



Hiroshima University Graduate School  
of Biomedical and Health Sciences  
(Dentistry) and Hiroshima University  
Hospital (Dental Departments)

# Research Achievements 2025

# Contents

## **Hiroshima University School of Dentistry, Hiroshima University Hospital, Graduate School of Biomedical and Health Sciences**

### ○ **Program of Dentistry**

- [Department of Maxillofacial Anatomy and Neuroscience](#)
- [Department of Physiology and Oral Physiology](#)
- [Department of Molecular Biology and Biochemistry](#)
- [Department of Oral and Maxillofacial Pathobiology](#)
- [Department of Bacteriology](#)
- [Department of Cellular and Molecular Pharmacology](#)
- [Department of Biomaterials](#)
- [Department of Mucosal Immunology](#)
- Department of Genomic Oncology and Oral Medicine
- [Department of Periodontal Medicine, and Division of Preventive and Restorative Dentistry \(Department of Periodontics\)](#)
- [Department of Oral Oncology, Division of Oral and Maxillofacial Surgery and Oral Medicine \(Department of Oral and Maxillofacial Surgery\)](#)
- [Department of Oral and Maxillofacial Surgery, and Division of Oral and Maxillofacial Surgery and Oral Medicine \(Department of Oral and Maxillofacial Reconstructive Surgery\)](#)
- [Department of Advanced Prosthodontics, and Division of Preventive and Restorative Dentistry \(Department of Oral Implant\)](#)
- [Department of Advanced Prosthodontics, and Division of Preventive and Restorative Dentistry \(Department of Prosthetic Dentistry\)](#)
- [Department of Orthodontics and Craniofacial Development Biology, and Division of Oral Health and Development \(Department of Orthodontics\)](#)
- [Department of Oral & Maxillofacial Radiology, Division of Oral and Maxillofacial Surgery and Oral Medicine \(Department of Oral and Maxillofacial Radiology\)](#)
- [Department of Biological Endodontics, and Division of Preventive and Restorative Dentistry \(Department of Endodontics and Operative Dentistry\)](#)
- [Department of Pediatric Dentistry, and Division of Oral Health and Development \(Department of Pediatric Dentistry\)](#)
- [Department of Dental Anesthesiology, and Division of Oral and Maxillofacial Surgery and Oral Medicine \(Department of Dental Anesthesiology\)](#)

### ○ **Program of Oral Health Sciences**

- [Department of Public Oral Health/Collaborative Research Laboratory of Oral Inflammation Regulation](#)
- [Department of Oral Epidemiology](#)
- Department of Oral Health Management
- [Department of Anatomy and Functional Restorations](#)
- [Department of Medical System Engineering](#)

- [Department of Oral Biology & Engineering](#)

○ **Graduate School of Biomedical and Health Sciences (Dentstry)**

Central Research Laboratory

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○ **University Hospital (Dental Departments)**

- [Division of General Dentistry, Department of General Dentistry](#)
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- Central Clinical Facilities, Division of Special Dental Treatment
- [Central Clinical Facilities, Center for Oral Clinical Examination](#)
- [Central Clinical Facilities, Dental Laboratory](#)
- [Central Clinical Facilities, Dental Hygiene Section](#)
- [Central Clinical Facilities, Division of Medical Informatics and Systems Management](#)

## Department of Maxillofacial Anatomy and Neuroscience

### (1) Staff and Students

Professor : Ryuji Terayama  
 Associate Professor: Kenta Uchibe  
 Associate Professor: Shohei Kohno

### (2) Main Research Activities

- 1: Studies on nociceptive transmission of orofacial region
- 2: Roles of glial cells in the development of neuropathic pain
- 3: Effects of administration of drugs on neuropathic pain
- 4: Roles of retinoic acid signaling in skeletal development
- 5: Studies on heterotopic ossification and related diseases
- 6: Studies on regulatory mechanisms of osteoblast differentiation

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Yimiti D, Uchibe K, Toriyama M, Hayashi Y, Ikuta Y, Nakasa T, Akiyama H, Watanabe H, Kondoh G, Takimoto A, Shukunami C, Adachi N, Miyaki S. CD1530, selective RAR $\gamma$  agonist, facilitates Achilles tendon healing by modulating the healing environment including less chondrification in a mouse model. *J Orthop Res*, Feb;43(2):273-284, 2025.
- 2: Matsuoka M, Uchibe K, Tang N, Tian H, Suzuki A, Oichi T, Usami Y, Alferiev I, Otsuru S, Abzug JM, Herzenberg JE, Pacifici M, Enomoto-Iwamoto M, Chorny M, Iwamoto M. Retinoid-impregnated nanoparticles enable control of bone growth by site-specific modulation of endochondral ossification in mice. *J Bone Miner Res*, Apr 21;40(4):535-547, 2025.
- 3: Matsuoka M, Tang N, Hongying T, Uchibe K, Otsuru S, Iwasaki N, Abzug JM, Enomoto-Iwamoto M, Iwamoto M. A retinoid antagonist attenuates bone growth inhibition caused by growth plate injury in mice. *J Orthop Res*, Oct;43(10):1724-1735, 2025.
- 4: Ogawa S, Higuchi S, Yoshimoto Y, Hoshino M, Miura S, Hamada A, Watanabe H, Sakuma T, Hu K, Ogata S, Uchibe K, Fujimoto K, Yamamoto T, Okamoto T, Kunimatsu R, Sotomaru Y, Tanimoto K, Kondoh G, Komori T, Docheva D, Shukunami C. Functional impact of pathogenic mutations in the Runt homology domain of mouse Runx2 on skeletal and dental phenotypes in cleidocranial dysplasia. *J Bone Miner Res*, Dec 27:zjaf201, 2025.

#### B) Review

#### C) Publications

- 1: Oral Anatomy, 3rd Edition (edited by Maeda Kenko, Amano Osamu, Abe Shinichi, and Baba Otto): Maeda Kenko et al.: Ishiyaku Shuppan (Tokyo), 230-234, 2025.

#### D) Other Publications

#### E) Presentation at Scientific Meeting

- 1: Terayama R, Uchibe K, Kohno S, Reorganization of synaptic inputs to spinal dorsal horn neurons in neuropathic pain, The 67th Annual Meeting of Japanese Association for Oral Biology (Kitakyushu), 2025.
- 2: Uchibe K, Kohno S, Terayama R, Guided bone growth by local retinoid administration, The 67th Annual Meeting of Japanese Association for Oral Biology (Kitakyushu), 2025.
- 3: Kohno S, Uchibe K, Terayama R, Differential changes in neuronal excitability and glial activation in

the spinal dorsal horn after peripheral nerve injury, The 67th Annual Meeting of Japanese Association for Oral Biology (Kitakyushu), 2025.

F) Invited lectures

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1. Grant-in Aid-for Scientific Research (C):Kenta Uchibe, 25K13066, ¥4,680,000
2. Grant-in Aid-for Scientific Research (C):Shohei Kohno, 25K14913, ¥4,680,000

(5) Academic Awards, etc.

(6) Patents

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## Department of Physiology and Oral Physiology

### (1) Staffs and Students

Professor : SUGITA, Makoto

Associate Professor : SAKAYORI, Nobuyuki

Assistant Professor : MIYABE, Risako

Research Assistant : YOKOYAMA, Emi

Graduate Students : YAMAMOTO, Kuniyo (~January); IWAMOTO, Yuma; MATSUO, Katsuhiro;  
TAHARA, Eiki; LI, Shengyu

Research Student : LI, Shengyu (~March)

### (2) Main Research Activities

- 1: The neuronal bases of taste perception and the taste-evoked behavioral and emotional responses
- 2: The roles of essential fatty acids in brain development and behaviors
- 3: The mechanisms of loss/recovery of consciousness induced by general anesthetics
- 4: The molecular mechanisms of ion and fluid transport in salivary glands
- 5: Studies on the function and dysfunction of ion channels and transporters

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Acquisition of auditory discrimination mediated by different processes through two distinct circuits linked to the lateral striatum: Setogawa S, Okauchi T, Hu D, Wada Y, Hikishima K, Onoe H, Nishizawa K, Sakayori N, Miyawaki H, Kitanishi T, Mizuseki K, Cui Y, Kobayash K: *eLife*, 13(97326), 2025.
- 2: Mice born to mothers fed a diet high in omega-6 fatty acids and low in omega-3 fatty acids during pregnancy exhibit various behavioral changes including impaired social behaviors and enhanced recognition memory: Sakayori N, Fujii K, Katakura M, Adachi M, Koshidaka Y, Takao K, Sugita M: *J Nutr*, 155(3), 775-787, 2025.

#### B) Review

#### C) Publications

#### D) Other publication

#### E) Presentation at Scientific Meeting

- 1: The roles of essential fatty acids in brain development: Sakayori N: The 115th Symposium of the Kanto Branch of the Japan Society of Nutrition and Food Science (Tokyo), 2025.
- 2: Imbalanced intake of essential fatty acids during pregnancy increases anxiety-related behavior in offspring mice: Kikuchi T, Hanamoto H, Sugita M, Sakayori N: The 58th Annual Meeting of the Chugoku-Shikoku Branch of the Japan Society of Nutrition and Food Science (Kochi), 2025.
- 3: Maternal imbalance in polyunsaturated fatty acids alters brain development and behavior in offspring: Sakayori N: 2025 KFN International Symposium and Annual Meeting (Busan), 2025.
- 4: Maternal dietary imbalance between n-6 and n-3 fatty acids impairs fine motor skills in mouse offspring: Li S, Handa T, Aizawa H, Sugita M, Sakayori N: The 4th Hiroshima University Neuroscience Seminar (Hiroshima), 2025.
- 5: Effects of maternal essential fatty acid intake balance during pregnancy on offspring motor function: Li S, Sugita M, Sakayori N: The 34th Annual Meeting of the Japan Society for Lipid Nutrition (Tokyo), 2025.

- 6: The role of essential fatty acids in brain development: Sakayori N: The 4th Japan Medical Association Union Basic Division Rising Star Retreat (Chita), 2025.
- 7: Imbalanced essential fatty acid intake in pregnant mice increases anxiety-like behavior in offspring under stress exposure. Kikuchi T, Omokawa D, Katakura M, Hanamoto H, Sugita M, Sakayori N: The 79th Annual Meeting of the Japan Society of Nutrition and Food Science (Nagoya), 2025.
- 8: A study on the role of essential fatty acids in brain development: Sakayori N: The 79th Annual Meeting of the Japan Society of Nutrition and Food Science (Nagoya), 2025.
- 9: Analysis of cross-modal effects on taste intensity evaluation: Shiota N, Ohira N, Saito M, Sugita M, Sakayori N, Obayashi N: The 2nd Neuro-Kasumi Young Researchers Meeting (Hiroshima), 2025.
- 10: The concerted effort of NKCC, TMEM16A and SGLT1 may underlie the efficient driving of oscillatory Cl<sup>-</sup> secretion from submandibular acinar cells: Sugita M, Takeyasu M: APPW2025 (Chiba), 2025.
- 11: The changes in the saccharin-elicited excitatory activities of bitter taste-relaying neurons in the medial amygdala by taste neophobia and learning: Sugita M: The 67th Annual Meeting of Japanese Association for Oral Biology (KitaKyushu), 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Urakami Foundation for Food and Food Culture Promotion: Sakayori N, Elucidating the function of eicosapentaenoic acid in brain development. \3,300,000.
- 2: Ryoshoku Research Association: Sakayori N, Elucidating the mechanisms by which maternal essential fatty acid intake balance influences offspring food preference. \1,500,000.
- 3: Grant-in-Aid for Scientific Research (C): Sugita M, The whole brain mapping of taste information processing to explore the mechanisms of taste impairment. 24K12870. \1,200,000.

#### (5) Academic Awards, etc.

1. Kikuchi T, Omokawa D, Katakura M, Hanamoto H, Sugita M, Sakayori N: Topics Award, The 79th Annual Meeting of the Japan Society of Nutrition and Food Science, 2025
2. Sakayori N: Incentive Award, Japan Society of Nutrition and Food Science, 2025

#### (6) Patents

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## Department of Molecular Biology and Biochemistry

### (1) Staff and Students

Professor: Chisa Shukunami

Associate Professor: Shigenori Miura

Assistant Professor: Katsumi Fujimoto

Graduate Student: Xinyi Yu (- 2025. 5), Shinsei Yambe, Kadi Hu, Jie Zhang (2025. 10-)

Undergraduate Student: Rintaro Matsui, Tomomi Sawada

Research Student: Jie Zhang (2025. 4 - 9)

### (2) Main Research Activities

- 1: Mechanisms regulating in the establishment of the junction between cartilage and tendon/ligament
- 2: The role of Pax1 during formation of vertebral column
- 3: Mechanisms of tendon/ligament formation
- 4: Mechanisms of periodontal ligaments formation
- 5: Molecular mechanisms of circadian rhythm regulation
- 6: Morphogenesis of the head and neck region
- 7: Establishment of a bone-tendon junction organoid model

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Ogawa S., Higuchi S., Yoshimoto Y., Hoshino M., Miura S., Hamada A., Watanabe H., Sakuma T., Hu K., Ogata S., Uchibe K., Fujimoto K., Yamamoto T., Okamoto T., Kunimatsu R., Sotomaru Y., Tanimoto K., Kondoh G., Komori T., Docheva D., and Shukunami C\*.: Functional impact of pathogenic mutations in the Runt homology domain of mouse Runx2 on skeletal and dental phenotypes in cleidocranial dysplasia.: *Journal of Bone Mineral Research*, doi: 10.1093/jbmr/zjaf201, 2025
- 2: Ren K., Fu Y., Zhu J., Liu J., Han Y., Zhang S, Zhang X., Chen M., Xia C., Sun K., Xiao D., Liu Y., Wang L., Qiang R., Shukunami C., Girisha KM, Ikegawa S., Guo L\*.: TMEM53 as an outer nuclear membrane regulator of cranial and tubular bone formation in craniotubular dysplasia.: *Journal of Human Genetics*, doi: 10.1038/s10038-025-01443-w, 2025
- 3: Sasaki T\*, Jin K., Takimoto A., Taga Y., Ishikawa Y., Bächinger HP., Sakai T., Terabayashi T., Hanada K., Schlötzer-Schrehardt U., Shukunami C., Hiraki Y. Nakamura T., Yamamoto E.: Fibulin-4 is required for the mechanical stability of tendons.: *Cell and Tissue Research*, 402(3): 361-372, 2025
- 4: Jiang Y., Pattappa G., Lin D., Della Porta G., Rudert M., Shukunami C., Docheva D\*.: The role of tenomodulin in the tendon repair process. : *American Journal of Physiology*, 329(4): C1075-C1084, 2025
- 5: Yu X., Kawakami R., Yambe S., Yoshimoto Y., Sasaki T., Higuchi S., Watanabe H., Akiyama H., Miura S., Hu K., Kondo G., Sagasaki R., Inui M., Adachi T., Docheva D., Imamura T. and Shukunami C\*.: Dynamic interactions between cartilaginous and tendinous and/or ligamentous primordia during musculoskeletal integration.: *Development*, 152(6): dev204512, 2025
- 6: Yimiti D., Uchibe K., Toriyama M., Hayashi Y., Ikuta Y., Nakasa T., Akiyama H., Watanabe H., Kondoh G., Takimoto A., Shukunami C., Adachi N., Miyaki S\*.: CD1530, selective RAR $\gamma$  agonist, facilitates Achilles tendon healing by modulating the healing environment including less chondrification in a mouse model.: *Journal of Orthopaedic Research*, 43(2): 273-284, 2025
- 7: Duman E., Müller-Deubert S., Pattappa G., Stratos I., Sieber SA., Clausen-Schaumann H., Sarafian V., Shukunami C., Rudert M., Docheva D\*.: Fluoroquinolone-Mediated Tendinopathy and Tendon Rupture.: *Pharmaceuticals*, doi: 10.3390/ph18020184, 2025
- 8: Groove-aided sacrificial molding for fabrication of ECM-based in vitro vascular model with branches.: Muramatsu J., Hashimoto M., Miura S., and Onoe H\*.: *Lab on a chip*, 25(18): 4800-4813, 2025
- 9: Control of tissue strain is essential for enhanced dermal innervation in the three-dimensional skin engineering.: Miura S., Nie M., Emoto K., and Takeuchi S\*.: *ACS Biomaterials science &*



*engineering*, 11(1): 442-450, 2025

- 10: Osteogenesis Potential of Polymethylmethacrylate-Hydroxyapatite and Stem Cells from Human Exfoliated Deciduous Teeth as Alveolar Bone Graft: An *In Silico* Study.: Saskianti T\*, Angelina M., Dewi A.M., Antonius Y., Zahri A.N., Ridwan R.D., Kanawa M., Kawamoto T., Tanimoto K., and Fujimoto K.: *European Journal of Dentistry*, 19(4): 1046-1054, 2025
- 11: Exploratory Analysis of Differentially Expressed Genes for Distinguishing Adipose-Derived Mesenchymal Stroma/Stem Cells from Fibroblasts.: Kanawa M\*, Fujimoto K., Saskianti T., Nakashima A., and Kawamoto T.: *Applied Sciences*, 15(18): 9881, 2025
- 12: Osteogenic Marker Expression after SHED and PMMA-HA Scaffold Application in Alveolar Bone Defects.: Saskianti T\*, Damayanti R., Pangestika F.W., Dewi A.M., Ridwan R.D., Fan C.Y., Kanawa M., Kawamoto T., Tanimoto K., and Fujimoto K.: *European Journal of Dentistry*, doi: 10.1055/s-0045-1812311, 2025

\* Corresponding author

## B) Review

## C) Publications

## D) Other Publications

## E) Presentation at Scientific Meeting

- 1: Elucidation of the effects of cell adhesion area on ultrasound responsiveness.: Mitsuda R., Koda S., Miura S., Kurashina Y.: The 37th Bioengineering Conference, JSME (2025.5.25, Yokohama)
- 2: Spatiotemporal analysis of vascular endothelial cell responses to complex stimuli using an in vitro branched vascular model.: Muramatsu J., Hashimoto M., Miura S., Onoe H.: The 64th Annual Conference of the Japanese Society for Medical and Biological Engineering (2025.6.6, Fukui)
- 3: Factor-permeable gel chamber for generating differentiation gradients in fibroblast-derived 3D tissues.: Takeuchi T., Muramatsu J., Miura S., Onoe H.: The 64th Annual Conference of the Japanese Society for Medical and Biological Engineering (2025.6.6, Fukui)
- 4: The effect of microfabricated cell adhesion areas on ultrasound responses of ion channel-type receptor.: Mitsuda L., Koda S., Miura S., and Kurashina Y.: *Transducers 2025* (2025.6.30, Florida USA)
- 5: Spatiotemporal analysis of endochondral cell responses to complex mechanical stress with ECM-based branched vascular model.: Muramatsu J., Hashimoto M., Miura S., and Onoe H: *EMBC 2025* (2025.7.15, Copenhagen)
- 6: The transcriptional regulators Gsc and Foxc1/Foxc2 are essential for proper connection between the mandible and tongue.: Wang Y., Yoshimoto Y., Adachi N., Takeuchi J., Shukunami C., Iseki S., Takechi M.: The 65th Annual Meeting of the Japanese Teratology Society (2027.7.25, Tokyo)
- 7: Effect of Acoustic Pressure on Ultrasound Response of Ion Channel-type Receptor.: Mitsuda R., Koda S., Miura S., Kurashina Y.: *Dynamics & Design Conference 2025* (2025.8.27, Okinawa)
- 8: Divergent temporal regulation of bone ridge and limb tendon formation by an evolutionarily conserved Scleraxis enhancer.: Yambe S.: The 20th Advanced Dentistry School 2025 (2025.8.28, Fukuoka)
- 9: Analysis of Achilles tendon calcification and ectopic ossification associated with aging and injury.: Yoshimoto Y., Gao X., Shukunami C., Iseki S.: The 168th Annual Meeting of the Japanese Society of Veterinary Science (2025.9.5, Miyazaki)
- 10: Development of a shear stress culture system for iPS cell-derived cerebral vascular endothelial cells using a pressure-driven biomimetic system.: Sugiura S., Tomita S., Kurihara K., Sakashita M., Sato H., Morimoto Y., Zhao B., Miura S., Miyake T., Okubo T., Fujiyama Y., Sakura T.: The 77th Annual Meeting of the Society for Biotechnology, Japan (2025.9.12, Hiroshima)
- 11: Involvement of Actin Cytoskeletal Structure in TRPA1 Ultrasound Responsiveness.: Mitsuda L., Koda S., Miura S., and Kurashina Y.: The 2025 IEE International Ultrasonics Symposium (2025.9.16, Utrecht)
- 12: Identification and functional significance of enhancers regulating Scleraxis expression: Yambe S.: The 24th Locomotor Science Meeting (2025.9.19, Matsuyama)
- 13: Switching and Evolutionary Significance of Pax1 Sclerotome Enhancers in Vertebrates.: Miura S.: The 24th Locomotor Science Meeting (2025.9.20, Matsuyama)
- 14: The Functional Role of Scleraxis in Mouse Craniofacial Development: Hu K.: The 24th Locomotor

- Science Meeting (2025.9.20, Matsuyama)
- 15: Factor-permeable Hydrogel Chamber Inducing Differentiation Gradient of MSC-derived 3D Ring-shaped Tissue.: Takeuchi T., Muramatsu J., Miura S., and Onoe H.: MicroTAS 2025 (2025.11.4, Adelaide)
  - 16: Development of a Pressure-driven Microphysiological System for Applying Shear Stress to iPS Cell-derived Cerebral Vascular Endothelial Cells.: Sugiura T., Tomita T., Kurihara K., Hashita T., Sato H., Morimoto Y., Jo B., Miura S., Yano S., Miyake C., Ohkubo T., Fujiyama Y., and Sakura T.: MicroTAS 2025 (2025.11.5, Adelaide)
  - 17: Gene transfection into mesenchymal stem cells using cationic lipids for sonogenetic control of tissue differentiation.: Kawai R., Mitsuda R., Koda S., Miura S., Kurashina Y.: The 16th Symposium on Micro-Nano Science and Technology (2025.11.11, Utsunomiya)
  - 18: Effects of micropatterned single-cell adhesion behavior on ultrasound responsiveness of TRPA1.: Mitsuda R., Koda S., Miura S., Kurashina Y.: The 16th Symposium on Micro-Nano Science and Technology (2025.11.11, Utsunomiya)
  - 19: Construction of Mesenchymal Stem Cell-Derived 3D Tissue with Differentiation Gradient using Factor-Permeable Gel Device.: Takeuchi T., Muramatsu J., Miura S., Onoe H.: The 16th Symposium on Micro-Nano Science and Technology (2025.11.11, Utsunomiya)
  - 20: Spatiotemporal analysis of *in vitro* endothelial tissue responses to complex mechanical stimuli with a branched microfluidic device.: Muramatsu J., Hashimoto M., Miura S., Onoe H.: The 16th Symposium on Micro-Nano Science and Technology (2025.11.11, Utsunomiya)
  - 21: Fluidic device for human placental transfer on culture insert.: Suzuki N., Miura S., Morimoto Y.: The 16th Symposium on Micro-Nano Science and Technology (2025.11.12, Utsunomiya)
  - 22: Roles of Scx<sup>+</sup>/Sox9<sup>+</sup> Progenitors and Mechanical Cues in the Hierarchical Organization of the Annulus Fibrosus.: Miura S., Zhang J., Morimoto Y., Akiyama H., Shukunami C.: The 44th Annual Meeting of the Japanese Society for Transplantation and Tissue Engineering in Musculoskeletal System (2025.11.22, Aichi)
  - 23: Ultrasonic Response of TRPA1 with Vibration Enhancer for Sonogenetics.: Mitsuda L., Konno R., Koda S., Miura S., and Kurashina Y.: The International Symposium on Biomolecular Ultrasound and Sonogenetics 2025 (ISBUS 2025) (2025.12.12, Pasadena)
  - 24: Tissue construction and evaluation of differentiation gradients using a factor-permeable gel device for an *in vitro* intervertebral disc model.: Takeuchi T., Muramatsu J., Miura S., Onoe H.: The 11th Cybonics Research Meeting (2025.12.5, Chiba)
  - 25: Scx<sup>+</sup>/Sox9<sup>+</sup> Progenitors and Mechanical Cues Coordinate the Spatial Differentiation Gradient of the Annulus Fibrosus.: Miura S., Zhang J., Morimoto Y., Akiyama H., Shukunami C.: The 48th Annual Meeting of the Molecular Biology Society of Japan (2025.12.4, Yokohama)
  - 26: DNA microarray data analysis to distinguish adipose-derived or bone marrow-derived mesenchymal stroma/stem cells from fibroblasts.: Kanawa M., Fujimoto K., Saskianti T., Nakashima A., and Kawamoto T.: The 48th Annual Meeting of the Molecular Biology Society of Japan (2025.12.3, Yokohama)

#### F) Special lectures in academic meetings

- 1: Regulatory mechanisms of musculoskeletal connectivity mediated by tendons and ligaments. Shukunami C.: Lecture I, The 53rd Nagasaki Osteoporosis Research Meeting (2025.8.20, Online)
- 2: Toward the Generation of Intervertebral Disc Organoids: Miura S.: Symposium 8: Cellular and Tissue Mechanobiology of the Musculoskeletal System, The 52nd Annual Meeting of the Japanese Society for Clinical Biomechanics (2025.11.8, Kyoto)

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grant-in-Aid for Scientific Research (B): Chisa Shukunami (Principal Investigator), 24k02611. ¥6,200,000.
- 2: Fund for the Promotion of Joint International Research (Fostering Joint International Research (B)): Chisa Shukunami (Principal Investigator), 21KK0161. ¥1,900,000.
- 3: Grant-in-Aid for Scientific Research (B): Chisa Shukunami (Co-Investigator), 24K03263. ¥300,000.
- 4: Grant-in-Aid for Scientific Research (B): Chisa Shukunami (Co-Investigator), 23K27721. ¥200,000.
- 5: Grant-in-Aid for Challenging Research (Exploratory): Chisa Shukunami (Co-Investigator),

- 24K22381. ¥100,000.
- 6: Grant-in-Aid for Scientific Research (C): Chisa Shukunami (Co-Investigator), 22K10017. ¥50,000.
  - 7: Grant-in-Aid for Scientific Research (C): Chisa Shukunami (Co-Investigator), 24K12347. ¥100,000.
  - 8: Grant-in-Aid for Scientific Research (C): Chisa Shukunami (Co-Investigator), 25K113145. ¥100,000.
  - 9: Grant-in-Aid for Scientific Research (B): Shigenori Miura (Principal Investigator), 24K03263. ¥3,000,000.
  - 10: Grant-in-Aid for Challenging Research (Exploratory): Shigenori Miura (Principal Investigator), 24K22381. ¥2,100,000.
  - 11: Grant-in-Aid for Scientific Research (A): Shigenori Miura (Co-Investigator), 23H00555. ¥2,300,000.
  - 12: Grant-in-Aid for Scientific Research (B): Shigenori Miura (Co-Investigator), 24K02611. ¥150,000.
  - 13: Grant-in-Aid for Challenging Research (Exploratory): Shigenori Miura (Co-Investigator), 24K21596. ¥400,000.
  - 14: Grant-in-Aid for Scientific Research (C): Katsumi Fujimoto (Principal Investigator), 22K11803. ¥450,000.
  - 15: Grant-in-Aid for Scientific Research (C): Katsumi Fujimoto (Co-Investigator) , 23K09162. ¥100,000.
  - 16: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University (Next-Generation Fellows) Research Funds: Hu Kadi, Construction of a visualization model of cells controlling tendon and ligament maturation. ¥400,000
  - 17: Grant-in-Aid for JSPS Fellows: Shinsei Yambe, Elucidation of the transcription factor network regulating tendon and ligament formation. ¥700,000
  - 18: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University (Next-Generation Fellows) Research Funds: Zhang Jie, Elucidation of mechanodynamics underlying enthesis formation and development of an organoid model. ¥200,000

#### (5) Academic Awards, etc.

1. Divergent temporal regulation of bone ridge and limb tendon formation by an evolutionarily conserved Scleraxis enhancer: Shinsei Yambe: The 20th Advanced Dentistry School 2025, Outstanding performance award

#### (6) Patents

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## Department of Oral and Maxillofacial Pathobiology

### (1) Staff and Students

Professor:	Toshinori Ando
Assistant Professor:	Hisako Furusho
Graduate Student:	Yume Ueda (D3 Department of Oral oncology) Nanako Kataoka (D2 Center of Oral Clinical Examination) Kai Omachi (D2 Department of Oral oncology) Yuga Maeda (D2 Department of Oral oncology) Yukina Kobayashi (D1 Center of Oral Clinical Examination) Sayako Yamane (D1 Department of Orthodontics)
Research Technician	Akiko Takada (From December)
From other department:	(Collaborative Research Laboratory of Oral Inflammation Regulation) Fumie Shiba (Research Associate) Mutsumi Miyauchi (Researcher) (Health Service Center / Department of Cardiovascular Medicine) Shunsuke Miyauchi (Research Associate) Ruri Mikami (Research Technician)

### (2) Main Research Activities

- 1: Clarifying the mechanisms of oral cancer development and progression (Focusing on genetic aberrations and the Hippo-YAP/TAZ pathway)
- 2: Investigating the mechanisms of drug resistance in oral cancer
- 3: Uncovering immune evasion mechanisms and the tumor microenvironment in oral cancer
- 4: Decoding the developmental mechanisms of salivary gland and odontogenic tumors
- 5: Advancing next-generation diagnostics through molecular pathology and AI-driven imaging
- 6: Exploring the links between periodontitis and systemic diseases (liver disease, preterm birth, cardiovascular disease and brain disease)
- 7: Translating pathogenic insights into novel diagnostic and therapeutic strategies
- 8: Study on epidemiological study on the relationship between periodontal disease and systemic diseases using large-scale data of Hiroshima Branch of National Health Insurance Society
- 9: Study on pathogenesis of stomatitis (Collaborative Research Laboratory)
- 10: Study on pathogenesis of periodontitis (Collaborative Research Laboratory)
- 11: Study on pathogenesis of MRONJ (Collaborative Research Laboratory)

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Atrial Translocation of *Porphyromonas gingivalis* Exacerbates Atrial Fibrosis and Atrial Fibrillation: Miyauchi S., Kawada MM., Furusho H., Nishi H., Nakajima A., Phat PT., Shiba F., Kitagawa M., Ouhara K., Oda N., Tokuyama T., Okubo Y., Okamura S., Takasaki T., Takahashi S., Hiyama T., Kawaguchi H., Komatsuzawa H., Miyauchi M., Nakano Y.: *Circulation*. May 27;151(21):1527-1540. 2025.
- 2: A case of lymphoproliferative disease of the palate while receiving infliximab and azathioprine for Crohn's disease: Ito N., Hamana T., Furusho H., Eboshida N., Asada Y., Obayashi F., Higaki M., Hamada A., Yamasaki S., Ando T., Koizumi K., Yanamoto S.: *J Oral Maxillofac Surg Med Pathol*. Mar;37(2):365-370. 2025.
- 3: Effect of stimulated salivary volume on dysbiosis of the salivary microbiome in children and young adults: Shintani T., Obayashi N., Yoshimoto T., Ando T., Morihara N., Kataoka N., Miyata R., Yoshino M., Yoshii H., Morimoto S., Hayashi Y., Suzuki M., Tanimoto K., Kajiya M.: *Int Dent J*, Jun 75(5(3): 1759-1770, 2025.

- 4: Carcinoma ex pleomorphic adenoma primarily composed of squamous cell carcinoma in buccal region – Case report: Naruse T., Ohta K., Shigeishi H., Ando T., Nakagawa T., Yamakado N., Ninomiya Y., Sakamoto S., Ishida Y., Aikawa T.: *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, Jan 37: 99–103, 2025.
- 5: Clinical value of the worst pattern of invasion in predicting extranodal extension in oral squamous cell carcinoma.: Higaki M., Ando T., Obayashi F., Ito N., Hirota S., Hamada A., Yamasaki S., Shintani T., Koizumi K., Yanamoto S.: *Discov Oncol*, Jul 16(1): 1259, 2025.
- 6: Effects of recombinant human sclerostin on proliferation and migration in human cementoblast lineage cells: Okimura N., Kunimatsu R., Kado I., Nakatani A., Sakata S., Ikeda K., Ito S., Ogasawara T., Ogashira S., Miyauchi M., Takata T., Tanimoto K.: *Arch Oral Biol*. Jul 175: 106273. 2025.
- 7: Establishment of immortalized human minor salivary gland cells and chemokine expression induced by IFN- $\gamma$ , TNF- $\alpha$ , and IL-1 $\beta$ : Naruse T., Ohta K., Akagi M., Sakuma M., Ishida Y., Niwata C., Nakagawa T., Ono S., Shiba F., Ando T., Nishi H., Shigeishi H., Aikawa T.: *Odontology*, Oct 113:1546-1557, 2025.
- 8: Prevalence and ecological role of *Streptococcus toyakuensis* in saliva of healthy young individuals: Obayashi N., Shintani T., Morihara N., Kawada-Matsuo M., Ando T., Miyata R., Hayashi Y., Kataoka N., Tanimoto K., Kawaguchi H., Komatsuzawa H., Kajiya M.: *International Dental Journal*. Oct 3;76(2026)103987. 2025.
- 9: Prevalence and ecological role of streptococcus toyakuensis in saliva of healthy young individuals.: a retrospective observational study: Obayashi N., Shintani T., Morihara N., Kawada-Matsuo M., Ando T., Miyata R., Hayashi Y., Kataoka N., Tanimoto K., Kawaguchi H., Komatsuzawa H., Kajiya M.: *Int Dent J*, Nov 76(1): 103987, 2025.
- 10: Management and prognostic implications of posteriorly advanced OSCC in contact with the medial pterygoid muscle.: Ito N., Obayashi F., Higaki M., Hamada A., Yamasaki S., Shintani T., Ando T., Koizumi K., Yanamoto S.: *Cancer Med*, Nov 14(22): e71174, 2025.
- 11: PIGF/Flt-1/MMP-1 axis in gingival carcinoma bone invasion: Nguyen PT., Miyauchi M., Subarnbhesaj A., Ogawa I., Chea C., Takata T.: *Histol Histopathol*. Nov;40(11):1757-1768. 2025.
- 12: Two cases of long-term zinc acetate hydrate administration in patients with a zinc deficiency taste disorder with copper deficiency after upper gastrointestinal resection.: Shintani T., Tahara H., Obayashi N., Ando T., Yoshimoto T., Yoshino M., Morimoto S., Ohdan H., Kajiya M.: *Clin Nutr ESPEN*, Dec 70: 309-313, 2025.
- 13: FHL2 DNA methylation in tooth root surfaces as a tool for age estimation: Oka H., Akazaki T., Miyauchi M., Kitagawa M. *J Forensic Sci.*, in press, 2025.
- 14: A case of periosteal chondroma in the articular process of mandible: Ishida Y., Yamasaki S., Uehara T., Yamasaki E., Hirota S., Furusho H., Hamana T., Aikawa T., Yanamoto S.: *J Oral Maxillofac Surg Med Pathol*. in press, 2025.
- 15: Effects of glycyrrhizin on healing and prevention of recurrent aphthous stomatitis in hamster models: Shiba F., Maekawara S., Furusho H., Ishida E., Shigeishi H., Ohta K., Miyauchi M.: *PLOS ONE*, in press, 2025.
- 16: A case of solitary fibrous tumor in the floor of mouth : Ooi H., Shimasue H., Ishida Y., Ando T., Ono S., Aikawa T.: *Japanese journal of Oral Surgery*, 71 (2): 51-56, 2025.
- 17: A case of submucosal buccal oncocytoma in a patient with Birt-Hogg-Dubé syndrome: Nakatani K., Yoshioka Y., Shirakawa J., Yanamoto S., Ando T., Yamamoto T.: *Japanese journal of Oral Surgery*, 71 (9): 426-432, 2025.
- 18: A case of myofibroma in the body of the mandible: Taguchi Y., Ito N., Ando T., Asada Y., Nobumoto T., Yanamoto S.: *Japanese journal of Oral Surgery*, 71 (6): 267-273, 2025.

## E) Presentations at Scientific Meetings

### 1) Symposium

1. Mechanisms of proliferation and drug resistance driven by dysrupted Hippo pathway in oral squamous cell carcinoma: Ando T.: The 114<sup>th</sup> Annual Meeting of the Japanese Society of Pathology (Sendai), 2025.
2. Proliferation and Drug Resistance of Oral Squamous Cell Carcinoma Induced by EGFR Gene Alterations and Dysregulation of the Hippo Pathway: Ando T.: The 36th Annual Meeting of the Japanese

Society of Oral Pathology (Okayama), 2025.

3. Immune Evasion Mechanisms Driven by Hippo Pathway Abnormalities in Oral Cancer: Ando T.: The 67<sup>th</sup> annual meeting of Japanese Association for Oral Biology (Fukuoka), 2025.
4. Mechanisms of NASH progression caused by periodontitis and potential therapeutic strategies: Furusho H.: The 67<sup>th</sup> annual meeting of Japanese Association for Oral Biology (Fukuoka), 2025.
5. Correlation Between Genetic Alterations and the Hippo Pathway in Oral Squamous Cell Carcinoma: Ando T.: The 64<sup>th</sup> annual autumn meeting of the Japanese Society of Clinical Cytology (Hiroshima), 2025.
6. Is FISH Testing Useful as an Adjunct to Oral Mucosal Cytology?: Unehara R, Mori T, Shimizu S., Kaneko Y., Ishida K., Ando T., Aikawa T., Ogawa I., Miyauchi M, Arihiro K.: The 64<sup>th</sup> annual autumn meeting of the Japanese Society of Clinical Cytology (Hiroshima), 2025.

## 2) International conference

1. Prognostic factors for squamous cell carcinoma of the maxillary gingiva and hard palate: A retrospective study: Ito N., Itotagawa M., Ando T., Omachi K., Obayashi F., Higaki M., Hamada A., Yamasaki S., Koizumi K., Yanamoto S.: 10<sup>th</sup> World Congress of the International Academy of Oral Oncology (IAOO) (Liverpool), 2025.
2. Dysregulated Hippo pathway promotes tumor growth and immune escape in oral squamous cell carcinoma: Ando T.: Taiwanese oral pathology (Taiwan), 2025.
3. The dual role of the Hippo-YAP/TAZ pathway in EGFR inhibitor resistance of oral squamous cell carcinoma: controlling proliferation and dormancy: Ando T (invited): OBT Research Center, Kyudai Oral Bioscience & DDR Research Center 9<sup>th</sup> Joint International Symposium 2025 (Fukuoka), 2025.
4. Translocation of periodontal pathogens to the left atrium: A potential trigger for inflammation-mediated atrial remodeling, Miyauchi S., Furusho H., Miyauchi M., Oda N., Tokuyama T., Okubo Y., Okamura S., Nakano Y., 18<sup>th</sup> Asia Pacific Heart Rhythm Society (APHRS) Scientific Session / 71<sup>st</sup> Japanese Heart Rhythm Society (JHRS) Scientific Session (Yokohama), 2025.

## 3) Domestic conference

1. Clinical study of 70 cases of maxillary gingival and hard palate squamous cell carcinoma: Ito N., Itotagawa Y., Ando T., Obayashi F., Higaki M., Hamada A., Yamasaki S., Koizumi K., Yanamoto S.: The 43rd Annual Meeting and Scientific Conference of the Japanese Society of Oral Oncology (Tokyo), 2025.2.27-28.
2. Establishment of novel bone regenerative cell therapy using direct conversion and 3D cell clumps culture system: Yoshino M., Yoshimoto T., Ando T., Shintani T., Morimoto S., Suzuki M., Yasuda G., Seki M., Kajiya M.: 68<sup>th</sup> Japanese association of Periodontology annual meeting in Autumn (Okinawa), 2025.
3. ALPK2 promotes cell proliferation in YAP/TAZ-activated oral squamous cell carcinoma: Ueda Y., Kataoka N., Okamoto K., Omachi K., Maeda Y., Kobayashi Y., Kajiya M., Yanamoto S., Ando T.: The 58<sup>th</sup> Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2025.
4. Improving the Accuracy and Specimen Collection Methods of Oral Cytology at Our University: Unehara R., Oue Y., Mori T., Shimizu T., Kaneko Y., Ishida K., Ando T., Ogawa I., Arihiro K.: The 66<sup>th</sup> annual spring meeting of the Japanese Society of Clinical Cytology (Spring) (Tokyo), 2025.
5. ER stress-mediated dormancy under EGFR inhibition requires YAP reactivation in oral squamous cell carcinoma: Kataoka N., Ueda Y., Okamoto K., Kobayashi Y., Omachi K., Maeda Y., Yanamoto S., Kajiya M., Ando T.: The 36<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology (Okayama), 2025.
6. YAP reactivation drives ER stress-mediated dormancy under EGFR inhibition in oral squamous cell carcinoma: Kataoka N., Ueda Y., Okamoto K., Kobayashi Y., Omachi K., Maeda Y., Yanamoto S., Kajiya M., Ando T.: The 84<sup>th</sup> Annual Meeting of the Japanese Cancer Association (Ishikawa), 2025.9.27
7. ALPK2 drives cell proliferation in oral squamous cell carcinoma: Ueda Y., Kataoka N., Okamoto K., Omachi K., Maeda Y., Kobayashi Y., Kajiya M., Yanamoto S., Ando T.: The 84<sup>th</sup> Annual Meeting of the Japanese Cancer Association (Ishikawa), 2025.
8. Elucidation of the mechanism by which ALPK2 regulates proliferation in oral squamous cell carcinoma (OSCC): Ueda Y., Kataoka N., Okamoto K., Omachi K., Maeda Y., Kobayashi Y., Kajiya M., Yanamoto S., Ando T.: The 1st research exchange meeting Kasumi-Nexus (Hiroshima), 2025.
9. Elucidation of the mechanisms of cancer cell dormancy mediated by YAP reactivation under EGFR

- inhibition: Kataoka N.: HU-Tomorrow Annual Meeting 2025 (Hiroshima), 2025.
10. ALPK2 promotes tumor growth in oral squamous cell carcinoma with activated YAP/TAZ signaling YAP/TAZ: Ueda Y., Kataoka N., Okamoto K., Omachi K., Maeda Y., Kobayashi Y., Kajiya M., Yanamoto S., Ando T.: HU-Tomorrow Annual Meeting 2025 (Hiroshima), 2025.
  11. A study of dental caries in elderly people using caries risk tests and quantitative oral bacterial tests: Hayashi Y., Shintani T., Ando T., Oki Y., Obayashi N., Suzuki M., Kataoka N., Yasuda G., Kobayashi Y., Miyata R., Kajiya M.: The 18<sup>th</sup> Annual Scientific Meeting of the Japanese Society for Evidence and the Dental Professional (Okinawa), 2025.
  12. Distribution characteristics of a resistant novel *Streptococcus* species revealed by secondary analysis of clinical specimens from caries risk test: Obayashi N., Shintani T., Morihara N., Ando T., Hayashi Y., Kataoka N., Kawaguchi H., Komatsuzawa H., Kajiya M.: The 18<sup>th</sup> Annual Scientific Meeting of the Japanese Society for Evidence and the Dental Professional (Okinawa), 2025.11.1
  13. Development of a nomogram for predicting distant metastasis in oral squamous cell carcinoma: Higaki M., Ando T., Morishita K., Obayashi F., Hamada A., Ito N., Yamasaki S., Koizumi K., Fujita Y., Yanamoto S.: The 70<sup>th</sup> Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.
  14. Elucidating the LLPS-mediated interaction mechanism of YAP/TAZ-RBM39 for the development of cancer therapies: Kobayashi Y., Watanabe C., Kataoka N., Kajiya M., Ando T.: The 48<sup>th</sup> Annual Meeting of the Molecular Biology Society of Japan (Kanagawa), 2025.

#### F) Case presentations

- 1: A case of cancer of unknown primary origin discovered following an oral lesion: Eboshida N., Ito N., Itotagawa Y., Obayashi F., Higaki M., Hamada A., Yamasaki S., Koizumi K., Ando T., Yanamoto S.: The 43<sup>rd</sup> Annual Meeting and Scientific Conference of the Japanese Society for Oral Oncology (Tokyo), 2025.
- 2: A case of mixed squamous cell carcinoma associated with neuroendocrine carcinoma arising in the palate: Hirota S., Higaki M., Ando T., Okamoto K., Itogawa S., Yanamoto S.: The 54<sup>th</sup> Chugoku-Shikoku Regional Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Yamaguchi), 2025.
- 3: A Case of Carcinoma of Unknown Primary Presenting as a Mass in the Maxillary Gingiva: Eboshida N., Ito N., Itotagawa M., Higaki M., Obayashi F., Hamada A., Yamasaki S., Koizumi K., Ando T., Yanamoto S.: The 3<sup>rd</sup> Academic Meeting of the Young Oral and Maxillofacial Surgeons Exchange Meeting (Hiroshima), 2025.
- 4: A case of multiple oral cancers with papillary squamous cell carcinoma of the tongue: Ono H., Morishita K., Kataoka N., Kitamura M., Hirota S., Koizumi K., Ando T., Yanamoto S.: The 72<sup>nd</sup> Annual Meeting of the Chugoku-Shikoku Regional Branch of the Japanese Stomatological Society (Ehime), 2025.
- 5: A case of intraosseous lipoma arising in the submental region: Okamoto K., Hirota S., Ohno H., Kitamura M., Morishita K., Koizumi K., Kobayashi Y., Ando T., Yanamoto S.: The 72<sup>nd</sup> Annual Meeting of the Chugoku-Shikoku Regional Branch of the Japanese Stomatological Society (Ehime), 2025.
- 6: A case of clear cell variant of squamous cell carcinoma arising in the mandibular gingiva: Kobayashi Y., Kataoka N., Ono S., Nakagawa T., Uetsuki R., Mizuta K., Aikawa T., Kajiya M., Ando T.: The 18<sup>th</sup> Annual Scientific Meeting of the Japanese Society for Evidence and the Dental Professional (Okinawa), 2025.
- 7: A case of developmental odontogenic cyst with characteristic features of glandular odontogenic cyst and odontogenic keratocyst, Incorporating Molecular pathological evaluation: Kataoka N., Asada Y., Fukutani T., Kobayashi Y., Tani R., Suei Y., Kakimoto N., Yanamoto S., Miyauchi M., Ogawa I., Kajiya M., Ando T.: The 18<sup>th</sup> Annual Scientific Meeting of the Japanese Society for Evidence and the Dental Professional (Okinawa), 2025.

#### G) Special lectures in academic meetings

- 1: A new era of oral pathology at Hiroshima University: Empowering young challengers and embracing diversity: Kobayashi Y.: The 36<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology (Young pathologist session) (Okayama), 2025.

- 2: Inheritance and innovation in oral pathology at Hiroshima University - Toward the Future of Dentistry -: Ando T.: Hiroshima University School of Dentistry Ehime Prefecture Alumni Association (Ehime), 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1. Grants-in-Aid for Scientific Research (B): Ando T. (PI, Continue): Deciphering the regulatory mechanism of cancer microenvironment induced by disruption of the Hippo pathway and novel therapeutic approach. 24K02645, 14,300,000 yen
2. Grants-in-Aid for Scientific Research (C): Miyauchi M. (PI, New), Furusho H. (Co-I, New): Role of Galectin-3 in the pathogenesis/exacerbation mechanism of atrial fibrillation induced by odontogenic infection of periodontal pathogen. 25K12987, 4,550,000 yen
3. Grants-in-Aid for Scientific Research (B): Mutsumi M. (Co-I, Continue): Pain management strategies for the elderly: Platelet-activating factor (PAF) related molecules and the mechanisms of pain chronicity. 23K27878, 18,980,000 yen
4. Grants-in-Aid for Scientific Research (B): Furusho H. (Co-I, New), Proposal of atrial cardiomyopathy involving atrial infection by *P. gingivalis* and elucidation of its underlying mechanisms, 25K00117, 18,850,000 yen
5. Grants-in-Aid for Scientific Research (B): Furusho H. (Co-I, New), A study on the mechanisms of brain function improvement and the assessment of cognitive function through chewing movements based on salivary irisin as an indicator. 24K02775, 18,590,000 yen
6. Takeda Science Foundation: Ando T. (PI, Continue): Clarifying the mechanism of transcriptional and growth promoting role of ALPK2 in head and neck squamous cell carcinoma. 2,000,000 yen
7. Grants-in-Aid for Scientific Research (Bilateral Joint Research) (Open partnership joint research project): Ando T. (PI, New): Clarifying the mechanism of Heat-not-burn tobacco on the initiation and progression of oral cancer. 2,000,000 yen
8. Hiroshima University Integrated Knowledge Research Support Program (HU SPRING): Maeda Y.: Elucidation of the molecular mechanisms enhancing sensitivity to CC-885 in oral squamous cell carcinoma and development of a novel therapeutic agent. 1,000,000 yen
9. Donated fund for Hiroshima Prefecture tumor registration business: Toshinori Ando
10. Donated fund from Mitsubishi-Mihara Hospital: Toshinori Ando

#### (5) Academic Awards, etc.

- 1: Toshinori Ando: The Japanese Society of Pathology Award for Encouragement of Young Pathologists, The 114<sup>th</sup> Annual Meeting of the Japanese Society of Pathology (Sendai), 2025.
- 2: Nanako Kataoka: Best poster award, The 36<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology (Okayama), 2025.
- 3: Yume Ueda: Excellent Presentation Award, HU-Tomorrow Annual Meeting 2025 (Hiroshima), 2025.  
Nanako Kataoka: Grand prize, HU-Tomorrow Annual Meeting 2025 (Hiroshima), 2025.

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## Department of Bacteriology

### (1) Staff and Students

Professor:	Hitoshi Komatsuzawa
Associate Professor:	Miki Matsuo
Researcher:	Keiko Tsuruda, Ikue Hayashi, Atsuko Watanabe
Graduate Student:	Yoshimasa Yasutomi, Rizka Hidayati, Wang Xuji

### (2) Main Research Activities

- 1: Isolation and characterization of drug-resistant bacteria
- 2: Elucidation of virulence and drug resistance factors of pathogenic bacteria
- 3: Search for novel antimicrobial susceptibility factors
- 4: Elucidation of the mechanisms of oral microbiome formation
- 5: Bacteriophage research

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Serum IgG titer findings for *Fusobacterium nucleatum* associated with clinical outcome following surgery in patients with esophageal squamous cell carcinoma: Yoshikawa T., Nishi H., Emi M., Hamai Y., Ibuki Y., Kurokawa T., Hirohata R., Ohsawa M., Kitasaki N., Komatsuzawa H., Kawaguchi H., Okada M.: PLoS One, 21;20(11), e0336219, 2025.
- 2: Impact of antimicrobial prophylaxis in colorectal cancer surgery on the gut and oral microbiome and resistome: A prospective observational cohort study.: Kitagawa H, Kajihara T, Yahara K, Kitamura N, Shigemoto N, Doi H, Shimbara K, Yoshimura K, Nakashima I, Uegami S, Watadani Y, Kawada-Matsuo M, Komatsuzawa H, Ohge H, Sugai M.: J Glob Antimicrob Resist, 25;46:227-234, 2025.
- 3: Complete genome sequence of a tetracycline-resistant *Streptococcus mutans* strain carrying the tet(M) gene.: Nishihama S, Suzuki Y, Shintani T, Tsunoi M, Hisatsune J, Sugawara Y, Takeda K, Kawada-Matsuo M, Kajiya M, Sugai M, Shiba H, Komatsuzawa H. J Oral Biosci, Sep;67(3):100679, 2025.
- 4: D-alanine synthesis and exogenous alanine affect the antimicrobial susceptibility of *Staphylococcus aureus*.: Suzuki Y, Kawada-Matsuo M, Thuan VTT, Le MN-T, Sakaguchi T, Komatsuzawa H. Antimicrob Agents Chemother. 2;69(7):e0193624, 2025.
- 5: Effects of Nisin A Combined with Antifungal Drug Against Growth of Candida Species.: Niitani Y, Ohta K, Yano K, Kaneyasu Y, Maehara T, Kitasaki H, Shigeishi H, Nishi H, Nishimura R, Naito M, Shiba F, Kawada-Matsuo M, Komatsuzawa H, Takemoto T.: Dent J (Basel), 8;13(4):160, 2025.
- 6: Clinical and genetic analysis of oral and nasal staphylococcus aureus isolates in dental patients.: Kawayanagi T, Kawada-Matsuo M, Kusaka S, Yasutomi Y, Suzuki Y, Nishihama S, Le MN, Sugawara Y, Hisatsune J, Kutsuno S, Asakawa M, Takeshita T, Nomura R, Shiba H, Sugai M, Komatsuzawa H.: Sci Rep, 16;15(1):13149, 2025.
- 7: Atrial Translocation of *Porphyromonas gingivalis* Exacerbates Atrial Fibrosis and Atrial Fibrillation.: Miyauchi S, Kawada-Matsuo M, Furusho H, Nishi H, Nakajima A, Phat PT, Shiba F, Kitagawa M, Ouhara K, Oda N, Tokuyama T, Okubo Y, Okamura S, Takasaki T, Takahashi S, Hiyama T, Kawaguchi H, Komatsuzawa H, Miyauchi M, Nakano Y.: Circulation, 27;151(21):1527-1540, 2025.
- 8: Oral colonization of antimicrobial-resistant bacteria in home health care participants and their association with oral and systemic status.: Nishihama S, Kawada-Matsuo M, Le MN, Fujii A, Haruta A, Kajihara T, Hashimoto Y, Yoshikawa M, Aikawa T, Tsuga K, Ohge H, Sugai M, Shiba H, Komatsuzawa H.: Sci Rep. 17;15(1):5776, 2025.
- 9: Comprehensive analysis of bacteriocins produced by clinical enterococcal isolates and their antibacterial activity against Enterococci including VRE.: Fujii A, Kawada-Matsuo M, Le MN, Suzuki Y, Nishihama S, Shiba H, Aikawa T, Komatsuzawa H.: Sci Rep, 9;15(1):4846, 2025.
- 10: *Fusobacterium nucleatum* in the oral cavity is associated with cerebral small vessel disease in patients with ischemic stroke.: Aoki S, Nishi H, Shiga Y, Nezu T, Eto F, Imamura E, Shimomura R, Kawada-Matsuo M, Komatsuzawa H, Kawaguchi H, Maruyama H.: J Stroke Cerebrovasc Dis., 34(1):108183, 2025.

## C) Publications

## D) Other Publications

## E) Presentations at Scientific Meetings

- 1: Fundamental Research for the Application of Bacteriophage Therapy Targeting Pathobionts within the Microbiome : Miki Kawada-Matsuo, Hitoshi Komatsuzawa : The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 2: A comprehensive characterisation of *Stenotrophomonas maltophilia* isolated from the oral cavity : Saki Nishihama, Miki Kawada-Matsuo, Vo Minh Ngoc, Tomoki Kawayanagi, Yo Sugawara, Junzo Hisatsune, Motoyuki Sugai, Hideki Shiba, Hitoshi Komatsuzawa : The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 3: Investigation of *Staphylococcus aureus* fatty acid susceptibility and its symbiotic relationship with *Corynebacterium* Species : Yasuyuki Asada, Keijuro Ohdan, Yujin Suzuki, Miki Kawada-Matsuo, Mikari Asakawa, Junzo Hisatsune, Yo Sugawara, Toru Takeshita, Motoyuki Sugai, Hitoshi Komatsuzawa : The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 4: Isolation and antibacterial evaluation of bacteriophages targeting Enterococci. : Bingxin Song, Miki Kawada-Matsuo, Hideki Shiba, Hitoshi Komatsuzawa : The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 5: Analysis of *S. capitis* strains exhibiting antimicrobial activity against drug-resistant bacteria : Keijuro Ohdan, Yujin Suzuki, Miki Kawada-Matsuo, Junzo Hisatsune, Tomonao Aikawa, Motoyuki Sugai, Hitoshi Komatsuzawa : The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 6: D-alanine affects the antibiotic susceptibility of *Staphylococcus aureus*. : Yujin Suzuki, Miki Kawada-Matsuo, Hitoshi Komatsuzawa : The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 7: Isolation of drug-resistant bacteria from the nasal and oral cavity and their follow-up investigation : Kousuke Ueda, Tomoki Kawayanagi, Miki Kawada-Matsuo, Junzo Hisatsune, Yo Sugawara, Toru Takeshita, Hideki Shiba, Motoyuki Sugai, Hitoshi Komatsuzawa : The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 8: Characterization of oral and nasal microbiota and factors associated with their uniqueness : Mikari Asakawa, Tomoki Kawayanagi, Shinya Kageyama, Miki Kawada-Matsuo, Hideki Shiba, Hitoshi Komatsuzawa, Toru Takeshita : The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 9: Analysis of the diversity of sensitivity of *Streptococcus mutans*-specific bacteriophage  $\phi$ KSM96 : Yumi Yamauchi, Saki Nishihama, Miki Kawada-Matsuo, Junzo Hisatsune, Yo Sugawara, Motoyuki Sugai, Hideki Shiba, Hitoshi Komatsuzawa : The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 10: Evaluation of fatty acid sensitivity in *Staphylococcus aureus* and *Corynebacterium* Species isolated from the nasal and oral cavity. Yasuyuki Asada, Keijuro Ohdan, Yujin Suzuki, Miki Kawada-Matsuo, Mikari Asakawa, Junzo Hisatsune, Yo Sugawara, Toru Takeshita, Tomonao Aikawa, Souichi Yanamoto, Motoyuki Sugai, Hitoshi Komatsuzawa : The 69th Annual Meeting of the Staphylococcal Research Society of Japan (Tokyo), 2025.
- 11: Analysis of *Staphylococcus capitis* strains exhibiting antimicrobial activity against drug-resistant bacteria : Keijuro Ohdan, Yujin Suzuki, Miki Kawada-Matsuo, Mi Nguyen-Tra Le, Junzo Hisatsune, Tomonao Aikawa, Motoyuki Sugai, Hitoshi Komatsuzawa : The 69th Annual Meeting of the Staphylococcal Research Society of Japan (Tokyo), 2025.
- 12: A comprehensive report on the isolation and characterization of *Stenotrophomonas maltophilia* from the oral cavity : Saki Nishihama, Miki Kawada-Matsuo, Hideki Shiba, Hitoshi Komatsuzawa.

- The 67th Annual Meeting of Japanese Association for Oral Biology (Kokura), 2025.
- 13: Isolation and antibacterial evaluation of bacteriophages targeting Enterococci. : Bingxin Song, Miki Kawada-Matsuo, Saki Nishihama, Hideki Shiba, Hitoshi Komatsuzawa : Joint Meeting of the Phage Research Society of Japan and the Japanese Society for Phage Therapy, (Osaka) 2025.
  - 14: Exploration of ΦKSM96-homologous temperate phages: Genomic variation and lytic activity : Yumi Yamauchi, Saki Nishihama, Miki Kawada-Matsuo, Hideki Shiba, Hitoshi Komatsuzawa : Joint Meeting of the Phage Research Society of Japan and the Japanese Society for Phage Therapy, (Osaka) 2025.
  - 15: Isolation of a New Bacteriophage with a Bactericidal Effect on the Dental Caries-Causing Bacterium *Streptococcus mutans*. M. Kawada-Matsuo, K. Sugai, Y. Sugawara, J. Hisatsune, J. Fujiki, H. Iwano, K. Tanimoto, M. Sugai, H. Komatsuzawa : ASM MICROBE 2025 (USA, Los Angeles), 2025.
  - 16: The Effects of Negative Pressure on Bacteria : T. Tadokoro, M. Matuo, H. Komatsuzawa, S. Kuroda, T. Kobayashi, H. Ohdan : ASM MICROBE 2025 (USA, Los Angeles), 2025.
  - 17: The Oral Cavity is a Potential Reservoir of Gram-Negative Antimicrobial-Resistant Bacteria, Which Are Correlated with Ageing and the Number of Teeth : M. Kawada-Matsuo, T. Kawayanagi, T. Takeshita, M. Asakawa, Y. Sugawara, C. Arai, H. Shiba, M. Sugai, H. Komatsuzawa : ASM MICROBE 2025 (USA, Los Angeles), 2025.
  - 18: Analysis of bacterial species and factors affecting *Staphylococcus aureus* colonization in nasal cavity : Yasuyuki Asada, Keijuro Ohdan, Yujin Suzuki, Miki Kawada-Matsuo, Mikari Asakawa, Junzo Hisatsune, Toru Takeshita, Motoyuki Sugai, Souichi Yanamoto and Hitoshi Komatsuzawa : ASM MICROBE 2025 (USA, Los Angeles), 2025.
  - 19: Analysis of *Staphylococcus capitis* strain with antibacterial activity against antimicrobial resistant bacteria : Keijuro Ohdan, Yujin Suzuki, Miki Kawada-Matsuo, Mi Nguyen-Tra Le, Junzo Hisatsune, Yo Sugawara, Tomonao Aikawa, Motoyuki Sugai, Hitoshi Komatsuzawa : ASM MICROBE 2025 (USA, Los Angeles), 2025.

#### F) Special lectures in academic meetings

##### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grant-in-Aid for Scientific Research (C) from the Ministry of Education, Culture, Sports, Sciences, and Technology of Japan. Miki Kawada-Matsuo: Establishment of phage and bacteriocin therapy to eliminate oral drug-resistant O-ARB. Grant No. 24K12886. 1,000,000 yen.
- 2: Funded Research: Hitoshi Komatsuzawa (Principal Investigator), Analysis of production of human antimicrobial peptides and their relationship with bacterial flora. 4,105,000 yen.
- 3: AMED: Research Project for the Promotion of Innovative Drug Development for Emerging and Re-emerging Infections: Miki Matsuo (co-author), Advanced One Health Tricycle Project to be developed in cooperation with Asian countries. 0G24JC7130. 1,500,000 yen.
- 4: Research Project for the Promotion of Emerging and Re-emerging Infectious Diseases and Immunization Policy: Miki Matsuo (co-author), Research to contribute to the development of a framework for the implementation of the Asia Pacific One Health Initiative for AMR (ASPIRE). 23HA2006. 18,462,000 yen.

##### (5) Academic Awards, etc.

##### (6) Patents

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## Department of Cellular and Molecular Pharmacology

### (1) Staff and Students

Professor: Yukio Ago

Assistant Professor: Satoshi Asano

Assistant Professor (Special Appointment): Rei Yokoyama

Graduate Student: Ami Ono (D4, Department of Orthodontics and Craniofacial Developmental Biology), Teru Uehara (D3, Department of Oral Oncology), Chiaki Tsuru (D2, Department of Orthodontics and Craniofacial Developmental Biology), Daichi Koan (D2, Department of Biological Endodontics, Motonori Itotagawa (D3, Department of Oral Oncology) (April~), Miyu Matsumi (M1) (April~)

Undergraduate Student: Mizuki Kaneko (B5), Daiki Handa (B4) (April~), Hina Kurata (B5, Department of Neurochemistry and Environmental Health Sciences), Shuhei Yamashita (B4, Department of Neurochemistry and Environmental Health Sciences)

International Student: Vo Phuoc Hanh Nguyen (B4) (~February), Song Vyryka (B5) (~August), Dao Nguyen Ha Anh (B4) (April~)

Research Student: Zihao Jin (D2, Laboratory of Biopharmaceutics, Graduate School of Pharmaceutical Sciences, Osaka University)

### (2) Main Research Activities

- 1: Studies on the mechanisms of action of the drugs in depression, schizophrenia, anxiety, and neurodegenerative diseases.
- 2: Studies on the roles of gene-environment interactions in brain development.
- 3: Studies on the roles of cell migration, adhesion, and proliferation in biological and pathological processes.

### (3) Research Achievements

#### A) Original Papers

- 1: Asano S, Ozasa K, Uehara T, Yokoyama R, Nakazawa T, Yanamoto S, Ago Y. Dimerisation of the VIP receptor VIPR2 is essential to its binding VIP and Gαi proteins, and to its functions in breast cancer cells. **British Journal of Pharmacology** 182: 3612–3627, 2025.
- 2: Hisaoka-Nakashima K, Tokuda S, Goto T, Yoshii N, Nakamura Y, Ago Y, Morioka N. Hippocampal microglial activation induces cognitive impairment and allodynia through neuronal plasticity changes in male mice with neuropathic pain. **Behavioural Brain Research** 488:115590, 2025.
- 3: Ueno H, Iyanaga Y, Kunida K, Hara Y, Miura H, Nakai Y, Tanuma M, Hayashida M, Yokoyama R, Ohkubo J, Seiriki K, Hayata-Takano A, Ao T, Yamaguchi S, Kitaoka S, Fukuyashiki T, Ago Y, Nakazawa T, Takuma K, Yoshimoto J, Hashimoto H, Kasai A. Recovery of centralities in medial prefrontal and sensory-related cortices associated with social behavior improvements in an autism mouse model. **Scientific Reports** 15: 22895, 2025.
- 4: Shimizu Y, Irifune M, Takahashi T, Oda A, Kamio H, Imamura S, Sasaki U, Imado E, Okada Y, Ago Y, Morita K, Sakai N. Nitrous oxide increases peripheral blood flow and decreases plasma adrenaline and noradrenaline concentrations in human volunteers: An in vivo nonrandomized clinical and in vitro chromaffin cell culture study. **European Journal of Pharmacology** 1003: 177899, 2025.
- 5: Sasaki U, Irifune M, Kochi T, Mukai T, Nakamura Y, Imado E, Oda A, Oue K, Morioka N, Ago Y. Ketamine-Induced Pica Behavior as Nausea and Vomiting Involves Activation of Dopamine and Serotonin Receptors in the Area Postrema of Rats: A Comparison with Etomidate and Pentobarbital. **European Journal of Pharmacology** 1005: 178068, 2025.
- 6: Hino N, Takada R, Suzuki K, Tokunoh N, Karaki T, Ohtake K, Ogami H, Nishiura T, Ishimoto K, Tsukamoto T, Ago Y, Okada Y, Okamoto T, Ono C, Matsuura Y, Obika S, Sakamoto K, Yoshioka Y,

Nakagawa S. Rational Design of a Covalent ACE2-Fc Decoy that Broadly Neutralizes SARS-CoV-2 Variants.  
**Protein Science** 34(10): e70306, 2025.

## B) Review

- 1: Satoshi Asano, Kotaro Sakamoto, Yukio Ago. A novel drug target VIPR2 to regulate migration and proliferation in breast cancer.  
**Folia Pharmacologica Japonica** 160(3): 163-166, 2025.
- 2: Yukio Ago, Kotaro Sakamoto. Development of a Brain-Penetrant Formulation of a Vasoactive Intestinal Peptide Receptor 2 Antagonist Peptide for Treating Schizophrenia.  
**Farumashia** 61(10): 877-881, 2025.

## C) Publications

None

## D) Other Publications

None

## E) Presentations at Scientific Meetings

International conference

- 1: Rei Yokoyama, Megumi Naito, Soichiro Ohnami, Haruki Kawase, Momoko Higuchi, Keiko Takasu, Takeru Tahara, Satoshi Asano, Koichi Ogawa, Atsushi Nakamura, Hidekuni Yamakawa, Yaichiro Kotake, Kazuhiro Takuma, Hitoshi Hashimoto, Yukio Ago. Therapeutic potential of low-dose opioids through brain region-specific neural activation for autism spectrum disorder. CINP-AsCNP 2025 Joint Congress, Melbourne, Australia, June 15-18, 2025.
- 2: Yukio Ago, Rei Yokoyama, Satoshi Asano, Daisuke Sugiyama, Shinsaku Nakagawa, Takatsugu Hirokawa, Eijiro Miyako, Kotaro Sakamoto. Therapeutic potential of brain-penetrating nanoparticles containing a selective VIP receptor 2 (VIPR2) antagonist peptide for schizophrenia. CINP-AsCNP 2025 Joint Congress, Melbourne, Australia, June 15-18, 2025.
- 3: Yukio Ago, Yosuke Yamawaki, Kazuhisa Ouhara, Noriyoshi Mizuno, Norimitsu Morioka, Hiroshi Hanamoto, Kana Oue. Periodontal infection impairs cognitive function in obese mice. IADR Asia Pacific Regional & WW9 Conference 2025/The 73rd Annual Meeting of Japanese Association for Dental, Oral, and Craniofacial Research, NewDelhi, India, September 18-21, 2025.
- 4: Chiaki Tsuru, Eiji Imado, Vyryka Song, Daisuke Uta, Rei Yokoyama, Satoshi Asano, Norikazu Kiguchi, Toshiaki Kume, Hiroshi Hanamoto, Kotaro Tanimoto, Yukio Ago. Microglia-specific deactivation reverses allodynia in autism spectrum disorder model mice. IADR Asia Pacific Regional & WW9 Conference 2025/The 73rd Annual Meeting of Japanese Association for Dental, Oral, and Craniofacial Research, NewDelhi, India, September 18-21, 2025.
- 5: Tomoya Takemoto, Kohei Kitagawa, Kazuki Nagayasu, Kaoru Seiriki, Atsushi Kasai, Yukio Ago, Kazuhiro Takuma, Daisuke Mori, Norio Ozaki, Ryota Hashimoto, Hitoshi Hashimoto, Takanobu Nakazawa. Cortical hyperactivity underlies impaired social interaction in a mouse model of 3q29 microdeletion. The 55th Annual Meeting of the Society for Neuroscience (Neuroscience 2025), San Diego, USA, November 15-19, 2025.

Domestic conference

- 1: Satoshi Asano, Ami Ono, Kaede Baba, Teru Uehara, Kotaro Sakamoto, Atsuko Hayata-Takano, Takanobu Nakazawa, Souichi Yanamoto, Kotaro Tanimoto, Hitoshi Hashimoto, Yukio Ago. Effects of the inhibition of the neuropeptide receptor VIPR2 on the cell cycle in breast cancer. APPW2025 Joint Conference (The 130th Annual Meeting of the Japanese Association of Anatomists, the 102nd Annual Meeting of the Physiological Society of Japan, and the 98th Annual Meeting of the Japanese Pharmacological Society Joint Conference), Makuhari, March 17-19, 2025.

- 2: Rei Yokoyama, Shinji Tsukada, Kosuke Higashino, Nigel H. Greig, Hitoshi Hashimoto, Yukio Ago. Butyrylcholinesterase inhibition ameliorates cognitive impairment in mice reared in social isolation through activation of both muscarinic acetylcholine and ghrelin receptors. APPW2025 Joint Conference (The 130th Annual Meeting of the Japanese Association of Anatomists, the 102nd Annual Meeting of the Physiological Society of Japan, and the 98th Annual Meeting of the Japanese Pharmacological Society Joint Conference), Makuhari, March 17-19, 2025.
- 3: Chiaki Tsuru, Eiji Imado, Daisuke Uta, Vyryka Song, Haruna Kurata, Takeru Tahara, Nguyen Phuoc Hanh Vo, Rei Yokoyama, Satoshi Asano, Yaichiro Kotake, Norikazu Kiguchi, Toshiaki Kume, Hiroshi Hanamoto, Kotaro Tanimoto, Yukio Ago. Chemogenetic inhibition of microglia attenuates mechanical allodynia induced by prenatal exposure to histone deacetylase inhibitor. APPW2025 Joint Conference (The 130th Annual Meeting of the Japanese Association of Anatomists, the 102nd Annual Meeting of the Physiological Society of Japan, and the 98th Annual Meeting of the Japanese Pharmacological Society Joint Conference), Makuhari, March 17-19, 2025.
- 4: Miku Yokohata, Yoki Nakamura, Keisuke Ikeda, Kazue Hisaoka-Nakashima, Yukio Ago, Ayami Sato, Yoshitaka Kondo, Akihito Ishigami, Norimitsu Morioka. Microglial Dysfunction Contributes to Age-Related Anxiodepressive Behaviors. APPW2025 Joint Conference (The 130th Annual Meeting of the Japanese Association of Anatomists, the 102nd Annual Meeting of the Physiological Society of Japan, and the 98th Annual Meeting of the Japanese Pharmacological Society Joint Conference), Makuhari, March 17-19, 2025.
- 5: Yukio Ago, Megumi Naito, Soichiro Ohnami, Haruki Kawase, Momoko Higuchi, Keiko Takasu, Takeru Tahara, Rei Yokoyama, Satoshi Asano, Koichi Ogawa, Atsushi Nakamura, Hidekuni Yamakawa, Yaichiro Kotake, Kazuhiro Takuma, Hitoshi Hashimoto. Low dose opioid without analgesic effects improves social deficits in a mouse model of autism spectrum disorder. The 145th Annual Meeting of the Pharmaceutical Society of Japan, Fukuoka, March 26-29, 2025.
- 6: Rei Yokoyama, Shinji Tsukada, Kosuke Higashino, Nigel H. Greig, Hitoshi Hashimoto, Yukio Ago. Brain cholinergic system and ghrelin signaling are involved in improving cognitive deficits with butyrylcholinesterase inhibition. The 145th Annual Meeting of the Pharmaceutical Society of Japan, Fukuoka, March 26-29, 2025.
- 7: Kotaro Sakamoto, Takatsugu Hirokawa, Zihao Jin, Rei Yokoyama, Shinsaku Nakagawa, Yukio Ago, Eijiro Miyako. Development of a brain-targeting formulation of the VIPR2 inhibitory peptide KS-133 for the recovery of cognitive dysfunction in schizophrenia model mice. The 145th Annual Meeting of the Pharmaceutical Society of Japan, Fukuoka, March 26-29, 2025.
- 8: Satoshi Asano, Kairi Ozasa, Teru Uehara, Rei Yokoyama, Takanobu Nakazawa, Souichi Yanamoto, Yukio Ago. Elucidation of the mechanism by which the dimer VIPR2 promotes breast cancer progression. The 147th Kinki Branch Meeting of the Japanese Pharmacological Society, Nagoya, June 7, 2025.
- 9: Vyryka Song, Chiaki Tsuru, Eiji Imado, Daisuke Uta, Rei Yokoyama, Satoshi Asano, Norikazu Kiguchi, Toshiaki Kume, Hiroshi Hanamoto, Kotaro Tanimoto, Yukio Ago. Selective chemogenetic deactivation of microglia reverses mechanical hypersensitivity in a mouse model of autism spectrum disorder. The 43rd Drug Discovery and Pharmacology Forum Okayama, Hiroshima, June 7, 2025.
- 10: Satoshi Asano, Yukio Ago. Regulation of the receptor tyrosine kinase PDGFR $\beta$  by the neuropeptide receptor VIPR2. The 67th Annual Meeting of Japanese Association for Oral Biology, Kitakyushu, September 5-7, 2025.
- 11: Atsuko Hayata, Hiroki Toyoda, Yukio Ago, Takafumi Kato, Kazuhiro Takuma. The effect of a small-molecule and high-affinity PAC1 antagonist in the chronically stressed mice. The 67th Annual Meeting of Japanese Association for Oral Biology, Kitakyushu, September 5-7, 2025.
- 12: Kana Oue, Yosuke Yamawaki, Kazuhisa Ouhara, Yukio Ago. Blood-Brain Barrier Dysfunction Induced by Periodontal Infection under Obese Conditions. The 67th Annual Meeting of Japanese Association for Oral Biology, Kitakyushu, September 5-7, 2025.
- 13: Rei Yokoyama, Takeru Tahara, Eiji Imado, Daisuke Uta, Haruki Kawase, Momoko Higuchi, Satoshi Asano, Hidekuni Yamakawa, Koichi Ogawa, Yaichiro Kotake, Toshiaki Kume, Kazuhiro Takuma, Hitoshi Hashimoto, Yukio Ago. A TRPV1 antagonist AMG-517 alleviates hyperalgesia and social deficits in prenatal VPA-induced mouse model of autism spectrum disorder. The 68th Annual Meeting of the Japanese Society for Neurochemistry, Nagoya, September 11-13, 2025.
- 14: Kana Oue, Rie Kawakami, Kazuhisa Ouhara, Hiroshi Hanamoto, Yukio Ago. Effects of obesity and periodontal disease: Impact on cognitive function via microglia activation. The 25th Scientific Meeting of the Japanese Association for Dental Science, Yokohama, September 26-28, 2025.
- 15: Miyu Matsumi, Rei Yokoyama, Satoshi Asano, Yukio Ago. Evaluation of changes in empathic

- function in mice before and after the development of depression and the effects of ketamine metabolites. The 1st Hiroshima University Graduate School of Biomedical and Health Sciences Research Exchange Meeting (Kasumi-Nexus), Hiroshima, October 17, 2025.
- 16: Kotaro Sakamoto, Zihao Jin, Satoshi Asano, Runa Fujimoto, Rei Yokoyama, Nobumasa Hino, Shinsaku Nakagawa, Takatsugu Hirokawa, Yukio Ago. Regulation of VIPR2 function, a class B GPCR, by artificial cyclic peptide antagonist KS-133 and agonist KS-133(P3K) targeting its extracellular domain. The 62nd Japanese Peptide Symposium, Fukuoka, October 21-23, 2025.
  - 17: Chiaki Tsuru, Eiji Imado, Song Vyryka, Daisuke Uta, Rei Yokoyama, Satoshi Asano, Norikazu Kiguchi, Toshiaki Kume, Hiroshi Hanamoto, Kotaro Tanimoto, Yukio Ago. Chemogenetic manipulation of microglia alleviates central sensitization and allodynia in a mouse model of autism spectrum disorder. JAPAN PAIN WEEK - JOINT CONFERENCE of 47th JASP, 18th JAMP, 29th JAPR and 30th JSOP, Tokyo, December 4-6, 2025.
  - 18: Satoshi Asano, Motonori Itotagawa, Teru Uehara, Kotaro Sakamoto, Rei Yokoyama, Yukio Ago. Mechanisms of metabolic regulation of receptor tyrosine kinases by the neuropeptide receptor VIPR2. The 44th Drug Discovery and Pharmacology Forum Okayama, Hiroshima, Hiroshima, December 13, 2025.
  - 19: Rei Yokoyama, Miyu Matsumi, Satoshi Asano, Yukio Ago. Impaired prosocial behavior in a mouse model of depression and the therapeutic effects of ketamine-related compounds. The 44th Drug Discovery and Pharmacology Forum Okayama, Hiroshima, Hiroshima, December 13, 2025.
  - 20: Miku Yokohata, Yoki Nakamura, Keisuke Ikeda, Nanami Fujii, Shino Uematsu, Kazue Hisaoka-Nakashima, Yuki Yamamoto, Hidetoshi Tahara, Yukio Ago, Ayami Sato, Yoshitaka Kondo, Akihito Ishigami, Norimitsu Morioka. Association between the onset of depression- and anxiety-like behaviors and microglia in aged mice. The 44th Drug Discovery and Pharmacology Forum Okayama, Hiroshima, Hiroshima, December 13, 2025.

#### F) Symposium and Special lectures in academic meetings

- 1: Yukio Ago. Toward the next generation of drug development for mental illnesses and developmental disorders. Special lecture: Graduate School of Life Sciences, Tokyo University of Agriculture, Tokyo, July 25, 2025.
- 2: Yukio Ago. Neural Mechanisms Underlying Changes in Emotional and Cognitive Function Due to Social Isolation and Their Recovery Through Ketamine. 40<sup>th</sup> Annual Meeting of the Society for Senescence-Accelerated Mouse (SAM) Research, Hiroshima, August 29-30, 2025.
- 3: Yukio Ago, Kotaro Sakamoto. Development of a VPAC2 Receptor-Targeting, Brain-Penetrating Peptide Nanoparticle Formulation for the Treatment of Schizophrenia. BPCNPNP2025 Joint Annual Meeting (The 47th Annual Meeting of the Japanese Society of Biological Psychiatry, the 35th Annual Meeting of the Japanese Society of Clinical Neuropsychopharmacology, and the 55th Annual Meeting of the Japanese Society of Neuropsychopharmacology), Kyoto, November 13-15, 2025.
- 4: Yukio Ago. Challenges in dental and pharmacological treatment for patients with schizophrenia and new developments in drug discovery. Special lecture: School of Pharmaceutical Sciences, Wakayama Medical University, Wakayama, November 25, 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grant-in-Aid for Scientific Research (B) from Japan Society for the Promotion of Science (JSPS): Yukio Ago (Principal Investigator, Continuance), Grant Number: 24K02185
- 2: Grant-in-Aid for Scientific Research (A) from JSPS: Yukio Ago (Co-Investigator, Continuance), Grant Number: 23H00450
- 3: Grant-in-Aid for Scientific Research (B) from JSPS: Yukio Ago (Co-Investigator, Continuance), Grant Number: 24K02384
- 4: Grant-in-Aid for Scientific Research (B) from JSPS: Yukio Ago (Co-Investigator, Continuance), Grant Number: 24K02775
- 5: Grant-in-Aid for Scientific Research (C) from JSPS: Yukio Ago (Co-Investigator, Continuance), Grant Number: 24K13089
- 6: Grant-in-Aid for Scientific Research (C) from JSPS: Yukio Ago (Co-Investigator, Continuance), Grant Number: 23K09183
- 7: Grant-in-Aid for Scientific Research (C) from JSPS: Satoshi Asano (Principal Investigator,

- Continuance), Grant Number: 23K09138
- 8: Grant-in-Aid for Early-Career Scientists from JSPS: Rei Yokoyama (Principal Investigator, New), Grant Number: 24K23296
  - 9: Grant-in-Aid for Research Activity Start-up from JSPS: Rei Yokoyama (Principal Investigator, Continuance), Grant Number: 24K23296
  - 10: Collaborative Research Grant from ICHIMARU PHARCOS Co., Ltd. (Japan): Yukio Ago (Principal Investigator, New)
  - 11: Collaborative Research Grant from ICHIMARU PHARCOS Co., Ltd. (Japan): Satoshi Asano (Principal Investigator, New)
  - 12: Collaborative Research Grant from Shionogi China Co., Ltd. (China): Rei Yokoyama (Principal Investigator, New)
  - 13: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University (HU SPRING): Ami Ono (Continuance)
  - 14: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University (HU SPRING): Daichi Koan (Continuance)
  - 15: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University (HU SPRING): Chiaki Tsuru (New)

## (5) Academic Awards

- 1: Chiaki Tsuru: Graduate Student Presentation Award. APPW2025 Joint Conference (The 130th Annual Meeting of the Japanese Association of Anatomists, the 102nd Annual Meeting of the Physiological Society of Japan, and the 98th Annual Meeting of the Japanese Pharmacological Society Joint Conference), March 19, 2025.
- 2: Yukio Ago: NPPR Reviewer Award 2025. The Japanese Society of Neuropsychopharmacology, April 11, 2025.
- 3: Rei Yokoyama: JSNP Excellent Presentation Award for CINP-AsCNP 2025. CINP-AsCNP 2025 Joint Congress (36th World Congress of Neuropsychopharmacology / 9th AsCNP Congress), June 16, 2025.
- 4: Mizuki Kaneko: Winner of the Japan Dental Association Student Clinician Research Program (SCRP) for Fiscal Year 2025, August 5, 2025.
- 5: Miyu Matsumi: Dean's Award, Graduate School of Biomedical and Health Sciences. The 1st Hiroshima University Graduate School of Biomedical and Health Sciences Research Exchange Meeting (Kasumi-Nexus), October 17, 2025.
- 6: Chiaki Tsuru: 2025 JADR/GC Young Investigator Award. Japanese Association for Dental, Oral, and Craniofacial Research (JADR), November 17, 2025.

## (6) Patents

- 1: Kotaro Sakamoto and Yukio Ago: "VIPR2 Antagonist Peptide"  
Patent No. 7698318 (Registration Date: June 17, 2025)  
Applicant: Ichimaru Pharcos Co., Ltd.
- 2: Kotaro Sakamoto, Eijiro Miyako, Yukio Ago, Shinsaku Nakagawa: "Composition"  
Patent No. 7713129 (Registration Date: July 15, 2025)  
Applicants: Ichimaru Pharcos Co., Ltd., Japan Advanced Institute of Science and Technology (JAIST), Hiroshima University, and Osaka University.
- 3: Kotaro Sakamoto, Runa Fujimoto, Naoki Nishizawa, Yukio Ago, Shinsaku Nakagawa: "LRP1-Binding Peptide"  
Application No. 2025-218540 (Filing Date: December 2, 2025)  
Applicants: Ichimaru Pharcos Co., Ltd., Nissan Chemical Corp.

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## Department of Biomaterials

### (1) Staff and Students

Professor:	Koichi Kato
Assistant Professor:	Isao Hirata
Research Collaborator:	Ayana Nakano, Fumika Abe, Karina Erda Saninggar
Graduate Student:	Yenny Yustisia, Hengky Bowo Ardhiyanto, Shiina Pasanen
Undergraduate student:	Hajime Hirao, Salma Najmi Dhaniswari, Andi Amanda Artenia Putri, Yohei Ageo, Minori Amano, Yui Ohta, Kanon Yoneda

### (2) Main Research Activities

- 1: Biomaterials and biodevices for regenerative medicine
- 2: Interactions between biological systems and biomaterial surfaces
- 3: 3D printing technology for bone tissue engineering

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Salma Najmi Dhaniswari\*, Andi Amanda Artenia Putri\*, Karina Erda Saninggar, Fumika Abe, Isao Hirata, Koichi Kato (\*contributed equally). Chimeric proteins consisting of bone morphogenetic protein-2 and a collagen-binding peptide: An in silico analysis. *Dent. J.*, in press
- 2: Yenny Yustisia, Koichi Kato. Immunomodulatory properties of mesenchymal stem cells within three-dimensional collagen matrices. *In vitro Cell. Dev. Biol. Animal*, 61:1158–1170 (2025)
- 3: Yung-Hsin Cheng, Chang-Chin Wu, Yueh-Hsin Chen, Pei-Feng Huang, Che-Wei Hsu, Koichi Kato, Kai-Chiang Yang. Chondroprotective effects of chitosan-coated poly(lactic-co-glycolic acid) nanocapsulized curcumin on human articular chondrocytes. *J. Biomed. Mater. Res. A* 113(8):e37969 (2025)
- 4: Reza Al Fessi, Coen Pramono Danudiningrat, Koichi Kato, Anita Yuliati. Structural and chemical properties of acellular scaffolds made from bovine ribs. *Dent. Mater. J.* 44(5): 572–578 (2025)
- 5: Shiina Pasanen, Archana Mootha, Isao Hirata, Kotaro Tanimoto, Koichi Kato\*. Enhanced growth of bone-marrow derived mesenchymal stem cells on the microcarriers tethered with engineered basic fibroblast growth factor. *Biotechnol. J.* 20:e70057 (2025)  
Correction to “Enhanced Growth of Bone Marrow-Derived Mesenchymal Stem Cells on the Microcarriers Tethered With Engineered Basic Fibroblast Growth Factor” *Biotechnol. J.* 20(10):e70139 (2025)
- 6: Try Ky. Chondrogenic differentiation of mesenchymal stem cells in response to anisotropic microenvironments in three-dimensional pellets. *J. Hiroshima Univ. Dent. Soc.* 57(1):1–12 (2025)
- 7: Tamamo Matsuyama, Shiina Pasanen, Fumino Futami, Ayari Kato, Isao Hirata, Souichi Yanamoto, Koichi Kato. Enhanced infiltration of myoblasts into collagen scaffolds loaded with engineered basic fibroblast growth factor. *Dent. Mater. J.* 44(3): 282–288 (2025)
- 8: Indira Widyantoro, Isao Hirata, Koichi Kato. A dilution method to increase the yield of engineered basic fibroblast growth factor. *Dent. J.* 58: 219–223 (2025)
- 9: Yung-Hsin Cheng, Hsing-Yu Chen, Koichi Kato, Kai-Chiang Yang. Chitosan nanoparticles as a targeted delivery system for anti-fibrotic microRNAs for oral submucosal fibrosis treatment. *Colloid. Surf. B Biointerfaces*, 252:114657 (2025)

#### B) Review

- 1: Koichi Kato: Bioengineering challenges in regenerative medicine: Biofunctional materials design. In *Biomedical Engineering: Imaging Systems, Electric Devices, and Medical Materials*. A. Miyauchi, H. Kagechika, eds., 2024, Jenny Stanford Publishing, Singapore, pp. 283–299

### C) Presentations at Scientific Meetings

- 1: Fumika Abe, Ayana Nakano, Isao Hirata, Kotaro Tanimoto, Koichi Kato. Molecular design of chimeric stromal cell-derived factor-1 $\alpha$ . 18th International Symposium on Nanomedicine (ISNM2025) (December 1–3, 2025, Hiroshima)
- 2: Tamamo Matsuyama, Sshiina Pasanen, Fumino Futami, Ayari Kato, Isao Hirata, Souichi Yanamoto, Koichi Kato. Myoblast migration enhanced by collagen scaffolds carrying nanoengineered basic fibroblast growth factor. 18th International Symposium on Nanomedicine (ISNM2025) (December 1–3, 2025, Hiroshima)
- 3: Shiina Pasanen, Fumika Abe, Karina Erda Saninggar, Koichi Kato. Construction of an efficient hMSC culture system using bFGF/IGF-1 fusion protein-immobilized microcarriers. 18th International Symposium on Nanomedicine (ISNM2025) (December 1–3, 2025, Hiroshima)
- 4: Yenny Yustisia, Koichi Kato. Seeding density regulates mesenchymal stromal cells immunomodulatory function in nanofiber collagen hydrogel. 18th International Symposium on Nanomedicine (ISNM2025) (December 1–3, 2025, Hiroshima)
- 5: Isao Hirata, Koichi Kato. Design and expression of surface binding Cripto-1. 18th International Symposium on Nanomedicine (ISNM2025) (December 1–3, 2025, Hiroshima)
- 6: Hengky Bowo Ardhiyanto, Isao Hirata, Kazuhiro Tsuga, Koichi Kato. Characterization of direct powder extrusion 3D printing technique of PCL-CO<sub>3</sub>AP composite scaffolds for bone tissue engineering applications. 18th International Symposium on Nanomedicine (ISNM2025) (December 1–3, 2025, Hiroshima)
- 7: Shiina Pasanen, Fumika Abe, Karina Erda Saninggar, Koichi Kato. Bone marrow-derived mesenchymal stem cell expansion on microcarriers tethered with IGF-1–bFGF chimeric proteins. 10th International Symposium on Biomedical Engineering (ISBE2025) and International Workshop on Nanodevice Technologies 2025 (IWNT2025) (October 30–31, 2025, Higashihiroshima)
- 8: Fumika Abe, Koichi Kato, Kotaro Tanimoto. Designing engineered stromal cell-derived factor-1 $\alpha$  for promoting bone formation. 38th Annual Meeting of Taiwan Association of Orthodontists (December 5–7, 2025, Tainan)
- 9: Shiina Pasanen, Fumika Abe, Karina Erda Saninggar, Koichi Kato. bFGF-IGF-1 fusion protein immobilized microcarriers promote the proliferation of hMSCs. The 23rd Annual Meeting of the Japanese Society for Regenerative Dentistry (October 4-5, 2025, Hakata)
- 10: Shiina Pasanen, Isao Hirata, Koichi Kato. FGF-Immobilized Microcarriers for Constructing a Bioreactor for Mesenchymal Stem Cells. The 83rd Annual Meeting of the Japanese Society for Dental Materials and Technology (April 19-20, 2025, Nagoya)
- 11: Yenny Yustisia, Koichi Kato. Morphology and immunomodulatory gene expressions of mesenchymal stromal cells incorporated in collagen hydrogel. The 83rd Annual Meeting of the Japanese Society for Dental Materials and Technology (April 19-20, 2025, Nagoya)
- 12: Shiina Pasanen, Isao Hirata, Kotaro Tanimoto, Koichi Kato. Engineered bFGF-tethered microcarriers for the expansion of bone marrow-derived hMSCs. The 97th Annual Meeting of the Japanese Society for Tissue Culture (August 21–22, 2025, Yamaguchi)
- 13: Shiina Pasanen, Fumika Abe, Koichi Kato. Promotion of hMSC Proliferation Using Microcarriers Immobilized with bFGF/IGF-1 Fusion Protein. Japan Society for Dental Materials, Equipment and Technology Kinki-Chugoku-Shikoku Regional Meeting Seminar (December 13, 2025, Kobe)
- 14: Sayo Endo, Saiji Shimoe, Moe Fukuda, Saki Fukai, Isao Hirata, Masato Kaku. Effect of rotation speed and polishing pressure in polishing PEEK. The 46th Annual Scientific Meeting, Japanese Academy of Dental Technology (January 25-26, 2025, Osaka)
- 15: Saki Hamanaka, Saiji Shimoe, Sayo Endo, Moe Fukuda, Isao Hirata, Masato Kaku. Effect of primer treatment on adhesion of denture base resin to PEEK with micro-retention. The 46th Annual Scientific Meeting, Japanese Academy of Dental Technology (January 25-26, 2025, Osaka)
- 16: Moe Fukuda, Saiji Shimoe, Sayo Endo, Saki Fukai, Isao Hirata, Masato Kaku. Variation of surface roughness by different types of abrasives in PEEK polishing. The 46th Annual Scientific Meeting, Japanese Academy of Dental Technology (January 25-26, 2025, Osaka)

### D) Invited Lectures

- 1: Koichi Kato, Tamamo Matsuyama, Karina Erda Saninggar, Fumika Abe, Ayana Nakano. Designing scaffold-binding growth factors. 10th Japan-Taiwan Bilateral Symposium on Nanomedicine (April 21–22, 2025, Yokohama)
- 2: Koichi Kato. From nano seeds to global science: 20 years of growth and connection. 18th International Symposium on Nanomedicine (ISNM2025) (December 1–3, 2025, Hiroshima)
- 3: Isao Hirata. Evaluation of Corrosion and Molecular Adsorption on Titanium Surfaces using Surface Plasmon Resonance. Shizuoka University/Hiroshima University Joint Workshop Research Exchange Meeting (May 30, 2025, Higashi-Hiroshima)

#### E) Education

- 1: Koichi Kato: Guide to the 2025 Spring Overseas Short-Term Dispatch Program (University of Strasbourg, Chulalongkorn University, Taipei Medical University)
- 2: Koichi Kato: Guide to the 2025 Summer Overseas Short-Term Dispatch Program (Airlangga University, Ho Chi Minh City University of Medicine and Pharmacy, Taipei Medical University)

#### F) Others

- 1: 18th International Symposium on Nanomedicine (ISNM2025) (December 1–3, 2025, Hiroshima): Koichi Kato (Chairman), Isao Hirata (Preparatory Committee Chairman)
- 2: Japan Society for Dental Materials and Equipment Kinki/Chugoku-Shikoku Regional Meeting Seminar: Koichi Kato (Regional Chair)

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, JSPS (PI: Koichi Kato): Koichi Kato, Designing biomaterials for in situ tongue regeneration. 23K09231. 775,000 JPY
- 2: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, JSPS (PI: Koichi Kato): Isao Hirata, Designing biomaterials for in situ tongue regeneration. 23K09231. 50,000 JPY
- 3: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, JSPS (PI: Isao Hirata): Isao Hirata, Three-dimensional molding and functional control of carbonate-apatite composite scaffolds. 23K09232. 750,000 JPY
- 4: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, JSPS (PI: Isao Hirata): Koichi Kato, Three-dimensional molding and functional control of carbonate-apatite composite scaffolds. 23K09232. 50,000 JPY
- 5: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, JSPS (PI: Masami Kanawa): Isao Hirata, Development of a Marker System to Predict the Differentiation Potential of Adipose-derived Mesenchymal Stem Cells. 21K09792. 100,000 JPY
- 6: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, JSPS (PI: Kotaro Tanimoto) Koichi Kato, Functional analysis of deciduous dental pulp stem cell-derived exosomes and application to induction of cleft palate bone regeneration. 21K10186. 400,000 JPY
- 7: Grant-in-Aid for Research Activity Start-up, Ministry of Education, Culture, Sports, Science and Technology, JSPS (PI: Ayana Nakano) Ayana Nakano, Controlling heterostructure of regenerated bone tissue using bio-3D printing technology, 23K16039. 1,800,000 JPY
- 8: Grant-in-Aid for Research Activity Start-up, Ministry of Education, Culture, Sports, Science and Technology, JSPS (PI: Fumika Abe) Fumika Abe, Molecular design of chimeric proteins as a component of tissue engineering scaffolds. 24K235880. 1,900,000 JPY

#### (5) Academic Awards, etc.

- 1: Best Presentation Award: Shiina Pasanen, Fumika Abe, Karina Erda Saninggar, Koichi Kato. The 23rd

- Annual Meeting of the Japanese Society for Regenerative Dentistry (October 4–5, 2025, Hakata)
- 2: English Presentation Award : Shiina Pasanen, Isao Hirata, Kotaro Tanimoto, Koichi Kato. Engineered bFGF-tethered microcarriers for the expansion of bone marrow-derived hMSCs. The 97th Annual Meeting of the Japanese Society for Tissue Culture (August 21–22, 2025, Yamaguchi)
  - 3: Abe Fumika: Japan Orthodontic Society “Republic of China Orthodontic Society 14th Resident Forum” Japan National Team Selection
  - 4: Best Poster Award: Shiina Pasanen, Fumika Abe, Koichi Kato. 2025 Kinki and Chugoku-Shikoku Regional Seminar of the Japanese Society for Dental Materials and Technology (December 13, 2025, Kobe)

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## Department of Mucosal Immunology

### (1) Staff and students

Professor : Ichiro Takahashi  
Associate Professor: Kei Tobiume

### (2) Main research activities

- 1 Microbial intracellular symbiosis phenomenon in innate immune cells
- 2 Plasticity of oral squamous cell carcinoma cells

### (3) Research Achievements

#### Original work

Anticancer effect of the antirheumatic drug leflunomide on oral squamous cell carcinoma by the inhibition of tumor angiogenesis. Niwata C., Nakagawa T., Naruse T., Sakuma M., Yamakado N., Akagi M., Ono S., Tobiume K., Gao J., Jimi E., Ohta K., Aikawa T. *Discov. Oncol.* doi: 10.1007/s12672-025-01763-5.

### (4) Status of receipt of Grants-in-Aid for Scientific Research

1: Grant-in-Aid for Research C: Ichiro Takahashi, Bioenergetic Development of the Molecular Mechanism of Microbial Intracellular Symbiosis Phenomena, 1560 thousand yen

2: Grant-in-Aid for Research C: Kei Himei, Separation of partial EMT and complete EMT in oral squamous cell carcinoma cells, 1820,000 yen

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## Department of Periodontal Medicine

### Division of Preventive and Restorative Dentistry,

### Department of Periodontics

#### (1) Staffs and Students

Professor: Noriyoshi Mizuno

Lecturer (clinical associate professor): Shinji Matsuda

Assistant Professor (clinical associate professor): Kazuhisa Ouhara, Tomoyuki Iwata

Assistant Professor: Shinya Sasaki (-March), Yukiko Nagatani (July-), Takumi Memida (October-)

Assistant Professor (Special Appointment):

Resident: Mizuho Kittaka (studying abroad), Misako Tari, Yuri Taniguchi, Tomoya Ueda (studying abroad),  
Shoko Kohno, Fuminori Nakashima, Yurika Ninomiya (October-)

Graduate Student: Ryouzuke Fujimori, Keisuke Yasuda, Shogo Shimada, Naoya Kuwabara, Shoya Ueda,  
Yoshiaki Itoh, Atsuko Hayakawa, Yuko Masugata, Masaru Shimizu

Research Student: Masahiko Suzukawa

Special Postdoctoral Researcher: Tetsuya Tamura

Clinical Trainee: Mari Kiyota, Yoshiaki Shimasaki, Manabu Takewaki, Takuma Yanagihara,  
Naoya Kubo, Saki Hatano, Daisuke Furutma, Kazuma Suzuki, Tomose Ogawa,  
Takayoshi Nagahara

#### (2) Main Research Activities

- 1: Immunological and genetic study on the onset of periodontics
- 2: Study on periodontal tissue regeneration using bone marrow mesenchymal stem cells
- 3: Study on periodontal tissue regeneration using neurotrophins
- 4: Study on the relationship between periodontal disease and rheumatoid arthritis
- 5: Study on the relationship between periodontal disease and diabetes mellitus
- 6: Study on physiological function and differentiation of the cells derived from periodontal ligament
- 7: Study on prevention for periodontal disease
- 8: Study on gingival hyperplasia
- 9: Study on the relationship between periodontal disease and scleroderma
- 10: Study on the establishment of treatment methods for peri-implantitis

#### (3) Research Achievements

##### A) Original Papers (including Case Reports)

1. B10 cells promote pro-resolving macrophage function through direct cell-cell contact and IL-10 secretion in Raw 264.7 cells  
Takumi Memida, Elaheh Dalir Abdolahinia, Guoqin Cao, Sunniva Ruiz, Shengyuan Huang, Satoru Shindo, Shin Nakamura, Jiang Lin, Toshihisa Kawai, Xiaozhe Han  
*International immunology*. 2025; March; 37(8); 457-474
2. Atrial Translocation of *Porphyromonas gingivalis* Exacerbates Atrial Fibrosis and Atrial Fibrillation  
Shunsuke Miyauchi, Miki Kawada-Matsuo, Hisako Furusho, Hiromi Nishi, Ayako Nakajima, Pham Trong Phat, Fumie Shiba, Masae Kitagawa, Kazuhisa Ouhara, Noboru Oda, Takehito Tokuyama, Yousaku Okubo, Sho Okamura, Taiichi Takasaki, Shinya Takahashi, Toru Hiyama, Hiroyuki Kawaguchi, Hitoshi Komatsuzawa, Mutsumi Miyauchi, Yukiko Nakano  
*Circulation*. 2025; May 27;151(21); 1527-1540.
3. Pro-Resolving Macrophage-Induced IL-35+ but Not TGF- $\beta$ 1+ Regulatory B Cell Activation Requires the PD-L1/PD-1 Pathway  
Guoqin Cao, Takumi Memida, Shengyuan Huang, Elaheh Dalir Abdolahinia, Sunniva Ruiz, Sahar Hassantash, Jayant Ari, Satoru Shindo, Jiang Lin, Toshihisa Kawai, Xiaozhe Han

- International Journal of Molecular Sciences. 2025; June; 26(11); 5332
4. B10 Promotes Polarization and Pro-Resolving Functions of Bone Marrow Derived Macrophages (BMDM) Through PD-1 Activation  
Takumi Memida, Guoqin Cao, Elaheh Dalir Abdolahinia, Sunniva Ruiz, Shengyuan Huang, Sahar Hassantash, Satoru Shindo, Motoki Okamoto, Shohei Yamashita, Shin Nakamura, Maiko Suzuki, Toshihisa Kawai, Xiaozhe Han  
*Cells*. 2025; June; 14(12); 860
  5. Development of a new step-by-step educational strategy on dental hygiene process of care in the undergraduate clinical training, Part I. Its effectiveness based on the students' self-evaluation  
Nakamura K, Nakai Y, Nagatani Y, Yamamoto T, Morino T, Kanayama K  
*The Japanese Journal of Oral Care*. 2025; June; 20(1); 29-37
  6. Suppressive Effects of Kouboku on Methyl Mercaptan Production and Biofilm Formation in *Porphyromonas gingivalis*.  
Yuri Taniguchi, Kazuhisa Ouhara, Yoko Sato, Mikio Shoji, Yitong Hou, Ruoqi Zhai, Ryouyuke Fujimori, Naoya Kuwahara, Tetsuya Tamura, Shinji Matsuda, Noriyoshi Mizuno  
*Mol Oral Microbiol*. 2025; June; 40(3); 128-136.
  7. A cross-sectional interventional study on the effects of periodontal treatment on periodontal inflamed surface area and masticatory efficiency values according to the 2018 periodontal status classification.  
Shinji Matsuda, Yumoto H, Komatsu Y, Dewake N, Iwata T, Nagano T, Morozumi T, Goto R, Kato S, Yamashita M, Hayashi J, Sekino S, Yamashita A, Yamashita K, Yoshimura A, Sugaya T, Takashiba S, Taguchi Y, Nemoto E, Shintani T, Miyagawa T, Nishi H, Mizuno N, Numabe Y, Kawaguchi H.  
*BMC Oral Health*. 2025; July 4; 25(1); 1094
  8. Monoallelic mutations in MMD2 cause autosomal dominant aggressive periodontitis  
Iwata T, Mizoguchi Y, Yoshimoto T, Tsumura M, Sakura F, Johnson JR, Matsuda S, Ouhara K, Nagatani Y, Asano T, Ohnishi H, Kato Z, Mihara K, Kanegane H, Ueda T, Sasaki S, Taniguchi Y, Ninomiya Y, Ohno Y, Suzuki-Takedachi K, Sotomaru Y, Sakuma T, Yamamoto T, Matsuda Y, Kume K, Sanui T, Nishimura F, Kajiya M, Ueki Y, Kurihara H, Morino H, Okada S, Kawakami H, Mizuno N.  
*J Exp Med*. 2025; Sep 1; 222(9); e20231911.
  9. Piezo1 protects against inflammatory bone loss via a unique Ca<sup>2+</sup>-independent mechanism in osteoclasts  
Satoru Shindo, Shin Nakamura, Avery Hawthorne, Alireza Heidari, Maria Rita Pastore, Motoki Okamoto, Maiko Suzuki, Manuel Salinas, Takumi Memida, Dmitriy Minond, Alexander Bontempo, Mark Cayabyab, Yingzi Yang, Janet L Crane, Maria Hernandez, Saynur Vardar, Patrick Hardigan, Xiaozhe Han, Steven Kaltman, Toshihisa Kawai  
*Frontiers in immunology*. 2025; September; 16; 1661538
  10. Cytokine Profiling of Exudates from Periapical Lesions and the Efficacy of CXCL10 as a Healing Marker.  
Kazuhisa Ouhara, Yuri Taniguchi, Ruoqi Zhai, Katsuhiko Takeda, Ryouyuke Fujimori, Naoya Kuwahara, Shoya Ueda, Yitong Hou, Nomi Honoka, Masaru Shimizu, Shoko Kono, Tomoyuki Iwata, Shinji Matsuda, Noriyoshi Mizuno  
*Pathogens*. 2025; October 7; 14(10); 1013
  11. Human CD24<sup>+</sup>CD38<sup>+</sup> regulatory B cells promote pro-resolving macrophage function through the synergistic effect of IL-10 and PD-L1  
Elaheh Dalir Abdolahinia, Elizabeth M Horta, Takumi Memida, Guoqin Cao, Shengyuan Huang, Sunniva Ruiz, Satoru Shindo, Shin Nakamura, Jiang Lin, Saynur Vardar, Toshihisa Kawai, Xiaozhe Han  
*Journal of leukocyte biology*. 2025; October; 117(10); qiaf141
  12. Piezo1 deficiency in monocytes accelerates periodontal bone loss via increased local migration and osteoclastogenesis  
Satoru Shindo, Shin Nakamura, Risa Shindo, Maria Rita Pastore, Takumi Memida, Guoqin Cao, Xiaozhe Han, Toshihisa Kawai  
*The Journal of Immunology*. 2025; November; 214(Supplement\_1); vkaf283.2642
  13. Developmental vulnerability to fluoride toxicity: enamel and clearance differences in adolescent versus mature mice  
Shohei Yamashita, Motoki Okamoto, Natsumi Fujiwara, Ria Achong-Bowe, Susanne Brueckner, Melanie Mendonca, Nanako Kuriki, Hiroko Harigaya, Juliana Sanches Trevizol, Deana Kukhianidze,

Roger Zhong, Marion A Cooley, Satoru Shindo, Takumi Memida, Navi Gill Dhillon, Yasuo Yamakoshi, Xiaozhe Han, Toshihisa Kawai, Marilia Alfonso Rabelo Buzalaf, Eric T Everett, Maiko Suzuki

Archives of toxicology. 2025; December; 1-16

14. Systematic learning of the process of dental hygiene care in clinical practice and its educational effectiveness, Report 2: A study of educational strategies and learning support for the process of dental hygiene care  
Nagatani Y, Nakamura K, Yamamoto T, Morino T, Kanayama K, Nakai Y  
The Japanese Journal of Oral Care. 2025; December; 20(2); 17-25

## B) Review

## C) Publications

## D) Other Publications

## E) Presentation at Scientific Meeting

1. Impact of inflammation or hyperglycemia in experimental peri-implantitis in mice  
Takumi Memida, Jacques Christopher Jaar, Sunniva Ruiz, Guoqin Cao, Elaheh Dalir Abdolahinia, Nanako Okamoto, Motoki Okamoto, Satoru Shindo, George Chen, Xuesong He, Maiko Suzuki, Saynur Vardar, Toshihisa Kawai, Xiaozhe Han  
2025 AADOCR/CADR Annual Meeting & Exhibition (2025 March, New York)
2. To elucidate the effect of estradiol on ligature induced periodontitis.  
Keisuke Yasuda, Shinji Matsuda, Tetsuya Yoshimoto, Fuminori Nakashima, Tomoya Ueda, Yurika Ninomiya, Shogo Shimada, Kazuhisa Ouhara, Noriyoshi Mizuno  
The 68th Spring Meeting of the Japanese Society of Periodontology (2025 May, Naha)
3. Epidemiological study on the safety and effectiveness of periodontal disease treatment in patients taking oral anticoagulant drugs  
Kazuhisa Ouhara, Yuri Taniguchi, Syunsuke Miyauchi, Tomoaki Shintani, Ryosuke Fujimori, Naoya Kuwahara, Syoya Ueda, Misako Tari, Yitong Hou, Shinya Sasaki, Shinji Matsuda, Tomoyuki Iwata, Mikihito Kajiya, Mutsumi Miyauchi, Yukiko Nakano, Noriyoshi Mizuno  
The 68th Spring Meeting of the Japanese Society of Periodontology (2025 May, Naha)
4. A case of the improvement of self-efficacy and the periodontal therapy including the periodontal regenerative therapy: the discovery of diabetes and the medical-dental collaboration  
Takayoshi Nagahara, Tomoyuki Iwata, Kazuhisa Ouhara, Noriyoshi Mizuno  
The 162th Meeting of the Japanese Society of Conservative Dentistry (2025 June, Matsuyama)
5. Assessment of oral environment and oral function in HIV-negative and HIV-positive hemophilia patients  
Shintani T, kada M, Kawagoe, Iwata T, Yamasaki N, Fujii T, Shiba H  
Asia Pacific AIDS and Co-Infections Conference 2025 (2025 June, Tokyo)
6. Negative response to electric pulp testing in affected teeth following periodontal regenerative therapy: Two case reports  
Takayoshi Nagahara, Hideki Shiba, Katsuhiko Takeda, Tomoyuki Iwata, Noriyoshi Mizuno  
The 46th Annual Scientific Meeting of Japan Endodontic Association(2025 July, Matsumoto)
7. Impact Of Hyperglycemia and Systemic-inflammation in Experimental Peri-implantitis in Mice  
Takumi Memida, Jacques Christopher Jaar, Satoru Shindo, George Chen, Xuesong He, Saynur Vardar, Toshihisa Kawai, Xiaozhe Han  
7th Penn Periodontal Conference (2025 July, Pennsylvania)
8. Perceptions of healthcare professionals toward task shifting and sharing of Dental Hygienists' responsibilities  
Nagatani Y, Imafuku R, Matsuda S, Iwata T, Ouhara K, Mizuno N  
Health Communication Week 2025 in Hongo, Tokyo (2025 October, Tokyo)
9. Effect of Anti-IL-6 Receptor Antibody on Periodontitis in a Mouse Model of P. gingivalis Infection  
Ryosuke Fujimori, Kazuhisa Ouhara, Yuri Taniguchi, Tomoyuki Iwata, Shinji Matsuda, Shinya Sasaki, Naoya Kuwahara, Noriyoshi Mizuno  
68th Autumn Conference of the Japanese Society of Periodontology (2025 October, Niigata)



10. Impact of hyperglycemia and systemic-inflammation in experimental periodontitis/peri-implantitis in mice  
Takumi Memida, Shinji Matsuda, Noriyoshi Mizuno  
The 163th Meeting of the Japanese Society of Conservative Dentistry (2025 November, Nagasaki)
11. Perception Gaps Between Dental Hygienists and Other Healthcare Professionals Regarding the Expansion of Their Roles: Future Challenges for Dental Hygienist Education  
Nagatani Y, Matsuda S, Iwata T, Ouhara K, Mizuno N  
The 163th Meeting of the Japanese Society of Conservative Dentistry (2025 November, Nagasaki)
12. To elucidate the effect of periodontitis on infection of SARS-Cov-2  
Sakiko Oka, Shinji Matsuda, Misako Tari, Yukiko Nagatani, Tomoyuki Iwata, Kazuhisa Ouhara, Noriyoshi Mizuno  
The 163th Meeting of the Japanese Society of Conservative Dentistry (2025 November, Nagasaki)
13. Relationship between oral environment and oral function and detection of Streptococcus mutans in hemophilia patients  
Shintani T, Okada M, Kawagoe, Iwata T, Yamasaki N, Fujii T, Shiba H  
The 39th Annual Meeting of the Japanese Society for AIDS Research (2025 December, Kumamoto)

#### F) Special lectures in academic meetings

1. Seminar  
The Importance of Genetic Diagnosis in Diseases of the Maxillofacial Region ~Focusing on Aggressive Periodontitis and SOST-Related Sclerosing Bone Dysplasia~  
Noriyoshi Mizuno  
Okayama University Medical Staff Seminar (2025 April, Okayama)
2. WEB seminar  
Indications for Regrowth in Endo-periolar lesions and afterward  
Takayoshi Nagahara  
Kaken Pharmaceutical Co., Ltd. Periodontal Tissue Regenerative Therapy Web Seminar (2025 May, Web)
3. Keynote seminar  
Considering the New Classification of Periodontal Disease ~ Focusing on the Presence of Patients with Periodontal Disease Strongly Influenced by Genetic Factors ~  
Noriyoshi Mizuno  
The 43rd Annual Meeting of the Japanese Society of Clinical Periodontology (2025 July, Hiroshima)
4. Symposium  
Severe periodontitis and oral collapse: a perspective from hospital  
Takayoshi Nagahara, Aya Tokumaru  
The 43rd Annual Meeting of the Japanese Society of Clinical Periodontology (2025 July, Hiroshima)
5. Prefectural Public Lectures  
Systemic diseases affected by periodontitis and their prevention  
Kazuhisa Ouhara  
2025 Prefectural Public Lecture: Specialists in Heart, Brain, and Periodontal Disease Discuss the Latest Preventive Measures (2025 August, Hiroshima)
6. Keynote seminar  
“Fundamental Periodontal Treatment”  
Noriyoshi Mizuno  
5th Chubu Regional Clinical Training Seminar of the Japanese Society of Periodontology (2025 October, Tsu)
7. JSP Best Paper Award for Periodontal Regenerative Medicine Winning Lecture Predictive  
Factors of periodontal regeneration using rh-FGF2  
Shinji Matsuda  
The 68th Autumn Meeting of the Japanese Society of Periodontology (2025 October, Niigata)
8. Seminar  
Conquering localized periodontal disease that often leads to tooth extraction- Understanding lesions

that are easily misdiagnosed and healthy periodontal tissues-

Takayoshi Nagahara

Osaka University School of Dentistry Alumni Association the 591st Clinical Colloquy (2025 October, Osaka)

9. WEB seminar

Conquering endoperiodendremia with periodontal regenerative therapy: From the basics of classification and diagnosis to periodontal regenerative therapy approach focused on FGF-2 reagent Takayoshi Nagahara

1 D Wed seminar (2025 December, Web)

(4) Status of Receiving Grants-in Aid for Scientific Research.

1. Grants-in aid for scientific research B: Noriyoshi Mizuno: Discovery of novel specific molecular targets for aggressive periodontitis patients with MMD2 mutations: 25K02813"
2. Grants-in aid for scientific research B: Kazuhisa Ouhara: Classification of the clinical significance of autoantibodies in rheumatoid arthritis patients and development of a prognosis prediction method based on this classification: 25K02685
3. Grants-in aid for scientific research C: Kazuhisa Ouhara: Elucidation of the mechanism by which periodontal pathogenic bacteria antigens inhibit periodontal tissue destruction using cell engineering technology: 25K13020
4. Grants-in aid for scientific research C: Shinji Matsuda: Drug discovery research for novel periodontitis treatments targeting NR4A1 using DNA-encoded libraries: 25K13006
5. Grants-in aid for scientific research C: Yukiko Nagatani: Professional Identity Formation in Dental Students, Elucidating Current Processes and Influencing Factors: 24K13243
6. Grants-in aid for scientific research C: Kazuhisa Ouhara: Elucidation of the mechanism by which the interaction between obesity and periodontal infection affects cognitive function : 23K09183
7. Grants-in aid for scientific research C: Yukiko Nagatani: Elucidating the Relationship Between Non-Communicable Diseases and Oral Hypofunction in the Post-COVID New Normal and Developing Integrated Strategies for Preventing Disease Deterioration: 22K02172
8. Grant-in -Aid for Early Career Scientists: Misako Tari: Elucidation of the mechanism how periodontitis exacerbates NAFLD under non-diabetic conditions: 24K19895
9. Grant-in -Aid for Early Career Scientists: Yuri Taniguchi: Elucidation of the mechanism by which Porphyromonas gingivalis fimbria exacerbates cerebral hemorrhage: 24K19880
10. Grant-in -Aid for Early Career Scientists: Tetsuya Tamura: Study on a novel periodontitis suppression mechanism mediated by geniposidic acid-induced oral malodor gas inhibition: 24K19881
11. Grant-in -Aid for Early Career Scientists: Yukiko Nagatani: Development of an Oral Health Practice Model and Educational Framework for Advancing Task Shifting and Task Sharing in Interprofessional Care: 22K17279
12. Health Science Center Research Grant: Shinji Matsuda: The influence of periodontal disease as the onset of the sarcopenia-depression association
13. NSK Nakanishi Foundation Research and Development Grant: Shinji Matsuda: Basic research aimed at creating a new therapeutic agent for periodontitis-related masseter sarcopenia - Drug discovery research using DNA encoded library screening method -
14. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Shoko Kono: Development of a brain-derived neurotrophic factor (BDNF)-applied bone regeneration therapy for peri-implantitis.
15. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Fuminori Nakashima: Study to verify the development of osteonecrosis of the jaw caused by romosozumab and to elucidate its mechanism.
16. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Yurika Ninomiya: Research for the development of treatment for drug-induced gingival hyperplasia
17. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Keisuke Yasuda: To elucidate the relationship and mechanism between periodontal disease progression and estrogen.
18. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Ryousuke Fujimori: Elucidation of the mechanism by which immune complexes derived

- from periodontal pathogenic bacteria antigens affect the exacerbation of periodontitis
19. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Naoya Kuwahara: Fundamental research for the development of novel periodontal tissue regenerative drugs using nahlsgein
  20. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Shogo Shimada: Examine the effect of NR4A1 on periodontitis and develop therapeutic agents targeting NR4A1
  21. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Syoya Ueda: Fundamental research on a paradigm shift in periodontitis treatment using JAK inhibitors
  22. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Yoshiki Ito: Basic Research Aimed at the Development of a Novel Therapeutic Strategy for Medication-Related Osteonecrosis of the Jaw
  23. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University (SPRING): Yuko Masugata: Investigation of the Potential Association Between Periodontal Disease and Masseter Muscle Sarcopenia
  24. Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University (SPRING): Atsuko Hayakawa: Elucidating the pathogenesis of early-onset aggressive periodontitis

#### (5) Award.

1. Shinji Matsuda  
JSP Best Paper Award for Periodontal Regenerative Medicine 2025  
Predictive factors of periodontal regeneration outcomes using rhFGF-2: A case-control study.
2. Ryouzuke Fujimori  
Young Investigator Award JPS 2025  
Effect of Anti-IL-6 Receptor Antibody on Periodontitis in a Mouse Model of *P. gingivalis* Infection
3. Shoko Kono  
Society Encouraging Paper Award, Oral Implant Society 2025  
Brain-derived neurotrophic factor promotes bone regeneration in a canine model of peri-implantitis

#### (6) Patents

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**Department of Oral Oncology**  
**Division of Oral and Maxillofacial Surgery and Oral Medicine**  
**Department of Oral and Maxillofacial Surgery**

(1) Staff and Students

Professor: Souichi Yanamoto (\*) Chief: Souichi Yanamoto (by-work)  
 Associate Professor:  
 Lecturer: Koichi Koizumi  
 Assistant Professor: Ryouji Tani (~Mar), Kensaku Sumi, Nanako Ito, Sachiko Yamasaki, Atsuko Hamada, Fumitaka Obayashi, Mirai Higaki (~Mar), Kota Morishita (Apr~)  
 Resident: Yuki Taguchi (Apr~), Tadayoshi Nobumoto (~Mar), Suguru Hirota, Kento Okamoto (~Oct), Natsuki Eboshida (Apr~), Tamamo Matsuyama (Apr~)  
 Graduate Student: Natsuki Eboshida (~Mar), Tamamo Matsuyama (~Mar), Asada Yasuyuki, Yume Ueda, Teru Uehara, Airi Odawara, Erika Yamasaki, Motonori Itotagawa, Kai Omachi, Yuga Maeda, Shiori Wakita, Hidekazu Ono (Apr~), Mizuha Kitamura (Apr~), Yuma Morifuji (Apr~), Taishi Yamada (Apr~).  
 Clinical Trainee: Yoshinari Myoken (~Mar), Ryouji Tani (Apr~), Yoshinori Fujita, Tomoaki Hamana (Apr~), Yasutaka Ishida, Mirai Higaki (Apr~), Satoshi Naruse (Apr~)  
 Researcher: Tomoaki Hamana (~Mar), Yuki Taguchi (~Mar), Taeko Fukutani, Shigeru Sakurai (~Mar)

(2) Main Research Activities

- 1: Multi-institutional clinical research to establish EBM for oral cancer treatment
- 2: Analysis of circulating tumor cells and cfDNA in oral cancer
- 3: Molecular biological research on distant metastasis of oral cancer
- 4: Research on quality of life in patients with medication-related osteonecrosis of the jaw
- 5: Research on AI-based image analysis in medication-related osteonecrosis of the jaw
- 6: Research on psychological approach for patients with oral cancer
- 7: Research on sarcopenia in patients with oral cancer
- 8: Research on adverse events of chemoradiotherapy for oral cancer
- 9: The intestinal and oral microflora of patients with oral cancer
- 10: Research on oral science approach for patients with sleep breathing disorder

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Relationship between undernutrition and CDDP-induced nephrotoxicity in oral squamous cell carcinoma: Asada Y, Ito N, Obayashi F, Higaki M, Hamada A, Yamasaki S, Koizumi K, Yanamoto S.: *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, 37(5), 891-894, 2025.
- 2: Perioperative management of acquired von Willebrand syndrome associated with monoclonal gammopathy of undetermined significance: a case report and review of literature: Tani R, Nobumoto T, Okamoto K, Fukutani T, Hirota S, Okamoto K, Koizumi K, Yanamoto S.: *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, 37(5), 1081-1085, 2025.
- 3: Prognostic value of inflammation- and nutrition-based biomarkers in patients with recurrent or metastatic oral squamous cell carcinoma treated with immune checkpoint inhibitors: A retrospective study: Yamasaki S, Ito N, Hamada A, Obayashi F, Higaki M, Nakagawa T, Ono S, Koizumi K, Yanamoto S.: *Oncology Letters*, 30(5), 503, 2025.
- 4: Clinical value of the worst pattern of invasion in predicting extranodal extension in oral squamous cell carcinoma: Higaki M, Ando T, Obayashi F, Ito N, Hamada A, Yamasaki S, Shintani T, Koizumi K, Yanamoto S.: *Discover Oncology*, 16(1), 1259, 2025.
- 5: Dimerisation of the VIP receptor VIPR2 is essential to its binding VIP and Gai proteins, and to its

- functions in breast cancer cells. Asano S, Ozasa K, Uehara T, Yokoyama R, Nakazawa T, Yanamoto S, Ago Y.: *British Journal of Pharmacology*, 182(15), 3612-3627, 2025.
- 6: Management and prognostic implications of posteriorly advanced oral squamous cell carcinoma in contact with the medial pterygoid muscle: Ito N, Obayashi F, Higaki M, Hamada A, Yamasaki S, Shintani T, Ando T, Koizumi K, Yanamoto S.: *Cancer Medicine*, 14(22), e71174, 2025.
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  - 8: A multicenter study of CT findings in medication-related osteonecrosis of the jaw: Otsuru M, Omori K, Hasegawa T, Yamamura Y, Kondo E, Ueda N, Soutome S, Rokutanda S, Ueda M, Nakahara H, Ishibashi K, Iwata E, Yamasaki S, Sado T, Myoken Y, Sakamoto Y, Kobayashi M, Hamana T, Kojima Y, Kanda T, Sumi M, Taguchi A, Umeda M.: *Scientific Report*, 15(1), 40152, 2025.
  - 9: Preliminary study for the development of enhanced recovery after surgery program for free flap reconstruction in older population with advanced oral cancer: A single-center retrospective study: Obayashi F, Koizumi K, Ito N, Higaki M, Hamada A, Yamasaki S, Fujioka Y, Nagamatsu S, Koshima I, Yanamoto S.: *BMC Cancer*, 25(1), 1872, 2025.
  - 10: Clinical significance and biological role of claudin-1 in oral squamous cell carcinoma cells: Nobumoto T, Yamasaki S, Hamada A, Higaki M, Ito N, Obayashi F, Ishida Y, Hamana T, Shintani T, Tani R, Koizumi K, Yanamoto S, Hayashido Y.: *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology*, 139(1), 92-100, 2025.
  - 11: The efficacy of different local flaps for wound closure of defects after removal of necrotic bone in advanced medication-related osteonecrosis of the jaw: A single-center cohort study: Myoken Y, Kawamoto T, Fujita Y, Hayashi S, Toratani S, Yanamoto S.: *Journal of Cranio-Maxillofacial Surgery*, 53(5), 543-551, 2025.
  - 12: Analysis of the molecular mechanism of claudin-1 expression in SCCKN cells, oral squamous cell carcinoma cell line: Nobumoto T, Yamasaki S, Hamada A, Higaki M, Ito N, Obayashi F, Ishida Y, Hamana T, Shintani T, Tani R, Koizumi K, Yanamoto S, Hayashido Y.: *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, 37(4), 607-616, 2025.
  - 13: Identification and characterization of salivary immune complex antigens in oral cancer: Sei M, Kanda S, Aibara N, Hashimura R, Hashizume J, Kutsuna YJ, Naruse T, Omori K, Sakai H, Yamada S, Hasegawa T, Takeda D, Yamakawa N, Kirita T, Kurosaki T, Miyamoto H, Sato K, Kodama Y, Nakashima MN, Nakashima M, Yanamoto S, Ohyama K.: *Clinical Oral Investigations*, 29, 482, 2025.
  - 14: T4a classification for oral cancer using mandibular canal invasion instead of bone marrow invasion in the TNM staging system: Okura M, Yamakawa N, Otsuru M, Hasegawa T, Yokota Y, Rin S, Sakai H, Yamada S, Hirai E, Ashikaga Y, Yamamoto K, Ueda M, Kirita T, Umeda M, Akashi M, Kurita H, Ohiro Y, Naruse T, Yanamoto S, and Japan Oral Oncology Group.: *Oral Oncology*, 171, 107771, 2025.
  - 15: Potential effect of topical antibiotics administration in the oral cavity on the reduced number of bacteria entering the lower respiratory tract after oral cancer surgery: Imakiire A, Soutome S, Miura K, Ito N, Higaki M, Obayashi F, Koizumi K, Yanamoto S, Yamada T, Umeda M.: *Journal of Dental Sciences*, 20(1): 319-324, 2025.
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  - 17: Anesthetic management for an elderly patient with severe bronchiectasis anesthesia progress: Takahashi T, Yoshida T, Ito N, Koizumi K, Kamio H, Oda A, Oue K, Doi M, Shimizu Y.: *Anesthesia Progress*, 72(1): 33-36, 2025.
  - 18: A case of lymphoproliferative disease of the palate while receiving infliximab and azathioprine for Crohn's disease: Ito N, Hamana T, Furusho H, Eboshida N, Asada Y, Obayashi F, Higaki M, Hamada A, Yamasaki S, Ando T, Koizumi K, Yanamoto S.: *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, 37(2): 365-370, 2025.
  - 19: Efficacy of Computer-assisted surgery in mandibular bone reconstruction with fibula free flap: Hamana T, Fukutani T, Matsuyama T, Nobumoto T, Obayashi F, Ito N, Ishida Y, Higaki M, Hamada A, Yamasaki S, Koizumi K, Yoshioka Y, Tani R, Yanamoto S.: *Journal of Japanese Society of Oral Oncology*, 37(1), 11-19, 2025.
  - 20: Survey of the Current State of Dental Treatment on Ninoshima : Which has Overcome the Problem of Areas Without Dentists.: Fukutani T, Nakase Y, Morifuji Y, Hamada A, Yamasaki S, Kanda T, Tani R, Koizumi K, Yanamoto S, Okamoto K.: *The journal of Hiroshima University Dental Society* 57 (1), 22-33, 2025.

- 21: A case of myofibroma in the body of the mandible : Taguchi Y, Ito N, Ando T, Asada Y, Nobumoto T, Yanamoto S: Japanese journal of oral and maxillofacial surgery, 71(6), 267-273, 2025.
- 22: Antimicrobial susceptibility surveillance of bacterial isolates recovered in Japan from odontogenic infections in 2018: Kaneko A, Iwabuchi H, Sato J, Matsumoto T, Kiyota H, Hasegawa N, Hanaki H, Naito H, Hamada T, Yamazaki H, Hoshi K, Abe M, Busujima Y, Suzuki T, Nakashima D, Izawa K, Akashiba T, Uematsu M, Terasawa F, Morihana T, Furudo S, Iseki T, Matsumoto K, Kishimoto H, Moridera K, Okamoto T, Kanda T, Ito Y, Sakamoto A, Miyake M, Obayashi Y.: Journal of Infection and Chemotherapy, 31(7), 102731, 2025.
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- 24: Enhanced infiltration of myoblasts into collagen scaffolds loaded with engineered basic fibroblast growth factor: Matsuyama T, Pasanen S, Futami F, Kato A, Hirata I, Yanamoto S, Kato K.: Dental Materials Journal, 44(3), 282-288, 2025.
- 25: Clinical and statistical analysis of oral malignant tumor patients at the department of oral Maxillofacial surgery, Hiroshima prefectural hospital.: Sugano D, Kitamura M, Omachi K, Ueda Y, Matsui K, Kiriya T, Kanda T.: Medical Journal of Hiroshima Prefectural Hospital, 56(1), 31-38, 2025.
- 26: Case of improved dental acceptance in a child with autism spectrum disorder: emotional. regulation support based on the SCERTS Model.: Oichi M, Oda Y, Yamaguchi M, Okino E, Morishita K, Ochiai I, Shimogouchi Y, Morimoto C, Hama Y, Miyauchi M, Hayashiuchi Y, Katayama S, Kanda T, Kawamoto H, Yamanaka F, Kamikawa K, Murakami S, Yamasaki K.: Dentistry for the handicapped, 46 (2), 98-106, 2025.
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## B) Review

- 1: Tube Feeding in Patients with Head and Neck Cancer Undergoing Chemoradio-/radio Therapy: A systematic review and meta-analysis based on the GRADE approach: Suzuki T, Yanamoto S, Takeda D, Saito H, Sato H, Asoda S, Adachi M, Yuasa H, Uzawa N, Kurita H.: Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology, 37(1), 92-98, 2025.
- 2: Desmoplastic Reaction in the Microenvironment of Head and Neck and Other Solid Tumors: The Therapeutic Barrier: Okuyama K, Tsuchiya M, Debnath KC, Islam S, Yanamoto S.: Therapeutic Advances in Medical Oncology, 17, 1-16, 2025.
- 3: Comment on “The characterization of tumor immune microenvironment after neoadjuvant immunotherapy in head and neck squamous cell cancer using multiplex immunohistochemistry”: Okuyama K, Yanamoto S.: Oral Oncology, 162, 107213, 2025.
- 4: Japanese Clinical Practice Guidelines for Oral Cancer, 2023: Kurita H, Uzawa N, Nakayama H, Abe T, Ibaraki S, Ohyama Y, Uchida K, Sato H, Miyabe S, Abe T, Kakimoto N, Kaida A, Sugiura T, Kioi M, Danjo A, Kitamura N, Hasegawa O, Tanaka T, Ueda N, Hasegawa T, Asoda S, Katsuta H, Yanamoto S, Yamada S, Takeda D, Suzuki T, Ohta Y, Kirita T.: International Journal of Oral and Maxillofacial Surgery, 54(5), 461-476, 2025.
- 5: HPV-positive HNSCC and Fc-silent PD-1 Blockade: A Clinical Discrepancy that Raises Next Immunological Questions: Okuyama K, Fujimoto J, Yanamoto S.: Journal for ImmunoTherapy of Cancer, 13, e012728, 2025.
- 6: Artificial Intelligence for Medication-related Osteonecrosis of the Jaw: a scoping review: Mine Y, Okazaki S, Yamasaki S, Kakimoto N, Yanamoto S, Murayama T.: Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology, 140(4), 405-415, 2025.

- 7: From Wound Coverage to Functional Healing: A Narrative Review of Biomaterial Applications in Head and Neck Mucosal Defects: Okuyama K, Debnath KC, Islam S, Yanamoto S.: *Head and Neck*, 47(11), 3201–3208, 2025.
- 8: Acid-Resistant Oral Microbiome on Oral Cancer Development: Okuyama K, Yanamoto S.: *JAMA Otolaryngology-Head & Neck Surgery*, 151(11), 1102-1103, 2025.

### C) Publications

- 1: Guidelines for Oral Cancer Treatment in the Elderly Patients (Edited by the Japanese Society of Oral Oncology): Yanamoto S, Yamasaki S, Obayashi F, Fukutani T, Matsuyama T: Kanahara Publishing (Tokyo), pp.17-44, 2025.
- 2: Oral Surgery YEARBOOK: Oral Surgery Handbook '25 for General Clinicians and Oral Surgeons (Japanese Society of Oral and Maxillofacial Surgeons, eds.): Neck Dissection: Yanamoto S: Quintessence Publishing (Tokyo), pp.112-122, 2025.
- 3: Chairside Q&A: Questions on Sleep Dentistry: Edited by the Japanese Academy of Dental Sleep Medicine: What is the difference between upper-lower integrated and separate OA?: Yanamoto S: *The Journal of Dental Hygienist*, Vol. 49, August Issue, Quintessence Publishing (Tokyo), pp.17, 2025.

### D) Other Publications

None

### E) Presentations at Scientific Meetings

- 1: Symposium Theme “Consideration of effective Chinese herbal medicine prescription for women’s medical”- Chinese herbal medicine for oral diseases- :Akihiko Sakamoto: The 50th Annual Meeting of by Hiroshima Prefectural Branch of The Japan Society for Oriental Medicine (Hiroshima), 2025.1.26.
- 2: Periosteal chondroma in mandibular condyle: A rare case report. Ramadhan FR, Shimabukuro K, Ohtsuka M, Nagasaki T, Konishi M, Suei M, Nakamoto T, Furusho H, Miyauchi M, Yamasaki S, Yanamoto S, Kakimoto N. The 43rd Joint Meeting of the Kansai and Kyushu Branches of the Japanese Society of Dental Radiology (Osaka), 2025.2.8.
- 3: A study on prognostic factors using skeletal muscle mass and IBPS (Inflammation-Based Prognostic Score) in oral cancer: Yamazaki E, Yamasaki S, Higaki M, Obayashi F, Hamada A, Ito N, Koizumi K, Yanamoto S.: The 43rd Annual Meeting of the Japanese Society for Oral Oncology (Tokyo), 2025.2.27-28.
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- 5: A case of salvage surgery for late tongue lymph node metastasis: Itotagawa Y, Higaki M, Tani R, Obayashi F, Hamada A, Yamasaki S, Koizumi K, Yanamoto S.: The 43rd Annual Meeting and Scientific Conference of the Japanese Society of Oral Oncology (Tokyo), 2025.2.27-28.
- 6: Experience with reverse clothoid curve needles in partial tongue resection: Higaki M, Koizumi K, Yamasaki S, Ito N, Obayashi F, Hamada A, Yanamoto S.: The 43rd Annual Meeting of the Japanese Society of Oral Oncology (Tokyo), 2025.2.27-28.
- 7: Experience with immune checkpoint inhibitors for oral squamous cell carcinoma: Yamasaki S, Ito N, Obayashi F, Higaki M, Hamada A, Nakagawa T, Ono S, Koizumi K, Aikawa T, Yanamoto S.: The 43rd Annual Meeting and Scientific Conference of the Japanese Society of Oral Oncology (Tokyo), 2025.2.27-28.
- 8: A clinical and pathological study of oral squamous cell carcinoma with neck lymph node metastasis: Maeda Y, Obayashi F, Ito N, Itotagawa Y, Higaki M, Hamada A, Yamasaki S, Koizumi K, Yanamoto S.: The 43rd Annual Meeting and Scientific Conference of the Japanese Society of Oral Oncology (Tokyo), 2025.2.27-28.
- 9: A case of cancer of unknown primary origin discovered following an oral lesion: Eboshida N, Ito N, Itotagawa Y, Obayashi F, Higaki M, Hamada A, Yamasaki S, Koizumi K, Ando T, Yanamoto S.: The

- 43rd Annual Meeting and Scientific Conference of the Japanese Society for Oral Oncology (Tokyo), 2025.2.27-28.
- 10: Symposium “Future education for oral cancer experts”: Training oral cancer specialists in School of Dentistry: Yanamoto S.: The 43rd Annual Meeting and Scientific Conference of the Japanese Society for Oral Oncology (Tokyo), 2025.2.27-28.
  - 11: Academic Seminar 4: Treatment strategies for recurrent and metastatic oral cancer - Focusing on the Oral Cancer Treatment Guidelines: Yanamoto S.: The 43rd Annual Meeting and Scientific Conference of the Japanese Society for Oral Oncology (Tokyo), 2025.2.27-28.
  - 12: Oral Cancer Registry Briefing and Progress Report: Kurita H, Yanamoto S, Nakayama H.: The 43rd Annual Meeting and Scientific Conference of the Japanese Society for Oral Oncology (Tokyo), 2025.2.27-28.
  - 13: Symposium 2: Alluminox treatment guidelines for oral cancer: Ibaragi S, Okui T, Higuchi K, Koizumi K, Noguchi K, Noguchi H, Yanamoto S.: The 43th Annual Meeting of Japanese Society of Oral Oncology (Tokyo), 2025.2.27-28.
  - 14: A multicenter retrospective observational study of metastatic tumors to the oral and maxillofacial region: Yamada S, Hasegawa T, Niiyama S, Sakai H, Naruse T, Koizumi K, Uchida K, Ohyama Y, Sasaki T, Ishimashi K, Nakahara H, Denda Y, Yamakawa N, Tasaka Y, Nitta T, Inomata T, Noguchi K, Kakuguchi Y, Saito Y, Asoda S.: The 43th Annual Meeting of Japanese Society of Oral Oncology (Tokyo), 2025.2.27-28.
  - 15: Symposium 8: Multi-institutional research of oral cancer in Japan: Yanamoto S.: The 37th Annual Congress of TAOMS (Taipei), 2025.3.8-9.
  - 16: A clinicopathological study of resected margins affecting local recurrence in superficial tongue carcinoma: Obayashi F, Higaki M, Hamada A, Yamasaki S, Ito N, Koizumi K, Yanamoto S.: The 37th Annual Congress of TAOMS (Taipei), 2025.3.8-9.
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  - 21: Medical, dental and pharmacological cooperation in the Fracture Liaison Service (FLS) at Hiroshima Prefectural Hospital: Current Status and Challenges: Matsui K, Matsuzaki M, Sugano T, Kitamura M, Naruse T, Hamada H, Sasaki E, Kawai C, Shinagawa K, Nakamura H, Hirata N, Nagao S, Nakano N, Okada T, Osako M, Nishida K, Kiriyama K, Kanda T.: The 54th Chugoku-Shikoku Regional Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Yamaguchi), 2025.4.26.
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  - 23: Effects of probiotics on preventing oral mucositis and maintaining nutritional status during breast cancer chemotherapy. Kuwahara Y, Nishi H, Ota K, Shigeishi H, Konishi M, Kakimoto N, Yoshioka Y, Horikoshi T, Yano K, Nakaoka M, Yamasaki S, Ito N, Yanamoto S, Tanimoto K, Kawaguchi H.: The 22nd General Meeting of the Japanese Society of Oral Care / The 5th World Congress of Oral Care (Niigata), 2025.4.26-27.
  - 24: Learn and Understand Surgical Techniques 3: Learn and understand neck dissection: Yanamoto S.: 3rd Academic Meeting of the Young Oral Surgeons Exchange Group (Hiroshima), 2025.3.10-11.
  - 25: Relationship between undernutrition and CDDP-induced nephrotoxicity in oral squamous cell carcinoma: Asada Y, Ito N, Obayashi F, Higaki M, Hamada A, Yamasaki S, Koizumi K, Tani R,



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- 26: Prognostic impact of skeletal muscle mass and inflammation-based prognostic scores in patients with oral cancer: Yamasaki E, Yamasaki S, Ueda Y, Odawara A, Higaki M, Obayashi F, Hamada A, Ito N, Koizumi K, Yanamoto S.: The 3rd Academic Meeting of the Young Oral and Maxillofacial Surgeons Exchange Meeting (Hiroshima), 2025.5.10-11.
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  - 31: Understanding inter-institutional differences in horizontal impacted mandibular wisdom tooth extraction: Tamura Y, Arimura Y, Higaki M: The 3rd Academic Meeting of the Young Oral and Maxillofacial Surgeons Exchange Meeting (Hiroshima), 2025.5.10-11.
  - 32: Three cases of refractory maxillary sinusitis caused by iatrogenic foreign bodies in which preoperative diagnosis was difficult: Kitamura M, Matsuzaki M, Sugano T, Matsui K, Naruse S, Kiriyama K, Yanamoto S, Kanda T.: The 3rd Academic Meeting of the Young Oral and Maxillofacial Surgeons Exchange Meeting (Hiroshima), 2025.5.10-11.
  - 33: A case of FN induced by S-1 Administration as Palliative Chemotherapy for Postoperative Recurrence of mandibular gingival squamous cell carcinoma: Fukushima H, Naruse T, Morishita K, Omori K, Takemura A, Yamada T.: The 3rd Academic Meeting of the Young Oral and Maxillofacial Surgeons Exchange Meeting (Hiroshima), 2025.5.10-11.
  - 34: Postoperative therapy and prognosis in patients with advanced oral cancer based on recurrence risk factors: Koizumi K, Ohmachi K, Hirota S, Ito N, Obayashi F, Hamada A, Yamasaki S, Tani R, Yanamoto S.: The 79th Annual Meeting of Japanese Stomatological Society (Matsumoto), 2025.5.16-17.
  - 35: Postoperative complications after mandibular reconstruction with free osteocutaneous flaps for osteoradionecrosis; Ito N, Itotagawa M, Omachi K, Obayashi F, Higaki M, Hamada A, Yamasaki S, Koizumi K, Yanamoto S.: The 79th Annual Meeting of Japanese Stomatological Society (Matsumoto), 2025.5.16-17.
  - 36: Post-extraction bleeding risk factors in hemophilia A: A multicenter retrospective study: Atarashi K, Yagyuu T, Kaneko K, Higaki M, Mizuta K, Kotaro S, Yamakawa N: The 79th Annual Meeting of Japanese Stomatological Society (Matsumoto), 2025.5.16-17.
  - 37: Investigation of prognostic factors of oral cancer using skeletal muscle mass and inflammation-based prognostic scores: Yamasaki E, Yamasaki S, Higaki M, Obayashi F, Hamada A, Ito N, Koizumi K, Yanamoto S.: The 26th International Conference on Oral and Maxillofacial Surgery (ICOMS) (Singapore), 2025.5.22-25.
  - 38: Secular changes of circulating tumor cells and cell-free DNA in blood with oral squamous cell carcinoma: Eboshida N, Hamada A, Asada Y, Ueda Y, Uehara T, Odawara A, Yamasaki E, Matsuyama T, Okamoto K, Fukutani T, Nobumoto T, Obayashi F, Ito N, Yasutaka I, Higaki M, Yamasaki S, Hamana T, Koizumi K, Yoshioka Y, Tani R, Yanamoto S.: The 26th International Conference on Oral and Maxillofacial Surgery (ICOMS) (Singapore), 2025.5.22-25.
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  - 43: Evaluation of the prognostic value of skeletal muscle mass and inflammation-based prognostic scores in oral cancer patients: Yamasaki E, Yamasaki S, Higaki M, Obayashi F, Hamada A, Ito N, Koizumi K, Yanamoto S.: The 49th Annual Meeting of the Japan Society for Head and Neck Cancer (Sapporo), 2025.6.13-6.14.
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  - 46: Analysis of bacterial species and factors affecting *Staphylococcus aureus* colonization in nasal cavity: Asada Y, Ohdan K, Suzuki Y, Kawada-Matsuo M, Asakawa M, Hisatsune J, Sugawara Y, Takeshita T, Aikawa T, Yanamoto S, Sugai M, Komatsuzawa H.: American Society for Microbiology (Los Angeles), 2025.6.19-23.
  - 47: Prognostic factors for squamous cell carcinoma of the maxillary gingiva and hard palate: A retrospective study: Ito N, Itotagawa M, Ando T, Omachi K, Obayashi F, Higaki M, Hamada A, Yamasaki S, Koizumi K, Yanamoto S.: 10th World Congress of the International Academy of Oral Oncology (IAOO) (Liverpool), 2025.7.16-19.
  - 48: ER stress-mediated dormancy under EGFR inhibition requires YAP reactivation in oral squamous cell carcinoma: Kataoka N, Ueda Y, Okamoto K, Kobayashi Y, Omachi K, Maeda Y, Yanamoto S, Kajiya M., Ando T.: The 36th Annual Meeting of the Japanese Society of Oral Pathology (Okayama), 2025.9.3.
  - 49: Intervention report on professional oral care for palliative care patients: Okugawa T, Okazaki Y, Shibata A, Yoneda T, Ishida Y, Hamana T, Nakaue S, Odawara M, Fujiwara T, Noriyuki T.: 7th Annual Meeting of Japan Society for Palliative Medicine, Chugoku-Shikoku Branch (Tokushima), 2025.9.6.
  - 50: Evaluation of fatty acid susceptibility of *Staphylococcus aureus* and *Corynebacterium* species from the nasal cavity and oral cavity: Asada Y, Ohtan K, Suzuki Y, Kawada-Matsuo M, Asakawa M, Hisatsune J, Sugawara Y, Takeshita T, Aikawa T, Yanamoto S, Sugai M, Komatsuzawa H.: The 69th Japanese Symposium on Staphylococci and Staphylococcal Infections (Tokyo), 2025.9.6.
  - 51: Four cases of refractory oral mucosal diseases evaluated using the drug-induced lymphocyte stimulation test (DLST): Fukutani T, Izumi S, Urata K, Okamoto S, Kishikawa K, Wakamatsu K, Yamazaki Y, Nakase Y, Okamoto K.: The 38th Annual Meeting of the Japanese Society of Oral Diagnosis and The 35th Annual Meeting of the Japanese Society of Oral Medicine Joint Conference (Sendai), 2025.9.7.
  - 52: Surgical dental treatment indications in patients enrolled in the fracture liaison service (FLS) at Hiroshima prefectural hospital and preventive strategies for medication-related osteonecrosis of the jaw (MRONJ): Matsui K, Matsuzaki M, Sugano T, Kitamura M, Kanda T, Okura Y, Hirata N, Nakano N, Okada T, Osako M, Nishida K.:The 27th Annual Meeting of the Japan Osteoporosis Society (Makuhari), 2025.9.14.
  - 53: Trends in initial and contralateral fractures in patients with bilateral proximal femoral fractures at our hospital: Hirata N, Okura Y, Okada T, Nakano N, Osako M, Matsui K, Nishida K.: The 27th Annual Meeting of the Japan Osteoporosis Society (Makuhari), 2025.9.14.
  - 54: Evaluation of abnormal bone metabolism marker levels in patients with proximal femoral fractures: Nishida K, Hirata N, Okura Y, Nakano N, Okada T, Matsui K, Osako M, Matsuo T.: The 27th Annual Meeting of the Japan Osteoporosis Society (Makuhari), 2025.9.14.
  - 55: Trends in the number of bone mineral density examinations across clinical departments at our hospital: Osako M, Fukugaiti K, Fujimoto K, Hirata N, Okura Y, Okada T, Nakano N, Matsui K, Nishida K.: The 27th Annual Meeting of the Japan Osteoporosis Society (Makuhari), 2025.9.14.
  - 56: Survey on oral care awareness among nurses in our hospital wards: A comparison before and after

- OHAT-J implementation: Sasaki E, Kanda T, Matsui K, Shimomura K, Ohara K, Mabu J.: The 31st Annual Meeting of The Japanese Society of Dysphagia Rehabilitation (Yokohama), 2025.9.19-20.
- 57: ALPK2 drives cell proliferation in oral squamous cell carcinoma: Ueda Y, Kataoka N, Okamoto K, Omachi K, Maeda Y, Kobayashi Y, Kajiya M, Yanamoto S, Ando T.: The 84th Annual Meeting of the Japanese Cancer Association (Kanazawa), 2025.9.25-27.
- 58: Potential role of circulating tumor cell-free DNA as biomarkers for metastasis in oral squamous cell carcinoma: Wakita S, Hamada A, Eboshida N, Hirota S, Obayashi F, Morishita K, Ito N, Yamasaki S, Koizumi K, Yanamoto S.: The 84th Annual Meeting of the Japanese Cancer Association (Kanazawa), 2025.9.25-27.
- 59: YAP reactivation drives ER stress-mediated dormancy under EGFR inhibition in oral squamous cell carcinoma: Kataoka N, Ueda Y, Okamoto K, Kobayashi Y, Omachi K, Maeda Y, Yanamoto S, Kajiya M, Ando T.: The 84th Annual Meeting of the Japanese Cancer Association (Ishikawa), 2025.9.27.
- 60: A case of multiple oral cancers with papillary squamous cell carcinoma of the tongue: Ono H, Morishita K, Kataoka N, Kitamura M, Hirota S, Koizumi K, Ando T, Yanamoto S.: The 72nd Annual Meeting of the Chugoku-Shikoku Regional Branch of the Japanese Stomatological Society (Ehime), 2025.10.4.
- 61: A case of intraosseous lipoma arising in the submental region: Okamoto K, Hirota S, Ohno H, Kitamura M, Morishita K, Koizumi K, Kobayashi Y, Ando T, Yanamoto S.: The 72nd Annual Meeting of the Chugoku-Shikoku Regional Branch of the Japanese Stomatological Society (Ehime), 2025.10.4.
- 62: A case of periosteal chondroma in the articular process of mandible: Ishida Y, Yamasaki S, Uehara T, Yamasaki E, Hirota S, Hamana T, Yanamoto S.: The 72nd Annual Meeting of the Chugoku-Shikoku Regional Branch of the Japanese Stomatological Society (Ehime), 2025.10.4.
- 63: Elucidation of the mechanism by which ALPK2 regulates proliferation in oral squamous cell carcinoma (OSCC): Ueda Y, Kataoka N, Okamoto K, Omachi K, Maeda Y, Kobayashi Y, Kajiya M, Yanamoto S, Ando T: The 1st research exchange meeting Kasumi-Nexus (Hiroshima), 2025.10.17.
- 64: Utility of an in-house CAD/CAM system in resection and reconstruction of mandibular carcinoma: Obayashi F, Ito N, Morishita K, Hirota S, Yamasaki S, Fujioka Y, Koizumi K, Nagamatsu S, Yanamoto S.: The 119th Hiroshima Cancer Treatment Research Group Meeting (Hiroshima), 2025.10.25.
- 65: Surgical treatment for medication-related osteonecrosis of the jaw (MRONJ) arising from cancer therapy. Yamasaki S, Morishita K, Obayashi F, Hamada M, Ito N, Koizumi K, Shintani T, Yanamoto S.: The 119th Hiroshima Cancer Treatment Research Group Meeting (Hiroshima), 2025.10.25.
- 66: ALPK2 promotes tumor growth in oral squamous cell carcinoma with activated YAP/TAZ signaling: Ueda Y, Kataoka N, Okamoto K, Omachi K, Maeda Y, Kobayashi Y, Kajiya M, Yanamoto S, Ando T.: HU-Tomorrow Annual Meeting 2025 (Hiroshima), 2025.10.25.
- 67: A case of developmental odontogenic cyst with characteristic features of glandular odontogenic cyst and odontogenic keratocyst: A reappraisal from a genetic perspective: Kataoka N, Asada Y, Fukutani T, Kobayashi Y, Tani R, Sueti Y, Kakimoto N, Yanamoto S, Miyauchi M, Ogawa I, Kajiya M, Ando T.: The 18th Annual Meeting of the Japanese Society for Oral and Maxillofacial Radiology and Oral Examination (Okinawa), 2025.11.2.
- 68: Impact of surgical treatment on oral function and QOL in patients with medication-related osteonecrosis of the jaw (MRONJ): Yamasaki S, Obayashi F, Morishita K, Ito N, Hamada M, Obayashi N, Shintani T, Koizumi K, Yanamoto S.: The 64th Hiroshima Dental Association Meeting / The 109th Hiroshima University Dental Society Meeting (Hiroshima), 2025.11.9.
- 69: Clinical statistics and trends of oral cancer in otolaryngology and early detection systems: Yamada T, Koizumi K, Itotagawa M, Oomathi K, Maeda Y, Wakita S, Asada Y, Ueda Y, Uehara T, Odawara A, Yamasaki E, Eboshida N, Matsuyama T, Hirota S, Yuki T, Obayashi F, Hamada A, Yamasaki S, Ito N, Yanamoto S.: The 64th Hiroshima Dental Association Meeting / The 109th Hiroshima University Dental Society Meeting (Hiroshima), 2025.11.9.
- 70: Assessment of pre-treatment quality of life in patients with oral cancer: Yamasaki E, Yamasaki S, Naito M, Obayashi F, Hamada A, Ito N, Koizumi K, Yanamoto S.: The 64th Hiroshima Dental Association Meeting / The 109th Hiroshima University Dental Society Meeting (Hiroshima), 2025.11.9.
- 71: Study on localization and muscle invasion in the progression patterns of tongue cancer: Obayashi F, Ito N, Morishita K, Hamada A, Yamasaki S, Koizumi K, Yanamoto S.: The 64th Hiroshima Dental Association Meeting / The 109th Hiroshima University Dental Society Meeting (Hiroshima), 2025.11.9.
- 72: Impact of hyperlipidemia medications on circulating tumor cells in patients with oral squamous cell carcinoma: Wakita S, Eboshida N, Hamada A, Higaki M, Obayashi F, Morishita K, Yamasaki S, Ito

- N, Koizumi K, Yanamoto S.: The 64th Hiroshima Dental Association Meeting / The 109th Hiroshima University Dental Society Meeting (Hiroshima), 2025.11.9.
- 73: The close relationship between dysphagia and oral conditions in the acute phase: Usefulness of dental intervention: Izumi S, Fukutani T, Sakahara T, Sugimoto M, Kawamura J, Nagai K, Urata K, Okamoto S, Kishikawa K, Wakamatsu K, Yamazaki Y, Miho M, Nakase Y, Okamoto K.: The 64th Hiroshima Dental Association Meeting / The 109th Hiroshima University Dental Society Meeting (Hiroshima), 2025.11.9.
- 74: Video lecture 3: Modified radical neck dissection: Yanamoto S.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 75: Oral cancer registration joint committee symposium: Significance of oral cancer registration: Yanamoto S.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 76: Development of a nomogram for predicting distant metastasis in oral squamous cell carcinoma: Higaki M, Ando T, Morishita K, Obayashi F, Hamada A, Ito N, Yamasaki S, Koizumi K, Fujita Y, Yanamoto S.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 77: Study on progression patterns in tongue cancer combining site of origin and tongue muscle invasion: Obayashi F, Ito N, Morishita K, Hirota S, Eboshida N, Matsuyama T, Hamada A, Yamasaki S, Koizumi K, Yanamoto S.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 78: Effect of hyperlipidemia medications on circulating tumor cells in the blood in oral squamous cell carcinoma: Wakita S, Eboshida N, Hamada A, Higaki M, Obayashi F, Morishita K, Yamasaki S, Ito N, Koizumi K, Yanamoto S.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 79: Evaluation of oral function and QOL before and after surgical treatment in patients with medication-related osteonecrosis of the jaw (MRONJ): Yamasaki S, Hamada M, Morishita K, Obayashi F, Ito N, Koizumi K, Shintani T, Yanamoto S.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 80: Impact of preoperative skeletal muscle mass and body mass index on the prognosis of patients with oral squamous cell carcinoma: Yamasaki E, Yamasaki S, Asada Y, Ueda Y, Odawara A, Uehara T, Obayashi F, Hamada A, Ito N, Koizumi K, Yanamoto S.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 81: <Symposium 1> Mandibular resection and reconstruction in malignant tumors: Koizumi K, Hirota S, Obayashi F, Morisita K, Hamada A, Yamasaki S, Ito N, Yanamoto S.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 82: A case of early metastasis to the anterolateral lingual lymph node after partial glossectomy for tongue cancer: Hayashi Y, Fujita Y, Akemi Y, Toratani S, Higaki M, Hosokawa A, Yanamoto S.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 83: Evaluation of oral care assessment items for palliative care patients: Fukutani T, Ishida Y, Hayashi S, Morifuji Y, Nakase Y, Hamana T, Okamoto K.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 84: A clinical statistical study of vascularized tissue transplantation cases at the department of dental and oral surgery, Hiroshima prefectural hospital: Matsuzaki M, Suagno D, Kitamura M, Omachi K, Ueda Y, Matsui K, Naruse T, Kiriya T, Kanda T.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 85: Review of oral care-related incident reports occurring during hospitalization at our institution: Kawai C, Matsuzaki M, Matsui K, Naruse T, Kiriya T, Kanda T.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 86: The utility of CT imaging on third molar extraction; a multicenter retrospective study: Takemura A, Naruse T, Tsuji T, Fukushima H, Furukawa K, Yamashita K, Omori K, Rokutanda S, Yamada T.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.
- 87: Operational status survey and observational study of a community-based clinical pathway for patients using high-dose antiresorptive agents (ARA) in our hospital: Wakamatsu K, Fukutani T, Urata K, Okamoto S, Kishikawa K, Maruko M, Yamazaki Y, Izumi S, Hirota S, Nakase Y, Ito N, Okamoto K.: The 42nd Asa Medical Association Meeting (Hiroshima), 2025.11.16.
- 88: Hospital-clinic collaboration between dept. of oral and maxillofacial surgery of Mazda hospital and Aki dental association: Kobayashi M, Sakamoto A, Arita Y. et al.: The 42th Annual Meeting of Aki Medical Society. (Hiroshima), 2025.12.7.

- 89: The utility of Ap evaluation for predicting nerve injuries on third molar extraction; a multicenter retrospective study: Fujiki Y, Takemura A, Naruse T, Fukushima H, Tsuji T, Omori K, Furukawa K, Rokutanda S, Yamada T.: The 58th Meeting of the Kyushu local committee of the Japanese stomatological society (Miyazaki), 2025.12.6.
- 90: Mechanisms of metabolic regulation of receptor tyrosine kinases by the neuropeptide receptor VIPR2: Asano S, Itotagawa M, Uehara T, Sakamoto K, Yokoyama R, Ago Y.: The 43rd Drug Discovery and Pharmacology Forum Okayama (Hiroshima), 2025.12.13.

#### F) Special lectures in academic meetings

- 1: OHAT-J: Kitamura M.: NST workshop at Hiroshima Prefectural Hospital (Hiroshima), 2025.1.8.
- 2: Review of incident reports related to the oral field at our hospital: Matsui K.: Medical Safety Training Session at Hiroshima Prefectural Hospital (Hiroshima), 2025.1.21.
- 3: Incidence of candida infections at our hospital: Kanda T.: Hisamitsu Pharmaceutical Medical Information Officer Training Session (Hiroshima), 2025.1.23.
- 4: Oral cancer treatment at our hospital: Kanda T.: Hiroshima Prefectural Hospital Nutrition Management Department Training Session (Hiroshima), 2025.1.31.
- 5: Case report in our department: Sado T.: Emergency medical lecture in the Miyoshi City Dental Association (Miyoshi), 2025.2.15.
- 6: Treatment of maxillofacial trauma: Kanda T.: Hiroshima Prefectural Hospital Surgery Department Seminar (Hiroshima), 2025.2.26.
- 7: Understanding and collaboration with medications in dental practice - for safe and secure treatment -: Hamana T.: Onomichi-shi Dental Association and Onomichi Pharmacists Association Joint Meeting (Onomichi), 2025.5.23.
- 8: Fundamentals of swallowing and oral care: Kanda T, Sasaki E, Hamada H.: First NST Specialist Therapist Training Session of Fiscal Year 2025 (Hiroshima), 2025.5.23.
- 9: Oral care for prevention of aspiration pneumonia: Sakamoto A.: Mazda Hospital post-graduate nurse training lecture (Hiroshima), 2025.6.2.
- 10: Oral cancer surgery and drug therapy: Yanamoto S.: Special Lecture, Kochi University School of Medicine (Nangoku), 2025.6.20.
- 11: Treatment strategies based on oral cancer clinical practice guidelines: Yanamoto S.: KANSAI Oral Cancer Seminar (Osaka), 2025.6.4.
- 12: Prevention and treatment of MRONJ at Hiroshima prefectural hospital dental and oral surgery department: Matsui K.: 2025 Hiroshima Prefectural Hospital FLS In-House Study Session (Hiroshima), 2025.7.4.
- 13: Practical treatment of obstructive sleep apnea at university hospitals: Yanamoto S.: Nagasaki University School of Dentistry Integrated Course "Sleep Disorders and Diseases" (Nagasaki), 2025.6.14.
- 14: Extraction techniques (Hands-on seminar): Yamasaki S.: The 2nd Head and Neck Cancer Seminar 2025 (Hiroshima), 2025.8.1.
- 15: Multi-institutional collaborative clinical research in oral surgery: Yanamoto S.: The 9th National and Public University Dental Clinical Research Promotion Conference (Fukuoka), 2025.8.29.
- 16: From presence to trust: Aiming to be the "Dentist of choice" for teams · What dental hygienists can do: Kanda T, Sasaki E.: The 3rd Hiroshima University Oral Oncology Control Collaborative Seminar "Learning Dysphagia from Scratch" (Hiroshima), 2025.8.31.
- 17: Practical dental treatment for obstructive sleep apnea: Yanamoto S.: Toyama University School of Medicine Department of Oral and Maxillofacial Surgery Seminar (Toyama), 2025.9.3.
- 18: Practical dental treatment for obstructive sleep Apnea: Yanamoto S.: Toyama University School of Medicine Special Lecture (Toyama), 2025.9.3.
- 19: Reality and prospects revealed through the ministry of health, labour and welfare personnel exchange program: The Present and Future of Dental Care Systems in Hiroshima Prefecture: Kanda T.: First Tōka-kai Meeting of Fiscal Year 2025 (Fukuyama), 2025.9.7.
- 20: Periodontitis as a focus on the infection: local and distant infections: Naruse T, Kawai C.: The 3th special lectures of liver disease (Hiroshima), 2025.9.9.
- 21: Oral surgery practice and medical collaboration in a super-aged society: Yanamoto S.: Onomichi City

- Dental Association Academic Lecture (Onomichi), 2025.10.5.
- 22: Ingestion and swallowing screening test: Kanda T.: Resident Hands-On in 2024 (Hiroshima), 2025.10.29.
  - 23: Treatment of oral mucosal melanoma - Clinical collaboration with a melanoma treatment center - : Koizumi K.: The 3rd Hiroshima Malignant Tumor Seminar (Hiroshima), 2025.11.5.
  - 24: Oral and maxillofacial trauma:Matsui K.: Resident Seminar 2025 (Hiroshima), 2025.11.25.
  - 25: Don't hesitate, Don't miss it! -Essential MRONJ knowledge for dental hygienists-: Kanda T.: Hiroshima University Dental Hygienist Education Center, 2025 Second Semester (Hiroshima), 2025.11.27.
  - 26: Dental practice in a super-aged society: Yanamoto S.: 2025 Miyoshi City Dental Association Academic Lecture (Miyoshi), 2025.11.29.
  - 27: Latest oral cancer treatment: Yanamoto S.: Nagasaki University School of Dentistry Special Lecture (Nagasaki), 2025.12.12.
  - 28: Grasping the key points of the tooth extraction : Sakamoto A.: Himawari Dental Clinic staff training lecture (Hiroshima), 2025.12.13.
  - 29: Oral cancer treatment guidelines and drug therapy: Yanamoto S.: Oral Cancer Seminar in Hiroshima (Hiroshima), 2025.12.19.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grants-in aid for scientific research (B): Yanamoto S. (Principal Investigator), Multicenter study of circulating tumor cells and circulating tumor DNA involved in distant metastasis of oral cancer. 22H03292. 4,290,000 yen
- 2: Grants-in aid for scientific research (C): Yamasaki S. (Principal Investigator), Development of novel therapies through immunotherapy and molecular mechanism analysis using iPSCs derived from lymphocytes of oral cancer patients. 23K09398. 1,040,000-yen
- 3: Grant-in-aid for early-career scientists; Fukutani T. (Principal Investigator), Establishment of "synovial chondromatosis-specific iPSC" and study of the disease through genomic surgery of pathogenic mutant genes. 23K16117. 650,000 yen
- 4: Grant-in-aid for scientific research (C): Hamada A. (Principal Investigator), Elucidation of the pathogenesis of cranioclavicular dysplasia using disease-specific iPSC cell organoids and mouse models. 25K13145. 1,400,000 yen
- 5: Grant-in-aid for scientific research (C): Obayashi F, Development of a Novel Rapid Recurrence Prediction Method for Postoperative Recurrent Oral Cancer Using Nucleic Acid Amplification Techniques. 25K13166. 1,820,000 yen
- 6: Grant-in-aid for early-career scientists; Morishita K. (Principal Investigator), Elucidation of the pathogenesis of atypical MRONJ without bone resorption. 24K19998. 1,820,000 yen
- 7: Grants-in aid for Early-Career Scientists; Okamoto K (Principal Investigator), Elucidation of the Regulatory Mechanism of Tumor-Associated Macrophages via the AXL–Hippo Pathway and Development of AXL-Targeted Therapeutics. 25K20374. 1,950,000 yen
- 8: Grants-in aid for Early-Career Scientists; Eboshida N. (Principal Investigator), AI-Integrated Model for Prognostic Prediction in Oral Cancer Patients Using Circulating Tumor Cells and Cell-Free DNA. 25K24068. 1,820,000 yen
- 9: Grants-in aid for scientific research (B): Yanamoto S. (Co-Investigator), Elucidation of the regulatory mechanism of the cancer microenvironment led by disruption of the Hippo pathway and its application to innovative therapies. 24K02645. 100,000yen
- 10: Grants-in aid for scientific research (C): Yanamoto S. (Co-Investigator), Tailor-made biomarker profiling of anti-PD-1 antibodies focused on blood circulating oral cancer cells. 24K13131. 100,000 yen
- 11: Grant-in-aid for scientific research (C): Yanamoto S. (Co-Investigator), Immunological investigation of extracapsular spread mechanism of oral squamous cell carcinoma cervical lymph node metastasis. 24K13127. 30,000 yen
- 12: Grant-in-aid for scientific research (C): Yanamoto S. (Co-Investigator), Prevention of postoperative pneumonia by antimicrobial pharmacy administration in intubated patients after oral surgery. 23K09482. 110,000 yen
- 13: Grant-in-Aid for Scientific Research (C): Yanamoto S. (Co-Investigator), A multi-institutional phase

- III randomized controlled trial on prevention of oral mucositis by steroid-containing agents. 23K09315. 60,000 yen
- 14: Grant-in-Aid for Scientific Research (C): Yanamoto S. (Co-Investigator), Design of biomaterials for in situ tissue regeneration of the tongue. 23K09231. 150,000 yen
  - 15: Grant-in-Aid for Scientific Research (C): Yanamoto S. (Co-Investigator), Elucidation of the relationship between sleep apnea and sarcopenia in the elderly. 23K09147. 110,000yen
  - 16: Grant-in-Aid for Scientific Research (C): Yanamoto S. (Co-Investigator), Exploration of Diagnostic Biomarkers for Oral Cancer Using Abnormal Protein Cleavage Profiles in Blood. 25K13235. 100,000 yen
  - 17: Grants-in aid for scientific research (C): Koizumi K. (Co-Investigator), Tailor-made biomarker profiling of anti-PD-1 antibodies focused on blood circulating oral cancer cells. 24K13131. 110,000 yen
  - 18: Grants-in aid for scientific research (C): Yamasaki S. (Co-Investigator), Tailor-made biomarker profiling of anti-PD-1 antibodies focused on blood circulating oral cancer cells. 24K13131. 50,000 yen
  - 19: Grants-in aid for scientific research (C): Hamada A. (Co-Investigator), Tailor-made biomarker profiling of anti-PD-1 antibodies focused on blood circulating oral cancer cells. 24K13131. 50,000 yen
  - 20: Grants-in aid for scientific research (C): Hamada A. (Co-Investigator), Development of novel therapies through immunotherapy and molecular mechanism analysis using iPSCs derived from lymphocytes of oral cancer patients. 23K09398. 89,630 yen
  - 21: Grant-in-aid for scientific research (C): Koizumi K. (Co-Investigator), Elucidation of the pathogenesis of cranioclaviel dysplasia using disease-specific iPS cell organoids and mouse models. 25K13145. 100,000 yen
  - 22: Grant-in-aid for scientific research (C): Yamasaki S. (Co-Investigator), Elucidation of the pathogenesis of cranioclaviel dysplasia using disease-specific iPS cell organoids and mouse models. 25K13145. 100,000 yen
  - 23: Grant-in-aid for fund for the promotion of joint international research (Fostering Joint International Research(B)): Hamada A. (Co-Investigator), Mechanobiological mechanisms of tendons and ligaments controlling the musculoskeletal system. 21KK0161. 300,000 yen
  - 24: Hiroshima University Integrated Knowledge Research Support Program (HU SPRING): Maeda Y. Elucidation of the molecular mechanisms enhancing sensitivity to CC-885 in oral squamous cell carcinoma and development of a novel therapeutic agent. 1,000,000yen
  - 25: The order and the 7th year's fee for the director of the Prefectural Hiroshima Hospital : Kanda T, Research on standardization of oral assessment of critically ill hospitalized patients. 300,000yen

#### (5) Academic Awards, etc.

- 1: Eboshida N.: A case of cancer of unknown primary discovered after the identification of an oral lesion: The 43rd Annual Meeting of Japanese Society of Oral Oncology (Tokyo), 2025.2.27-28.
- 2: Kanda T.: Hiroshima prefectural hospital improvement promotion committee, Fiscal Year 2024 Hospital Director's Commendation: Introduction of oral health assessment tool OHAT-J (Hiroshima ), 2025.3.25.
- 3: Ueda Y.: Excellent Presentation Award: HU-Tomorrow Annual Meeting 2025 (Hiroshima), 2025.10.25.
- 4: Yamasaki E.: Excellent Poster Award: Impact of preoperative skeletal muscle mass and body mass index on the prognosis of patients with oral squamous cell carcinoma: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.11.14-16.

#### (6) Patents

None

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## Department of Oral and Maxillofacial Surgery Division of Oral and Maxillofacial Surgery and Oral Medicine (Department of Oral and Maxillofacial Reconstructive)

### (1) Staff and Students

Professor: Tomonao Aikawa

Lecturer :Shigehiro Ono (~Nov)

Research Associate: Yoshiaki Ninomiya (Diagnosis and treatment lecturer), Kuniko Mizuta, Takayuki Nakagawa, Yoko Ishida (~Mar), Takako Naruse, Ryo Uetsuki, Miyuki Sakuma, Rena Shido (Apr~)

Resident: Naoko Kishi, Yasuki Ishioka, Rena Shido (~Mar), Misaki Akagi (~Mar) , Misaki Miyahara (Apr~), Ayumi Fujii(Apr~)

Graduate Student: Chieko Niwata (~Mar), Ayumi Fujii (~Mar), Daitoku Murakami, Keijuro Ohdan, Jun Ashida, Yoshiteru Yamashita, Mizuki Watanabe, Yuzo Takeda (Apr~), Mihiro Kitamura (Apr~), Chisato Kajihara (Apr~)

Teaching the study assistant:Yuko Shintaku, Hiroshi Murozumi

Registered Intern: Yoshihisa Inoue, Kimiko Doi, Yoko Ishida, Chieko Niwata

Researcher: Sho Yokoyama

### (2) Main Research Activities

- 1: Functional evaluation and development of oral and maxillofacial reconstructive surgeries
- 2: Genomic analysis of stomatognathic diseases
- 3: Biochemical characterization and development of therapeutics of oral tumors
- 4: Molecular-biological studies on control of invasion and migration of oral cancers
- 5: Studies on responsible gene of osseous dysplasia of jaws
- 6: Molecular-biological studies on dental and periodontal tissue regeneration
- 7: Development of biomaterials of oral and maxillofacial reconstruction
- 8: Development of biomaterial for dental implant treatment
- 9: Studies on mechanism of oral mucosa against microorganisms

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Carcinoma ex pleomorphic adenoma primarily composed of squamous cell carcinoma in buccal region – Case report. Naruse T, Ohta K, Shigeishi H, Ando T, Nakagawa T, Yamakado N, Ninomiya Y, Sakamoto S, Ishida Y, Aikawa T. *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology.* 37: 99–103, 2025.
- 2: Development of a Pharyngeal Residue Level Assessment Index Using Artificial Intelligence (AI) Acoustic Analysis: A Study Protocol. Shimizu Y, Takahashi T, Oda A, Imamura S, Imado E, Sasaki U, Kamio H, Suyama M, Uetsuki R, Ohshimo S, Shime N, Hanamoto H. *Cureus.* 1;17:e78358, 2025.
- 3: Prognostic value of inflammation- and nutrition-based biomarkers in patients with recurrent or metastatic oral squamous cell carcinoma treated with immune checkpoint inhibitors: A retrospective study. Yamasaki S, Ito N, Hamada A, Obayashi F, Higaki M, Nakagawa T, Ono S, Koizumi K, Aikawa T, Yanamoto S. *Oncol Lett.* 2025;30(5):503.
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- 5: Distinct Bone Resorption Patterns in Syngeneic Mouse Models of Gingival Squamous Cell Carcinoma Reflecting SCCVII Cell Line Heterogeneity. Sosuke Takahata, Masato Minohara, Chiaki Nishizawa, Shohei Yamashita, Susumu Tanaka, Hideo Yoshioka, Mikihiko Kogo, Eijiro Jimi, Toshimi Michigami,



- Tomonao Aikawa, and Kazuaki Miyagawa, *Oral Science International*. 22: e70015. 2025.
- 6: A case of periosteal chondroma in the articular process of mandible. Yasutaka Ishida, Sachiko Yamasaki, Teru Uehara, Erika Yamasaki, Suguru Hirota, Hisako Furusho, Tomoaki Hamana, Tomonao Aikawa, Souichi Yanamoto, *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*. (2025 in press)
  - 7: Orthodontic-Surgical Approach for Treating Skeletal Class II Malocclusion with Severe Mandibular Hypoplasia in Williams Syndrome. Murotani T, Kurosaka H, Yamamoto S, Aikawa Tomonao, Tanaka S, Yamashiro T. *The Cleft Palate Craniofacial Journal*. (2025, in press)
  - 8: Establishment of immortalized human minor salivary gland cells and chemokine expression induced by IFN- $\gamma$ , TNF- $\alpha$ , and IL-1 $\beta$ . Naruse T, Ohta K, Akagi M, Sakuma M, Ishida Y, Niwata C, Nakagawa T, Ono S, Shiba F, Ando T, Nishi H, Shigeishi H, Aikawa T. *Odontology*. 113:1546-1557, 2025.
  - 9: TMPRSS2 expression in oral mucosal cells induced by transfected double-stranded RNA and IL-1 $\beta$ . Akagi M, Ohta K, Sakuma M, Naruse T, Ishida Y, Niwata C, Yamakado N, Nakagawa T, Ono S, Nishi H, Shigeishi H, Aikawa T. *J Oral Biosci*. 67:100619, 2025.
  - 10: Oral colonization of antimicrobial-resistant bacteria in home health care participants and their association with oral and systemic status. Nishihama S, Kawada-Matsuo M, Le MN, Fujii A, Haruta A, Kajihara T, Hashimoto Y, Yoshikawa M, Aikawa T, Tsuga K, Ohge H, Sugai M, Shiba H, Komatsuzawa H. *Sci Rep*. 15:5776, 2025.
  - 11: Comprehensive analysis of bacteriocins produced by clinical enterococcal isolates and their antibacterial activity against Enterococci including VRE. Fujii A, Kawada-Matsuo M, Le MN, Suzuki Y, Nishihama S, Shiba H, Aikawa T, Komatsuzawa H. *Sci Rep*. 15:4846, 2025.
  - 12: Anticancer effect of the antirheumatic drug leflunomide on oral squamous cell carcinoma by the inhibition of tumor angiogenesis. Niwata C, Nakagawa T, Naruse T, Sakuma M, Yamakado N, Akagi M, Ono S, Tobiume K, Gao J, Jimi E, Ohta K, Aikawa T. *Discov Oncol*. 16:53, 2025.
  - 13: Surgical orthodontic correction of Class II open bite with idiopathic condylar resorption. Takagi T, Shintaku Y, Aikawa T, Shimizu A, Tanaka E, *AJO-DO Clinical Comparison*. 5:164-179, 2025.
  - 14: Identification of an unidentified corpse with gingival overgrowth: A case report. Oka H, Namera A, Katsuya N, Harada T, Fujii A, Fukumoto W, Ito H, Nagao T, Kakimoto N, Nagao M. *Legal Med*. 75:102628, 2025.
  - 15: Dysbiosis of the gut microbiome may contribute to the pathogenesis of oral lichen planus through Treg dysregulation. Yokomizo S, Kaneko N, Chen H, Yan L, Tsuji S, Akagawa S, Sameshima J, Sueyoshi T, Nagano H, Miyahara Y, Kamikaseda Y, Kido H, Hayashi Y, Yamauchi M, Kiyoshima T, Goto Y, Ohyama Y, Kaneko K, Moriyama M, Kawano S. *Mucosal Immunology*. 18:1013-1026, 2025.
  - 16: Pleural disseminated cells mimicking malignant mesothelioma or adenocarcinoma metastasized from tongue squamous cell carcinoma: A case report and literature review. Ogata K, Fujita S, Shido R, Narahara S, Katase N, Koike H, Sumi M, Ohba S, Yamada T. *Journal of Oral and maxillofacial Surgery, Medicine, and Pathology*. 37.1147-1152, 2025.
  - 17: Evaluation of the Temporomandibular Joint in Normal Occlusion Without Temporomandibular Joint Symptoms. Ohba S, Takagi Y, Sasaki M, Katayama I, Eida S, Ogata K, Narahara S, Shido R, Sumi M, Yamada T. *Oral Science International*. 22,2025.
  - 18: Influence of unfavourable osteotomy on skeletal stability and temporomandibular joint symptoms in sagittal split ramus osteotomy. Ohba S, Shido R, Naruse T, Narahara S, Yamada T. *International Journal of Oral Maxillofacial Surgery*. 54:727-732,2025.
  - 19: Sagittal Split Ramus Osteotomy Without Segmental Fixation in Skeletal Class II. Narahara S, Shido R, Koga T, Moriuchi E, Yamada T, Ohba S, Shirota T. *Journal of Craniofacial Surgery*. 36, 2025.
  - 20: Maxillary sinus floor augmentation using sponge- and cotton-like graft materials in a rabbit model. Ohba S, Shido R, Yamamoto H, Hara M, Nishikawa Y, Kasuga T, Yamada T, Sumita Y, Shirota T. *Journal of Oral Bioscience*. 67:100586, 2025.
  - 21: BECN1 Is Involved in Spheroid Formation and Resistance to 5- FU- Induced Cytotoxicity in CD44 high Oral Cancer Cells. Yamashita Y, Sugiyama M, Shigeishi H, Yokoyama S, Ohta K, Ono S, Aikawa T. *Oral Science International*. 22:e70007,2025.
  - 22: Clinical study of failed implant cases in our department. NINOMIYA Yoshiaki. *J Jpn Soc Gnathol Occlusion*. 45: 217-221, 2025.
  - 23: Surgical-orthodontic Correction of a Patient with Skeletal Class II Open Bite with Condylar Hypoplasia. Kani R, Oka A, Aikawa T, Tanaka S, Yamashiro T. *Jpn.J. Jaw Derorm*. 35: 223-234, 2025.
  - 24: A case of solitary fibrous tumor in the floor of mouth. Ooi H, Shimasue H, Ishida Y, Andou T, Ono S, Aikawa T. *J Jpn Soc Oral Maxillofac Surg*, 71: 51-56, 2025.

## B) Review

### C) Publications

### D) Other Publications

- 1: Oral Disease Q&A for Improving Diagnostic Skills 83: Uetsuki R, Mizuta K, Aikawa T, et al. Editorial committee: Yamashiro M. Dental Diamond, 103-104, 2025.
- 2: Overseas Journal Watching "The effect of osteoporosis on autogenous bone graft resorption": Uetsuki R, Aikawa T. DENTAL DIAMOND 50(8): 97, 2025.
- 3: Does osteoporosis affect bone graft to alveolar bone?: Uetsuki R, Aikawa T. Dental Diamond, 97, 2025.

### E) Presentations at Scientific Meetings

- 1: A case of maxillary wisdom tooth displaced into the pterygomandibular space. Fujii A, Uetsuki R, Nakagawa T, Shido R, Akagi M, Yamashita Y, Ono S, Aikawa T: The 54th Academic Meeting of the Chugoku-Shikoku Branch of the Japanese Society of Oral and Maxillofacial Surgeons, Yamaguchi, 2025.
- 2: A case of bone augmentation using onlay graft for alveolar ridge resorption. Naruse T, Ninomiya Y, Sakuma M, Aikawa T: The 3rd Academic Meeting of the Young Oral Surgeons Association, Hiroshima, 2025.
- 3: A case of navigation system-assisted removal of recurrent odontogenic keratocyst in the pterygoid process. Kajihara C, Uetsuki R, Ono S, Mizuta K, Murozumi H, Sakuma M, Watanabe M, Aikawa T: The 3rd Academic Meeting of the Young Oral Surgeons Association, Hiroshima, 2025.
- 4: Two cases of submandibular gland inflammation with epithelioid granuloma difficult to differentiate from IgG4-related dacryoadenitis and sialadenitis. Miyahara Y, Kaneko N, Yokomizo S, Moriyama M, Kawano S: The 3rd Academic Meeting of the Young Oral Surgeons Association, Hiroshima, 2025.
- 5: A Retrospective Study of unfavorable splits/fractures in Bilateral Sagittal Split Ramus Osteotomy. Sakuma M, Mizuta K, Uetsuki R, Nakagawa T, Shido R, Higuchi M, Matsushita Y, Ono S, Aikawa T: The 3rd Academic Meeting of the Young Oral Surgeons Association, Hiroshima, 2025.
- 6: A case of bilateral coronoid process hyperplasia with temporary postoperative malocclusion. Takeda Y, Koshinuma S, Hirai R, Murai T, Narugami I, Tomioka H, Moratera K, Iemori M, Takaoka K: The 3rd Academic Meeting of the Young Oral Surgeons Association, Hiroshima, 2025.
- 7: A case of simultaneous orthognathic surgery and removal of recurrent odontogenic keratocyst in the maxillary tuberosity. Kitamura M, Mizuta K, Sakuma M, Shintaku Y, Matsushita Y, Higuchi M, Aikawa T: The 3rd Academic Meeting of the Young Oral Surgeons Association, Hiroshima, 2025.
- 8: A multicenter retrospective study of risk factors for post-extraction bleeding in hemophilia A. Atarashi T, Yagyu T, Kaneko K, Higaki M, Mizuta K, Sato K, Yamakawa N: The 79th Annual Meeting of the Japanese Stomatological Society, Nagano, 2025.
- 9: The antirheumatic drug leflunomide exhibits antitumor effects on oral squamous cell carcinoma cells through inhibition of angiogenesis and proliferation. Niwata C, Nakagawa T, Ono S, Uetsuki R, Yamakado N, Ohta K, Aikawa T: The 79th Annual Meeting of the Japanese Stomatological Society, Nagano, 2025.
- 10: Comprehensive analysis of bacteriocins produced by clinical enterococcal isolates of Enterococci at Hiroshima University Hospital and their antibacterial activity against Enterococci including VRE. Fujii A, Kawada-Matsuo M, Nishihama S, Shiba H, Komatsuzawa H, Aikawa T: The 58th Hiroshima University Dental Society General Meeting, Hiroshima, 2025.
- 11: Analysis of Staphylococcus capitis strains with antibacterial activity against antimicrobial-resistant bacteria. Ohdan K, Suzuki Y, Matsuo M, Le MN, Hisatsune J, Aikawa T, Sugai M, Komatsuzawa H: The 98th Annual Meeting of the Japanese Society for Bacteriology, Hiroshima, 2025.
- 12: A case of severe postoperative subcutaneous ecchymosis in a patient taking minoxidil. Uetsuki R, Ono S, Mizuta K, Nakagawa T, Sakuma M, Shido R, Ishioka Y, Aikawa T: The 35th Annual Meeting of the Japan Society for Jaw Deformities, Fukuoka, 2025.
- 13: Investigation of bone splitting in sagittal split ramus osteotomy without using a bone chisel. Sakuma M, Mizuta K, Ono S, Uetsuki R, Nakagawa T, Shido R, Higuchi M, Matsushita Y, Shintaku Y, Aikawa T: The 35th Annual Meeting of the Japan Society for Jaw Deformities, Fukuoka, 2025.
- 14: Evaluation of the usefulness of MODUS2® open sagittal split plates in sagittal split ramus osteotomy

- for skeletal Class II cases. Mizuta K, Sakuma M, Uetsuki R, Nakagawa T, Ono S, Higuchi M, Matsushita Y, Shintaku Y, Aikawa T: The 35th Annual Meeting of the Japan Society for Jaw Deformities, Fukuoka, 2025.
- 15: Evaluation of the usefulness of modified inverted L-shaped ramus osteotomy for skeletal Class II open bite cases. Shido R, Nakagawa T, Ono S, Mizuta K, Uetsuki R, Ishioka Y, Sakuma M, Shintaku Y, Higuchi M, Matsushita Y, Aikawa T: The 35th Annual Meeting of the Japan Society for Jaw Deformities, Fukuoka, 2025.
  - 16: Luncheon seminar 2 "The future of jaw deformity treatment - selection of osteosynthesis materials" Surgical technique and fixation materials for sagittal split ramus osteotomy in skeletal Class II cases. Mizuta K: The 35th Annual Meeting of the Japan Society for Jaw Deformities, Fukuoka, 2025.
  - 17: Remodeling of glenoid fossa of temporal bone after costochondral grafting for bilateral condylar process defects. Uetsuki R, Mizuta K, Ono S, Murozumi H, Ishioka Y, Shintaku Y, Matsushita Y, Higuchi M, Aikawa T: The 5th Joint German-Japanese CMF Symposium (Goethe Symposium), Fukuoka, 2025.
  - 18: A retrospective study of unfavorable splits/fractures in orthognathic surgery. Sakuma M, Mizuta K, Uetsuki R, Nakagawa T, Shido R, Higuchi M, Matsushita Y, Ono S, Aikawa T: The 5th Joint German-Japanese CMF Symposium (Goethe Symposium), Fukuoka, 2025.
  - 19: Analysis of Staphylococcus capitis Strain with Antibacterial Activity against Antimicrobial Resistant Bacteria. Ohdan K, Suzuki Y, Kawada-Matsuo M, Le MN, Hisatsune J, Sugai M, Aikawa T, Komatsuzawa H: ASM Microbe 2025, Los Angeles, 2025.
  - 20: Orthognathic Treatment for Untreated Adult Patients with Cleft Lip and Palate. Kawase-Koga Y, Kanno Y, Togashi C, Fujii Y, Aikawa T: The 17th Congress of the International Cleft Lip and Palate Foundation, Symposium, Frankfurt, 2025.
  - 21: Maxillary anterior segmental distraction osteogenesis for patients with cleft lip and palate. Aikawa T, Kishi N, Koga Y: The 17th Congress of the International Cleft Lip and Palate Foundation, Frankfurt, 2025.
  - 22: The progress of cleft lip and palate treatment in southern mountainous region of Mexico. Kishi N, Arizpe Cantu A, Coronado de Arizpe MT, Diaz Barriga L, Kogo M, Aikawa T: The 17th Congress of the International Cleft Lip and Palate Foundation, Symposium, Frankfurt, 2025.
  - 23: Analysis of Staphylococcus capitis strains with antibacterial activity against antimicrobial-resistant bacteria. Ohdan K, Suzuki Y, Matsuo M, Le MN, Hisatsune J, Aikawa T, Sugai M, Komatsuzawa H: The 69th Staphylococcal Research Meeting, Tokyo, 2025.
  - 24: A case of occlusal restoration by simultaneous total temporomandibular joint replacement and orthognathic surgery for open bite due to condylar resorption. Ohdan K, Nakagawa T, Ishioka Y, Sakuma M, Ono S, Ishida Y, Mizuta K, Uetsuki R, Aikawa T: The 72nd Chugoku-Shikoku Regional Meeting of the Japanese Stomatological Society, Ehime, 2025.
  - 25: Effect of nucleic acids and antimicrobial peptide LL-37 on inflammatory factor expression in minor salivary gland cells. Watanabe M, Ohta K, Sakuma M, Ishida Y, Naruse T, Shigeishi H, Shiba F, Aikawa T: The 72nd Chugoku-Shikoku Regional Meeting of the Japanese Stomatological Society, Ehime, 2025.
  - 26: Achievements of cleft lip and palate treatment in southern mountainous region of Mexico. Arizpe A, Coronado MT, Kishi N, Kogo M, Aikawa T: The 15th International Congress on Cleft Lip/Palate and Related Craniofacial Anomalies, Symposium, Kyoto, 2025.
  - 27: Medical support and training project for the treatment of cleft lip and palate in Myanmar. Kishi N, Kogo M, Aikawa T: The 15th International Congress on Cleft Lip/Palate and Related Craniofacial Anomalies, Symposium, Kyoto, 2025.
  - 28: A case of bone augmentation using maxillary anterior torus and maxillary molar alveolar crest bone. Ninomiya Y, Doi K, Oki Y, Tsuga K: The 55th Annual Meeting of the Japanese Society of Oral Implantology, Fukuoka, 2025.
  - 29: Multi-segmental Le Fort I Osteotomy using CAD/CAM occlusal splint and 3D simulation. Aikawa T: The 64th Congress of the Korean Association of Maxillofacial Plastic and Reconstructive Surgeons, Symposium, Busan, South Korea, 2025.
  - 30: Stability of Multi-segmental Le Fort I Osteotomy using CAD/CAM Splints. Miyahara Y, Takeda Y, Shido R, Uetsuki R, Ishioka Y, Nakagawa T, Ono S, Inoue S, Inoue A, Inoue Y, Shintaku Y, Higuchi M, Matsushita Y, Sakuma M, Mizuta K, Aikawa T: The 64th Congress of the Korean Association of Maxillofacial Plastic and Reconstructive Surgeons, Busan, South Korea, 2025.
  - 31: Pattern of Pterygomaxillary Disjunction in Le Fort I Osteotomy by Leverage Technique. Takeda Y, Mizuta K, Ono S, Uetsuki R, Shido R, Nakagawa T, Miyahara Y, Ishioka Y, Sakuma M, Kitamura M,

- Aikawa T: The 64th Congress of the Korean Association of Maxillofacial Plastic and Reconstructive Surgeons, Busan, South Korea, 2025.
- 32: A Case of Basal Cell Nevus Syndrome Undergoing Simultaneous Orthognathic Surgery and Maxillary Cystectomy. Kitamura M, Mizuta K, Sakuma M, Shintaku Y, Matsushita Y, Higuchi M, Aikawa T: The 64th Congress of the Korean Association of Maxillofacial Plastic and Reconstructive Surgeons, Busan, South Korea, 2025.
  - 33: Total temporomandibular joint replacement in our department. Fujii A, Uetsuki R, Mizuta K, Ono S, Nakagawa T, Shido R, Sakuma M, Miyahara Y, Ohdan K, Takeda Y, Murozumi H, Ishioka Y, Yanoshita M, Hirose N, Kaku M, Tanimoto K, Aikawa T: The 109th Hiroshima University Dental Society Regular Meeting, Hiroshima, 2025.
  - 34: A case of basal cell nevus syndrome with simultaneous orthognathic surgery and left maxillary cystectomy. Kitamura M, Mizuta K, Ono S, Sakuma M, Naruse T, Kishi N, Watanabe M, Aikawa T: The 64th Hiroshima Prefectural Dental Society Meeting / The 109th Hiroshima University Dental Society Regular Meeting, Hiroshima, 2025.
  - 35: A case of odontogenic keratocyst with recurrent lesion in the pterygoid process treated using a navigation system and rigid endoscope. Kajihara C, Uetsuki R, Ono S, Mizuta K, Murozumi H, Sakuma M, Watanabe M, Aikawa T: The 64th Hiroshima Prefectural Dental Society Meeting / The 109th Hiroshima University Dental Society Regular Meeting, Hiroshima, 2025.
  - 36: Comprehensive analysis of antimicrobial peptides effective against enterococci including VRE. Fujii A, Ohdan K, Aikawa T: The 70th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons, Fukuoka, 2025.
  - 37: Five cases of temporomandibular joint reconstruction for condylar resorption in our department. Shido R, Nakagawa T, Ono S, Mizuta K, Uetsuki R, Sakuma M, Higuchi M, Matsushita Y, Shintaku Y, Aikawa T: The 70th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons, Fukuoka, 2025.
  - 38: Relationship between Beclin-1 and cancer stem cell characteristics in CD44-high oral squamous cell carcinoma cells. Yamashita Y, Shigeishi H, Yokoyama S, Uetsuki R, Ono S, Ohta K, Aikawa T: The 70th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons, Fukuoka, 2025.
  - 39: Analysis of cetuximab resistance acquisition mechanism involving partial EMT oral cancer cells. Ashida J, Tobiume K, Yamakado N, Uetsuki R, Nakagawa T, Mizuta K, Yamashita Y, Watanabe M, Ono S, Aikawa T: The 70th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons, Fukuoka, 2025.
  - 40: The journey and current position of young oral surgeons, and further challenges. Sakuma M: The 70th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons, Symposium, Fukuoka, 2025.
  - 41: CHARGE syndrome with limited mouth opening after repeated mandibular distraction osteogenesis: A challenging case requiring tracheostomy tube removal and increased mouth opening. Shido R, Miyahara Y, Takeda Y, Uetsuki R, Nakagawa T, Ono S, Aikawa T: The 16th Meeting of the Japanese Society of Temporomandibular Joint Surgery, Fukuoka, 2025.
  - 42: A case of maxillary sinus floor elevation despite two bone defects in the left maxillary lateral wall. Ninomiya Y, Ishioka Y, Naruse T, Ono S: The 29th Annual Meeting of the Japanese Society of Maxillofacial Implants, Shimane, 2025.

#### F) Special lectures in academic meetings

- 1: Hiroshima City Dental Medical Welfare Council Special Lecture "Knowledge and techniques of oral surgery useful for clinical practice: From skillful techniques to use of antibiotics and temporomandibular joint diseases requiring attention". Aikawa T, Hiroshima, 2025.
- 2: The 4th Hiroshima Jaw Deformity Study Group Lecture: "Orthognathic surgery of the mandible other than SSRO". Aikawa T, Hiroshima, 2025.
- 3: The 9th Winter Oral and Maxillofacial Surgery Clinical Research Symposium "Clinical application and future development of total temporomandibular joint replacement" Symposium: Practical aspects of new medical technologies and devices. Aikawa T, Yamagata, 2025.
- 4: Shimane University School of Medicine Tutorial Lecture (Oral and Maxillofacial Surgery) Special Lecture "Diagnosis and treatment of jaw deformities Topics: Treatment of malocclusion caused by severe temporomandibular joint pathology". Aikawa T, Web/On-demand, 2025.
- 5: Miyazaki University Oral and Maxillofacial Surgery Seminar "Clinical course and preventive measures of progressive condylar resorption". Aikawa T, Miyazaki, 2025.

- 6: Miyazaki University School of Medicine Special Lecture "Introduction to oral and maxillofacial surgery, cleft lip and palate treatment, temporomandibular joint diseases, and temporomandibular joint surgery". Aikawa T, Miyazaki, 2025.
- 7: Kyushu University Oral and Maxillofacial Surgery Seminar "Clinical course and preventive measures of progressive condylar resorption". Aikawa T, Fukuoka, 2025.
- 8: Kyushu University School of Dentistry Special Lecture "Temporomandibular joint diseases and temporomandibular joint surgery". Aikawa T, Fukuoka, 2025.
- 9: Osaka Dental University Oral Surgery Seminar "Orthognathic surgery of the mandible other than SSRO and collaboration between oral surgery and orthodontics: What to avoid in presurgical orthodontic treatment". Aikawa T, Osaka, 2025.
- 10: Osaka Dental University School of Dentistry Special Lecture "Treatment of cleft lip and palate". Aikawa T, Osaka, 2025.
- 11: Japanese Society of Clinical Oral Surgery Special Lecture "Update on jaw deformity treatment: Including occlusal reconstruction and temporomandibular joint reconstruction". Aikawa T, Osaka, 2025.
- 12: The 3rd Academic Meeting of the Young Oral Surgeons Association Special Lecture "Let's learn the basics of orthognathic surgery of the maxilla and mandible, and take a step forward". Aikawa T, Hiroshima, 2025.
- 13: The 3rd Academic Meeting of the Young Oral Surgeons Association Diversity Program "Diversity as seen by an unconventional oral surgeon: Through overseas medical support activities". Kishi N, Hiroshima, 2025.
- 14: Tokushima Bunri University Regional Studies Lecture "My thoughts on regional contribution: From the passion for launching a medical project in Myanmar". Kishi N, Tokushima, 2025.
- 15: Shunbi-kai Lecture "Trouble cases referred from private practitioners to Hiroshima University Hospital". Ninomiya Y, Hiroshima, 2025.
- 16: Hiroshima University School of Dentistry First Department of Prosthodontics Alumni Association Special Lecture "Update on occlusal reconstruction surgery and temporomandibular joint surgery". Aikawa T, Hiroshima, 2025.
- 17: Hiroshima University School of Dentistry Alumni Association Kinki Branch Special Lecture "Update on occlusal reconstruction surgery and temporomandibular joint surgery: Temporomandibular joint diseases requiring attention". Aikawa T, Osaka, 2025.
- 18: "Medical support for the treatment of cleft lip and palate in Mexico". Kishi N, Uetsuki R, Mexico, 2025.
- 19: Mihara Medical Forum "Occlusal treatment in oral surgery". Niwata C, Hiroshima, 2025.
- 20: Shunbi-kai Lecture "Trouble cases of wisdom tooth extraction and implant treatment". Ninomiya Y, Hiroshima, 2025.
- 21: IBRA (International Bone Research Association) Seminar, Orthognathic Surgery: Congress Chairman, Seminar Lecturer, Hands-on Instructor. Aikawa T, Hiroshima, 2025.

### (3) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grant-in-Aid for Scientific Research (Scientific Research (C)) new: Aikawa T: Bone resorption mechanisms in the oral cancer microenvironment: Study on osteoclast activation via Th17 (Principal Investigator). Issue Number 25K13206
- 2: Grant-in-Aid for Scientific Research (Scientific Research (B)) new: Miyagawa K, Aikawa T: Pursuit of functional diversity of osteocytes aiming to establish a foundation for the development of new treatments for hard tissue diseases (Co-Investigator). Issue Number 25K02829
- 3: Grant-in-Aid for Scientific Research (Challenging Research (Exploratory)) new: Miyagawa K, Aikawa T: Elucidation of novel resistance mechanisms to immune checkpoint inhibitors in tumor bone lesions (Co-Investigator). Issue Number 25K22698
- 4: Grants-in-Aid for Scientific Research (Scientific Research (C)) continuation: Aikawa T, Miyagawa K: Bone resorption mechanisms in the tumor microenvironment: Analysis centered on IL-7 and RANKL expression mechanisms (Principal Investigator). Issue Number 22K10145
- 5: Grants-in-Aid for Scientific Research (Scientific Research (C)) continuation: Mizuta K, Tobiume K: Does noncoding RNA involved in the development of mandibular diaphyseal dysplasia (GDD)? Issue Number 22K10119
- 6: Grant-in-Aid for Scientific Research (Scientific Research (C)) continuation: Ohta K, Aikawa T, Sakaguchi T, Komatsuzawa H, Shigeishi H: Elucidation of the novel functions of the new coronavirus

- target protein in the oral mucosa and its expression regulatory factors (Co-Investigator). Issue Number 23K09371
- 7: Grant-in-Aid for Scientific Research (Scientific Research (C)) continuation: Aikawa T: Research on the mechanism of tumor-induced bone resorption: Comprehensive analysis focusing on RANKL expression regulation and osteoclastogenesis (Principal Investigator). Issue Number 19K10266
  - 8: Grant-in-Aid for Scientific Research (Scientific Research (C)) continuation: Nakagawa T: Mechanism of action of the anti-rheumatic drug leflunomide on tumor infiltrating lymphocytes in oral cancer. Issue Number 24K131570A
  - 9: Grants-in-Aid for Scientific Research (Young Research) continuation: Naruse T: Elucidation of the immune response mechanism of SARS-CoV-2 binding receptors in the oral mucosa. Issue Number 21K17116
  - 10: Grants-in-Aid for Scientific Research (Young Research) continuation: Uetsuki R: Analysis of relationship between Snail-induced EMT and cancer stem cell characteristics in oral cancer cells. Issue Number 22K17158
  - 11: Grants-in-Aid for Scientific Research (Young Research) continuation: Shido R: Development of novel osteoinductive gene activation substrates incorporating miRNA inhibitor Tiny-LNA. Issue Number 23K16156
  - 12: Grant-in-Aid for Scientific Research (Young Research) continuation: Sakuma M: Recognition mechanism of *Candida albicans* cell wall components by CEACAM1 in oral mucosa. Issue Number 23K159740A
  - 13: Grant-in-Aid for Scientific Research (Research Activity Start-up) new: Fujii A: Genomic analysis of antimicrobial-resistant bacteria distributed in systemic organs and oral infection isolates (Principal Investigator). Issue Number 25K24140
  - 14: Grant-in-Aid for Scientific Research (Research Activity Start-up) continuation: Miyahara Y: Class switch mechanism to IgG4 in IgG4-related diseases unraveled from the great mimicker. Issue Number 24K23557
  - 15: Grant-in-Aid for Scientific Research (Young Research) new: Miyahara Y: Novel therapeutic strategy for oral lichen planus focusing on network mechanisms between oral epithelial cells and Th2 cells. Issue Number 25K20409

#### (5) Academic Awards, etc.

- 1: The 79th Annual Meeting of the Japanese Stomatological Society, Outstanding Poster Award, Rising Scientist Award "The antirheumatic drug leflunomide has angiogenesis inhibitory and antitumor effects on oral squamous cell carcinoma": Niwata C.
- 2: The 29th Annual Meeting of the Japanese Society of Maxillofacial Implants, Outstanding Paper Award "A case of bone augmentation using interconnected porous hydroxyapatite bone graft material (NEOBONE®) and autogenous bone mixed graft material after ameloblastoma removal": Ninomiya Y.
- 3: The 3rd Academic Meeting of the Young Oral Surgeons Association, Outstanding Presentation Award "A Retrospective Study of unfavorable splits/fractures in Bilateral Sagittal Split Ramus Osteotomy": Sakuma M.
- 4: The 35th Annual Meeting of the Japan Society for Jaw Deformities, Outstanding Poster Award "Evaluation of the usefulness of modified inverted L-shaped ramus osteotomy for skeletal Class II open bite cases": Shido R.
- 5: The 72nd Chugoku-Shikoku Regional Meeting of the Japanese Stomatological Society, Newcomer Award "Effect of nucleic acids and antimicrobial peptide LL-37 on inflammatory factor expression in minor salivary gland cells": Watanabe M.
- 6: The 28th Hiroshima University School of Dentistry Alumni Association Encouragement Award "Comprehensive analysis of bacteriocins produced by clinical enterococcal isolates and their antibacterial activity against enterococci including VRE": Fujii A.
- 7: The 58th Hiroshima University Dental Society General Meeting, Research Incentive Award "Comprehensive analysis of bacteriocins produced by clinical enterococcal isolates of Enterococci at Hiroshima University Hospital and their antibacterial activity against Enterococci including VRE": Fujii A.

#### (6) Patents

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## Department of Advanced Prosthodontics

### Division of Preventive and Restorative Dentistry (Department of Oral Implant)

#### (1) Staff and Students

Professor : Kazuhiro Tsuga  
 Associate Professor : Yasuhiko Abe, Mineka Yoshikawa, Takayasu Kubo  
 Assistant Professor : Maho Takeuchi, Hiroshi Oue, Yoshifumi Oki, Maho Takeuchi  
 Resident : Mariko Maruyama, Eri Ishida, Rie Hatakeyama, Yutaro Takahashi  
 Graduate Student : Yutaro Takahashi, Hengky Bowo Ardhianto, Takashi Ogino, Yusuke Morimoto,  
 Tomoko Izumikawa, Shota Inoue  
 Clinical Trainee : Mie Tatsumura  
 Administrative staff : Rinko Kurumi

#### (2) Main Research Activities

- 1: Development of a predict diagnostic device for implant treatment
- 2: Research on the development of a newly bite force measurement device and the creation of standard value
- 3: Research on the masticatory ability and chewing sounds of older adults with prosthetic appliances
- 4: Development of a new method for assessing masticatory and swallowing function using a super high-speed camera
- 5: Research on the effectiveness of preoperative tongue rehabilitation
- 6: Research on the diagnosis of low tongue pressure and the prevention of oral dysfunction in the elderly
- 7: Establishment of a new dysphagia evaluation method using a portable ultrasound diagnostic device
- 8: Development of an antibacterial active rechargeable denture system
- 9: Basic research on PEEK materials for dental applications and clinical research on PEEK crowns for molars

#### (3) Research Achievements

##### A) Original Papers (including Case Reports)

- 1: Comparison of clinical outcomes of polyetheretherketone and hybrid resin crowns placed on molars for over two years.: Yokoi M, Abekura H, Kagawa K, Morita K, Nishio F, Umehara H, Kato M, Oda R, Doi K, Tsuga K. *Sci Rep.*, 5, 15(1), 15627, 2025.
- 2: Tooth loss induces cognitive decline independent of low-protein diet intake in male mice.: Hatakeyama R, Oue H, Yokoi M, Ishida E, Kubo T, Tsuga K. *Arch Oral Biol.*, 180, 10642, 2025.
- 3: Passive Fit Evaluation of Implant Superstructures by Analyzing Accumulated Screw Tightening Torque: A Dental Technique.: Doi K, Oue H, Kobatake R, Wakamatsu K, Tsuga K. *Case Rep Dent.*, 29, 92683812025, 2025.
- 4: The Utility of Evaluating Primary Stability of Implants Using Accumulated Insertion Torque Values: a Preliminary Study.: Kobatake R, Doi K, Izumikawa T, Morimoto Y, Wakamatsu K, Tsuga K. *J Oral Maxillofac Res.*, 30, 16(2), e4, 2025.
- 5: Reliability of drilling torque values measured with a novel measurement drill for guiding implant placement protocols. Morimoto Y, Doi K, Kobatake R, Wakamatsu K, Izumikawa T, Oki Y, Tsuga K. *J Clin Exp Dent.* 1, 17(10), e1230-e1234, 2025.
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- 7: Usefulness of a novel density measurement drill for evaluating cancellous bone density: correlation between CT value and drilling torque value in bovine ribs.: Doi K, Wakamatsu K, Kobatake R, Oki Y, Makihara Y, Konishi M, Tsuga K. *Int J Implant Dent.*, 11(1), 7, 2025.
- 8: Correlation between Bone Density Classified by Computed Tomography (CT) Value and Trabecular

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- 9: Relationships between dysarthria, lesion location, and oral/swallowing function in patients with first-ever stroke.: Nakamori M, Imamura E, Matsushima H, Tachiyama K, Ayukawa T, Nishino M, Yoshikawa M, Yoshida M, Maruyama H. *Clinical Neurology and Neurosurgery.*, 254, 108928, 2025.
  - 10: Oral colonization of antimicrobial-resistant bacteria in home health care participants and their association with oral and systemic status.: Nishihama S, Kawada-Matsuo M, Le MN, Fujii A, Haruta A, Kajihara T, Hashimoto Y, Yoshikawa M, Aikawa T, Tsuga K, Ohge H, Sugai M, Shiba H, Komatsuzawa H. *Scientific Reports.*, 15, 5776, 2025.
  - 11: Comparison of swallowing dynamics between jelly and thickened liquid commonly used for swallowing training in Japan.: Yoshikawa M, Kayashita J, Nakamori M, Nagasaki T, Masuda S, Yoshida M. *Scientific Reports.*, 15,, 26299, 2025.
  - 12: The impact of occlusion support patterns on right-handed denture wearers on oral function and oral health-related quality of life.: Takahashi Y, Yoshikawa M, Yoshida M, Takeuchi M, Yokoi M, Haruta A, Maruyama S, Tsuga K. *Journal of Oral Rehabilitation.*, 52,, 1980–1989, 2025.
  - 13: Investigation of the improvement of swallowing function with low-frequency pulse waves or interference waves delivered via cervical electrical stimulation in patients with Parkinson's disease.: Nakamori M, Matsuyama R, Toko M, Yamada H, Hayashi Y, Yoshikawa K, Yoshikawa M, Nagasaki T, Shimizu Y, Maruyama H. *Contemporary Clinical Trials Communications.*, 44, 101463, 2025.
  - 14: Automatic chewing ability assessment using a self-supervised learning model.: Takeuchi M, Tsuga K, Yoshikawa M, Nishida M, Nishimura M. *Journal of Signal Processing.*, 29, 107–110, 2025.

## B) Review

## C) Publications

- 1: 第 33 章 要支援・要介護高齢者に対する局部床義歯（部分床義歯）補綴. 歯学生のパーソナルデンチャー第 7 版: 津賀 一弘, 吉川 峰加: 医歯薬出版株式会社, 270–274, 2025. Chapter 33, Partial dentures for older adults who require assistance or nursing care. *Removable Partial Denture Prosthodontics for Dental Students.*: Tsuga K, Yoshikawa M: Ishiyaku Publishers, Inc., 270–274, 2025.
- 2: 第 2 章 05 低舌圧 口腔機能低下の診断基準となる 7 項目. かかりつけ歯科医のための口腔機能低下症入門: 津賀 一弘, 吉川 峰加: 株式会社デンタルダイヤモンド社, 58–65, 2025. Chapter 2 - 05, Low tongue pressure: Seven diagnostic criteria for oral hypofunction. *An introduction to oral hypofunction for family dentists*: Tsuga K, Yoshikawa M : Dental Diamond co., 58–65, 2025.
- 3: 舌圧を補綴歯科治療の成功に役立てよう: 吉川 峰加: 日本補綴歯科学会誌, 17(1): 40–45,2025. Why not use tongue pressure to help your prosthodontic treatment more successful?: Yoshikawa M: *Ann Jpn Prosthodont Soc* 17: 40-45, 2025.

## D) Other Publications

- 1: Ministry of Health, Labour and Welfare Sciences Research Grant, Research Project for Promoting Emerging and Re-emerging Infectious Diseases and Vaccination Policies, Research Group on Establishing Efficient and Effective Methods for Controlling Drug-Resistant Bacteria in Clinics and Nursing Homes (JPMH22HA1002), Guide to Countering Drug-Resistant Bacteria in Nursing Homes ; (Editor) Ohge H, (Principal investigator) Ohge H, (co-researcher) Iinuma Y, Kiyosuke M, Sugai M, Muraki Y, Mori M, Yagi T, Yahara K, (Research collaborators) Kajihara T, Haruta A, Hosaka Y, Yoshikawa M, : Hiroshima Chuo Printing Co., Ltd. 41-42, 2025.

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- 1: Accumulated Torque: A New Metric for Assessing Implant Stability: Kobatake R, Doi K, Morimoto Y, Izumikawa T, Wakamatsu K, Kubo T, Tsuga K: 2025 IADR/PER General Session & Exhibition, Barcelona, 2025.
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- 11: Clinical application of novel bone density assessment based on drilling torque measurement: Wakamatsu K, Doi K, Oki Y, Kobatake R, Oue H, Kubo T, Tsuga K: The 55th Annual Meeting of the Japanese Society of Oral Implantology, Fukuoka, 2025.
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- 15: Relation between intraoperative bone density assessment using drilling torque values and implant primary stability: An experimental study using a low-density bovine bone model: Morimoto Y, Doi K, Kobatake R, Wakamatsu K, Yamanaka T, Kubo T, Tsuga K: The 45th Annual Meeting of the Japanese Society of Oral Implantology Chugoku & Shikoku Branch, Okayama, 2025.
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- 18: Experimental tooth loss alters gut microbiota and metabolites in mice: Yokoi M, Hatakeyama R, Ishida E, Matsufusa Y, Okamoto M, Tsuga K, Yoshida M.: The 36th annual meeting of the Japanese Society of Gerodontology: Chiba, 2025.
- 19: Development of Pharyngeal Residue Evaluation Method Using a Pocket Echo (First Report: Examination of Probe Position): Maruyama S, Yoshikawa M, Nagasaki T, Yamada S, Tsuga K: The 31st Annual Meeting of the Japanese Society of Dysphagia Rehabilitation, Yokohama, 2025.
- 20: Link Between Masticatory Function and Gut Microbial Metabolism in Young Adults: An Exploratory

Analysis: Kato M, Morita K, Abekura H, Doi K, Tsuga K: The 64th Hiroshima Prefectural Dental Society Meeting (Joint Meeting with the 109th Regular Meeting of the Hiroshima University Dental Society), Hiroshima, 2025.

- 21: An Attempt at Anatomical Identification of Pharyngolaryngeal Structures on Ultrasonographic Images During Swallowing: Nagasaki T, Maruyama S, Yoshikawa M, Yamada S, Tsuga K, Kakimoto N: The 36th Annual Meeting of the Japanese Society of Clinical Dysphagia Research, Nagoya, 2025
- 22: A study of dental caries in elderly people using caries risk tests and quantitative oral bacterial tests: Hayashi Y, Shintani T, Ando T, Oki Y, Obayashi N, Suzuki M, Kataoka N, Yasuda G, Kobayashi Y, Kajiyama M: The 18th Annual Meeting of the Japanese Society for Evidence and the Dental Professional: Okinawa 2025.
- 23: A Pilot Study on the Visualization of Pharyngeal Residue Using a Pocket-Sized Ultrasonography (US) Device: Nagasaki T, Maruyama S, Yoshikawa M, Ramadhan FR, Simabukuro K, Otuka S, Suei Y, Konishi M, Nakamoto T, Tsuga K, Kakimoto N: The 43rd Kansai–Kyushu Joint Regional Meeting of the Japanese Society for Oral and Maxillofacial Radiology, Osaka, 2025
- 24: Treatment Outcomes of Convalescent-Phase Dysphagia Rehabilitation in Patients with Parkinsonian Disorders After Pneumonia: Takagi S, Ikeda J, Yoshida M, Araki T, Muguruma K, Kotosaki T, Yoshikawa M, Kayoda Y: The 66th Annual Meeting of the Japanese Society of Neurology, Osaka 2025
- 25: Three-Dimensional Visualization of Swallowing Movements Using High-Speed Imaging and a Time-of-Flight Camera: Wang F, Mujahidim S, Shimazaki K, Isii I, Yoshikawa M, Naito M: The 26th Annual Conference of the Society of Instrument and Control Engineers, Hiroshima, 2025

#### F) Special lectures in academic meetings

- 1: Development of Objective Numerical Evaluation in Implant Treatment: Evaluation of Bone Density and Passive Fit by Torque Measurement: Doi K, Oue H, Oki Y, Wakamatsu K: The 55th Annual Meeting of the Japanese Society of Oral Implantology, Fukuoka, 2025.
- 2: Oral Care and Management Supporting Safe Swallowing Function: Yoshikawa M: Hiroshima Oral Health Management Seminar: Hiroshima, 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: MEXT Grant-in-Aid for Scientific Research (B): Tsuga K: Can Diagnosis of Low Tongue Pressure and Early Intervention in Older Adults Prevent Oral Dysfunction? (Grant No.23K21490) ¥17,030,000.
- 2: MEXT Grant-in-Aid for Scientific Research (C): Abe Y : Development of an Antimicrobial Denture Adhesive Utilizing an Organic-Inorganic Hybrid Antimicrobial Agent. (Grant No.23K09276) ¥4,680,000.
- 3: MEXT Grant-in-Aid for Scientific Research (C): Takeuchi M : Development of a Hard Lining Material for Rechargeable Denture Bases with Antibacterial Activity Focusing on the Oral Microbiome. (Grant No.25K13126) ¥4,680,000.
- 4: MEXT Grant-in-Aid for Scientific Research (C): Oue H: Elucidation of the mechanisms underlying tooth loss–induced cognitive decline using metabolomic analysis (Grant No.24K13006). ¥1,300,000.
- 5: MEXT Grant-in- Aid for Support for starting research activities: Hatakeyama R: Elucidation of the Mechanisms Underlying Blood–Brain Barrier Dysfunction Induced by Tooth Loss via Hypoxic Responses and Reactive Oxygen Species (Grant No. 25K24097). ¥2,730,000.
- 6: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Morimoto Y: Establishment of a predictive diagnostic method for implant primary stability using drilling torque value measurement. ¥400,000.
- 7: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Izumikawa T: Construction of a predictive diagnostic model for implant primary stability by developing simulated bone by bone density. ¥400,000.

#### (5) Academic Awards, etc.

- 1: Yoshikawa M: Hiroshima University Women Researchers Encouragement Award, FY2025.
- 2: Yoshikawa M: Society Award of the Japanese Society of Oral and Maxillofacial Function, 2025.

- 3: Izumikawa T, Doi K, Oue H, Kobatake R, Wakamatsu K, Kubo T, Tsuga K: Best Poster Presentation Award: The 55th Annual Meeting of the Japanese Society of Oral Implantology, 2025.

(6) Patents

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## Department of Advanced Prosthodontics Division of Preventive and Restorative Dentistry (Department of Prosthetic Dentistry)

### (1) Staff and Students

Professor : Kazuhiro Tsuga  
Associate Professor : Kazuya Doi  
Assistant Professor : Koji Morita, Keisuke Yasuda, Reiko Kobatake  
Resident : Kiichi Nakamori, Azusa Haruta, Chihiro Yoshiga, Kaien Wakamatsu  
Graduate Student : Masamichi Kato, Shion Maruyama, Ami Yoshioka  
Researcher : Hitoshi Abekura  
Clinical Trainee : Kazuko Kagawa, Yuhei Hashimoto  
Administrative staff : Rinko Kurumi

### (2) Main Research Activities

- 1: Development of a predict diagnostic device for implant treatment
- 2: Research on the development of a newly bite force measurement device and the creation of standard value
- 3: Research on the masticatory ability and chewing sounds of older adults with prosthetic appliances
- 4: Development of a new method for assessing masticatory and swallowing function using a super high-speed camera
- 5: Research on the effectiveness of preoperative tongue rehabilitation
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- 7: Establishment of a new dysphagia evaluation method using a portable ultrasound diagnostic device
- 8: Development of an antibacterial active rechargeable denture system
- 9: Basic research on PEEK materials for dental applications and clinical research on PEEK crowns for molars

### (3) Research Achievement

#### A) Original Papers (including Case Reports)

- 1: Comparison of clinical outcomes of polyetheretherketone and hybrid resin crowns placed on molars for over two years.: Yokoi M, Abekura H, Kagawa K, Morita K, Nishio F, Umehara H, Kato M, Oda R, Doi K, Tsuga K. *Sci Rep.*, 5, 15(1), 15627, 2025.
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## B) Review

## C) Publications

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- 2: Chapter 2 - 05, Low tongue pressure: Seven diagnostic criteria for oral hypofunction. An introduction to oral hypofunction for family dentists: Tsuga K, Yoshikawa M : Dental Diamond co., 58–65, 2025.

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  - 19: Development of Pharyngeal Residue Evaluation Method Using a Pocket Echo (First Report: Examination of Probe Position): Maruyama S, Yoshikawa M, Nagasaki T, Yamada S, Tsuga K: The 31st Annual Meeting of the Japanese Society of Dysphagia Rehabilitation, Yokohama, 2025
  - 20: Link Between Masticatory Function and Gut Microbial Metabolism in Young Adults: An Exploratory Analysis: Kato M, Morita K, Abekura H, Doi K, Tsuga K: The 64th Hiroshima Prefectural Dental Society Meeting (Joint Meeting with the 109th Regular Meeting of the Hiroshima University Dental Society), Hiroshima, 2025
  - 21: An Attempt at Anatomical Identification of Pharyngolaryngeal Structures on Ultrasonographic Images During Swallowing: Nagasaki T, Maruyama S, Yoshikawa M, Yamada S, Tsuga K, Kakimoto N: The 36th Annual Meeting of the Japanese Society of Clinical Dysphagia Research, Nagoya, 2025
  - 22: A Pilot Study on the Visualization of Pharyngeal Residue Using a Pocket-Sized Ultrasonography (US) Device: Nagasaki T, Maruyama S, Yoshikawa M, Ramadhan FR, Simabukuro K, Otuka S, Sueti Y, Konishi M, Nakamoto T, Tsuga K, Kakimoto N: The 43rd Kansai–Kyushu Joint Regional Meeting of the Japanese Society for Oral and Maxillofacial Radiology, Osaka, 2025

## F) Special lectures in academic meetings

- 1: Development of Objective Numerical Evaluation in Implant Treatment: Evaluation of Bone Density

- and Passive Fit by Torque Measurement: Doi K, Oue H, Oki Y, Wakamatsu K: The 55th Annual Meeting of the Japanese Society of Oral Implantology, Fukuoka, 2025.
- 2: Has the Introduction of CAD/CAM Crowns into Insurance Coverage Transformed Dental Care?“From Clinical Research on PEEK Crowns to Insurance Coverage and Long-Term Outcomes” Abekura H: The 16th Annual Meeting of the Japan Digital Dentistry Society, Tokyo, 2025.
  - 3: Clinical Practice and Long-Term Outcomes of Insurance-Covered PEEK Crowns: Abekura H: 2025 Yamaguchi Prefecture Dental Association & Japanese Academy of Prosthodontics Seminar, Co-hosted by Yamaguchi Prefecture Dental Association Lifelong Learning Public Seminar, Yamaguchi, 2025.
  - 4: Clinical Practice and Long-Term Outcomes of Insurance-Covered PEEK Crowns: Abekura H: Tokyo Dental University Alumni Association Lecture, Fukuyama, 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: MEXT Grant-in-Aid for Scientific Research (B): Tsuga K: Can Diagnosis of Low Tongue Pressure and Early Intervention in Older Adults Prevent Oral Dysfunction? (Grant No.23K21490) ¥17,030,000.
- 2: MEXT Grant-in- Aid for Young Scientists: Kobatake R: A novel bone reconstruction therapy using bioactive porous titanium in combination with intermittent administration of parathyroid hormone (Grant No. 25K20329). ¥2,730,000.
- 3: MEXT Grant-in- Aid for Young Scientists: Nakamori K: Development of a novel adhesive system possessing durable antibacterial activity for secondary caries prevention (Grant No. 25K20349). ¥2,470,000.
- 4: Grant-in-Aid for Research Activity Start-up: Haruta A: Does the use of disinfectants and antimicrobial agents in the oral cavity lead to disinfectant-resistant bacteria? (Grant No. 25K19745). ¥1,430,000.
- 5: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Yoshioka A: Development of a novel adhesive system possessing durable antibacterial activity for secondary caries prevention. ¥200,000.
- 6: MEXT Grant-in-Aid for Scientific Research (C): Abekura H: Development of super engineering plastic restorative materials with wear resistance and aesthetics. (Grant No. 24K13005). ¥910,000.
- 7: Collaborative Research Grant from Bando Chemical Industries, LTD.: Doi K. ¥2,000,000.
- 8: Research Grant from The NSK Nakanishi Foundation.: Doi K. ¥2,000,000.

#### (5) Academic Awards, etc.

- 1: Izumikawa T, Doi K, Oue H, Kobatake R, Wakamatsu K, Kubo T, Tsuga K: Best Poster Presentation Award: The 55th Annual Meeting of the Japanese Society of Oral Implantology, 2025.

#### (6) Patents

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**Department of Orthodontics and Craniofacial Development  
Biology  
Division of Oral Health and Development  
Department of Orthodontics**

(1) Staff and Students

Professor	: Kotaro Tanimoto
Associate Professor	: Ryo Kunimatsu,
Associate professor of clinical medicine	: Naoto Hirose
Assistant Professor	: Yuki Asakawa, Yuki Yoshimi, Makoto Yanoshita, Isamu Kado, Shota Ito, Yuma Koizumi, Ayaka Nakatani, Eri Tsuboi,
Intern	: Kazutaka Ikeda, Tomohiro Ogasawara, Kodai Rikitake, Naoki Kubo, Fumika Abe, Shintaro Ogashira, Ayaka Odo, Risako Oshiro, Daiki Kita, Katsuhito Sugai
Graduate Student	: Saki Ogawa, Izumi Tanabe, Shun Ogata, Naonobu Okimura, Ami Ono, Rio Shibata, Saki Takesue, Minori Nakazato(~2025.5), Ryosuke Nakajima, Shiina Pasanen, Reina Hatano, Akira Hirabae, Kanako Okazaki, Erika Otake, Marino Yoshida, Hiroataka Kiridoshi, Io Koyanagi, Momoko Sato, Chiaki Tsuru, Kahana Fukuhara, Fukutaro Matsuo, Yuma Yasumitsu, Ayano Kubota, Nakawaka Rei, Nishigauchi Kazuki, Yamane Sayako
Visiting Professor	: Eiji Tanaka, Ichiro Takahashi, Shoichi Miyawaki, Hiroshi Kamioka
Registered Intern	: Kuniaki Tanaka, Sakura Yamada, Kazuyo Ando, Hiroki So, Tomoka Hiraki, Ayana Nakano, Shuzo Sakata, Sayuri Nishiyama
Dental Hygienist	: Miho Okada, Miho Sakai

(2) Main Research Activities

- 1 : Elucidation of pathogenic mechanism in malocclusion and management of oral maxillofacial skeletal growth
  - \* Basic research on bone metabolism
  - \* Effects of breathing and perioral muscles on growth
  - \* Examination of evaluation methods for oral myofunctional therapy
- 2 : Evaluation of the stability of treatment for jaw deformities
- 3 : Optimization of tooth movement by orthodontic force
  - \* Elucidation of the mechanism of root resorption and exploration of treatment methods
  - \* Effects of laser irradiation on tooth movement
  - \* Inhibition of root resorption during tooth movement by anti-inflammatory analgesics
- 4 : Establishment of a new orthodontic treatment based on the image and biochemical diagnosis of temporomandibular disorders (TMD)
  - \* Elucidation of the mechanism of joint destruction caused by mechanical stress
  - \* Examination of treatment methods for the temporomandibular joint osteoarthritis
- 5 : Application of regeneration medicine to orthodontic treatment
  - \* Establishment of bone regeneration of alveolar cleft using mesenchymal stem cells
  - \* Regulation of stem cell differentiation into bone and chondrocytes
  - \* Application of enamel matrix proteins to regenerative medicine
- 6 : Suppression of caries risk in orthodontic treatment
  - \* Research on Amelogenesis imperfecta
  - \* Restoring tooth enamel by biomineralization
  - \* Risk assessment and treatment of dental caries
- 7 : Reducing the risk of periodontal disease during orthodontic treatment
  - \* Study on changes in oral bacterial flora
  - \* Risk assessment and treatment of periodontal disease
- 8 : Evaluation of the contribution of various oral functions to general fitness



- \* Research on obstructive sleep apnea syndrome
- 9 : Application of digital technological in orthodontic treatment
  - \* Evaluation of tooth movement, root resorption, and pain using aligners
  - \* Assistance of orthodontic diagnosis using artificial intelligence
- 10 : Development of new instruments and materials for orthodontic treatment

### (3) Research Achievements

#### A) Original Papers (2025.1-2025.12 including Case Reports)

##### Original Papers

- 1 : Effects of near-infrared diode laser irradiation on pain relief and neuropeptide markers during experimental tooth movement in the periodontal ligament tissues of rats: A pilot study : Okazaki K., Nakatani A., Kunimatsu R., Kado I., Sakata S., Kiridoshi H., Tanimoto K.: *Int J Mol Sci.* 2025 Jul 31;26(15):7404. doi: 10.3390/ijms26157404.
- 2 : Effects of recombinant human sclerostin on proliferation and migration in human cementoblast lineage cells :  
Okimura N., Kunimatsu R., Kado I., Nakatani A., Sakata S., Ikeda K., Ito S., Ogasawara T., Ogashira S., Miyauchi M., Takata T., Tanimoto K.: *Arch Oral Biol.*, 2025 Jul;175:106273. doi: 10.1016/j.archoralbio.2025.106273. Epub 2025 Apr 19.
- 3 : Role of extracellular vesicles of stem cells from human exfoliated deciduous teeth in osteogenesis :  
Shibata R., Kunimatsu R., Ito S., Ogasawara T., Ogashira S., Nakatani A., Rikitake K., Odo A., Hirabae A., Koyanagi I., Abe T., Hiraki T., Sakata S., Yoshimi Y., Tanimoto K.: *Int J Mol Sci.* 2025 Jun 18;26(12):5841. doi: 10.3390/ijms26125841.
- 4 : Effect of recombinant human amelogenin on the osteogenic differentiation potential of SHED :  
Hirabae A., Kunimatsu R., Yoshimi Y., Rikitake K., Ogashira S., Nakatani A., Sakata S., Tanimoto K.: 2025 Apr 30;14(9):657. doi: 10.3390/cells14090657
- 5 : Enhanced Growth of Bone Marrow-Derived Mesenchymal Stem Cells on the Microcarriers Tethered With Engineered Basic Fibroblast Growth Factor :  
Pasanen S., Mootha A., Hirata I., Tanimoto K., Kato K.: *Biotechnology Journal.* 2025 Jun;20(6) e70057. doi:10.1002/biot.70057
- 6 : Functional impact of pathogenic mutations in the Runt homology domain of mouse Runx2 on skeletal and dental phenotypes in cleidocranial dysplasia :  
Ogawa S., Higuchi S., Yoshimoto Y., Hoshino M., Miura S., Hamada A., Watanabe H., Sakuma T., Hu K., Ogata S., Uchibe K., Fujimoto K., Yamamoto T., Okamoto T., Kunimatsu R., Sotomaru Y., Tanimoto K., Kondoh G., Komori T., Docheva D., Shukunami C.: *J Bone Miner Res.* 2025 Dec 27;:zjaf201. doi: 10.1093/jbmr/zjaf201.
- 7 : Investigation of Angiogenic Potential in CD146-Positive Stem Cells Derived from Human Exfoliated Deciduous Teeth :  
Rikitake K., Kunimatsu R., Yoshimi Y., Tanimoto k.: *Int J Mol Sci.*, 2025 Jan 24;26(3):974. doi: 10.3390/ijms26030974.
- 8 : Changes in the craniofacial morphology in sclerostin knockout mice :  
Ikeda K., Kaku M., Fan-Yi C., Shukunami C., Tanimoto K.: *Arch Oral Biol.* 2025 Dec 29; 183:106492. doi:10.1016/j.archoralbio.2025.106492.
- 9 : Prevalence of and sex-related differences in excessive daytime sleepiness in adolescents and young adults with malocclusion :  
Sakata S., Kunimatsu R., Ikeda K., Sugai K., Ogashira S., Tanimoto K.: *Diagnostics (Basel).* 2025 Jun 16;15(12):1527. doi: 10.3390/diagnostics15121527.
- 10 : Oral microbiome analysis and caries risk classification by the Caries Management by Risk Assessment system in pre-orthodontic patients :  
Kado I., Kunimatsu R., Koizumi Y., Yoshimi Y., Ogasawara T., Abe F., Ohgashira S., Tsai S., Okazaki K., Tanimoto K.: *J Clin Med.*, 2025 Sep 13;14(18):6464. doi: 10.3390/jcm14186464.
- 11 : Resolvin D1 suppresses inflammation in human fibroblast-like synoviocytes via the p-38, NF- $\kappa$ B, and

- AKT signaling pathways :
- Yanoshita M., Naoto H., Nishiyama S., Tsuboi E., Kubo N., Kita D., Tanimoto K.: *In Vitro Cell Dev. Biol. Anim.*, 2025 Mar;61(3):331-339. doi: 10.1007/s11626-024-01008-9. Epub 2025 Mar 10.
- 12: *Houttuynia cordata* exhibits anti-inflammatory activity against Interleukin-1 $\beta$ -induced inflammation in human gingival epithelial cells: An in vitro study:  
Kunimatsu R., Ikeoka S., Koizumi Y., Odo A., Tanabe I., Kawashima Y., Kiso A., Hashii Y., Tsuka Y., Tanimoto K.: *dentistry journal*. 2025 Aug;13(8):360. doi: 10.3390/dj13080360.
- 13: Effects of Photobiomodulation on Osteoarthritis from In Vivo and In Vitro Studies: A Narrative Review:  
Kunimatsu R., Nakatani A., Sakata S., Tanimoto K.: *Int J Mol Sci.*, 2025 Sep 16;26(18):8997. doi: 10.3390/ijms26188997.
- 14: Enhanced infiltration of myoblasts into collagen scaffolds loaded with engineered basic fibroblast growth factor :  
Matsuyama T., Pasanen S., Futami F., Kato A., Hirata I., Yanamoto S., Kato K.: *Dent Mater J.*, 2025 May 29;44(3):282-288. doi: 10.4012/dmj.2024-314. Epub 2025 Apr 9.
- 15 : Osteogenesis Potential of Polymethylmethacrylate-Hydroxyapatite and Stem Cells from Human Exfoliated Deciduous Teeth as Alveolar Bone Graft: An In Silico Study :  
Saskianti T., Angelina M., Dewi AM., Antonius Y., Zahri AN., Ridwan RD., Kanawa M., Kawamoto T., Tanimoto K., Fujimoto K.: *Eur J Dent.*, 2025 Mar 12. doi: 10.1055/s-0044-1801280. Epub ahead of print.
- 16 : Effect of Stimulated Salivary Volume on Dysbiosis of the Salivary Microbiome in Children and Young Adults :  
Shintani T., Obayashi N., Yoshimoto T., Ando T., Morihara N., Kataoka N., Miyata R., Yoshino M., Yoshii H., Morimoto S., Hayashi Y., Suzuki M., Tanimoto K., Kajiya M.: *Int Dent J.* 2025 Jun;75(3):1759-1770. doi: 10.1016/j.identj.2025.03.015. Epub 2025 Apr 8.
- 17 : Age Estimation from Lateral Cephalograms Using Deep Learning: A Pilot Study from Early Childhood to Older Adults :  
Tokinaga R., Mine Y., Yoshimi Y., Okazaki S., Ito S., Takeda S., Ogawa S., Peng Tzu-Yu., Kakimoto N., Tanimoto K., Murayama T.: *J Clin Med.*, 2025 Oct 7;14(19):7084. doi: 10.3390/jcm14197084.
- 18 : Prevalence and Ecological Role of *Streptococcus toyakuensis* in Saliva of Healthy Young Individuals :  
Obayashi N., Shintani T., Morihara N., Kawada-Matsuo M., Ando T., Miyata R., Hayashi Y., Kataoka N., Tanimoto K., Kawaguchi H., Komatsuzawa H., Kajiya M.: *Int Dent J.* 2025 Nov 8;76(1):103987. doi: 10.1016/j.identj.2025.103987.
- 19 : Yoshimi Y, Mine Y, Yamamoto K, Okazaki S, Ito S, Sano M, Peng TY, Nakamoto T, Nagasaki T, Kakimoto N, Murayama T, Tanimoto K. Detecting the articular disk in magnetic resonance images of the temporomandibular joint using YOLO series. *Dent Mater J.* 2025 Jan 31;44(1):103-111. doi: 10.4012/dmj.2024-186. Epub 2024 Dec 28. PMID: 39756977.
- 20 : Nugraha AP, Yang K, Pramusita A, Putranti NAR, Luthfi M, Ramadhani NF, Sitalaksmi RM, Situmorang PC, Artasasta MA, Alhasyimi AA, Riawan W, Nugraha AP, Shariff KA, Tanimoto K, Hong G. Human umbilical cord mesenchymal stem cells secretome and nanoemulsion propolis combination ameliorate osteoclastogenesis in lipopolysaccharide-induced osteolysis in hyperglycemia rats. *J Dent Sci.* 2025 Oct;20(4):2181-2188. doi: 10.1016/j.jds.2025.07.003. Epub 2025 Jul 16. PMID: 41040564; PMCID: PMC12485425.
- 21 : Saskianti T, Angelina M, Dewi AM, Antonius Y, Zahri AN, Ridwan RD, Kanawa M, Kawamoto T, Tanimoto K, Fujimoto K. Osteogenesis Potential of Polymethylmethacrylate-Hydroxyapatite and Stem Cells from Human Exfoliated Deciduous Teeth as Alveolar Bone Graft: An In Silico Study. *Eur J Dent.* 2025 Oct;19(4):1046-1054. doi: 10.1055/s-0044-1801280. Epub 2025 Mar 12. PMID: 40073999; PMCID: PMC12494438.
- 22 : Okazaki S, Mine Y, Yoshimi Y, Iwamoto Y, Ito S, Peng TY, Nishimura T, Suehiro T, Koizumi Y, Nomura R, Tanimoto K, Kakimoto N, Murayama T. RadImageNet and ImageNet as Datasets for Transfer Learning in the Assessment of Dental Radiographs: A Comparative Study. *J Imaging Inform Med.* 2025 Feb;38(1):534-544. doi: 10.1007/s10278-024-01204-9. Epub 2024 Jul 24. PMID: 39048809; PMCID: PMC11811346.

## Case reports

- 1: Craniofacial Changes with Protractor Therapy in Mandibular Prognathism associated with a Thyroglossal Duct Cyst: A Case Report :  
Sakata S., Kunimatsu R., Nakatani A., Tanimoto K.: Case Rep Dent. 2025 Oct 14;2025:1234184. doi: 10.1155/crid/1234184.

## Original papers in press

- 1 : Neuron-specific overexpression of human vasoactive intestinal peptide receptor 2 in mice causes cognitive dysfunction and abnormal dendritic morphology in the prefrontal cortex :  
Ono A., Miyaoka T., Koan D., Zihao Jin, Lu Chen, Hayata-Takano A., Asano S., Yokoyama R., Ishimoto K., Hino N., Harada A., Nakazawa T., Hashimoto H., James A. Wascheck, Nakagawa S., Tanimoto K., Ago Y.: Journal of Pharmacological Sciences, 2025 in press
- 2 : Bulk RNA-seq analysis of the articular capsule in a TMJ-OA rat model with anterior disc displacement :  
Kita D., Hirose N., Yanoshita M., Ito S., Koizumi Y., Nishiyama N., Tsuboi E., Kubo N., Oshiro R., Yoshida M., Asakawa Y., Tanimoto K.: Oral dis., 2025 in press

## Clinical report in Japanese

## Case reports in Japanese

B) Review (2025.1-2025.12)

C) Publications (2025.1-2025.12)

D) Other Publications (2025.1-2025.12)

E) Presentations at Scientific Meetings (2025.1-2025.12)

- 1 : Clinical course of multiple supernumerary impacted teeth : Hirose N.: Consortium for Professional Orthodontists (CPO), February Meeting (Online), Feb 26, 2025.
- 2 : A case presenting with multiple tooth eruption disturbances : Hirose N.: Consortium for Professional Orthodontists (CPO), February Meeting (Online), Feb 26, 2025.
- 3 : Chemogenetic inhibition of microglia attenuates mechanical allodynia induced by prenatal exposure to histone deacetylase inhibitor : Tsuru C., Imado E., Uta D., Song V., Kurata H., Tahara T., Vo N P H., Yokoyama R., Asano S., Kotake Y., Kiguchi N., Kume T., Hanamoto H., Tanimoto K., Ago Y. : APPW2025 The 130th Annual Meeting of the Japanese Association of Anatomists (JAA) The 102nd Annual Meeting of the Physiological Society of Japan (PSJ) The 98th Annual Meeting of the Japanese Pharmacological Society (JPS) (Chiba), Mar 17, 2025.
- 4 : Application of conditioned media of stem cells from human exfoliated deciduous teeth to bone regeneration : Kunimatsu R., Hiraki T., Rikitake K., Abe T., Tanimoto K.: The 24th Congress of the Japanese Society for Regenerative Medicine (Yokohama), Mar 20, 2025.
- 5 : Comparison of Orthodontic Tooth Movement of Regenerated Bone Induced by CAP or Bovine Bone in Dogs : Kunimatsu R., Abe T., Tanimoto K.: The 24th Congress of the Japanese Society for Regenerative Medicine (Yokohama), Mar 20, 2025.
- 6 : bFGF-immobilized microcarriers for constructing bioreactors for mesenchymal stem cells : Pasanen S., Hirata I., Kato K.: The 83th General Session of Japanese Society Dental Materials and Devices (Nagoya), Apr 19, 2025.
- 7 : Imaging interpretation of temporomandibular joint osteoarthritis : Hirose N.: Study Meeting of the Young Researchers Section, Japanese Society for the Temporomandibular Joint (Online), Apr 22, 2025.

- 8 : The importance of perioperative oral care in preventing postoperative pneumonia and consideration of the timing of oral care intervention during general anesthesia surgery : Naganuma K., Nishi H., Shigeishi H., Oota K., Yoshioka Y., Konishi M., Kakimoto N., Odo A., Horikoshi S., Tari M., Yamasaki S., Ito N., Yano K., Nakaoka M., Yanamoto S., Tanimoto K., Kawaguchi H.: The 22nd Annual Meeting and Academic Conference of the Japanese Society of Oral Care (Niigata), Apr 27, 2025.
- 9 : Identifying the condition of impacted maxillary canines from panoramic X-ray images using deep learning : Ogawa S., Yoshimi Y., Mine Y., Okazaki S., Ito S., Murayama T., Tanimoto K.: The 16th Scientific Meeting of the Japan Academy of Digital Dentistry (Tokyo), May 10, 2025.
- 10 : Effect of recombinant human amelogenin on the osteogenic differentiation potential of human deciduous dental pulp-derived mesenchymal stem cell : Hirabae A., Kunimatsu R., Yoshimi Y., Rikitake K., Ogashira S., Nakatani A., Sakata S., Tanimoto K.: The 58th Annual Meeting of Hiroshima University Dental Society (Hiroshima), Jun 14, 2025.
- 11 : Effects of extracellular vesicles of stem cells from human exfoliated deciduous teeth on the cellular metabolism of osteoblasts : Shibata R., Kunimatsu R., Ito S., Ogasawara T., Ogashira S., Nakatani A., Rikitake K., Odo A., Hirabae A., Koyanagi I., Abe T., Hiraki T., Sakata S., Yoshimi Y., Tanimoto K.: The 58th Annual Meeting of Hiroshima University Dental Society (Hiroshima), Jun 14, 2025.
- 12 : Effects of recombinant human sclerostin on proliferation and migration in human cementoblast lineage cells : Okimura N., Kunimatsu R., Kado I., Nakatani A., Sakata S., Ikeda K., Ito S., Ogasawara T., Ogashira S., Miyauchi M., Takata T., Tanimoto K.: The 58th Annual Meeting of Hiroshima University Dental Society (Hiroshima), Jun 14, 2025.
- 13 : Orthodontics and AI : Ito S.: Consortium for Professional Orthodontists (CPO) June Meeting (Online), Jun 18, 2025
- 14 : A cross-sectional study of excessive daytime sleepiness in orthodontic patients : Sakata S., Kunimatsu R., Ikeda K., Sugai K., Ogashira S., Kiyohara Y., Kumagai H., Siomi T., Tanimoto K.: The 49th Annual Meeting of Japanese Society of Sleep Research (Hiroshima), Jun 28, 2025.
- 15 : A survey of the actual situation of obstructive sleep apnea treatment using separable intraoral appliances at Hiroshima University Hospital Orthodontics Department : Ikeda K., Kunimatsu R., Sakata S., Ogashira S., Sugai K., Kiyohara K., Kumagai H., Shiomi T., Tanimoto K.: The 49th Annual Meeting of Japanese Society of Sleep Research (Hiroshima), Jun 29, 2025.
- 16 : Effect of oral myofunctional therapy on changes of maxillary incisors in patients with anterior open bite : Odo A., Asakawa Y., Nakatani A., Abe F., Ogawa S., Ando K., Yamada S., Tanimoto K.: The 68th Annual Meeting of the Chu-Shikoku Orthodontic Society (Okayama), Jul 6, 2025.
- 17 : A case of Basal Cell Nevus Syndrome treated with fenestration for odontogenic keratocyst : Abe F., Kado I., Taguchi Y., Souichi Y., Tanimoto K.: The 68th Annual Meeting of the Chu-Shikoku Orthodontic Society (Okayama), Jul 6, 2025.
- 18 : A case of Fanconi anemia refraining from orthodontic treatment due to the risk of inducing oral cancer : Sugai K., Ito S., Yoshimi Y., Kado I., Koizumi Y., Tanimoto K. : The 68th Annual Meeting of the Chu-Shikoku Orthodontic Society (Okayama), Jul 6, 2025.
- 19 : A case report of Freeman-Sheldon syndrome: features of disease including general status : Oshiro R., Koizumi Y., Yoshimi Y., Kado I., Ito S., Hirose N., Tanimoto K.: The 68th Annual Meeting of the Chu-Shikoku Orthodontic Society (Okayama), Jul 6, 2025.
- 20 : A case of temporomandibular disorder occurring during orthodontic treatment : Asakawa Y., Yanoshita M., Tsuboi E., Otake E., Fukuhara K., Tanimoto K.: The 38th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Tokyo), Jul 12, 2025.
- 21 : Three Pediatric Cases of Temporomandibular Joint Disorders Improved Following Lifestyle and Behavioral Guidance : Tsuboi E., Hirose N., Asakawa Y., Yanoshita M., Ito S., Koizumi Y., Kubo N., Kita D., Oshiro R., Otake E., Tanimoto K.: The 38th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Tokyo), Jul 12, 2025.
- 22 : Estrogen receptor  $\alpha$  and  $\beta$  regulate chondrocyte inflammation induced by mechanical loading via distinct mechanisms : Takesue S., Hirose N., Yanoshita M., Nishiyama S., Tsuboi E., Kubo N., Kita D., Nakazato M., Nakajima R., Yoshida M., Asakawa Y., Tanimoto K.: The 38th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Tokyo), Jul 13, 2025.
- 23 : Bulk RNA-seq analysis of the articular capsule in a TMJ-OA rat model with surgically induced anterior disc displacement : Kita D., Hirose N., Yanoshita M., Yoshida M., Oshiro R., Ito S., Koizumi

- Y., Kubo N., Tsuboi E., Asakawa Y., Tanimoto K.: The 38th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Tokyo), Jul 13, 2025.
- 24 : Engineered bFGF-tethered microcarriers for the expansion of bone marrow-derived hMSCs : Pasanen S., Hirata I., Tanimoto K., Kato K.: The 97th Annual Meeting of Japanese Tissue Culture Association (Sanyoonoda), Aug 22, 2025.
- 25 : Investigation of bacterial contamination of dental unit water : Sugai K., Matsuo F., Matsuo M., Komatsuzawa H., Tanimoto K.: The 67th Annual Meeting of the Japanese Association for Oral Biology (Kitakyushu), Sep 7, 2025.
- 26 : Tooth devitalization during and after orthodontic treatment : Kubo N., Hirose N.: Consortium for Professional Orthodontists (CPO) Collaboration Forum (Osaka), Sep 10, 2025.
- 27 : Orthodontic techniques for inducing mesial movement of the maxillary first molar : Yoshida M., Hirose N.: Consortium for Professional Orthodontists (CPO) Collaboration Forum (Osaka), Sep 10, 2025.
- 28 : Multimodal AI-based prediction of skeletal pattern from lateral facial photographs : Ito S., Mine Y., Yoshimi Y., Okazaki S., Ogawa S., Takeda S., Murayama T., Tanimoto K.: IADR Asia Pacific Regional & 35th ISDR Annual Conference 2025 (New Delhi), Sep 20, 2025.
- 29 : Analysis of the effect of miR-125b-1 on bone metabolism : Ogasawara T., Ito S., Ohgashira S., Oshiro R., Kunimatsu R., Tanimoto K.: IADR Asia Pacific Regional & 35th ISDR Annual Conference 2025 (New Delhi), Sep 20, 2025.
- 30 : Effect of CD146+ human exfoliated deciduous teeth (SHED) on bone regeneration in a mouse calvaria defect model : Rikitake K., Kunimatsu R., Yoshimi Y., Ando K., Nikawa H., Tanimoto K.: IADR Asia Pacific Regional & 35th ISDR Annual Conference 2025 (New Delhi), Sep 20, 2025.
- 31 : Microglia-specific deactivation reverses allodynia in autism spectrum disorder model mice : Tsuru C., Imado E., Song V., Uta D., Yokoyama R., Asano S., Kiguchi N., Kume T., Hanamoto H., Tanimoto K., Ago Y.: IADR Asia Pacific Regional & 35th ISDR Annual Conference 2025 (New Delhi), Sep 20, 2025.
- 32 : A cross-sectional study of excessive daytime sleepiness in orthodontic patients at Hiroshima University Hospital : Kunimatsu R., Sakata S., Ikeda K., Ohgashira S., Sugai K., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 33 : A survey of the treatment of abnormally erupted teeth at Hiroshima University Hospital : Yoshimi Y., Hirose N., Ogasawara T., Kita D., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 34 : The mouthwash containing cetylpyridinium chloride suppresses gingivitis and dysbiosis during orthodontic treatment – a double-blind randomized controlled study- : Kado I., Shiba F., Kunimatsu R., Koizumi Y., Yoshimi Y., Ogasawara T., Abe F., Ohgashira S., Tsai S., Okazaki K., Bono H., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 35 : *Houttuynia cordata* exhibits anti-inflammatory activity against interleukin-1 $\beta$ -induced inflammation in human gingival epithelial cells : Koizumi Y., Kunimatsu R., Ikeoka S., Odo A., Tanabe I., Tsuka Y., Kawashima Y., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 36 : Orthodontic Treatment of a Patient with Non-syndromic Oligodontia and a Skeletal Class 3 Relationship: A Case Report and 6 years Follow-up : Nakatani A., Kunimatsu R., Asakawa Y., Tsuka Y., Sakata S., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 37 : Effects of Angiogenic Potential in CD146-Positive Stem Cells Derived from Human Exfoliated Deciduous Teeth : Rikitake K., Kunimatsu R., Yoshimi Y., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 38 : A Survey on the Actual Practice of Obstructive Sleep Apnea Treatment Using Separate Intraoral Devices at Hiroshima University Hospital Orthodontics Department : Ikeda K., Kunimatsu R., Sakata S., Ohgashira S., Sugai K., Kiyohara Y., Kumagai H., Shiomi T., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 39 : Caries risk and oral microbiome analysis in Hiroshima University orthodontic patients using the CAMBRA system : Ohgashira S., Kunimatsu R., Kado I., Koizumi Y., Yoshimi Y., Ogasawara T., Abe F., Okazaki K., Tsai S., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.

- 40 : A case of surgical orthodontic treatment for skeletal maxillary protrusion in Sturge-Weber syndrome : Ohgashira S., Kado I., Yoshimi Y., Ito S., Koizumi Y., Ogasawara T., Kunimatsu R., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 41 : Risk factors in orthodontic traction therapy for impacted teeth, A study in mandibular second premolar : Kita D., Hirose N., Yoshimi Y., Ogasawara T., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 42 : A case of multiple impacted teeth associated with Gorlin Syndrome treated with surgical exposure and orthodontic traction : Abe F., Kado I., Yoshimi Y., Ito S., Koizumi Y., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Oct 1, 2025.
- 43 : A case of orthodontic treatment avoided due to oral cancer risk in Fanconi Anemia : Sugai K., Ito S., Yoshimi Y., Kado I., Koizumi Y., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Oct 1, 2025.
- 44 : Effects of recombinant human sclerostin on proliferation and migration in human cementoblast lineage cells : Okimura N., Kunimatsu R., Kado I., Nakatani A., Sakata S., Ikeda K., Ito S., Ogasawara T., Ohgashira S., Miyauchi M., Takata T., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 45 : Effects of human deciduous dental pulp-derived mesenchymal stem cell-derived extracellular-vesicles on the metabolism of osteoblasts : Shibata R., Kunimatsu R., Ito S., Ogasawara T., Ohgashira S., Nakatani A., Rikitake K., Odo A., Hirabae A., Koyanagi I., Abe T., Sakata S., Hiraki T., Yoshimi Y., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 46 : Effects of NIR laser irradiation on pain and neuropeptide during experimental tooth movement in rats : Okazaki K., Kunimatsu R., Nakatani A., Kado I., Sakata S., Kiridoshi H., Tanimoto K.: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), Sep 30, 2025.
- 47 : Microcarriers tethered with chimeric bFGF-IGF-1 fusion proteins promote human MSC proliferation : Pasanen S., Abe F., Karina Erda Saninggar., Kato K.: The 23th Annual Meeting of Japanese Association of Regenerative Dentistry (Fukuoka), Oct 4, 2025.
- 48 : A Case of Klippel-Feil Syndrome: Analysis of Oral and Maxillofacial Findings and Treatment Approach: Analysis of Oral and Maxillofacial Findings and Treatment Approach : Ito S., Hirose N., Yoshimi Y., Kado I., Ogasawara T., Tanimoto K.: The 49th Annual Meeting of Japanese Cleft Palate Association (Kyoto), Oct 23, 2025.
- 49 : A Case of Klippel-Feil Syndrome: Analysis of Oral and Maxillofacial Findings and Treatment Approach: Analysis of Oral and Maxillofacial Findings and Treatment Approach : Ito S., Abe F., Yoshimi Y., Kado I., Koizumi Y., Ogasawara T., Hirose N., Tanimoto K.: The 15th International Congress on Cleft Lip/Palate and Related Craniofacial Anomalies (Kyoto), Oct 23, 2025.
- 50 : Bone marrow-derived mesenchymal stem cell expansion on microcarriers tethered with IGF-1-bFGF chimeric proteins : Pasanen S., Abe F., Karina Erda Saninggar., Kato K.: The 10th International Symposium on Biomedical Engineering (Hiroshima), Oct 30, 2025.
- 51 : A cross-sectional study of excessive daytime sleepiness in orthodontic patients at Hiroshima University Hospital : Kunimatsu R., Sakata S., Ikeda K., Ohgashira S., Sugai K., Tanimoto K.: The 109th Hiroshima University Dental Society Regular Meeting (Hiroshima), Nov 9, 2025.
- 52 : A case of bilateral maxillary canine impaction close to the nasal cavity that required surgical intervention after a period of observation : Kubo N., Hirose N., Yanoshita M., Yoshida M., Tanimoto K.: The 109th Hiroshima University Dental Society Regular Meeting (Hiroshima), Nov 9, 2025.
- 53 : A case observing chronological changes in occlusal radiographs during phase I orthodontic treatment using a rapid maxillary expansion appliance : Suzuki Y., Osugi S., Sugai C., Nishi A., Suzuki Y., Matsuo K., Nakazima H., Nakano M., Nomura R., Tanimoto K., Kakimoto N., Asaeda M., Nishimura R., Naito M.: The 109th Hiroshima University Dental Society Regular Meeting (Hiroshima), Nov 9, 2025.
- 54 : Total temporomandibular joint replacement surgery in our department : Fujii A., Uetsuki R., Mizuta K., Ono S., Nakagawa T., Sido R., Sakuma M., Miyahara Y., Ohdan K., Takeda Y., Murozumi H., Ishioka K., Yanoshita M., Hirose N., Kaku M., Tanimoto K., Aikawa T.: The 109th Hiroshima University Dental Society Regular Meeting (Hiroshima), Nov 9, 2025.
- 55 : Effects of NIR laser irradiation on pain and neuropeptide during experimental tooth movement in rats : Okazaki K., Kunimatsu R., Nakatani A., Sakata S., Kiridoshi H., Tanimoto K.: The 34th Annual

- meeting of Japanese Society for Laser Dentistry (Tokyo), Nov 29, 2025.
- 56 : Molecular Design of Chimeric Stromal Cell-derived Factor-1 $\alpha$  : Abe F., Nakano A., Hirata I., Tanimoto K., Kato K.: The 18th International Symposium on Nanomedicine (Hiroshima), Dec 3, 2025.
- 57 : Effects of near-infrared diode laser irradiation on pain relief and neuropeptide markers during experimental tooth movement in rats : Okazaki K., Kunimatsu R., Nakatani A., Tanimoto K.: The 38th Annual Meeting of Taiwan Association of Orthodontists (Tainan), Dec 6, 2025.
- 58 : Renal dysfunction contributes to decreased bone turnover in the temporomandibular joint : Yoshida M., Yanoshita M., Hirose N., Kita D., Kubo N., Ogata S., Ito S., Tanimoto K.: The 38th Annual Meeting of Taiwan Association of Orthodontists (Tainan), Dec 6, 2025.
- 59 : Applying CAMBRA in Japan: Factors Associated With High/Extreme Caries Risk in Orthodontic Patients : Koizumi Y., Kunimatsu R., Kado I., Yoshimi Y., Ogasawara T., Ogashira S., Abe F., Okazaki K., Tanimoto K.: The 38th Annual Meeting of the Taiwan Association of Orthodontists (Tainan), Dec 6, 2025.
- 60 : Isolation of a novel temperate bacteriophage specifically killing activity against *Streptococcus mutans* clinical isolates : Sugai K., Matsuo M., Komatsuzawa H., Tanimoto K.: The 38th Annual Meeting of the Taiwan Association of Orthodontists (Tainan), Dec 6, 2025.
- 61 : Hyaluronidase-Induced Fragmentation of Hyaluronan Promotes Apoptosis in Human Articular Chondrocytes : Erika Odake, Yuki Asakawa, Naoto Hirose, Yuma Koizumi, Kotaro Tanimoto.: The 38th Annual Meeting of Taiwan Association of Orthodontists (Tainan), Dec 6, 2025.
- 62 : Determining the impacted state of maxillary canines in panoramic radiographs using deep learning: Yoshimi Y., Mine Y., Takeda S., Okazaki S., Ogawa S., Ito S., Murayama T., Tanimoto K.: The 38th Annual Meeting of Taiwan Association of Orthodontists (Tainan), Dec 6, 2025.
- 63 : Clinical Questions Regarding Bone Deformities and Bone Cysts in Temporomandibular Disorders : Hirose N.: Study Meeting of the Young Researchers Section, Japanese Society for the Temporomandibular Joint (Online), Dec 12, 2025.

#### F) Special lectures in academic meetings (2025.1-2025.12)

- 1 : Tanimoto K: Management and precautions for temporomandibular disorders in the treatment of jaw deformities. J. Soc. Jaw Deform. 21st Educational Training Session, WEB, 2025.
- 2 : Tanimoto K: Prognosis of Surgical Orthodontic Treatment - Consideration of Postoperative Stability-: The 35<sup>th</sup> Annual Meeting of the Japanese Society for Jaw Deformities, Jun 5, 2025.
- 3 : Tanimoto K: Temporomandibular Disorders in Children with Malocclusion : The 38th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Tokyo), Jul 13, 2025.
- 4 : Tanimoto K: Temporomandibular Disorders and Orthodontics- Research and Clinical paradigms-: Matsumoto Dental University Orthodontics Alumni Association (Shiojiri), Jul 24, 2025.
- 5 : Tanimoto K: The joy of eating for a lifetime – the world of professionals protecting systemic health starting from oral care. Earth Mondamin Seminar 2025 (Hiroshima), Oct 5, 2025.
- 6 : Tanimoto K: Comprehensive Orthodontics 1: Dentofacial Orthopedics~possibilities and limitations~: Orthodontic Seminar for Airlangga University Department of Orthodontics (Surabaya, Indonesia, online), Sep 26, 2025.
- 7 : Tanimoto K: Comprehensive Orthodontics 2: Periodontology and Orthodontics~ Orthodontic treatment for patients with periodontal diseases~: Orthodontic Seminar for Airlangga University Department of Orthodontics (Surabaya, Indonesia, online), Oct 28, 2025.
- 8 : Tanimoto K: Comprehensive Orthodontics 3: Surgical Orthodontics~ Orthodontic treatment for patients with Jaw deformity: Orthodontic Seminar for Airlangga University Department of Orthodontics (Surabaya, Indonesia), Nov 7, 2025.
- 9 : Tanimoto K: Treatment strategy of skeletal open bite: 4<sup>th</sup> Airlangga Annual Orthodontic Seminar (AAOS) (Surabaya, Indonesia), Oct 8, 2025.
- 10 : Hirose N.: Specialized conservative therapy for temporomandibular disorders and transition to surgical treatment: From the orthodontic perspective : The 38th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Tokyo), Jul 12, 2025.
- 11 : Hirose N.: Unraveling the Science Behind Impacted Teeth : Consortium for Professional Orthodontists (CPO) Collaboration Forum (Osaka), Sep 10, 2025.
- 12 : Yanoshita M.: Orthodontic treatment aimed at improving traumatic occlusion in middle-aged and

elderly patients : The 68th Annual Meeting of the Chu-Shikoku Orthodontic Society (Okayama), 2025.

- 13 : Kita D., Tsuge M., Tanimoto K.: The Relationship Between Teeth and Liver Disease ~From an Orthodontist's Perspective~ : Public lecture 'Let's protect our precious liver' (Shobara), Sep 6, 2025.
- 14 : Abe F., Kato K., Tanimoto K.: Designing engineered stromal cell-derived factor-1 $\alpha$  for promoting bone formation : The 14th TAO Resident's Forum -Oral Presentation Competition, 2025 The 37th Annual Meeting of the TAO (Tainan), Dec 5, 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1. Grant-in-aid for Scientific Research (B) : Tanimoto K., Elucidation of the Homing Characteristics of CD146-Positive Deciduous Dental Pulp Stem Cell-Derived Exosomes and a Novel Regenerative Medicine Strategy. 24K02653. 4,420,000 yen
2. Grant-in-aid for Scientific Research (B) : Kunimatsu R., Establishment of a new treatment for bone regeneration in the cleft jaw by fusing spatial control techniques and tissue engineering. 24K02654. 4,550,000 yen
3. Grant-in-aid for Scientific Research (C) : Asakawa Y., Elucidation of mechanisms of promoting mandibular cartilage differentiation by Sema3A and its application to new treatment with mandibular retrusion. 22K10273. 1,690,000 yen
4. Grant-in-aid for Scientific Research (C) : Yoshimi Y., Development of cleft closure therapy using functional amelogenin peptide and stem cell paracrine action. 25K13253. 1,820,000 yen
5. Grant-in-aid for Scientific Research (C) : Tsuka Y., To elucidate the ability of plant-derived extracts to induce periodontal tissue metabolism during tooth movement and the mechanism of their anti-inflammatory effects. 23K09414. 1,300,000 yen
6. Grant-in-aid for Scientific Research (C) : Abe T., Elucidating the metabolic activity of periodontal tissue and constructing a treatment to prevent root resorption utilizing stem cells from the culture media of human exfoliated deciduous teeth. 23K09415. 1,040,000 yen
7. Grant-in-aid for Scientific Research (C) : Yanoshita M., Analysis of bone metabolism abnormalities specific to the mandible head and the mechanism of suppression of ICR by FAK inhibition. 22K17230. 1,430,000 yen
8. Grant-in-aid for Early-Career Scientists : Yamada S., Application to peptide drug discovery for periodontitis during orthodontic treatment based on lactoferrin research. 24K0060. 1,950,000 yen
9. Grant-in-aid for Early-Career Scientists : Ito S., Elucidation of the bone metabolic regulatory mechanism mediated by miR-125b-5p derived from osteoblast exosomes. 25K20457. 2,470,000 yen
10. Grant-in-Aid for Early-Career Scientists : Hiraki T., Characterization of Different Mesenchymal Stem Cell Culture Supernatants from Origin and Development of a Therapeutic Method for Bone Regeneration Applying Humoral Factors. 24K20082. 2,080,000 yen
11. Grant-in-Aid for Early-Career Scientists : Koizumi Y., Analysis of disbiosis in the oral microflora of growing orthodontic patients and development of a preventive method for medically-induced diseases. 24K0058. 2,990,000 yen
12. Grant-in-Aid for Early-Career Scientists : Nakatani A., Elicidate of the mechanism of the photobiomodulation for periodontal tissue and tooth movement-induced pain. 24K20081. 1,430,000 yen
13. Grant-in-Aid for Early-Career Scientists : Sakata S., Elucidation of the mechanism of oxidative stress regulation by naturally derived extracts and application to the treatment of degenerative joint diseases. 25K20433. 2,470,000 yen
14. Grant-in-Aid for Early-Career Scientists : Nakano A., Rational molecular design of scaffold-binding growth factors for tissue engineering. 25K20308. 2,340,000 yen
15. Grant-in-Aid for Early-Career Scientists : Tsuboi E., Establishment of a novel regenerative therapy for temporomandibular joint disc perforation utilizing Semaphorin3A. 25K20434. 2,080,000 yen
16. Grant-in-Aid for Early-Career Scientists : Rikitake K., Establishment of a new jaw cleft regeneration treatment using mesenchymal stem cells derived from the dental pulp of deciduous teeth with excellent bone regeneration and angiogenesis abilities. 24K19919. 2,730,000 yen
17. Grant-in-Aid for Early-Career Scientists : Ogasawara T., The application of exsomes derived from culture supernatants of stem cells from human exfoliated deciduous teeth to the treatment of



- inflammatory bone destruction diseases. 24K20059. 2,080,000 yen
18. Grant-in-Aid for Early-Career Scientists : Ikeda K., Elucidation of the mechanisms by which sclerostin modulates periodontal tissue metabolism in response to maxillofacial skeletal growth and tooth movement. 25K204550A. 2,210,000 yen
  19. Grant-in-Aid for Early-Career Scientists : Naoki K., Elucidation of the mechanism underlying the effect of estrogen on mandibular growth via GPER and its application to treatment. 25K204560A. 1,690,000 yen
  20. Grant-in-Aid for Early-Career Scientists : Sugai K., Elucidation of the mechanism underlying the effect of estrogen on mandibular growth via GPER and its application to treatment. 25K20435. 1,950,000 yen
  21. Grant-in-Aid for Research Activity Start-up : Abe F., Molecular design of chimeric proteins as components of tissue engineering scafolds. 24K23588. 1,170,000 yen
  22. Grant-in-Aid for Research Activity Start-up : Odo A., Exploration of periodontal tissue metabolism inducing ability of deciduous dental pulp stem cell culture supernatant and its application to novel method for preventing root resorption. 24K23554. 1,300,000 yen
  23. NSK Nakanishi Foundation Research Grant : Kunimatsu R., Establishment of a Novel Therapeutic Method for Craniofacial Diseases Applying High-frequency Near-Infrared Semiconductor Laser. 1,000,000 yen
  24. Satake Foundation Research Grant 2025 : Hirose N., Elucidation of the pain perception mechanics in the temporomandibular joint via mechanoreceptor PIEZO2. 3010077. 500,000 yen
  25. Health Labour Sciences Research Grant Disability Policy Comprehensive Research Project (Co-I) : Hirose N., Research on the Actual Situation of Diseases Targeted for upbringing medical care. 300,000 yen
  26. Iwadare Scholarship Foundation Grant for Graduate Students' Overseas Presentation in Reiwa 7 (2025) : Tsuru C., Microglia-specific deactivation reverses allodynia in autism spectrum disorder model mice. 200,000 yen

#### (5) Academic Awards, etc.

- 1 : Tsuru C., Imado E., Song V., Uta D., Yokoyama R., Asano S., Kiguchi N., Kume T., Hanamoto H., Tanimoto K., Ago Y.: Microglia-specific deactivation reverses allodynia in autism spectrum disorder model mice : The 73rd Annual Meeting of the Japanese Association for Dental Research JADR/GC Award
- 2 : Tsuboi E., Asakawa Y., Hirose N., Yanoshita M., Sumi C., Takano M., Onishi A., Nishiyama S., Kubo N., Kita D., Tanimoto K.: The role of semaphorin 3A on chondrogenic differentiation : The 28th Hiroshima University School of Dentistry Alumni Association Encouragement Award
- 3 : Abe F., Kado I., Taguchi Y., Yanamoto S., Tanimoto K.: A case of Basal Cell Nevus Syndrome treated with fenestration for odontogenic keratocyst : The 68th Annual Meeting of the Chu-Shikoku Orthodontic Society Poster Award
- 4 : Kado I., Shiba F., Kunimatsu R., Koizumi Y., Yoshimi Y., Ogasawara T., Abe F., Ohgashira S., Tsai S., Okazaki K., Bono H., Tanimoto K.: The mouthwash containing cetylpyridinium chloride suppresses gingivitis and dysbiosis during orthodontic treatment – a double-blind randomized controlled study- : The 84th Annual Meeting of the Japanese Orthodontic Society Excellent Presentation Award
- 5 : Kita D., Hirose N., Yoshimi Y., Ogasawara T., Tanimoto K.: Risk factors in orthodontic traction therapy for impacted teeth, A study in mandibular second premolar : The 84th Annual Meeting of the Japanese Orthodontic Society Excellent Presentation Award
- 6 : Shibata R., Kunimatsu R., Ito S., Ogasawara T., Ohgashira S., Nakatani A., Rikitake K., Odo A., Hirabae A., Koyanagi I., Abe T., Sakata S., Hiraki T., Yoshimi Y., Tanimoto K.: Effects of human deciduous dental pulp-derived mesenchymal stem cell-derived extracellular- vesicles on the metabolism of osteoblasts : The 84th Annual Meeting of the Japanese Orthodontic Society Award
- 7 : Okazaki K., Kunimatsu R., Nakatani A., Sakata S., Kiridoshi H., Tanimoto K.: Effects of Near-Infrared diode laser irradiation on pain relief and neuropeptide markers during experimental tooth movement in the periodontal ligament tissues of rats : The 37th Annual Meeting of the Japanese Society for Laser Dentistry Excellent Presentation Award for Young Scientists

- 8 : Hirabae A.: Hiroshima University, Excellent Student Scholarship 2025
- 9 : Okimura N.: Hiroshima University, Excellent Student Scholarship 2025
- 10 : Pasanen S.: Hiroshima University, Excellent Student Scholarship 2025

(6) Patents

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## Department of Oral & Maxillofacial Radiology Division of Oral and Maxillofacial Surgery and Oral Medicine (Department of Oral and Maxillofacial Radiology)

### (1) Staff and Students

Professor : Naoya Kakimoto  
Associate Professor : Takashi Nakamoto  
Associate Professor/Lecturer : Yoshikazu Suei, Masaru Konishi  
Assistant Professor : Toshikazu Nagasaki, Masahiko Ohtsuka, Kiichi Shimabukuro  
Graduate Student : Fahri Reza Ramadhan, Megumi Nose

### (2) Main Research Activities

- 1: Radiographic diagnosis of oral diseases
- 2: Radiographic study on mandibular osteomyelitis
- 3: Study of radiation dosimetry in X-ray region for diagnosis
- 4: Study on the videofluoroscopic examination of swallowing
- 5: Improvement of treatment results in the radiotherapy for oral cancers
- 6: Radiographic study to screen osteoporosis using panoramic radiographs of the jaw
- 7: Study on taste disorder with oral cancer patients after radiotherapy
- 8: Quantitative analysis of temporomandibular joint on MRI
- 9: Radiomics research on cervical lymph node metastasis of tongue cancer using ultrasonographic images
- 10: Radiomics research on the prediction of MRONJ development using medical images

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Clinical factors associated with jawbone remineralization after nonsurgical treatment and imaging-based insights into its processes: Shimabukuro K., Wongratwanich P., Konishi M., Ramadhan F.R., Nose M., Ohtsuka M., Nagasaki T., Suei Y., Nakamoto T., Kakimoto N.: *Oral Radiology*, 2025. (Online ahead of print)
- 2: RadImageNet and ImageNet as datasets for transfer learning in the assessment of dental radiographs: A comparative study: Okazaki S, Mine Y, Yoshimi Y, Iwamoto Y, Ito S, Peng TY, Nishimura T, Suehiro T, Koizumi Y, Nomura R, Tanimoto K, Kakimoto N, Murayama T: *J Imaging Inform Med*, 38, 534-544, 2025.
- 3: Detecting the articular disk in magnetic resonance images of the temporomandibular joint using YOLO series: Yoshimi Y, Mine Y, Yamamoto K, Okazaki S, Ito S, Sano M, Peng TY, Nakamoto T, Nagasaki T, Kakimoto N, Murayama T, Tanimoto K: *Dent Mater J*, 44, 103-111, 2025.
- 4: Analyzing the performance of multimodal large language models on visually-based questions in the Japanese National Examination for Dental Technicians: Mine Y, Taji T, Okazaki S, Takeda S, Peng TY, Shimoe S, Kaku M, Nikawa H, Kakimoto N, Murayama T: *J Dent Sci*, 20, 2460-2466, 2025.
- 5: Radiomics analysis of intraoral ultrasonographic images for prediction of late cervical lymph node metastasis in patients with tongue cancer: influence of marginal region: Konishi M, Shimabukuro K, Kakimoto N: *Dentomaxillofac Radiol*, 54, 389-395, 2025.
- 6: Benchmarking multimodal large language models on the dental licensing examination: Challenges with clinical image interpretation: Mine Y, Okazaki S, Taji T, Kawaguchi H, Kakimoto N, Murayama T: *J Dent Sci*, 20, 2427-2435, 2025.
- 7: Identification of an unidentified corpse with gingival overgrowth: A case report: Oka H, Namera A, Katsuya N, Harada T, Fujii A, Fukumoto W, Ito H, Nagao T, Kakimoto N, Nagao M: *Leg Med (Tokyo)*, 75, 102628, 2025.
- 8: Age estimation from lateral cephalograms using deep learning: A pilot study from early childhood to older adults: Tokinaga R, Mine Y, Yoshimi Y, Okazaki S, Ito S, Takeda S, Ogawa S, Peng T, Kakimoto N,

Tanimoto K, Murayama T: *Journal of Clinical Medicine*, 14, 7084, 2025.

9: Usefulness of a novel density measurement drill for evaluating cancellous bone density: correlation between CT value and drilling torque value in bovine ribs: Doi K, Wakamatsu K, Kobatake R, Oki Y, Makihara Y, Konishi M, Tsuga K: *Int J Implant Dent*. 11;7, 2025.

10: Multicatheter-guided rigid registration for high-dose-rate interstitial brachytherapy for mobile tongue cancer: Koganezawa AS, Nakashima T, Konishi M, Shimabukuro K, Hirokawa J, Nishibuchi I, Kakimoto N, Murakami Y. *Phys Med*. 133:104981, 2025.

11: Radiomics analysis for characterizing high-risk mandibular regions of medication-related osteonecrosis of the jaw using computed tomography: Konishi M: *J Oral Maxillofac Surg, Med, Pathol*, Available online 17 November, 2025.

12: Investigation of the improvement of swallowing function with low-frequency pulse waves or interference waves delivered via cervical electrical stimulation in patients with Parkinson's disease: A randomized controlled study protocol: Nakamori M, Matsuyama R, Toko M, Yamada H, Hayashi Y, Yoshikawa K, Yoshikawa M, Nagasaki T, Shimizu Y, Maruyama H: *Contemporary Clinical Trials Communications* 44, 101463, 2025.

13: Comparison of swallowing dynamics between jelly and thickened liquid commonly used for swallowing training in Japan: Yoshikawa M, Kayashita J, Nakamori M, Nagasaki T, Masuda S, Yoshida M: *Scientific Reports* 15, 26299, 2025.

## B) Review

1: Japanese clinical practice guidelines for oral cancer, 2023: Kurita H, Uzawa N, Nakayama H, Abe T, Ibaraki S, Ohyama Y, Uchida K, Sato H, Miyabe S, Abé T, Kakimoto N, Kaida A, Sugiura T, Kioi M, Danjo A, Kitamura N, Hasegawa O, Tanaka T, Ueda N, Hasegawa T, Asoda S, Katsuta H, Yanamoto S, Yamada S, Takeda D, Suzuki T, Ohta Y, Kirita T: *Int J Oral Maxillofac Surg*, 54, 461-476, 2025.

2: Artificial intelligence for medication-related osteonecrosis of the jaw: a scoping review: Mine Y, Okazaki S, Yamasaki S, Kakimoto N, Yanamoto S, Murayama T: *Oral Surg Oral Med Oral Pathol Oral Radiol*, 140, 405-415, 2025.

## C) Publications

1: What patients should see! Key points in dental radiography: Kakimoto N: *nico*, February, 39-49, 2025.

2: Multicatheter-guided rigid registration for high-dose-rate interstitial brachytherapy for mobile tongue cancer: Koganezawa A, Nakashima T, Konishi M, Shimabukuro K, Hirokawa J, Nishibuchi I, Kakimoto N, Murakami Y: *Physica Medica*, 133, 104981, 2025.

3: Trends in diagnostic imaging research (1): Development of a quantitative evaluation method for the Temporomandibular Joint using T2 mapping: Kakimoto N, Nakamoto T, Konishi M: *Nihon Shika Hyoron (The Nippon Dental Review)*, Vol.85, 131-133, 2025.

4: Trends in diagnostic imaging research (2): Development of a lesion onset prediction model using Radiomics analysis: Konishi M, Nakamoto T, Kakimoto N: *Nihon Shika Hyoron (The Nippon Dental Review)*, Vol.85, 129-131, 2025.

5: Trends in Diagnostic Imaging Research (3): An osteoporosis screening system using panoramic radiographs with Convolutional Neural Networks: Nakamoto T, Konishi M, Kakimoto N: *Nihon Shika Hyoron (The Nippon Dental Review)*, Vol.85, 115-117, 2025.

6: Application of Ultrasonography in Tongue Cancer Diagnosis and Treatment: Konishi M: *Ultrasonic Technology*, 37:74-76, 2025.

## E) Presentation at Scientific Meeting

1: Influence of Dead Cancer Cells on Remineralization at Bone Destruction Sites: Miyashita Y., Shimabukuro K., Kusuhara T., Nose M., Ramadhan F.R., Otsuka M., Nagasaki S., Konishi M., Suei Y., Nakamoto T., Kakimoto N.: *The 44th Joint Meeting of the Kansai and Kyushu Branches (Nagasaki)*, 2025.

2: A Case of a Supernumerary Tooth Suspected to Be a Third Dentition: Konishi M, Shimabukuro K, Ramadhan FR, Kakimoto N: *The 43rd annual joint meeting of Kansai and Kyushu of Japan Society of Oral and Maxillofacial Radiology (Osaka)*, 2025.

- 3: Periosteal Chondroma in Mandibular Condyle: A rare case report: Ramadhan FR, Shimabukuro K, Otsuka M, Nagasaki T, Konishi M, Sueti Y, Nakamoto T, Furusho H, Miyauchi M, Yamazaki S, Yanamoto S, Kakimoto N: The 43rd annual joint meeting of Kansai and Kyushu of Japan Society of Oral and Maxillofacial Radiology (Osaka), 2025.
- 4: Visualization of pharyngeal residue using a pocket ultrasound device: A preliminary study: Nagasaki T, Maruyama S, Yoshikawa M, Yamada S, Ramadhan FR, Shimabukuro K, Otsuka M, Sueti Y, Konishi M, Nakamoto T, Tsuga K, Kakimoto N: The 43rd annual joint meeting of Kansai and Kyushu of Japan Society of Oral and Maxillofacial Radiology (Osaka), 2025.
- 5: Importance of perioperative oral care in the prevention of postoperative pneumonia and evaluation of the timing of oral care intervention during surgery under general anesthesia: Naganuma K, Nishi H, Shigeishi H, Ohta K, Yoshioka Y, Konishi M, Kakimoto N, Ohdo A, Horikoshi S, Tari M, Yamazaki S, Ito N, Yano K, Nakaoka M, Yanamoto S, Tanimoto K, Kawaguchi H: The 22nd Annual Meeting and Scientific Conference of the Japanese Society of Oral Care (Niigata), 2025.
- 6: Effects of probiotic supplementation on the prevention of oral mucositis and maintenance of nutritional status during chemotherapy for breast cancer: Kuwahara Y, Nishi H, Ohta K, Shigeishi H, Konishi M, Kakimoto N, Yoshioka Y, Horikoshi S, Yano K, Nakaoka M, Yamazaki S, Ito H, Yanamoto S, Tanimoto K, Kawaguchi H: The 22nd Annual Meeting and Scientific Conference of the Japanese Society of Oral Care (Niigata), 2025.
- 7: An attempt at anatomical identification on ultrasonographic images of the pharyngo-laryngeal region during swallowing: Nagasaki T, Maruyama S, Yoshikawa M, Yamada S, Tsuga K, Kakimoto N: The 36th Annual Meeting of the Japanese Society of Dysphagia Rehabilitation (Aichi), 2025.
- 8: Periodontal Status in Children with Hypophosphatasia using Orthopantomography: Takagi M, Okawa R, Nakamoto T, Suehiro Y, Kakimoto N, Nakano K: International Association of Paediatric Dentistry (Cape Town), 2025.
- 9: A case of observing serial changes in occlusal radiographs during phase I orthodontic treatment using a rapid maxillary expansion appliance: Suzuki Y, Takeda N, Osugi S, Sugai C, Suzuki Y, Matsuo K, Nakashima M, Yoshida M, Nakano M, Nomura R, Tanimoto K, Kakimoto N, Asaeda M, Nishimura R, Naito M: The 109th Hiroshima University Dental Society and the 64th Hiroshima Prefectural Dental Society (Hiroshima), 2024.
- 10: Two cases of developing odontoma showing different imaging findings: Kusuhara T, Nakamoto T, Sueti Y, Konishi M, Nagasaki T, Otsuka M, Shimabukuro K, Nose M, Ramadhan FR, Miyashita Y, Furusho H, Ando T, Kakimoto N: The 44th annual joint meeting of Kansai and Kyushu of Japan Society of Oral and Maxillofacial Radiology (Osaka), 2025.
- 11: Two cases with straight neck showing dysphagia-like findings after surgery for mandibular gingival carcinoma: Arai M, Nagasaki T, Yamada S, Yoshikawa M, Nose M, Ramadhan FR, Shimabukuro K, Otsuka M, Sueti Y, Konishi M, Nakamoto T, Kakimoto N: The 44th annual joint meeting of Kansai and Kyushu of Japan Society of Oral and Maxillofacial Radiology (Osaka), 2025.
- 12: Follow-up study of oral status after brachytherapy for patients with oral cancers: Konishi M, Kakimoto N: 79th Annual meeting of Japanese Stomatological Society (Matsumoto), 2025.
- 13: Prediction for medication-related osteonecrosis of the jaw using radiomics with panoramic radiography: Konishi M, Nishi H, Kawaguchi H, Kakimoto N. The 65th congress of Japanese Society of Oral and Maxillofacial Radiology (Sapporo), 2025.
- 14: Prediction for medication-related osteonecrosis of the jaw using radiomics with CT: Konishi M: The 35th annual meeting of the Japanese Association of Oral Medicine and the 38th annual meeting of the Japanese Society of Oral Diagnosis / Oral Medicine (Sendai), 2025.
- 15: Investigation of supernumerary teeth in the premolar region: potential for third dentition: Konishi M, Shimabukuro K, Ramadhan FR, Nose M, Kakimoto N: The 6th Autumn Conference of Japanese Society for Oral and Maxillofacial Radiology (Osaka), 2025.
- 16: A multi-institutional collaborative study on Pocket Oral Echo(R) using a simulated tongue cancer phantom: Hayashi T, Takamura M, Kobayashi T, Nikkuni Y, Konishi M, Aruji Y, Ogura I: The 79th Annual meeting of Japanese Stomatological Society (Matsumoto), 2025.
- 17: Quantitative analysis of the displacement of catheters for HDR interstitial brachytherapy: Koganezawa A, Nakashima T, Konishi M, Shimabukuro K, Hirokawa J, Nishibuchi I, Kakimoto N, Murakami Y: The 38th annual meeting of Japanese Society for Radiation Oncology (Tokyo), 2025.
- 18: Improvement of accuracy of osteoporosis screening support system using transfer learning with panoramic X-ray images taken by different radiography machines: Nakamoto T, Tagichi A, Hirasawa Y, Kakimoto N: The 65th congress of Japanese Society of Oral and Maxillofacial Radiology (Sapporo), 2025.
- 19: Development of a pharyngeal residue evaluation method using a Pocket echo (First report: Examination

of Probe position): Maruyama S, Yoshikawa M, Nagasaki T, Yamada S, Tsuga K: The 31<sup>st</sup> Annual Meeting of the Japanese Society of Dysphagia Rehabilitation (Yokohama), 2025.

20: The comparison of swallowing screening tests with videofluoroscopic examination in stroke patients: Nakamori M, Imamura E, Yoshida M, Yoshikawa M, Nagasaki T, Masuda S, Kayashita J, Maruyama H, Hosomi N: 66<sup>th</sup> Annual Meeting of the Japanese Society of Neurology (Osaka), 2025.

#### F) Special lectures in academic meetings

1: Fundamentals and practical use of dental X-ray imaging that dental hygienists should know: Joint Seminar by Shin-Kansai Health and K-wave, Periodontology and Cariology (Osaka), 2025.

2: TMJ imaging from multi-modality: Kakimoto N: International Collaborative Webinar in Oral and Maxillofacial Radiology between Universitas Indonesia and Hiroshima University (Web), 2025.

3: Atomic bomb exposure and Dentists: Radiation exposure and oral health management: Kakimoto N: Symposium Commemorating the 80th Anniversary of the Atomic Bombing, Science and Peace at Hiroshima University 80 Years after the Atomic Bombing, Research Institute for Radiation Biology and Medicine, Hiroshima University (Hiroshima), 2025.

4: Application of intraoral ultrasonography and Radiomics: Masaru Konishi: Symposium "Intraoral US × Radiomics", The 43rd Annual Meeting of Japanese Society of Oral Oncology (Tokyo), 2025.

5: Research on nonionic water-soluble Iodine contrast media and radiation dose during VF examination: Masaru Konishi: Symposium "VFSS that makes everyone happy!", The 31st annual meeting of the Japanese Society of Dysphagia Rehabilitation (Yokohama), 2025.

6: Hands-on seminar of Ultrasonography: Hayashi T, Ariji Y, Konishi M, Kobayashi T, Takamura M.: The 79th congress of Japanese Stomatological Society (Matsumoto), 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1: Grant-in-aid for Scientific Research (C): Kakimoto N, Saito A, Nakamoto T, Konishi M, Quantitative dosimetry and dose distribution prediction modeling for high-dose-rate adaptive interstitial brachytherapy for oral cancer. 22K10219. 490,000 JPY

2: Grant-in-aid for Scientific Research (C): Murayama T, Iwamoto Y, Kakimoto N, Mine Y, Okazaki S: Development and implementation of an integrated dental imaging model using deep learning. 25K15961. 50,000 JPY

3: Grant-in-aid for Scientific Research (C): Murakami Y, Kawahara D, Imano N, Konishi M, Nishibuchi I. Tongue-out Radiotherapy: A new approach to reduce toxicity. 24K10860, 780,000 JPY.

4: Joint research from Research Center for Radiation Disaster Medical Science: Konishi M, Shimabukuro K. Study on the mechanism of taste disorder from radiation. 100,000 JPY.

#### (5) Academic Awards, etc.

1. Konishi M: President's award : Prediction for medication-related osteonecrosis of the jaw using radiomics with CT: Konishi M: The 35th annual meeting of the Japanese Association of Oral Medicine and the 38th annual meeting of the Japanese Society of Oral Diagnosis / Oral Medicine .

#### (6) Patents

1: Prediction device and prediction method, generated model production device and production method, and control program (Application No.: JP 2025-078907) (Applicant: Masaru Konishi)

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## Department of Biological Endodontics, and Division of Preventive and Restorative Dentistry (Department of Endodontics and Operative Dentistry)

### (1) Staff and Students

Professor: Hideki Shiba

Lecturer: Katsuhiko Takeda

Assistant Professor: Noriko Saito-Nakayama, Kazuma Yoshida, Jun Nakanishi, Tomoki Kumagai, Tomoki Kawayanagi (from November)

Medical Doctor: Tomoya Naruse, Tomoki Kawayanagi (until October)

Graduate Student: Saki Nishihama, Takuya Arita, Song Bingxin, Kosuke Ueda, Reina Kawai, Daichi Koan, Yohei Takahashi, Ryotaro Taga, Nanami Miyake, Yumi Yamauchi, Kimiaki Yuhi, Ayaka Miyata-Arita (Leave of absence)

### (2) Main Research Activities

- 1: Studies on biological regeneration of dentin/pulp complex and periapical tissues
- 2: Studies on pulp regeneration by regulation of inflammation
- 3: Studies on biological obturation of root canals at apical areas
- 4: Observational studies and clinical trials on endodontics

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Periodontal ligament fibroblasts utilize isoprenoid intermediate farnesyl diphosphate for maintaining osteo/cementogenic differentiation abilities: Wang X., Suzuki S., Yuan H., Hirata-Tsuchiya S., Fahreza R.R., Nemoto E., Shiba H., Yamada S.: *J Dent Sci*, 20, 560-568, 2025.
- 2: A case report of invasive cervical resorption of a maxillary central incisor: Takeda K., Naruse T., Kawai R., Takahashi Y., Shiba H.: *J Jap Endod Assoc*, 46, 30-35, 2025.
- 3: Two cases in which root canal treatment of the invaginated portion was effective for periodontitis around dens invaginatus in maxillary lateral incisors: Saito-Nakayama N., Hirata-Tsuchiya S., Miyata-Arita A., Takeda K., Shiba H.: *J Jap Endod Assoc*, 46, 36-43, 2025.
- 4: Comprehensive analysis of bacteriocins produced by clinical enterococcal isolates and their antibacterial activity against Enterococci including VRE: Fujii A., Kawada-Matsuo M., Le M.N., Suzuki Y., Nishihama S., Shiba H., Aikawa T., Komatsuzawa H.: *Sci Rep*, 15, 4846, 2025.
- 5: Oral colonization of antimicrobial-resistant bacteria in home health care participants and their association with oral and systemic status: Nishihama S., Kawada-Matsuo M., Le M.N., Fujii A., Haruta A., Kajihara T., Hashimoto Y., Yoshikawa M., Aikawa T., Tsuga K., Ohge H., Sugai M., Shiba H., Komatsuzawa H.: *Sci Rep*, 15, 5776, 2025.
- 6: Survey of the characteristics of patients referred to the Department of Conservative Dentistry, Hiroshima University Hospital: Furutama D., Arita T., Miyata-Arita A., Kawayanagi T., Hirata-Tsuchiya S., Saito-Nakayama N., Nakanishi J., Yoshida K., Kumagai T., Sadaoka N., Naruse T., Nishihama S., Takahashi Y., Taga R., Miyake N., Yamauchi Y., Ueda K., Kawai R., Koan D., Wang C., Song B., Takeda K., Shiba H.: *Journal of the Japanese Society of Conservative Dentistry*, 68, 16-22, 2025.
- 7: Clinical and genetic analysis of oral and nasal staphylococcus aureus isolates in dental patients: Kawayanagi T., Kawada-Matsuo M., Kusaka S., Yasutomi Y., Suzuki Y., Nishihama S., Le M.N., Sugawara Y., Hisatsune J., Kutsuno S., Asakawa M., Takeshita T., Nomura R., Shiba H., Sugai M., Komatsuzawa H.: *Sci Rep*, 15, 13149, 2025.
- 8: Oral Dysbiosis Is Associated with the Pathogenesis of Aortic Valve Diseases: Yaguchi E., Komiyama Y., Inami S., Shibasaki I., Shintani T., Shiraishi R., Hyodo T., Shiba H., Hamaguchi S., Fukuda H., Toyoda S., Fukumoto C., Izumi S., Wakui T., Kawamata H.: *Microorganisms*, 13, 1677, 2025.
- 9: Complete genome sequence of a tetracycline-resistant *Streptococcus mutans* strain carrying the tet(M)

- gene: Nishihama S., Suzuki Y., Shintani T., Tsunoi M., Hisatsune J., Sugawara Y., Takeda K., Kawada-Matsuo M., Kajiya M., Sugai M., Shiba H., Komatsuzawa H.: *J Oral Biosci*, 67, 100679, 2025.
- 10: Cytokine Profiling of Exudates from Periapical Lesions and the Efficacy of CXCL10 as a Healing Marker: Ouhara K., Taniguchi Y., Zhai R., Takeda K., Fujimori R., Kuwahara N., Ueda S., Hou Y., Honoka N., Shimizu M., Kono S., Iwata T., Matsuda S., Mizuno N.: *Pathogens*, 14, 1013, 2025.
- 11: Type H Vessel Is Progressively Lost in Periodontitis: A 3D Tissue-Clearing Analysis of Alveolar Bone: Shindo S., Nakamura S., Shindo R., Ueda T., Adachi T., Okamoto M., Suzuki M., Hosokawa Y., Hosokawa I., Shiba H., Toshihisa K.: *ODEP*, 5, 20-31, 2025.

## B) Reviews

none

## C) Publications

- 1: Endodontic–Periodontal Lesions: Shiba H., Takeda K.: *Endodontics*, 6th Edition (edited by Takashi Okiji et al.), Ishiyaku Publishers, Inc., 2025.

## D) Other Publications

none

## E) Presentation at Scientific Meeting

- 1: A twenty-five-year case of the initial periodontal treatment for severe periodontal tissue destruction in maxillary anterior teeth : Shiba H., Tajiri T., Takeda K. : The 68th Spring Meeting of the Japanese Society of Periodontology (Naha), 2025.
- 2: Investigation of the characteristics of oral and nasal microbiota and factors influencing similarity between these microbiota: Asakawa M., Kawayanagi T., Kageyama S., Matsuo M., Shiba H., Komatsuzawa H., Takeshita T.: The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 3: Comprehensive report on the isolation and characterization of *Stenotrophomonas maltophilia* from the oral cavity: Nishihama S., Kawada-Matsuo M., Vo M Ngoc., Kawayanagi T., Sugawara Y., Sugai M., Shiba H., Komatsuzawa H.: The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 4: Isolation of drug-resistant bacteria from nasal and oral cavities and their follow-up studies: Ueda K., Kawayangi T., Kawada-Matsuo M., Sugawara Y., Hisatsune J., Takeshita T., Shiba H., Sugai M., Komatsuzawa H.: The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 5: Analysis of the diversity of sensitivity of *Streptococcus mutans*-specific bacteriophage  $\Phi$ KSM96: Yamauchi Y., Nishihama S., Kawada-Matsuo M., Hisatsune J., Sugawara Y., Sugai M., Shiba H., Komatsuzawa H.: The 98th Annual Meeting of Japanese Society for Bacteriology (Kanazawa), 2025.
- 6: The Oral Cavity is a Potential Reservoir of Gram-Negative Antimicrobial-Resistant Bacteria, Which Are Correlated with Ageing and the Number of Teeth: Kawada-Matsuo M., Kawayanagi T., Takeshita T., Asakawa M., Sugawara Y., Arai C., Shiba H., Sugai M., Komatsuzawa H.: *ASM Microbe 2025* (Los Angeles (CA)), 2025.
- 7: Assessment of oral environment and oral function in HIV-negative and HIV-positive hemophilia patients: Shintani T., Okada M., Kawagoe M., Iwata T., Yamasaki N., Fujii T., Shiba H.: 10th Asia Pacific AIDS and Co-Infections Conference (Tokyo), 2025.
- 8: Multifaceted investigation of gram-negative antimicrobial-resistant bacteria isolated from the oral and nasal cavities by genomic, statistical and flora analyses: Kawayangi T., Shiba H.: The 162nd Meeting of the Japanese Society of Conservative Dentistry (Matsuyama), 2025.
- 9: Complete genome sequence of a tetracycline-resistant *Streptococcus mutans*.: Nishihama S., Takeda K., Shiba H.: The 162nd meeting of the Japanese Society of Conservative Dentistry (Matsuyama), 2025.
- 10: Diversity in susceptibility of *Streptococcus mutans* specific bacteriophage,  $\Phi$ KSM96, to the clinical isolates: Yamauchi Y., Nishihama S., Takeda K., Shiba H.: The 162nd Meeting of the Japanese Society of Conservative Dentistry (Matsuyama), 2025.
- 11: Negative response to electric pulp testing in affected teeth following periodontal regenerative therapy,



- Two case reports: Nagahara T., Shiba H., Takeda K., Iwata T., Mizuno N.: The 46th meeting of the Japan Endodontic Association (Shiojiri), 2025.
- 12: Anaerobic Culture System in Endodontics: A Retrospective Study Evaluating Its Impact on Treatment Success: Nakanishi J., Saito-Nakayama N., Hirata-Tsuchiya S., Furutama D., Miyata-Arita A., Kawayanagi T., Arita T., Nishihama S., Naruse T., Sadaoka N., Kumagai T., Yoshida K., Takeda K., Shiba H.: The 46th meeting of the Japan Endodontic Association (Shiojiri), 2025.
  - 13: A Comprehensive Report on the Isolation and Characterization of *Stenotrophomonas maltophilia* from the Oral Cavity.: Nishihama S., Kawayanagi T., Kawada-Matsuo M., Shiba H., Komatsuzawa H.: The 67th Annual Meeting of the Japanese Association for Oral Biology (Fukuoka), 2025.
  - 14: Association between Methicillin-Resistant *Staphylococcus aureus* Carriage in the Oral Cavity and Oral Environment: Nishihama S., Shiba H.: The 25th Scientific Meeting of the Japanese Association for Dental Science (Kanagawa), 2025.
  - 15: CHARACTERIZATION OF ORAL-DERIVED STAPHYLOCOCCUS AUREUS AND ITS RELATIONSHIP TO THE ORAL ENVIRONMENT: Nishihama S., Kagawa-Matsuo M., Kawayanagi T., Asakawa M., Takeshita T., Shiba H., Komatsuzawa H.: International Society of Microbiota (ISM) ISM – RIKEN Tokyo Targeting Microbiota (Tokyo), 2025.
  - 16: Bio-3D printed grafts of clumps of MSCs/ECM complexes induce periodontal tissue regeneration in a beagle dog one-wall defect model: Yasuda G., Takeda K., Yoshimoto T., Morimoto S., Yoshino M., Suzuki M., Takai H., Torii Y., Maekawa T., Kajiya M.: The 163rd meeting of the Japanese Society of Conservative Dentistry (Nagasaki), 2025.
  - 17: Regulation of Inflammatory Cytokine Expression in Human Dental Pulp Cells by IL-34: Kawai R., Takeda K., Naruse T., Takahashi Y., Yuhi K., Kumagai T., Nakanishi J., Shiba H.: The 163rd meeting of the Japanese Society of Conservative Dentistry (Nagasaki), 2025.
  - 18: Exploration of ΦKSM96-homologous temperate phages: Genomic variation and lytic activity : Yamauchi Y., Nishihama S., Kawada-Matsuo M., Shiba H., Komatsuzawa H. : The 5th Annual Meeting of Japanese Society for Phage Therapy (Osaka), 2025.
  - 19: Association between oral environment/oral function and detection of *Streptococcus mutans* in patients with hemophilia: Shintani T., Okada M., Kawagoe M., Iwata T., Yamazaki N., Fujii T., Shiba H.: The 39th annual meeting of the Japanese Society for AIDS Research (Kumamoto), 2025.
  - 20: A Study on the Awareness of HIV/AIDS Among Postgraduate Clinical Training Dentists: Usami T., Sato J., Goto S., Saito Y., Maruoka Y., Takagi J., Shikano M., Shiba H., Yoshikawa H.: The 39th annual meeting of the Japanese Society for AIDS Research (Kumamoto), 2025.

#### A) F) Special lectures in academic meetings

- 1: Infection control: Shiba H.: Clinical workshop of Japan Endodontic Association (Tokyo), 2025.
- 2: Endodontic treatment for the era of 100-year lifespans: considering the long-term prognosis of endodontically treated teeth and the advancement of endodontic therapy: Shiba H.: 2025 Japan Endodontic Association Workshop (Sapporo), 2025.
- 3: Support Activities for People Living with HIV and Epidemiological Research Conducted by the Dental Department of Hiroshima University Hospital: Shiba H.: AIDS Prevention Foundation HIV Medical Training Course / Hokkaido HIV Dental Care Training Seminar (Hakodate), 2025.
- 4: Cementum Tear: Shiba H.: The 42nd Alpen Oral Science Forum (Toyama), 2025.
- 5: Graduate Student's Challenge to Study Abroad for Research—The Journey to Presenting Periodontal Research at an International Conference and Financial Challenges—: Kumagai T.: The 58<sup>th</sup> Conference of Hiroshima University Dental Society (Hiroshima), 2025.

#### B) (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grants for research received from Hiroshima Prefecture: Shiba H., Study on network-construction of dental practice for HIV infection: 3.0 million JPY
- 2: Grants-in aid for scientific research (C): Takeda K., Development of the treatment of pulpitis, targeting the endoplasmic reticulum stress response. #23K09184: 1.2 million JPY
- 3: Japan Agency for Medical Research and Development : Project for Regenerative/Cellular Medicine and Gene Therapy (Non clinical): Takeda K., (Co-investigator): Development of promising periodontal regenerative therapy using 3D grafting tissue fabricated by a bio-3D printer: 1.3 million JPY
- 4: Grants-in Aid for scientific research (C): Yoshida K., Development of the novel treatment of endodontics,

- utilizing MXRA5 that strongly expressed in dental pulp stem cells. #25K13007: 1.3 million JPY
- 5: Grants-in-Aid for Scientific Research (C): Nakanishi J., Development of local application of teriparatide for inflammatory bone resorption. #24K12930: 1.1 million JPY
  - 6: Grants-in-Aid for Research Activity Start-up: Kumagai T., Elucidation the engagement of Oxytocin produced by dental infections in PTB/LBW. #24K23587: 1.1 million JPY
  - 7: Grants-in-Aid for Early-Career Scientists: Kumagai T., Development of a new pulp-preservation therapy based on the Oxytocin receptor agonist LIT-001. #25K20285: 1.8 million JPY
  - 8: Grants-in-Aid for Research Activity Start-up: Kawayanagi T., Elucidation of the mechanism of high-level resistance gene expression in oral drug-resistant gram-negative bacteria. #25K24099: 1.2 million JPY
  - 9: Grants-in-Aid for Research Activity Start-up : Naruse T., The influence of the unfolded protein response in apical periodontitis with a focus on inflammatory bowel disease risk factors. #25K24098: 1.0 million JPY
  - 10: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Nishihama S., Characterisation of oral drug-resistant bacteria and establishment of new antimicrobial therapies: 400 thousand JPY
  - 11: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Ueda K., Search for antimicrobial substances that specifically eliminate drug-resistant bacteria and development of probiotic products: 400 thousand JPY
  - 12: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Kawai R., Research on the development of a new pulp capping agent by regulating the dental pulp cell-macrophage cooperation: 400 thousand JPY
  - 13: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Koan D., Development of a novel therapeutic approach for schizophrenia using a specific VPAC2 receptor inhibitory peptide: 400 thousand JPY
  - 14: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Takahashi Y., Development of targeting the Endoplasmic Reticulum Stress Response for the Treatment of Pulpitis: 400 thousand JPY
  - 15: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Taga R., Development of a Novel Vital Pulp Therapy Using a Combination of W9 Peptide and MTA Cement: 400 thousand JPY
  - 16: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Miyake N., Development of pulp preservation therapy with LIT-001, an Oxytocin receptor agonist with anti-inflammatory and calcification-inducing effects: 400 thousand JPY
  - 17: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Yamauchi Y., Establishment of the isolation and genetic modification method of bacteriophages effective against *Streptococcus mutans*: 400 thousand JPY
  - 18: Program for Developing and Supporting the Next-Generation of Innovative Researchers at Hiroshima University: Yuhi K., A Basic Study on the Development of a Novel Inhibitor of External Root Resorption based on the Regulation of Reactive Oxygen Species: 400 thousand JPY

#### (5) Academic Awards, etc.

- 1: Nishihama S, Shiba H: The 25th Scientific Meeting of the Japanese Association for Dental Science Poster Award, 2025.
- 2: Nishihama S: The 2025 Excellent Student Scholarship, 2025.

#### C) (6) Patents

none

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## Department of Pediatric Dentistry Division of Oral Health and Development (Department of Pediatric Dentistry)

### (1) Staff and Students

Professor:	Ryota Nomura (*) Chief: Ryota Nomura (by-work)
Associate Professor:	Chieko Mitsuhashi (~Mar.)
Assistant Professor:	Meiko Tachikake (~Mar.), Yuko Iwamoto, Tatsuya Akitomo, Yuria Asao, Satoru Kusaka
Assistant Professor (Special Appointment):	Mariko Kametani (Apr.~)
Graduate Student:	Momoko Usuda (~Mar.), Mariko Kametani (~Mar.), Masashi Ogawa, Ami Kaneki, Taku Nishimura, Shunya Ikeda, Yuya Ito, Eimi Tabata, Yasuko Tsuge, Shuma Hamaguchi, Kana Kawashima (Apr.~), Yuto Shoji (Apr.~)
Researcher:	Chieko Mitsuhashi (Apr.~)
Clinical Trainee:	Fumiko Hayashi, Ami Okamine (~Sep.), Seiko Watanabe (~Mar.), Shuhei Kaneko, Momoko Usuda (Apr.~), Meiko Tachikake (May.~), Yuka Mochizuki (May.~)

### (2) Main Research Activities

- 1: Research on the effects of oral bacteria on systemic diseases
- 2: Bacteriological research of onset mechanism and prevention of dental caries in children
- 3: Bacteriological research on pediatric periodontal diseases and clinical research on oral care for children with systemic diseases, including hemophilia, type 1 diabetes, and pediatric cancer during the perioperative period.
- 4: Evaluation of psychological stress in dental treatment in children
- 5: Dental approach to pediatric dysphagia
- 6: Investigation of oral status of Cambodian children
- 7: Research in oral environment and dental diseases in abused children

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: RadImageNet and ImageNet as datasets for transfer learning in the assessment of dental radiographs comparative study: Okazaki S., Mine Y., Iwamoto Y., Ito S., Peng T. Y., Nishimura T., Koizumi Y., Nomura R., Tanimoto K., Kakimoto N., Murayama T.: *Journal of Imaging Informatics in medicine*, 38(1), 534-544, 2025.
- 2: Relationship between childhood caries and social background: Regarding the novel emerged correlation between induced abortion and dental caries: Nagao T., Nakao N., Nagao M., Oka H., Nakashima A., Uchida M., Ito A., Nomura R., Shimamura K., Namera A., Harada T., Murata K., Hatori K.: *Pediatric Dental Journal*, 35 (1), 100341, 2025.
- 3: Current knowledge about infective endocarditis prevention among dentists affiliated with the Japanese Dental Association: Kadota T., Akitomo T., Iwamoto Y., Okawa R., Mikasa Y., Ohara T., Daimon M., Izumi C., Yanagita K., Nomura R., Nakano K.: *Journal of Cardiology*, 86(1), 90-92, 2025.
- 4: The oral pathobiont *Streptococcus anginosus* is enriched in the gut of stroke subjects and predicts two-year cardiovascular outcome: Tonomura S., Hattori Y., Ishibashi T., Ikeda S., Noda K., Chiba T., Kato Y., Asano R., Fukuma K., Taira-Edamoto Y., Motooka D., Inagaki T., Okazawa M., Nakamura S., Koga M., Toyoda K., Nomura R., Nakano K., Friedland R., Takeda K., Takahashi R., Ihara M., Nakaoka Y.: *Circulation Journal*, 89(12), 1931-1939, 2025.
- 5: A case of hypophosphatasia started enzyme replacement therapy since babyhood stage: Akitomo T., Niizato N., Kaneki A., Ogawa M., Nishimura T., Kametani M., Usuda M., Iwamoto Y., Mitsuhashi C., Nomura R.: *Children*, 12 (1), 61, 2025.
- 6: Case study of a broken instrument in a primary tooth and literature review: Nakano M., Akitomo T.,

- Ogawa M., Kametani M., Usuda M., Kusaka S., Mitsuhashi C., Nomura R.: *Children*, 12 (2), 149, 2025.
- 7: A case of severe early childhood caries occurring in a childhood cancer patient: Akitomo T., Niizato N., Ikeda S., Ito Y., Tabata E., Mitsuhashi C., Nomura R.: *Children*, 12 (3), 261, 2025.
  - 8: Long-term follow-up of a patient with ankylosis of a primary incisor caused by trauma: Akitomo T., Hamaguchi S., Mitsuhashi C., Nomura R.: *Reports*, 8 (1), 27, 2025.
  - 9: A second residual tooth occurring from one tooth: A case report: Akitomo T., Kametani M., Iwamoto Y., Mitsuhashi C., Nomura R.: *Diagnostics*, 15(6), 733, 2025.
  - 10: Effect of *Helicobacter pylori* on enamel and dentin development-an *in vitro* study in mice: Sahlberg C., Salmela E., Rice D., Nakano K., Nomura R., Alaluusua S.: *Journal of Oral Microbiology*, 17(1), 2500670, 2025.
  - 11: Clinical and genetic analysis of oral and nasal *Staphylococcus aureus* isolates in dental patients: Kawayanagi T., Kawada-Matsuo M., Kusaka S., Yasutomi Y., Suzuki Y., Nishihama S., Le M. N., Sugawara Y., Hisatsune J., Asakawa M., Takeshita T., Nomura R., Shiba H., Sugai M., Komatsuzawa H.: *Scientific reports*, 15(1), 13149, 2025.
  - 12: Deep learning predicts osteogenic differentiation stages of human mesenchymal stem cells from phase-contrast microscopy images: Sano M., Kasagawa M., Okazaki S., Nishimura T., Tabata E., Tzu-Yu Peng, Nomura R., Murayama T.: *Dental Materials Journal*, 44(5), 557-563, 2025.
  - 13: Cnm-positive *Streptococcus mutans*, a major pathogen of dental caries, may exacerbate IgA nephropathy via tonsils: Ito S., Misaki T., Naka S., Matsuoka D., Suehara K., Suehiro Y., Nagasawa Y., Nomura R., Matsumoto-Nakano M., Nakano K.: *Clinical and Experimental Nephrology*, 29(10), 1400-1408, 2025.
  - 14: Evaluation of the dental caries status of new pediatric patients in tertiary dental institutions in 2013, 2018, and 2023: Tabata E., Kaneki A., Ogawa M., Nishimura T., Ito Y., Ikeda S., Tsuge Y., Hamaguchi S., Akitomo T., Nomura R.: *Children*, 12(8), 960, 2025.
  - 15: Prevalence of *Streptococcus mutans* harboring the *cnm* gene encoding cell surface protein Cnm in Japanese children: Suehiro Y., Okuda M., Otsugu M., Ochiai M., Takagi M., Tojo F., Mikasa Y., Naka S., Matsumoto-Nakano M., Lapirattanakul J., Okawa R., Nomura R., Nakano K.: *Scientific Reports*, 15(1), 27047, 2025.
  - 16: Inhibitory effect of allyl isothiocyanate on cariogenicity of *Streptococcus mutans*: Akitomo T., Kaneki A., Ogawa M., Ito Y., Hamaguchi S., Ikeda S., Kametani M., Usuda M., Kusaka S., Hamada M., Mitsuhashi C., Kozai K., Nomura R.: *International Journal of Molecular Sciences*, 26(15), 7443, 2025.
  - 17: Dentoalveolar abscess caused by pericoronitis of an erupting first molar: Kawashima K., Ogawa M., Tachikake T., Shoji Y., Akitomo T., Nomura R.: *Diagnostics*, 15(12), 1531, 2025.
  - 18: Long term follow-up of a patient with McCune-Albright syndrome: Shoji Y., Kusaka S., Kawashima K., Hamaguchi S., Tachikake M., Akitomo T., Nomura R.: *Journal of Clinical Medicine*, 14(17), 6101, 2025.
  - 19: Development of a novel method to evaluate gingivitis in children by combining rapid saliva test systems: Iwamoto Y., Mitsuhashi C., Ikeda S., Ito Y., Hamaguchi S., Tabata E., Tsuge Y., Kaneki A., Ogawa M., Nishimura T., Kametani M., Kusaka S., Asao Y., Akitomo T., Kozai K., Nomura R.: *Scientific reports*, 15(1), 41033, 2025.
  - 20: Evaluation of *Streptococcus mutans* strains possessing genes encoding collagen-binding proteins in the Japanese population: Okuda M., Suehiro Y., Lapirattanakul J., Naka S., Matsumoto-Nakano M., Nomura R., Okawa R., Nakano K. *BMC Oral Health*, 25,1908, 2025.
  - 21: Comparison of the performances of different updated generative artificial intelligence models on the Japanese National Dental Examination: Hamaguchi S., Hamada M., Ikeda S., Kusaka S., Akitomo T., Nomura R.: *Journal of Dental Sciences*, in press.
  - 22: Challenges and limitations of multimodal large language models in interpreting pediatric panoramic radiographs: Mine Y., Iwamoto Y., Okazaki S., Nishimura T., Tabata E., Takeda S., Peng T. Y., Nomura R., Kakimoto K., Murayama T.: *International Journal of Paediatric Dentistry*, in press.
  - 23: Distribution of *Helicobacter pylori* in the oral cavity of patients with tooth extractions at various locations and ages: Hamada M., Nomura R., Ogawa Y., Nishiyama K., Kadota T., Nakano T.: *International Dental Journal*, in press.
  - 24: Association between oral *Streptococcus mutans* counts and proteinuria in patients with chronic kidney disease: a pilot study using chlorhexidine: Misaki T., Suehiro Y., Naka S., Matsuoka D., Suehara K., Ito S., Nagasawa Y., Okawa R., Nomura R., Matsumoto-Nakano M., Nakano K.: *JMA Journal*, in press.
  - 25: Isolation of *Streptococcus mutans* in the gastrointestinal tract of corpses: Kaneki A., Oka H., Ogawa M., Ito Y., Kametani M., Usuda M., Akitomo T., Mitsuhashi C., Lapirattanakul J., Hamada M., Narutaka

- K., Harada T., Nagao T., Kawada-Matsuo M., Nakano K., Komatsuzawa H., Nagao M., Nomura R.: Journal of Oral Microbiology, in press.
- 26: Binding of IgA1 and surface-expressed collagen-binding protein of *Streptococcus mutans* contributes to IgA nephropathy pathogenesis: Matsuoka D., Suehara K., Naka S., Misaki T., Nagasawa Y., Ito S., Suehiro Y., Nomura R., Nakano K., Matsumoto-Nakano M.: Frontiers in Cellular and Infection Microbiology, in press.

## B) Review

- 1: A systematic review of the oral health status of hemophilic patients: Akitomo T., Kaneki A., Mitsuhata C., Nomura R.: Children, 12(4), 490, 2025.
- 2: Applications and potential of ChatGPT in dentistry: Scoping review of research perspectives: Hamada M., Kikuchi S., Akitomo T., Kusaka S., Iwamoto Y., Nomura R.: Journal of Dental Sciences, in press.
- 3: Applications of artificial intelligence in tooth extraction: A systematic review: Hamada M., Nomura R., Akitomo T., Kusaka S., Iwamoto T., Yamamoto S., Ogaya Y., Nakano K.: Journal of Dental Sciences, in press.
- 4: Generative artificial intelligence and large language models in pediatric dentistry: A scoping review: Akitomo T., Hamada M., Hamaguchi S., Kusaka S., Nomura R.: International Dental Journal, in press.
- 5: Practice of Oral Health Education for Teachers at Cambodian Public Elementary Schools and Longitudinal Changes in Children's Oral Health Status: Asao Y.: The Japanese Journal of Pediatric Dentistry, 63(1): 5-11, 2025.

## C) Publications

### D) Other Publications

- 1: Information on dental caries for healthcare professionals (Leaflet): Ryota Nomura (Supervision): Welltec Co., Ltd. (Osaka), 2025.
- 2: Information on periodontal disease for healthcare professionals (Leaflet): Ryota Nomura (Supervision): Welltec Co., Ltd. (Osaka), 2025.

## E) Presentations at Scientific Meetings

### International conference

- 1: A second residual tooth occurring from one tooth: Akitomo T., Kaneki A., Nishimura T., Kametani M., Iwamoto Y., Mitsuhata C., Nomura R.: The 66th Annual Congress of the Korean Academy of Pediatric Dentistry (Seoul, Korea), 2025.
- 2: External validation of deep learning models for comprehensive tooth detection from pediatric panoramic radiographs: Nishimura T., Iwamoto Y., Mine Y., Okazaki S., Tabata E., Mitsuhata C., Nomura R.: The 66th Annual Congress of the Korean Academy of Pediatric Dentistry (Seoul, Korea), 2025.
- 3: Comparison of *Streptococcus mutans* isolated from the oral cavity and large intestine using genetic analyses: Ito Y., Oka H., Ikeda S., Kaneki A., Ogawa M., Kametani M., Asao Y., Akitomo T., Kawada-Matsuo M., Nakano K., Komatsuzawa H., Nagao M., Nomura R.: The 66th Annual Congress of the Korean Academy of Pediatric Dentistry (Seoul, Korea), 2025.
- 4: Development of a novel method to evaluate gingivitis in children: Ikeda S., Mitsuhata C., Ito Y., Hamaguchi S., Tabata E., Tsuge Y., Kaneki A., Ogawa M., Nishimura T., Kametani M., Kusaka S., Asao Y., Akitomo T., Iwamoto Y., Nomura R.: The 34th Annual Congress of Taiwan Academy of Pediatric Dentistry (Taichung, Taiwan), 2025.
- 5: A case of medical-dental collaboration in a child with acute myeloid leukemia who had necrotizing ulcerative gingivitis: Asao Y., Kametani M., Ito Y., Iwamoto Y., Mitsuhata C., Nomura R.: The 34th Annual Congress of Taiwan Academy of Pediatric Dentistry (Taichung, Taiwan), 2025.
- 6: Tooth detection on pediatric intraoral photographs using deep learning: Tabata E., Iwamoto Y., Mine Y., Nishimura T., Okazaki S., Murayama T., Nomura R.: IADR/PER General Session & Exhibition (Barcelona, Spain), 2025.
- 7: Analysis of correlation with *Streptococcus mutans* serotypes and collagen-binding property: Suehiro Y., Okuda M., Naka S., Matsumoto-Nakano M., Nomura R., Nakano K.: IADR/PER General Session & Exhibition (Barcelona, Spain), 2025.

- 8: Effects of chlorhexidine gluconate mouthwash on *Streptococcus mutans*: Genetic analysis: Suehiro Y., Okawa R., Nomura R., Nakano K.: IADR Asia Pacific Regional Conference 2025 (New Delhi, India), 2025.
- 9: Performance of multimodal large language models in interpreting pediatric panoramic radiographs: Iwamoto Y., Mine Y., Nishimura T., Tabata E., Okazaki S., Murayama T., Nomura R.: The 30th Congress of the International Association of Paediatric Dentistry (Cape Town, South Africa), 2025.
- 10: Tooth detection on pediatric intraoral images using deep learning and mobile application development: The 30th Congress of the International Association of Paediatric Dentistry (Cape Town, South Africa), 2025.
- 11: Characteristics of the oral environment in young children with dental caries: Mitsuata C., Ito Y., Kaneki A., Ogawa M., Kametani M., Nomura R.: The 30th Congress of the International Association of Paediatric Dentistry (Cape Town, South Africa), 2025.
- 12: The Prevalence of *Streptococcus mutans* organisms harboring *cnm* gene encoding cell surface protein Cnm in Japanese children: Suehiro Y., Okuda M., Otsugu M., Naka S., Matsumoto-Nakano M., Okawa R., Nomura R., Nakano K.: The 30th Congress of the International Association of Paediatric Dentistry (Cape Town, South Africa), 2025.
- 13: Prevalence of *Streptococcus mutans* strains with *cnm* encoding Cnm cell surface protein in individuals in Japan divided by age: Okuda M., Suehiro Y., Tojo F., Naka S., Lapirattanakul J., Matsumoto-Nakano M., Nomura R., Nakano K.: The 30th Congress of the International Association of Paediatric Dentistry (Cape Town, South Africa), 2025.
- 14: Histological analyses of kidney lesion in IgA model mice induced by nasal treatment of *Porphyromonas gingivalis*: Nagasawa Y., Nomura R., Misaki T., Ito S., Suehiro Y., Shojima K., Suehara K., Matsuoka D., Naka S., Nakano M., Shinmura K., Nakano K.: The 62nd European Renal Association Congress (Vienna, Austria), 2025.
- 15: Evaluation of biofilm-forming and collagen-binding properties of killed *Streptococcus mutans* organisms: Suehiro Y., Otsugu M., Nomura R., Nakano K.: The 4th Japan-Korea-Thailand-Australia Joint Symposium (Sydney, Australia), 2025.

#### Domestic conference

- 1: Potential Reduction of Proteinuria by Oral Care Using Chlorhexidine Gluconate : Misaki T., Sehiro Y., Naka S., Matsuoka D., Suehara K., Nagasawa Y., Ito S., Nomura R., Nakano M., Nakano K.: The 48th Annual Meeting of the Japanese Society of IgA Nephropathy: (Tokyo), 2025.
- 2: Histological evaluation of an IgA nephropathy mouse model induced by nasal administration of *Porphyromonas gingivalis*: Nagasawa Y., Nomura R., Misaki T., Ito S., Sehiro Y., Yamasaki H., Syojima K., Suehara K., Matusoka D., Naka S., Nakano M., Nimura K., Nakano K.: The 48th Annual Meeting of the Japanese Society of IgA Nephropathy: (Tokyo), 2025.
- 3: Literature review on chemotherapy and dental abnormalities: Akitomo T., Tsuge Y., Ikeda S., Ito Y., Tabata E., Hamaguchi S., Mitsuata C., Nomura R.: The 11st Japan Multi-Disciplinary Pediatric Care Conference (Hiroshima), 2025
- 4: Application of equipment of dental radiography in detecting metal fragments in gunshot wounds: A case report: Ikeda S., Oka H., Nagao M.: The 19th Annual Meeting of Japanese Society of Forensic Dental Science (Tokyo), 2025
- 5: Analysis of mixed dentition panoramic radiographs using object detection models and evaluation of robustness using external datasets: Nishimura T., Mine Y., Okazaki S., Tabata E., Murayama T.: The 16th Academic Conference of the Society of Digital Dentistry (Tokyo), 2025
- 6: Automatic Detection of Tooth Types on Pediatric Intraoral Photographs and Development of Self-check Application Using deep learning: Tabata E., Mine Y., Nishimura T., Okazaki S., Murayama T.: The 16th Academic Conference of the Society of Digital Dentistry (Tokyo), 2025
- 7: Analysis of mixed dentition panoramic radiographs using a deep learning model and robustness evaluation with external datasets: Nishimura T., Iwamoto Y., Mine Y., Tabata E., Mitsuata C., Nomura R.: The 63rd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
- 8: Relationship of *Streptococcus mutans* collagen-binding property with number of caries found in Japanese children: Okuda M., Suehiro Y., Tojo F., Naka S., Matsumoto-Nakano M., Nomura R., Nakano K.: The 63rd Annual Congress of the Japanese Society of Pediatric Dentistry, young People's Meeting (Niigata), 2025.
- 9: Radial Measurement Validation of Dental Arch Development in Pediatric Space Maintenance with Removable Dentures : Satoru K., Tatsuya A., Shuma H., Yuria A., Yuko A., Meiko T., Chieko M.,

- Ryota N. : The 63nd Annual Congress of the Japanese Society of Pediatric Dentistry, young People's Meeting (Niigata), 2025.
- 10: Two cases of eruption disturbance in children receiving bisphosphonates: Kametani M., Kaneki A., Nishimura T., Akitomo T., Nakano M., Iwamoto Y., Nomura R.: The 63th Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025
  - 11: Detection of *Streptococcus mutans* in the digestive tissue of the deceased: Ogawa M., Kaneki A., Kametani M., Usuda M., Ito Y., Ikeda S., Hamaguchi S., Asao Y., Akitomo T., Mitsuhata C., Nakano K., Nomura R.: The 63rd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
  - 12: Inhibitory effects of various monoterpenes in citrus fruits on *Streptococcus mutans* : Kaneki A., Ohata J., Okuda M., Ogawa M., Kametani M., Kusaka S., Akitomo T., Mitsuhata C., Nakano K., Nomura R. : The 63nd Annual Congress of the Japanese Society of Pediatric Dentistry, young People's Meeting (Niigata), 2025.
  - 13: Automatic detection of tooth types on pediatric intraoral photographs using deep learning approach: Tabata E., Iwamoto Y., Mine Y., Nishimura T., Nomura R.: The 63rd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
  - 14: A case of McCune–Albright syndrome with long-term follow-up: Tachikake M., Asao Y., Niizato N., Mitsuhata C., Nomura R.: The 63rd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
  - 15: Analysis of the expression of *Streptococcus mutans* collagen-binding protein in different culture environments: Suehara K., Matsuoka D., Naka S., Suehiro Y., Nomura R., Nakano K., Matsumoto-Nakano M.: The 63nd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
  - 16: Evaluation of *Porphyromonas gulae* FilmA using silkworm infection model: Yoshida S., Inaba H., Nomura R., Matsumoto-Nakano M.: The 63nd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
  - 17: Investigation of a novel pathogenic mechanism of onset IgA nephropathy involving the Toll-like receptors: Matsuoka D., Suehara K., Naka S., Suehiro Y., Nomura R., Nakano K., Matsumoto-Nakano M.: The 63nd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
  - 18: Genetic analysis of the mechanism of action of a mouthwash containing chlorhexidine gluconate against *Streptococcus mutans*: Suehiro Y., Nomura R., Nakano K.: The 63nd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
  - 19: Relationship of collagen-binding property of *Streptococcus mutans* with number of caries experience in Japanese children: Okuda M., Suehiro Y., Tojo F., Naka S., Matsumoto-Nakano M., Nomura R., Nakano K.: The 63nd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
  - 20: A case of anterior crossbite treated by rapid maxillary expansion: Suzuki Y., Naito M., Matsumoto-Nakano M., Nomura R.: The 63nd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
  - 21: Analysis of oral health conditions among schoolchildren during the COVID-19 Pandemic: Asao Y., Naito M., Morikawa K., Yoshioka K., Murai Y., Iwasaki M., Toki S., Mizutani N., Naganuma Y., Tsuge S.: The 89th National Conference on School Dental Health, Hiroshima (Hiroshima), 2025.
  - 22: Protecting children from abuse, including through oral health care: Kawashima K.: Hiroshima University Emergent Next-Generation Researcher Development and Support Program, HU SPRING\_3QUESTIONS (Hiroshima), 2025.
  - 23: A novel screening method for pediatric oral hypofunction using bread: Shoji Y.: Hiroshima University Emergent Next-Generation Researcher Development and Support Program, HU SPRING\_3QUESTIONS (Hiroshima), 2025.
  - 24: A survey of oral function development in children at childcare facilities: Asao Y., Maejima M., Suzuki J., Naito M., Yamazaki K., Nomura R.: The 44th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Tokushima), 2025.
  - 25: Comparison of Oral health Status of Children in Temporary Custody Shelters Before and After the COVID-19 Pandemic: Kawashima K., Asao Y., Iwamoto Y., Akitomo T., Mitsui M., Naito M., Nomura R.: The 44th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Tokushima), 2025.
  - 26: Survey of the Current Status of Children with Dental Caries at Their First Visit to a Tertiary Dental Care Center: A Comparison of Fiscal Years 2013, 2018, and 2023: Tabata E., Akitomo T., Ikeda S., Ito Y., Tsuge Y., Hamaguchi S., Nomura R.: The 44th Congress of Japanese Society of Pediatric

- Dentistry Chushikoku Branch (Tokushima), 2025.
- 27: Analysis of Masticatory Frequency and Meal Duration in Children Consuming Two Types of Bread with Different Hardness: Ito Y., Kametani M., Ogawa M., Kaneki A., Tabata E., Hamaguchi S., Ikeda S., Tsuge Y., Nishimura T., Nomura R.: The 44th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Tokushima), 2025.
  - 28: A Case of Fibrous Dysplasia Associated with McCune-Albright Syndrome Assessed Using Objective Measurement Indices: Syouji Y., Kawashima K., Kusaka S., Tatikake M., Akitomo T., Nomura R.: The 44th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Tokushima), 2025.
  - 29: A Case of Attempting to Improve Oral Function Using a Palatal Augmentation Prosthesis with a Palatal Lift Prosthesis in a Patient Who Suffered a Cerebral Infarction at Age 13 : Kusaka S., Meiko T., Ryota N. : The 44th Congress of Japanese Society of Pediatric Dentistry Kinki Branch (Osaka), 2025.
  - 30: Improvement of eruption failure of the maxillary right first molar with anterior crossbite using rapid maxillary expansion: a case report: Suzuki Y., Naito M., Nakano M., Nomura R.: The 44th annual meeting of the kansai regional branch of the Japanese society of pediatric dentistry: (Osaka), 2025.
  - 31: Evaluation of the Applicability of Generative AI to the National Dental Board Examination: Hamaguchi, S., Tsuge Y., Ikeda S., Kusaka S., Akitomo T., Nomura R.: The 44th Congress of Japanese Society of Pediatric Dentistry Kinki Branch (Osaka), 2025.
  - 32: A cross-sectional comparison of dental caries prevalence among children in temporary custody shelters in Hiroshima prefecture before and after the COVID-19 Pandemic: Asao Y., Kawashima K., Iwamoto Y., Akitomo T., Maejima M., Kamikawa K., Yamazaki K., Nomura R.: The 10th Academic Meeting of the Japanese Society for Prevention of Child Abuse in Dentistry (Niigata), 2025.
  - 33: A case in which removal of an odontoma at the age of 4 improved the non-eruption and mal-direction of the second primary molar: Iwamoto Y., Akitomo T., Asao Y., Mitsuhashi C., Nomura R.: The 37th Annual Meeting and Academic conference of Japanese Society of Pediatric Oral and Maxillofacial Surgery (Takamatu), 2025
  - 34: A case study of occlusal radiographic follow-up during Phase 1 orthodontic treatment using a rapid maxillary expansion appliance: Suzuki Y., Takeda N., Osugi S., Sugai C., Nishi A., Suzuki Y., Matsuo K., Nakashima K., Yoshida M., Nakano M., Nomura R., Tanimoto K., Kakimoto N., Asaeda M., Nishimura R., Naito M.: The 64th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2025
  - 35: A case of rapid maxillary expansion for a child with Autism Spectrum Disorder (ASD) and skeletal class II malocclusion with maxillary constriction: Suzuki Y., Kuroe K., Oda Y., Yoshida M., Nakano M., Nomura R., Tanimoto K., Asaeda M., Nishimura R., Naito M.: The 25th General Assembly of the Japan Association for Dental Science (Yokohama), 2025.

#### F) Special lectures in academic meetings

- 1: Japanese Society of Pediatric Dentistry, Gender Equality Committee, Meet the Pediatric Dentistry Talks You Can Only Hear Vol. 1 "Why We Wanted to Be Pediatric Dentists": Activities of Pediatric Dentistry at Hiroshima University: Nomura Ryota, 2025
- 2: Japanese Society of Pediatric Dentistry, Gender Equality Committee, Meet the Pediatric Dentistry Talks You Can Only Hear Vol. 1 "Why We Wanted to Be Pediatric Dentists": Protecting Children's Health through Their Oral Health: Iwamoto Yuko, 2025.
- 3: The 6th S-PRG Filler Research Meeting on Biofunctional Materials (Kyoto): Past research achievements and future research perspectives on S-PRG filler: Nomura Ryota, Tatsuya Akitomo, Mariko Kametani, Momoko Usuda, Chieko Mitsuhashi, Yuto Suehiro, Rena Okawa, Kazuhiko Nakano, 2025.
- 4: 1D Premium (Web): Learn all about "Tooth Hypoplasia & Morphological Abnormalities" - Types you need to know, such as MIH, nodules, and fusion, and clinical responses -: Iwamoto Yuko, 2025
- 5: The 63rd Japanese Society of Pediatric Dentistry, International Symposium (Niigata): How can we support children with dental caries in Japan as the birthrate declines?: Iwamoto Yuko, 2025
- 6: Lecture by the Encouragement Award winner at The 63rd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata): Clinical study of dental abnormalities in pediatric patients receiving chemotherapy: Tatsuya Akitomo, 2025.



- 7: 2024 Takagi Shunsuke Bread Science Promotion Foundation Grant Research Presentation Meeting (Hiroshima): Establishing Methods for Detecting and Improving Abnormalities in Oral Function in Children Using Bread: Ryota Nomura, 2025.
- 8: 2024 Takagi Shunsuke Bread Science Promotion Foundation Grant Research Presentation Meeting (Hiroshima): Issues in mastication in children: Mariko Kametani, 2025.
- 9: 2025 China Dental Show (Hiroshima): Can Be Used for Children as Well! + $\alpha$  Tips for Pediatric Oral Health Instruction (OHI) Utilizing Mouthrinses: Yuria Asao, 2025.
- 10: 2025 Kitahiroshima Town Dental Health Seminar (Hiroshima): Supporting children's overall development through oral health ~Checkpoints for Teeth and Oral Function~: Iwamoto Yuko, 2025
- 11: 2025 Lecture Meeting of the Oral Health Center Committee, Kure City Dental Association (Hiroshima): Dental caries and trauma management in children within special needs dentistry: Ryota Nomura, 2025.
- 12: 2025 Hiroshima Prefecture Community Healthcare and Long-Term Care Comprehensive Securing Project, Training Program for Special Needs Dental Care Providers in Hiroshima Prefecture (Hiroshima): Advice from pediatric dentistry on special needs dental care: Ryota Nomura, 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grant-in-Aid for Scientific Research (B): Nomura Ryota (Principal Investigator), Establishment of a foundation for the control of pediatric immune and infectious diseases with a focus on periodontal pathogenic bacteria. Project No. 24K02655. 3,500,000 yen
- 2: Grant-in-Aid for Scientific Research (B): Nomura Ryota (Contributor), Elucidation of pathology and exploration of treatment strategies via inter-organ networks caused by mutans streptococci. Project No. 24K02650. 1,500,000 yen
- 3: Grant-in-Aid for Scientific Research (C): Nomura Ryota (Contributor), A new strategy for oral cancer treatment targeting autophagy based on omics analysis. Project No. 24K13068. 100,000 yen
- 4: Grant-in-Aid for Scientific Research (C): Nomura Ryota (Contributor), Research on oral *Helicobacter pylori* infection and Parkinson's disease. Project No. 24K09387. 100,000 yen
- 5: Grant-in-Aid for Scientific Research (C): Ryota Nomura (contributor), Elucidating the pathogenicity and functional/structural correlation of *S. mutans* collagen-binding protein using antibody mimic molecules. Project No. 22K10233. 100,000 yen
- 6: Grant-in-Aid for Scientific Research (C): Ryota Nomura (contributor), Investigation of the Association between health status in older adults and periodontal pathogens in a cohort study of healthy elderly individuals. Project No. 25K12981. 400,000 yen
- 7: Grant-in-Aid for Scientific Research (C): Ryota Nomura (contributor), Exploration of the suppression of oral colonization by *Streptococcus mutans* associated with systemic diseases through breast milk-derived immunity, Project No. 25K13249. 100,000 yen
- 8: Grant-in-Aid for Scientific Research (C): Ryota Nomura (contributor), Elucidation of the oral environment associated with the establishment of *Helicobacter pylori* Infection during childhood, Project No. 25K13268. 100,000 yen
- 9: Grant-in-Aid for Scientific Research (C): Mitsuata Chieko (Principal Investigator), The role of glial cells in the effects of early-life stress on the developmental brain. Project No. 24K13197. 1,000,000 yen
- 10: Grant-in-Aid for Scientific Research (B): Mitsuata Chieko (Contributor), Establishment of a foundation for the control of pediatric immune and infectious diseases with a focus on periodontal pathogenic bacteria. Project No. 24K02655. 100,000 yen
- 11: Grant-in-Aid for Scientific Research (B): Mitsuata Chieko (Contributor), Research on the mechanism of brain function improvement and cognitive function evaluation by masticatory exercise using salivary irisin as an indicator. Project No. 24K02775. 100,000 yen
- 12: Grant-in-Aid for Scientific Research (B): Mitsuata Chieko (Contributor), Pain treatment strategies for the elderly: Platelet-activating factor (PAF)-related molecules and the mechanism of intractable pain. Project No. 23K27878. 100,000 yen
- 13: Grant-in-Aid for Scientific Research (C): Yuko Iwamoto (Principal Investigator), Development of a pediatric dental diagnosis support system using deep learning. Project No. 24K13173. 1,000,000 yen
- 14: Grant-in-Aid for Scientific Research (C): Yuko Iwamoto (Contributor), Involvement of glial cells in

- the effects of early-life stress on brain formation during development. Project No. 24K13197. 100,000 yen
- 15: Grant-in-Aid for Scientific Research (C): Yuko Iwamoto (Contributor), Construction and deployment of an image integration model for dentists using deep learning. Project No. 25K15961. 50,000 yen
  - 16: Young Scientists: Tatsuya Akitomo (Principal Investigator), A new approach to oral-systemic linkage research focusing on the collagen-binding ability of oral streptococci species derived from children. Project No. 23K16205. 1,100,000 yen
  - 17: Grant-in-Aid for Scientific Research (B): Tatsuya Akitomo (Contributor), Establishment of a foundation for the control of pediatric immune and infectious diseases focusing on periodontal pathogenic bacteria. Project number 24K02655. 100,000 yen
  - 18: Grant-in-Aid for Scientific Research (C): Yuria Asao (Contributor), Involvement of glial cells in the effects of early-life stress on brain formation during development. Project No. 24K13197. 100,000 yen
  - 19: Grant-in-Aid for Research Activity Start-up: Mariko Kametani (contributor), Elucidation of the Distribution, Survival Strategies, and Pathogenesis of Oral Streptococcus Species in Systemic Organs. Project No. 25K24100. 1,000,000 yen
  - 20: Takagi Shunsuke Foundation for Bread Science and Technology Research Grant 2025: Ryota Nomura, Development of individualized visualization and training methods for oral functional developmental disorders using bread-based applications. 1,000,000 yen
  - 21: Research Grant from the Fukutokukai Foundation: Satoru Kusaka, Investigation of the effects of citrus peel-derived extracts, with consideration for environmental impact and safety, on pathogenic oral bacterial species in children. 300,000 yen.
  - 22: World-Leading Overseas Research Activity Support Program: Tabata Emi, 1,000,000yen.
  - 23: 2025 First Semester Overseas Conference Presentation Support Grant for Graduate Students, Tabata Emi, 70,000yen
  - 24: Ryokufukai Foundation Education and Research Encouragement Award (Overseas Training Support Grant): Ito Yuya, 100,000yen.
  - 25: Hiroshima University Emergent Next-Generation Researcher Development and Support Program: Kaneki Ami, An innovative challenge to reduce and prevent systemic diseases in Cambodia by focusing on the collagen binding ability of mutans streptococci. 400,000 yen
  - 26: Hiroshima University Emergent Next-Generation Researcher Development and Support Program: Masashi Ogawa, Elucidation of diseases caused by Streptococcus mutans via inter-organ networks and exploration of therapeutic strategies. 400,000 yen.
  - 27: Hiroshima University Emergent Next-Generation Researcher Development and Support Program: Ikeda Shunya, A new strategy for elucidating and controlling pediatric immune and infectious diseases involving oral bacterial species. 400,000 yen
  - 28: Hiroshima University Emergent Next-Generation Researcher Development and Support Program: Tabata Emi, Pediatric dental image diagnostic system using AI. 400,000 yen
  - 29: Hiroshima University Emergent Next-Generation Researcher Development and Support Program: Tsuge Yasuko, Building an early detection system for pediatric oral functional developmental disorders by individual visualization of tongue surface characteristics. 400,000 yen
  - 30: Hiroshima University Emergent Next-Generation Researcher Development and Support Program: Kawashima Kana, Elucidation of the distribution and pathological roles of oral bacterial species present in systemic organs while bypassing the oral barrier. 400,000 yen
  - 31: Hiroshima University Emergent Next-Generation Researcher Development and Support Program: Shoji Yuto, Mechanistic Elucidation of Brain Vulnerability Underlying Neurodevelopmental Disorders and Development of an Early Identification Method for High-Risk Individuals Focusing on Oral Bacterial Species. 400,000 yen
  - 32: Japan Society of Pediatric Dentistry International Conference Presentation Incentive Program 2025 (66th Korean Society of Pediatric Dentistry): Taku Nishimura, External validation of deep learning models for comprehensive tooth detection from pediatric panoramic radiographs. 29,000 yen
  - 33: Japan Society of Pediatric Dentistry International Conference Presentation Incentive Program 2025 (66th Korean Society of Pediatric Dentistry): Yuya Ito, Comparison of *Streptococcus mutans* isolated from the oral cavity and large intestine using genetic analyses. 29,000 yen
  - 34: Japan Academy of Pediatric Dentistry International Conference Presentation Incentive Program 2025 (34rd Taiwan Academy of Pediatric Dentistry): Shunya Ikeda, Development of a novel method to

- evaluate gingivitis in children. 45,000 yen
- 35: Japan Academy of Pediatric Dentistry International Conference Presentation Incentive Program 2025 (International Association of Paediatric Dentistry Congress): Eimi Tabata, Tooth detection on pediatric intraoral photographs using deep learning. 89,000 yen

#### (5) Academic Awards, etc.

- 1: Tatsuya Akitomo.: 2025 Encouragement Award from The Japanese Society of Pediatric Dentistry, The Japanese Society of Pediatric Dentistry.
- 2: Yuya Ito.: Award for Excellent Presentation, Korean Academy of Pediatric Dentistry The 66th Scientific Meeting and Annual Congress.
- 3: Shunya Ikeda.: The 34th Annual Congress of the Taiwan Academy of Pediatric Dentistry, Outstanding Poster Award
- 4: Mariko Kametani.: Dentsply Sirona Award, Japanese Society of Pediatric Dentistry, Fiscal Year 2023.
- 5: Tatsuya Akitomo.: Award for Excellent Presentation, Korean Academy of Pediatric Dentistry The 66th Scientific Meeting and Annual Congress.
- 6: Ami Kaneki.: HU SPRING Award 2024
- 7: Yuya Ito.: Ryokufukai Educational Research Encouragement Award.

#### (6) Patents

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## Department of Dental Anesthesiology Division of Oral & Maxillofacial Surgery and Oral Medicine, (Department of Dental Anesthesiology)

### (1) Staff and Students

Professor: Hiroshi Hanamoto (\*) Chief: Hiroshi Hanamoto (by-work)  
Lecturer: Mitsuhiro Yoshida  
Assistant Professor: Yoshitaka Shimizu (Clinical Lecturer), Mitsuru Doi, Kana Oue, Aya Oda,  
Assistant Professor (Special Appointment): Serika Imamura  
Resident: Hisanobu Kamio, Utaka Sasaki, Eiji Imado  
Graduate student: Maho Suyama, Taro Kikuchi  
Clinical Trainee: Masaki Yasusaka, Taiga Yoshinaka, Yoshinari Myoken, Yoshino Nishimura  
Researcher: Tamayo Takahashi

### (2) Main Research Activities

- 1: Mechanisms of general anesthetic action
- 2: Development of a novel general anesthetic method applying enhancement of descending pain suppression system
- 3: Role of each neuron in an intravenous anesthetic agent-induced anesthetic factor
- 4: A stage of delirium in general anesthesia
- 5: Involvement of dopamine neurons in awakening from general anesthesia
- 6: Antianxiety effects of sedative drugs
- 7: Respiratory sound monitor during dental treatment under sedation
- 8: Effects of nitrous oxide on cardiovascular system
- 9: Chronic pain
- 10: Medical emergency during dental treatments

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Early prevention of carrageenan-induced peripheral/spinal inflammation suppresses microglial hyperactivity in the trigeminal spinal subnucleus caudalis and alleviates chronic facial nociception: Yamamoto T, Yoshida M, Koyama Y, Mulpuri Y, Imado E, Oue K, Doi M, Shimizu Y, Kishimoto N, Hanamoto H, Seo K: *Heliyon*. 2025 Jan 7;11(2): e41602.
- 2: Anesthetic Management for an Elderly Patient with Severe Bronchiectasis: Takahashi, T, Yoshida, M, Ito, N, Koizumi, K, Kamio, H, Oda, A, Oue, K, Doi, M, & Shimizu, Y: *Anesth Prog*. 2025 Mar 1;72(1),33-36.
- 3: Anesthetic Management of a Pregnant Patient Undergoing Oral Surgery: Yoshida, M, Oue, K, Doi, M, Shimizu, Y: *Anesth Prog*. 2025 Jun 9;72(2), 104-108.
- 4: Knockdown of decorin in human bone marrow mesenchymal stem cells suppresses proteoglycan layer formation and establishes a pro-inflammatory environment on titanium oxide surfaces: Kamio H, Okabe K, Honda M, Kuroda K, Tsuchiya S: *J Mater Sci Mater Med*. 2025 Jan 7;36(1):5.
- 5: General anesthesia with remimazolam for tooth extraction in a patient with Noonan syndrome and hypertrophic obstructive cardiomyopathy: A case report: Kamio H, Oue K, Asada Y, Ito N, Imamura S, Doi M, Shimizu Y, Yoshida M, Yanamoto S, Hanamoto H: *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, Volume 37, Issue 1, January 2025, Pages 108-111.
- 6: Ketamine-induced pica behavior as nausea and vomiting involves dopamine and serotonin receptor activation in the area postrema of rats: A comparison with etomidate and pentobarbital: Sasaki U, Irifune M, Kochi T, Mukai T, Nakamura Y, Imado E, Oda A, Kamio H, Imamura S, Oue K, Morioka N, Ago Y: *European Journal of Pharmacology*, Volume 1005, 15 October 2025, 178068.
- 7: Development of a pharyngeal residue level assessment index using artificial intelligence (AI) acoustic analysis: a study protocol: Shimizu Y, Takahashi T, Oda A, Imamura S, Imado E, Sasaki U, Kamio H,

- Suyama M, Uetsuki R, Ohshimo S, Shime N, Hanamoto H: *Cureus* 17: e78358, 2025.
- 8: Nitrous oxide increases peripheral blood flow and decreases plasma adrenaline and noradrenaline concentrations in human volunteers: an in vivo nonrandomized clinical and in vitro chromaffin cell culture study: Shimizu Y, Irifune M, Takahashi T, Oda A, Kamio H, Imamura S, Sasaki U, Imado E, Okada Y, Ago Y, Morita K, Sakai N: *Eur J Pharmacol* 1003: 177899, 2025.

## B) Review

- 1: Articaine as a potential alternative to lidocaine in Japanese dental practice: Yamamoto T, Inoue T, Yoshida M, Seki S, Kishimoto N: *J Dent Anesth Pain Med*: 25(3):219-221, 2025.

## C) Publications

## D) Other Publications

## E) Presentations at Scientific Meetings

- 1: Impact of Obesity and Periodontal Disease on Cognitive Function via Microglial Activation: Oue K, Kawakami R, Ouhara H, Hanamoto H, Ago Y: The 25th Scientific Meeting of the Japanese Association for Dental Science (Yokohama), 2025.
- 2: Awake Tracheal Intubation Under Sedation with Remimazolam: Three Case Reports of Difficult Airway Management: Oue K, Suyama M, Kikuchi T, Kamio H, Imamura S, Oda A, Doi M, Shimizu Y, Yoshida M, Hanamoto H: The 8th Annual Meeting of Japanese Airway Management Society (Hiroshima), 2025.
- 3: Intranasal Midazolam for Premedication in Adults with Intellectual Disabilities: Oue K, Oda Y, Sasaki U, Imado E, Kamio H, Suyama M, Kikuchi T, Takahashi T, Imamura S, Oda A, Doi M, Shimizu Y, Yoshida M, Hanamoto H: The 53rd Annual Meeting of the Japanese Dental Society of Anesthesiology (Kagoshima), 2025.
- 4: Analysis of Blood-Brain Barrier Disruption Induced by Periodontal Infection under Obese Conditions: Oue K, Yamawaki Y, Ouhara K, Ago Y: The 67th Annual Meeting of the Japanese Association for Oral Biology (Kokura), 2025.
- 5: A case of suspected anaphylactic reaction after general anesthesia induction: Suyama M, Yoshida M, Imado E, Sasaki U, Kamio H, Imamura S, Oda A, Oue K, Doi M, Shimizu Y, Hanamoto H: The 39th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku Branch (Tokushima), 2025.
- 6: A case of a patient who visited a pain clinic complaining of numbness after tooth extraction and was found to have chronic myofascial pain: Kamio H, Doi M, Yoshida M, Shimizu Y, Oue K, Sasaki U, Imado E, Suyama M, Kikuchi T, Nishimura Y, Myoken Y, Hanamoto H: The 53rd Annual Meeting of the Japanese Dental Society of Anesthesiology (Kagoshima), 2025.
- 7: A case of trigeminal neuralgia in which treatment for myofascial pain improved control: Kamio H, Doi M, Oda A, Imamura S, Sasaki U, Imado E, Suyama M, Kikuchi T, Nishimura Y, Myoken Y, Hanamoto H: The 53rd Annual Meeting of the Japanese Dental Society of Anesthesiology (Kagoshima), 2025.
- 8: Respiratory Assessment during Dental Treatment Using Piezoelectric Sensors and Sleep Apnea Evaluation Devices: Kozu F, Hanamoto H: The 8th Annual Meeting of Japanese Airway Management Society (Hiroshima), 2025.
- 9: Identification of physiological indicators for real-time stress estimation during dental treatment: Sakamoto T, Murakami J, Yamada T, Hanamoto H, Sekine T: The 53rd Annual Meeting of the Japanese Dental Society of Anesthesiology (Kagoshima), 2025.
- 10: Assessment of respiratory ventilation using Respiratory Inductive Plethysmography: Kozu F, Suyama M, Hanamoto H: The 53rd Annual Meeting of the Japanese Dental Society of Anesthesiology (Kagoshima), 2025.
- 11: Myofascial pain syndrome after refractory local anesthesia with IV sedation: Imamura S, Doi M, Oue K, Imado E, Sasaki U, Oda A, Kamio H, Suyama M, Shimizu Y, Yoshida M, Hanamoto H: The 53rd Annual Meeting of the Japanese Dental Society of Anesthesiology (Kagoshima), 2025.
- 12: Perioperative Management of a Patient with Severe Motor and Intellectual Disabilities Complicated by Severe Scoliosis: A Case Report: Kikuchi T, Oue K, Nishimura Y, Myoken Y, Suyama M, Kamio

- H, Imado E, Imamura S, Sasaki U, Oda A, Doi M, Shimizu Y, Yoshida M, Hanamoto H: The 39th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku Branch (Tokushima), 2025.
- 13: Maternal nutritional imbalance between n-6 and n-3 essential fatty acids increases anxiety-related behaviors in offspring under stressful environments: Kikuchi T, Omokawa D, Katakura M, Hanamoto H, Sugita M, Sakayori N: The 79th Annual Meeting of Japan Society of Nutrition and Food Science (Aichi), 2025.
  - 14: Maternal nutritional imbalance between n-6 and n-3 essential fatty acids increases anxiety-related behaviors in offspring under stressful environments: Kikuchi T, Hanamoto H, Sugita M, Sakayori N: The 58th Annual Meeting of Japan Society of Nutrition and Food Science, Chugoku and Shikoku Regional Meeting (Kochi), 2025.
  - 15: AI-Based Adventitious Sound Classification for Visualization of Aspiration Risk: Itou S, Shimizu Y, Takahashi T, Oda A, Oue K, Yoshida M, Saeki N, Ohshimo S, Hanamoto H, Shime N: The 8th Annual Meeting of Japanese Airway Management Society (Hiroshima), 2025.
  - 16: Visualization of Pharyngeal Residue and Aspiration Risk Assessment Using AI Acoustic Analysis: Ito S, Shimizu Y, Takahashi T, Oda A, Imamura S, Doi M, Oue K, Sasaki U, Imado E, Kamio H, Suyama M, Kikuchi T, Nishimura M, Myoken Y, Yoshida M, Hanamoto H: The 53rd Annual Meeting of the Japanese Dental Society of Anesthesiology (Kagoshima), 2025.
  - 17: Microglia-specific deactivation reverses allodynia in autism spectrum disorder model mice: Tsuru C, Imado E, Song V, Uta D, Yokoyama R, Asano S, Kiguchi N, Kume T, Hanamoto H, Tanimoto K, Ago Y: International Association for Dental, Oral, and Craniofacial Research, Asia-Pacific Regional Conference (New Delhi), 2025.
  - 18: A TRPV1 antagonist AMG-517 alleviates hyperalgesia and social deficits in prenatal VPA-induced mouse model of autism spectrum disorder: Yokoyama R, Tahara T, Imado E, Uta D, Kawase H, Higuchi M, Asano S, Yamakawa H, Ogawa K, Kotake Y, Kume T, Takuma K, Hashimoto H, Ago Y: The 68th Annual Meeting of the Japanese Society for Neurochemistry (Aichi), 2025.
  - 19: Chemogenetic inhibition of microglia attenuates mechanical allodynia induced by prenatal exposure to histone deacetylase inhibitor: Tsuru C, Imado E, Uta D, Vvryka S, Kurata H, Tahara T, Nguyen V, Yokoyama R, Asano S, Kotake Y, Kiguchi N, Kume T, Hanamoto H, Tanimoto K, Ago Y: The Joint Congress of the 130th Annual Meeting of the Japanese Association of Anatomists, the 102nd Annual Meeting of the Physiological Society of Japan, and the 98th Annual Meeting of the Japanese Pharmacological Society (APPW2025) (Chiba), 2025.
  - 20: Chemogenetic manipulation of microglia alleviates central sensitization and allodynia in a mouse model of autism spectrum disorder: Tsuru C, Imado E, Song V, Uta D, Yokoyama R, Asano S, Kiguchi N, Kume T, Hanamoto H, Tanimoto K, Ago Y: JAPAN PAIN WEEK - JOINT CONFERENCE of 47th JASP, 18th JAMP, 29th JAPR and 31st JSOP (Tokyo), 2025.

## F) Special lectures in academic meetings

- 1: Ensuring Safety in Dental Treatment for Pediatric and Special Needs Patients: Oue K: The 30th Annual Meeting of the Japanese Society of Pediatric Anesthesiology (Tokushima), 2025.
- 2: Young Researchers' Academic Exchange Meeting. Everyone Can Be a Bridge! Young Researchers Discuss the Future of Special Care Dentistry: Oda A: The 41st Annual Meeting of the Japanese Society for Disability and Oral Health (Osaka), 2025.
- 3: Education Systems for Airway Management Monitoring and Airway Crisis Response in Dental Practice: Hanamoto H: The 8th Annual Meeting of Japanese Airway Management Society (Hiroshima), 2025.
- 4: Pain treatment in pain clinics: Hanamoto H: The 7th: How to Understand Pain in the Field of Dentistry and Oral Surgery and the Necessity of Multidisciplinary Treatment (Osaka), 2025.
- 5: Basic knowledge and practice of general management: Hanamoto H: Hiroshima Prefecture Training Seminar for Dentists to Consult with People Having Difficulty Receiving Dental Health Care Services (Hiroshima), 2025.
- 6: Changes in Vital Signs During Dental Treatment and Their Management. Hanamoto H: Shimane Dental Association Western Clinical Seminar (Shimane), 2025.
- 7: Safety Management in Dental Treatment Under Intravenous Sedation: Insights from Clinical Research. Hanamoto H: Hiroshima University School of Dentistry Alumni Association Academic Lecture (Hiroshima), 2025.
- 8: Sedation Management for Intraoral Procedures: Strategies to Reduce Cough Reflex During Dental

- Treatment Under Sedation. Hanamoto H: The 69th Hiroshima Society of Anesthesiologists (Hiroshima), 2025.
- 9: The Necessity of Preoperative Examinations and Medical Consultations in Dental Surgery: Shimizu Y: 53rd Annual Meeting of the Japanese Society of Dental Anesthesiology (Kagoshima), 2025.
  - 10: Complete Guide to Incident Investigation: Shimizu Y: 53rd Annual Meeting of the Japanese Society of Dental Anesthesiology (Kagoshima), 2025.
  - 11: What Is the Underlying Cause of Symptoms with No Identifiable Etiology? : Doi M: Hiroshima University School of Dentistry, Dental Hygienist Training Center Recurrent Education Program, 2025 Academic Year (First Semester), Session 2 (Web), 2025.
  - 12: Pain Clinic Practice That Makes Living Easier: An Introduction to Cognitive Behavioral Therapy: Doi M: The 53rd Annual Meeting of the Japanese Dental Society of Anesthesiology (Kagoshima), 2025.
  - 13: Reconsidering Cognitive Characteristics in Patients with Chronic Pain: Perspectives on Anger, Perceived Injustice, and Hyperactivity: Doi M: JAPAN PAIN WEEK 2025 (Tokyo), 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grant-in-Aid No. 23K09353 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Yoshida M, Yamamoto T, The analysis of the BDNF-TrkB and descending pathways in chronic masticatory muscle disorder. ¥4,680,000.
- 2: Grant-in-Aid No. 23K09350 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Yamamoto T, Yoshida M, The role of hyperpolarization-activated cyclic nucleotide-gated channels in neuropathic pain. ¥4,810,000.
- 3: Grant-in-Aid No. 21K10072 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Shimizu Y, Sadamori T, Analysis of noise characteristics from dental apparatus during auscultation of breath sounds to prevent from air-way obstruction under sedation. ¥4,160,000.
- 4: Grant-in-Aid No. 24K13069 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (New): Shimizu Y, Sadamori T, Development of an AI acoustic analysis system for monitoring the risk of aspiration after oral surgery. ¥4,550,000.
- 5: Grant-in-Aid No. 23K09183 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Oue K, Study on interaction of obesity and periodontal disease on cognitive impairment. ¥4,680,000.
- 6: Grant-in-Aid No. 25K14976 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (New): Yamawaki Y, Oue K, Mechanisms of Stress Vulnerability via Microglial Dysfunction in Obesity. ¥4,680,000.
- 7: Grant-in-Aid No. 22K17184 for Early-Career Scientists from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Oda A, Establishment of safe conscious sedation with remimazolam using electroencephalogram and pharmacokinetic analysis. ¥4,550,000.
- 8: Grant-in-Aid No. 25K20406 for Early-Career Scientists from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (New): Oda A, Establishment of an evaluation method for the recovery process following sedation with remimazolam using electroencephalogram and pharmacokinetic analysis. ¥4,810,000.
- 9: Grant-in-Aid No. 23K19455 for Research Activity Start-up from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Imado E, Research on the pathophysiology and therapeutic basis of developmental disorders targeting pain-related molecules. ¥2,860,000.
- 10: Grant-in-Aid No. 22K17091 for Early-Career Scientists from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Kamio H, Elucidation of the biocompatibility of titanium implants and the role of decorin in surrounding bone regeneration. ¥4,550,000.
- 11: Grant-in-Aid No. 22K21061 for Research Activity Start-up from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Sasaki U, Elucidation of the neurochemical basis for general anesthetic-induced nausea and vomiting. ¥1,430,000.
- 12: Grant-in-Aid No. 23K09395 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Hanamoto H, Takatsu F, Development of a non-contact breathing and heart rate monitoring system for dental treatment. ¥4,810,000.
- 13: Grant-in-Aid No. 25K13342 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (New): Takahashi T, Shimizu Y, Development of an AI-Based Acoustic Analysis Technology for Identifying Respiratory Abnormalities During Dental

Sedation in Patients with Disabilities. ¥4,680,000.

- 14: Nakatomi Foundation 37th (2024) Research Grant (New): Imado E, Elucidation of the Neural Basis of Sex Differences in Altered Pain Sensitivity in Autism Spectrum Disorder and Development of Therapeutic Strategies. ¥1,500,000.

(5) Academic Awards, etc.

(6) Patents

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## Department of Public Oral Health Collaborative Research Laboratory of Oral Inflammation Regulation

### (1) Staff and Students

Professor: Kouji Ohta (\*) Chief in Department of Oral Health: Kouji Ohta  
 Associate Professor: Hideo Shigeishi  
 Assistant Professor: Yoshino Kaneyasu  
 Graduate Student: Kanako Yano (D3), Honami Kitasaki, Hou Yitong (D2),  
 Hina Masumoto, Honoka Nomi, Hina Yamakido, Miku Konuma, Hinano Kakiuchi,  
 LIU LI CHEN (M2),  
 Momoka Okita, Yui Matsuoka (M1)  
 Assistant Professor, Collaborative Research Laboratory: Fumie Shiba  
 Researcher: Mutsumi Miyauchi

### (2) Main Research Activities

- 1: Study on Prevention for oral infection and oral complication of systemic diseases
- 2: Study on efficacy of perioperative oral care on systemic diseases
- 3: Study on human papillomavirus in oral squamous cell carcinoma
- 4: Study on mechanism of oral mucosa against microorganisms
- 5: Study on the development of new devices and examination for oral hygiene management
- 6: Study on associations between oral function and physical activity in Japanese aged adults
- 7: Study on cigarette smoke extract and oral keratinocytes or host immune responses.
- 8: Study on the pathogenesis of oral mucositis
- 9: Study on the relationship between periodontitis and systemic diseases
- 10: Study on the pathogenesis of drug-related osteonecrosis of jaw (MRONJ)

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Anti-fungal effects of slightly acidic electrolyzed water on *Candida* species. Wu CH, Kaneyasu Y, Yano K, Shigeishi H, Kitasaki H, Maehara T, Niitani Y, Takemoto T, Mine Y, Le MN, Kawada-Matsuo M, Komatsuzawa H, Ohta K. *Journal of Oral Biosciences*. 67(1):100573, 2025.
- 2: TMRSS2 expression in oral mucosal cells induced by transfected double-stranded RNA and IL-1 $\beta$ . Akagi M, Ohta K, Sakuma M, Naruse T, Ishida Y, Niwata C, Yamakado N, Nakagawa T, Ono S, Nishi H, Shigeishi H, Aikawa T. *Journal of Oral Biosciences*. 16:100619, 2025.
- 3: Carcinoma ex pleomorphic adenoma primarily composed of squamous cell carcinoma in buccal region – Case report. Naruse T, Ohta, K, Shigeishi H, Ando T, Nakagawa T, Yamakado N, Ninomiya Y, Sakamoto S, Ishida Y, Aikawa. *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*. 37(1), 99-103, 2025.
- 4: Relationship between the presence of oral herpes simplex virus type 1 DNA and oral hygiene condition in dependent older individuals. Shigeishi H, Matsumura M, Hamada N, Kaneyasu Y, Sugiyama M, Ohta K. *Oral Science International*, 22(1), e1258, 2025.
- 5: BECN1 is involved in spheroid formation and resistance to 5-FU-induced cytotoxicity in CD44high oral cancer cells. Yamashita Y, Shigeishi H, Yokoyama S, Ono S, Aikawa T, Sugiyama M, Ohta K. *Oral Science International*. 22(2), e70007, 2025.
- 6: Cross-sectional pilot study of relationships between specific oral bacteria and acute respiratory failure requiring intensive care unit admission. Nishi H, Ohta K, Ohshimo S, Shigeishi H, Obayashi T, Munenaga S, Okazawa Y, Inubushi J, Ino N, Tokikazu T, Yano K, Ohge H, Kurihara H, Shime N, Kawaguchi H. *J Dent*. 157:105724, 2025.
- 7: Effects of Nisin A Combined with Antifungal Drug Against Growth of *Candida* Species. Niitani Y, Ohta K, Yano K, Kaneyasu Y, Maehara T, Kitasaki H, Shigeishi H, Nishi H, Nishimura R, Naito M,

- Shiba F, Kawada-Matsuo M, Komatsuzawa H, Takemoto T. *Dent J (Basel)*. 13(4):160., 2025.
- 8: Effects of Cigarette Smoke Extract on CXCL8 and CXCL1 Expression in oral Keratinocytes Induced by Synthetic Bacterial Lipoprotein Pam3CSK4. Kitasaki H, Ohta K, Akagi M, Niitani Y, Kaneyasu Y, Maehara T, Yano K, Shiba F, Shigeishi H, Takemoto T. *Oral Science International*, 22(2), e70006, 2025.
  - 9: Establishment of immortalized human minor salivary gland cells and chemokine expression induced by IFN- $\gamma$ , TNF- $\alpha$ , and IL-1 $\beta$ . Naruse T, Ohta K, Akagi M, Sakuma M, Ishida Y, Niwata C, Nakagawa T, Ono S, Shiba F, Ando T, Nishi H, Shigeishi H, Aikawa T. *Odontology*. 113(4):1546-1557, 2025.
  - 10: Change in the Pattern of Tuft-Level Wear in Wide-Head Manual Toothbrushes After Use: A Prospective Cohort Pilot Study. Kaneyasu Y, Shigeishi H, Niitani Y, Takemoto T, Sugiyama M, Ohta K. *Cureus*. 21;17(8):e90658, 2025.
  - 11: Presence of oral *Helicobacter pylori* DNA and its association with dental hygiene in older adults. Yamakido H, Shigeishi H, Masumoto H, Hamada N, Kitasaki H, Kaneyasu Y, Niitani Y, Takemoto T, Sugiyama M, Ohta K. *World Academy of Sciences Journal*. 7(6):126, 2025.
  - 12: Analysis of multimodal large language models on visually-based questions in the Japanese National Examination for Dental Hygienists: A preliminary comparative study. Kaneyasu Y, Mine Y, Niitani Y, Taji T, Takeda S, Tokinaga R, Shigeishi H, Takemoto T, Kakimoto N, Murayama T, Ohta K. *Journal of Dental Sciences*, in press, 2025.
  - 13: Atrial Translocation of *Porphyromonas gingivalis* Exacerbates Atrial Fibrosis and Atrial Fibrillation. Miyauchi S, Matsuo MK, Furusho H, Nishi H, Nakajima A, Phat PT, Shiba F, Kitagawa M, Ouhara K, Oda N, Tokuyama T, Okubo Y, Okamura S, Takasaki T, Takahashi S, Hiyama T, Kawaguchi H, Komatsuzawa H, Miyauchi M, Nakano Y. *Circulation*. 151(21):1527-1540, 2025.
  - 14: Effects of glycyrrhizin on healing and prevention of recurrent aphthous stomatitis in hamster models. Shiba F, Maekawara S, Furusho S, Ishida E, Shigeishi H, Ohta K, Miyauchi M. *PLOS ONE*, in press, 2025.
  - 15: Relationship Between Virulence Factor Activities, Cytotoxicity of *Candida albicans* Strains Isolated from Oral Cavity, and Cytokine Production by Oral Keratinocytes Exposed to Those Strains: Yano K, Nishi H., Shigeishi H., Kaneyasu Y., Niitani Y., Kitasaki H., Kawaguchi H., Takamoto M., Shiba F., Takemoto T., Ohta K.: *Dent J (Basel)*. 2025 Oct 29; 13(11): 502.
  - 16: Anticancer effect of the antirheumatic drug leflunomide on oral squamous cell carcinoma by the inhibition of tumor angiogenesis. Niwata C, Nakagawa T, Naruse T, Sakuma M, Yamakado N, Akagi M, Ono S, Tobiume K, Gao J, Jimi E, Ohta K, Aikawa T. *Discov Oncol*. 16;53, 2025.

## B) Review

1:

## C) Publications

- 1: [Learn on the bulletinboard] It's time for a health check up! The ECG test isn't scary at all !: Kaneyasu Y. *Higashiyamasyobo*, pp54-55, 2025.

## D) Other Publications

- 1: *Medical Science Digest Special Issue (Extra Edition)*, December 2025 Onco-cardiology, nephrology, hypertension: Contributed by Shiba F, Miyauchi M, Ohta K, New Science Co., Ltd. (Tokyo), 2025.
- 2: Ministry of Health, Labour and Welfare. Guidelines for the appropriate use of antimicrobial agents, 4th Edition, dental edition, partial writing by Ohta K, 2025.

## E) Presentations at Scientific Meetings

- 1: Association between oral *Helicobacter pylori* and periodontitis in older adults: Yamakido H, Shigeishi H, Masumoto H, Konuma M, Kakiuchi H, Nomi H, Kitasaki H, Kaneyasu Y, Yano K, Niitani Y, Ohta K : The 34th Annual Meeting of Japanese association of Oral Infectious Disease (Tokyo), 2025.
- 2: Association between oral EBV/ *P. gingivalis* infection and periodontal inflamed surface area: Masumoto H, Shigeishi H, Yamakido H, Konuma M, Kakiuchi H, Nomi H, Kitasaki H, Yano K, Kaneyasu Y, Niitani Y, Ohta K: The 34th Annual Meeting of Japanese association of Oral Infectious Disease (Tokyo), 2025.
- 3: Association between oral *Helicobacter pylori* infection and oral hygiene status: Yamakido H, Shigeishi H, Masumoto H, Konuma M, Kakiuchi H, Kitasaki H, Kaneyasu Y, Yano K, Niitani Y, Ohta K : The 20th annual meeting of the Japan Society for Dental Hygiene (Tokyo), 2025
- 4: Association between oral herpes simplex virus infection and periodontal inflamed surface area: Kakiuchi H, Shigeishi H, Konuma M, Yamakido H, Masumoto H, Kitasaki H, Nomi H, Kaneyasu Y, Yano K, Niitani Y, Ohta K : The 20th annual meeting of the Japan Society for Dental Hygiene (Tokyo), 2025.
- 5: Associations of oral hygiene status with postoperative inflammation in duodenal tumor patients: Konuma M, Shigeishi H, Kakiuchi H, Yamakido H, Masumoto H, Kitasaki H, Nomi H, Kaneyasu Y, Yano K, Niitani Y, Ohta K : The 20th annual meeting of the Japan Society for Dental Hygiene (Tokyo), 2025.
- 6: Mechanistic Elucidation of 5-Fluorouracil (5FU)-Induced Exacerbation of Oral Mucositis Based on Comprehensive Gene Expression Analysis in a Hamster Model: Shiba F, Miyauchi M, Ohta K: The 79th Annual Meeting of the Japanese Stomatological Society (NPO) (Matsumoto), 2025.
- 7: Evaluation of the Effects of *Equisetum arvense* in an Early MRONJ Model Rat (Award Lecture): Inoue A, Miyauchi M, Ohta K, Shiba F: The 79th Annual Meeting of the Japanese Stomatological Society (NPO) (Matsumoto), 2025.
- 8: Elucidation of the Mechanism of Stomatitis Development by Local Gene Knockdown Using In Vivo Electroporation and RNA Interference: Shiba F, Miyauchi M, Ohta K: The 67th Annual Meeting of the Japanese Association for Oral Biology (Kitakyushu), 2025.
- 9: Establishment of an EGFR Inhibitor-Induced Exacerbation Model of Oral Mucositis: Shiba F, Takahashi M, Miyauchi M, Ohta K: The 67th Annual Meeting of the Japanese Association for Oral Biology (Kitakyushu), 2025.
- 10: Use of a Cetylpyridinium Chloride-Containing Mouthwash Suppresses Gingivitis and Oral Microbiota Dysbiosis During Orthodontic Treatment: Kadoi I, Shiba F, Kunimatsu R, Yoshimi Y, Koizumi Y, Ogasawara N, Abe F, Ohto S, Okazaki K, Cai S, Bono H, Tanimoto K: The 84th Annual Meeting of the Japanese Orthodontic Society (Sapporo), 2025.
- 11: Effects of the Antimicrobial Peptide LL-37 on the Induction of Inflammatory Factor Expression in Minor Salivary Gland Cells: Watanabe M, Ohta K, Sakuma M, Ishida Y, Naruse T, Shigeishi H, Shiba F, Aikawa T: The 72nd Regional Meeting (Chugoku-Shikoku Branch) of the Japanese Stomatological Society (NPO) (Matsuyama), 2025.
- 12: Mechanistic Elucidation of *Candida albicans* Infection-Induced Exacerbation of Oral Mucositis Based on Comprehensive Gene Expression Analysis: Shiba F, Miyauchi M, Ohta K: The 72nd Regional Meeting (Chugoku-Shikoku Branch) of the Japanese Stomatological Society (NPO) (Matsuyama), 2025.
- 13: Mechanistic Elucidation of 5-Fluorouracil-Induced Exacerbation of Oral Mucositis through Gene Ontology Enrichment Analysis of RNA-Seq Data: Shiba F, Miyauchi M, Ohta K: The 70th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.
- 14: Combined Effect of the Antimicrobial Peptide Nisin A and Antifungal Agents Against *Candida*, Niitani Y, Ohta K, Yano K, Kitasaki H, Liu L, K, Kaneyasu Y, Shigeishi H, Kimura M, Takemoto T: The 20th annual meeting of the japan society for dental hygiene (Tokyo), 2025.
- 15: Development of Novel Indicators and Devices Aimed at Advancing Future Oral Health and the Practice of Evidence Integration, Kaneyasu Y, The 74th Annual Meeting of the Japanese Society for Oral Health (Niigata), 2025.
- 16: Intra- and Inter-Rater Reliability of an Objective Dental Plaque Assessment Method and Issues for Practical Application, Kojika H, Kondo Y, Kaneyasu Y, Shigeishi H, Ohta K, 64st Hiroshima Prefectural Dental Association Hiroshima University Dental Society Regular Meeting (Hiroshima), 2025.
- 17: Antifungal susceptibility of *Candida* species isolated from oral cavity in respiratory cancer patients during perioperative period: Yano K., Nishi H., Shigeishi H., Kaneyasu Y., Niitani Y., Nakaoka M.,

- Kawaguchi H., Ohta K.: The 22nd Annual Meeting and Academic Conference of the Japanese Society of Oral Care (Niigata), 2025.
- 18: Antifungal susceptibility of *Candida* species isolated from oral cavity in respiratory cancer patients during perioperative period: Yano K., Nishi H., Shigeishi H., Kaneyasu Y., Niitani Y., Nakaoka M., Kawaguchi H., Ohta K.: The 5th Annual Meeting and Academic Conference of the International Society of Oral Care (Niigata), 2025.
  - 19: The role of perioperative oral care in preventing postoperative pneumonia and optimal timing of oral care intervention during general anesthesia: Naganuma K., Nishi H., Shigeishi H., Ohta K., Yoshioka Y., Konishi M., Kakimoto N., Odo A., Horikoshi I., Tari M., Yamasaki S., Ito N., Yano K., Nakaoka M., Yanamoto S., Tanimoto K., Kawaguchi H.: The 22nd Annual Meeting and Academic Conference of the Japanese Society of Oral Care (Niigata), 2025.
  - 20: Effects of probiotic preparations on prevention of oral mucositis and maintenance of nutritional status in breast cancer chemotherapy: Kuwabara Y., Nishi H., Ohta K., Shigeishi H., Konishi M., Kakimoto N., Yoshioka Y., Horikoshi I., Yano K., Nakaoka M., Yamasaki S., Ito N., Yanamoto S., Tanimoto K., Kawaguchi H.: The 22nd Annual Meeting and Academic Conference of the Japanese Society of Oral Care (Niigata), 2025.
  - 21: Relationship between cytotoxicity of *C. albicans* strains and cytokine produces from oral keratinocytes against *C. albicans*: Yano K., Nishi H., Shigeishi H., Kaneyasu Y., Niitani Y., Kawaguchi H., Ohta K.: Joint Annual Meeting of the Three Societies (The 45th Annual Meeting of the Japanese Society of Oral Therapeutics and Pharmacology, The 43rd Annual Meeting of the Japan Dental Society of Oriental Medicine and The 34th Annual Meeting of the Japanese Association for Oral Infectious Diseases) (Tokyo), 2025.
  - 22: Improved Patient Satisfaction through Objective Evaluation of Whitening Effect: A Case Report: Yoshino M., Yano K., Yoshimoto T., Shintani T., Kajiya M.: The 18th Annual Meeting of the Japanese Society for Evidence and the Dental Professional (Uruma), 2025.
  - 23: Effects of nucleic acid introduction on the expression of antiviral factors and virus-related receptors in oral mucosal epithelial cells: Kitasaki H., Ohta K., Kaneyasu Y., Maehara T., Niitani Y., Takemoto T., Shigeishi H.: The 74th Annual Meeting of the Japanese Society of Oral Health (Niigata), 2025
  - 24: Effect of cigarette smoke extract on antiviral defense responses induced by nucleic acid transfection in oral mucosal epithelial cells: Kitasaki H., Ohta K., Kaneyasu Y., Niitani Y., Yano K., Takemoto T., Shigeishi H.: The 72nd Annual Meeting of the Chugoku-Shikoku Branch of the Japanese Stomatological Society (Matsuyama), 2025
  - 25: The Effects of Cigarette Smoke Extract on Antiviral Genes Induced by Nucleic Acid Delivery in Oral Mucosal Epithelial Cells: Kitasaki H., Ohta K., Kaneyasu Y., Niitani Y., Yano K., Takemoto T., Shigeishi H.: The 20th Annual Meeting of the Japan Society for Dental Hygiene (Tokyo), 2025
  - 26: Leflunomide, an antirheumatic drug, exhibits antitumor effects on oral squamous cell carcinoma cells through inhibition of angiogenesis and suppression of proliferation. Niwata T., Nakagawa T., Ono S., Uetuki R., Yamakado N., Ohta K., Aikawa T., The 79th Annual Meeting of the Japanese Stomatological Society (NPO) (Matsumoto), 2025.

## F) Special lectures in academic meetings

- 1: Ohta K, Standard precautions in dental treatment. 1st Toyama Dental Hygienists Forum (Toyama), 5/11, 2025.
- 2: Ohta K, Antimicrobial resistance (AMR) and appropriate use of antibiotics in dental treatment- Drug-resistant bacteria isolated from the oral cavity. General Meeting of the Ehime prefecture branch of Hiroshima university school of dentistry (Ehime), 6/7, 2025.
- 3: Ohta K, Drug required caution for dental treatment -Update on antiresorptive agents: Aki dental association scientific lecture (Hiroshima), 6/21, 2025
- 4: Ohta K, Standard precautions and environmental management for dental treatment: The 40th Annual Meeting and Scientific Conference of the Japanese Society for Environmental Infections (Yokohama), 6/11, 2025.
- 5: Ohta K, Medical safety management for dental treatment. Ehime dental association seminar on medical safety measures (Ehime), 8/24, 2025
- 6: Ohta K, Guidelines for the appropriate use of antimicrobial agents-current status of Dental clinic-joint annual meeting of the three societies (The 45th Annual meeting of the Japanese society of Oral Therapeutics and Pharmacology, The 43rd Annual meeting of the Japan dental society of oriental medicine and the 34th annual meeting of the Japanese association for oral infectious diseases (Tokyo),

10/19, 2025.

- 7: Ohta K et al, 2025 The Journal of the Japanese Association for Dental Science, Vol. 45, Special Feature: Roundtable Discussion, Countermeasures against antimicrobial resistance (AMR) in dentistry and oral health Management, (Tokyo), 12/1, 2025

#### G) Contribution to Community

- 1: Kaneyasu Y: School dental health instruction, Hiroshima University, 2025.
- 2: Yano K.: Committee Member, Academic Program Committee, Japan Academy of Esthetic Dentistry
- 3: Ohta K (Director), Yano K, Kitasaki H: Japan Dental Hygienist Society Certified Dental Hygienist Seminar Staff of Dental Care Safety Management Course, 2025.
- 4: Kitasaki H: Hiroshima Dental Hygienists' Association, Director, Public Relations
- 5: Ohta K (Committee Member), administration of Infection control council of national and public university hospital
- 6: Ohta K (Chairperson of dental medical subcommittee), administration of dental medical subcommittee for Infection control council of national and public university hospital
- 7: Ohta K: Japanese society for infection prevention and control, educational tool, Hand hygiene (revision), 2025
- 8: Ohta K: Japanese society for infection prevention and control, educational tool, Infection prevention by oral bacterial control (revision), 2025
- 9: Ohta K: Japanese society for infection prevention and control, educational tool, Prevention measures by infection route (revision), 2025
- 10: Ohta K: Japanese society for infection prevention and control, educational tool, Standard precaution (revision), 2025
- 11: Ohta K (Writing collaborator) Ministry of Health, Labour and Welfare. Guidelines for the appropriate use of antimicrobial agents, 4th Edition, dental edition, 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grants-in-Aid for Scientific Research (Scientific Research (C) : new: Shigeishi H (Main-researcher) : Elucidation of the regulatory mechanism of cancer stem cell traits mediated by Beclin-1 in oral squamous cell carcinoma cells highly expressing CD44. (23K09370).
- 2: Grants-in-Aid for Scientific Research (Scientific Research (C): new: Ohta K (Main- researcher): Elucidation of the novel functions of the new coronavirus target protein in the oral mucosa and its expression regulatory factors (23K09371).
- 3: Grants-in-Aid for Scientific Research (Scientific Research (C): new: Ohta K (Co-researcher): Elucidation of factors influence esophageal cancer treatment using comprehensive analysis of the oral microbiome (23K09311)
- 4: Grants-in-Aid for Scientific Research (Scientific Research (C) : Ohta K (Co- researcher): Basic research for developing dental implant treatment guidelines for patients receiving bisphosphonates. (21K09952)
- 5: Grants-in-Aid for Scientific Research (Scientific Research (C) : Ohta K (Co-researcher): Development of transplantation material for treatment of jaw bone necrosis with angiogenic effect. (21K10094)
- 6: Grants-in-Aid for Scientific Research (Scientific Research (C) : Ohta K (Co-researcher): Effect of distribution of resistant bacteria in the oral cavity and managing oral hygiene on medical / long term care related pneumonia (No.20K10248)
- 7: Grants-in-Aid for Scientific Research (Scientific Research (C) : Ohta K (Co-researcher): Establishment of IPS-derived jawbone and gingival organoids by conglomerate culture technology and advancement of oral regenerative medicine (No.22H03275)
- 8: Research grant (FUTOKU foundation): Kaneyasu Y (Principal Investigator): Development of an application aimed at supporting oral health and examination of its usefulness: ¥300,000.
- 9: Grants-in-Aid for Scientific Research (Early-Career Scientists: Kaneyasu Y (Main-researcher): Development of a toothbrush cleaner using electrolyzed water with strong bactericidal effects and its application to a new mouthwash. (No. 24K20110).

- 10: Grant-in-Aid for Early-Career Scientists : Fumie Shiba (Principal Investigator), A Novel Mechanism of Stomatitis Pathogenesis Based on Transcriptome Analysis of a Stomatitis Initiation Stage Model, Project/Area Number: 23K16150.
- 11: Grant-in-Aid for Early-Career Scientists : Fumie Shiba (Principal Investigator), Elucidation of the Mechanism of Chemotherapy-Induced Oral Mucositis Exacerbation via Retrotransposons, Project/Area Number: 25K20373.

#### (5) Academic Awards, etc.

- 1: Young investigator award, Inoue A, (Co-presenters: Miyauchi M, Ohta K, Shiba F Evaluation of the effects of *Equisetum arvense* in an early MRONJ model rat” The Japanese stomatological society (NPO), 2025.
- 2: Academic paper award of the Japanese dental hygienists’ association (Sunstar foundation award), encouragement award, Yano K (Co-presenters: Nishi H, Shigeishi H, Kaneyasu K, Kawaguchi H, Ohta K), Antifungal susceptibility of *Candida* isolated from the oral cavities of patients with head and neck cancer and esophageal cancer” The Japanese society of dental hygiene, 2025.
- 3: Excellent poster award, rising scientist award, Niwata T(co-authors: Nakagawa T, Ono S, Uetuki R, Yamakado N, Ohta K, Aikawa T), The rheumatoid arthritis drug leflunomide has anti-angiogenic and antitumor effects against oral squamous cell carcinoma, The 79th Annual Meeting of the Japanese Stomatological Society (NPO) (Matsumoto), 2025.
- 4: Young Investigator Award, Watanabe (co-authors: Ohta K, Sakuma M, Ishida Y, Naruse T, Shigeishi H, Shiba F, Aikawa T), Effects of nucleic acids and the antimicrobial peptide ll-37 on the induction of inflammatory factor expression in minor salivary gland cells, he 72nd Regional Meeting (Chugoku–Shikoku Branch) of the Japanese Stomatological Society (NPO), 2025.

#### (7) Patents

1. Shiba F (et al.), Japanese Patent Application No. 2025-065879, Patent related to oral mucositis, 2025.
2. Shiba F (et al.), Japanese Patent Application No. 2025-185028, Patent related to oral mucositis, 2025.
- 3: Ayuka Inoue: The 71th Meeting of the Chugoku-Shikoku Branch of the Japanese Stomatological Society, Rookie award. Evaluation of the efficacy of *Equisetum arvense* in the early MRONJ rat model.

#### (6) Patents

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## Department of Oral Epidemiology

### (1) Staff and Students

Professor: NAITO Mariko

Research Associate: NISHIMURA Rumi

Graduate Student: NISHIMOTO Misa

KURAWAKI Yuko

MATUO Katsuhiko (Oral Physiology)

TANAKA Sora

KAWAMOTO Airi

HUANG Wei

SHIOMIZU Suzuna

FURUIE Ayari

MITSUI Mizuki

KIM Nahyun

NAKAHAMA Yuka

MIURA Aoha

MIZUTA Momoka

Post-doctoral researchers: ASAEDA Mayuka

Research Scientist: SUZUKI Yoshitaka

### (2) Main Research Activities

- 1: Study on the methods for Oral health care
- 2: Study on the education program for Oral health
- 3: Study on the development of oral function
- 4: Epidemiological studies regarding associations between oral health and general health
- 5: Molecular epidemiology and gene-environmental interaction
- 6: Associations between health screening behavior, health status and lifestyle
- 7: Research for dysphagia patients and their caregivers
- 8: QOL/PRO research

### (3) Achievements

#### A) Original Papers (including Case Reports)

- 1: Relationship between work duties and years of experience of dental hygienists providing Home Visiting Dental Service dental house calls in Hiroshima Prefecture: Miyoshi S, Aimi R, Fujiwara C, Kuwahara S, Nishimura R. *Journal of the Japanese Society of Dental Hygiene*, 19(2), 13-22, 2025.
- 2: Effects of Nisin A Combined with Antifungal Drug Against Growth of Candida Species: Niitani Y, Ohta K, Yano K, Kaneyasu Y, Maehara T, Kitasaki H, Shigeishi H, Nishi H, Nishimura R, Naito M, Shiba F, Kawada-Matsuo M, Komatsuzawa H, Takemoto T: *Dentistry Journal*, 13(4), 160, 2025.
- 3: Association of Number of Teeth Present With Nutrient Intake and Food Group Consumption: Asaeda M, Nishimura R, Suma S, Tsukamoto M, Kadomatsu Y, Kubo Y, Okada R, Nagayoshi M, Tamura T, Hishida A, Takeuchi K, Goto C, Imaeda N, Wakai K, Arimoto N, Maehara T, Naito M: *Journal of Oral Rehabilitation*, 52(10), 1664-1673, 2025.
- 4: Collaboration with the Centre for Odontology and Oral Health Sciences at Jonkoping University: Tanaka S, Nishimura R, Maehara T, Asaeda M, Mitsui M, Shiomizu S, Huang W, Kawamoto A, Kurawaki Y, Hama Y, Ohta K, Takemoto T, Stensson M, Ahonen H, Roshandel Z, Carlsson E, Naito M: *The journal of Hiroshima University Dental Society*, 57 (1), 13-21, 2025.
- 5: Subjective Swallowing Function and Oral-related Quality of Life in Community dwelling Older Adults: Ishigami M, Omoda M, Kondo M, Hukutani H, Nishimura R, Suzukamo Y, Naito M: *Japanese Journal of Public Health*, 72(7), 449-455, 2025.
- 6: Impact of a multifaceted continuing education program on occupational stress and professional capabilities in dental hygienists: a longitudinal study: Kurawaki Y, Aimi R, Misumi K, Matsumoto A, Mitsui M, Asaeda M, Nishimura R, Takemoto T, Naito M: *BMC Med Educ*, 25:1498, 2025.

## B) Review

None

## C) Publications

None

## D) Other Publications

- 1: Chapter 8 Caries activity tests : Prophylactic Treatment of Dental Caries for Dental Hygienists 2nd: Niitani Y, Nishimura R(ed. By Nakagaki H, Katou K, Ishitobi K and Kousaka T): Ishiyaku Publishers,Inc (Tokyo), 122-130, 2024.
- 2: Implant treatment: The newest series of textbook for dental hygienist education -Basic theory and practical process for prosthodontic dentistry: Nishimura R (ed. By Akagawa Y, Sueese K, Masui I, Aiba C and Yamada S): Ishiyaku Publishers, Inc (Tokyo), 202-211, 2024.
- 3: Dysphagia Rehabilitation for Dental Hygienists 2nd: Nishimura R (ed. By Inoue M, Kikutani T, Sato Y, Shimoyama K, Fujitani J, Huruya J, Mizugami M and Mukai Y): Ishiyaku Publishers,Inc (Tokyo), 135-144, 2024.

## E) Presentations at Scientific Meetings

- 1: SNS Usage, eHealth Literacy, and Oral Health QOL in Japan-Taiwan: A Protocol: Furuie A, Asaeda M, Huang W, Mitsui M, Shiomizu S, Nishimura R, Ikeda A, Chen SL, Naito M: The 74th Annual Meeting of the Japanese Society for Dental Health (Niigata), 2025.
- 2: A case of anterior crossbite treated by rapid maxillary expansion: Suzuki Y, Naito M, Matsumoto-Nakano M, Nomura R: The 63rd Annual Congress of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
- 3: A case of narrowed maxillary dentition treated with stepwise rapid maxillary expansion followed by piezocision: Suzuki Y, Matsuo K, Naito M, Tanimoto K: 2025 International Association for Dental Research (IADR) / Pan European Region General Session & Exhibition (Barcelona), 2025.
- 4: Association between the number of missing teeth and total mortality: Matsuo M, Asaeda M, Shiomizu S, Kawamoto A, Kurawaki Y, Nishimura R, Naito T, Hanada N, Wakai K, Naito M: 2025 International Association for Dental Research (IADR) / Pan European Region General Session & Exhibition (Barcelona), 2025.
- 5: The association between meal timing regularity and oral health behavior: Shiomizu S, Mitsui M, Furuie A, Huang W, Tanaka S, Matsuo K, Asaeda M, Nishimura R, Nagayoshi M, Tamura T, Wakai K, Naito M: 2025 International Association for Dental Research (IADR) / Pan European Region General Session & Exhibition (Barcelona), 2025.
- 6: Study on the Relationship Between Masticatory Ability and Posture in Young Individuals: Takaishi N, Nishi N, Nishimura R, Naito M: The 25th Annual Meeting of the Japanese Dental Association (Kanagawa), 2025.
- 7: A case of skeletal class II malocclusion with maxillary constriction in a child with autism spectrum disorder treated with rapid maxillary expansion: Suzuki Y, Kuroe K, Oda Y, Yoshida M, Matsumoto-Nakano M, Nomura R, Tanimoto K, Asaeda M, Nishimura R, Naito M: The 25th Scientific Meeting of the Japanese Association for Dental Science (Kanagawa), 2025.
- 8: Dysphagia Assessment and Dental Care for Residents of Facilities for People with Disabilities: Three Case Reports: Murata M, Kawamoto A, Maehara T, Kawamoto H: The 42nd Annual Congress of the Japanese Society for Disability and Oral Health (Osaka), 2025.
- 9: In house Medical Examinations at a Long-term Care Facility for People with Disabilities for 27 years History at the Hospital: Murata M, Kawamoto A, Maehara T, Kawamoto H: The 42nd Annual Congress of the Japanese Society for Disability and Oral Health (Osaka), 2025.
- 10: Investigation of the Effects on Taste Perception in Young Adults: Miura A, Nakahama Y, Mizuta M, Obayashi N, Nishimura R, Naito M: The 20th Annual Meeting of the Japan Dental Hygiene Society (Tokyo), 2025.
- 11: Activity report on the project to support the continuous employment of dental hygienists at a



- university: Asaeda M, Mitsui M, Aimi R, Kurawaki Y, Misumi K, Nishimura R, Matsumoto A, Naito M, Takemoto T: The 20th Annual Meeting of the Japan Dental Hygiene Society (Tokyo), 2025.
- 12: Activity Report of the Dental Hygienist Training Program Engaged in Home Dental Health Care in FY 2023-2024: Hata N, Asaeda M, Nishimura R, Maehara T, Matsumoto A, Miyoshi S: The 20th Annual Meeting of the Japan Dental Hygiene Society (Tokyo), 2025.
  - 13: A case of sequential changes in occlusal radiographs during phase I orthodontic treatment with rapid maxillary expansion: Suzuki Y, Takeda N, Osugi S, Sugai C, Nishi A, Suzuki Y, Matsuo K, Nakajima M, Matsumoto-Nakano M, Nomura R, Tanimoto K, Kakimoto N, Asaeda M, Nishimura R, Naito M: The 64th Scientific Meeting of Hiroshima Prefecture Dental Association and 109th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2025.
  - 14: Association of stress and coping with oral health among community-dwelling older adults: Asaeda M, Mitsui M, Huang W, Kurawaki Y, Nishimura R, Maehara T, Tamura T, Nagayoshi M, Matsunaga T, Wakai K, Naito M: The 35th National Conference of the Japan Society for Occupational Health (Tokushima), 2025.
  - 15: A case of improvement of eruption disturbance of the maxillary right first molar with anterior crossbite by rapid maxillary expansion: Suzuki Y, Naito M, Matsumoto-Nakano M, Nomura R: The 44th Congress of Japanese Society of Pediatric Dentistry Kinki Branch (Osaka), 2025.

#### F) Lectures

- 1: Nishimura R: Mondamin Seminar Hiroshima 2025, 2025.
- 2: Asaeda M: The 41st Research Presentation Meeting & Academic/Industry Seminar hosted by the Hiroshima Prefecture Dental Hygienists' Association "What You Should Know About Literature Searches and Reading Papers Before Starting Your Research - How to Find and Read Papers?": Hiroshima Prefecture Dental Association Hall (Hiroshima), 2025.

#### G) Social Contributions

- 1: Nishimura R, Shiomizu S, Mitsui M, Nakahama Y, Miura A, Mizuta M: Assessment of oral function at special nursing home "Kosei-En" (Hiroshima), 2025.
- 2: Nishimura R, Asaeda M: Project to improve the qualifications of dental hygienists for the promotion of home dental care (Hiroshima), 2025.
- 3: Nishimura R, Asaeda M: Project to support the continuous employment of dental hygienists (Hiroshima), 2025.
- 4: Asaeda M: Assessment of oral function at General Health and Welfare Center "Yamasaki-Honsha Minna-no-Ai Plaza" (Hiroshima), 2025.
- 5: Nishimura R, Kurawaki Y, Nakahama Y, Miura A, Mizuta M: Oral health instruction at Mimyo Kindergarten and 5 other facilities (Hiroshima), 2025.
- 6: Nishimura R, Nakahama Y, Mizuta M: Work experience for High School students: Oral health instruction at Hiroshima University (Hiroshima), 2025.
- 7: Nishimura R, Shiomizu S, Mitsui M, Nakahama Y, Miura A, Mizuta M: Assessment of oral function at Sadashige Community Center and 4 other facilities (Hiroshima), 2025.
- 8: Kawamoto A: Hiroshima Prefecture Dental Hygienists' Association, Hiroshima District "Good Teeth Day Campaign" project at ALPARK (Hiroshima), 2025.
- 9: Kawamoto A: Hiroshima Prefecture Dental Hygienists' Association, Hiroshima District Provided oral health guidance at the Hiroshima City Support Center for Persons with Physical Disabilities (Hiroshima), 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc

- 1: Grant-in-Aid for Scientific Research (C): Naito M (PI): Development of Core Indicators and Construction of an Item Bank for Oral Health Assessment, Project No. 24K13214, ¥1,170,000.
- 2: Grant-in-Aid for Scientific Research (C): Nishimura R (Co-researcher): Development of Core Indicators and Construction of an Item Bank for Oral Health Assessment, Project No. 24K13214, ¥600,000.
- 3: Grant-in-Aid for Scientific Research (C): Naito M (Co-researcher): Health Status and Health Behaviors Among Middle-Aged Single and Unmarried Individuals: Mediating Factors in the

- Relationship Between Single/Unmarried Status and Health Status, Project No. 25K13605, ¥100,000.
- 4: Grant-in-Aid for Scientific Research (B): Naito M (Co-researcher): Establishing Scientific Evaluation Methods for Patient-Reported Outcomes and Quality of Life - Validation and Practical Application Based on Fundamental Principles. Project No. 23K203350B, ¥100,000.
  - 5: Grant-in-Aid for Research Activity Start-up: Nishimura R (PI): International Comparative Study Aiming to Elucidate the Effects of Sleep and Social Support on Oral Health in Older Adults, Project No. 25K24139, ¥1,200,000.
  - 6: Grant-in-Aid for Research Activity Start-up: Nishimura R (PI): Research on Coping Behaviors and Oral Health for Stress, Project No. 25K20600, ¥1,950,000.
  - 7: Ministry of Health, Labour and Welfare FY 2025 Demonstration Project for Securing Dental Hygienist Personnel: Naito M, Kurawaki Y, ¥7,706,000.
  - 8: Hiroshima Prefecture Home Dental Care Promotion and Competency Enhancement Project: Naito M, Nishimura R, Asaeda M, ¥4,177,000.
  - 9: Hiroshima Prefecture Dental Hygienist Career Continuous Employment Support Program: Naito M, Nishimura R, Asaeda M, ¥4,412,000.

(5) Academic Awards, etc.

None

(6) Patents

None

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## Department of Anatomy and Functional Restorations

### (1) Staff and Students

Professor : Masato Kaku  
 Associate Professor : Saiji Shimoe  
 Graduate Students : Haruya Kawabata, Rinko Shubiki, Nene Morie, Nana Morikiyo, Soichiro Yamaga, Koto In,  
 Undergraduate Student : Arisa Inoue, Kazuki Nakahara, Yuto Nakamura, Mizuki Yasuhara, Naoki Yoneda, Haruna Shinta, Nonoka Sugikubo, Yukito Taneda, Saki Tohno, Haruna Nakaso, Kohta Hiyama  
 Research Student : Shogo Iwaguro  
 Clinical Resident : Kazunori Itatani

### (2) Main Research Activities

- 1 : Effects of mechanical stress on bone metabolism and angiogenesis
- 2 : Tongue-palatal contact during articulation and swallow
- 3 : Study on dental materials for esthetic
- 4 : Study on new clinical application using novel dental ceramic
- 5 : Study on objective evaluation using the three-dimensional image

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

1. Chen DD, Peng TY, Huang PY, Kaku M, Cheng JH. 2025, Advances in clear aligner therapy: Comparative evaluation of the optical properties and bacterial adhesion of 3D direct-printed and thermoformed aligners. *Prog Orthod*, 18;26(1):53. doi: 10.1186/s40510-025-00600-3.
2. Mine Y, Taji T, Okazaki S, Takeda S, Peng TY, Shimoe S, Kaku M, Nikawa H, Kakimoto N, Murayama T. 2025, Analyzing the performance of multimodal large language models on visually-based questions in the Japanese national examination for dental technicians. *J Dent Sci*, 20: 2460-2466.
3. Kasagawa M, Mine Y, Sano M, Kurokui Y, Ueda A, Kaku M, Nikawa H, Murayama T. 2025, Analysis of Risedronate Analog on Extraction Socket Healing in Mice, *In Vivo*, 39: 648-655.
4. Kaku M., Shimoe S, Mine Y, Taji T, Murayama T, Nikawa H, 2025, Transient apical breakdown during orthodontic incisor intrusion treated with non-steroidal anti-inflammatory drugs: a case report. *Br Dent J*, 239:774-777.

#### B) Review

#### C) Publications

#### D) Other Publications

#### E) Presentation at Scientific Meeting

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

(5) Academic Awards, etc.

(6) Patents

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## Department of Medical System Engineering

### (1) Staff and Students

Professor	: Takeshi Murayama
Lecturer	: Yuichi Mine
Graduate Students	: Memori Minoda, Saori Takeda, Taku Nishimura (Pediatric Dentistry), Eimi Tabata (Pediatric Dentistry), Hinako Atarashi, Honoka Aoe, Ayano Ueda, Mahina Kamada, Noriko Mae, Yukinaga Kurokui, Ryohei Tokinaga,
Graduation Research Students	: Junya Okazaki, Rinka Shimono, Aoi Nakamura, Keishu Fujiwara, Amane Mukai, Ayuka Yamaguchi, Mao Tsukasaki, Hana Miyaoka, Chinatsu Wakayama, Hinata Kawata, Haruna Tokunaga, Ryuki Santanda, Honoka Arita

### (2) Main Research Activities

- 1: Application of artificial intelligence to dentistry
- 2: Application of 3-d technologies to dentistry
- 3: Study on mechanisms of medication-related osteonecrosis of the jaw (MRONJ)

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: RadImageNet and ImageNet as Datasets for Transfer Learning in the Assessment of Dental Radiographs: A Comparative Study: Okazaki S, Mine Y, Yoshimi Y, Iwamoto Y, Ito S, Peng TY, Nishimura T, Suehiro T, Koizumi Y, Nomura R, Tanimoto K, Kakimoto N, Murayama T.: *Journal of Imaging Informatics in Medicine*, 38 (1), 534-544, 2025.
- 2: Detecting the articular disk in magnetic resonance images of the temporomandibular joint using YOLO series: Yoshimi Y, Mine Y, Yamamoto K, Okazaki S, Ito S, Sano M, Peng TY, Nakamoto T, Nagasaki T, Kakimoto N, Murayama T, Tanimoto K.: *Dental Materials Journal*, 44 (1), 103-111, 2025.
- 3: Analysis of Risedronate Analog on Extraction Socket Healing in Mice: Kasagawa M, Mine Y, Sano M, Kurokui Y, Ueda A, Kaku M, Nikawa H, Murayama T.: *In Vivo*, 39 (2), 648-655, 2025.
- 4: Anti-fungal effect of slightly acidic electrolyzed water on *Candida* species: Wu CH, Kaneyasu Y, Yano K, Shigeishi H, Kitasaki H, Maehara T, Niitani Y, Takemoto T, Mine Y, Le MN, Kawada-Matsuo M, Komatsuzawa H, Ohta K.: *Journal of Oral Biosciences*, 67 (1), 100573, 2025.
- 5: Artificial intelligence for medication-related osteonecrosis of the jaw: a scoping review: Mine Y, Okazaki S, Yamasaki S, Kakimoto N, Yanamoto S, Murayama T.: *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology*, 140 (4), 405-415, 2025.
- 6: Impacts of surface characteristics on biological responses and biofilm formation of 3D-printed denture base resins: An in vitro study: Tseng CF, Sung CC, Yang YT, Chen FN, Mine Y, Chiang YC, Lin ZC, Fang ML, Chen HM, Kok SH, Peng TY.: *Journal of Dental Sciences*, 20 (3), 1716-1722, 2025.
- 7: Benchmarking multimodal language models on the dental licensing examination: Challenges with clinical image interpretation: Mine Y, Okazaki S, Taji T, Kawaguchi H, Kakimoto N, Murayama T.: *Journal of Dental Sciences*, 20 (4), 2427-2435, 2025.
- 8: Analyzing the performance of multimodal large language models on visually-based questions in the Japanese National Examination for Dental Technicians: Mine Y, Taji T, Okazaki S, Takeda S, Peng TY, Shimoe S, Kaku M, Nikawa H, Kakimoto N, Murayama T.: *Journal of Dental Sciences*, 20 (4), 2460-2466, 2025.
- 9: Facial scan in clinical dentistry and related research: A scoping review: Shuto T, Mine Y, Tani A, Taji T, Murayama T.: *Cureus*, 17 (4), e81662, 2025.
- 10: Comparative Evaluation of Dental Clinical Surface Treatments for Polyetheretherketone with

- Airborne-Particle Abrasion, Hydrofluoric Acid Etching, and Handheld Nonthermal Plasma Activation on Long-Term Bond Performance: Lai SY, Lin SI, Chang CW, Shen YR, Mine Y, Lin ZC, Fang ML, Sung CC, Tseng CF, Peng TY, Lee CW.: *Polymers*, 17 (11), 1448, 2025.
- 11: Deep learning predicts osteogenic differentiation stages of human mesenchymal stem cells from phase-contrast microscopy images: Sano M, Mine Y, Okazaki S, Kasagawa M, Nishimura T, Tabata E, Peng TY, Ueda A, Nomura R, Murayama T.: *Dental Materials Journal*, 44 (5), 557-563, 2025.
  - 12: Promoting Surface Energy and Osteoblast Viability on Zirconia Implant Abutments through Glass–Ceramic Spray Deposition Technology: Hsu WC, Yao YC, Kang CM, Cha TY, Wu SH, Mine Y, Tseng CF, Lee IT, Lin DJ, Peng TY.: *Journal of Functional Biomaterials*, 16 (8), 288, 2025.
  - 13: Age estimation from lateral cephalograms using deep learning: A pilot study from early childhood to older adults: Tokinaga R, Mine Y, Yoshimi Y, Okazaki S, Ito S, Takeda S, Ogawa S, Peng TY, Kakimoto N, Tanimoto K, Murayama T.: *Journal of Clinical Medicine*, 14 (19), 7084, 2025.
  - 14: Handheld Nonthermal Plasma Augmentation of Glass–Ceramic Spray Deposition on Zirconia Surface Characterization and MG-63/HGF-1 Cell Behavior: An in vitro Study: Wu SH, Lai SY, Lee IT, Mine Y, Huang HY, Peng TY: *Journal of Functional Biomaterials*, 16 (11), 421, 2025.
  - 15: Transient apical breakdown during orthodontic incisor intrusion treated with non-steroidal anti-inflammatory drugs: a case report: Kaku M, Shimoe S, Mine Y, Taji T, Murayama T, Nikawa H.: *British Dental Journal*, 239 (11), 774-777, 2025.
  - 16: Challenges and Limitations of Multimodal Large Language Models in Interpreting Pediatric Panoramic Radiographs: Mine Y, Iwamoto Y, Okazaki S, Nishimura T, Tabata E, Takeda S, Peng TY, Nomura R, Kakimoto N, Murayama T.: *International Journal of Paediatric Dentistry*, in press
  - 17: Analysis of multimodal large language models on visually-based questions in the Japanese National Examination for Dental Hygienists: A preliminary comparative study: Kaneyasu Y, Mine Y, Niitani Y, Taji T, Takeda S, Tokinaga R, Shigeishi H, Takemoto T, Kakimoto N, Murayama T, Ohta K.: *Journal of Dental Sciences*, in press
  - 18: What the performance of multimodal LLMs on a national licensing exam teaches us about occupational therapy education: Saita K, Mine Y, Amano S.: *BMC Medical Education*, in press

## B) Review

- 1: Current status and future prospects of large-scale language model research in dentistry: Okazaki S, Mine Y, Takeda S, Murayama T: *The journal of Hiroshima University Dental Society*, 57, 1-11, 2025.

## C) Publications

## D) Other Publications

## E) Presentation at Scientific Meeting

- 1: The potential for biometric impression using smartphone 3D scanning technology for the DX of dental technology: Takayama Y, Taji T, Mine Y, Higo M, Kawabata H, Oba S: *The 7th International Congress of Dental Technology, The 46th Annual Scientific Meeting Japanese Academy of Dental Technology (Osaka)*, 2025.
- 2: Development of a dental diagnosis support system using deep learning integrated with image processing: Mine Y, Koshimizu M, Ogawa T: *2024 Achievement Report Meeting of Research Center for Biomedical Engineering, (Kanagawa)*, 2025.
- 3: Predicting osteogenic differentiation stage of mesenchymal stem cells using deep learning: Okazaki S, Mine Y, Murayama T: *The 83rd Academic Meeting of The Japanese Society for Dental Materials and Devices (Aichi)*, 2025.
- 4: External validation of deep learning models for comprehensive tooth detection from pediatric panoramic radiographs: Nishimura T, Iwamoto Y, Mine Y, Okazaki S, Tabata E, Mitsuhashi C, Nomura R.: *Korean Academy of Pediatric Dentistry 2025 Conference (Seoul)*, 2025.
- 5: Evaluation of multimodal large language models to support dental practice: Mine Y, Okazaki S, Takeda S, Murayama T: *The 16th Annual Conference of Japan Academy of Digital Dentistry (Tokyo)*, 2025.

- 6: Analysis of mixed dentition panoramic radiographs using an object detection model and robustness evaluation with external datasets: Nishimura T, Mine Y, Okazaki S, Tabata E, Murayama T: The 16th Annual Conference of Japan Academy of Digital Dentistry (Tokyo), 2025.
- 7: Automatic detection of tooth types on pediatric intraoral photographs and development of self-check application using deep learning: Tabata E, Mine Y, Nishimura T, Okazaki S, Murayama T: The 16th Annual Conference of Japan Academy of Digital Dentistry (Tokyo), 2025.
- 8: Age estimation from lateral cephalograms using deep learning-based regression models: Tokinaga R, Mine Y, Yoshimi Y, Ito S, Okazaki S, Aoe H, Ogawa S, Takeda S, Tanimoto K, Murayama T: The 16th Annual Conference of Japan Academy of Digital Dentistry (Tokyo), 2025.
- 9: Identifying the condition of impacted maxillary canines from panoramic X-ray images using deep learning: Ogawa S, Yoshimi Y, Mine Y, Okazaki S, Ito S, Murayama T, Tanimoto K: The 16th Annual Conference of Japan Academy of Digital Dentistry (Tokyo), 2025.
- 10: Analysis of mixed dentition panoramic radiographs using a deep learning model and robustness evaluation with external datasets: Nishimura T, Iwamoto Y, Mine Y, Tabata E, Nomura R: 3rd Japanese Society of Pediatric Dentistry Young People's Meeting / The 63rd Annual Meeting of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
- 11: Automatic detection of tooth types on pediatric intraoral photographs using deep learning approach: Tabata E, Iwamoto Y, Mine Y, Nishimura T, Nomura R: The 63rd Annual Meeting of the Japanese Society of Pediatric Dentistry (Niigata), 2025.
- 12: Tooth Detection on Pediatric Intraoral Photographs Using Deep Learning: Tabata E, Iwamoto Y, Mine Y, Nishimura T, Okazaki S, Murayama T, Nomura R.: 103rd General Session & Exhibition of the IADR/IADR Pan European Regional Congress (Barcelona), 2025.
- 13: Regulation of CTGF Protein Expression via the PDGFR-AKT Pathway in Malignant Mesothelioma Cells: Suehiro T, Ahmad K M, Nguyen T D H, Xu B, Komatsu H, Kurachi T, Nikawa H, Mine Y, Matsumoto R, Asano K, Fujii M: 97th Annual Meeting of the Japanese Tissue Culture Association (Yamaguchi), 2025.
- 14: Multimodal AI-based prediction of skeletal pattern from lateral facial photographs: Ito S, Mine Y, Yoshimi Y, Okazaki S, Ogawa S, Takeda S, Murayama T, Tanimoto K: IADR Asia Pacific Regional & WW9 Conference 2025 (New Delhi), 2025.
- 15: Regulation of CTGF Protein Levels via AKT Signaling Activated by PDGF Receptor in Malignant Mesothelioma: Suehiro T, Xu B, Mine Y, Fujii M: The 84th Annual Meeting of the Japanese Cancer Association (Kanazawa), 2025.
- 16: Performance of multimodal large language models in interpreting pediatric panoramic radiographs: Iwamoto Y, Mine Y, Okazaki S, Nishimura T, Tabata E, Murayama T, Nomura R: IAPD2025 (Cape Town), 2025.
- 17: Tooth Detection on Pediatric Intraoral Images Using Deep Learning and Mobile Application Development: Tabata E, Iwamoto Y, Mine Y, Nishimura T, Okazaki S, Murayama T, Nomura R: IAPD2025 (Cape Town), 2025.
- 18: Detection of dental and oral diseases from radiographic images using deep learning: Okazaki S, Mine Y: 2025 SCU Industry-Academia-Government Research Exchange Meeting (Sapporo), 2025.
- 19: Determining the impacted state of maxillary canines in panoramic radiographs using deep learning: Yoshimi Y, Mine Y, Takeda S, Okazaki S, Ogawa S, Ito S, Murayama T, Tanimoto K.: 38th Annual Meeting of TAO (Taipei), 2025.

#### F) Special Lectures in Academic Meetings

- 1: Current status and challenges of artificial intelligence research in the dental field: Mine Y: Surface Technology Association Kanto Branch 106th Lecture: 7th Medical and industrial applications of surface and material technology - Application of machine learning and deep learning to surface treatment technology in the medical field -, 2025.
- 2: Japan Prosthodontic Society Special Mission Committee II (in charge of developing young researchers) Report on the Prosthodontic Meeting for Next Generation (PMNG) 2023 and 2024: Mine Y: Prosthodontic Meeting for Next Generation 2025, 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: KAKENHI Grant-in-Aid for Scientific Research (C): (Principal Investigator) Murayama T, (Co-Investigator) Mine Y, Deployment of Dental Image Integration Models Using Deep Learning. Grant Number 25K15961.
- 2: KAKENHI Grant-in-Aid for Scientific Research (C): (Principal Investigator) Mine Y, (Co-Investigator) Murayama T, Development of Deep Learning Cell Analysis Technology for Jaw Bone Regeneration Therapy. Grant Number 25K13103.
- 3: KAKENHI Grant-in-Aid for Scientific Research (C): (Co-Investigator) Murayama T, Mine Y, Development of a maxillofacial prosthetic support system using deep generative model. Grant Number 24K13026.
- 4: KAKENHI Grant-in-Aid for Scientific Research (C): (Co-Investigator) Mine Y, Development of a pediatric dental diagnosis support system using deep learning. Grant Number 24K13173.
- 5: KAKENHI Grant-in-Aid for Scientific Research (C): (Co-Investigator) Mine Y, Development of a Prophylaxis for Cognitive Decline Using Biogenics. Grant Number 23K09296.
- 6: 41st (2025) Murata Foundation Research Grant for Interdisciplinary Studies: Mine Y, Medical Device Applicability of Large Language Models: Technical Validation and Construction of a Regulatory Science Framework. Adoption NO: 25BR-048.
- 7: Research Center for Biomedical Engineering Joint Research Project General Joint Research A (Domestic A): Mine Y, Development of a dental diagnosis support system using deep learning integrated with image processing. Accession number 3049.

#### (5) Academic Awards, etc.

- 1: Kasagawa M: 2024 Student Awards of Hiroshima University Graduate School of Biomedical Sciences, 2025.
- 2: Okazaki S, Mine Y, Murayama T: The 83nd Academic Meeting of the Japanese Society of Dental Materials and Devices in 2025, GC Award, 2025.
- 3: Mine Y: Japan Society of Digital Dentistry 6th Academic Encouragement Award, 2025.
- 4: Suehiro T, Ahmad K M, Nguyen T D H, Xu B, Komatsu H, Kurachi T, Nikawa H, Mine Y, Matsumoto R, Asano K, Fujii M: The 97th Annual Meeting of the Japanese Society for Tissue Culture Research Award, 2025.
- 5: Tokinaga R: Hiroshima University Excellent Student Scholarship for 2025, 2025.

#### (6) Patents

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## Department of Oral Biology & Engineering

### (1) Staff and Students

Professor : Hiroki Nikawa

Associate Professor : Tsuyoshi Taji

Education and Research Support Staff: Kaori Taguchi

Graduate Student: Mei Inoue, Reon Komatsu, Ryo Okamoto, Masaki Natsu, Shota Takayama, Sota Nakatani, Kenyo Go, Aoi Matoba, Ai Yoshimura, Moe Ueda, Haruka Horii, Rika Tanaka

Undergraduate Student: Noa Konishi, Munetoki Nakamura, Yuna Hoshida, Hinami Matsui, Honoka Morimoto, Ayaka Watanabe

### (2) Main Research Activities

- 1: Study on candidal biofilms and denture plaque
- 2: Study on dental caries and probiotics
- 3: Design for cationic antimicrobial peptides
- 4: Study on mechanisms of the alveolar bone resorption
- 5: Development of bone-resorption inhibitors
- 6: Study on dental implant materials
- 7: Collaborative research about allergy
- 8: Study on digital dentistry
- 9: Collaborative research about aortic aneurysm
- 10: Development of oral function devices
- 11: Analysis of food texture

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Benchmarking multimodal language models on the dental licensing examination: Challenges with clinical image interpretation: Mine Y, Okazaki S, Taji T, Kawaguchi H, Kakimoto N, Murayama T: *Journal of Dental Sciences*: 20(4), 2427-2435, 2025.
- 2: Analyzing the performance of multimodal large language models on visually-based questions in the Japanese National Examination for Dental Technicians: Mine Y, Taji T, Okazaki S, Takeda S, Peng TY, Shimoe S, Kaku M, Nikawa H, Kakimoto N, Murayama T: *Journal of Dental Sciences*, 20(4),2460-2466, 2025.
- 3: Analysis of Risedronate Analog on Extraction Socket Healing in Mice: Kasagawa M, Mine Y, Sano M, Kurokui Y, Ueda A, Kaku M, Nikawa H, Murayama T: *In Vivo*,648-655, 2025.
- 4: Oral Microbiome Patterns of Dental Caries in Kazakhstani Adolescents: Argul Issilbayeva, Zharkyn Jarmukhanov, Samat Kozhakhmetov, Yermekbayeva Bakytgul, Laura Chulenbayeva, Graciela Muniz-Terrera, Masae Furukawa, Hiroki Nikawa, Adil Supiyev, Almagul Kushugulova, Anara Zhumadilova: *Journal of Applied Oral Science*, accepted, 2025.
- 5: Aging performance and bacteria adhesion of 3D-printed, CAD/CAM-milled, and conventional definitive denture resins: Chuang PE, Chen FN, Shieh TM, Chuang CC, Wei C, Nikawa H, Peng TY: *J Prosthodont Res*, accepted, 2025.
- 6: Transient apical breakdown during orthodontic incisor intrusion treated with non-steroidal anti-inflammatory drugs: a case report: Kaku M, Shimoe S, Mine Y, Taji T, Murayama T, Nikawa H: *Br Dent J*, 239, 774-777, 2025.
- 7: Facial Scan in Clinical Dentistry and Related Research: A Scoping Review: Shuto T, Mine Y, Tani A, Taji T, Murayama T: *Cureus*, 17(4), e81662, 2025.

#### B) Review

#### C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

F) Symposium and special lecture

- 1: Application of Probiotics strain *Lactobacillus rhamunosus* L8020 to oral health :Hiroki Nikawa : ISBE and IWNT 2025 (higashihiroshima) 2025.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Hiroki Nikawa (Head), Yuichi Mine, Tsuyoshi Taji (Co-investigators), Research Project Number: 23K092960. \1,560,000
- 2 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Tsuyoshi Taji (Head), Hiroki Nikawa (Co-investigators), Research Project Number: 24K13026. \1,170,000
- 3 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Yuichi Mine (Head), Hiroki Nikawa (Co-investigators), Research Project Number: 25K131035. \1,560,000
- 4 : Donation from Shikoku nyugyou corporation to Hiroki Nikawa. \300,000
- 5 : Donation from Hiroshima Red Cross Hospital & Atomic-bomb Survivors Hospital. to Hiroki Nikawa. \140,000

(5) Academic Awards, etc.

(6) Patents

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## Center for Cause of Death Investigation Research & Education (Division of Forensic Odontology)

\* This division is operated by a single dedicated academic staff member who is responsible for research, education, and administrative duties. Additional members are affiliated with other departments, and their achievements are listed in their respective divisions.

### (1) Staff and Students

Specially Appointed Associate Professor/Lecturer: Hiroko Oka

### (2) Main Research Activities

- 1: Cuses of death and oral findings
- 2: Age prediction using oral specimen and findings
- 3: Personal identification system
- 4: Education method and assessment on forensic odontology

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: **Oka H\***, Akazaki T, Miyauchi M, Kitagawa M: FHL2 DNA methylation in tooth root surfaces as a tool for age estimation. *Journal of Forensic Sciences*. Epub 2025 Oct 28.
- 2: **Oka H\***, Fujii A, Asao Y, Nagao M: Personality Traits and Dental Students' Interest in Observing Forensic Dental Examinations. *Forensic Dental Science*. Accepted on Aug 1, 2025.
- 3: **Oka H\***, Namera A, Katsuya N, Harada T, Fujii A, Fukumoto W, Ito H, Nagao T, Kakimoto N, Nagao M: Identification of an unidentified corpse with gingival overgrowth: A case report. *Legal Medicine (Tokyo)*. Epub 2025 Apr 20.

#### B) Review

#### C) Publications

#### D) Other Publications

#### E) Presentations at Scientific Meetings

- 1: **Oka H**: The evolution of undergraduate education in disaster dentistry-Based on a questionnaire survey of dental trainees at Hiroshima University Hospital over the past six years-: The 30<sup>th</sup> Anniversary Meeting of Japanese Association for Disaster Medicine, Nagoya, 2025.
- 2: Ito Y, **Oka H**, Ikeda A, Kaneki A, Ogawa M, Kametani M, Asao Y, Akitomo T, Kawada-Matsuo M, Nakano K, Komatsuzawa H, Nagao M, Nomura R: Comparison of *Streptococcus mutans* isolated from the oral cavity and large intestine using genetic analyses : The 66th Scientific Meeting and Annual Congress of the Korean Academy of Pediatric Dentistry, Korea, 2025.

- 3: Ikeda S, **Oka H**, Nagao M: Application of equipment of dental radiography in detecting metal fragments in gunshot wounds: A case report: The 19th Annual Meeting of Japanese Society of Forensic Dental Science, Tokyo, 2025.
- 4: Fujii A, **Oka H**, Nagao M: Isolation of *Staphylococcus aureus* from oral and whole body specimens from corpses: The 19th Annual Meeting of Japanese Society of Forensic Dental Science, Tokyo, 2025.
- 5: Isobe Y, Oka H, Yamazoe J, Takeshita A, Morikawa H, Hoshina T, Kawaguchi O, Masui K, Kubo N, Mizohata M, Matsumoto H: Dental findings from deceased individuals using an intraoral scanner: a case report The 19th Annual Meeting of Japanese Society of Forensic Dental Science, Tokyo, 2025.
- 6: Nakakuki K, **Oka H**, Kumagai A, Fuchida S: An approach to disaster dental health education in dental education : :The 44th Annual Academic Meeting of Japanese Dental Education Association, Chiba, 2025.

#### F) Special lectures in academic meetings

- 1: Hiroko Oka (Organizer of UDS1): Frontiers in age estimation research from the oral and maxillofacial region: toward collaboration with oral biosciences: The 67th Annual Meeting of Japanese Association of Oral Biology, Kitakyushu, 2025.
- 2: Hiroko Oka (Lecturer): Overview and Fundamentals of Dental Identification: Hiroshima Prefecture Police Dentists Association Workshop FY 2025, Hiroshima, 2025.
- 3: Hiroko Oka (Lecturer & Organizer): Current Status of Education on “Abuse” for Dental Students: 2025 Training Seminar “Listen! Speak! Abuse Education for Dental Students” hosted by the Education Committee of the Japanese Society of Forensic Dental Science, Tokyo, 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grants-in-Aid for Scientific Research (Scientific Research (B): Oka Hiroko (co-Investigator), Establishment of a foundation for the control of immunological diseases and infections in children by focusing on periodontopathogenic bacteria (Tentative translation), No. 24K02655
- 2: Pfizer Health Research Foundation 2024: Oka Hiroko (Investigator), A study on the relationship between the distribution of oral bacteria in the body and pathological conditions.

#### (5) Academic Awards, etc.

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## Department of General Dentistry

### (1) Staff and Students

Professor: Hiroyuki Kawaguchi  
 Assistant Professor: Hiromi Nishi, Susumu Horikoshi  
 Medical Staff: Nami Obayashi, Noriaki Ide( until March)

### (2) Main Research Activities

- 1: Research in general dentistry
- 2: Research on Perioperative Oral Management
- 3: Research on Oral Bacteria and Systemic Diseases
- 4: Research in taste disorder of patients receiving chemotherapy
- 5: Research in allergy related to dental materials

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: TMPRSS2 expression in oral mucosal cells induced by transfected double-stranded RNA and IL-1 $\beta$  : Akagi M., Ohta K., Sakuma M., Naruse T., Ishida Y., Niwata C., Yamakado N., Nakagawa T., Ono S., Nishi H., Shigeishi H., Aikawa T. : *Journal of Oral Biosciences* : 67(2) : 100619 : 2025
- 2: Atrial Translocation of Porphyromonas gingivalis Exacerbates Atrial Fibrosis and Atrial Fibrillation : Miyauchi S., Kawada-Matsuo M., Furusho H., Nishi H., Nakajima A., Pham P., Shiba F., Kitagawa M., Ouhara K., Oda N., Tokuyama T., Okubo Y., Okamura S., Takasaki T., Takahashi S., Hiyama T., Kawaguchi H., Komatsuzawa H., Miyauchi M., Nakano Y. : *Circulation* : 151(21) : 2025
- 3: Establishment of immortalized human minor salivary gland cells and chemokine expression induced by IFN- $\gamma$ , TNF- $\alpha$ , and IL-1 $\beta$  : Naruse T., Ohta K., Akagi M., Sakuma M., Ishida Y., Nakagawa T., Ono S., Nishi H., Shigeishi H., Aikawa T. : *Odontology* : 113(4) : 1546-1557 : 2025
- 4: Cross-sectional pilot study of relationships between specific oral bacteria and acute respiratory failure requiring intensive care unit admission : Nishi H., Ohta K., Ohshimo S., Shigeishi H., Obayashi T., Munenaga S., Okazawa Y., Inubushi J., Ino N., Tokikazu T., Yano K., Ohge H., Kurihara H., Shime N., Kawaguchi H. : *Journal of Dentistry* : 157 : 105724 : 2025
- 5: Effects of nisin A combined with antifungal drug against growth of Candida species : Niitani Y., Ohta K., Yano K., Kaneyasu Y., Maehara T., Kitasaki H., Shigeishi H., Nishi H., Nishimura R., Naito M., Kawada-Matsuo M., Komatsuzawa H., Takemoto T. : *Dentistry Journal* : 13(4) : 160 : 2025
- 6: Radiomics analysis for prediction of medication-related osteonecrosis of the jaw using panoramic radiographs : Konishi M., Nishi H., Kawaguchi H., Kakimoto N. : *Oral Radiology* : 41 : 507-516 : 2025
- 7: The periodontal pathogen Fusobacterium nucleatum is associated with disease severity in multiple sclerosis : Naito H., Nakamori M., Nishi H., Toko M., Muguruma T., Yamada H., Sugimoto T., Yamazaki Y., Ochi K., Kawaguchi H., Maruyama H. : *Scientific Reports* : 15 : 38316 : 2025
- 8: A cross-sectional interventional study on the effects of periodontal treatment on periodontal inflamed surface area and masticatory efficiency values according to the 2018 periodontal status classification : Matsuda S., Yumoto H., Komatsu Y., Dewake N., Iwata T., Nagano T., Morozumi T., Goto R., Kato S., Yamashita M., Hayashi J., Sekino S., Yamashita A., Yamashita K., Yoshimura A., Sugaya T., Takashiba S., Taguchi Y., Nemoto E., Shintani T., Miyagawa T., Nishi H., Mizuno N.,

- Numabe Y., Kawaguchi H. : BMC Oral Health : 25 : 1094 : 2025
- 9: Relationship between virulence factor activities, cytotoxicity of *Candida albicans* strains isolated from oral cavity, and cytokine production by oral keratinocytes exposed to those strains : Yano K., Nishi H., Shigeishi H., Kaneyasu Y., Niitani Y., Kitasaki H., Kawaguchi H., Takamoto M., Shiba F., Takemoto T., Ohta K. : Dentistry Journal : 13(11) : 502 : 2025
- 10: Serum IgG titer to *Fusobacterium nucleatum* is associated with clinical outcomes after surgery in patients with esophageal squamous cell carcinoma : Yoshikawa T., Nishi H., Emi M., Hamai Y., Ibuki Y., Kurokawa T., Hirohata R., Ohsawa M., Kitasaki N., Komatsuzawa H., Kawaguchi H., Okada M. : PLOS ONE : 20(11) : 2025
- 11: Effect of Stimulated Salivary Volume on Dysbiosis of the Salivary Microbiome in Children and Young Adults : Shintani T., Obayashi N., Yoshimoto T., Ando T., Morihara N., Kataoka N., Miyata R., Yoshino M., Yoshii H., Morimoto S., Hayashi Y., Suzuki M., Tanimoto K., Kajiya M. : International Dental Journal : 75 : 1759–1770 : 2025
- 12: Two cases of long-term zinc acetate hydrate administration in patients with a zinc deficiency taste disorder with copper deficiency after upper gastrointestinal resection : Shintani T., Tahara H., Obayashi N., Ando T., Yoshimoto T., Yoshino M., Morimoto S., Ohdan H., Kajiya M. : Clinical Nutrition ESPEN : 70 : 309-313 : 2025
- 13: Benchmarking multimodal large language models on the dental licensing examination: Challenges with clinical image interpretation : Mine Y., Okazaki S., Taji T., Kawaguchi H., Kakimoto N., Murayama T. : Journal of Dental Sciences : 20 : 2427-2435 : 2025

## B) Review

- 1: Establishment of Japanese Association of Communication in Dentistry and its Official Journal: Hiroyuki Kawaguchi, Yukio Nagatani. Japanese Association of Communication in Dentistry (1):1-2. 2025.

## C) Publications

- 1: Nishi, Hiromi: HEART Nursing — Heart Disease and Oral Frailty: Learning the Basics. Medica Publishing Co., Ltd., published in April 2025. ISBN-10: 4-8404-8580-1, ISBN-13: 978-4-8404-8580-7.
- 2: Nishi, Hiromi: HEART Nursing — Heart Disease and Oral Frailty: Practical Applications Starting Tomorrow. Medica Publishing Co., Ltd., published in May 2025. ISBN-10: 4-8404-8581-X, ISBN-13: 978-4-8404-8581-4.
- 3: Nishi, Hiromi: Infection Control, Summer 2025 Special Issue — Ready-to-Use Infection Control Checklists: “Dental Clinic”. Medica Publishing Co., Ltd., published on July 30, 2025.

## D) Other Publications

## E) Presentations at Scientific Meetings

- 1: Distribution characteristics of a resistant novel *Streptococcus* species revealed by secondary analysis of clinical specimens from caries risk test: Obayashi N., Shintani T., Morihara N., Ando T., Hayashi Y., Kataoka N., Kawaguchi H., Komatsuzawa H., Kajiya M.: The 18th Annual Scientific Meeting of the Japanese Society for Evidence and the Dental Professional (Okinawa), 2025
- 2: A study of dental caries in elderly people using caries risk tests and quantitative oral bacterial tests: Hayashi Y., Shintani T., Ando T., Oki Y., Obayashi N., Suzuki M., Kataoka N., Yasuda G., Kobayashi Y., Miyata R., Kajiya M.: The 18th Annual Meeting of Japanese Society for Evidence and the Dental (Okinawa), 2025.
- 3: Effects of probiotics during breast cancer chemotherapy: An approach for the prevention of oral

- mucositis and maintenance of nutritional status: Kuwahara, Y., Nishi, H., Ota, K., Shigeishi, H., Konishi, M., Kakimoto, N., Horikoshi, R., Yoshioka, Y., Nakaoka, M., and Kawaguchi, H. Presented at the 22nd Annual Meeting of the Japanese Society of Oral Care / the 5th Annual Meeting of the International Society of Oral Care, Yokohama, Japan, April 26–27, 2025.
- 4: Importance of oral care in the prevention of postoperative pneumonia and examination of the timing of intervention.: Naganuma, K., Nishi, H., Shigeishi, H., Ota, K., Yoshioka, Y., Konishi, M., Kakimoto, N., Horikoshi, R., Yano, K., Nakaoka, M., and Kawaguchi, H. Presented at the 22nd Annual Meeting of the Japanese Society of Oral Care / the 5th Annual Meeting of the International Society of Oral Care, Yokohama, Japan, April 26–27, 2025.
  - 5: Antifungal susceptibility of *Candida* strains isolated from the oral cavity of perioperative cancer patients.: Yano, K., Nishi, H., Shigeishi, H., Kaneyasu, K., Niitani, Y., Nakaoka, M., Kawaguchi, H., and Ota, K. Presented at the 22nd Annual Meeting of the Japanese Society of Oral Care / the 5th Annual Meeting of the International Society of Oral Care, Niigata, Japan, April 26–27, 2025.
  - 6: Prediction for medication-related osteonecrosis of the jaw using radiomics with panoramic radiography.: Konishi, M., Nishi, H., Kawaguchi, H., and Kakimoto, N. Presented at the 65th Annual Meeting and the 21st Regular General Assembly of the Japanese Society for Oral and Maxillofacial Radiology, Sapporo, Japan, May 30–June 1, 2025.
  - 7: Needle-Guided Impalement Facilitates Chondrogenesis in 3D Mesenchymal Stem Cell Constructs : Ueki, H., Morimoto, S., Yoshimoto, T., Yoshino, M., Horikoshi, S., Shintani, T., Kajiyama, M. The 43rd Annual Meeting of the Japanese Society for Bone and Mineral Research July 24–26, 2025.
  - 8: Association of periodontal pathogen with subtypes of motor symptoms of Parkinson's disease.: Yamada, H., Nakamori, M., Nishi, H., Naito, H., Yamazaki, Y., and Maruyama, H. Presented at the International Congress of Parkinson's Disease and Movement Disorders (MDS 2025), Honolulu, Hawaii, USA, October 5–9, 2025.
  - 9: Association between the cytotoxic activity of oral *Candida albicans* isolates and cytokine production from oral mucosal epithelial cells.: Yano, K., Nishi, H., Shigeishi, H., Kaneyasu, K., Niitani, Y., Kawaguchi, H., and Ota, K. Presented at the 45th Annual Meeting of the Japanese Society of Dental Pharmacology, the 43rd Annual Meeting of the Japanese Society of Dental Oriental Medicine, and the 34th Annual Meeting of the Japanese Society of Oral Infectious Diseases, Tokyo, Japan, October 18–19, 2025.

#### F) Special lectures in academic meetings

1. Hiromi Nishi. "Regional Collaboration." Training Workshop for Consultation Dentists for Patients with Difficulty Accessing Dental Health and Medical Services in Hiroshima Prefecture, Hiroshima, Japan, January 19, 2025.
2. Hiroyuki Kawaguchi. "The Role of Dentistry in Large-Scale Disasters" Reiwa 6<sup>th</sup> Minami Ward Community Medical, Dental, and Pharmaceutical Collaboration Seminar, Hiroshima, Japan, February 20, 2025.
3. Hiromi Nishi. "Oral Care from the Perspective of Preventive Medicine: An Approach Based on Clinical Research." Presented at the 30th Annual Meeting of the Japanese Society of Hospital General Medicine (470th ICD Training Course), Hiroshima, Japan, February 24, 2025.
4. Hiromi Nishi. Symposium presentation at the 12th Annual Meeting of the Japanese Society of Cardiovascular Stroke, Hiroshima, Japan, April 12, 2025.
5. Nami Obayashi: "Examination and Diagnosis of Dry Mouth Patients and the Importance of Oral Hygiene Management" Training Program for Dental Hygienists to Promote Home Dental Care, Hiroshima University Hospital, Hiroshima Prefecture Regional Comprehensive Medical and Nursing Care Securing Project (Online) July 13, 2025
6. Hiroyuki Kawaguchi: "Management of Medical Safety" Certified Dental Hygienist Seminar "Dental Medical Safety Management" Course (WEB), 2025
7. Hiroyuki Kawaguchi: "Resilience Engineering and Medical Safety" Certified Dental Hygienist Seminar "Dental Medical Safety Management" Course (WEB), 2025
8. Hiromi Nishi. Symposium 19, 25th Scientific Meeting of the Japanese Association for Dental Science: "Toward Oral Care That Leads to Better Outcomes: A New Strategy, 'Self-Oral Care.'" Yokohama, Japan, September 26–28, 2025.
9. Hiroyuki Kawaguchi: "Human factors and Resilience for Patient Safety" The 32<sup>nd</sup> Japan Endodontic Association Specialist Seminar. Osaka November 2, 2025

10. Hiromi Nishi. Workshop 3, Joint Meeting of the 95th Western Japan Regional Meeting of the Japanese Association for Infectious Diseases and the 73rd Western Japan Branch Meeting of the Japanese Society of Chemotherapy: “The Role of Oral Care and Oral Management in the Prevention and Treatment of Aspiration Pneumonia.” Fukuoka, Japan, November 28–29, 2025.
11. Nami Obayashi: “What is Taste Disorder: Enjoying Delicious Food for a Lifetime” Training Program for Dental Hygienists to Promote Home Dental Care, Hiroshima University Hospital, Hiroshima Prefecture Regional Comprehensive Medical and Nursing Care Securing Project (Online) November 30, 2025

#### G)Implementation of Seminars / Workshops

1. Hiroyuki Kawaguchi (Task Force): Reiwa 6<sup>th</sup> AY Seminar of Clinical Training Instructor for Dentist hosted by Kagoshima University Hospital (Web) 2025/1/24~26
2. Hiroyuki Kawaguchi (Task Force): 27<sup>th</sup> Seminar of Clinical Training Instructor for Dentist at Chugoku-Shikoku Region (Okayama) 2025/2/8,9
3. Hiroyuki Kawaguchi (Chief Task Force): Reiwa 7<sup>th</sup> AY Certified Dental Hygienist Seminar, Dental Medical Safety Management Course, hosted by the Japan Dental Hygienists’ Association (Web), 2025/9/6,7
4. Hiroyuki Kawaguchi (Task Force): Reiwa 7<sup>th</sup> AY Seminar of Clinical Training Instructor for Dentist hosted by Himawari Dental Clinic (Hiroshima) 2025/9/14,15
5. Hiroyuki Kawaguchi (President): Health Communication Week 2025 in Hongo Tokyo, 2nd Academic Conference of Japanese Association of communication in Dentistry (Tokyo) 2025/10/4,5
6. Hiroyuki Kawaguchi (Task Force): 1st Seminar of Clinical Training Instructor for Dentist hosted by Japanese Society of the General Dentistry (Web) 2025/10/29~31
7. Hiroyuki Kawaguchi (Task Force): 28<sup>th</sup> Seminar of Clinical Training Instructor for Dentist at Chugoku-Shikoku Region (Tokushima) 2025/12/22,23

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grants-in-Aid for Scientific Research (C): Hiromi Nishi. Comprehensive analysis of the oral microbiome to identify factors influencing esophageal cancer treatment. 23K09311, 4,550,000 yen.
- 2: Industry-Academia Collaborative Research: Hiromi Nishi. Verification of the preventive effect of low-power diode laser on chemotherapy-induced oral mucositis. 3022KA7382, 500,000 yen.
- 3: Industry-Academia Collaborative Research: Hiromi Nishi. Development and validation of diode laser accessories. 3024KA7259, 1,000,000 yen.
- 4: Grants-in-Aid for Scientific Research (C): Shiro Aoki (Principal Investigator), Hiromi Nishi (Co-Investigator). Can periodontal bacterial infection be a risk factor for the onset and prognosis of stroke? 21K10210, 4,160,000 yen.
- 5: Grants-in-Aid for Early-Career Scientists: Susumu Horikoshi. Development of a quality control method for a novel periodontal tissue regeneration therapy using mesenchymal stem cell aggregates with cartilage induction. 24K19896, 4,680,000 yen.
- 6: Grants-in-Aid for Early-Career Scientists: Obayashi N (PI. Continue), Elucidation of the mechanism of taste alteration induced by irinotecan, an anticancer drug focusing on salty taste. 22K17207, 4,550,000 yen
- 7: Grants-in-Aid for Early-Career Scientists: Obayashi N (PI. Novel), Elucidation of the Mechanism of Taste Disorder Induced by Anticancer Drugs with a Focus on Cell Adhesion Factors. 25K20407, 4,810,000 yen
- 8: Grants-in-Aid for Scientific Research (C): Hiroyuki Kawaguchi (Principal Investigator), Hiromi Nishi (Co-Investigator). Elucidation of the oral environment and oral microbiota involved in gastric cancer development. 23K09200, 4,680,000 yen.

#### (5) Academic Awards, etc.

#### (6) Patents

1:

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## Division of Oral Health and Development

### Department of Oral Health

#### (1) Staff and Students

Professor: Kouji Oota, Toshinobu Takemoto, Mariko Naito, Hiroki Nikawa, Masato Kaku

(\* Chief: Kouji Oota (by-work)

Associate Professor: Tsuyoshi Taji

Associate Professor/Lecturer: Hideo Shigeishi

Assistant Professor: Yoshie Niitani, Rumi Nishimura, Tomoko Maehara, Yoshino Kaneyasu

Education and Research Support Staff: Sanae Miyoshi, Yuuko Kurawaki, Kotomi Testumori, Ayumi Daijo, Keiko Misumi, Nana Ashikaga

Please refer to the research achievements of the following each department.

- Department of Public Oral Health: Kouji Oota, Hideo Shigeishi, Tomoko Maehara, Yoshino Kaneyasu
- Department of Oral Epidemiology: Mariko Naito, Rumi Nishimura, Yuuko Kurawaki
- Department of Oral Health Management: Toshinobu Takemoto, Yoshie Niitani
- Department of Anatomy and Functional Restorations: Masato Kaku
- Department of Oral Biology & Engineering: Hiroki Nikawa, Tsuyoshi Taji, Hisako Sasahara

#### (2) Main Research Activities

- 1 : Study on oral function in the elderly
- 2 : Study on Job Return Support Program

#### (3) Achievements

##### A) Original Papers (including Case Reports)

- 1: Relationship between work duties and years of experience of dental hygienists providing Home Visiting Dental Service dental house calls in Hiroshima Prefecture: Sanae Miyoshi, Reiko Aimi, Chihiro Fujiwara, Satomi Kuwahara, Rumi Nishimura. *Journal of the Japanese Society of Dental Hygiene*, 19(2), 13–22, 2025.
- 2 : Impact of a multifaceted continuing education program on occupational stress and professional capabilities in dental hygienists: a longitudinal study: Kurawaki Y, Aimi R, Misumi K, Matsumoto A, Mitsui M, Asaeda M, Nishimura R, Takemoto T, Naito M: *BMC Med Educ*, 25:1498, 2025.

##### B) Review

##### C) Publications

##### D) Other Publications

- 1 : *Dental Hygienist Course: Geriatric Dentistry*, 4th Edition. Nagasu Shoten (Kyoto). Chapter 7: Oral Health Management, 6. Health Education for Older Adults.: Sanae Miyoshi, 232–237, 2025.
- 2 : Monthly “Dental Hygienist”, February 2025 issue. Quintessence Publishing (Tokyo). Special Roundtable Discussion: Sanae Miyoshi et al., 84–91, 2025.
- 3 : Monthly “Dental Hygienist”, April 2025 issue. Quintessence Publishing (Tokyo). Book Review: Sanae Miyoshi, 117, 2025.

##### E) Presentations at Scientific Meetings

- 1: Relationship between work duties and years of experience of dental hygienists providing Home Visiting Dental Service dental house calls in Hiroshima Prefecture: Sanae Miyoshi., Award Winner Presentation,

The 20th Annual Meeting of the Japanese Society of Dental Hygiene (Tokyo), 2025.

2: Activity report on the project to support the continuous employment of dental hygienists at a university:  
Asaeda M, Mitsui M, Aimi R, Kurawaki Y, Misumi K, Nishimura R, Matsumoto A, Naito M, Takemoto T:  
The 20th Annual Meeting of the Japan Dental Hygiene Society (Tokyo), 2025.

#### F) Lectures

1: Sanae Miyoshi. 2024 Public Symposium, Dental Hygienist Education and Training Center, Hiroshima University School of Dentistry (Hiroshima), 2025.

2: Sanae Miyoshi. Training Seminar on Frailty Prevention for Older Adults by Dental Hygienists, Kumamoto Dental Hygienists' Association (Kumamoto), 2025.

3: Sanae Miyoshi. Community Care Human Resource Development Seminar, Saga Dental Hygienists' Association (Saga), 2025.

4: Sanae Miyoshi. Career Advancement Support Seminar, Tokushima University (Tokushima), 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

#### (5) Academic Awards, etc.

1 : Sanae Miyoshi. The 20th Outstanding Paper Award (Sunstar Foundation Award), Japanese Society of Dental Hygiene.

#### (6) Patents

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## Division of Oral Health and Development Department of Special Care Dentistry

### (1) Staff and Students

Professor: Yoshiyuki Okada      (※)Chief: Yoshiyuki Okada  
 Lecturer: Yuriko Yoshida  
 Assistant Professor: Hironori Miyazaki  
 Medical Doctor: Chiaki Shimizu, Hironao Asahina, Rieko Fujiwara, Hisaho Yamaguchi  
 Clinical Staff: Masako Morimoto, Yoshifumi Nishio, Ryo Nishino, Takuya Miyagi  
 Research Student: Masako Morimoto, Yoshifumi Nishio, Ryo Nishino, Takuya Miyagi  
 Clinical Trainee: Fumiko Hayashi, Ayako Niino  
 Post doc: Norimasa Manabe (until May; transferred in May to Associate Professor, Faculty of Physical Education, Tenri University).

### (2) Main Research Activities

- 1: Underlying mechanisms of suppressed pressor responses to pain stimulation by N2O inhalation.
- 2: Effects of N2O inhalation on baroreflex sensitivity.
- 3: Research on the Elucidation of Spinal Circuit Mechanisms Using the Soleus H-Reflex
- 4: Effect that difference in occlusal force and difference occlusion region give to the soleus H-reflex
- 5: Does habitual exercise modify the effects of skeletal muscle chemoreceptor activation on the Hoffmann reflex and the pressor reflex?
- 6: Compensation of impaired baroreceptor reflexes in patients with pacemakers
- 7: Effects on Vascular Resistance and Pulse Wave by Applying Sedation Techniques
- 8: Effects of sedation on vascular resistance and arterial pulse wave
- 9: A study on the chronological changes in the oral microbiota of tube-fed patients with xerostomia.
- 10: Research on the establishment of oral care methods for people with oral membranous substances.
- 11: Effects of probiotics on sleep duration and depth in autistic individuals via gut-brain interaction.
- 12: Research on oral care using pectin-containing oral gel.
- 13: A Single-Arm Pre-Post Comparison Study on the Stress-Reducing Effects of Lactic Acid Bacteria Beverages and Their Impact on the Gut-Brain Axis in Individuals with Autism Spectrum Disorder.
- 14: Investigation of the association between vaccination with and without novel corona vaccine and infection among persons with disabilities
- 15: Study on the Relationship Between Behavioral Patterns of Patients with Down Syndrome and Oral/ Intestinal Microbiota
- 16: Evaluation of the Effect of Salivary Gland Massage on Saliva Secretion
- 17: Oral Environment Survey of Para-Athletes
- 18: Study on the caries-preventive effect of abrasives containing surface-reactive glass ionomer (S-PRG), a biological filler, on 6- and 10-year-old students at Tolanok and Ngo Quyen Elementary Schools in Can Tho City 2025.
- 19: Effects of Bruxism and Hypoxic Sleep on Central Circulatory Regulatory Mechanisms.
- 20: Effect of different administration route of midazolam on sedation in patients with intellectual disabilities.
- 21: Evaluation of the Effectiveness of Tongue-Feeding Training for Oral Function Decline in Individuals with Down Syndrome
- 22: Evaluation of anxiety and stress caused by the spread of Covid-19 infection in people involved in Special Care Dentistry.

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Relationship Between the Morphology of Oral Membranous Substances and Oral Wetness in Older Individuals Undergoing Long-Term Tube Feeding in Japan: Hironao Asahina, Yoshiyuki Okada, Ryo

- Nishino, Kahoru Todoroki, Kohei Matsumura, Yusuke Yamagami, Tadashi Ogasawara: *Spec Care Dentist*. 45(4), e70078, 2025.
- 2: Factors related to parents' perceptions of oral health for children with Down syndrome in Japan: Tomoyuki Onishi, Takahiro Funatsu, Takafumi Ooka, Yoshiyuki Okada, Miki Kadena, Hiroyoshi Kawaai, Jin Sekino, Luc A M Marks, Shouji Hironaka, Tadashi Ogasawara: *Spec Care Dentist*. 45(1): e13064. Epub doi: 10.1111/scd.13064. 2024.
  - 3: Prolonged corrected QT interval is associated with cardiac sympathetic nervous function overactivity in patients with severe aortic stenosis: assessment by 123I-metaiodobenzylguanidine myocardial scintigraphy: Yukihiro Fukuda, Yoshifumi Nishio, Hironori Miyazaki, Yoshiyuki Okada, Hironori Ueda, Shinya Takahashi, Yukiko Nakano: *Heart Vessels*. 40(11): 1048-1057. Epub doi: 10.1007/s00380-025-02550-6. 2025.
  - 4: Nitrous oxide increases peripheral blood flow and decreases plasma adrenaline and noradrenaline concentrations in human volunteers: An in vivo nonrandomized clinical and in vitro chromaffin cell culture study: Yoshitaka Shimizu, Masahiro Irifune, Tamayo Takahashi, Aya Oda, Hisanobu Kamio, Serika Imamura, Uta Sasaki, Eiji Imado, Yoshiyuki Okada, Yukio Ago, Katsuya Morita, Norio Sakai: *Eur J Pharmacol*. Epub:1003: 177899. doi: 10.1016/j.ejphar.2025.177899. 2025
  - 5: Dietary nitrate supplementation suppresses sympathetic neural responses to mechanoreflex activation during static handgrip exercise in postmenopausal women: Kazumasa Manabe, Jeung-Ki Yoo, Ryosuke Takeda, Takuro Washio, Qi Fu: *J Appl Physiol* (1985). 139(4):964-975. 2025
  - 6: Blunted baroreflex-mediated sympathoinhibition and vasodilation to countdown before exercise in young women compared to men: Kazumasa Manabe, Andrew W D'Souza, Ryosuke Takeda, Sarah L Hissen, Takuro Washio, John D Akins, Belinda Sanchez, Qi Fu: *Clin Auton Res*. 35(6):747-757. 2025
  - 7: The impact of oral contraceptive pill use on sympathetic transduction at rest in young females: Andrew W D'Souza, Sarah L Hissen, Kazumasa Manabe, Takuro Washio, Meghan C Annis, Belinda Sanchez, Charlotte W Usselman, Qi Fu, J Kevin Shoemaker: *Am J Physiol Heart Circ Physiol*. 328(2): H271-H282. 2025
  - 8: Effects of Clenching Strength on Step Reaction Time: Nao Sugai, Ryo Hirabayashi, Yoshiyuki Okada, Yuriko Yoshida, Takeru Okouchi, Hirotake Yokota, Tomonobu Ishigaki, Makoto Komiya, Mutsuaki Edama: *J Funct Morphol Kin*, 10(3), 264; <https://doi.org/10.3390/jfmk10030264> 2025.
  - 9: Reproducibility of Tongue Pressure Values in Adults with Down Syndrome : Yamaguchi Hisaho, Oda Yuki, Aoki Gaku, Orihashi Yasushi, Miyazaki Hironori, Morimoto Masako, Yamada Sachiko, Yoshida Mitsuyoshi, Okada Yoshiyuki : *Special Care in Dentistry*, 2025.
  - 10: 2024JASD Workshop for Mouthguard and Sports Dentistry (Group 6): Toshiaki Ueno, Hiroshi Churei, Kairi Hayashi, Gen Tanabe, Kaito Togawa, Yuriko Yoshida: *IJSD*, 18 (1), 18-35, 2025.
  - 11: Potential of Pectin Hydrogels to Remove Oral Membranous Substances on the Palate: Hironao Asahina, Yoshiyuki Okada, Ryo Nishino, Yasuhiko Murakami, Mami Osaki, Kahoru Todoroki, Tadashi Ogasawara: *JJSDH* 46 (2), 74-82, 2025.
  - 12: Clinical Characteristics and Risk Classification of Patients with Congenital Heart Disease at a Tertiary Medical Institution for Special Care Dentistry : Ryo Nishino, Yoshiyuki Okada, Takuya Miyagi , Hironori Miyazaki, Yoshio Hatanaka, Hironao Asahina, Rieko Fujiwara, Yuriko Yoshida, Chiaki Shimizu: *JJSDH*, 46 (3), 193-199, 2025.
  - 13: Effects of Differences in Intrapulmonary Pressure on Remote Facilitation of the Soleus H-Reflex - A Preliminary Study-: Yuriko Yoshida, Hisaho Yamaguchi, Ryo Nishino, Ryo Hirabayashi, Yoshiyuki Okada: *Journal of Sports Dentistry*, 28(2), 35-40, 2025.

## B) Review

N/A

## C) Publications

- 1: *Yoku Wakaru Geriatric Dentistry, 3rd Edition*: Edited by Yuji Sato, Koichiro Ueda, Takeshi Kikutani, Junichi Furuya, and Takayuki Ueda (Editors-in-Chief); Yoshiyuki Okada et al. (Contributors): Nagasue Shoten.

#### D) Other Publications

- 1: Use Case 1 (Gentle Care Macerate Gel); Potential of Pectin Hydrogel (Gentle Care Macerate Gel) for Palatal Membranous Substances: Food Care Newsletter vol.10: Hironao Asahina, Yoshiyuki Okada: Food Care Co., Ltd. (Sagamihara), pp.3-4, 2025.

#### E) Presentations at Scientific Meetings

- 1: Chronological changes in the oral mucosal microbiota of older patients receiving tube feeding and requiring nursing care: Hironao Asahina, Yoshiyuki Okada, Ryo Nishino, Kahoru Todoroki, Yuriko Yoshida, Hironori Miyazaki, Yoshifumi Nishio, Masako Morimoto, Hisaho Yamaguchi, Tadashi Ogasawara: The 42nd Japanese Society for Disability and Oral Health (Osaka), 2025.
- 2: Preliminary examination of the plaque removal effect by the use of the brush using a nonwoven fabric and the mouthpiece: Takuya Miyagi, Yoshida Yuriko, Chiaki Shimizu, Hironao Asahina, Yuriko Fujiwara, Hironori Miyazaki, Masako Morimoto, Yoshihumi Nishio, Hisaho Yamaguchi, Ryo Nishino, Yoshiyuki Okada: Japanese Society for Disability and Oral Health, (Osaka), 2025.
- 3: 16s rRNA Metagenome Analysis of bacteria in Oral Membranous Substances Using Next-generation Sequencers: Hironao Asahina, Hirotaka Isse, Yoshiyuki Okada, Rieko Fujiwara, Chiaki Shimizu, Takuya Miyagi, Ryo Nishino, Yoshifumi Nishio, Masako Morimoto, Hisaho Yamaguchi, Hironori Miyazaki, Yuriko Yoshida, Tadashi Ogasawara: The 42nd Japanese Society for Disability and Oral Health (Osaka), 2025.
- 4: Regulation of Muscle Sympathetic Nerve Activity and Cardiac Output in Patients with Pacemakers : Yoshifumi Nishio, Ryo Nishino, Hironori Miyazaki, Hisaho Yamaguchi, Masako Morimoto, Yuriko Yoshida, Yoshiyuki Okada : The 42th Japanese Society for Disability and Oral Health (Osaka), 2025.
- 5: Predicted Increase in Muscle Sympathetic Nerve Activity by Repeated Pain Experiences and Modification by Nitrous Oxide Inhalation: Hironori Miyazaki, Yoshifumi Nishio, Hisaho Yamaguchi, Ryo Nishino, Masako Morimoto, Chiaki Furutani, Yuriko Yoshida, Yoshiyuki Okada: The 42nd Japanese Society for Disability and Oral Health (Osaka), 2025
- 6: A case of dental treatment under general anesthesia for a patient with type 2 diabetes mellitus who constantly consumes snacks due to adjustment disorder : Masako Morimoto, Aya Oda, Kana Oue, Yuki Oda, Yoshiyuki Okada : The 42nd Japanese Society for Disability and Oral Health (Osaka), 2025.
- 7: A Randomized Crossover Trial to Evaluate the Efficacy of Linking Training on Oral Hypofunction in Patients with Down Syndrome: Yamaguchi Hisaho, Oda Yuki, Morimoto Masako, Nishio Yoshifumi, Miyazaki Hironori, Asahina Naohiro, Furutani Chiaki, Fujiwara Rieko, Nishino Ryo, Miyagi Takuya, Yoshida Yuriko, Okada Yoshiyuki: The 41nd Japan Society for Disability and Oral Health (Osaka), 2025.
- 8: Examination of the stress-reducing effect of *L. paracasei* strain Shirota in autism spectrum disorder: Chiaki Furutani, Masako Morimoto, Yoshifumi Nishio, Ryo Nishino, Rieko Fujiwara, Hironori Miyazaki, Yuki Oda, Yoshiyuki Okada: The 41st Japanese Society for Disability and Oral Health (Osaka), 2025.
- 9: Copy Denture Fabrication Using Optical Impressions for a Demented Patient with Communication Difficulties: A Case Report : Ryo Nishino, Chiaki Shimizu, Yoshifumi Nishio, Masako Morimoto, Hisaho Yamaguchi, Takuya Miyagi Hironori Miyazaki, , Hironao Asahina, Rieko Fujiwara, Yuriko Yoshida, Yoshiyuki Okada : The 42th Japanese Society for Disability and Oral Health (Osaka), 2025.
- 10: Current status of acute regression in patients with Down syndrome. : Fujiwara R, Shimizu C, Nishino R, Asahina K, Yamaguchi H, Nishio Y, Miyazaki H, Morimoto M, Miyagi T, Yoshida Y, Okada Y. : The Annual Meeting and Scientific Congress of the Japanese Society for Disability and Oral Health, Osaka, Japan, 2025.
- 11: Association between Athletic Level and Dental Caries Prevalence in Special Olympics Participants: Yuriko Yoshida, Hisaho Yamaguchi, Hironori Miyazaki, Masako Morimoto, Yoshifumi Nishio, Ryo Nishino, Takuya Miyagi, Rieko Fujiwara, Hironao Asahina, Yoshiyuki Okada: The 42th Japanese Society for Disability and Oral Health (Osaka), 2025.

- 12: Examination of the mucous membrane moisturizing ability with the pectin-containing oral gel agent: Takuya Miyagi, Hironao Asahina, Koichi Ogawa, Yoshiyuki Okada: Japanese Society of Gerodontology, (Chiba), 2025.
- 13: Longitudinal Changes in Oral Injuries During Competition and Mouthguard Usage Among College Athletes : Ryo Nishino, Yuriko Yoshida, Hisaho Yamaguchi, Yoshikazu Higashihara, Go Hayata, Sakamoto Takahiro, Yoshiyuki Okada : The 36th Annual Meeting of the Japanese Society of Sports Dentistry, (Saitama), 2025.
- 14: Effects of Post-Exercise Ischemia Following Forearm Muscle Fatigue on Remote Facilitation of the Soleus H-Reflex: Yuriko Yoshida, Hisaho Yamaguchi, Ryo Nishino, Ryo Hirabayashi, Yoshiyuki Okada: The 36th Annual Meeting of the Japanese Society of Sports Dentistry, (Saitama), 2025.
- 15: The effect of bite strength in patients who have undergone orthodontic treatment on the soleus muscle H-reflex: Yamaguchi Hisaho, Yoshida Yuriko, Nishino Ryo, Imada Sakurako, Hrabayashi Ryo, Okada Yoshiyuki: The 36nd Japanese Academy of Sports Dentistry (Saitama), 2025.
- 16: Effects of Occlusal Correction on Simple Reaction Time and Selective Reaction Time: Nao Sugai, Ryo Hirabayashi, Yoshiyuki Okada, Yuriko Yoshida, Fumika Nakatani, Mutsuaki Edama: The 36th Annual Meeting of the Japanese Society of Sports Dentistry, (Saitama), 2025.
- 17: The Effect of Occlusion on Concentration Tasks: Fumika Nakatani, Ryo Hirabayashi, Yoshiyuki Okada, Yuriko Yoshida, Nao Sugai, Mutsuaki Edama: The 36th Annual Meeting of the Japanese Society of Sports Dentistry, (Saitama), 2025.

#### F) Special lectures in academic meetings

- 1: Smile for All: Diseases Requiring Special Consideration During Dental Treatment – Special Needs Dentistry and Congenital Heart Disease: Yoshiyuki Okada (Lecturer): 2nd Training Course for the Improvement of Special Needs Dental Health Care and Advanced Course II for Certified Special Needs Dental Consultants, Saitama Dental Association, January 2025 (Saitama).
- 2: Smile for All: Community-Based Special Needs Dentistry – Clinical Considerations and Referral Criteria for Patients with Internal Disabilities: Yoshiyuki Okada (Lecturer): FY2025 Training Course on Special Needs (Pediatric and Adult) Dentistry, Saitama Dental Association, November 2025 (Saitama).
- 3: Pharmacological Behavior Management – Practical Application of Nitrous Oxide Inhalation Sedation: Yoshiyuki Okada (Lecturer): Training Course to Enhance Clinical Competency in Special Needs (Pediatric and Adult) Dentistry, Tokushima Dental Association, 2025 (Tokushima).
- 4: Oral Care – Focusing on Patients Receiving Enteral Nutrition: Hironao Asahina (Lecturer): Training Course on Special Needs (Pediatric and Adult) Dentistry, Saitama Dental Association, 2025 (Saitama).
- 5: Young Researchers’ Meeting “Current Practice and Future Challenges of Dental Checkups for Para-Athletes”: Yuriko Yoshida (Lecturer): The 36th Annual Meeting and Scientific Congress of the Japanese Society of Sports Dentistry, 2025 (Saitama).
- 6: Assessment of Human Central Cardiovascular Regulatory Function – Application of Microneurography: Yoshiyuki Okada (Lecturer): FY2025 Special Lecture, Department of General Dentistry and Geriatric Dentistry, Kyushu University Graduate School of Dental Science, 2025 (Fukuoka).
- 7: Precautions in Dental Treatment According to Comorbidities in Patients with Disabilities – Cardiovascular Diseases: Yoshiyuki Okada (Lecturer): FY2025 Special Needs Dentistry Special Lecture, Okayama University Hospital, 2025 (Okayama).
- 8: Basic Knowledge of Disabilities and Dental Management: Yoshiyuki Okada (Lecturer): Training Program for Certified Dental Consultants for Patients with Difficulty Accessing Dental Services, Hiroshima Prefectural Dental Hygienists Liaison Council and Hiroshima Dental Association, 2025 (Hiroshima).
- 9: Behavior Management and Community Collaboration in Special Needs Dentistry – Referral Criteria: Yoshiyuki Okada (Lecturer): FY2025 Hiroshima Prefecture Comprehensive Community Medical and Long-Term Care Support Project “Training Program for Special Needs Dental Practitioners in Hiroshima,” Hiroshima Dental Association, 2025 (Hiroshima).
- 10: Precautions in Dental Treatment According to Disease – Cardiovascular Diseases: Yoshiyuki Okada (Lecturer): FY2025 Special Lecture in General Dentistry, Kyushu University Faculty of Dental Science, 2025 (Fukuoka).

- 11: Smile for All: Dental Management for Patients with Special Needs: Yoshiyuki Okada (Lecturer): FY2025 Recurrent Education Program, Dental Hygienist Education and Training Center, 2025 (Hiroshima).
- 12: Research Ethics – What Would You Do in 2025? Key Points of Research Ethics and Ethical Review Through Case Studies: Yoshiyuki Okada (Lecturer): Joint Program of the Ethics Committee and Institutional Review Board, Organized by the Japanese Society for Disability and Oral Health, The 41st Annual Meeting and Scientific Congress of the Japanese Society for Disability and Oral Health, 2025 (Osaka).

#### G) Holding of academic conferences and seminars

- 1: The 15th Chugoku Regional Clinical Study Group on Dentistry for Persons with Disabilities Yoshiyuki Okada (Representative and Chairperson of Preparatory Committee), (Yonago) 2025.
- 2: Chugoku Regional Clinical Study Group on Dentistry for Persons with Disabilities Workshop for Certified Dentists and Certified Dental Hygienists of the Japanese Society of Dentistry for Persons with Disabilities (organized by Yoshiyuki Okada) (Yonago) 2025.
- 3: A Research Mindset and Ethical Thinking Essential for Clinical Practice – How to Enjoy Academic Meetings 100 Times More: Yoshiyuki Okada: FY2025 Aki District Community Training Course in Special Needs Dentistry (Accredited Supervising Dentist Training Program of the Japanese Society for Disability and Oral Health), Yusenkai Himawari Dental Clinic, 2025 (Aki District, Hiroshima).

#### H) Social Activities

- 1: Dental Care Promotion Programme for Severely Disabled Persons in Residential Facilities: Hiroshima Prefecture Dental Association.
- 2: Dental Examination Program at International Pacific University, School Corporation Soshi Gakuen.
- 3: Medical Checkup for Designated Elite Athletes of the Hiroshima Para-Sports Association – Dental Examination
- 4: Custom-Made Mouthguard Production Project for the Tokyo 2025 Deaflympics

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: JSPS KAKENHI, Grant-in-Aid for Scientific Research (A): Yoshiyuki Okada (Co-Investigator, continuing), Development of a Non-Invasive Microneurography Method: Reconstruction of Peripheral Sympathetic Nerve Activity from a Vascular Dynamics Model. Grant No. 22H00197. Total budget: 41,730 thousand JPY. Japan Society for the Promotion of Science
- 2: JSPS KAKENHI, Challenging Research (Exploratory): Yoshiyuki Okada (Principal Investigator, continuing), Does Sleep Under Hypoxic Conditions Stimulating Central Chemoreceptors Trigger Bruxism? Grant No. 23K18360. Total budget: 6,370 thousand JPY. Japan Society for the Promotion of Science
- 3: JSPS KAKENHI, Grant-in-Aid for Scientific Research (C): Yoshiyuki Okada (Co-Investigator, continuing), Development of a Novel General Anesthetic Using EEG and Electromyography-Based Evaluation of Drug Candidate Efficacy. Grant No. 24K13089. Total budget: 4,550 thousand JPY. Japan Society for the Promotion of Science
- 4: JSPS KAKENHI, Grant-in-Aid for Scientific Research (C): Yoshiyuki Okada (Co-Investigator, newly awarded), Does Teeth Clenching Contribute to Fall Prevention During Walking in Older Adults? Grant No. 25K144720. Total budget: 4,550 thousand JPY. Japan Society for the Promotion of Science
- 5: JSPS KAKENHI, Grant-in-Aid for Young Scientists: Yuriko Yoshida (Principal Investigator, continuing), Elucidation of Spinal Circuit Mechanisms Toward the Development of Novel Exercise Prescriptions for Patients Requiring Long-Term Care. Grant No. 23K16067. Total budget: 4,680 thousand JPY. Japan Society for the Promotion of Science
- 6: JSPS KAKENHI, Grant-in-Aid for Young Scientists: Hironao Asahina (Principal Investigator, continuing), Longitudinal Changes in the Oral Microbiota of Older Adults Receiving Enteral Nutrition and Establishment of Appropriate Oral Care Intervals. Grant No. 24K19948. Total budget: 4,680

- thousand JPY. Japan Society for the Promotion of Science
- 7: JSPS KAKENHI, Grant-in-Aid for Young Scientists s: Rieko Fujiwara (Principal Investigator, continuing), Association Between Behavioral Characteristics and Gut Microbiota in Patients with Down Syndrome and the Effects of Probiotics. Grant No. 24K20111. Total budget: 4,810 thousand JPY. Japan Society for the Promotion of Science
  - 8: JSPS KAKENHI, Grant-in-Aid for Young Scientists: Chiaki Shimizu (Principal Investigator, newly awarded), Effects of Probiotics on Stress Reduction in Autism and Their Impact on the Gut–Brain Axis. Grant No. 25K20478. Total budget: 4,680 thousand JPY. Japan Society for the Promotion of Science
  - 9: JSPS KAKENHI, Grant-in-Aid for Young Scientists: Hironori Miyazaki (Principal Investigator, newly awarded), Effects of Predictive Central Command Induced by Repetitive Pain Stimulation on the Baroreflex Mechanism and Its Modulation by Nitrous Oxide. Grant No. 25K20477. Total budget: 3,700 thousand JPY. Japan Society for the Promotion of Science

#### (5) Academic Awards, etc.

- 1: JSDH iADH Research Encouragement Award: Hironao Asahina, 2025
- 2: JSDH Yamaguchi Award: Hironao Asahina, 2025
- 3: The 42th Japanese Society for Disability and Oral Health. Outstanding Presentation Award : Ryo Nishino, 2025
- 4: Japan Academy of Sports Dentistry Paper Encouragement Award (Yamahachi Dental Materials Industry Award): Yuriko Yoshida, Hisaho Yamaguchi, Ryo Nishino, Ryo Hirabayashi, Yoshiyuki Okada: Effects of Differences in Intrapulmonary Pressure on Remote Facilitation of the Soleus H-Reflex -A Preliminary Study-.

#### (6) Patents

N/A

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## Central Clinical Divisions

### Center of Oral Clinical Examination

#### (1) Staff and Students

Director: Mikihiro Kajiya  
 Lecturer: Tomoaki Shintani, Toshinori Ando (Until July)  
 Assistant Professor: Tetsuya Yoshimoto  
 Assistant Professor (Special Appointment): Mai Yoshino  
 Research Associate: Shin Morimoto  
 Dentist: Nami Obayashi (In training from the Department of General Dentistry),  
 Graduate Student: Masayuki Suzuki, Yuka Hayashi, Nanako Kataoka, Gakuto Yasuda  
 Yukina Kobayashi, Shinya Hasegawa, Liao Shiran  
 Technician: Rie Miyata, Naomi Abe, Miyako Takenaka, Asami Tamura

#### (2) Main Research Activities

- 1: Developing the promising tissue regenerative therapy using stem cells and 3D culture techniques.
- 2: Establish a novel culture system that can mimic the oral cavity using 3D cell constructs and micro-devices.
- 3: Diagnostic pathological study on head and neck lesions.
- 4: Study on test and treatment of metal allergy and dry mouth.
- 5: Research on Examination and Treatment for Taste Disorders and Xerostomia
- 6: Molecular pathological study on development and progression of oral squamous cell carcinoma.
- 7: Study on molecular target therapy to oral cancer targeted with HBp17/FGFBP.
- 8: Analysis of actual condition of oral bacterial infection.
- 9: Molecular pathological research on oral/head and neck cancer focusing on genomic alterations and the Hippo pathway.

#### (3) Research Achievements

##### B) Original Papers (including Case Reports)

- 1: Jawbone-like organoids generated from human pluripotent stem cells. Motoike S, Inada Y, Toguchida J, Kajiya M, Ikeya M. *Nat Biomed Eng.* 2025 Nov;9(11):1816-1834.
- 2: Monoallelic mutations in MMD2 cause autosomal dominant aggressive periodontitis: Iwata T., Mizoguchi Y., Yoshimoto T., Tsumura M., Sakura F., Johnson JR., Matsuda S., Ouhara K., Nagatani Y., Asano T., Ohnishi H., Kato Z., Mihara K., Kanegane H., Ueda T., Sasaki S., Taniguchi Y., Ninomiya Y., Ohno Y., Suzuki-Takedachi K., Sotomaru Y., Sakuma T., Yamamoto T., Matsuda Y., Kume K., Sanui T., Nishimura F., Kajiya M., Ueki Y., Kurihara H., Morino H., Okada S., Kawakami H., Mizuno N.: *J Exp Med.* 2025 Sep1;222(9):e20231911. doi: 10.1084/jem.20231911 (equally first author), 2025.
- 3: Effect of stimulated salivary volume on dysbiosis of the salivary microbiome in children and young adults: Shintani T., Obayashi N., Yoshimoto T., Ando T., Morihara N., Kataoka N., Miyata R., Yoshino M., Yoshii H., Morimoto S., Hayashi Y., Suzuki M., Tanimoto K., Kajiya M.: *Int Dent J*, 75(3): 1759-1770, 2025.
- 4: Complete genome sequence of a tetracycline-resistant *Streptococcus mutans* strain carrying the tet(M) gene: Nishihama S., Suzuki Y., Shintani T., Tsunoi M., Hisatsune J., Sugawara Y., Takeda K., Kawada-Matsuo M., Kajiya M., Sugai M., Shiba H., Komatsuzawa H.: *J Oral Biosci*, 67(3): 100679, 2025.
- 5: Clinical value of the worst pattern of invasion in predicting extranodal extension in oral squamous cell carcinoma.: Higaki M., Ando T., Obayashi F., Ito N., Hirota S., Hamada A., Yamasaki S., Shintani T., Koizumi K., Yanamoto S.: *Discov Oncol*, 16(1): 1259, 2025.
- 6: A cross-sectional interventional study on the effects of periodontal treatment on periodontal inflamed surface area and masticatory efficiency values according to the 2018 periodontal status classification: Matsuda S., Yumoto H., Komatsu Y., Dewake N., Iwata T., Nagano T., Morozumi T., Goto R., Kato

- S., Yamashita M., Hayashi J., Sekino S., Yamashita A., Yamashita K., Yoshimura A., Sugaya T., Takashiba S., Taguchi Y., Nemoto E., Shintani T., Miyagawa T., Nishi H., Mizuno N., Numabe Y., Kawaguchi H.: *BMC Oral Health*, 25(1): 1094, 2025.
- 7: Oral Dysbiosis Is Associated with the Pathogenesis of Aortic Valve Diseases: Yaguchi E., Komiyama Y., Inami S., Shibasaki I., Shintani T., Shiraishi R., Hyodo T., Shiba H., Hamaguchi S., Fukuda H., Toyoda S., Fukumoto C., Izumi S., Wakui T., Kawamata H.: *Microorganisms*, 13(7): 1677, 2025.
  - 8: Two cases of long-term zinc acetate hydrate administration in patients with a zinc deficiency taste disorder with copper deficiency after upper gastrointestinal resection.: Shintani T., Tahara H., Obayashi N., Ando T., Yoshimoto T., Yoshino M., Morimoto S., Ohdan H., Kajiya M.: *Clin Nutr ESPEN*, 70: 309-313, 2025.
  - 9: Prevalence and ecological role of streptococcus toyakuensis in saliva of healthy young individuals: Obayashi N., Shintani T., Morihara N., Kawada-Matsuo M., Ando T., Miyata R., Hayashi Y., Kataoka N., Tanimoto K., Kawaguchi H., Komatsuzawa H., Kajiya M.: *International Dental Journal*. Oct 3;76(2026)103987,2025.
  - 10: High expression of CDKN2A in oral squamous cell carcinoma is associated with distant metastasis: Cell-free DNA as a new prognostic feature: Eboshida N., Hamada A., Tanigawa A., Higaki M., Obayashi F., Ito N., Yamasaki S., Tani R., Shintani T., Koizumi K., Yanamoto S.: *Mol Clin Oncol*, 23(6): 111, 2025.
  - 11: Management and prognostic implications of posteriorly advanced OSCC in contact with the medial pterygoid muscle.: Ito N., Obayashi F., Higaki M., Hamada A., Yamasaki S., Shintani T., Ando T., Koizumi K., Yanamoto S.: *Cancer Med*, 14(22): e71174, 2025.
  - 12: Carcinoma ex pleomorphic adenoma primarily composed of squamous cell carcinoma in buccal region – Case report: Naruse T., Ohta K., Shigeishi H., Ando T., Nakagawa T., Yamakado N., Ninomiya Y., Sakamoto S., Ishida Y., Aikawa T.: *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, 37: 99–103, 2025.
  - 13: Establishment of immortalized human minor salivary gland cells and chemokine expression induced by IFN- $\gamma$ , TNF- $\alpha$ , and IL-1 $\beta$ : Naruse T., Ohta K., Akagi M., Sakuma M., Ishida Y., Niwata C., Nakagawa T., Ono S., Shiba F., Ando T., Nishi H., Shigeishi H., Aikawa T.: *Odontology*, 113:1546-1557, 2025.
  - 14: A case of solitary fibrous tumor in the floor of mouth : Ooi H., Shimasue H., Ishida Y., Ando T., Ono S., Aikawa T.: *Japanese journal of Oral Surgery*, 71 (2): 51-56, 2025.
  - 15: A case of submucosal buccal oncocytoma in a patient with Birt-Hogg-Dubé syndrome: Nakatani K., Yoshioka Y., Shirakawa J., Yanamoto S., Ando T., Yamamoto T.: *Japanese journal of Oral Surgery*, 71 (9): 426-432, 2025.
  - 16: A case of myofibroma in the body of the mandible: Taguchi Y., Ito N., Ando T., Asada Y., Nobumoto T., Yanamoto S.: *Japanese journal of Oral Surgery*, 71 (6): 267-273, 2025.

## B) Review

## C) Publications

1. Role of Osteocyte Innate Immune Mechanisms in Periodontal Disease : Yoshimoto T: In: *BIO Clinica (Supplement): Unraveling the Link Between the Oral Cavity and Chronic Inflammation*, Hokuryukan (Tokyo, Japan), 2025.

## D) Other Publications

1. *Periodontal Disease and Systemic Health 2025 — Periodontal Disease and Osteoporosis* : Yoshimoto T: *Japanese Society of Periodontology* (Tokyo, Japan), 2025.

## E) Presentations at Scientific Meetings

1. Development of a Novel Bone Regenerative Cell Therapy Using Direct Conversion and Three-Dimensional Culture: Kajiya M: *The 67th Annual Meeting of the Japanese Association for Oral Biology* (Kitakyushu), 2025.
2. Non-clinical Proof of Concept and Future Perspectives of a Novel Periodontal Tissue Regenerative

- Therapy Using a Bio3D Printer and Mesenchymal Stem Cells: Kajiya M: The 68th Autumn Meeting of the Japanese Society of Periodontology (Niigata), 2025.
3. Development of an Innovative Periodontal Tissue Regenerative Therapy Using Three-Dimensional Transplantable Tissues Fabricated with a Bio3D Printer: Kajiya M: AMED Researchers' Networking Meeting 2025 (Tokyo), 2025.
  4. Development of Periodontal Tissue Regenerative Therapy Using Mesenchymal Stem Cells and Bio-3D Printer : Kajiya M : 18<sup>th</sup> International Symposium on Nanomedicine (Hiroshima), 2025
  5. Distribution characteristics of a resistant novel Streptococcus species revealed by secondary analysis of clinical specimens from caries risk test: Obayashi N., Shintani T., Morihara N., Ando T., Hayashi Y., Kataoka N., Kawaguchi H., Komatsuzawa H., Kajiya M.:The 18th Annual Scientific Meeting of the Japanese Society for Evidence and the Dental Professional (Okinawa), 2025.
  6. Establishment of a BBB-on-a-chip platform bridging Oral and Brain research~The Oral–Brain Axis~ : Yoshimoto T : THE FIRST KNOWLEDGE EXCHANGE BETWEEN KOREAN MPS ENGINEERS AND JAPANESE BARRIOLOGISTS(Hiroshima), 2025.
  7. Identification and Functional Analysis of a Novel Causative Gene MMD2 in Aggressive Periodontitis, Yoshimoto T:JADR (APR joint meeting) (Delhi, India), 2025.
  8. Improved Patient Satisfaction through Objective Evaluation of Whitening Effect: A Case Report: Yoshino Mai.,Yano Kanako.,Yoshimoto T.,Shintani T.,Kajiya M.:The 18th Annual Meeting of Japanese Society for Evidence and the Dental (Okinawa), 2025.
  9. Identification and Functional Analysis of a Novel Causative Gene MMD2 in Aggressive Periodontitis: Yoshimoto T:ASBMR Annual Meeting (Seattle, U.S.A), 2025.
  10. Identification and Functional Analysis of a Novel Causative Gene MMD2 in Aggressive Periodontitis: (Invited): Yoshimoto T, The 7th Frontier of Oral Medical Science (Moji), 2025.
  11. Bio-3D printed grafts of clumps of MSCs/ECM complexes induce periodontal tissue regeneration in a beagle dog one-wall defect model: Yasuda G., Takeda K., Yoshimoto T., Morimoto S., Yoshino M., Takai H., Torii Y., Maekawa T., Shintani T, Kajiya M.: The 163th Meeting of the Japanese Society of Conservative Dentistry (Nagasaki), 2025.
  12. Establishment of novel bone regenerative cell therapy using direct conversion and 3D cell clumps culture system: Yoshino M., Yoshimoto T., Ando T., Shintani T., Morimoto S., Suzuki M., Yasuda G., Seki M., Kajiya M.: The 68th Japanese association of Periodontology annual meeting in Autumn (Naha), 2025.
  13. Establishment of novel bone regenerative cell therapy using direct conversion and 3D cell clumps culture system: Yoshino M.: The 43th Annual Meeting of the Japanese Society for Bone and Mineral Research (Kumamoto), 2025.
  14. Development of novel bone regenerative cell therapy using direct conversion Osteoblasts and 3D cell clumps culture system: Yoshino M., Seki M., Yoshimoto T., Morimoto S., Shintani T., Kajiya M.: ASBMR Annual Meeting 2025(Seattle), 2025.
  15. To elucidate the effect of estradiol on ligature induced periodontitis: Yasuda K., Matsuda S., Yoshimoto T., Nakashima F., Ueda T., Ninomiya Y., Shimada S., Ouhara K., Mizuno N.:68th Japanese association of Periodontology annual meeting in Autumn (Naha), 2025.
  16. Assessment of the oral environment and oral function in HIV-negative and HIV-positive hemophilia patients : Okada M., Shintani T., Kawagoe M., Iwata T., Yamasaki N., Fujii T., Shiba H.:The 39th Annual Meeting of Japanese Society for AIDS Research (Kumamoto), 2025.
  17. An observational study on the relationship between oral environment, oral function, and detection of Streptococcus mutans in patients with hemophilia : Shintani T., Okada M., Kawagoe M., Iwata T., Yamasaki N., Fujii T., Shiba H.:The 27th Japanese HIV dental workshop (Web), 2025.
  18. Evaluation of oral function and quality of life before and after surgical treatment in patients with medication-related osteonecrosis of the jaw (MRONJ) : Yamasaki S., Hamada A., Morishita K., Obayashi F., Ito N., Koizumi K., Shintani T., Yanamoto S.:The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.

19. The impact of periodontal disease on the liver pathology of fatty liver disease in the elderly population, particularly on the progression of fibrosis : Sakaba M., Chihara K., Uchida F., Yamagata K., Yabe Y., Shintani T., Shoda J.: The 70th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuoka), 2025.
20. Evaluation of oral function and quality of life before and after surgical treatment in patients with medication-related osteonecrosis of the jaw (MRONJ) : Yamasaki S., Hamada A., Morishita K., Obayashi F., Ito N., Koizumi K., Shintani T., Yanamoto S.: The 109th Hiroshima University Dental Society Regular Meeting (Hiroshima), 2025.
21. Assessment of oral environment and oral function in HIV-negative and HIV-positive hemophilia patients: Shintani T., Okada M., Kawagoe M., Iwata T., Kajiya M., Yamasaki N., Fujii T., Shiba H.: The 10th Asia-Pacific AIDS & Co-Infections Conference (Tokyo), 2025.
22. ER stress-mediated dormancy under EGFR inhibition requires YAP reactivation in oral squamous cell carcinoma: Kataoka N., Ueda Y., Okamoto K., Kobayashi Y., Omachi K., Maeda Y., Yanamoto S., Kajiya M., Ando T.: The 36th Annual Meeting of the Japanese Society of Oral Pathology (Okayama), 2025.
23. YAP reactivation drives ER stress-mediated dormancy under EGFR inhibition in oral squamous cell carcinoma: Kataoka N., Ueda Y., Okamoto K., Kobayashi Y., Omachi K., Maeda Y., Yanamoto S., Kajiya M., Ando T.: The 84th Annual Meeting of the Japanese Cancer Association (Ishikawa), 2025.
24. ALPK2 drives cell proliferation in oral squamous cell carcinoma: Ueda Y., Kataoka N., Okamoto K., Omachi K., Maeda Y., Kobayashi Y., Kajiya M., Yanamoto S., Ando T.: The 84th Annual Meeting of the Japanese Cancer Association (Ishikawa), 2025.
25. ALPK2 promotes cell proliferation in YAP/TAZ-activated oral squamous cell carcinoma: Ueda Y., Kataoka N., Okamoto K., Omachi K., Maeda Y., Kobayashi Y., Kajiya M., Yanamoto S., Ando T.: The 58th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2025.
26. Elucidation of the mechanism by which ALPK2 regulates proliferation in oral squamous cell carcinoma (OSCC): Ueda Y., Kataoka N., Okamoto K., Omachi K., Maeda Y., Kobayashi Y., Kajiya M., Yanamoto S., Ando T.: The 1st research exchange meeting Kasumi-Nexus (Hiroshima), 2025.
27. Improving the Accuracy and Specimen Collection Methods of Oral Cytology at Our University: Unehara R., Oue Y., Mori T., Shimizu T., Kaneko Y., Ishida K., Ando T., Ogawa I., Arihiro K.: The 66th annual spring meeting of the Japanese Society of Clinical Cytology (Spring) (Tokyo), 2025.
28. Elucidation of the mechanisms of cancer cell dormancy mediated by YAP reactivation under EGFR inhibition: Kataoka N.: HU-Tomorrow Annual Meeting 2025 (Hiroshima), 2025.
29. A study of dental caries in elderly people using caries risk tests and quantitative oral bacterial tests: Hayashi Y., Shintani T., Ando T., Oki Y., Obayashi N., Suzuki M., Kataoka N., Yasuda G., Kobayashi Y., Miyata R., Kajiya M.: The 18th Annual Meeting of Japanese Society for Evidence and the Dental (Okinawa), 2025.
30. Elucidating the LLPS-mediated interaction mechanism of YAP/TAZ-RBM39 for the development of cancer therapies: Kobayashi Y., Watanabe C., Kataoka N., Kajiya M., Ando T.: The 48th Annual Meeting of the Molecular Biology Society of Japan (Kanagawa), 2025.

## F) Case presentations

- 1: A case of cancer of unknown primary origin discovered following an oral lesion: Eboshida N., Ito N., Itotagawa Y., Obayashi F., Higaki M., Hamada A., Yamasaki S., Koizumi K., Ando T., Yanamoto S.: The 43th Annual Meeting and Scientific Conference of the Japanese Society for Oral Oncology (Tokyo), 2025.
- 2: A case of mixed squamous cell carcinoma associated with neuroendocrine carcinoma arising in the palate: Hirota S., Higaki M., Ando T., Okamoto K., Itotagawa S., Yanamoto S.: The 54th Chugoku-Shikoku Regional Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Yamaguchi), 2025.
- 3: A Case of Carcinoma of Unknown Primary Presenting as a Mass in the Maxillary Gingiva: Eboshida N., Ito N., Itotagawa M., Higaki M., Obayashi F., Hamada A., Yamasaki S., Koizumi K., Ando T., Yanamoto S.: The 3rd Academic Meeting of the Young Oral and Maxillofacial Surgeons Exchange Meeting (Hiroshima), 2025.
- 4: A case of multiple oral cancers with papillary squamous cell carcinoma of the tongue: Ono H., Morishita K., Kataoka N., Kitamura M., Hirota S., Koizumi K., Ando T., Yanamoto S.: The 72nd

Annual Meeting of the Chugoku-Shikoku Regional Branch of the Japanese Stomatological Society (Ehime), 2025.

- 5: A case of intraosseous lipoma arising in the submental region: Okamoto K., Hirota S., Ohno H., Kitamura M., Morishita K., Koizumi K., Kobayashi Y., Ando T., Yanamoto S.: The 72nd Annual Meeting of the Chugoku-Shikoku Regional Branch of the Japanese Stomatological Society (Ehime), 2025.
- 6: A Case of Clear Cell Variant of Squamous Cell Carcinoma Arising in the Mandibular Gingiva: Kobayashi Y., Kataoka N., Ono S., Nakagawa T., Uetsuki R., Mizuta K., Aikawa T., Kajiya M., Ando T.: The 18th Annual Scientific Meeting of the Japanese Society for Evidence and the Dental Professional (Okinawa), 2025.
- 7: A case of developmental odontogenic cyst with characteristic features of glandular odontogenic cyst and odontogenic keratocyst, Incorporating Molecular pathological evaluation: Kataoka N., Asada Y., Fukutani T., Kobayashi Y., Tani R., Sueti Y., Kakimoto N., Yanamoto S., Miyauchi M., Ogawa I., Kajiya M., Ando T.: The 18th Annual Scientific Meeting of the Japanese Society for Evidence and the Dental Professional (Okinawa), 2025.

#### G) Special lectures in academic meetings

1. Building a Bridge Between Engineering Technology and Dental Medicine: Perspectives on Periodontal Tissue Regeneration Enabled by Bio 3D Printing: Yoshimoto T: Hiroshima University / Shizuoka University Workshop, 2025.
2. Mechanisms of proliferation and drug resistance driven by dysrupted Hippo pathway in oral squamous cell carcinoma: Ando T: The 114th Annual Meeting of the Japanese Society of Pathology (Sendai), 2025.
3. A New Era of Oral Pathology at Hiroshima University: Empowering Young Challengers and Embracing Diversity: Kobayashi Y: The 36th Annual Meeting of the Japanese Society of Oral Pathology (Young pathologist session) (Okayama), 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: AMED Program for Accelerating Realization of Regenerative Medicine, Cellular and Gene Therapies (Non-clinical PoC Acquisition Project): Kajiya M (PI, ongoing), Development of an Innovative Periodontal Regenerative Therapy Using Three-Dimensional Transplantable Tissues Fabricated with a Bio3D Printer, 42,000,000 yen
- 2: JST START Startup Ecosystem Development Program: Kajiya M (PI, newly awarded), Commercialization of a Bone Regenerative Cell Product Using “Cartilage-like Tissue with a Bone Shell” that Mimics the Bone Developmental Process, 20,000,000 yen
- 3: AMED Translational Research Seed A: Kajiya M (PI, newly awarded), Development of an Innovative Bone Reconstruction Therapy Using Direct Conversion-Derived Osteoblasts and Three-Dimensional Aggregate Culture Technology, 3,000,000 yen
- 4: Japan Society for the Promotion of Science, Grants-in-Aid for Early-Career Scientists: Obayashi N (PI. Continue), Elucidation of the mechanism of taste alteration induced by irinotecan, an anticancer drug focusing on salty taste. 22K17207, 4,550,000 yen
- 5: Japan Society for the Promotion of Science, Grants-in-Aid for Early-Career Scientists: Obayashi N (PI. Novel), Elucidation of the Mechanism of Taste Disorder Induced by Anticancer Drugs with a Focus on Cell Adhesion Factors. 25K20407, 4,810,000 yen
- 6: AMED Program for Acceleration of Regenerative Medicine, Cell Therapy, and Gene Therapy (Non-clinical PoC Acquisition Research Project), Yoshimoto T (Co-Investigator, Ongoing) Development of an Innovative Periodontal Regenerative Therapy Using Three-Dimensional Transplantable Tissues Fabricated by a Bio 3D Printer. 23bm1223015h0001, 2,000,000 yen
- 7: AMED-PRIME (Aging Research Area; FY2024–FY2028), Yoshimoto T (Principal Investigator, Ongoing), Mechanobiology-Based Elucidation of Osteocyte Aging Mechanisms and Their Pathophysiological Significance, 40000,000 yen
- 8: Japan Society for the Promotion of Science (JSPS) KAKENHI, Grant-in-Aid for Scientific Research

- (B) (FY2025–FY2027), Yoshimoto T (Co-Investigator, New), Identification of Novel Specific Molecular Targets for Aggressive Periodontitis Patients Harboring MMD2 Mutations, 1,300,000 yen
- 9: SENSHIN Medical Research Foundation (Blood Medicine Research Grant) (FY2025–FY2026), Yoshimoto T (Principal Investigator, New), Elucidation of the Pathogenesis of Aggressive Periodontitis and Development of Therapeutic Strategies Using Novel Disease-Specific iPS Cells, 2,000,000 yen
  - 10: Ministry of Education, Culture, Sports, Science and Technology (MEXT): Joint Usage/Research Center Program for Biomedical, Dental, and Engineering Collaboration (FY2025), Yoshimoto T (Principal Investigator, Ongoing), Development of a Bone–BBB (Blood–Brain Barrier) Coupled Microfluidic Device, 150,000 yen
  - 11: Mochida Memorial Foundation for Medical and Pharmaceutical Research (FY2025) Yoshimoto T (Principal Investigator, New), Generation of Human iPS Cell–Derived Bone Marrow Organoids Using a Microfluidic Device, 3,000,000 yen
  - 12: Gunma University: Joint Usage/Research Center Program for Endocrinology and Metabolism (Collaborative Research Grant) (FY2025), Yoshimoto T (Principal Investigator, New), Elucidation of Osteocyte Aging Mechanisms Mediated by the Nuclear E3 Ubiquitin Ligase PDLIM2, 400,000 yen
  - 13: Astellas Research Association for Metabolic Disorders (FY2024–FY2025), Yoshimoto T (Principal Investigator, Ongoing), Elucidation of Chronic Inflammation Mechanisms with a Novel Focus on Osteocytes, 2,000,000 yen
  - 14: Naito Foundation (FY2024–FY2025), Yoshimoto T (Principal Investigator, Ongoing), Elucidation of Mechanisms Underlying the Chronicity of Inflammation with a Novel Focus on Osteocytes, 3,000,000 yen
  - 15: Japan Society for the Promotion of Science (JSPS) KAKENHI, Grant-in-Aid for Research Activity Start-up (FY2024–FY2025), Yoshino M. (Principal Investigator, Continuing), Establishment of an in vitro Three-Dimensional Jawbone Marrow Model Using Human Neural Crest-Derived Mesenchymal Stem Cells, Grant No. 24K23589, 2,100,000 yen
  - 16: Japan Society for the Promotion of Science (JSPS) KAKENHI, Grant-in-Aid for Early-Career Scientists (FY2025–FY2027), Yoshino M. (Principal Investigator, New), Establishment of Three-Dimensional Osteoblast Spheroids Useful for Bone Regeneration via Direct Conversion, Grant No. 25K20310, 4,800,000 yen
  - 17: Grants-in-Aid for Scientific Research (B): Ando T. (PI, Continue): Deciphering the regulatory mechanism of cancer microenvironment induced by disruption of the Hippo pathway and novel therapeutic approach. 24K02645, 14,300,000 yen
  - 18: Takeda Science Foundation: Ando T. (PI, Continue): Clarifying the mechanism of transcriptional and growth promoting role of ALPK2 in head and neck squamous cell carcinoma. 2,000,000 yen
  - 19: Grants-in-Aid for Scientific Research (Bilateral Joint Research) (Open partnership joint research project): Ando T. (PI, New): Clarifying the mechanism of Heat-not-burn tobacco on the initiation and progression of oral cancer. 2,000,000 yen

#### (5) Academic Awards, etc.

- 1: Gennai K: (School of Dentistry student; supervised by Yoshimoto T) Encouragement Award, The 58th General Meeting of the Hiroshima University Dental Society (Hiroshima), 2025.
- 2: Suzuki M: Encouragement Award, The 58th General Meeting of the Hiroshima University Dental Society (Hiroshima), 2025.
- 3: Yoshimoto T: Encouragement Award (Grand Prize / Best Award) , The 7th Frontier of Oral Medical Science Award (Fukuoka), 2025.
- 4: Yoshino M: Outstanding Presentation Award in Periodontal Regenerative Medicine, The 68th Spring Annual Meeting of the Japanese Society of Periodontology (Okinawa), 2025.
- 5: Yoshino M: ASBMR 2025 Travel Award, The 43th Annual Meeting of the Japanese Society for Bone and Mineral Research (Kumamoto), 2025.
- 6: Kataoka N: Best poster award, The 36th Annual Meeting of the Japanese Society of Oral Pathology (Okayama), 2025

- 7: Kataoka N: Grand prize, HU-Tomorrow Annual Meeting 2025 (Hiroshima), 2025.
- 8: Hayashi Y: Outstanding Oral Presentation Award, The Annual Meeting of Japanese Society for Evidence and the Dental (Okinawa), 2025
- 9: Ando T: The Japanese Society of Pathology Award for Encouragement of Young Pathologists, The 114th Annual Meeting of the Japanese Society of Pathology (Sendai), 2025

1: (6) Patent

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## Central Clinical Divisions

### Dental Laboratory

#### (2) Staff and Students

Director of Dental Technicians Section : Hiroki Nikawa (Prof.)  
 Assistant Chief Dental Technician : Shogo Iwaguro  
 Dental Technician : Yukihiro Takayama, Mai Ohtaku, Momoyo Higo,  
 Haruya Kawabata, Ryoji Kato, Sumire Oba (Jan–Mar 2025)

#### (2) Main Research Activities

- 1: Management of the patient's information by the use of implanted devices in the denture.
- 2: Radioprotective prostheses for irradiation therapies
- 3: Clinical analysis of superstructure of implant.
- 4: Esthetic dentistry
- 5: Accuracy of castings
- 6: Information processing in the dental laboratory
- 7: Study on dental composite materials for esthetic

#### (3) Research Achievements

##### E) Original Papers (including Case Reports)

- 1: Analyzing the performance of multimodal large language models on visually-based questions in the Japanese National Examination for Dental Technicians: Mine Y, Taji T, Okazaki S, Takeda S, Peng TY, Shimoe S, Kaku M, Nikawa H, Kakimoto N, Murayama T: Journal of Dental Sciences, 20(4),2460-2466, 2025.
- 2: Aging performance and bacteria adhesion of 3D-printed, CAD/CAM-milled, and conventional definitive denture resins: Chuang PE, Chen FN, Shieh TM, Chuang CC, Wei C, Nikawa H, Peng TY: J Prosthodont Res, accepted, 2025.

##### F) Review

##### G) Publications

##### H) Other Publications

##### E) Presentation at Scientific Meeting

1. The potential for biometric impression using smartphone 3D scanning technology for the DX of dental technology : Takayama Y, Taji T, Mine Y, Higo M, Kawabata H, Ohba S : 7th International Congress of Dental Technology • The 46th Annual Scientific Meeting, Japanese Academy of Dental Technology, 2025
2. Fabrication of a mandibular full-arch prosthesis supported by implants using the scan data of removable denture a case report : Iwaguro S, Kato R, Higo M, Kawabata H, Oba S, Shimoe S : 7th International Congress of Dental Technology • The 46th Annual Scientific Meeting, Japanese Academy of Dental Technology, 2025
3. A case of the fabrication of a maxillary left central incisor implant superstructure using CAD/CAM for a patient with deep bite: Higo M, Iwaguro S, Takayama Y, Kato R, Kawabata H, Shimoe S: 7th International Congress of Dental Technology • The 46th Annual Scientific Meeting, Japanese Academy of Dental Technology, 2025



4. Effect of alumina blast particle size on the bonding of PEEK to composite resin and acrylic resin : Kawabata H, Shimoe S, Iwaguro S, Takayama Y, Higo M, Kaku M : 7th International Congress of Dental Technology · The 46th Annual Scientific Meeting, Japanese Academy of Dental Technology, 2025

F) Symposium and special lecture

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Grant from Japanese Dental Science Federation (JDSF-DSP1-2025-301-1) : Yukihiro Takayama. \60,000

(5) Academic Awards, etc.

1. Best Poster Presentation Award : Yukihiro Takayama : 7th International Congress of Dental Technology · The 46th Annual Scientific Meeting, Japanese Academy of Dental Technology, 2025

(6) Patents

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## Central Clinical Divisions

### Dental Hygiene Section

#### (1) Staff and Students

Director of Dental Hygiene Section: Kouji Ohta

Section leader of Dental Hygiene Section: Miyuki Nakaoka

Section sub-leader of Dental Hygiene Section: Miho Okada

Chief Dental Hygienists: Maiko Kawagoe, Haruka Yasuda

Dental Hygienists: Atsuko Wakita, Kanako Yano, Tomoko Tokikazu, Kiho Naganuma, Ruri Miyano, Kana Dainobu, Su chengyih (Till March), Honami Kitasaki, Nayu Ishimaru, Yuki Kuwabara, Miho Sakai, Otoha Kawahara, Sari Nakamura, Yurina Nakamura, Suzuka Kuroko, Rin Tunaba, Makiko Okamoto (Till March), Yuki Namura (From February), Noriko Takeshita (From April), Aina Yagashira (From April), Kano Yano (From April)

Dental Assistants: Saori Nagamine, Ayako Kuto, Yudai Miyoshi

#### (2) Main Research Activities

#### (3) Research Achievements

##### A) Original Papers (including Case Reports)

- 1: Anti-fungal effects of slightly acidic electrolyzed water on *Candida* species: Wu CH., Kaneyasu Y., Yano Kanako, Shigeishi H., Kitasaki H., Maehara T., Niitani Y., Takemoto T., Mine Y., Le MN., Kawada-Matsuo M., Komatsuzawa H., Ohta K.: J Oral Biosci. 2025 Mar;67(1): 100573.
- 2: Effects of Nisin A Combined with Antifungal Drug Against Growth of *Candida* Species: Niitani Y., Ohta K., Yano Kanako, Kaneyasu Y., Maehara T., Kitasaki H., Shigeishi H., Nishi H., Nishimura R., Naito M., Shiba F., Kawada-Matsuo M., Komatsuzawa H., Takemoto T.: Dent J (Basel). 2025 Apr 8; 13(4): 160.
- 3: Effects of Cigarette Smoke Extract on CXCL8 and CXCL1 Expression in oral Keratinocytes Induced by Synthetic Bacterial Lipoprotein Pam3CSK4: Kitasaki H., Ohta K., Akagi M., Niitani Y., Kaneyasu Y., Maehara T., Yano Kanako, Shiba F., Shigeishi H., Takemoto T.: Oral Science International Volume 22, Issue 2, May 2025, 70006
- 4: Cross-sectional pilot study of relationships between specific oral bacteria and acute respiratory failure requiring intensive care unit admission: Nishi H., Ohta K., Ohshima S., Shigeishi H., Obayashi T., Munenaga S., Okazawa Y., Inubushi J., Ino N., Tokikazu T., Yano Kanako, OHge H., Kurihara H., Shime N., Kawaguchi H.: Journal of Dentistry Volume 157, June 2025, 105724
- 5: Relationship Between Virulence Factor Activities, Cytotoxicity of *Candida albicans* Strains Isolated from Oral Cavity, and Cytokine Production by Oral Keratinocytes Exposed to Those Strains: Yano Kanako, Nishi H., Shigeishi H., Kaneyasu Y., Niitani Y., Kitasaki H., Kawaguchi H., Takamoto M., Shiba F., Takemoto T., Ohta K.: Dent J (Basel). 2025 Oct 29; 13(11): 502.

##### B) Review

##### C) Publications

##### D) Other Publications

- 1: Rediscovering the Meaning of Work: Why We Came to Japan as Dental Hygienists: Adachi N., Miyoshi S., Yujeong S., Su Cheng-Yih, Liao Shin-Ru: Quintessence Publishing (Tokyo), Vol.49, P84-91, 2025.

##### E) Presentations at Scientific Meetings

- 1: Antifungal susceptibility of *Candida* species isolated from oral cavity in respiratory cancer patients

- during perioperative period: Yano Kanako, Nishi H., Shigeishi H., Kaneyasu Y., Niitani Y., Nakaoka M., Kawaguchi H., Ohta K.: The 22nd Annual Meeting and Academic Conference of the Japanese Society of Oral Care (Niigata), 2025.
- 2: Antifungal susceptibility of *Candida* species isolated from oral cavity in respiratory cancer patients during perioperative period: Yano Kanako, Nishi H., Shigeishi H., Kaneyasu Y., Niitani Y., Nakaoka M., Kawaguchi H., Ohta K.: The 5th Annual Meeting and Academic Conference of the International Society of Oral Care (Niigata), 2025.
  - 3: The role of perioperative oral care in preventing postoperative pneumonia and optimal timing of oral care intervention during general anesthesia: Naganuma K., Nishi H., Shigeishi H., Ohta K., Yoshioka Y., Konishi M., Kakimoto N., Odo A., Horikoshi I., Tari M., Yamasaki S., Ito N., Yano Kanako, Nakaoka M., Yanamoto S., Tanimoto K., Kawaguchi H.: The 22nd Annual Meeting and Academic Conference of the Japanese Society of Oral Care (Niigata), 2025.
  - 4: Effects of probiotic preparations on prevention of oral mucositis and maintenance of nutritional status in breast cancer chemotherapy: Kuwabara Y., Nishi H., Ohta K., Shigeishi H., Konishi M., Kakimoto N., Yoshioka Y., Horikoshi I., Yano Kanako, Nakaoka M., Yamasaki S., Ito N., Yanamoto S., Tanimoto K., Kawaguchi H.: The 22nd Annual Meeting and Academic Conference of the Japanese Society of Oral Care (Niigata), 2025.
  - 5: Effects of nucleic acid introduction on the expression of antiviral factors and virus-related receptors in oral mucosal epithelial cells: Kitasaki H., Ohta K., Kaneyasu Y., Machara T., Niitani Y., Takemoto T., Shigeishi H.: The 74th Annual Meeting of the Japanese Society of Oral Health (Niigata), 2025.
  - 6: Effect of cigarette smoke extract on antiviral defense responses induced by nucleic acid transfection in oral mucosal epithelial cells: Kitasaki H., Ohta K., Kaneyasu Y., Niitani Y., Yano Kanako, Takemoto T., Shigeishi H.: The 72nd Annual Meeting of the Chugoku-Shikoku Branch of the Japanese Stomatological Society (Matuyama), 2025.
  - 7: Relationship between cytotoxicity of *C. albicans* strains and cytokine produces from oral keratinocytes against *C. albicans*: Yano Kanako, Nishi H., Shigeishi H., Kaneyasu Y., Niitani Y., Kawaguchi H., Ohta K.: Joint Annual Meeting of the Three Societies (The 45th Annual Meeting of the Japanese Society of Oral Therapeutics and Pharmacology, The 43rd Annual Meeting of the Japan Dental Society of Oriental Medicine and The 34th Annual Meeting of the Japanese Association for Oral Infectious Diseases) (Tokyo), 2025.
  - 8: Association between oral EBV/ *P. gingivalis* infection and periodontal inflamed surface area: Masumoto H., Shigeishi H., Yamakido H., Konuma M., Kakiuchi H., Nomi H., Kitasaki H., Yano Kanako, Kaneyasu Y., Niitani Y., Ohta K.: Joint Annual Meeting of the Three Societies (The 45th Annual Meeting of the Japanese Society of Oral Therapeutics and Pharmacology, The 43rd Annual Meeting of the Japan Dental Society of Oriental Medicine and The 34th Annual Meeting of the Japanese Association for Oral Infectious Diseases) (Tokyo), 2025.
  - 9: Association between oral Helicobacter pylori and periodontitis in older adults: Yamakido H., Shigeishi H., Masumoto H., Konuma M., Kakiuchi H., Nomi H., Kitasaki H., Kaneyasu Y., Yano Kanako, Niitani Y., Ohta K.: Joint Annual Meeting of the Three Societies (The 45th Annual Meeting of the Japanese Society of Oral Therapeutics and Pharmacology, The 43rd Annual Meeting of the Japan Dental Society of Oriental Medicine and The 34th Annual Meeting of the Japanese Association for Oral Infectious Diseases) (Tokyo), 2025.
  - 10: Improved Patient Satisfaction through Objective Evaluation of Whitening Effect: A Case Report: Yoshino M., Yano Kanako, Yoshimoto T., Shintani T., Kajiya M.: The 18th Annual Meeting of the Japanese Society for Evidence and the Dental Professional (Uruma), 2025.
  - 11: The Effects of Cigarette Smoke Extract on Antiviral Genes Induced by Nucleic Acid Delivery in Oral Mucosal Epithelial Cells: Kitasaki H., Ohta K., Kaneyasu Y., Niitani Y., Yano Kanako, Takemoto T., Shigeishi H.: The 20th Annual Meeting of the Japan Society for Dental Hygiene (Tokyo), 2025.
  - 12: Combined Effect of the Antimicrobial Peptide Nisin and Antifungal Agents Against *Candida*: Niitani Y., Ohta K., Yano Kanako, Kitasaki H., LIU LI CHEN, Kaneyasu Y., Shigeishi H., Kimura M., Takemoto T.: The 20th Annual Meeting of the Japan Society for Dental Hygiene (Tokyo), 2025.
  - 13: Associations of oral hygiene status with postoperative inflammation in duodenal tumorpatients: Konuma M., Shigeishi H., Kakiuchi H., Yamakido H., Masumoto H., Nomi H., Kaneyasu Y., Yano Kanako, Niitani Y., Ohta K.: The 20th Annual Meeting of the Japan Society for Dental Hygiene (Tokyo), 2025.
  - 14: Association between oral herpes simplex virus infection and periodontal inflamed surface area: Kakiuchi H., Shigeishi H., Konuma M., Yamakido H., Masumoto H., Nomi H., Kaneyasu Y., Yano Kanako, Niitani Y., Ohta K.: The 20th Annual Meeting of the Japan Society for Dental Hygiene

- (Tokyo), 2025.
- 15: Association between oral *Helicobacter pylori* infection and hygiene status: Yamakido H., Shageishi H., Masumoto H., Konuma M., Kakiuchi H., Kitasaki H., Kaneyasu Y., Yano Kanako, Niitani Y., Ohta K.: The 20th Annual Meeting of the Japan Society for Dental Hygiene (Tokyo), 2025.
  - 16: Association between the oral environment and oral function of hemophilia patients and the detection of *Streptococcus mutans*: Shintani T., Okada M., Kawagoe M., Iwata T., Yamazaki N., Fujii T., Shiba H.: The 39th Annual Meeting of the Japanese Society for AIDS Research (Kumamoto), 2025.

#### F) Special lectures in academic meetings

1. Oral health management in dentistry for the disabled: Tokikazu T.: Hiroshima prefecture regional medical care nursing comprehensive securing business Education at Hiroshima Oral Health Center Research function development project Hiroshima prefecture dental health service provision difficult person consultation physician training workshop (Hiroshima), 2025.
2. HIV Diseases and Dentistry: Kawagoe M: 2025Beginner Course for AIDS Clinical Practice Training for Nurses (Hiroshima), 2025.
3. HIV Diseases and Dentistry: Okada M:2025Beginner Course for AIDS Clinical Practice Training for Nurses (Hiroshima), 2025.
4. Creating an Environment that Supports Safe Pediatric Dental Care -From the Perspective of a Dental Hygienist: Nakaoka M.: 44th Japan Society of Pediatric Dentistry Chugoku-Shikoku Regional Symposium (Tokushima), 2025.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

#### (5) Academic Awards, etc.

1. Kanako Yano: Japan Dental Hygienists' Association Academic Paper Award (Sunstar Foundation Award), Encouragement Award, 2025.

#### (6) Patents

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## Central Clinical Facilities Division of Medical Informatics and Systems

### (1) Staff and Students

Director : Yoshiyuki Okada(Co.)  
Assistant Professor : Masahiko Ohtsuka (Co.), Takeshi Tanaka(Co.)  
Technician : Tokue Yanagida (Co.)

### (2) Main Research Activities

- 1: Research on development and management of healthcare and welfare information system.
- 2: Research on Medical Informatics.

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Providing Intermediate Outreach Support at a University Hospital: Tanaka T et al.: J Japanese Society for Low-vision Research and Rehabilitation 25, S32-S38, 2025.
- 2: Survey on awareness and usage of collaborative pathways between pediatrics and ophthalmology: Fujita R, Ando H, Kiuchi Y, Tanaka T: Journal of Japanese Society for Clinical Pathway, 27 (3), 330, 2025.

#### B) Review

None.

#### C) Publications

None.

#### D) Other Publications

None.

#### E) Presentation at Scientific Meeting

- 1: An Attempt to Educate Dental Students Critical Reading with an Abstract of Scientific Paper on “Medical Information System”: Tanaka T: Japan Association for Medical Informatics Spring Conference 2025 (Sendai, Japan), 2025.
- 2: Survey on awareness and usage of collaborative pathways between pediatrics and ophthalmology: Fujita R, Ando H, Kiuchi Y, Tanaka T: The 25nd Annual Meeting of the Japan Society for Clinical Pathway (Toyama, Japan), 2025.
- 3: Evaluation of a Medical Institution Webpage Model for Browsing in Extremely Enlarged Characters and the Tendencies of Persons with Visual Impairments Who Need It: Tanaka T, Ujima K, Narai A, Kiuchi Y: Medinfo 2025 (Taipei, Taiwan), 2025.

#### F) Special lectures in academic meetings

None.

### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: MEXT KAKENHI Grant-in-aid for Scientific Research(C), No. 24K151920. 750 thousand JPY.
- 2: MEXT KAKENHI Grant-in-aid for Scientific Research(C), No. 23K151920. 50 thousand JPY.

(5) Academic Awards, etc.

None.

(6) Patents

None..

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