

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

Research Achievement 2019

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

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○ **Program of Oral Health Sciences**

- [Department of Public Oral Health](#)
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○ **Graduate School of Biomedical and Health Sciences (Dentistry)**

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- [Division of General Dentistry, Department of General Dentistry](#)
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Department of Calcified Tissue Biology

(1) Staff and Students

Professor: Yuji Yoshiko

Assistant Professor: Tomoko Minamizaki (until August)

Assistant Professor (Special Appointment): Shohei Kohno (from October)

Researcher: Shohei Kohno (September)

Education and Research Support Staff: Masaaki Toshishige

Research Assistant: Atsuko Tomiyama, Rikako Nagai

Graduate Student: Yasumasa Irie (Pediatric Dentistry, until March), Faisal Ahmed, Sarmin Nushrat, Shota Ito (Orthodontic Dentistry), Masashi Nakano (Pediatric Dentistry), Tomohiro Ogasawara (Orthodontic Dentistry)

(2) Main Research Activities

- 1 : Mineralization (including ectopic mineralization)
- 2 : Calcitropic and phosphotropic factors and mineral metabolism
- 3 : Osteonetwork
- 4 : MicroRNAs
- 5 : Bone metastasis

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : An N-terminal-truncated isoform of FAM134B (FAM134B-2) regulates starvation-induced hepatic selective ER-phagy. : Shohei Kohno, Yuji Shiozaki, Audrey L Keenan, Shinobu Miyazaki-Anzai, Makoto Miyazaki : Life Sci Alliance, 2 (3), e201900340, 2019.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : MicroRNA-125b embedded in bone matrix exerts protective effects on ovariectomy- and neurectomy-induced bone loss by suppressing osteoclast formation.: Tomoko Minamizaki, Faisal Ahmed, Nushrat Sarmin, Shota Ito, Kotaro Tanimoto, Yuji Yoshiko: The World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases - the International Osteoporosis Foundation - the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis 2019 (Paris), 2019.
- 2 : Bone matrix miR-125b suppresses the progression of osteolytic bone metastasis by targeting not only osteoclasts but also cancer cells.: Nushrat Sarmin, Mentari Zaurasari, Tomoko Minamizaki, Yuji Yoshiko: The American Society for Bone and Mineral Research 2018 Annual Meeting (Orlando), 2019.
- 3 : Bone matrix miR-125b inhibits bone resorption without affecting skeletal development and improves age-related changes in bone mass and quality: Shota Ito, Tomoko Minamizaki, Yoshiaki Kitaura, Shinsuke Ohba, Ung-il Chung, Kotaro Tanimoto, Yuji Yoshiko: The American Society for Bone and Mineral Research 2018 Annual Meeting (Orlando), 2019.
- 4 : Single-cell analysis reveals the diversity and adipogenic potential of osteoblasts.: Masashi Nakano, Hirotaka Yoshioka, Tomoko Minamizaki, Katsuyuki Kozai, Yuji Yoshiko: The 124th Annual Meeting of The Japanese Association of Anatomists (Niigata), 2019.
- 5 : miR-125b accumulated in bone matrix inhibits osteolytic bone metastasis. : Nushrat Sarmin, Hilmy Irsyadi Hanif, Tomoko Minamizaki, Yuji Yoshiko: The 52nd Hiroshima University Dental Society (Hiroshima), 2019.
- 6 : miR-125b accumulated in bone matrix suppresses osteolytic bone metastasis. : Nushrat Sarmin, Tomoko Minamizaki, Yuji Yoshiko: The 61th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2019.
- 7 : Overexpression of miR-125b in osteoblasts inhibits bone resorption without affecting skeletal development and improves age-related changes in bone mass and quality: Shota Ito, Tomoko Minamizaki, Yoshiaki Kitaura, Shinsuke Ohba, Ung-il Chung, Yuji Yoshiko: The 37th Annual Meeting of the Japanese Society for Bone and Mineral Research (Kobe), 2019.

F) Special lectures in academic meetings

- 1 : Epigenetics with a focus on microRNA.: Yuji Yoshiko: Faculty of Dentistry Universitas Padjadjaran (Bandung), 2019.
- 2 : A new paradigm for bone turnover and its potential clinical implications.: Yuji Yoshiko: International

Dental Scientific Conference & Expo, Dies Forum 2019 (Bandung), 2019.

- 3 : Bone matrix vesicle microRNA.: Yuji Yoshiko: The 1st International Symposium for Intercellular Communication and Extracellular Vesicles (Okayama), 2019.

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

- 1 : Japan Agency for Medical Research and Development, Rare/Intractable Disease Research (Continuance): Yuji Yoshiko, Development of a new class of anti-mineralization. 23,400,000 yen
- 2 : Grant-in-Aid for Challenging Research (Exploratory) (Continuance): Yuji Yoshiko, Elucidation of osteoblast fate determination by single cell analysis on mRNA-ncRNA. 18K19647. 2,340,000 yen.
- 3 : Grants-in-Aid for Scientific Research (C) (Continuance): Yuji Yoshiko (Co-investigator), Functional analysis of soluble FGF receptor derived from bone and cartilage and its application to bone and cartilage regeneration. 17K11804. 150,000 yen
- 4 : Grants-in-Aid for Scientific Research (C) (Continuance): Yuji Yoshiko (Co-investigator), Analysis of fate determination of osteoblasts at the single cell level with the search for a novel target of bone formation agents. 17K11613. 200,000 yen
- 5 : Raffinee International Corporation (Continuance): Yuji Yoshiko, 2,700,000 yen

(5) Academic Awards, etc.

- 1 : Shota Ito : ASBMR 2019 Annual Meeting Young Investigator Award (The American Society for Bone and Mineral Research)
- 2 : Shota Ito, Tomoko Minamizaki, Yuji Yoshiko : ASBMR 2019 Annual Meeting Plenary Poster (The American Society for Bone and Mineral Research)
- 3 : Shota Ito : ASBMR 2019 Travel Award (The Japanese Society for Bone and Mineral Research)
- 4 : Nushrat Sarmin : Best Presentation Award (Hiroshima University Dental Society)

(6) Patents

- 1 : Yuji Yoshiko, Yuichiro Takei, Tomoko Minamizaki, Hirotaka Yoshioka, Yasuo Ochi : 破骨細胞形成および/または機能抑制剤, 破骨細胞形成および/または機能促進剤並びに破骨細胞形成および/または機能を抑制または促進する薬剤のスクリーニング法 (JP6632116B) (Applicants: Hiroshima University)

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Department of Maxillofacial Anatomy and Neuroscience

(1) Staff and Students

Professor : Ryuji Terayama

Associate Professor: Kenta Uchibe

(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

(3) Research Achievements

A) Original Papers (including Case Reports)

1 : Hiyama S, Yokoi M, Akagi Y, Kadoyama Y, Nakamori K, Tsuga K, Uchida T, Terayama R, Osteoclastogenesis from bone marrow cells during estrogen-induced medullary bone formation in Japanese quails, *J Mol Histol* 50(4):389-404, 2019.

2 : Sumitani Y, Uchibe K, Yoshida K, Weng Y, Guo J, Yuan H, Ikegame M, Kamioka H, Okamura H, Inhibitory effect of retinoic acid receptor agonists on in vitro chondrogenic differentiation. *Anat Sci Int.* 2019 in press.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Terayama R, Effect of A₃ adenosine receptor agonist on neuropathic pain, The 74th Annual Meeting

of the Japanese Association of Anatomists Chugoku-Shikoku Chapter (Izumo), 2019.

2 : Terayama R, A₃ adenosine receptor agonist attenuates neuropathic pain by suppressing activation of microglia and convergence of nociceptive inputs in the spinal dorsal horn, The 61st Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2019.

3 : Terayama R, Abnormal pain sensation and changes in the spinal dorsal horn after peripheral nerve injury, The 24th Annual Meeting of Japanese Association for Orofacial pain (Kawasaki), 2019.

4 : Matsuoka M, Uchibe K, Alferiev I, Abzug JM, Min L, Iwasaki N, Iwamoto M, Michael C, Iwamoto M, Controlling Targeted Bone Growth by Synthetic Retinoid Nanoparticles, The 32nd Annual Meeting of the Japanese Society of Cartilage Metabolism (Toyonaka), 2019.

5 : Uchibe K, Ikegame M, Iwamoto M, Okamura H, Roles of retinoic acid signaling in chondrogenesis, The 60th Annual Meeting of Japan Society of Histochemistry and Cytochemistry/ The 13th Japan-China Joint Seminar on Histochemistry and Cytochemistry (Kobe), 2019.

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

1 : Grant-in Aid-for Scientific Research (C): Ryuji Terayama, 19K10042, ¥1,430,000

(5) Academic Awards, etc.

(6) Patents

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Department of Physiology and Oral Physiology

(1) Staffs and Students

Professor : SUGITA, Makoto

Assistant Professor : KITAGAWA, Michinori

Graduate Students : YAMAMOTO, Kuniyo

(2) Main Research Activities

- 1 : The molecular and cellular bases of taste perception and coding
- 2 : The neuronal mechanisms underlying the taste-evoked behavioral and emotional responses
- 3 : The molecular mechanisms of ion and fluid transport in salivary glands
- 4 : The molecular mechanisms in development, morphogenesis and functional maintenance of salivary glands and oral tissues
- 5 : Studies on the function and dysfunction of ion channels and transporters

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other publication

E) Presentation at Scientific Meeting

- 1 : Information processing in brainstem bitter taste-relaying neurons : Sugita M., Yamamoto K. : The 9th Federation of the Asian and Oceanian Physiological Societies Congress (FAOPS 2019) (Kobe), 2019.
- 2 : Effect of extracellular glucose concentration on carbachol-induced fluid secretion from submandibular glands : Sugita M., Kitagawa M. : The 61th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2019.
- 3 : Visualization and quantification of Hippo signaling pathway by multicolor bimolecular fluorescence complementation (BiFC) : Kitagawa M., Sugita M. : The 42th Annual Meeting of the Molecular

biology Society of Japan (Fukuoka), 2019.

- 4 : Involvement of sodium-glucose cotransporter activity in sustaining Cl⁻ and fluid secretion from salivary glands : Sugita M., Takeyasu M., Murakami T., Terachi M., Kozai K. : 2019 NIPS Research Meeting (Okazaki), 2019.

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

- 1 : Grant-in-Aid for Scientific Research (C): Sugita M., The functional mapping of taste information processing in the brain by using genetic tracing. 18K09519. ¥1,200,000.

(5) Academic Awards, etc.

(6) Patents

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Department of Oral and Maxillofacial Pathobiology

(1) Staffs and Students

Professor	:	Takashi Takata (~March) Mutsumi Miyauchi (April~)
Associate Professor	:	Mutsumi Miyauchi (~March)
Assistant Professor	:	Hisako Furusho
Graduate Student	:	Shinichi Sakamoto (D4) (~March) Shrestha Madhu (D4) (~March) Sakura Yamada (D4, Department of Orthodontics) (~March) Eri Ishida (D2, Department of Advanced Prosthodontics) Ibuki Kobayashi (D1) (~August) Kanae Oda (D1) (Department of Orthodontics)

(2) Main Research Activities

- 1: Study on correlation between periodontitis and preterm birth/ low birth weight
- 2: Development of prognostic/diagnostic examination system of preterm birth targeting serum Galectin-3
- 3: Collaborative study on correlation between odontogenic infection and NASH
- 4: Collaborative study on correlation between odontogenic infection and brain diseases
- 5: Collaborative study on correlation between odontogenic infection and atrial fibrillation
- 6: Regulation of bone destructive disease using lactoferrin peptides
- 7: Development of diagnosis/inspection system using expiratory air
- 8: Epidemiological study on the relationship between periodontal disease and systemic diseases using large-scale data of Hiroshima Branch of National Health Insurance Society

(2) Research Achievements

A) Original Papers (including Case Reports)

1. Molecular mechanisms underlying the inhibitory effects of bovine lactoferrin on osteosarcoma: Chea C, Haing S, Miyauchi M, Shrestha M, Imanaka H, Takata T: *Biochem Biophys Res Commun*. 2019 Jan 15;508(3):946-952. doi: 10.1016/j.bbrc.2018.11.204. Epub 2018 Dec 10.
2. Knowledge, practices and perceptions regarding the follow-up of HIV-exposed infants in Cambodia: perspective of mothers and providers: Kunthea Soch¹, B POCH and Chanbora Chea *Int Arch Public Health Community Med* 2019 Mzr;3(1):1-9.
3. Endodontic infection-induced inflammation resembling osteomyelitis of the jaws in toll-like receptor 2/interleukin 10 double-knockout mice: Sasaki H, Furusho H, Rider DB, Dobeck JM, Kuo WP, Fujimura A, Yoganathan S, Hirai K, Xu S, Sasaki K, Stashenko P: *J Endod*. 2019 Feb;45(2):181-188. doi: 10.1016/j.joen.2018.10.007.
4. Detection of MAPK/ERK pathway proteins and KRAS mutations in adenomatoid odontogenic tumors: Bologna MR, Ogawa I, Mosqueda TA, Takata T, Sánchez RC, Villarroel DM, Takeda Y, Mikami T: *Oral Dis*. 2019 Mar;25(2):481-487. doi: 10.1111/odi.12989. Epub 2018 Nov 7.
5. Fetal membrane inflammation induces preterm birth via toll-like receptor 2 in mice with chronic gingivitis: Konishi H, Urabe S, Miyoshi H, Teraoka Y, Maki T, Furusho H, Miyauchi M, Takata T, Kudo Y, Kajioka S: *Reprod Sci*. 2019 Jul;26(7):869-878. doi: 10.1177/1933719118792097. Epub 2018 Sep 17.
6. The transition of tissue inhibitor of metalloproteinases from -4 to -1 induces aggressive behavior and poor patient survival in dedifferentiated liposarcoma via YAP/TAZ activation: Shrestha M, Ando T, Chea C, Sakamoto S, Nishisaka T, Ogawa I, Miyauchi M, Takata T: *Carcinogenesis*. 2019 Oct 16;40(10):1288-1297. doi: 10.1093/carcin/bgz023.
7. Two cases of odontogenic carcinoma with sclerosing features in the mandible: diagnostic difficulties in a sclerosing odontogenic carcinoma: Seki-Soda M, Sano T, Ogawa I, Ishikawa A, Arai H, Hirato J, Takayama Y, Yokoo S, Takata T, Oyama T: *J Oral Maxillofac Surg, Med Pathol* (in press).

8. A case of angioleiomyoma of the hard palate: Higashikawa K, Ishida F, Ninomiya Y, Ono S, Ishioka Y, Tada M, Fukui A, Uetsuki R, Ogawa I, Miyauchi M, Takechi M: J. Hiroshima Univ. Dent. Soc. 2019 51(2):116-120.
9. A case of Lipoma of oral floor filling the sublingual space: Higashikawa K, Sasaki K, Nakagawa T, Shimasue H, Ono S, Mizuta K, Ishioka Y, Seino S, Nrusse T, Uetsuki R, Sakamoto S, Orita M, Miyauchi, M, Ogawa I, Takechi M: J. Hiroshima Univ. Dent. Soc. 2019 51(2):121-126.

B) Reviews

1. Periodontal pathogen: P. gingivalis infection and nonalcoholic steatohepatitis: Knowledge of periodontitis that should be known as a diabetes specialist (Kurihara H. Edt): Miyauchi M, Takata T: DIABETES: Ishiyaku Publishers Inc. (Tokyo), 11- 4 , p.86-93, 2019.

C) Publications

1. Benign mixed epithelial and mesenchymal odontogenic tumors: Salivary gland/ oral/odontogenic tumor (Aozasa K, Nagao T, Takata T. Eds.): Miyauchi M: Nakayama Shoten Inc. (Tokyo), p. 289-96, 2019.
2. Chronic odontogenic Infections and Preterm birth: Placentology based on basic and clinical aspects: (Japan Placenta Association Eds.): Miyauchi M, Urabe S, Kudou Y: Medical View Co., LTD. (Tokyo), p.204-10, 2019.
3. Abnormal pulpal horn, enamel drop etc.: Dictionary of Dental hygiene (the Japan association for Dental Hygienist Education Eds.): Miyauchi M: Suenaga Shoten K.K. (Kyoto), p.25,45 etc., 2019.
4. 3rd Edition of Pathological changes of periodontal diseases: The Periodontology (Umeda M, Ogata Y. Eds.): Miyauchi M, Takata T: Suenaga Shoten K.K. (Kyoto), p.12-14, 2019.
5. Odontogenic Pathology: Contemporary Oral Medicine Contemporary Oral Medicine (Camille SF,

Eds.): Takata T, Miyauchi M, Ogawa I, Mighell A: Springer (Switzerland AG), 1-80, 2019.

E) Presentation at Scientific Meeting

1) Special lectures in academic meetings

1. Development of peptide drug against bone destruction based on lactoferrin research: Miyauchi M, Yamada S, Tanimoto K, Tate S, Takata T: ifia JAPAN 2019 (24th international food ingredients and activities exhibition and conference)/HFE JAPAN 2019(17th Health food exhibition and conference) seminar (Tokyo), 2019.
2. Chronic odontogenic infection and preterm birth: Miyauchi M: Alumni association of Dental faculty of Hiroshima University (Hiroshima Prefecture branch) seminar (Hiroshima), 2019.

2) Presentation at International Scientific Meeting

3) Presentation at Domestic Scientific Meeting

1. A case of thrombus suspected of tumor of left submandibular gland : Shimabukuro N, Nakamoto T, Nagasaki S, Wongratwanich P, Verdonschot RG, Ohtsuka M, Suei Y, Furusho H, Ogawa I, Uetsuki R, Ono S, Kakimoto N: 38th Meeting of branch of Kansai • Kyushu of Japanese Society for Oral and Maxillofacial Radiology (Kagoshima), 2019.
2. *Porphyromonas gingivalis*-odontogenic infection promotes development and progression of NASH - related hepatocellular carcinoma via integrin signalling: Sakamoto S, Shrestha Madhu, Furusho H, Miyauchi M, Takata T: 108th Annual Meeting of the Japanese Society of Pathology (Tokyo), 2019.
3. Serum antibody titer against FimA Type IV of *Porphyromonas gingivalis* is a possible marker for preterm birth cause by periodontitis.: Takaki H, Furusho H, Miyauchi M, Ohara K, Fujita T, Urabe S, Shintani T, Kurihara H, Kudou Y, Takata T: 62nd Spring Meeting of the Japanese Society of Periodontology (Yokohama), 2019.

4. Exploratory study on plant extracts promoting anti-inflammatory effect of glycyrrhizin: Shiba N, Miyauchi M, Chanbora C, Furusho H, Iwasaki S, Shimizu R, Ota K, Takata T: 62nd Spring Meeting of the Japanese Society of Periodontology (Yokohama), 2019.
5. *Porphyromonas gingivalis* (P.g.)-fimA (type2 and type4) serum antibody titer is a possible marker for preterm birth associated with periodontitis: Maegawara S: 25th Student Clinician Research Program (SCRIP) (Tokyo), 2019.
6. Odontogenic infection of *Porphyromonas gingivalis* exacerbates pathological progression of NASH: Miyauchi M: 1st Seminar of oral infectious diseases (Hiroshima), 2019.
7. Central giant cell lesions of the mandibular condyle: 2 case reports: Wongratwanich P, Suei K, Konishi M, Nagasaki S, Otsuka M, Verdonschot RG, Ono S, Okuda T, Koizumi K, Hirota S, Sakamoto S, Ogawa I, Miyauchi M, Nakamoto T, Kakimoto N: 39th Meeting of branch of Kansai · Kyushu of Japanese Society for Oral and Maxillofacial Radiology (Okayama), 2019
8. A case of parotid tumor (Intraductal salivary duct carcinoma ex pleomorphic adenoma) : Ogawa I, Ohbayashi M, Miyauchi M, Hijihara M: 21st of Annual meeting of Society of Salivary Gland Tumor Pathology (Tokyo), 2019.

4) Case report

1. Non-sebaceous lymphadenoma: Sakamoto S, Obayashi M, Ogawa I, Miyauchi M, Fujihara M: 129th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Kouchi), 2019.
2. Mesenchymal chondrosarcoma: Sakamoto S, Furusho H, Ono S, Nakamoto T, Mutsumi M, Hirose T, Ogawa I: 30th Annual Meeting of Japanese Society of Oral Pathology (Tokyo), 2019.

3. Intraductal carcinoma ex pleomorphic adenoma: Ogawa I, Obayashi M, Miyauchi M, Fujihara M: 72th Meeting of Hiroshima Pathological Conference (Hiroshima), 2019.
4. Intraductal salivary duct carcinoma ex pleomorphic adenoma: Ogawa I, Obayashi M, Miyauchi M, Fujihara M: 21th Annual Meeting of the Japan Salivary Gland Society (Tokyo), 2019.
5. Parotid gland tumor (Intraductal carcinoma ex pleomorphic adenoma) : Ogawa I, Ohbayashi M, Miyauchi M, Fujihara M: 72nd Meeting of Hiroshima Pathological Conference (Hiroshima), 2019.

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

1. Grants-in-Aid for Scientific Research (Scientific Research(C)): Hisako Furusho (Principal Investigator, New), Role of TLR2 in preterm birth caused by *P.gingivalis* dental infection.
2. Grants-in-Aid for Scientific Research (Scientific Research(B)): Mutsumi Miyauchi (Co-Investigator, Continuance), Development of an algorithm for diagnosis and inspection of medical conditions by breath gas sensing.
3. Grants-in-Aid for Scientific Research (Scientific Research(C)): Mutsumi Miyauchi (Co-Investigator, New), Establishment of preventive method of non-alcoholic steatohepatitis-related hepatocellular carcinoma focusing on periodontal disease and oral flora.
4. Grants-in-Aid for Scientific Research (Scientific Research(C)): Mutsumi Miyauchi, Hisako Furusho (Co-Investigator, New), Study on preterm birth prevention and anti-inflammatory effects of luteal hormones using odontogenic infection induced preterm birth mouse model.
5. Grants-in-Aid for Scientific Research (Scientific Research(C)): Mutsumi Miyauchi (Co-Investigator, Continuance), Development and deployment of an age estimation method for Asian people using DNA methylation as an indicator.

6. Donated fund from Sanstar Co. Ltd. (Continuance): Takashi Takata (Study on periodontitis)
7. Donated fund from Earth Co. (Continuance): Takashi Takata
8. Donated fund from Arkray, Inc. (Continuance): Mutsumi Miyauchi
9. Donated fund for Hiroshima Prefecture tumor registration business (Continuance): Mutsumi Miyauchi
(Study on oral diseases)
10. Donated fund from Mitsubishi-Mihara Hospital (Continuance): Mutsumi Miyauchi (Study on
diagnosis for oral disease)

(4) Academic Awards

1. Hikaru Takagi Hiroshima University President Award
2. Shiiko Maegawara 25th Student Clinician Research Program (SCRP) 1st place in the basic division
/ overall winner

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Department of Bacteriology

(1) Staff and Students

Professor: Name: Hitoshi Komatsuzawa (from 1-May, 2019)

Associate Professor: Miki Matsuo (from 1-Mar, 2020)

Researcher: Chika Arai

(2) Main Research Activities

- 1 : Analysis of oral microbiome formation
- 2 : Analysis of virulence and antibiotic resistance of oral bacteria
- 3 : Isolation and characterization of drug resistant bacteria
- 4 : Analysis of virulence and drug resistance in *Staphylococcus aureus*
- 5 : Identification of novel antibacterial agents

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Antibacterial activity of phellodendron bark against *Streptococcus mutans*. Tsujii T, Kawada-Matsuo M, Migita H, Ohta K, Oogai Y, Yamasaki Y, Komatsuzawa H. *Microbiol Immunol*. 2020 Mar 20. In press
- 2 : Antibacterial activity of disodium succinoyl glycyrrhetinate, a derivative of glycyrrhetic acid against *Streptococcus mutans*. Yamashita T, Kawada-Matsuo M, Katsumata T, Watanabe A, Oogai Y, Nishitani Y, Miyawaki S, Komatsuzawa H. *Microbiol Immunol*. 2019 Jul;63(7):251-260.
- 3 : Heparin-LL37 complexes are less cytotoxic for human dental pulp cells and have undiminished antimicrobial and LPS-neutralizing abilities. Yoshida K, Suzuki S, Kawada-Matsuo M, Nakanishi J, Hirata-Tsuchiya S, Komatsuzawa H, Yamada S, Shiba H. *Int Endod J*. 2019 Sep;52(9):1327-1343.
- 4 : Single mutations in BraRS confer high resistance against nisin A in *Staphylococcus aureus*. Arai K, Kawada-Matsuo M, Oogai Y, Noguchi K, Komatsuzawa H. *Microbiologyopen*. 2019 Nov;8(11):e791.

C) Publications

- 1 : Oral Microbiology and Immunology: Hitoshi Komatsuzawa : Ishiyaku Publishers,Inc. (Tokyo) 198-199, 210-230, 278-282, 2020.
- 2 : Oral Microbiology and Immunology: Miki Matsuo : Ishiyaku Publishers,Inc. (Tokyo) 278-282, 2020.
- 3 : Text for Dental Hygienist Microbiology: Hitoshi Komatsuzawa : Ishiyaku Publishers,Inc. (Tokyo) 110-121, 144-153, 157-177, 2015.

E) Presentations at Scientific Meetings

- 1 : Survival strategy of Staphylococcus aureus -Analysis of the adaptation to antibacterial agents- : Hitoshi Komatsuzawa : 102th Branch meeting (Kanto area) of Japanese Society for Bacteriology (Matsumoto), 2019.
- 2 : How Staphylococcus aureus adapt to the host? : Hitoshi Komatsuzawa : Hiroshima conference of Infectious diseases (Hiroshima), 2019.
- 3 : Pathogenic bacteria which should be careful for infection prevention in dental therapy : 37th General Meeting of Japanese Society for Infection Prevention and Control. (Yokohama), 2020.
- 4 : Potential for use of antimicrobial peptides and their problem. 93th General Meeting of Japanese Society for Bacteriology (Nagoya), 2020.

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

1: Miki Matsuo, Grants-in-Aid for Scientific Research (B) from the Ministry of Education, Culture, Sports, Sciences, and Technology of Japan., Analysis of natural prebiotic factors for the inhibition of Staphylococcus aureus infection to oral cavity., Grant No: 16H05512, 1200 千円

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Department of Cellular and Molecular Pharmacology

(1) Staff and Students

Professor (Special Appointment) : Takashi Kanematsu

Assistant Professor: Satoshi Asano

Graduate Student: Hiroki So

Research Student: Yasuka Ikura (6th), Mitsuki Nishimoto (5th)

(2) Main Research Activities

- 1 : Studies on the molecular mechanisms of GABA_A receptor signaling in the central nervous system
- 2 : Studies on the regulatory mechanisms of food intake and energy metabolism
- 3 : Studied on the mechanisms of cell migration and adhesion regulated by a new molecule

(3) Research Achievements

A) Original Papers (including Case Reports)

1 : Phospholipase C-related catalytically inactive protein regulates cytokinesis by protecting phosphatidylinositol 4,5-bisphosphate from metabolism in the cleavage furrow. Asano S, Ikura Y, Nishimoto M, Yamawaki Y, Hamao K, Kamijo K, Hirata M, Kanematsu T. *Sci Rep.* 2019 Sep 4;9(1):12729.

2 : Phospholipase C-related catalytically inactive protein regulates lipopolysaccharide-induced hypothalamic inflammation-mediated anorexia in mice. Yamawaki Y, Shirawachi S, Mizokami A, Nozaki K, Ito H, Asano S, Oue K, Aizawa H, Yamawaki S, Hirata M, Kanematsu T. *Neurochem Int.* 2019 131:104563.

3 : Phospholipase C-related inactive protein type-1 deficiency affects anesthetic electroencephalogram activity induced by propofol and etomidate in mice. Furukawa T, Nikaido Y, Shimoyama S, Ogata Y, Kushikata T, Hirota K, Kanematsu T, Hirata M, Ueno S. *J Anesth.* 2019 33(4):531-542.

4 : *Ccr7* null mice are protected against diet-induced obesity via *Ucp1* upregulation and enhanced energy expenditure. Sano T, Sanada T, Sotomaru Y, Shinjo T, Iwashita M, Yamashita A, Fukuda T, Sanui T, Asano T, Kanematsu T, Nishimura F. *Nutr Metab (Lond).* 2019 4;16:43.

5 : Prolyl Isomerase Pin1 Suppresses Thermogenic Programs in Adipocytes by Promoting Degradation of Transcriptional Co-activator PRDM16. Nakatsu Y, Matsunaga Y, Yamamotoya T, Ueda K, Inoue MK, Mizuno Y, Nakanishi M, Sano T, Yamawaki Y, Kushiya A, Sakoda H, Fujishiro M, Ryo A, Ono H, Minamino T, Takahashi SI, Ohno H, Yoneda M, Takahashi K, Ishihara H, Katagiri H, Nishimura F,

Kanematsu T, Yamada T, Asano T. Cell Rep. 2019 26(12):3221-3230.

B) Review

1 : Phospholipase C-related catalytically inactive protein: A novel signaling molecule for modulating fat metabolism and energy expenditure. Kanematsu T, Oue K, Okumura T, Harada K, Yamawaki Y, Asano S, Mizokami A, Irifune M, Hirata M. J Oral Biosci. 2019 61(2):65-72.

C) Publications

Basic Principles of Dental Pharmacology (Simplified for Dental Students) : Takashi Kanematsu, : Edit-Kiyoshi Ohura, Akifumi Togari, Takashi Kanematsu, Akira Nifuji, Suenaga (Kyoto Japan), pp.16–22, 2019.

E) Presentations at Scientific Meetings

1 : Phospholipase C-related catalytically inactive protein modulates cytokinesis progression : Kanematsu Takashi, Asano Satoshi : The 92th Annual Meeting of The Japanese Pharmacological Society, (Osaka), 2019.

2 : Regulation of cell adhesion by phospholipase C-related catalytically inactive protein (PRIP); PRIP directly binds to talin1 and promotes talin1 dimerization : Satoshi Asano, Takashi Kanematsu : 103th Hiroshima Prefecture Dental Association Hiroshima University Dental Society (Nippon Academy of Dental Technology Chugoku and Shikoku branch) (Hiroshima), 2019

3 : Mechanism linking periodontitis to Alzheimer's disease: Critical roles of cathepsin B in neuroinflammation : Junjun Ni, Zhou Wu, Takashi Kanematsu : 1st JRSDOF (Tokyo), 2019

4 : Discovery and functional analysis of novel protein involved in cell adhesion : Satoshi Asano, Takashi Kanematsu : 14th The society of cell movement (Hiroshima), 2019

5 : PRIP regulates talin1 dimerization by binding to its dimerization domain, and controls fibronectin/integrin-mediated cell adhesion : Satoshi Asano, Takashi Kanematsu : 61th Annual Meetings of Japanese Association for Oral Biology (Tokyo), 2019

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

1 : Grant-in-Aid for Scientific Research (C): Asano S.: Development research of anti-malignant tumor agent applying a new metastasis-regulating factor PRIP. Project number 17K11644. Amount 4,550,000 (2017–2019).

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Department of Biomaterials

(1) Staff and Students

Professor: Koichi Kato

Assistant Professor: Isao Hirata

Administrative staff: Tomomi Date, Chihiro Matsuda

Graduate Student: Ajay Shakya, Azusa Onishi, Tomoko Ogasawara, Fumiko Nishio, Yuuka Yamauchi,
Satoshi Miyauchi, Ayana Nakano

Researcher: Dea Ajeng Pravita, Banun Kusumawardani, Dwi Merry Christmarini

(2) Main Research Activities

- 1: Biomaterials and biodevices for regenerative medicine
- 2: Study on the interactions between biological systems and biomaterial surfaces

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Effect of microslit retention on the bond strength of zirconia to dental materials: Shogo Iwaguro, Saiji Shimoe, Isao Hirata, Takeshi Murayama, Takahiro Satoda: *Dental Materials Journal* (2019), 38(6), 1043-1052.
- 2: Effect of laser groove treatment on shear bond strength of resin-based luting agent to polyetheretherketone (PEEK): Hiroki Tsuka, Koji Morita, Kan Kato, Hitomi Kimura, Hitoshi Abekura, Isao Hirata, Koichi Kato, Kazuhiro Tsuga: *Journal of Prosthodontic Research* (2019), 63(1), 52-57.
- 3: Differentiation of mouse-induced pluripotent stem cells into dental epithelial-like cells in the absence of added serum: Aimi Naim Abdullah, Satoshi Miyauchi, Azusa Onishi, Kotaro Tanimoto, Koichi Kato: *In Vitro Cellular & Developmental Biology - Animal* (2019), 55(2), 130-137.
- 4: Current collaborative education: Hidenori Nishimura, Ryuta Kataoka, Haruhiko Kashiwazaki, Hiromitu Morita, Koichi Kato: *The Journal of Japanese Dental Education Association* (2019), 35(3), 79-84.

B) Review

C) Publications

D) Other Publications

E) Presentations at Scientific Meetings

- 1: Oriented immobilization of basic fibroblast growth factor: A novel bioengineered surface design for the expansion of mesenchymal stem cells: Ajay Shakya*, Eiji Imado, Nguyen Kim Phuong, Tamamo Matsuyama, Kotaro Horimoto, Isao Hirata, Koichi Kato: Society for Biomaterials 2019 (Seattle, WA), 2019
- 2: Nano-scale surface design for the selective expansion of neural progenitors derived from iPS cells: Yuka Yamauchi, Kotaro Tanimoto, Koichi Kato*: 7th China-Japan Symposium on Nanomedicine (Xi'an, China), 2019
- 3: Development of micropore forming filament for 3D printer: Isao Hirata*, Koichi Kato: The 103th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2019.
- 4: Polyamphoteric hydrogels exhibit tenacious adhesion at mucosal tissue interface: Fumiko Nishio*, Isao Hirata, Kazuhiro Tsuga, Koichi Kato: European Materials Research Society Spring Meeting 2019 (Nice, France), 2019
- 5: Smart biointerface for the efficient expansion of neural progenitor cells derived from induced pluripotent stem cells: Yuka Yamauchi*, Kotaro Tanimoto, Koichi Kato: European Materials Research Society Spring Meeting 2019 (Nice, France), 2019
- 6: Bioengineering challenges toward regenerative medicine: Koichi Kato: 3rd ICOLIB 2019 (Jember, Indonesia), 2019
- 7: Designing biomaterials assisted by biological databases: Koichi Kato: Chu-Shikoku Block Symposium, Japanese Society for Biomaterials (Okayama, Japan), 2019
- 8: An approach to selectively expand stem cells: Oriented immobilization of growth factors onto solid surfaces: Ajay Shakya, Isao Hirata, Koichi Kato*: APAN Deantal Telemedicine (Daejeon, Korea), 2019
- 9: Bioengineering challenges toward regenerative dentistry: Koichi Kato: Symposium of Bioengineering and Biomaterials Development (Taipei, Taiwan), 2019
- 10: International collaboration at Hiroshima University School of Dentistry: Koichi Kato, 38th Annual Meeting of the Japanese Dental Education Association (Fukuoka, Japan), 2019

F) Special lectures in academic meetings

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

- 1: Fund for the Promotion of Joint International Research, Fostering Joint International Research (B), Grants-in-Aid for Scientific Research, JSPS (PI: Koichi Kato): Koichi Kato, Strategy for spatially-

- controlled tissue regeneration. 19KK0278. 2,300,000 JPY
- 2: Grant-in-Aid for Challenging Exploratory Research, JSPS (PI: Kotaro Tanimoto): Koichi Kato, Protease-driven biomineralization and its application to enamel regeneration. 19K22717. 150,000 JPY
 - 3: Fund for the Promotion of Joint International Research, Fostering Joint International Research (B), Grants-in-Aid for Scientific Research, JSPS (PI: Koichi Kato): Isao Hirata, Strategy for spatially-controlled tissue regeneration. 19KK0278. 200,000 JPY
 - 4: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, Representative Kanawa M.: Hirata I.: Development of differentiation predictive marker to evaluate stemness of bone marrow derived mesenchymal stem cells.: No.17K11541. 200,000 JPY
 - 5: Japan Society for the Promotion of Science, Bilateral Joint Research Projects/Seminars FY2019. Representative Koichi Kato: 7th Japan-China Symposium on Nanomedicine, Xi'an China, 24-26 May 2019. 904,000JPY.

(5) Academic Awards, etc.

(6) Patents

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Department of Periodontal Medicine

Division of Preventive and Restorative Dentistry Department of Periodontics

(1) Staffs and Students

Professor: Hidemi Kurihara

Associate Professor: Tsuyoshi Fujita

Associate Professor, Lecturer: Noriyoshi Mizuno

Assistant Professor: Katsuhiko Takeda, Tomoyuki Iwata, Kazuhisa Ouhara, Mikihiro Kajiya,
Shinji Matsuda, Ai Okanobu, Shinya Sasaki

Resident: Mizuho Kittaka (studying abroad), Tetsuya Yoshimoto (studying abroad), Manabu Takewaki (-
March), Syuichi Munenaga (-April), Nao Komatsu, Yoko Sato (-March), Yuta Hamamoto

Graduate Student: Masahiko Suzukawa, Tasuku Takemura, Daisuke Furutama, Saki Hatano, Sota Motoike,
Susumu Horikoshi, Misako Tari, Takumi Memida, Tomoya Ogawa, Hisakatsu Sone, Zhai
Ruoqi, Shin Morimoto, Yuri Taniguchi, Tetsuya Tamura, Hiroki Yoshii

Clinical Trainee: Akihiro Konishi (-March), Mari Kiyota, Yoshiaki Shimasaki, Kei Takeshita, Ryoko Kishi,
Keita Takahashi, Hiromitsu Sasaki (-March)

(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 neurotrophines
- 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 relationship between periodontal disease and dementia

(3) Research Achievements

A) Original Papers (including Case Reports)

1. BDNF/HMW-HA complex as an adjunct to nonsurgical periodontal treatment of ligature-induced periodontitis in dogs.
Sasaki S, Takeda K, Takewaki M, Ouhara K, Kajiya M, Mizuno N, Fujita T, Kurihara H.
J Periodontol. 2019 Jan;90(1):98-109. Epub 2018 Aug 30.
2. Glycyrrhizic acid suppresses inflammation and reduces the increased glucose levels induced by the combination of *Porphyromonas gulae* and ligature placement in diabetic model mice.
Akutagawa K, Fujita T, Ouhara K, Takemura T, Tari M, Kajiya M, Matsuda S, Kuramitsu S, Mizuno N, Shiba H, Kurihara H.
Int Immunopharmacol. 2019 Mar;68:30-38. Epub 2018 Dec 30.
3. Current status of dental metal allergy in Japan.
Kitagawa M, Murakami S, Akashi Y, Oka H, Shintani T, Ogawa I, Inoue T, Kurihara H.
J Prosthodont Res. 2019 Jul;63(3):309-312. Epub 2019 Feb 7.
4. Relationship between periodontal inflammation and calcium channel blockers induced gingival overgrowth-a cross-sectional study in a Japanese population.
Matsuda S, Okanobu A, Hatano S, Kajiya M, Sasaki S, Hamamoto Y, Iwata T, Ouhara K, Takeda K, Mizuno N, Fujita T, Kurihara H.
Clin Oral Investig. 2019 Nov;23(11):4099-4105. Epub 2019 Feb 15.
5. Clumps of Mesenchymal Stem Cell/Extracellular Matrix Complexes Generated with Xeno-Free Conditions Facilitate Bone Regeneration via Direct and Indirect Osteogenesis.
Motoike S, Kajiya M, Komatsu N, Horikoshi S, Ogawa T, Sone H, Matsuda S, Ouhara K, Iwata T, Mizuno N, Fujita T, Ikeya M, Kurihara H.
Int J Mol Sci. 2019 Aug 15;20(16). pii: E3970.
6. Multiple External Root Resorption of Teeth as a New Manifestation of Systemic Sclerosis-A Cross-Sectional Study in Japan.
Memida T, Matsuda S, Kajiya M, Mizuno N, Ouhara K, Fujita T, Hirata S, Yoshida Y, Sugimoto T, Nishi H, Kawaguchi H, Sugiyama E, Kurihara H.
J Clin Med. 2019 Oct 4;8(10). pii: E1628.
7. Alveolar Bone Protection by Targeting the SH3BP2-SYK Axis in Osteoclasts.
Kittaka M, Yoshimoto T, Schlosser C, Rottapel R, Kajiya M, Kurihara H, Reichenberger EJ, Ueki Y.
J Bone Miner Res. 2019 Oct 15.
8. Draft Genome Sequence of *Porphyromonas gingivalis* Strain 381 Okayama (381OKJP) Stock Culture.
May AC, Maeda H, Kurihara H, Miyamoto M, Hongyo H, Tanimoto I, Nagai A, Nishimura F, Murayama

Y, Kato K, Koikeguchi S, Cugini C.

Microbiol Resour Announc. 2019 Feb 28;8(9). pii: e01641-18. eCollection 2019 Feb.

9. Oral environment and taste function of Japanese HIV-infected patients treated with antiretroviral therapy

Shintani T, Fujii T, Yamasaki N, Kitagawa M, Iwata T, Saito S, Okada M, Ogawa I, Unei H, Hamamoto K, Nakaoka M, Kurihara H, Shiba H

Aids Care, 19:1-6, 2019.

B) Review

C) Publications

D) Other Publications

1. Periodontitis you should know about as a diabetes specialist

Hidemi Kurihara/ Plan and edition

Monthly Diabetes vol.18; 11(4), 2019

C) Presentation at Scientific Meeting

1. The dysbiosis of gut microbiota induced by oral inoculation of Porphyromonas gingivalis, periodontopathogenic bacteria, exacerbates arthritis in SKG mouse

Kazuhisa Ouhara, Syuichi Munenaga, Yuta Hamamoto, Shintaro Hirata, Hidemi Kurihara, Eiji Sugiyama

The 14th Young Researchers in Advanced Rheumatology (YRAR) (2019 January, Osaka)

2. Strategies to improve the hand hygiene compliance in a dental outpatient.

Chika Kozono, Yukiko Nagatani, Miyuki Nakaoka, Mikihito Kajiya, Tomoyuki Iwata, Noriyoshi Mizuno, Tomoaki Shinntani, Kouji Oota, Hiroyuki Kawaguchi, Hideki Shiba, Hidemi Kurihara, Kazuhiro Tuga

The 34th Annual Meeting of Japanese Society for Infection Prevention and Control (2019 February, Kobe)

3. Identification of pathogenic bacteria of apical periodontitis and antimicrobial sensitivity

Hidemi Kurihara, Chika Kozono, Tomoyuki Iwata, Miyuki Nakaoka, Noriyoshi Mizuno, Hideki Shiba

The 34th Annual Meeting of Japanese Society for Infection Prevention and Control (2019 February, Kobe)

4. Identification and antifungal sensitivity of Genus Candida isolated from oral candidiasis in

perioperative patients

Koji Ohta, Hiromi Nishi, Hiroki Ohge, Hidemi Kurihara

The 34th Annual Meeting of Japanese Society for Infection Prevention and Control (2019 February, Kobe)

5. Report for the usefulness in Audit System via the Internet of the Hiroshima Safety Dental Service Support Network
Tomoyuki Iwata, Akihiro Sawa, Noriyoshi Mizuno, Miyuki Nakaoka, Yukiko Nagatani, Chika Kozono, Takayoshi Nagahara, Koji Ohta, Tomoaki Shintani, Hideki Shiba, Kazuhiro Tsuga, Hiroyuki Kawaguchi, Hidemi Kurihara
The 34th Annual Meeting of Japanese Society for Infection Prevention and Control (2019 February, Kobe)
6. Investigation of bone regeneration mechanism induced by clumps of MSCs/ECM complexes.
Souta Motoike, Mikihiro Kajiya, Nao Komatsu, Susumu Horikoshi, Tomoya Ogawa, Hisakatsu Sone, Tomoyuki Iwata, Katsuhiko Takeda, Kazuhisa Ouhara, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara
The 18th Congress of the Japanese Society for Regenerative Medicine (2019 March, Kobe)
7. The case report of multiple root resorption in systemic sclerosis patients
Takumi Memida, Shinji Matsuda Kazuhisa Ouhara Hidemi Kurihara
The 63rd Annual General Assrmbly and Scientific Meeting of Japan College of Rheumatology (2019 April, Kyoto)
8. The effect of ACPA derived from RA patient in osteoclastogenesis
Kazuhisa Ouhara, Syuichi Munenaga, Shintaro Hirata, Eiji Sugiyama, Hidemi Kurihara
The 63rd Annual General Assembly and Scientific Meeting of Japan College of Rheumatology (2019 April, Kyoto)
9. Effect of chondro-inductive Clumps of MSCs/ECM complexes on bone regeneration
Susumu Horikoshi, Mikihiro Kajiya, Manabu Takewaki, Nao Komatsu, Souta Motoike, Tomoya Ogawa, Hisakatsu Sone, Tomoyuki Iwata, Katsuhiko Takeda, Kazuhisa Ouhara, Tsuyoshi Fujita, Noriyoshi Mizuno, Hidemi Kurihara
The 62th spring meeting of the Japanese society of Periodontology (2019 May, Yokohama)
10. The Elucidation of Developmental Process on Ligature-Induced Experimental Periodontitis in Mice
Tasuku Takemura , Tsuyoshi Fujita, Kazuhisa Ouhara, Shinji Matsuda, Mikihiro Kajiya, Misako Tari, Tomoyuki Iwata, Norihito Mizuno, Hidemi Kurihara
The 62th spring meeting of the Japanese society of Periodontology (2019 May, Yokohama)
11. Investigation of bone regeneration mechanism induced by clumps of MSCs/ECM complexes.
Souta Motoike, Mikihiro Kajiya, Nao Komatsu, Susumu Horikoshi, Tomoya Ogawa, Hisakatsu Sone, Tomoyuki Iwata, Katsuhiko Takeda, Kazuhisa Ouhara, Noriyoshi Mizuno, Tsuyoshi Fujita,

Hidemi Kurihara

The 62th spring meeting of the Japanese society of Periodontology (2019 May, Yokohama)

12. Inflammatory response in systemic and hippocampal region induced by experimental periodontitis in mice
Daisuke Furutama, Shinji Matsuda, Tsuyoshi Fujita, Mikihiro Kajiya, Ai Okanobu, Saki Hatano, Takumi Memida, Noriyoshi Mizuno, Hidemi Kurihara
The 52th The Hiroshima University Dental Society (2019 June, Hiroshima)
13. The role of NR4A1 in drug-induced gingival overgrowth
Saki Hatano, Shinji Matsuda, Ai Okanobu, Mikihiro Kajiya, Daisuke Furutama, Takumi Memida, Tsuyoshi Fujita, Hidemi Kurihara
The 52th The Hiroshima University Dental Society (2019 June, Hiroshima)
14. The Elucidation of Developmental Process on Ligature-Induced Experimental Periodontitis in Mice
Tasuku Takemura, Tsuyoshi Fujita, Kazuhisa Ouhara, Shinji Matsuda, Mikihiro Kajiya, Tomoyuki Iwata, Misako Tari, Norihito Mizuno, Hidemi Kurihara
International Association for Dental Research (2019 June, Vancouver, Canada)
15. Development of a diagnostic kit for bad bacteria of dental caries
Nagamine K., Kitagawa M., Kurihara H.
Innovation JAPAN 2019 (2019 August, Tokyo)
16. Dental intervention at Hiroshima University Hospital NST
Yano K., Kadota A., Hirayama J., Suzuki K., Nishi H., Nakaoka M., Kawaguchi H., Kurihara H., Ohge H., Tazuma S.
The 12th Japanese Society for Parenteral and Enteral Nutrition (2019 August, Ube)
17. Development of periodontal tissue regenerative therapy by clumps of MSCs/ECM complexes
Mikihiro Kajiya
AMED Regenerative Medicine research exchange meeting (2019 September, Tokyo)
18. Investigation of the oral environment and function based on the oral screening examination of first-visit dental patients
Shintani T., Kitagawa M., Ogawa I., Kawaguchi H., Tsuga K., Shiba H., Kurihara H.
The 12th Annual Meeting of Japanese Society for Evidence and the Dental Professional (2019 September, Tokyo)
19. Exploratory performance comparison trial of titanium allergy diagnostic agent -Specificity and safety-
Kitagawa M., Oka H., Iwamoto K., Tanaka M., Ogawa I., Hide M., Kurihara H.
The 12th Annual Meeting of Japanese Society for Evidence and the Dental Professional (2019 September, Tokyo)
20. Development of genuine bone-like tissue from clumps of MSCs/ECM complexes for craniofacial bone

regenerative therapy

Mikihito Kajiya

BioJapan 2019 (2019 October, Yokohama)

21. The role of NR4A1 in Nifedipine or Phenytoin induced gingival overgrowth
Saki Hatano, Shinji Matsuda, Ai Okanobu, Mikihito Kajiya, Daisuke Furutama, Takumi Memida, Tsuyoshi Fujita, Hidemi Kurihara
The 62nd Annual Meeting of the Japanese Society of Periodontology (2019 October, Kitakyusyu)
22. A case report of aggressive periodontitis using several examinations for evaluation of treatment results
Shinji Matsuda, Yukiko Nagatani, Hidemi Kurihara
The 62nd Annual Meeting of the Japanese Society of Periodontology (2019 October, Kitakyusyu)
23. The role of IL-6 induced by Experimental Periodontitis on Inflammatory Response of Hippocampal Region in Mice
Daisuke Furutama, Shinji Matsuda, Tsuyoshi Fujita, Mikihito Kajiya, Ai Okanobu, Saki Hatano, Takumi Memida, Noriyoshi Mizuno, Hidemi Kurihara
The 62nd Annual Meeting of the Japanese Society of Periodontology (2019 October, Kitakyusyu)
24. A case report that Severe chronic periodontitis patients who repeated fever after SRP.
Yukiko Nagatani, Shinji Matsuda, Yuki Emura, Miyuki Nakaoka, Hidemi Kurihara
The 62nd Annual Meeting of the Japanese Society of Periodontology (2019 October, Kitakyusyu)
25. Dental hygienists may enforce the interprofessional collaboration on diabetic therapy.
Yuki Emura, Chika Kozono, Mikihito Kaziya, Kana Dainobu, Eri Takeda, Saori Ikeda, Tomoaki Shintani, Miyuki Nakaoka, Tsuyoshi Fujita, Hidemi Kurihara
The 62nd Annual Meeting of the Japanese Society of Periodontology (2019 October, Kitakyusyu)
26. Analysis of actual condition of cnm-positive Streptococcus mutans carriers in Japanese
Nagamine K, Kitagawa M, Ouhara K, Shintani T, Ogawa I, Kurihara H.
The 22nd Annual Meeting of Japanese Society of Metabolism and Clinical Nutrition (2019 November, Yokohama)
27. The correlation Porphyromonas gingivalis infection and rheumatoid arthritis
Syuichi Munenaga, Kazuhisa Ouhara, Yuta Hamamoto, Mikihito Kajiya, Noriyoshi Mizuno, Tsuyoshi Fujita, Eiji Sugiyama, Hidemi Kurihara, Hiroyuki Kawaguchi
The 58th Meeting of Hiroshima Prefectural Dental Association/ The 103 rd Meeting of Hiroshima University Dental Society (2019 November, Hiroshima)
28. The dysbiosis of gut microbiota induced by oral inoculation of Porphyromonas gingivalis, periodontopathogenic bacteria, exacerbates arthritis in SKG mouse
Yuta Hamamoto, Kazuhisa Ouhara, Syuichi Munenaga, Mikihito Kajiya, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara
The 58th Meeting of Hiroshima Prefectural Dental Association/ The 103 rd Meeting of Hiroshima

- University Dental Society (2019 November, Hiroshima)
29. The case report and clinical study of multiple root resorption in systemic sclerosis patients
Takumi Memida, Shinji Matsuda, Noriyoshi Mizuno, Kazuhisa Ouhara, Mikihiro Kajiya,
Tsuyoshi Fujita, Hidemi Kurihara
The 58th Meeting of Hiroshima Prefectural Dental Association/ The 103rd Meeting of Hiroshima
University Dental Society (2019 November, Hiroshima)
 30. The 3D Culture of Clumps of Mesenchymal Stem Cell/Extracellular Matrix Complexes have effect on
the Cell Fate Nao Komatsu
Mikihiro Kajiya, Souta Motoike, Susumu Horikoshi, Tomoya Ogawa, Hisakatsu Sone, Tomoyuki Iwata,
Kazuhisa Ouhara, Shinji Matsuda, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara
The 58th Meeting of Hiroshima Prefectural Dental Association/ The 103rd Meeting of Hiroshima
University Dental Society (2019 November, Hiroshima)
 31. Analysis of actual condition of *cnm*-positive *Streptococcus mutans* carriers
Kitagawa M, Ouhara K, Awata T, Shintani T, Ogawa I, Kurihara H.
The 58th Meeting of Hiroshima Prefectural Dental Association/ The 103rd Meeting of Hiroshima
University Dental Society (2019 November, Hiroshima)
 32. Correspondence for accident HIV exposure in Hiroshima University Hospital outpatient department
Tomoaki Shintani, Tomoyuki Iwata, Miho Okada, Naoya Yamasaki, Teruhisa Fujii, Hideki Shiba
The 33rd annual meeting of the Japanese society for AIDS research (2019 November, Kumamoto)
 33. Rapid genetic testing of *cnm*⁺ *Streptococcus mutans* by LAMP method
Nagamine K, Kitagawa M, Ouhara K, Kurihara H.
The 42nd Annual Meeting of the Molecular Biology Society of Japan (2019 December, Fukuoka)
 34. A case of anti-centromere antibody-positive dry mouth patient who showed a marked decrease in
salivary secretion 4 years after the first visit
Kitagawa M., Nojima T., Uchisako K., Obayashi F., Ogawa I., Okamoto T., Sugiyama E.,
Kurihara H.
The 64th Annual Meeting of Japan Salivary Gland Society (2019 December, Tokyo)

D) Special lectures in academic meetings

1. “Reconsideration of Dental care -Recollection of work as a university professor”
Hidemi Kurihara
Lecture in Kunimastu dental clinic (2019 February, Uwajima)
2. “Paradigm shift of periodontal therapy - Expectations for young dentists living as a high level medical
person!”
Hidemi Kurihara

- Lecture for 4th grade in Showa University School of dentistry (2019 April, Tokyo)
3. "Persistent research !"
Hidemi Kurihara
Lecture for dental staff in Showa University School of dentistry (2019 April, Tokyo)
 4. "Persistent research !"
Hidemi Kurihara
Lecture for the 39th regenerative medicine study group of Nagasaki (2019 May, Nagasaki)
 5. "3D cultures of MSCs open a new door of periodontal tissue regeneration."
Hidemi Kurihara
IAP/JSP Joint Symposium (2019 June, Osaka)
 6. Special Lecture
Hidemi Kurihara
Airlangga University (2019 June, Surabaya, Indonesia)
 7. "Regenerative therapy for small defect of periodontal tissue by brain-derived neurotrophic factor, BDNF"
Hidemi Kurihara
Pharma-labo EXPO 2019 (2019 July, Tokyo)
 8. Keynote Speech "The road to explore for Nobless Oblige as a dentist"
Hidemi Kurihara
Okayama University department of 2nd dental preservation fellowship General Meeting and Clinical Workshop (2019 July, Okayama)
 9. Educational lecture "Periodontal disease and Diabetes"
Tsuyoshi Fujita
The 2nd Chushikoku Diabetes Medical Treatment Guidance skill-up seminar i
(2018 September, Hiroshima)
 10. "Periodontal disease and P.g. infection"
Hidemi Kurihara
The 58th Meeting of Hiroshima Prefectural Dental Association/ The 103 rd Meeting of Hiroshima University Dental Society (2019 November, Hiroshima)
 11. Toward the elucidation of the mechanism of drug-induced gingival overgrowth
Ai Kunimoto
Periodontology/ Chugoku-Shikoku regional branch of the Japanese academy of clinical periodontology (2019 December, Okayama)
 12. "From Periodontal disease to P.g. infection"
Hidemi Kurihara
Periodontology/ Chugoku-Shikoku regional branch of the Japanese academy of clinical periodontology (2019 December, Okayama)

13. Special Lecture

Hidemi Kurihara

Kyusyu University school of dentistry (2019 December, Fukuoka)

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

1. Grants-in aid for scientific research: Hidemi Kurihara: #18H02977
2. Grants-in aid for scientific research: Noriyoshi Mizuno: #18H02978
3. Grants-in aid for scientific research: Kazuhisa Ouhara: #18K09599
4. Grants-in aid for scientific research: Mikihiro Kajiyama: #19K10129
5. Grants-in aid for scientific research: Shinji Matsuda: #19K10130
6. Grants-in aid for Early-Career Scientists: Ai Okanobu: #18K17070
7. The year of 2018 grant-in-Aid for Japan society for the promotion of science special research fellows :
Sota Motoike : #18J13726
8. Grants-in aid for Early-Career Scientists: Nao Komatsu: #19K19030
9. Grants-in aid for Research Activity Start-up: Shinya Sasaki: #19K24120
10. Grants-in aid for Research Activity Start-up: Yuta Hamamoto: #19K24073
11. General foundation Ryokufukai The year of 2019 education and research prize for encouragement
(Grant for young researcher grant): : Yuta Hamamoto
12. Takeda Science Foundation Medical Research Grant for 2019 : Mikihiro Kajiyama
13. AMED Translational & Clinical Research Core Centers : Mikihiro Kajiyama

(6) Award.

1. Kazuhisa Ouhara

Academic Award of the Japanese society of periodontology

Research on the effect of local immune response of periodontal tissue against periodontal pathogens
for systemic diseases

2. Nao Komatsu

Young Scientist Award of the Japanese society of periodontology

Type I collagen deposition via osteoinduction ameliorates YAP/TAZ activity in 3D floating culture
clumps of mesenchymal stem cell/extracellular matrix complexes

3. Sota Motoike

1) Young Scientist Award of the Japanese society of periodontology

Cryopreserved clumps of mesenchymal stem cell/extracellular matrix complexes retain

osteogenic capacity and induce bone regeneration

2) Hiroshima University Excellent Student

4. Saki Hatano

Encouraging prize of the 52nd meeting of the Hiroshima University Dental Society

The role of NR4A1 in drug-induced gingival overgrowth

(7) Patents

1. Kazuya Doi, Reiko Kobatake, Tsuyoshi Fujita, Takayasu Kubo, Hanako Umehara, Taku Inoue, Shigeki Chiba

Multi Porous metal thin film

(Patent Number : 2019-129101)

(Patent applicant : Hiroshima University)

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Department of Molecular Oral Medicine & Maxillofacial Surgery

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

(1) Staff and Students

Professor: Tetsuji Okamoto Department Chair: Tetsuji Okamoto (Concurrent appointment)

Associate Professor: Shigeaki Toratani

Clinical Associate Professor: Yasutaka Hayashido

Assistant Professor: Ryouji Tani, Yukio Yoshioka, Kouichi Koizumi, Taku Kanda, Kensaku Sumi,
Tomoaki Hamana, Sachiko Yamasaki, Taishi Sakaue

Clinical fellow: Naohiro Kimura(Apr~), Yuki Taguchi, Atuko Hmada ,Shigeru Sakurai,
Hirotaka Takatao (~May) Humitaka Obayashi, Kouji Tsushima(~May),
Taeko Fukutani(~May), Youji Nakase, Mirai Higaki, Suguru Hirota, Kensaku Matsui
Kaori Uchisako(Apr~), Seiya Hayashi(Apr~), Tadayoshi Nobumoto(Apr~),
Takefumi Mishima(Apr~)

Registered part-time doctor: Isao Takahashi, Koh Nabeshima, Yasutaka Ishida,
Hidemasa Miyata, Yoshinari Myoken, Yoshinori Fujita
Kohsei Okamoto, Yoku Ito, Akihiko Sakamoto

Graduate Student: Kaori Uchisako(~May), Seiya Hayashi(~May), Tadayoshi Nobumoto(~May),
Takefumi Mishima(~May), Shigeki Sato, Hideaki Takahasji
Iwao Katayama, Hidemasa Miyata, Yuuichi Arita, Tomohiro Sado,

(2) Main Research Activities

1. Gene/molecular diagnosis and therapy for oral cancer and salivary gland tumors. (Cancer stem cells, growth factors, growth factor receptors, invasion and metastasis, tumor angiogenesis, and molecular/gene target therapy). ^[1]_[SEP]
2. The molecular/genetic diagnosis and therapy for oral and cranio-maxillofacial deformities. ^[1]_[SEP]
3. Establishment and characterization of human induced pluripotent stem (iPS) cells derived ^[1]_[SEP] from human pulp cells in serum- and feeder-free cell culture. ^[1]_[SEP]
4. Generation of human induced pluripotent stem (iPS) cells derived from patients with genetic disorders in the oral and cranio-maxillofacial region in serum- and feeder-free culture to elucidate the molecular mechanism involved in the disease. ^[1]_[SEP]
5. Purification of biologically active factors from marine organism.

6. Photodynamic therapy for oral cancer. ^[L]_[SEPP]
7. Immune cell therapy for oral cancer by using NK/lymphokine-activated killer (LAK) cells. ^[L]_[SEPP]
8. Jaw and tooth regeneration *in vitro*. ^[L]_[SEPP]
9. Molecular-epidemiological study of oral and maxillofacial disease among residents of Semipalatinsk Nuclear Test Site (SNTS) area in Kazakhstan.
10. Measuring brain hemodynamic changes on mounting dental appliance using Near-Infrared Spectroscopy
11. The intestinal and oral microbiota of patients with oral cancer

(3) Research Achievements

Original Papers (including Case Reports)

1. Induction of integration-free human-induced pluripotent stem cells under serum- and feeder-free conditions.: A. Hamada, E. Akagi, S. Yamasaki, H. Nakatao, F. Obayashi, M. Ohtaka, K. Nishimura, M. Nakanishi, S. Toratani, T. Okamoto.: *In Vitro Cell Dev Biol Anim*. doi: 10.1007/s11626-019-00412-w. Epub 2019 Nov. 25.
2. Metastasis of carcinoma ex pleomorphic adenoma to the brain without previous metastasis to the lungs or bones: a case report.: Y. Yoshioka, S. Hayashi, A. Hamada, S. Toratani, T. Okamoto.: *British Journal of Oral and Maxillofacial Surgery*, 57(9), 926-928, 2019
3. Comment on “A novel method to prevent biting through nasolabial flap: Modified oral screen” by Chaudhary et al. *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*. Fujita Y, Nishida T, Myoken Y. : *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, 31(3) 212-213. 2019, May.
4. Comment on “Nonsurgical Management of Medication-Related Osteonecrosis of the Jaws Using Local Wound Care” by Hadaya et al.: Nishida T, Fujita Y, Myoken Y. : *Journal of Oral and Maxillofacial Surgery*.: 77(5):885-886. 2019 May.
5. A clinical study of super-elderly patients over 90 years old with oral cancer.: T. Sakaue, Y. Yoshioka, K. Matsui, K. Tsushima, F. Obayashi, A. Hamada, S. Yamasaki, T. Hamana, K. Sumi, T. Kanda, K. Koizumi, R. Tani, Y. Hayashido, H. Sasahara, Y. Ito, T. Sado, Y. Ishida, K. Okamoto, M. Kobayashi, A. Sakamoto, Y. Myoken, S. Toratani and T. Okamoto.: *J. Jpn. Stomatol. Soc.* 68(1), 12-19, 2019.
6. Clinical investigation of oral cancer in Adolescent and Young Adult (AYA) generation.: T. Sakaue, Y. Yoshioka, K. Matsui, K. Tsushima, F. Obayashi, A. Hamada, S. Yamasaki, T. Hamana, K. Sumi, T. Kanda, K. Koizumi, R. Tani, Y. Hayashido, H. Sasahara, Y. Ito, T. Sado, Y. Ishida, K. Okamoto, M. Kobayashi, A. Sakamoto, Y. Myoken, S. Toratani and T. Okamoto.: *J. Jpn. Stomatol. Soc.* 68(1), 20-27, 2019.

7. Three cases of deep neck infection occurring in ARONJ (anti-resorptive agent-related osteonecrosis of the jaw) patients. : S. Yamasaki, S. Toratani, K. Uchisako, Y. Taguchi, Y. Yoshioka, T. Okamoto.: *J.Jpn. Stomatol. Soc.*68(3) 226-231, 2019.
8. A case of eosinophilic granulomatosis with polyangiitis which bilateral sublingual painless swelling occurred first: T. Nobumoto, T. Kanda, S. Hayashi, R. Tani, I. Ogawa and T. Okamoto.: *J.Jpn. Stomatol. Soc.*68(4) 294-298, 2019.
9. A Case of Apical Periodontitis of Dens in Dent Leading to Palatal Abscess.: N. Kimura, T. Sado, Y. Yoshioka, Y. Yoshimura, S. Toratani, T. Okamoto.:*J.Hiroshima Univ.Dent.Soc.*51 127-130 2019.
10. A case of sialolithiasis of the minor salivary glands in buccal mucosa.: T. Nobumoto, Y. Yoshioka, M. Higaki, S. Sakamoto, I. Ogawa, S.Toratani, T.Okamoto.: *J. Hiroshima Univ. Dent. Soc.*, Vol.51(2), p112-115, 2019.
11. Recurrence of giant thyroglossal duct cyst on the floor of the mouth: case report.: Y. Ito, J. Hara, S.Shuji,M. Senami .: *The Medical Bulletin of Onomichi General Hospiral.* VoL(29), P23-26,2019.
12. Establishment of disease-specific induced pluripotent stem cells (iPSCs) for the study of disease mechanisms: Y. Nakase, A.Hamada,H. Nakatao, F. Obayashi. S.Yamasaki, T. Hata, N. Kitamura, T. Yamamoto, S. Toratani, T.Okamoto.: *Journal of Japanese Tissue Culture Society for Dental Research*, Vol.28(1), p23-24, 2019.
13. Establishment and characterization of radiation resistant strains from squamous cell carcinoma cell lines in serum-free defined culture.: A. Hamada, Nguyen Quang Tam, K. Uchisako, Y. Nakase, H. Nakatao, S. Toratani, T. Okamoto.: *Journal of Japanese Tissue Culture Society for Dental Research*, Vol.28(1), p33-34, 2019.
14. Establishment of an oral neuroendocrine carcinoma cell line - oral neuroendocrine carcinoma diagnosed based on the growth pattern of primary cultured cells.: S. Satoh, A. Hamada, S. Sakurai, T. Hamana, S. Toratani, T. Okamoto.: *Journal of Japanese Tissue Culture Society for Dental Research*, Vol.28(1), P9-10.2019.

B) Review article

not applicable

C) Publications

not applicable

D) Other Publications

not applicable

E) Presentation at Scientific Meeting

International Meeting Presentation

1. Establishment and Characterization of Disease-specific Human iPSCs in Serum-, Integration- and Feeder-free Cultures.: A. Hamada, Y. Nakase, F. Obayashi, T. Fukutani, H. Nakatao, E. Sakaue , S. Yamasaki, T. Kanda, K. Koizumi, Y. Yoshioka, R. Tani , S. Toratani, JD. Sato, T. Okamoto.: Annual Meeting of Society for In Vitro Biology Meeting (Tampa, Florida, USA) 2019.6.9.
2. 2019 SIVB Lifetime Distinguished Achievement Award Lecture, Annual Meeting of Society for In Vitro Biology Meeting (Tampa, Florida, USA) 2019.6.9.

International invited lecture

1. Microbiome related to oral cancer and Immunotherapy in oral cancer, Tetsuji Okamoto, Taipei Medical University Oct 21, 2019.
2. Disease-specific Human iPSCs in Serum-, Integration- and Feeder-free Cultures, Tetsuji Okamoto, Tufts University School of Dental Medicine, Boston, 12 Nov, 2019.

Domestic Meeting presentations

1. Perioperative oral cavity function management in the transcranial taxis evoked potential monitoring enforcement case. : N. Ito, Y. Yamasaki, M. Maruko, Y. Fujiwara, H. Manabe, K. Okamoto. : The 40th spinal cord function diagnosis society (Tokyo), 2019.2.2.
2. Changes in consciousness of ward staff due to dental intervention to neurosurgery inpatients and future issues.: Y.Ito, C.Okugawa, N.Shikabayashi, F.Takatu .:The 44th The general meeting of Japanses Dental Hyginist Society, (Yokohama), 2019. 3. 21-23
3. Establishment of oral squamous cell carcinoma cell lines in serum free condition.: A. Hamada, S. Sato, K. Uchisako, Y. Nakase, F. Obayashi, H. Nakatao, S. Yamasaki, R. Tani, S. Toratani, T. Okamoto.: The 73th The meeting of Japanese Stomatological Society (Kawagoe), 2019.4.20-21.
4. Cellular endocrinological study of mechanism in radiation resistance of squamous cell carcinoma in serum-free culture.: K. Uchisako, A. Hamada, T. Mishima, K. Matsui, R.Tani, S. Toratani, T. Okamoto. : The 73th The meeting of Japanese Stomatological Society (Kawagoe), 2019.04.20-21.
5. The present conditions of the medical department dentistry cooperation perioperative Oral care in the Onomichi General Hospital.: Y. Ito, F. Takatu, J. Hara, T. Kanda, T. Okamoto.: The 73th The meeting of Japanese Stomatological Society (Kawagoe), 2019.4.19-21.

6. Relationship between oral squamous cell carcinomas and Human Papillomavirus (HPV) 16.: S. Hayashi, S. Toratani, H. Nakatao, K. Matsui, T. Fukutani, A. Hamada, Y. Yoshioka, R. Tani, T. Okamoto.: The 73th The meeting of Japanese Stomatological Society (Kawagoe), 2019.4.19-21.
7. Clinical study of Ameloblastoma in our department. : K. Tsusima, T. Kanda, Y. Taguchi, T. Hamana, K. Koizumi, Y. Yoshioka, R. Tani, Y. Hayashido, S. Toratani, T. Okamoto. : The 73th Annual Meeting of Japanese Stomatological Society, (Kawagoe) 2019.4.19-21
8. A case of periodontitis of dens in dent causing palatal abscess.: N. Kimura, T. Sado, H. Kuniyasu, Y. Yoshimura, T. Okamoto.: The 73th Annual Meeting of Japanese Stomatological Society, (Kawagoe) 2019.4.19-21
9. Establishment of a cell line derived from oral neuroendocrine carcinoma - oral neuroendocrine carcinoma diagnosed based on the growth of primary cultured tumor cells-.: S. Satoh, A. Hamada, S. Sakurai, T. Hamana, T. Toratani, T. Okamoto.: The 73rd Annual Meeting of Japanese Stomatological Society (Kawagoe), 2019.4.19-21
10. A case of oral cavity neuroendocrine carcinoma successfully treated with multidisciplinary therapy. : S. Sakurai, T. Hamana, S. Satoh, A. Hamada, S. Toratani, T. Okamoto.: The 73th Annual Meeting of Japanese Stomatological Society (Kawagoe), 2019.4.19-20.
11. Measuring brain hemodynamic changes on mounting dental appliance using Near-Infrared Spectroscopy -second report- .: H. Miyata, R. Tani, T. Hamana, S. Toratani, T. Okamoto.: The 73th Annual Meeting of Japanese Stomatological Society (Kawagoe), 2019.4.19-20.
12. Study on Expression Mechanism and Function of Claudin1 in Oral Squamous Cell Carcinomas.: T. Nobumoto, K. Tsushima, Y. Hayashido, T. Okamoto.: The 73th Annual Meeting of Japanese Stomatological Society (Kawagoe), 2019.4.19-20.
13. Diversity analysis of gut and oral microbiome in oral cancer patients (2nd report):.K. Matsui, R. Tani, A. Hamada, K. Uchisako, S. Toratani, T. Ootomo, K. Tokumaru, T. Okamoto.: The 73th Annual Meeting of Japanese Stomatological Society (Kawagoe), 2019.4.19-20.
14. Analysis of gene mutation of Nevroid Basal Cell Carcinoma Syndrome (NBCCS) and establishment of NBCCS-specific induced pluripotent stem cells in integration-, feeder cell-, and serum-free culture.: Y. Nakase, A. Hamada, H. Nakatao, F. Obayashi, S. Yamasaki, T. Hata, N. Kitamura, T. Yamamoto, S. Toratani, T. Okamoto. : The 73th Annual meeting of the Japanese Stomatological Society, (Kawagoe) 2019.4.19-21.
15. Functional analysis of Heparin-binding protein 17 / FGF-Binding Protein-1 (HBp17 / FGFBP-1) in squamous cell carcinoma (SCC) cells using CRISPR / Cas9 system : M. Higaki, T. Shintani, S. Sato, T. Okamoto :The 73th The meeting of Japanese Stomatological Society (Kawagoe), 2019.4.19-21.
16. Generation of maxillofacial tissue from mouse iPS cells in serum free organoid culture conditions.:F. Obayashi, A. Hamada, S. Satoh, N. Nakatao, S. Yamasaki, T. Okamoto. : The 73th The meeting of Japanese Stomatological Society (Kawagoe), 2019.4.19-21 Relationship between oral

- squamous cell carcinomas and Human Papillomavirus (HPV) 16.: S. Hayashi, S. Toratani, H. Nakatao, K. Matsui, T. Fukutani, A. Hamada, Y. yoshioka, R. Tani, T. Okamoto.: The 73th The meeting of Japanese Stomatological Society (Kawagoe), 2019.4.19-21.
17. Effect of cholesterol synthesis inhibitors on the generation of lymphokine-activated killer cells activity.: T. Mishima, R. Tani, K. Matsui, A. Hamada, S. Toratani, T. Okamoto. :The 73th Annual Meeting of Japanese Stomatological Society (Kawagoe), The 73th Annual meeting of the Japanese Stomatological Society, (Kawagoe) 2019.4.19-21.
 18. A successful case of the sequelaes of the brainstem infarction that treated by the dysphasia rehabilitation including the biofeedback.: Y. Arita, A. Sakamoto, R. Tani, Y. Yoshioka, K. Koizumi, T. Shintani, Y. Hayashido, S. Toratani, T. Okamoto.:The 73th The meeting of the Japanese Stomatological Society(Kawagoe), 2019.4.19-21.
 19. Clinical statistical examination of the ARONJ onset in Hiroshima City Asa Citizens Hospital , osteoporotic treatment patients. : N. Ito, K. Okamoto, S. Toratani, T. Okamoto. : The 73th Annual meeting of Japanese stomatological society (Kawagoe), 2019.4.20-21.
 20. Surgical management of medication-related osteonecrosis of the Jaw (MRONJ) using nasolabial flaps. Y. Myoken, E. Sakaue, Y. Fujita, T. Okamoto.: The 73th Annual meeting of the Japanese Stomatological Society, (Kawagoe) 2019.4.19-21.
 21. Surgical treatment of a patient with maxillary MRONJ using a nasolabial flap after management of masticator space abscess: A case report. : J. Nomura, J. Kobayashi, K. Monden, E. Sakaue,, Y. Fujita, T. Okamoto, Y. Myoken.: The 48th Regional Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Fukuyama), 2019.5.25.
 22. A case of the bad iliopsoas muscle syndrome that epidural lower radiation therapy was effective for pain control. T. Noriyuki, N. Takazawa, R. Nakanuno, K. Nomoto, Y. Ito, M Odawara, C. Fujiwara.:The 24th Congress of Japanese Society for Palliative Medicine, (Yokohama), 2019.6.21-23.
 23. Investigated a feeling of perplexity and the recognition about the observation by a nurse to be able to employ for the cancer pain control of the person with dementia.M. Odawara, C. Fujiwara, C. Moriake, S. Kubo, N. Okamoto, Y. Hamamoto, C. Okugawa, H. Nkatukasa, R. Hirai, Y. Ito, T. Noriyuki.: The 24th Congress of Japanese Society for Palliative Medicine 2019(Yokohama), 2019.6.21-23.
 24. A case of the dysphagia rehabilitation that intervened for a patient with tetanus after West Japan heavy rain disaster.: R. Shigemi, S. Kanzaki, Y. Arita, M. Oshita, K. Matsuoka.: The 20th Japanese Association of Speech-Language-Hearing Therapists (Oita), 2019.6.28-29.
 25. Establishment of the in-hospital oral health maintenance system in the use of patients with malignant tumor of anti-resorptive agents and construction of the regional alliances pass. : N. Ito,

- M. Maruko, Y. Nakabayashi, A. Hurukawa, K. Okamoto. : The 21th Japan Society for Health Care Management (Nagoya), 2019.7.19-20.
26. Oral care intervention for the toxic epidermal necrolysis patient by the dental hygienist.: N. Shikabayashi, A. shibata, C. Okugawa, F. Takatu, Y. Ito.: The 14th The general meeting of Japanese Dental Hygienist Society,(Nagoya), 2019.9.21-23.
27. Oral care intervention for the toxic epidermal necrolysis patient by the dental hygienist.: N.Shikabayashi, A.shibata, C.Okugawa, F.Takatu, Y.Ito.: The 14th The general meeting of Japanses Dental Hyginist Society, (Nagoya), 2019.9.21-23.
28. Clinical study of submandibular abscess in our department for past 12 years.: H. Takahashi, S. Yamasaki, Y. Yoshioka, K. Matsui, T. Sakaue, T. Hamana, T. Kanda, K. Koizumi, R. Tani, Y. Hayashido, S. Toratani, T. Okamoto. : The 29th meeting of Japanese Society of Oral medicine, The 32th meeting of Japanese Society of Oral Diagnosis, The 12th meeting of Japanese society for Evidence and the Dental Professional, The 30th meeting of Japanese Society of Oral Pathology (Tokyo), 2019.9.21.
29. Three cases of deep neck infection In our department.: Y. Yoshioka, S Satoh, F. Obayashi, S.Sakurai, S. Yamasaki, T. Hamana, K. Koizumi, S. Toratani,T. Okamoto.: The 12th general meeting of Japanese Society for Evidence and the Dental Professional, The 30th Annual Meeting of the Japanese Society of Oral Pathology, The 29th general meeting of Japanese Society of Oral Medicine, The 32th general meeting of The Japanese Society of Oral Diagnosis/Oral Medicine, (Tokyo) 2019.9.20-23
30. Clinical study of submandibular abscess over the past 12 years in our department.: H. Takahashi, S. Yamasaki,Y.Yoshioka,T. Sakaue,T.Hamana,T.Kanda,K.Koizumi,R.Tani,Y. Hayashido,S. Toratan, T.Okamoto.: The 12th general meeting of Japanese Society for Evidence and the Dental Professional, The 30th Annual Meeting of the Japanese Society of Oral Pathology, The 29th general meeting of Japanese Society of Oral Medicine, The 32th general meeting of The Japanese Society of Oral Diagnosis/Oral Medicine, (Tokyo) 2019.9.20-23
31. Clinical study of sialolithis patients over the past 10 years in our department.: Y. Nakase, T. Hamana, T. Sakaue, S. Yamasaki, K. Sumi, T. Kanda, K. Koizumi, R. Tani, Y. Hayashido, S. Toratani, T. Okamoto. : The 12th general meeting of Japanese Society for Evidence and the Dental Professional, The 30th Annual Meeting of the Japanese Society of Oral Pathology, The 29th general meeting of Japanese Society of Oral Medicine, The 32th general meeting of The Japanese Society of Oral Diagnosis/Oral Medicine, (Tokyo) 2019.9.20-23
32. A case of long-term treatment for Proliferative verrucous leukoplakia.: S. Hirota, Y. Yoshioka, T. Mishima, S. Toratani, T. Okamoto: The 30th Annual Meeting of the Japanese Society of Oral Pathology, The 29th general meeting of Japanese Society of Oral Medicine, The 32th general meeting of The Japanese Society of Oral Diagnosis/Oral Medicine, (Tokyo) 2019.9.20-23

33. An in vitro model for cancer stem cell dormancy and recurrence using drug-inducible reprogramming system.: K. Tsuge, K. Yano, A. Hamada, T. Okamoto, H. Tahara, S. Shimamoto.: The 92th Annual Meeting of the Japanese Biochemical Society, (Kanagawa), 2019.9.24
34. Diversity analysis of oral microbiota of oral cancer patients using next-generation sequencer.: K. Matsui, R. Tani, A. Hamada, S. Toratani, T. Ootomo, K. Tokumaru, T. Okamoto.: The 18th Oral Cancer Study Association, (Hiroshima), 2019.10.11.
35. Effect of cholesterol synthesis inhibitors on the generation of lymphokine-activated killer cells activity: T. Misgima, R. Tani, K. Matsui, A. Hamada, S. Toratani, T. Okamoto. The 18th Annual Meeting of oral cancer study group of Chugoku and Shikoku region (Hiroshima), 2019.4.10.11.
36. A case of congenital lymphatic malformation of the oral floor similar to ranula. K. Matsui, T. Kanda, Y. Yoshioka, A. Hamada, O. Makoto, S. Sakamoto, S. Toratani, T. Okamoto. The 76th Annual meeting of the Japanese Stomatological Society, (Hiroshima),2019.10.12.
37. Clinical analysis of antiresorptive agent-related osteonecrosis of the jaw (ARONJ) in our department and affiliated hospitals.: S. Hayashi, Y. Yoshioka, T. Sakaue, S. Yamasaki, T. Hamana, K. Sumi, T. kanda, K. Kouichi, R. Tani, A. Y. Hayashido, S. Toratani, N. Ito, K. Okamoto, F. Takatsu, Y. Ito, Y. Ishida, K. Tsushima, T. Sado, H. Nakatao, M. Kobayashi, Y. Arita, T. Sakamoto, Y. Myoken, T. Okamoto.: The 67th The meeting of Japanese Stomatological Society (Hiroshima), 2019.10.12
38. Surgical management of medication-related osteonecrosis of the Jaw (MRONJ) – The usefulness of nasolabial flaps.: Y. Fujita, J. Nomura, J. Kobayashi, K. Monden, E. Sakaue,, T. Okamoto, Y. Myoken: The 67th Regional Meeting of the Japanese Stomatological Society (Hiroshima), 2019.10.12.
39. Surgical treatment of a patient with maxillary MRONJ using a nasolabial flap after management of masticator space abscess: A case report. : J. Nomura, J. Kobayashi, K. Monden, E. Sakaue,, Y. Fujita, T. Okamoto, Y. Myoken.: The 67th Regional Meeting of the Japanese Stomatological Society (Hiroshima), 2019.10.12.
40. Investigation into actual status of use BMA in the Onomichi General hospital and the recognition Onomichi Prefecture dental clinic and the composition drugstore.: Y, Ito.: The 64th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Sapporo), 2019.11.2
41. Surgical management of medication-related osteonecrosis of the Jaw (MRONJ) – The usefulness of nasolabial flaps.: Y. Fujita, J. Nomura, E. Sakaue,, T. Okamoto, Y. Myoken: The 64th Congress of the Japanese Society of Oral and Maxillofacial Surgeons, (Sapporo), 2019.11.2
42. Surgical treatment of a patient with maxillary MRONJ using a nasolabial flap after management of masticator space abscess: A case report.: J. Nomura, Sakaue,, Y. Fujita, T. Okamoto, Y. Myoken.: The 64th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Sapporo), 2019.11.2

43. Study on Expression Mechanism and Function of Claudin1 in Oral Squamous Cell Carcinomas.:
T. Nobumoto, Y. Hayashido, T. Okamoto.: The 56th Annual Meeting of Japan Tissue Culture Society for Dental Research (Gifu), 2019.11.2
44. Effect of insulin and cholesterol synthesis inhibitors on the generation of lymphokine-activated killer cells activity: T. Mishima, R. Tani, K. Matsui, A. Hamada, S. Toratani, T. Okamoto. The 56th annual meeting of Japan tissue culture society for dental research (Gifu), 2019.11.2.
45. Functional analysis of Heparin-binding protein 17 / FGF-Binding Protein-1 in squamous cell carcinoma cells using CRISPR / Cas9 system : M. Higaki, T. Shintani, S. Sato, T. Okamoto :The 56th The meeting of Japan Tissue Culture of Dental Research (Gifu), 2019.11.2
46. About Anti-resorptive agents-related Osteonecrosis of the Jaw(ARONJ). Y. Ito.: The16th medical care cooperation workshop, (Hiroshima), 2019.11.6.
47. A case of carcinoma of floor of mouth reconstructed with the submental island flap.: K. Monden, J. Nomura, J. Kobayashi, E. Sakaue,, Y. Fujita, T. Okamoto, Y. Myoken.: The 58th Congress of the Hiroshima Prefectural Dental Association and the 103th Congress of the Hiroshima Dental School Congress (Hiroshima), 2019.11.18

F) Special lectures at academic meetings

1. Case report in our department.: T.Sado, N.Kimura.: Emergency medical lecture in the Miyoshi city dental association (Miyoshi), 2019.2.7
2. Association between oral diseases and systemic inflammation (aim to healthy-longevity)
A.Sakamoto, Y. Arita. : Minami-district medical, dental and pharmacological cooperation workshop lecture (Hiroshima) 2019.2.15
3. How do you examine an osteoporosis patient under the medical department dentistry cooperation? :
Asa dental association lecture. : K. Okamoto, N. Ito. : (Hiroshima), 2019.3.6.
4. In terms of oral frail.:Y.Ishida.: Shimokamagari hospital PEGENT study meeting, (Kure) 2019.3.7.
5. Oral and Maxillofacial Surgery, Mazda Hospital, Mazda Corporation Inc. ; About differential diagnosis of oral cancer (tongue, gingiva etc.) : A. Sakamoto, Y. Arita,: Aki dental association lecture (Hiroshima) ,2019.4.13
6. The relationship between the swallowing and the medicine "good or bad medicine for swallowing".
T. Tanabe, Y. Arita, A. Sakamoto., The 7th conference of Dysphagia (Mazda Hospital),2019.4.25
7. Dental activities in Akinada region.:Y.Ishida.: Dental health workshop of Public health clinical institutions conference in Chugoku region, (Kure) 2019.7.26.
8. How do you examine an osteoporosis patient under the medical department dentistry cooperation? :
Yamagata district dental association lecture. : K. Okamoto, N. Ito. : (Hiroshima), 2019.8.3.

9. Dysphagia as seen by neurosurgeons.: R. Ogami, Y. Arita, A. Sakamoto.: The 8th conference of Dysphagia , (Mazda Hospital), 2019.10.24
10. How do you examine an osteoporosis patient under the medical department dentistry cooperation? : Mihara district dental association lecture. : N. Ito, H. Nishino, K. Hayash. : (Hiroshima), 2019.10.31.
11. The workshop of Dysphagia Rehabilitation of the Hiroshima Prefectural.: Y. Arita, A. Sakamoto.: Dental Association, (Kure), 2019.12.1
12. The relationship of a cancer and the oral cavity, trial in our hospital. : Y. Ito, T. Hanada.: Pancreatic cancer classroom Workshop Osaka 2019, (Osaka), 2019.12.7.
13. Relationship between oral cavity and whole body.: T.Sado, K.Tsushima.:Hiroshima clinical laboratory engineers association lecture (Miyoshi), 2019.12.7

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

1. Grants-in aid for scientific research (B): Tetsuji Okamoto. #18H0300000.
2. Grants-in aid for scientific research (C): Toratani Shigeaki: #18K09744.
3. Grants-in aid for scientific research (C):Yasutaka Hayashido: #19K103100A.
4. Grants-in aid for scientific research (C): Ryouji Tani: #19K103590A.
5. Grants-in aid for scientific research (C): Koichi Koizumi: #18K09767.
6. Grants-in aid for scientific research (C): Yukio Yoshioka: #17K11838.
7. Grants-in aid for scientific research (C): Tomoaki Shintani: #19K17199.
8. Grants-in aid for scientific research (C): Tomoaki Hamana: #17K11875.
9. Grant-in-Aid for Young Scientists(B): Sachiko Yamasaki: #18K09723
10. Grant-in-Aid for Young Scientists(B): Taishi Sakaue: #19K192340.
11. Grant-in-Aid for Young Scientists(B):Atsuko Hamada: #19K191980.
12. Grant-in-Aid for Young Scientists(B):Yuki Taguchi: #19K192330.
13. Grant-in-Aid for Young Scientists(B):Hirotaka Nakatao: #18K17199.
14. Grant-in-Aid for Young Scientists(B):Suguru Hirota: #19K19197.
15. Grant-in-Aid for Young Scientists(B):Kensaku Matsui: #19K191620.
16. Grant-in-Aid for Start-up:Tadayoshi Nobumoto: #19K24147.
17. Grant-in-Aid for Start-up:Takefumi Mishima: #19K24148.

(5) Academic Awards, etc.

1. T. Okamoto: 2019 SIVB Distinguished Lifetime Achievement Award, 2019.6.8-12 (Tampa USA)
2. T. Okamoto: Honorary member recommended : Japan Tissue Culture Society for Dental Research ,2019.11.2 (Gifu)

3. T. Okamoto: Special Achievement Award of the Alumni association of Oral and maxillofacial surgery, 2019.11.17 (Hiroshima)

(6) Patents

not applicable

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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 Surgery)

(1) Staff and Students

Associate Professor : Masaaki Takechi

Assistant Professor : Koichiro Higashikawa, Koji Ohta (~Apr)

Research Associate : Yoshiaki Ninomiya, Hiroshi Shimasue (Diagnosis and treatment lecturer), Shigehiro Ono (Diagnosis and treatment lecturer), Kuniko Mizuta, Takayuki Nakagawa, Misato Tada, Akiko Fukui, Takako Naruse (Apr ~)

Resident : Yasuki Ishioka, Fumi Ishida, Yoko Ishida, Kazuki Sasaki, Sayaka Seino, Ryo Uetsuki, Hiroshi Kato (Oct ~)

Graduate Student : Hiroshi Kato (~Sep), Hiroshi Murodumi, Miyuki Sakuma, Sho Yokoyama, Satoshi Okuda, Shohei Fukada, Nao Yamakado

Registered Intern : Masaki Kiyomihara, Yoshihisa Inoue, Taro Kashihara, Yasuhiro Tanaka (Dec~)

(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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1) A targeted genetic association study of the rare type of osteomyelitis. Yahara H, Horita S, Yanamoto S, Kitagawa Y, Asaka T, Yoda T, Morita K, Michi Y, Takechi M, Shimasue H, Maruoka Y, Kondo E, Kusukawa J, Tsujiguchi H, Sato T, Kannon T, Nakamura H, Tajima A, Hosomichi K, Yahara K: Journal of Dental Research (in press).
- 2) Expression of CD44, CD44v9, ABCG2, CD24, Bmi-1 and ALDH1 in stage I and II oral squamous

- cell carcinoma and their association with clinicopathological factors. Tamatani T, Takamaru N, Ohe G, Akita K, Nakagawa T, Miyamoto Y: *Oncol Lett*, 16: 1133-1140, 2018.
- 3) Application of low-crystalline carbonate apatite granules in 2-stage sinus floor augmentation: a prospective clinical trial and histomorphometric evaluation. Nakagawa T, Kudoh K, Fukuda N, Kasugai S, Tachikawa N, Koyano K, Matsushita Y, Sasaki M, Ishikawa K, Miyamoto Y. *J Periodontal Implant Sci.* 49: e35, 2019.
 - 4) A research analysis of the Thrombocytopenia patient with Compound odontoma in the maxillary primary canine: Tachikake M, Mitsuhata C, Iwamoto Y, Ono S, Tada M, Kozai K.: *Japanese Journal of Dental Welfare* 23(1): 26-33, 2018.
 - 5) A huge compound odontoma arising in the mandible of a child.: Tada M, Ohta K, Ninomiya Y, Fukui A, Uetsuki R, Takechi M.: *Japanese Journal of Oral and Maxillofacial Surgery* 65(5): 351-356, 2019.
 - 6) A case of venous aneurysm in the submandibular region.: Uetsuki R, Ono S, Tada M, Inoue S, Ogawa I, Takechi M.: *Japanese Journal of Oral and Maxillofacial Surgery* 65(10): 689-693, 2019.
 - 7) A case of solitary intraosseous neurofibroma of the mandible in an elderly patient.: Ishida F, Ohta K, Fujimoto S, Naruse T, Takechi M.: *Japanese Journal of Oral and Maxillofacial Surgery* 65(11): 752-756, 2019.
 - 8) A Case of Skeletal Maxillary Protrusion with Open Bite and Hypoplasia of the Condyle Treated Using Maxillary Surgery Alone. : Ono S, Nakagawa T, Kaku M, Yamamoto T, Ohta K, Kubozono K, Uetsuki R, Mizuta K, Tanimoto K and Takechi M.: *The Japanese Journal of Jaw Deformities* 29: 59-65, 2019.
 - 9) A Case of Angioleiomyoma of the Hard Plate.: Higashikawa K, Ishida F, Ninomiya Y, Ono S, Ishioka Y, Tada M, Fukui A, Uetsuki R, Ogawa I, Miyauchi M and Takechi M.: *Journal of Hiroshima University Dental Society* 51(2):116-120, 2019.
 - 10) A case of Lipoma of the Oral Floor Filling the Sublingual Space.: Higashikawa K, Sasaki K, Nakagawa T, Shimasue H, Ono S, Mizuta K, Ishioka Y, Seino S, Naruse T, Uetsuki R, Sakamoto S, Orita M, Miyauchi M, Ogawa I and Takechi M.: *The Journal of Hiroshima University Dental Society* 51(2): 121-126, 2019.

B) Review

C) Publications

- 1: *Dental Implant Treatment in Medically Compromised Patients*, Editor Quan Yuan, Springer, *Organ Diseases and Dental Implant Treatment*. 4.3.Hepatitis, P64-65. Shigehiro Ono and Masaaki Takechi.

2: Dental Implant Treatment in Medically Compromised Patients, Editor Quan Yuan, Springer, Organ Diseases and Dental Implant Treatment. 4.3. Thyroid Disorders, P64-65. Yoshiaki Ninomiya and Masaaki Takechi.

D) Other Publications

E) Presentation at Scientific Meeting

- 1) Occlusal Reconstruction Using Bone Anchored Device for Wide Edentulous After Surgical Treatments of Carcinoma of the Maxillary : Ono S, Mizuta K, Uetsuki R, Ohta K, Takechi M : The 37th Annual Meeting of Japanese Society of Oral Oncology (Nagasaki), 2019.1.24
- 2) A Case report of Left Cervical Metastasis of Tongue Cancer During Pregnancy : Mizuta K, Ohta K, Ono S, Sasaki K, Kato H, Takechi M : The 37th Annual Meeting of Japanese Society of Oral Oncology (Nagasaki), 2019.1.24
- 3) A case of skeletal maxillary protrusion with open bite and hypoplasia of the condyle treated using maxillary surgery alone : Uetsuki R, Ono S, Kaku M, Yamamoto T, Ohta K, Mizuta K, Tanimoto K, Takechi M : The 52th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2019.6.15
- 4) The effect of hydrogel stiffness on morphology and gene expression pattern in CD44high oral squamous cell carcinoma cells : Yokoyama S, Shigeishi H, Murodumi H, Sakuma M, Kato H, Ohta K, Sugiyama M, Takechi M : The 52th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2019.6.15
- 5) A Case of Horizontal Alveolar Bone Resorption treated by Splitcrest Technique and GBR with Interconnected Porous Hydroxyapatite Ceramics : Sasaki K, Ninomiya Y, Tsuka H, Ishida F, Mizuta K, Ono S, Ohta K, Tsuga K, Takechi M : The 52th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2019.6.15
- 6) Nucleic Acid Transfection Mechanism and Inflammatory Response Through Antibacterial Peptide LL-37 in Oral Mucosal Keratinocyte : Kato H, Ohta K, Naruse T, Ishida Y, Shigeishi H, Takechi M : The 73rd Annual Meeting of Japanese Stomatological Society (Saitama), 2019.4.20
- 7) Observation of Structure of the Bone by Computed Tomography and Clinical Study of Initial Fixation of Implant : Ishioka Y, Ninomiya Y, Yokoyama S, Sasaki K, Mizuta K, Ohta K, Takechi M : The 73rd Annual Meeting of Japanese Stomatological Society (Saitama), 2019.4.21
- 8) A case of venous aneurysm in the submandibular region : Uetsuki R, Ono S, Tada M, Inoue S, Ogawa I, Takechi M : The 48th Congress of the Japanese Society of Oral and Maxillofacial Surgeons Chugoku Shikoku Branch (Fukuyama), 2019.5.25
- 9) A case of orthognathic surgery for jaw deformity due to condylar fracture in early childhood :

- Mizuta K, Ono S, Hanaoka K, Hanaoka H, Kaku M, Sasaki K, Murodumi H, Yamamoto T, Tanimoto K : The 29th Annual Meeting of the Japanese Society for Jaw Deformities (Tokyo), 2019.6.8
- 10) A case of intraoral condylectomy for dislocation of temporomandibular joint due to prolonged case of condyle of mandible : Uetsuki R, Ono S, Tada M, Mizuta K, Takechi M : The 21st Annual Meeting of Japanese Society of Oral and Maxillofacial Trauma (Gifu), 2019.7.5
 - 11) Induced expression in Antimicrobial Peptides DEFB-129 by *Candida albicans* of gingival fibroblasts : Sakuma M, Ohta K, Kato H, Ishida Y, Naruse T, Takechi M: The 12th Japanese Society for Evidence and the Dental Professional, The 30th Annual Meeting of the Japanese Society of Oral Pathology, The 29th Japanese Society of Oral Medicine, The 32th the Japanese Society of Oral Diagnosis/Oral Medicine (Tokyo), 2019.9.21,
 - 12) A Clinical Study of Implant treatment with bone augmentation in oral and maxillofacial trauma : Ishioka Y, Ninomiya Y, Yokoyama S, Sasaki K, Ohta K, Takechi M: The 49th Japan Society of Oral Implantology General Session & Exhibition (Fukuoka), 2019.9.21,
 - 13) Two cases of patients having mucosal cyst performed sinus lift : Ninomiya Y, Mizuta K, Tada M, Ishioka Y, Takechi M: The 49th Japan Society of Oral Implantology General Session & Exhibition (Fukuoka), 2019.9.22,
 - 14) The Effect of Tranexamic Acid during Sagittal Split Ramus Osteotomy : Yoshida M, Yoshida K, Ono S, Shimizu Y, Mukai A, Doi M, Irifune M: The 2019 IADR/AADR/CADR General Session & Exhibition (Vancouver, CANADA), 2019.9.25
 - 15) A Clinical Study of implant cases having oral and maxillofacial trauma at our department : Ishioka Y, Ninomiya Y, Yokoyama S, Sasaki K, Ohta K, Takechi M; The 67th Japanese Stomatological Society The Chugoku & Shikoku Districts (Hiroshima), 2019.10.12
 - 16) Expression in Antimicrobial Peptides by *Candida albicans* of gingival fibroblasts : Sakuma M, Ohta K, Kato H, Ishida Y, Naruse T, Shigeishi H, Takechi M: The 28th Japanese Association for Oral Infection Diseases General Session & Exhibition (Osaka), 2019.10.12
 - 17) Analysis of Runx2-induced expression of melatonin in human mandible osteoblasts origin : Murodumi H, Shigeishi H, Kato H, Yokoyama S, Sakuma M, Tada M, Ono S, Ohta K, Takechi M: The 67th Japanese Stomatological Society The Chugoku & Shikoku Districts (Hiroshima), 2019.10.12
 - 18) Mechanical analysis of TMEM16E and development of specific monoclonal antibodies : Mizuta K, Tobiume K, Kubozono K, Murodumi H, Takechi M; The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
 - 19) Three cases of surgical orthodontics treatment for jaw deformities with condyle deformity : Ono S, Mizuta K, Tada M, Sasaki K, Naruse T, Uetsuki R, Takechi M: The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
 - 20) Analysis of provided treatment-resistant by EMT in oral squamous carcinoma : Higashikawa K,

- Uetsuki R, Ishida F, Shigeishi H, Shimasue H, Ono S, Takechi M: The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
- 21) A case of mesenchymal chondrosarcoma of the mandible.: Tada M, Ono S, Ohta K, Okuda S, Ogawa I, Sakamoto S, Kakimoto N, Konishi M, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
 - 22) A case of adenosquamous carcinoma of the mandibular.: Fukui A, Ono S, Ohta K, Tada M, Ogawa I, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
 - 23) Analyses of the cancer stem cell-like property in Snail-induced EMT phenotype oral cancer cells.: Uetsuki R, Higashikawa K, Shigeishi H, Ishida F, Ono S, Shimasue H, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
 - 24) Clinical study of failed implant cases in our department.: Ninomiya Y, Ono S, Mizuta K, Tada M, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
 - 25) Eight case of the tooth auto-transplantation using a frozen stored tooth in our department.: Seino S, Shimasue H, Mizuta K, Harada T, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
 - 26) Nasal and Oral Midazolam of Conscious Sedation Used in Children Undergoing Oral Surgery.: Miyauchi M, Hama Y, Shimasue H, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
 - 27) Expression of inflammatory genes induced by transfected nucleic acids in the minor salivary glands.: Naruse T, Ohta K, Sakuma M, Kato H, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
 - 28) Antimicrobial peptide LL-37 transfects nucleic acids into cytoplasm via endocytosis in oral keratinocytes.: Kato H, Ohta K, Sakuma M, Naruse T, Ishida Y, Shigeishi H, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.10.25~10.27
 - 29) A case of occlusal reconstruction by Bone Anchored Device for Wide Edentulous Area after partial maxillectomy.: Ishioka Y, Ono S, Murodumi H, Yokoyama S, Sasaki K, Ninomiya Y, Kubo T, Takechi M. The 39th Annual Meeting of Japanese Society of Oral Implantology Chugoku Shikoku Branch (Matsuyama), 2019.11.16~11.17
 - 30) Clinical investigation of implant cases with complication in our department after the implant treatment. : Ninomiya N, Ono S, Tada M, Nakagawa T, Ishida F, Okuda S, Takechi M. The 23rd Annual Meeting of the Japanese Academy of Maxillofacial implants (Tsukuba), 2019.11.30~12.1

F) Special lectures in academic meetings

- 1) The Pitfalls of Implant Treatment In a Super-Aged Society. -Surgical Pitfalls of Implant Treatment In a Super-Aged Society.-: Masaaki Takechi. The 49th Annual Meeting of the Japanese Society of Oral Implantology, The 37th Annual Meeting of the Kyushu branch of Japanese Society of Oral Implantology (Fukuoka), 2019.9.22

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

- 1) Grants-in aid for scientific research (C) Continuation: Ono S, Takechi M, Tobiume K, Higashikawa K : #17K11874
- 2) Grants-in aid for scientific research (C) Continuation: Ohta K, Takechi M, Shigeishi H : #17K11840
- 3) Grants-in aid for scientific research (C) Continuation: Shigeishi H, Ohta K, Ono S : #17K11837
- 4) Grants-in aid for scientific research (C) Continuation: Fukui A, Ohta K : #17K11841
- 5) Grants-in aid for scientific research (C) Continuation: Nakagawa T, Fukuda N, Miyamoto Y, Mano T, Kurio N : #18K09746
- 6) Grants-in aid for scientific research (C) Continuation: Takechi M, Ohta K, Ono S : #18K09790
- 7) Grants-in-Aid for Young Scientists(B) Continuation: Uetsuki R : #18K17198
- 8) Grants-in aid for scientific research (C) Continuation: Shimasue H, Tobiume K, Higashikawa K : #18K09813
- 9) Grants-in aid for scientific research (C) Continuation: Higashikawa K, Tobiume K : #18K10358
- 10) Grants-in aid for scientific research (C) Novelty: Mizuta K, Tobiume K : # 19K10309
- 11) Grants-in-Aid for Young Scientists(B) Novelty: Ishida F : #19K19161
- 12) Grants-in aid for scientific research (C) Novelty: Tada M, Takechi M, Ninomiya Y : #19K10267

(5) Academic Awards, etc.

(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: Hiroshi Oue, Yohei Okazaki, Shinsuke Okada, Takahiro Mori, Yoshifumi Oki

Research Associate: Maho Takeuchi, Mariko Maruyama, Aya Hiraoka, Azusa Kuroki

Graduate Student: Miwa Sasaki, Erika Asahara, Eri Ishida, Kiichi Nakamori, Kanako Yamawaki, Azusa Haruta

Clinical Trainee: Toru Akutu, Ryo Takeshita

Administrative staff: Rinko Kurumi

(2) Main Research Activities

- 1 : Elucidation of the effect of prosthodontic treatments on the quality of life of elderly people.
- 2 : Removal prosthodontics and swallowing function of elderly people.
- 3 : Development and clinical application of functional oral rehabilitation utilizing tongue pressure measurement.
- 4 : Development and clinical application of new materials for oral implants.
- 5 : Development of novel biomaterial with “bio-metal” .
- 6 : Elucidation of the effect of FGF on bone formation surrounding oral implants.
- 7 : Biomechanics analysis of prostheses and their surrounding bone supported by implants.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Novel fabrication of porous titanium by a resin-impregnated titanium substitution technique for bone reconstruction: Kobatake R, Doi K, Kubo T, Makihara Y, Oki Y, Yokoi M, Umehara H, Tsuga K: RSC Adv. 9: 1625-1631, 2019.
- 2 : Oral function and vertical jump height among healthy older people in Japan: Morita K, Tsuka H, Kimura H, Mori T, Yoshikawa M, Yoshida M, Kimura M, Tsuga K: Community Dent Health. 36: 275-279, 2019.

- 3 : Effect of laser groove treatment on shear bond strength of resin-based luting agent to polyetheretherketone (PEEK): Tsuka H, Morita K, Kato K, Kimura H, Abekura H, Hirata I, Kato K, Tsuga K: J Prosthodont Res. 63:52-57, 2019.
- 4 : Association between buccal mucosa ridging and oral feature/symptom and its effects on occlusal function among dentate young adults in a cross-sectional study of Japan: Morita K, Tsuka H, Kuremoto K, Kimura H, Kawano H, Yokoi M, Yasuda K, Yoshida M, Tsuga K: Cranio. 19:1-5, 2019. [Epub ahead of print]
- 5 : Effect of autoclave heat sterilization on the surface properties of the sodium titanate hydrogel layer on alkali-treated titanium membranes: Umehara H, Doi K, Kobatake R, Oki Y, Makihara Y, Kubo T, Tsuga K: J. Hiroshima Univ. Dent. Soc. 51: 85-90, 2019.
- 6 : Development of a novel bioactive titanium membrane with alkali treatment for bone regeneration: Umehara H, Doi K, Oki Y, Kobatake R, Makihara Y, Kubo T, Tsuga K: Dental materials Journal. 2019 accepted
- 7 : A case report of eating problems after operation of oral floor cancer treated with implant – supported overdenture: Yoshikawa M: Ann Jpn Prosthodont Soc 11: 64-67, 2019.
- 8 : Recovery of masticatory function after implant treatment in the left mandibular molar region: A case report: Okazaki Y: Ann Jpn Prosthodont Soc 11: 163-166, 2019.
- 9 : Changes in maximum tongue pressure and swallowing tongue pressure after insertion of palatal augmentation prostheses: a multicenter study: Mori T, Yoshikawa M, Yoshida M, Kikutani T, Ono T, Tsuga K, Minakuchi S, Sakurai K: J J Gerodont. 3: 86-93, 2019.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Standard values in the examinations of oral function " Tongue pressure measurement": Oi T, Komino M, Yoshikawa M, Komiyama T: Japan prosthodontic Society (Hokkaido), 2019.
- 2 : Effect of surface treatment with laser irradiation on shear bond strength of resin-based luting agent to PEEK : Kimura H, Tsuga H, Morita K, Abekura H, Hirata I, Tsuga K: Japan prosthodontic Society (Hokkaido), 2019.
- 3 : Performance and safety of antimicrobial tissue conditioner containing CPC-Montmorillonite: Asahara E, Naoe T, Makita Y, Okazaki Y, Yasuda K, Nakamori K, Okada S, Horiuchi R, Yoshida Y, Yokoyama A, Tsuga K, Abe Y: Japan prosthodontic Society (Hokkaido), 2019.

- 4 : Tongue pressure test and candy sucking test: new prospects for functional diagnosis: Tsuga K: Amersfoort, 29th Annual congress of the European College of Gerodontology Joining forces to improve (oral) health (Amersfoort), 2019.
- 5 : Polyamphoteric hydrogels exhibit tenacious adhesion at mucosal tissue interface: Nishio F, Hirata I, Tsuga K, Kato K: 2019 Spring E-MRS Meeting (Nice), 2019.
- 6 : Ionic cross-links enhance mucoadhesion of polymeric hydrogels: Nishio F, Hirata I, Tsuga K, Kato K: The 51st Hiroshima University Dental Society (Hiroshima), 2019.
- 7 : Development of novel bioactive porous titanium for bone reconstruction material: Kobatake R, Doi K, Oki Y, Makihara Y, Umehara H, Kubo T, Tsuga K: The 51st Hiroshima University Dental Society (Hiroshima), 2019.
- 8 : Evaluation of factors affecting masticatory function: Maruyama M, Morita K, Takeda C, Kuroki A, Higa C, Hiraoka A, Mori T, Yoshikawa M, Yoshida M, Tsuga K: Japanese Society of Gerodontology (Miyagi), 2019.
- 9 : Search for the oral function associated with nursing care food squashing: Yamawaki K, Mori T, Itaki S, Hiraoka A, Higa C, Yoshikawa M, Taji G, Yoshida M, Tsuga K: Japanese Society of Gerodontology (Miyagi), 2019.
- 1 0 : Association between salivary alpha-amylase and oral parafunctions in community-dwelling elderly individuals: Morita K, Mori T, Nishio F, Kuroki A, Yokoi M, Maruyama M, Hiraoka A, Miyamoto C, Takeda C, Yoshikawa M, Yoshida M, Tsuga K: Japanese Society of Gerodontology (Miyagi), 2019.
- 1 1 : Tongue Pressure Test and Training in Long Term Care Prevention: Tsuga K: 97th General Session & exhibition of the IADR (Vancouver), 2019
- 1 2 : Prosthetic rehabilitation for segmental mandibulectomy without jaw bone reconstruction: a case report: Mori T: 2019 annual meeting of Japan Prosthodontic Society Chugoku-Shikoku branch (Hiroshima), 2019.
- 1 3 : Effectiveness of direct digital impression using intra oral scanner: Evaluation at dental student's model practice: Kagawa K, Doi K, Okada S, Higa C, Asahara E, Kimura H, Takeda C, Haruta A, Oue H, Yasuda K, Abekura H, Tsuga K: 2019 annual meeting of Japan Prosthodontic Society Chugoku-Shikoku branch (Hiroshima), 2019.
- 1 4 : Shear bond strength of adhesive resin cement to laser groove treated PEEK : Kimura H, Morita K, Abekura H, Tsuka H, Tsuga K: 2019 annual meeting of Japan Prosthodontic Society Chugoku-Shikoku branch (Hiroshima), 2019.
- 1 5 : Antibacterial dental adhesive containing cetylpyridinium chloride montmorillonite: Okazaki Y, Yao C, Ahmed M, Mercelis B, Yoshihara K, Abe Y, Van Meerbeek B: ICP & EPA JOINT MEETING (Amsterdam), 2019.
- 1 6 : Basic survey for the prevention of intraoral residual medication in older adults: Hasegawa Y, Sadakane A, Yoshida M, Yoshikawa M, Nozaki S, Ono T, Niimura K, Kishimoto H: 25th Annual Meeting of Japanese Society of Dysphagia Rehabilitation (Niigata), 2019.
- 1 7 : Dentin biomodification using collagen cross-linkers: Parise Gré C, Yao C, Ahmed M, Okazaki Y, Mercelis B, Van Meerbeek B: CED-IADR/NOF Oral Health Research Congress (Madrid), 2019.
- 1 8 : Multi-parameter evaluation of acrylamide HEMA-alternative monomers in 2-Step adhesives: Ahmed M, Yoshihara K, Yao C, Okazaki Y, Van Landuyt K, Peumans M, Van Meerbeek B: CED-IADR/NOF Oral Health Research Congress (Madrid), 2019.
- 1 9 : Tongue-pressure training in Japanese healthy elderly: Training and detraining effects in longitudinal RCT study : Yoshikawa-Sonoda M, Kitagawa M, Nagao A, Nishikawa Y, Kuroki A, Maruyama M, Mori T, Yoshida M, Tsuga K : 9th ESSD Congress (Vienna), 2019.
- 2 0 : Development of bioactive titanium membrane: Umehara H, Kubo T, Doi K, Kobatake, Oki Y, Makihara Y, Tsuga K: The 49th Annual Meeting of the Japanese Society of Oral Implantology (Fukuoka), 2019.

- 2 1 : Novel bioactive titanium membrane for bone regeneration; effect of alkali treatment: Umehara H, Doi K, Kobatake R, Makihara Y, Oki Y, Kubo T, Tsuga K: European Association for Osseointegration 28th Annual Scientific Meeting (Lisbon), 2019.
- 2 2 : The capability and biocompatibility of antimicrobial adhesive polyurethane gel sheet for retention of facial & somato prosthesi: Nakamori K, Iwaguro S, Okazaki Y, Asahara E, Yasuda K, Yoshihara K, Abe Y, Tsuga K: The 74th Japanese Society for Dental Materials and Devices (Nagasaki), 2019.
- 2 3 : Observational study in the oral squeezing style for taking in dysphagia diet: Haruta A, Yamawaki K, Mori T, Kuroki A, Okazaki Y, Maruyama M, Yoshikawa M, Tsuga K: 30th Annual Meeting of Japanese Society for Mastication Science and Health Promotion (Tokyo), 2019.
- 2 4 : Development of repeated tongue movement measuring device. Higa C, Tsuga K, Mori T, Hiraoka A, Kuroki A, Morita K, Yoshikawa M: 63rd Scientific Meeting of the Japanese Society of Stomatognathic Function (Tokyo), 2019.
- 2 5 : Objective evaluation of functional recovery by implant treatment using oral function test: Maruyama M, Doi K, Kubo T, Kitagawa M, Takechi M, Tsuga K: 39th Annual Meeting of Japanese Society of Oral Implantology Chugoku-Shikoku branch (Ehime), 2019.
- 2 6 : A case report applying newly developed interconnected porous hydroxyapatite to implant GBR: Makihara Y, Doi K, Oki Y, Kobatake R, Umehara H, Kubo T, Tsuga K: Dentisphere 4 International scientific meeting 5th Asean plus & Tokushima joint international conference (Surabaya), 2019..
- 2 7 : Novel fabrication of bioactive porous titanium for bone reconstruction: Kobatake R, Doi K, Makihara Y, Oki Y, Umehara H, Oue H, Abe Y, Kubo T, Tsuga K: Dentisphere 4 International scientific meeting 5th Asean plus & Tokushima joint international conference (Surabaya), 2019.
- 2 8 : The bioactive effect of alkali treated titanium membrane: Umehara H, Doi K, Kobatake R, Oki Y, Makihara U, Kubo T, Tsuga K: Dentisphere 4 International scientific meeting 5th Asean plus & Tokushima joint international conference (Surabaya), 2019.

F) Special lectures in academic meetings

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

- 1 : MEXT Grant-in-Aid for Scientific Research (C): Tsuga K: Development of novel examination for chewing force. (Grant No. 18K09660). ¥1,950,000
- 2 : MEXT Grant-in-Aid for Scientific Research (C): Yoshikawa M: Can the early detection and early improvement of oral frailty stop the frailty? (Grant No. 16K11887). ¥780,000
- 3 : MEXT Grant-in-Aid for Scientific Research (C): Okazaki Y: Development of new antibacterial adhesive system to enable to recharge antibacterial activity. (Grant No. 19K10206). ¥1,300,000
- 4 : MEXT Grant-in- Aid for Young Scientists (B): Okazaki Y: Development of new mouthwash to reduce the risk of developing ventilator-associated pneumonia (VAP). (Grant No. 17K17172). ¥3,510,000
- 5 : MEXT Grant-in- Aid for Young Scientists (B): Mori T: Development of an individual model for prediction of functional recovery after prosthodontic treatment (Grant No. 19K19129). ¥2,080,000
- 6 : MEXT Grant-in- Aid for Young Scientists (B): Oki Y: Newly development of the titanium membrane with cell-controlling function (Grant No. 18K17122). ¥2,080,000
- 7 : MEXT Grant-in-Aid for Scientific Research (Support for Starting Research Activities): Hiraoka A: Elucidation of the optimal period of PAP therapy aiming at oral ingestion by ALS patients. (Grant No. 16H07002). ¥1,430,000
- 8 : Research grant: Daicel-Evonik Ltd.: Tsuga K: Clinical evaluation of molar PEEK crown (Grant No. 1817JA736). ¥1,056,000
- 9 : Research grant from Hiroshima University, for Young Scientists: Oue H: Association between mastication and cerebrovascular disorder. (Grant No. 1810138). ¥1,000,000

(5) Academic Awards, etc.

- 1 : Kobatake R, Doi K, Oki Y, Makihara Y, Umehara H, Kubo T, Tsuga K : Development of novel bioactive porous titanium for bone reconstruction material : The 51th Hiroshima University Dental Society, Best presenter award, 2019.
- 2 : Makihara Y, Doi K, Oki Y, Kobatake R, Umehara H, Kubo T, Tsuga K : A case report applying newly developed interconnected porous hydroxyapatite to implant GBR : Dentisphere 4 International scientific meeting 5th Asean plus & Tokushima joint international conference 2nd Best Poster Presenter Award (Clinical Category), 2019.
- 3 : Umehara H, Doi K, Kobatake R, Oki Y, Makihara U, Kubo T, Tsuga K : The bioactive effect of alkali treated titanium membrane : Dentisphere 4 International scientific meeting 5th Asean plus & Tokushima joint international conference 1st Best Poster Presenter Award (Research Category), 2019.

(6) Patents

- 1 : Doi K, Kobatake R, Fujita T, Kubo T, Umehara H: Porous Metal Membrane (No. 2019-129101) (Hiroshima University, Nagamine Manufacturing Co., Ltd.)

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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	: Hitoshi Abekura, Mitsuyoshi Yoshida
Assistant Professor	: Kazuya Doi, Kouji Morita,, Yusuke Makihara, Keisuke Yasuda,
Resident	: Kazuko Kagawa, Chiaki Higa, Miyuki Yokoi,
Graduate Student	: Reiko Kobatake, Fumiko Nishio, Hanako Umehara, Hitomi Kimura, Chiho Takeda
Clinical Trainee	: Sachiko Takagi, Wataru Teshima
Administrative staff	: Rinko Kurumi

(2) Main Research Activities

- 8 : Elucidation of the effect of prosthodontic treatments on the quality of life of elderly people.
- 9 : Removal prosthodontics and swallowing function of elderly people.
- 1 0 : Development and clinical application of functional oral rehabilitation utilizing tongue pressure measurement.
- 1 1 : Development and clinical application of new materials for oral implants.
- 1 2 : Development of novel biomaterial with “bio-metal”.
- 1 3 : Elucidation of the effect of FGF on bone formation surrounding oral implants.
- 1 4 : Biomechanics analysis of prostheses and their surrounding bone supported by implants.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 0 : Tongue function is important for masticatory performance in the healthy elderly: a cross-sectional survey of community-dwelling elderly: Sagawa K, Furuya H, Ohara Y, Yoshida M, Hirano H, Iijima K, Kikutani T: J Prosthodont Res. 63: 31-34, 2019.
- 1 1 : Novel fabrication of porous titanium by a resin-impregnated titanium substitution technique for bone reconstruction: Kobatake R, Doi K, Kubo T, Makihara Y, Oki Y, Yokoi M, Umehara H, Tsuga K: RSC Adv. 9: 1625-1631, 2019.

- 1 2 : Consumption of green tea but not coffee is associated with the oral health-related quality of life among an older Japanese population: Kyoto-Kameoka cross-sectional study : Nanri H, Yamada Y, Itoi A, Yamagata E, Watanabe Y, Yoshida T, Miyake M, Date H, Ishikawa-Takata K, Yoshida M, Kikutani T, Kimura M: *Eur J Clin Nutr.* 73, 577-584, 2019.
- 1 3 : Oral function and vertical jump height among healthy older people in Japan: Morita K, Tsuka H, Kimura H, Mori T, Yoshikawa M, Yoshida M, Kimura M, Tsuga K: *Community Dent Health.* 36: 275-279, 2019.
- 1 4 : Effect of laser groove treatment on shear bond strength of resin-based luting agent to polyetheretherketone (PEEK): Tsuka H, Morita K, Kato K, Kimura H, Abekura H, Hirata I, Kato K, Tsuga K: *J Prosthodont Res.* 63:52-57, 2019.
- 1 5 : Association between buccal mucosa ridging and oral feature/symptom and its effects on occlusal function among dentate young adults in a cross-sectional study of Japan: Morita K, Tsuka H, Kuremoto K, Kimura H, Kawano H, Yokoi M, Yasuda K, Yoshida M, Tsuga K: *Cranio.* 19:1-5, 2019. [Epub ahead of print]
- 1 6 : Effect of autoclave heat sterilization on the surface properties of the sodium titanate hydrogel layer on alkali-treated titanium membranes: Umehara H, Doi K, Kobatake R, Oki Y, Makihara Y, Kubo T, Tsuga K: *J. Hiroshima Univ. Dent. Soc.* 51: 85-90,2019.
- 1 7 : Development of a novel bioactive titanium membrane with alkali treatment for bone regeneration: Umehara H, Doi K, Oki Y, Kobatake R, Makihara Y, Kubo T, Tsuga K: *Dental materials Journal.* 2019 accepted
- 1 8 : Changes in maximum tongue pressure and swallowing tongue pressure after insertion of palatal augmentation prostheses: a multicenter study: Mori T, Yoshikawa M, Yoshida M, Kikutani T, Ono T, Tsuga K, Minakuchi S, Sakurai K: *J J Gerodont.* 3: 86-93, 2019.

B) Review

- 1 : Other Conditions Affecting Dental Implant Treatment: Xiao-bo Duan, Kazuya Doi, Quan Yuan, Shi-wen Zhang: *Dental Implant Treatment in Medically Compromised Patients* (Springer), 211-253, 2019.
- 2 : Dental profession can prevent aspiration pneumonia: Yoshida M: *J J Gerodont:* 34: 365-367, 2019.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 2 9 : Effect of surface treatment with laser irradiation on shear bond strength of resin-based luting agent to PEEK : Kimura H, Tsuga H, Morita K, Abekura H, Hirata I, Tsuga K: *Japan prosthodontic Society (Hokkaido)*, 2019.
- 3 0 : Performance and safety of antimicrobial tissue conditioner containing CPC-Montmorillonite:

- Asahara E, Naoe T, Makita Y, Okazaki Y, Yasuda K, Nakamori K, Okada S, Horiuchi R, Yoshida Y, Yokoyama A, Tsuga K, Abe Y: Japan prosthodontic Society (Hokkaido), 2019.
- 3 1 : Tongue pressure test and candy sucking test: new prospects for functional diagnosis: Tsuga K: Amersfoort, 29th Annual congress of the European College of Gerodontology Joining forces to improve (oral) health (Amersfoort), 2019.
- 3 2 : Polyamphoteric hydrogels exhibit tenacious adhesion at mucosal tissue interface: Nishio F, Hirata I, Tsuga K, Kato K: 2019 Spring E-MRS Meeting (Nice), 2019.
- 3 3 : Ionic cross-links enhance mucoadhesion of polymeric hydrogels: Nishio F, Hirata I, Tsuga K, Kato K: The 51st Hiroshima University Dental Society (Hiroshima), 2019.
- 3 4 : Development of novel bioactive porous titanium for bone reconstruction material: Kobatake R, Doi K, Oki Y, Makihara Y, Umehara H, Kubo T, Tsuga K: The 51st Hiroshima University Dental Society (Hiroshima), 2019.
- 3 5 : Evaluation of factors affecting masticatory function : Maruyama M, Morita K, Takeda C, Kuroki A, Higa C, Hiraoka A, Mori T, Yoshikawa M, Yoshida M, Tsuga K: Japanese Society of Gerodontology (Miyagi), 2019.
- 3 6 : Search for the oral function associated with nursing care food squashing: Yamawaki K, Mori T, Itaki S, Hiraoka A, Higa C, Yoshikawa M, Taji G, Yoshida M, Tsuga K: Japanese Society of Gerodontology (Miyagi), 2019.
- 3 7 : Oral health • Oral care for home-bounded elderly • Prevention of aspiration pneumonia: Yokomura K, Hotta H, Yoshida M: Japanese Society of Gerodontology (Miyagi), 2019.
- 3 8 : Association between salivary alpha-amylase and oral parafunctions in community-dwelling elderly individuals : Morita K, Mori T, Nishio F, Kuroki A, Yokoi M, Maruyama M, Hiraoka A, Miyamoto C, Takeda C, Yoshikawa M, Yoshida M, Tsuga K: Japanese Society of Gerodontology (Miyagi), 2019.
- 3 9 : Dental practice for the prevention of aspiration pneumonia: Yamaya M, Yoshida M, Kodama T, Monjiyama H: Japanese Society of Gerodontology (Miyagi), 2019.
- 4 0 : Tongue pressure test and training in long term care prevention: Tsuga K: 97th General Session & exhibition of the IADR (Vancouver), 2019
- 4 1 : Effectiveness of direct digital impression using intra oral scanner: Evaluation at dental student's model practice: Kagawa K, Doi K, Okada S, Higa C, Asahara E, Kimura H, Takeda C, Haruta A, Oue H, Yasuda K, Abekura H, Tsuga K: 2019 annual meeting of Japan Prosthodontic Society Chugoku-Shikoku branch (Hiroshima), 2019.
- 4 2 : Shear bond strength of adhesive resin cement to laser groove treated PEEK: Kimura H, Morita K, Abekura H, Tsuka H, Tsuga K: 2019 annual meeting of Japan Prosthodontic Society Chugoku-Shikoku branch (Hiroshima), 2019.
- 4 3 : Dysphagia rehabilitation by dental profession: Furuya J, Yoshida M: 25th Annual Meeting of Japanese Society of Dysphagia Rehabilitation (Niigata), 2019.
- 4 4 : Basic survey for the prevention of intraoral residual medication in older adults: Hasegawa Y, Sadakane A, Yoshida M, Yoshikawa M, Nozaki S, Ono T, Niimura K, Kishimoto H: 25th Annual Meeting of Japanese Society of Dysphagia Rehabilitation (Niigata), 2019.
- 4 5 : Tongue-pressure training in Japanese healthy elderly: Training and detraining effects in longitudinal RCT study: Yoshikawa-Sonoda M, Kitagawa M, Nagao A, Nishikawa Y, Kuroki A, Maruyama M, Mori T, Yoshida M, Tsuga K: 9th ESSD Congress (Vienna), 2019.
- 4 6 : Development of bioactive titanium membrane: Umehara H, Kubo T, Doi K, Kobatake, Oki Y, Makihara Y, Tsuga K: The 49th Annual Meeting of the Japanese Society of Oral Implantology (Fukuoka), 2019.
- 4 7 : Control of cells by titanium thin film: Umehara H: 3MT competition (Hiroshima), 2019.
- 4 8 : Novel bioactive titanium membrane for bone regeneration; effect of alkali treatment : Umehara H, Doi K, Kobatake R, Makihara Y, Oki Y, Kubo T, Tsuga K: European Association for

- Osseointegration 28th Annual Scientific Meeting (Lisbon), 2019.
- 4 9 : The capability and biocompatibility of antimicrobial adhesive polyurethane gel sheet for retention of facial & somato prosthesis: Nakamori K, Iwaguro S, Okazaki Y, Asahara E, Yasuda K, Yoshihara K, Abe Y, Tsuga K: The 74th Japanese Society for Dental Materials and Devices (Nagasaki), 2019.
- 5 0 : Observational study in the oral squeezing style for taking in dysphagia diet: Haruta A, Yamawaki K, Mori T, Kuroki A, Okazaki Y, Maruyama M, Yoshikawa M, Tsuga K: 30th Annual Meeting of Japanese Society for Mastication Science and Health Promotion (Tokyo), 2019.
- 5 1 : Development of repeated tongue movement measuring device. Higa C, Tsuga K, Mori T, Hiraoka A, Kuroki A, Morita K, Yoshikawa M: 63rd Scientific Meeting of the Japanese Society of Stomatognathic Function (Tokyo), 2019.
- 5 2 : Objective evaluation of functional recovery by implant treatment using oral function test: Maruyama M, Doi K, Kubo T, Kitagawa M, Takechi M, Tsuga K: 39th Annual Meeting of Japanese Society of Oral Implantology Chugoku-Shikoku branch (Ehime), 2019.
- 5 3 : A case report applying newly developed interconnected porous hydroxyapatite to implant GBR: Makihara Y, Doi K, Oki Y, Kobatake R, Umehara H, Kubo T, Tsuga K: Dentisphere 4 International scientific meeting 5th Asean plus & Tokushima joint international conference (Surabaya), 2019.
- 5 4 : Novel fabrication of bioactive porous titanium for bone reconstruction: Kobatake R, Doi K, Makihara Y, Oki Y, Umehara H, Oue H, Abe Y, Kubo T, Tsuga K: Dentisphere 4 International scientific meeting 5th Asean plus & Tokushima joint international conference (Surabaya), 2019.
- 5 5 : The bioactive effect of alkali treated titanium membrane: Umehara H, Doi K, Kobatake R, Oki Y, Makihara U, Kubo T, Tsuga K: Dentisphere 4 International scientific meeting 5th Asean plus & Tokushima joint international conference (Surabaya), 2019.

F) Special lectures in academic meetings

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

- 1 0 : MEXT Grant-in-Aid for Scientific Research (C): Tsuga K: Development of novel examination for chewing force. (Grant No. 18K09660). ¥1,950,000
- 1 1 : MEXT Grant-in-Aid for Scientific Research (C): Abekura H: A study of splint discontinuous wear based on EEG and EMG analysis of long-term dynamics of bruxism (Grant No. 17K11782). ¥650,000.
- 1 2 : MEXT Grant-in-Aid for Scientific Research (C): Yoshida M: Evidence-based diagnosis for oral intake in patients with aspiration pneumonia (Grant No. 19K10207). ¥2,210,000.
- 1 3 : MEXT Grant-in-Aid for Scientific Research (C): Doi K: Establishment of bone reconstruction with implant stability using bioactive porous titanium. (Grant No. 18K09683). ¥1,560,000.
- 1 4 : MEXT Grant-in-Aid for Scientific Research (C): Kagawa K: Functional analysis of a novel soluble FGF receptor derived from bone and cartilage and its application to osteochondral regeneration (Grant No. 17K11804). ¥1,300,000.
- 1 5 : MEXT Grant-in- Aid for Young Scientists (B): Makihara Y: Establishment of bone regeneration therapy for osteoporosis using bone formation promoting hydroxyapatite. (Grant No. 19K19053). ¥2,080,000.
- 1 6 : MEXT Grant-in- Aid for Young Scientists (B): Higa C: New development of iterative tongue motion test and training method. (Grant No. 17K17373). ¥1,820,000.
- 1 7 : MEXT Grant-in- Aid for Young Scientists (B): Yokoi M: Establishment of bone regeneration therapy for peri-implantitis bone defect using FGF receptor signal inhibition (Grant No. 19K19069). ¥1,300,000.
- 1 8 : MEXT Grant-in-Aid for JSPS Fellows: Kobatake R: Novel development of bone reconstruction treatment by bioactive porous titanium. (Grant No. 19J13235). ¥1,100,000.

- 19 : Research grant: Daicel-Evonik Ltd.: Tsuga K: Clinical evaluation of molar PEEK crown (Grant No. 1817JA736). ¥1,056,000
- 20 : Research grant: ULTI—Medical Ltd.: Abekura H: PEEK crown for molars ¥500,000.
- 21 : Research grant: OCI Ltd.: Abekura H: PEEK crown for molars ¥500,000.

(5) Academic Awards, etc.

- 4 : Kobatake R, Doi K, Oki Y, Makihara Y, Umehara H, Kubo T, Tsuga K : Development of novel bioactive porous titanium for bone reconstruction material : The 51th Hiroshima University Dental Society, Best presenter award, 2019.
- 5 : Umehara H: Control of cells by titanium thin film: Best performance and audience award, 2019.
- 6 : Makihara Y, Doi K, Oki Y, Kobatake R, Umehara H, Kubo T, Tsuga K : A case report applying newly developed interconnected porous hydroxyapatite to implant GBR : Dentisphere 4 International scientific meeting 5th Asean plus & Tokushima joint international conference 2nd Best Poster Presenter Award (Clinical Category), 2019.
- 7 : Umehara H, Doi K, Kobatake R, Oki Y, Makihara U, Kubo T, Tsuga K : The bioactive effect of alkali treated titanium membrane : Dentisphere 4 International scientific meeting 5th Asean plus & Tokushima joint international conference 1st Best Poster Presenter Award (Research Category), 2019.
- 8 : Kobatake R: Hiroshima University Graduate School of Biomedical Sciences Award, 2019.

(6) Patents

- 1 : Doi K, Kobatake R, Fujita T, Kubo T, Umehara H: Porous Metal Membrane (No. 2019-129101) (Hiroshima University, Nagamine Manufacturing Co., Ltd.)

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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	: Hiroshi Ueda, Masato Kaku (~R1.10.31)
Lecturer	: Ryo Kunimatsu
Assistant Professor	: Yuki Asakawa, Naoto Hirose, Yuki Yoshimi, Tetsuya Awada, Yuji Tsuka, Takaharu Abe (R1.9.1~)
Intern	: Kayo Horie, Takaharu Abe (~R1.8.31), Makoto Yanoshita, Taeko Yamamoto, Koji Iwai (R1.10.1~), Azusa Onishi, Isamu Kado, Mami Takano, Sakura Yamada
Graduate Student	: Koji Iwai (~R1.9.30), Kazuyo Ando, Hiroki So, Yuka Yamauchi, Tomoka Hiraki, Jin Izumino, Shota Ito, Haruka Kagawa, Yuma Koizumi, Ayaka Nakatani, Ayana Nakano, Sayumi Miura, Shuzo Sakata, Sayuri Nishiyama, Kazutaka Ikeda, Eri Ishida, Tomohiro Ogasawara, Eri Tsuboi, Kodai Rikitake, Naoki Kubo, Kanae Oda, Nurul Aisyah Rizky Putranti
Professor(part-time)	: Kazuo Tanne, Eiji Tanaka, Ichiro Takahashi, Shoichi Miyawaki
Research Associate	: Cynthia Concepción Medina
Registered Intern	: Kuniaki Tanaka, Kazunori Itatani, Eri Ohtani, Hirotaka Sugino, Yu Matsumura, Shoutoku Kojima, Saki Okita, Hidemi Gunji, Yuko Nakao, Aya Kimura, Yuka Yashima
Dental Hygienist	: Miho Okada, Natsumi Ino

(2) Main Research Activities

- 1 : Elucidation of pathogenic mechanism in malocclusion and management of oral maxillofacial skeletal growth
- 2 : Optimization of tooth movement by orthodontic force
- 3 : Establishment of a new orthodontic treatment based on the image and biochemical diagnosis of temporomandibular disorders (TMD)
- 4 : Application of regeneration medicine to orthodontic treatment
- 5 : Suppression of caries risk in orthodontic treatment
- 6 : Evaluation of the contribution of various oral functions to general fitness
- 7 : Development of new instruments and materials for orthodontic treatment

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Multislice computed tomography assessment of airway patency changes associated with mandibular advancement appliance therapy in supine patients with obstructive sleep apnea : Matsumura Y., Ueda H., Nagasaki T., Cynthia CM., Iwai K., Tanimoto K.: *Sleep Disord.*, volume 2019, Article ID 8509820, 9 pages, <https://doi.org/10.1155/2019/8509820>, 2019.
- 2 : Influences of mouth breathing on memory and learning ability in growing rats : Tsubamoto-Sano N., Ohtani J., Ueda H., Kaku M., Tanne K., Tanimoto K.: *J Oral Sci.*, 61(1), 119-124, 2019.
- 3 : Molecular biological and histological effects of Er:YAG laser irradiation on tooth movement : Tsuka Y., Kunimatsu R., Gunji H., Nakajima K., Hiraki T., Nakatani A., Tanimoto K.: *J Oral Sci.*, 61(1), 67-72, 2019.
- 4 : Differentiation of mouse-induced pluripotent stem cells into dental epithelial-like cells in the absence of added serum : Aimi N.A., Miyauchi S., Onishi A., Tanimoto K., Kato K.: *In Vitro Cell Dev Biol Anim.*, 55(2), 130-137, 2019.
- 5 : Elucidation of the inflammatory mechanism of mandibular cartilage development and the establishment of a prevention method for PCR using Sema3A : Hirose N., Sumi C., Yanoshita M., Takano M., Nishiyama S., Tsuboi E., Asakawa Y., Tanimoto K.: *Impact*, volume 2019, 67-69(3), 2019.
- 6 : Acetaminophen reduces apical root resorption during orthodontic tooth movement in rats : Kaku M., Yamamoto T., Yashima Y., Izumino J., Kagawa H., Ikeda K., Tanimoto K.: *Arch. Oral Biol.*, 102, 83-92, 2019.
- 7 : Correction of skeletal class II severe open bite with temporomandibular joint disorder treated by miniscrew anchorage and molar extraction: a case report : Kaku M., Yamamoto T., Yashima Y., Izumino J., Kagawa H., Ikeda K., Tanimoto K.: *J. Med. Case Rep.*, 13 (1), 207, 1186/s13256-019-2132-6, 2019.
- 8 : ANGPTL2 Promotes Inflammation via Integrin $\alpha 5\beta 1$ in Chondrocytes : Takano M., Hirose N., Sumi C., Yanoshita M., Nishiyama S., Onishi A., Asakawa Y., Tanimoto K.: *Cartilage*, doi.org/10.1177/1947603519878242, 2019.
- 9 : Success rates in isolating mesenchymal stem cells from permanent and deciduous teeth : Nakajima K., Kunimatsu R., Ando K., Hiraki T., Rikitake K., Tsuka Y., Abe T., Tanimoto K.: *Sci Rep.*, 9(1), 16764, 2019.
- 10 : A case of skeletal maxillary protrusion with open bite and hypoplasia of the

- condyle treated using maxillary surgery alone : Ono S., Nakagawa T., Kaku M., Yamamoto T., Ohta K., Kubozono K., Uetsuki R., Mizuta K., Tanimoto K., Takechi M.: Jpn. J. Jaw Deform, 29(1), 59-65, 2019.
- 1 1 : Two orthodontic cases treated by autotransplantation using extracted teeth : Kamiya T., Kamiya A., Sumi H., Sumi C., Tanimoto K.: J. Chu-shi. Orthod. Soc., 31 (1), 7-22, 2019.
- 1 2 : An orthodontic treatment case of mandibular protrusion with canted occlusal plane and asymmetry of mandible : Kojima S., Kaku M., Yamamoto T., Yashima Y., Kyomen S., Tanimoto K.: J. Chu-shi. Orthod. Soc., 31 (1), 23-30, 2019.
- 1 3 : A Treatment Case of Left Cleft Lip and Palate with Maxillary Central Supernumerary Teeth and Microdont : Nobuhara T., Kunimatsu R., Tanne-Asakawa Y., Okamoto Y., Gunji H., Kimura A., Takano M., Yamada S., Tanimoto K.: J. Hiroshima Univ. Dent. Soc., 51(1), 23-33, 2019.

B) Review

C) Publications

- 1 : Orthodontics 6th edition : Tanimoto K, Iida J., et al., ed., Ishiyaku publisher, 2019.
- 2 : 迷ったときのかかりつけ歯医者 : 谷本幸太郎, 医療評価ガイド編集部 編, 南々社 (広島県), 2019.

D) Other Publications

- 1 : Editorial note : Tanimoto K., J. Jpn. Cleft Palate Assoc., 44(1): 44, 2019.

E) Presentations at Scientific Meetings

- 1 : Smart Biointerface for the Efficient Expansion of Neural Progenitor Cells Derived from Induced Pluripotent Stem Cells : Yamauchi Y., Tanimoto K., Kato K.: 2019 Spring Meeting of the European Materials Research Society (Nice), 2019.
- 2 : Semaphorin3A Inhibits Inflammation in Chondrocytes under Excessive Mechanical Stress : Hirose N., Sumi C., Yanoshita M., Takano M., Nishiyama S., Tsuboi E., Onishi A., Yamauchi Y., Asakawa Y., Tanimoto K.: The 97th General Session of International Association for Dental Research (Vancouver), 2019.
- 3 : Anti-inflammatory effects of FAK inhibitor on condylar cartilage under excessive mechanical stress : Yanoshita M., Hirose N., Takano M., Sumi C., Nishiyama S.,

- Tsuboi E., Asakawa Y., Onishi A., Yamauchi Y., Tanimoto K.: The 97th General Session of International Association for Dental Research (Vancouver), 2019.
- 4 : Effects of FAK inhibitor on condylar cartilage under the excessive mechanical stress in organ culture model : Yanoshita M., Hirose N., Takano M., Nishiyama S., Onishi A., Yamauchi Y., Tsuboi E., Asakawa Y., Tanimoto K.: The 32nd Annual Meeting of the Japanese Society for Temporomandibular Joint, The 6th Asian Academy congress for Temporomandibular Joint (Tokyo), 2019.
- 5 : ANGPTL2 promotes inflammation via integrin $\alpha 5\beta 1$ in chondrocytes : Takano M., Hirose N., Yanoshita M., Nishiyama S., Tsuboi E., Onishi A., Yamauchi Y., Asakawa Y., Tanimoto K.: The 32nd Annual Meeting of the Japanese Society for Temporomandibular Joint, The 6th Asian Academy congress for Temporomandibular Joint (Tokyo), 2019.
- 6 : Bone matrix miR-125b inhibits bone resorption without affecting skeletal development and improves age-related changes in bone mass and quality : Ito S., Minamizaki T., Kitaura Y., Ohba S., Chung U., Tanimoto K., Yoshiko Y.: ASBMR 2019 Annual Meeting (Orlando), 2019.
- 7 : Bone regeneration in a canine artificial jaw cleft model using bone marrow-derived mesenchymal stem cells : Abe T., Kunimatsu R., Yoshimi Y., Tsuka Y., Awada T., Sumi K., Tanimoto K.: The 52nd Annual Scientific Congress of the Korean Association of Orthodontists (Seoul), 2019.
- 8 : Effect of Er:YAG laser irradiation and mechanical force on primary human gingival fibroblasts : Tsuka Y., Kunimatsu R., Gunji H., Abe T., Cynthia CM., Nakajima K., Hiraki T., Nakatani A., Tanimoto K.: The 52nd Annual Scientific Congress of the Korean Association of Orthodontists (Seoul), 2019.
- 9 : Hyperbaric oxygen stimulates osteoblast differentiation and bone regeneration in mice calvarial defects : Izumino J., Kaku M., Yamamoto T., Yashima Y., Kagawa H., Ikeda K., Tanimoto K.: The 52nd Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2019.
- 1 0 : EGF-immobilized culture substrates for the efficient expansion of neural progenitor cells derived from iPS cells : Yamauchi Y., Tanimoto K., Kato K.: The 52nd Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2019.
- 1 1 : A case of skeletal maxillary protrusion with open bite and hypoplasia of the condyle treated using maxillary surgery alone : Uetsuki R., Ono S., Kaku M., Yamamoto T., Ohta K., Mizuta K., Tanimoto K., Takechi M.: The 52nd Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2019.

- 1 2 : Evaluation of masticatory function in Cleft Lip and Palate patients after orthodontic treatment : Miura S., Iwai K., Cynthia CM., Horie K., Ishida E., Ueda H., Tanimoto K.: The 62nd Annual Meeting of the Chu-Shikoku Orthodontic Society (Kure), 2019.
- 1 3 : Cephalometric differences between the past and the present in Japanese adults with normal occlusion : Yamauchi Y., Hirose N., Sumi C., Yanoshita M., Onishi A., Nishiyama S., Yoshimi Y., Tanimoto K.: The 62nd Annual Meeting of the Chu-Shikoku Orthodontic Society (Kure), 2019.
- 1 4 : A case of malocclusion with Parry Romberg syndrome : Yashima Y., Kaku M., Yamamoto T., Izumino J., Kagawa H., Ikeda K., Tanimoto K.: The 62nd Annual Meeting of the Chu-Shikoku Orthodontic Society (Kure), 2019.
- 1 5 : Overexpression of miR-125b in osteoblasts inhibits bone resorption without affecting skeletal development and improves age-related changes in bone mass and quality : Ito S., Minamizaki T., Kitaura Y., Ohba S., Chung U., Tanimoto K., Yoshiko Y.: The 37th Annual Meeting of the Japanese Society for Bone Mineral Research (Kobe), 2019.
- 1 6 : Analysis of actual condition of cnm-positive Streptococcus mutans carriers : Kitagawa M., Ouhara K., Awada T., Shintani T., Ogawa I., Kurihara H.: The 58th Hiroshima Prefecture Dental Association, The 103rd Hiroshima University Dental Society (Hiroshima), 2019.
- 1 7 : Statistical study of temporomandibular disorders in Hiroshima University orthodontic clinic over the past 5 years : Onishi A., Hirose N., Awada T., Yanoshita M., Takano M., Yamauchi Y., Nishiyama S., Tsuboi E., Tanimoto K.: The 58th Hiroshima Prefecture Dental Association, The 103rd Hiroshima University Dental Society (Hiroshima), 2019.
- 1 8 : Effects of high-frequency near-infrared diode laser irradiation on the proliferation and migration of osteoblasts : Kunimatsu R., Gunji H., Tsuka Y., Yoshimi Y., Awada T., Nakajima K., Sakata S., Nakatani A., Hiraki T., Abe T., Tanimoto K.: The 78th Annual Meeting of The Japanese Orthodontic Society (Nagasaki), 2019.
- 1 9 : Baicalin inhibits root resorption during tooth movement in a rodent model : Kimura A., Kunimatsu R., Tsuka Y., Horie K., Yoshimi Y., Awada T., Gunji H., Abe T., Nakajima K., Sakata S., Nakatani A., Tanimoto K.: The 78th Annual Meeting of The Japanese Orthodontic Society (Nagasaki), 2019.
- 2 0 : Survey on caries risk test using patient's saliva in Orthodontic Clinic in Hiroshima University Hospital : Okada M., Kunimatsu R., Yoshimi Y., Kado I.,

- Yamada S., Tokui F., Kitagawa M., Tanimoto K.: The 78th Annual Meeting of The Japanese Orthodontic Society (Nagasaki), 2019.
- 2 1 : Application of conditioned media of stem cells from human exfoliated deciduous teeth to bone regeneration : Hiraki T., Kunimatsu R., Nakajima K., Abe T., Yamada S., Rikitake K., Awada T., Yoshimi Y., Tsuka Y., Kaku M., Tanimoto K.: The 78th Annual Meeting of The Japanese Orthodontic Society (Nagasaki), 2019.
- 2 2 : Relationship between salivation and skeletal morphology in Orthodontic Clinic in Hiroshima University Hospital : Yoshimi Y., Kado I., Yamada S., Okada M., Tokui F., Kunimatsu R., Tanimoto K.: The 78th Annual Meeting of The Japanese Orthodontic Society (Nagasaki), 2019.
- 2 3 : The effect of mesenchymal stem cells on chemotaxis of osteoclast precursor cells : Abe T., Kunimatsu R., Yoshimi Y., Tsuka Y., Sumi K., Nakajima K., Hiraki T., Rikitake K., Tanimoto K.: The 78th Annual Meeting of The Japanese Orthodontic Society (Nagasaki), 2019.
- 2 4 : Statistical study of temporomandibular disorders in Hiroshima University orthodontic clinic over the past 5 years : Onishi A., Hirose N., Awada T., Yanoshita M., Takano M., Yamauchi Y., Nishiyama S., Tsuboi E., Tanimoto K.: The 78th Annual Meeting of the Japanese Orthodontic Society (Nagasaki), 2019.
- 2 5 : Effects of mechanical force on osteocytes at presser side of alveolar bone : Yashima Y., Kaku M., Yamamoto T., Izumino J., Kagawa H., Ikeda K., Tanimoto K.: The 78th Annual Meeting of the Japanese Orthodontic Society (Nagasaki), 2019.
- 2 6 : The analysis of the dynamics of saliva microbiome by multi-bracket appliances using next generation sequencing. : Kado I., Hisatsune J., Koizumi Y., Sugai M., Tanimoto K.: The 78th Annual Meeting of The Japanese Orthodontic Society (Nagasaki), 2019.

F) Special lectures in academic meetings

- 1 : Tanimoto K. : Dental education in near future- revision of curriculum in 2019- : Hiroshima University School of Dentistry supporter's association (Hiroshima), 2019.
- 2 : Tanimoto K. : Patient management of malocclusion with mandibular condylar resorption in orthodontic treatment : The 32nd Annual Meeting of the Japanese Society for Temporomandibular Joint, The 6th Asian Academy congress for Temporomandibular Joint (Tokyo), 2019.

- 3 : Tanimoto K. : Acceleration of orthodontic tooth movement by laser irradiation : FORKINAS VII -International Conference and Exhibition on Dentistry (Jember), 2019.
- 4 : Tanimoto K. : Severe orthodontic cases with difficulty in correspondence – introduction of previous cases – : 38th Annual Meeting of the Japanese Society of Pediatric Dentistry, Chubu division (Tsu), 2019.
- 5 : Tanimoto K. : A new technology for orthodontic treatment – laser-assisted tooth movement – : 11th TIIKG International Scientific Meeting in Dentistry (Makassar), 2019.
- 6 : Hirose N. : Mechanical stress and cartilage degradation mechanism, 'search for substances as therapeutic agents for temporomandibular disorders' : The 32nd Annual Meeting of the Japanese Society for Temporomandibular Joint, The 6th Asian Academy congress for Temporomandibular Joint (Tokyo), 2019.
- 7 : Hirose N. : Evaluation of oral function before and after orthognathic surgery by use of Electro palatography : The 29th Annual Meeting of Japanese Society for Jaw Deformities (Tokyo), 2019.
- 8 : Hirose N. : New insights of TMD therapy : The annual seminar of Kagawa Medical Practitioners Association (Kagawa), 2019.
- 9 : Kunimatsu R. : Application of cold laser on the metabolism of periodontal tissue for orthodontic treatment : The 37th Annual Meeting of Japan Dental Society of Oriental Medicine (Hiroshima), 2019.
- 10 : Kunimatsu R. : Development of Enamel Regeneration Technology and Exploration of Amelogenin Peptide Drug Discovery : Japan Science and Technology Agency New Technology Presentation Meeting (Tokyo), 2019.
- 11 : Kunimatsu R. : URA seminar : Hiroshima URA (Hiroshima), 2019.

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

- 1 : Challenging Research (Exploratory) : Tanimoto K.: Introduction of proteolytic enzyme into biomineralization process and its application to tooth enamel regeneration. 19K22717. 2,990,000yen
- 2 : Grant-in-aid for Scientific Research (C) : Kunimatsu R.: Application of cold laser to regeneration of periodontal tissue and pain relief during tooth movement. 19K10385. 1,950,000 yen
- 3 : Grant-in-aid for Scientific Research(C) : Asakawa Y.: Elucidation of the effect of Angptl2 on cartilage destruction of osteoarthritis and its application to novel

- therapies. 18K09833. 1,040,000 yen
- 4 : Grant-in-aid for Scientific Research(C) : Hirose N.: Elucidation of mechanics of temporomandibular joint osteoarthritis and establishment of new therapeutic method with NFATc inhibitor. 19K10383. 2,080,000 yen
- 5 : Grant-in-Aid for Young Scientists (B) : Sumi K.: The development to bone regeneration treatment for CLP patients using mesenchymal stem cells of different origins and semiconductor lasers. 17K17327. 2,080,000 yen
- 6 : Grant-in-Aid for Young Scientists (B) : Yoshimi Y.: Application to prevent and treat root absorption using naturally derived flavonoids and amelogenin peptide drug discovery. 17K17330. 2,080,000 yen
- 7 : Grant-in-aid for Scientific Research (C) : Yoshimi Y.: Application of functional amelogenin peptides to bone organoid preparation and bone regeneration. 19K103840A. 2,880,000 yen
- 8 : Grant-in-Aid for Young Scientists (B) : Awada T.: Application to periodontal tissue regeneration by a new amelogenin peptide combined with mesenchymal stem cells derived from dental pulp and adipose. 17K17328. 2,080,000 yen
- 9 : Grant-in-Aid for Early-Career Scientists : Awada T.: Development of orthodontic treatment using a combination of growth hormone replacement therapy and functional appliances. 19K192970A. 2,700,000 yen
- 1 0 : Grant-in-Aid for Early-Career Scientists : Tsuka Y.: Elucidation of mandibular head cartilage destruction mechanism and establishment of treatment method for osteoarthritis of the temporomandibular joint using cold laser. 18K17256. 1,300,000 yen
- 1 1 : Grant-in-Aid for Early-Career Scientists : Abe T.: Establishment of minimally invasive treatment for alveolar cleft with the application of exosomes of stem cells from human exfoliated deciduous teeth. 19K192690A. 2,080,000 yen
- 1 2 : Grant-in-Aid for Young Scientists (B) : Horie K.: A effect of withaferin A on extra-territorial facial pathological pain following a trigeminal nerve injury. 17K15790. 2,210,000 yen
- 1 3 : Grant-in-Aid for Early-Career Scientists : Horie K.: Elucidation of pathogenesis of associated pain in trapezius and sternocleidomastoid muscles associated with temporomandibular disorder. 19K19298. 1,690,000 yen
- 1 4 : Grant-in-Aid for Young Scientists (B) : Sugino H.: The construction of two layers cartilage composites by bioengineering and application to temporomandibular joint restoration. 17K17910. 2,210,000 yen
- 1 5 : Grant-in-Aid for Young Scientists (B) : Date T.: Designed SDF-1 chimeric protein

- for bone tissue regeneration. 17K17914. 1,820,000 yen
- 1 6 : Grant-in-Aid for Early-Career Scientists : Gunji H.: Periodontal tissue metabolism activation and clinical application during tooth movement using cold laser. 18K17257. 2,080,000 yen
- 1 7 : Grant-in-Aid for Early-Career Scientists : Okita S.: Activation of mature osteoblasts and an investigation of their bone regeneration ability. 18K17258. 1,170,000 yen
- 1 8 : Grant-in-Aid for Early-Career Scientists : Nakao Y.: Elucidation of bone metabolism regulation mechanism by microRNA in bone matrix vesicles and application to efficient tooth movement. 19K19268. 3,250,000 yen
- 1 9 : Grant-in-Aid for Scientific Research (Support for Starting Research Activities) : Yanoshita M.: Establishment of effective treatment for temporomandibular joint disorders with Docosahexaenoic acid (DHA) and Resolvin. 18H06310. 1,430,000 yen
- 2 0 : Grant-in-Aid for Scientific Research (Support for Starting Research Activities) : Nakajima K.: Analysis of bone regeneration mechanism and verification of optimal transplant condition in stem cells from human exfoliated deciduous teeth. 18H06278 g g . 1,430,000 yen
- 2 1 : Grant-in-Aid for Early-Career Scientists : Kimura A.: Elucidation of periodontal tissue metabolic activity and its application to root resorption treatment by baicalin, flavonoid. 19K19270. 2,080,000 yen
- 2 2 : Grant-in-Aid for Early-Career Scientists : Yamamoto T.: The effect of acetaminophen by COX inhibition for reduction of apical root resorption. 19K192960A. 1,900,000 yen
- 2 3 : Grant-in-Aid for Scientific Research (Support for Starting Research Activities) : Kado I., The elucidation of change of oral ecosystem including dynamics of microbiome by orthodontic treatment and building a new prevention system. 19K24147. 1,430,000yen
- 2 4 : Hiroshima university Grant-in-Aid for challenging Exploratory Research : Yamada S.: Development of anti-bone destructive peptides based on lactoferrin research. 500,000 yen

(5) Academic Awards, etc.

- 1 : Yanoshita M. : The 32nd Annual Meeting of the Japanese Society for the Temporomandibular Joint Excellence (Ishibashi) Award, 2019.

- 2 : Ito S. : ASBMR 2019 Annual Meeting, ASBMR 2019 Annual Meeting
Young
Investigator Award.
- 3 : Ito S. : ASBMR 2019 Annual Meeting, ASBMR 2019 Annual Meeting
Plenary
Poster.
- 4 : Ito S. : The 37th Annual Meeting of the Japanese Society for Bone
Mineral
Research, ASBMR 2019 Travel Award.
- 5 : Tsuka Y. : The 52nd Annual Scientific Congress of the Korean Association
of
Orthodontists, Excellent Poster Presentation Award.
- 6 : Hiraki T. : The 78th Annual Meeting of the Japanese Orthodontic Society,
The 79th
Annual Meeting of the Japanese Orthodontic Society poster
award.
- 7 : Kimura A. : The 78th Annual Meeting of the Japanese Orthodontic Society,
The 79th
Annual Meeting of the Japanese Orthodontic Society poster
award.

(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 (From 1 st October)
Associate Professor/Lecturer	: Yoshikazu Suei, Takashi Nakamoto
Assistant Professor	: Toshikazu Nagasaki, Masahiko Ohtsuka, Masaru Konishi, Verdonschot R.G.
Graduate Student	: Kiichi Shimabukuro, Pongsapak Wongratwanich

(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: Speech production in the human brain
- 9: Quantitative analysis of temporomandibular joint on MRI

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: T2 relaxation times of the retrodiscal tissue in patients with temporomandibular joint disorders and healthy volunteers: A comparative study: Kakimoto N., Shimamoto H., Kitisubkanchana J., Tsujimoto T., Senda Y., Iwamoto Y., Verdonschot R.G., Hasegawa Y., Murakami S.: Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, Sep;128(3):311-318. doi: 10.1016/j.oooo.2019.02.005, 2019
- 2: On recognizing Japanese katakana words: Explaining the reduced priming with hiragana and mixed-kana identity primes: Kinoshita, S., & Verdonschot, R.G.: Journal of Experimental Psychology: Human Perception and Performance. 45(11):1513-1521. doi: 10.1037/xhp0000692, 2019.

- 3: The fundamental phonological unit of Japanese word production: an EEG study using the picture-word interference paradigm: Verdonschot, R.G., Tokimoto, S., & Miyaoka, Y.: *Journal of Neurolinguistics*. 51:183-193. doi: 10.1016/j.jneuroling.2019.02.004, 2019
- 4: Spoken-word production in Korean: a non-word masked priming and phonological Stroop task investigation. Han, J-I., & Verdonschot, R.G.: *Quarterly Journal of Experimental Psychology*. 72(4):901-912. doi: 10.1177/1747021818770989, 2019.
- 5: Allograph priming is based on abstract letter identities: Evidence from Japanese kana. Kinoshita, S., Schubert, T., & Verdonschot, R.G. *Journal of Experimental Psychology: Learning, Memory, and Cognition*. 45(1):183-190. doi: 10.1037/xlm0000563, 2019.
- 6: The effectiveness of various types of mouthwash on alleviating radiation-induced oral mucositis in head and neck cancer patients: a systematic review.: Konishi, M., Verdonschot, R.G., Shimabukuro, K., Nakamoto, T., Fujita, M., & Kakimoto, N.: *Oral Radiology*. 35:207–223. doi: 10.1007/s11282-018-0361-9, 2019.
- 7: A case of an abnormal positioning of the common carotid artery which was clinically diagnosed as a submandibular mass. Nakamoto, T., Suei, Y., Konishi, M., Kanda, M., Verdonschot, R.G. & Kakimoto, N. *Oral Radiology*. 35(3):331-334. doi: 10.1007/s11282-018-0355-7, 2019.
- 8: Improvement of region of interest extraction and scanning method of computer-aided diagnosis system for osteoporosis using panoramic radiographs. Nakamoto, T., Taguchi, A., Verdonschot, R.G., & Kakimoto, N.: *Oral Radiology*. 35(2):143-151. doi: 10.1007/s11282-018-0330-3, 2019.
- 9: Multislice Computed Tomography Assessment of Airway Patency Changes Associated with Mandibular Advancement Appliance Therapy in Supine Patients with Obstructive Sleep Apnea. Matsumura, Y., Ueda, H., Nagasaki, T., Medina, CC., Iwata, K., Tanimoto K.: *Sleep disorders*. Article ID 8509820, 9p. doi: 10.1155/8509820, 2019.

C) Publications

- 1: Chapter 8 Radiation therapy; Dental hygienist course, *Oral radiology* (Kaneda T., Okumura Y., Murakami S.): Kakimoto N.: Nagasue dhoten inc. (Kyoto), 88-95, 2019
- 2: Part 2 Oral, odontogenic tumor, chapter 2 basic knowledge for diagnosis, image diagnosis: Histopathological practice for cancer treatment guideline, salivary gland tumor/oral, odontogenic tumor (Aozasa K.): Kakimoto N.: Nakayama Shoten Co., Ltd. (Tokyo), 220-228, 2019
- 3: Spapé M.M., Verdonschot, R.G., & van Steenbergen, H. (2019) *The E-Primer: An introduction to creating psychological experiments in E-Prime*. Second edition updated for E-Prime 3. Leiden: Leiden University Press. ISBN: 9789087283209.

E) Presentation at Scientific Meeting

- 1: A case of thrombosis suspected as left submandibular tumor: Shimabukuro K., Konisi M., Nakamoto T., Nagasaki T., Wongratwanich P., Verdonschot R.G., Otsuka M., Suei Y., Furusho H., Ogawa I., Uetsuki R., Ono S., Kakimoto N.: The 37th annual joint meeting of Kansai and Kyushu of Japanese Society of Oral and Maxillofacial Radiology (Kagoshima), 2019.
- 2: High dose rate interstitial brachytherapy for oral cancer patients at Hiroshima University Hospital - Introduction and Early experience-: Kakimoto N., Konishi M., Shimabukuro K., Wongratwanich P., Verdonschot R.G., Nagasaki T., Otsuka M., Nakamoto T., Suei Y.: The 37th annual joint meeting of Kansai and Kyushu of Japanese Society of Oral and Maxillofacial Radiology (Kagoshima), 2019.
- 3: Evaluation of reconstruction technique for reducing metallic artifacts between CT machines: Kobayashi M., Ushio A., Yamaoka H., Fujioka C., Kiguchi M., Kakimoto N.: The Japanese meeting of radiological technologists in dental college and university dental hospital in 2019 (Tokyo), 2019
- 4: Study and observation of Center for Cause of Death Investigation Research by clinical practice dental students: Oka H., Kouzai K., Kakimoto N.: 38th general assembly of Japanese Dental Education Association (Fukuoka), 2019
- 5: T2-relaxation times of the temporomandibular joint using 3.0T MRI: Kakimoto N, Nagasaki T, Akiyama Y, Yamaoka H, Shimabukuro K, Wongratwanich P, Verdonschot RG, Konishi M, Otsuka M, Nakamoto T, Suei Y: 22nd ICDMFR (USA), 2019
- 6: A case of maxillary incisor teeth with root resorption due to impacted canine teeth: Numata N., Fujinaka C., Fujinaka S., Kakimoto N.: The joint meeting of the 58th annual meeting of Hiroshima Prefectural Dental Association and the 103th annual meeting of Hiroshima University Dental Society (Hiroshima), 2019.
- 7: Activities of forensic dentistry section of Center for Cause of Death Investigation Research, Graduate School of Biomedical and Health Science, Hiroshima University: Oka H., Kouzai K., Kakimoto N., Fukumoto W., Uraoka N., Nagao M., Awai K., Yasui W.: The joint meeting of the 58th annual meeting of Hiroshima Prefectural Dental Association and the 103th annual meeting of Hiroshima University Dental Society (Hiroshima), 2019.
- 8: Treatment results of high dose rate interstitial brachytherapy for tongue cancer patients with modular lead-lined spacer: Iwamoto Y., Majima M., Tsujimoto T., Shimamoto H., Marutani K., Uchiyama Y., Sasai T., Kakimoto N., Fuchihata H., Murakami S.: The 24th congress of clinical imaging of oral and maxillofacial Radiology (Kokura), 2019
- 9: Central giant cell lesions of the mandibular condyle: 2 case reports: Wongratwanich P., Suei Y., Konishi M., Nagasaki T., Otsuka M., Verdonschot R.G., Ono S., Okuda S., Koizumi K., Hirota K., Sakamoto S., Ogawa I., Miyauchi M., Nakamoto T., Kakimoto N.: The 38th annual joint meeting of Kansai and Kyushu of Japanese Society of Oral and Maxillofacial Radiology (Okayama), 2019.
- 10: Quantifying of image evaluation method of computer-aided screening support system for osteoporosis

based on detection of linearly eroded endosteal margin of lower border of mandible on panoramic radiographs: Nakamoto T., Hatsuta S, Yagi S., Taguchi A., Kakimoto N.: The 60th annual meeting of Japanese Society of Oral and Maxillofacial Radiology (Tokyo), 2019.

- 11: Intraoral ultrasonographic features of tongue cancer and an incidence of cervical lymph node metastasis: Konishi M., Fujita M., Shimabukuro K., Wongratwanich P., Kakimoto N.: The 60th annual meeting of Japanese Society of Oral and Maxillofacial Radiology (Tokyo), 2019.
- 12: Oral status of the elderly with severe dementia in special elderly nursing home second report: Konishi M., Nagasaki T., Yasuhara Y., Kakimoto N.: The 25th annual meeting of the Japanese Society of Dysphagia Rehabilitation(Niigata), 2019.
13. A case of pumping food bolus between oral cavity and pharynx with a severe mental retardation patient: Konishi M., Nagasaki T., Yasuhara Y., Kakimoto N.: The 37th annual joint meeting of Kansai and Kyushu of Japanese Society of Oral and Maxillofacial Radiology (Kagoshima), 2019.
14. A case of multiple bone formation in the maxillary sinus: Konishi M., Shimabukuro K., Wongratwanich P., Nagasaki T., Sueti Y., Nakamoto T., Kakimoto N.: The 38th annual joint meeting of Kansai and Kyushu of Japanese Society of Oral and Maxillofacial Radiology (Okayama), 2019.
- 15: Should videofluoroscopy and nasoendoscopy examinations be carried out simultaneously during pharyngeal swallowing?: Nagasaki T., Yamada S., Yoshida M., Yoshikawa M., Verdonchot RG, Yasuhara Y., Shimabukuro K., Wongratwanich P., Konishi M., Sueti Y., Kakimoto N: 22nd ICDMFR (USA), 2019.

F) Special lectures in academic meetings

- 1: Brachytherapy for Tongue Cancer: Kakimoto N: HICARE/IAEA International Training Course on Advanced Radiation Therapy (IAEA-RCA Regional Training Course) (Hiroshima), 2019
- 2: Oral image diagnosis: Kakimoto N.: General assembly of Yamagata-gun Dental Association (Hiroshima), 2019
- 3: Image diagnosis in dentistry: Kakimoto N.: General assembly of Hiroshima and Yamaguchi branch in Alumni association of Osaka University School of Dentistry (Hiroshima), 2019
- 4: Let's use it for clinical practice. X-ray images: Kakimoto N., Workshop of Hiroshima Prefecture Dental Hygienist Association (Hiroshima), 2019
- 5: X-ray image to supplement invisible parts -Do you use the images in clinical practice?-. Kakimoto N.: Clinical Symposium of Alumni association of Osaka University School of Dentistry (Suita), 2019
- 6: X-ray image interpretation workshop including AI: Kakimoto N., Employee Seminar at Asahirentogen Ind. Co., Ltd. (Kyoto), 2019
- 7: Oral image diagnosis: Kakimoto N.: General assembly of Akitakata City Dental Association (Hiroshima), 2019

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

- 1: Fund of Hiroshima University “Nozomi H fund”, Cancer Medical Research Promotion Grant: Kakimoto N., High dose rate interstitial brachytherapy for oral cancer patients -Establishment of high precision and treatment standard-, 1,000,000 JPY
- 2: General foundation Ryokufukai The year of 2019 education and research prize for encouragement (Grantfor young researcher grant): Wongratwanich P., Quantitative evaluation of temporomandibular joint by MRI T2 mapping -longitudinal study-, 200,000 JPY
- 3: Grant-in-aid for Scientific Research (C): Kakimoto N., Normalization of high dose rate interstitial brachytherapy for oral cancer patients. 19K10289, 1,200,000 JPY
- 4: Grant-in-aid for Scientific Research (C): Verdonshot, R.G., Speech Sound Production in the Bilingual Brain. 17K02748, 1,040,000 JPY
- 5: Joint research from Research Center for Radiation Disaster Medical Science: Konishi M. Study on the mechanism of taste disorder from radiation. 200,000JPY

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

(1) Staff and Students

Professor : Hideki Shiba
 Associate Professor:
 Lecturer : Katsuhiko Takeda
 Assistant professor : Shizu Hirata-Tsuchiya, Noriko Saito, Satoru Shindo,
 Keiichi Akutagawa, Kazuma Yoshida
 Resident : Jun Nakanishi
 Graduate Student : Satomi Shirawachi
 Visiting Research Scholar: Wang bo

(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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: BDNF/HMW-HA complex as an adjunct to nonsurgical periodontal treatment of ligature-induced periodontitis in dogs.
 Sasaki S, Takeda K, Takewaki M, Ouhara K, Kajiya M, Mizuno N, Fujita T, Kurihara H.
J. Periodontol., 90: 98-109, 2019.
- 2: Dental pulp cell-derived powerful inducer of TNF- α comprises PKR containing stress granule rich microvesicles.
 Suzuki S, Fukuda T, Nagayasu S, Nakanishi J, Yoshida K, Hirata-Tsuchiya S, Nakao Y, Sano T, Yamashita A, Yamada S, Ohta K, Shiba H, Nishimura F.
Sci. Rep., 9: 3825, 2019.
- 3: Glycyrrhizic acid suppresses inflammation and reduces the increased glucose levels induced by the combination of *Porphyromonas gulae* and ligature placement in diabetic model mice.
 Akutagawa K, Fujita T, Ouhara K, Takemura T, Tari M, Kajiya M, Matsuda S, Kuramitsu S, Mizuno N, Shiba H, Kurihara H.
Int. Immunopharmacol., 68: 30-38, 2019.

- 4: Heparin-LL37 complexes are less cytotoxic for human dental pulp cells with undiminished antimicrobial and LPS- neutralizing abilities.
Yoshida K, Suzuki S, Kawada-Matsuo M, Nakanishi J, Tsuchiya-Hirata S, Komatsuzawa H, Yamada S, Shiba H.
Int. Endod. J., 52: 1327-1343, 2019.
- 5: Interleukin (IL)-35 suppresses IL-6 and IL-8 production in IL-17A-stimulated human periodontal ligament cells.
Shindo S, Hosokawa Y, Hosokawa I, Shiba H.
Inflammation., 42: 835-840, 2019.
- 6: Oral environment and taste function of Japanese HIV-infected patients treated with antiretroviral therapy.
Shintani T, Fujii T, Yamasaki N, Kitagawa M, Iwata T, Saito S, Okada M, Ogawa I, Unei H, Hamamoto K, Nakaoka M, Kurihara H, Shiba H.
AIDS Care., 19: 1-6, 2019.
- 7: Relationship between periodontal inflammation and calcium channel blockers induced gingival overgrowth-a cross-sectional study in a Japanese population.
Matsuda S, Okanobu A, Hatano S, Kajiya M, Sasaki S, Hamamoto Y, Iwata T, Ouhara K, Takeda K, Mizuno N, Fujita T, Kurihara H.
Clin Oral Investig., 23: 4099-4105, 2019.

B) Reviews

- 1: The role of NF- κ B in physiological bone development and inflammatory bone diseases: Is inhibition of NF- κ B “killing two birds with one stone”?
Jimi E., Takakura N., Hiura F., Nakamura I., Hirata-Tsuchiya S.
Cells., 8: E1636, 2019.

C) Publications

D) Other Publications

- 1: A case report: Removal of a fractured file in a root canal using a microscope and an ultrasonic device.
Nagahara T, Shiba H., Nihonshikahyoron, 12-15, 2019.
- 2: Family dental clinic in case of trouble in Hiroshima –Family doctor series- ⑦Explanation of preiodontal disease, bridge, eathetic treatment, preventive dentistry, etc.
Noriko Saito, etc., 196-201, Nannansha, 2019

E) Presentation at Scientific Meeting

- 1: Unusual Anatomy of a Maxillary Second Molar.
Nagahara T, Takeda K, Wada K, Shiba H.
The 19th Annual scientific meeting of West Japan Endodontic Association (Osaka), 2019.
- 2: Case reports of cemental tear.
Nagahara T, Takeda K, Iwata T, Shiba H.
The Hiroshima meeting of West Japan Endodontic Association (Hiroshima), 2019.
- 3: Development of Biological Endodontics.
Takeda K, Hirata-Tsuchiya S, Shindo S, Saito N, Akutagawa K, Nagahara T, Shiba H.
The Hiroshima meeting of West Japan Endodontic Association (Hiroshima), 2019.
- 4: Endodontic management of a middle mesial canal of a mandibular second molar with two roots.
Nagahara T, Takeda K, Iwata T, Shiba H.
The 40th Annual scientific meeting of Japan Endodontic Association (Tokyo), 2019.
- 5: Surgical sealing of non-accidental root perforation improves periapical periodontitis in maxillary central incisor.
Hirata-Tsuchiya S, Suzuki S, Shiba H.
The 40th Annual scientific meeting of Japan Endodontic Association (Tokyo), 2019.
- 6: Periodontal regenerative therapy in localized severe periodontitis with cemental tear.
Nagahara T, Tokumaru A, Takeda K, Iwata T, Shiba H, Kurihara H.
The 62th Annual scientific meeting of the Japanese Society of Periodontology (Kitakyushu), 2019.
- 7: The effect of low dose Zoledronic acid on human dental pulp cell.
Shindo S, Muramoto K, Shiba H.
The 150th Meeting of the Japanese Conservative Dentistry (Kanazawa), 2019.
- 8: Reversible binding of heparin to high-dose LL37 eliminates its cytotoxicity with undiminished antimicrobial and LPS-neutralizing abilities.
Yoshida K, Suzuki S, Nakanishi J, Hirata-Tsuchiya S, Yamada S, Shiba H.
The 150th Meeting of the Japanese Conservative Dentistry (Kanazawa), 2019.
- 9: Analysis of anti-inflammatory mechanism of Phosphophoryn.
Nakanishi J, Suzuki S, Yoshida K, Hirata-Tsuchiya S, Yamada S, Shiba H.
The 150th Meeting of the Japanese Conservative Dentistry (Kanazawa), 2019.
- 10: A Small Nuclear Acidic Protein (MTI-II, Zn²⁺ Binding Protein, Parathymosin) attenuates TNF α inhibition of BMP-induced osteogenesis by enhancing accessibility of the Smad4-NF-kB p65 complex to Smad binding element.
Hirata-Tsuchiya S, Suzuki S, Okamoto K, Saito N, Yamada S, Shiba H, Kitamura C.

- The 151th Meeting of the Japanese Conservative Dentistry (Fukuoka), 2019.
- 11: The proinflammatory function of Semaphorin7A in human dental pulp cells.
Saito N, Shindo S, Hirata-Tsuchiya S, Nakanishi J, Yoshida K, Takeda K, Shiba H.
The 151th Meeting of the Japanese Conservative Dentistry (Fukuoka), 2019.
- 12: Oxytocin suppresses CXCL10 production in TNF- α -stimulated human dental pulp stem cells.
Kumagai T, Shindo S, Muramoto K, Kawaguchi H, Takeda K, Shiba H.
The 151th Meeting of the Japanese Conservative Dentistry (Fukuoka), 2019.
- 13: Unusual anatomy of a maxillary and mandibular second molar.
Nagahara T, Takeda K, Shiba H.
The 151th Meeting of the Japanese Conservative Dentistry (Fukuoka), 2019.
- 14: Oxytocin suppresses CXCL10 production in TNF- α -stimulated human dental pulp stem cells.
Shindo S, Takeda K, Shiba H.
2019-year scientific meeting of dental medicine in Chuugoku-Shikoku district (Hiroshima), 2019.
- 15: Effects of glycyrrhizin on ligature – induced periodontitis with *Porphyromonas gulae* infection in diabetes model mouse.
Akutagawa K, Fujita T, Ouhara K, Kajiya M, Matsuda S, Mizuno N, Takeda K, Shiba H, Kurihara H.
The 101st Scientific Meeting of Hiroshima University Dental Society (2019), Hiroshima.
- 16: Development of Biological Endodontics.
Shirawachi S, Takeda K, Hirata-Tsuchiya S, Shindo S, Saito N, Akutagawa K, Yoshida K, Nakanishi J, Shiba H.
The 101st Scientific Meeting of Hiroshima University Dental Society (2019), Hiroshima.
- 17: Action in HIV exposure in Dentistry of Hiroshima University Hospital.
Shintani T, Iwata T, Okada M, Yamasaki N, Fujii T, Shiba H.
The 33th Annual meeting of the Japanese Society for AIDS research (Kumamoto), 2019.
- 18: Effects of Semaphorin4D Produced by Activated Platelets on Periodontal Osteoblastogenesis.
Toshihisa Kawai, Satoru Shindo, Alexandru Movila, Atsushi Ikeda, Umadevi Kandalam, Alireza Heidari, Saynur Vardar Sengul, Kenta Yamamoto, Maria Hernandez.
IADR general session, Vancouver, Canada, 2019.

F) Special lectures in academic meetings

- 1: Infection control.
Shiba H.
Clinical workshop of Japan Endodontic Association (Osaka), October, 2019.

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

- 1: Grants-in-Aid for Scientific Research (C): Tsuchiya S.
Development of endodontic treatment through the NF- κ B inhibition by the NSAID repositioning.
No. 17K11706, ¥1,200,000.
- 2: Grant-in-Aid for Early-Career Scientists: Shindo S.
Elucidation of novel dental pulp hard tissue induction mechanism by infiltrating $\gamma\delta$ T cells.
No. 19K19028, ¥2,340,000.
- 3: Grant-in-Aid for Early-Career Scientists: Saito N.
Analysis of physiological function and clinical application of semaphorin 7A in pulpitis.
No. 19K19029, ¥1,600,000.
- 4: Grant-in-Aid for Early-Career Scientists: Akutagawa K.
Elucidation of the improvement mechanism of both periodontitis and blood glucose level by HMGB1-RAGE axis control.
No. 19K18998, ¥1,600,000.
- 5: Grant-in-Aid for Research Activity Start-up: Yoshida K.
Establishment of novel endodontic therapy using low cytotoxic agent, heparin-LL37 complex. No. 19K24096, ¥1,100,000.
- 6: Hiroshima University germinating research grant (grant for young researcher): Nakanishi J.
Development of [conservative treatment of dental pulp](#) applying hybrid recombinant Phosphophoryn contributes to promotion of dietary education., ¥500,000.
- 7: Grants for research received from Hiroshima Prefecture: Shiba H.
Study on network-construction of dental practice for HIV infection., ¥3,000,000.

B) Academic Awards, etc.

- 1: 22nd Hiroshima University Faculty of Dentistry Alumni Association Award: Akutagawa K.
Glycyrrhizic acid suppresses inflammation and reduces the increased glucose levels induced by the combination of Porphyromonas gulae and ligature placement in diabetic model mice.
Akutagawa K, Fujita T, Ouhara K, Takemura T, Tari M, Kajiya M, Matsuda S, Kuramitsu S, Mizuno N, Shiba H, Kurihara H.
Int. Immunopharmacol., 68: 30-38, 2019.

(1) Patents

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- **Department of Pediatric Dentistry**
- **Division of Oral Health and Development
(Department of Pediatric Dentistry)**

(1) Staff and Students

Professor : Katsuyuki Kozai

Associate Professor : Chieko Mitsuata

Research Associate : Meiko Tachikake, Noriko Niizato, Yuko Iwamoto, Nobuyuki Tatsukawa, Kaoru Sakurai

Physician : Yasumasa Irie

Graduate Student : Nao Kado, Masashi Nakano, Tomoko Ogasawara, Misa Takeyasu, Tatsuya Akitomo, Yuria Asao

Clinical Trainee : Fumiko Hayashi, Akira Yamane, Seiko Watanabe, Shoji Takahashi, Ami Okamine, Hironao Tanaka, Etsuko Fukuda

(2) Main Research Activities

- 1 : Bacteriological research of onset mechanism and prevention of dental caries in children
- 2 : Research in oral environment and dental diseases in abused children
- 3 : Clinical research in oral care in children suffered from systematic diseases
- 4 : Evaluation of psychological stress in dental treatment in children
- 5 : 3-D analysis of dentition and occlusion in children
- 6 : Bacteriological research in periodontal diseases in children
- 7 : Investigation of oral status of Cambodian children

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Survey of Actual Conditions of New Patients Treated at Department of Pediatric Dentistry of Hiroshima University Hospital between 2011 and 2015: Irie Y., Iwamoto Y., Tatsukawa N., Akitomo T., Takeyasu M., Sakurai K., Mitsuata C., Kozai K.: The Japanese Journal of Pediatric Dentistry, 57(1), 87-93, 2019.
- 2 : —Survey of Intellectually Disabled Patients Visiting Department of Pediatric Dentistry

Hiroshima University Hospital: Akitomo T., Mitsuata C., Tachikake M., Niizato N., Iwamoto Y., Tatsukawa N., Sakurai K., Kozai K.: The Japanese Journal of Pediatric Dentistry, 57(3), 374-381, 2019.

- 3 : A case of the Dental Noncooperativity Down's Syndrome Boy with a Maxillary Cyst-like Lesion: Mitsuata C., Niizato N., Ohta K., Murozumi H., Takechi M., Sakamoto S., Ogawa I., Kozai K.: The Journal of Hiroshima University Dental Society, 51(2), 131-135, 2019.
- 4 : The Behavioral Features Exhibited by Abused or Neglected Children at Primary Schools: Kaihara Y., Sasahara H., Niizato N., Sakurai K., Yamane Y., Nikawa H., Hosohara K., Yamasaki K., Kozai K.: The Journal of Hiroshima University Dental Society, 51(2), 104-111, 2019.

B) Review

C) Publications

- 1 : A guide to oral health check-ups for infants - Helping the parent for healthy growth of the child. 3rd ed. The Japanese Society of Pediatric Dentistry, (Sharing writing) Chapter 6 Q&A for consultation and health guidance, tooth brushing and dental floss, Kozai K.: Ishiyaku Publishers, Inc., Tokyo, 2019.
- 2 : The atlas of pediatric oral & maxillofacial lesions & surgical approach [oral membrane]. (editor) Sakashita H., Kaneko C., Kozai K., Horinouchi Y.: (sharing writing) Chapter 1. When a child patient comes., 8-10, Chapter 2.1. Periodontal diseases in child, Quintessence Publishing, Tokyo, 2019.
- 3 : The atlas of pediatric oral & maxillofacial lesions & surgical approach [Tooth and maxill-mandibular bone]. (editor) Sakashita H., Kaneko C., Kozai K., Horinouchi Y.: (Sharing writing) Kozai K.: lecture 1. Attention of hemostasis, 69-70, Quintessence Publishing, Tokyo, 2019.
- 4 : Home-Dentist in Hiroshima. (editor) Medical evaluation guide editorial department, (Sharing writing) Kozai K.: How to take good care of pediatric dental clinic, 216-220, Nannannsha, Hiroshima, 2019.

D) Other Publications

- 1 : Dental response to child abuse -Health disparity read from oral collapse of children-: Kozai K.: Clinical Pediatric Dentistry, 24(8), 21-30, 2019.

E) Presentations at Scientific Meetings

- 1 : A long term follow up case of the child with Hypophosphatasia: Iwamoto Y., Matsumoto(Miyake) N., Nakaoka M., Mitsuata C., Kozai K.: The 57th Congress of Japanese Society of Pediatric Dentistry (Sapporo), 2019.

- 2 : Oral condition of Cambodian school children and effect of oral health instruction: Asao Y., Iwamoto Y., Tatsukawa N., Sakurai K., Mitsuhata C., Naito M., Kozai K.: The 57th Congress of Japanese Society of Pediatric Dentistry (Sapporo), 2019.
- 3 : Dental Health Condition and Behavior of Abused Infants in Temporary Shelters in Hiroshima: Niizato N., Sakurai K., Kaihara Y., Nii N., Hosohara K., Yamasaki K., Kozai K.: The 57th Congress of Japanese Society of Pediatric Dentistry (Sapporo), 2019.
- 4 : Rosiglitazone regulates bone narrow ad: pogenesis through klotho B: Irie Y., Kozai K.: The 57th Congress of Japanese Society of Pediatric Dentistry (Sapporo), 2019.
- 5 : Hydroxy- α -Sanshool enhances TRPM5 channel activity: Akitomo T., Kozai K.: The 57th Congress of Japanese Society of Pediatric Dentistry (Sapporo), 2019.
- 6 : Dental Caries of Children in Temporary Shelters is Associated with Dental Health Behavior and Growth Environment: Niizato N., Sakurai K., Kaihara Y., Nii N., Itou T., Shitozawa M., Danjou A., Hosohara K., Yamasaki K., Kozai K.: The 66th Annual Meeting of the Japanese Society for Child health (Tokyo), 2019.
- 7 : Detection of Dental and Oral Anomalies Using Deep Learning Approach: Mine Y., Iwamoto Y., Nakamura K., Mitsuhata C., Kozai K., Murayama T., IADR/AADR/CADR General Session & Exhibition (Vancouver, BC, Canada), 2019.
- 8 : Applying deep convolutional neural network approach for detection of oral and dental anomalies: Nakamura K., Mine Y., Iwamoto Y., Enomoto S., Eguchi T., Mitsuhata C., Kozai K., Murayama T., : The 52nd Meeting of the Hiroshima University Dental Society (Hiroshima), 2019.
- 9 : Actual conditions of children with Down's syndrome at department of pediatric dentistry of Hiroshima University Hospital: Nao K., Mitsuhata C., Kozai K.: The 52nd Meeting of the Hiroshima University Dental Society (Hiroshima), 2019.
- 10 : Single-cell analysis reveals the diversity and adipogenic potential of osteoblasts.: Nakano M., Yoshioka H., Minamizaki T., Kozai K., Yoshiko Y.: The 124th Annual Meeting of The Japanese Association of Anatomists (Niigata), 2019.
- 11 : Analysis of gene expression for environmental adaptation affecting transmission of *Streptococcus mutans* : Mitsuhata C., Kado N., Puteri M., Iwamoto Y., and Kozai K.: IAPD2017 (27th IAPD CONGRESS), Cancun, 2019.
- 12 : A case of the reposition and sprint in the mandibular primary anterior teeth of extrusive luxation : Tachikake M., Kozai K., Mitsuhata C. :The 19th Annual Meetin of Japanese Association of Dental Traumatology (Osaka), 2019.
- 13 : The actual condition of oral management in our department for perioperative children: Iwamoto Y., Niizato N., Tachikake M., Sakurai K., Irie Y., Mitsuhata C., Kozai K.: The 38th congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Okayama), 2019.
- 14 : Survey of New Preschool Patients with Dental Caries Visiting the Department of Pediatric Dentistry

of Hiroshima University Hospital: Akitomo T., Asao Y., Tatsukawa N., Iwamoto Y., Mitsuhashi C., Kozai K.: The 38th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Okayama), 2019.

- 15 : Clinical statistical investigation of supernumerary tooth at the Department of Pediatric Dentistry of University Hospital: Akitomo T., Asao Y., Iwamoto Y., Tachikake M., Niizato N., Sakurai K., Mitsuhashi C., Kozai K.: The 31st Japanese Society of Pediatric Oral and Maxillofacial Surgery (Kanazawa), 2019.
- 16 : The Behavioral Features of Primary school students that can be used to screen abused and neglected children: Niizato N., Kaihara Y., Sasahara H., Sakurai K., Mitsuhashi C., Hosohara K., Yamasaki K., Kozai K.: The 4th Annual Conference of Japanese Dental Society for Prevention Child Abuse and Neglect (Chiba), 2019.

F) Special lectures in academic meetings

- 1 : Research of dental treatment survey in school dentistry: Kozai K., Hiroshima Prefectural Medical Association/Citizen Public Lecture: Hiroshima YMCA International Cultural Center Building No. 3 (Hiroshima), 2019.
- 2 : Points to be examined in infant dental checkups-Growth development and growth environment examined from the oral cavity- : Kozai K.: Kochi City Dental Association 2018 Technical workshop on health care activities: Kochi Dental Association (Kochi), 2019.
- 3 : Knowledge of pediatric dentistry for pediatricians: Kozai K.:Hiroshima City Pediatricians Lecture: Hiroshima Medical Center (Hiroshima), 2019.
- 4 : Thinking about dental care for children in a disparity society-from caries prevention to occlusal induction-: Kozai K.: Hiroshima University School of Dentistry Alumni Association Kanto Branch: Tokyo Garden Palace (Tokyo), 2019.
- 5 : Growth environment that can be seen due to oral collapse of children: Kozai K.:The 4th West Japan Children's Dental Health and Health Conference: Fukuoka Dental Association (Fukuoka City), 2019.7.13.
- 6 : Considering the health disparity with pediatric dentistry The 38th congress of Japanese Society of Pediatric Dentistry Chushikoku Branch:: Kozai K.: Okayama University 50th Anniversary Museum (Okayama), 2019.
- 7 : Dental health promotion for children growing in society: Kozai K.: Tochigi Prefectural Dental Health Leader Workshop: Tochigi Prefectural Dental Association (Utsunomiya), 2019.
- 8 : Key points for pediatric dentistry to be connected to the Reiwa New Era-See What! Dental Care for

Children -: Kozai K.: The 31st Japan Society of Pediatric Oral Surgery: Kanazawa City Culture Hall (Kanazawa), 2019.

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

- 1 : Grant-in-Aid for Early-Career Scientists: Iwamoto Y., Development of oral health education model for children in Cambodia and Southeast Asia (No.19K19330) 2019 direct expenses: ¥1,100,000, indirect expenses: ¥330,000.
- 2 : Grant-in-Aid for Scientific Research (C) : Niizato N., Survey on oral health condition and dental health behavior of abused children in shelter (No 17K11962) 2019 : direct expence ¥1,100,000. indirect expence ¥330,000.
- 3 : Other donations (2 joint research institutions, 2 local dental clinics)

(5) Academic Awards, etc.

- 1 : The International Exchange Encouragement Prizes, Hiroshima Peace Creation Fund, 2019.2.27 (The project to protect the teeth of Cambodian children, Iwamoto Y.)
- 2 : Tachikake M.: Best Research & Presentation Award in Japan Association of Dental Traumatology: (JADT).2019.
- 3 : Kozai K. (Representative): Hiroshima University President's Award.Dental support activities for Cambodian children, 2019.11.2.

(6) Patents

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**Department of Dental Anesthesiology,
Graduate School of Biomedical and Health Sciences and
Department of Dental Anesthesiology,
Division of Oral & Maxillofacial Surgery and Oral Medicine**

(1) Staff and Students

Professor	: Irifune Masahiro, D.D.S., Ph.D.
Lecturer	: Yoshida Mitsuhiko, D.D.S., Ph.D.
Research Associate	: Shimizu Yoshitaka, D.D.S., Ph.D., Doi Mitsuru, D.D.S., Mukai Akari, D.D.S., Ph.D., Oue Kana, D.D.S., Ph.D.
Resident	: Takahashi-Uno Tamayo, D.D.S., Ph.D., Yoshinaka Taiga, D.D.S., Ph.D., Kikuchi Yuka, D.D.S., Ph.D., Ogawa Yuya, D.D.S., Ph.D., Maetani Yuka, D.D.S., Ph.D.
Graduate Student	: Mukai Tomohiro, D.D.S., Motoike-Imamura Serika D.D.S., Kochi Takahiro, D.D.S., Sasaki Utaka, D.D.S., Imado Eiji, D.D.S.
Clinical Trainee	: Kawahara Michio, M.D., Ph.D., Kawahara Toshiya, D.D.S., Yasusaka Masaki, D.D.S., Hama Yoko, D.D.S., Oda Aya, D.D.S., Ph.D.

(2) Main Research Activities

- 1: Study on mechanisms of general anesthetic action
- 2: Development of a novel general anesthetic method applying enhancement of descending pain suppression system
- 3: Study on role of each neuron in an intravenous anesthetic agent-induced anesthetic factor
- 4: Study on a stage of delirium in general anesthesia
- 5: Study on involvement of dopamine neurons in awakening from general anesthesia
- 6: Study on antianxiety effects of sedative drugs
- 7: Study on effects of nitrous oxide on cardiovascular system
- 8: Study on chronic pain
- 9: Study on efficacy of chest compressions in cardiopulmonary resuscitation
- 10: Study on medical emergency during dental treatments

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: SKF-10047, a prototype Sigma-1 receptor agonist, augmented the membrane trafficking and uptake activity of the serotonin transporter and its C-terminus-deleted mutant via a Sigma-1 receptor-independent mechanism: Asano M, Motoike S, Yokota C, Usuki N, Yamamoto H, Urabe T, Katarao K, Hide I, Tanaka S, Kawamoto M, Irifune M, Sakai N: *J Pharmacol Sci.* 139(1), 29-36, 2019.
- 2: Severe lip biting as self-mutilation behavior has reduced in patient with Lesch-Nyhan syndrome by continuous use of mouth-guard under regional alliance: A case report: Oda Y, Furutani C, Morimoto C, Yoshida K, Oda A, Mukai T, Wakita A, Mizota Y, Watari M, Irifune M, Okada Y: *Journal of the Japanese Society for Disability and Oral Health*, 40 (1), 7-13, 2019.
- 3: Perioperative general anesthesia management for tooth extraction in a patient who was implanted with vagus nerve stimulator for intractable epilepsy: Mukai A, Takahashi T, Yoshinaka T, Kochi T, Mukai T, Oda A, Kikuchi Y, Yoshida K, Irifune M: *Journal of the Japanese Society for Disability and Oral Health*, 40 (1), 20-26, 2019.

B) Review

- 1: Phospholipase C-related catalytically inactive protein: A novel signaling molecule for modulating fat metabolism and energy expenditure: Kanematsu T, Oue K, Okumura T, Harada K, Yamawaki Y, Asano S, Mizokami A, Irifune M, Hirata M: *J Oral Biosci.* 61(2), 65-72, 2019.

C) Publications

- 1: I. General principles and methodology of general anesthesia: *Dental Anesthesiology*, 8th edn. (Fukushima K, Ichinohe T, Shimada M, Niwa H, Miyawaki T): Yoshida M, Irifune M: Ishiyaku Publishers, Inc. (Tokyo), 197-200, 2019.
- 2: II. Mechanisms of general anesthetic action: *Dental Anesthesiology*, 8th edn. (Fukushima K, Ichinohe T, Shimada M, Niwa H, Miyawaki T): Irifune M: Ishiyaku Publishers, Inc. (Tokyo), 200-204, 2019.
- 3: Acid-base balance: *Clinical Dental Anesthesiology*, 5th edn. (Niwa H, Irifune M, Kohase H, Shibutani T, Fukayama H): Irifune M: Nagasueshoten, Inc. (Kyoto), 24-28, 2019.
- 4: Nervous system (Autonomic nerve): *Clinical Dental Anesthesiology*, 5th edn. (Niwa H, Irifune M, Kohase H, Shibutani T, Fukayama H): Irifune M: Nagasueshoten, Inc. (Kyoto), 28-32, 2019.
- 5: Local anesthetics: *Clinical Dental Anesthesiology*, 5th edn. (Niwa H, Irifune M, Kohase H, Shibutani T, Fukayama H): Irifune M: Nagasueshoten, Inc. (Kyoto), 85-93, 2019.
- 6: Vasoconstrictors: *Clinical Dental Anesthesiology*, 5th edn. (Niwa H, Irifune M, Kohase H, Shibutani T, Fukayama H): Irifune M: Nagasueshoten, Inc. (Kyoto), 93-95, 2019.
- 7: Definition of pain: *Clinical Dental Anesthesiology*, 5th edn. (Niwa H, Irifune M, Kohase H, Shibutani T, Fukayama H): Irifune M: Nagasueshoten, Inc. (Kyoto), 221, 2019.

- 8: Transmission of pain: Clinical Dental Anesthesiology, 5th edn. (Niwa H, Irifune M, Kohase H, Shibutani T, Fukayama H): Irifune M: Nagasueshoten, Inc. (Kyoto), 221-223, 2019.
- 9: Evaluation of pain: Clinical Dental Anesthesiology, 5th edn. (Niwa H, Irifune M, Kohase H, Shibutani T, Fukayama H): Doi M: Nagasueshoten, Inc. (Kyoto), 223-225, 2019.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Perioperative anesthesia management for an autism spectrum disorder patient who was thought to be difficult to be hospitalized: Oda A, Yoshida K, Kouch T, Mukai T, Kikuchi Y, Takahashi T, Yoshinaka T, Oue K, Mukai A, Shimizu C, Oda Y, Okada Y, Irifune M: The Asia Association for Disability and Oral Health, in Kaohsiung City, Taiwan, April 12 –14, 2019.
- 2: The effect of tranexamic acid during sagittal split ramus osteotomy: Yoshida M, Ono S, Shimizu Y, Yoshida K, Mukai A, Doi M, Irifune M: 97th International Association for Dental Research General Session, in Vancouver, Canada, June 20, 2019.
- 3: Does the ability of GABA receptor agonists to induce immobility in mice involve profound central nervous system depression in EEG?: A comparison between propofol versus gabaculine: Irifune M, Yoshinaka T, Mukai A: The 34th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku Branch (Hiroshima), 2019.
- 4: Simultaneous excision of a tongue tumor and a thoracoscopic malignant lung tumor under general anesthesia: Imado E, Shimizu Y, Saeki N, Yoshinaka T, Oda A, Maetani Y, Oue K, Mukai A, Yoshida M, Irifune M: The 34th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku Branch (Hiroshima), 2019.
- 5: A case of discontinuation of surgery due to difficult ventilation during induction of general anesthesia: Yoshinaka T, Takahashi T, Ogawa Y, Kochi T, Sasaki U, Motoike S, Mukai T, Kikuchi Y, Oue K, Mukai A, Doi M, Shimizu Y, Yoshida M, Irifune M: The 34th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku Branch (Hiroshima), 2019.
- 6: Study on arterial pressure at optimum sedative condition during IVS for patients with intellectual disabilities who take antipsychotic drugs: Oda Y, Yoshida K, Yoshinaka T, Oue K, Oda A, Mukai T, Hama Y, Miyauchi M, Irifune M, Okada Y: The 47th Annual Meeting of Japanese Dental Society of Anesthesiology (Okayama), 2019.
- 7: The ability of GABA receptor agonists to induce immobility in mice is independent of profound central nervous system depression in EEG: Yoshinaka T, Mukai A, Irifune M: The 47th Annual Meeting of Japanese Dental Society of Anesthesiology (Okayama), 2019.
- 8: Current status of dental treatment under intravenous sedation in outpatients with intellectual

disabilities: Oda Y, Yoshida K, Oda A, Mukai T, Mukai A, Imado E, Takahashi T, Watari M, Irifune M, Okada Y: The 47th Annual Meeting of Japanese Dental Society of Anesthesiology (Okayama), 2019.

- 9: Clinico-statistical study of intravenous sedation for dental treatment using dexmedetomidine hydrochloride in combination with midazolam: Oda A, Yoshida K, Mukai T, Kikuchi Y, Yoshinaka T, Takahashi T, Oue K, Mukai A, Irifune M: The 47th Annual Meeting of Japanese Dental Society of Anesthesiology (Okayama), 2019.
- 10: Clinico-statistical case study on patients underwent dental treatment under intravenous sedation and physical restraint in special care dental clinic of Hiroshima University Hospital: Oda A, Oda Y, Yoshida K, Kochi T, Mukai T, Yoshinaka T, Takahashi T, Oue K, Mukai A, Furutani C, Okada Y, Irifune M: The 36th Annual Meeting of the Japanese Society for Disability and Oral Health (Gifu city), 2019.
- 11: A case whose swallowing function evaluation was effective after dental treatment under general anesthesia for a cerebral palsy infant patient with dysphagia: Mukai A, Yoshinaka T, Takahashi T, Mukai T, Oda A, Kikuchi Y, Kochi T, Imado E, Oue K, Yoshida M, Shimizu C, Oda Y, Okada Y, Irifune M: The 36th Annual Meeting of the Japanese Society for Disability and Oral Health (Gifu city), 2019.

F) Special lectures in academic meetings

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

- 1: Grant-in-Aid No. 18K09812 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Irifune M, Kanematsu T: Development of a novel general anesthetic method of applying the enhancement of descending pain suppression system by stimulation of dopamine neurons in the nucleus accumbens. ¥650.
- 2: Grant-in-Aid No. 17K17254 for Young Scientists (B) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Oue K: Study on brown adipocytes molecules mechanism for obesity control. ¥1,500,000.
- 3: Grant-in-Aid No. 17K11908 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Doi M: Functional brain imaging evaluation of treatment effect of cognitive behavioral therapy and antidepressant drugs on glossodynia. ¥500.

(5) Academic Awards, etc.

(6) Patents

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Department of Public Oral Health

(1) Staff and Students

Professor : Kouji Ohta
 Associate Professor : Hideo Shigeishi, Maki Nosou
 Assistant Professor : Tomoko Maehara
 Graduate Student : Yoshino Kaneyasu (D2), Yoshimi Iwao, Momoko Ishikawa, Ayumu Saitou, Mariko Nakamura, Mari Matsumura(M2)

(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 micro organism
- 5: Study on efficacy of care program for elderly
- 6: Study on the activities of oral health at school
- 7: Study on the school oral health and oral health for persons with special needs.
- 8 : Study on development of new device and examination for oral hygiene management

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Effect of hydrogel stiffness on morphology and gene expression pattern of CD44high oral squamous cell carcinoma cells. Shigeishi H, Yokoyama S, Murodumi H, Sakuma M, Kato H, Higashikawa K, Takechi M, Ohta K, Sugiyama M. *Int J Clin Exp Pathol.* 12(8):2826-2836, 2019.
- 2 : Improvement of physical and oral function in community-dwelling older people after a 3-month long-term care prevention program including physical exercise, oral health instruction, and nutritional guidance. Iwao Y, Shigeishi H, Takahashi S, Uchida S, Kawano S, Sugiyama M. *Clin Exp Dent Res.* 5(6):611-619, 2019.
- 3 : Measurement of bristle splaying of toothbrushes using digital imaging and evaluation of plaque removal efficacy over 3 months: A randomized controlled trial (RCT). Kaneyasu Y, Shigeishi H, Maehara T, Fukada-Sambuichi E, Amano H, Sugiyama M. *Int J Dent Hyg.* 2019 Dec 23.
- 4 : Relationship of Salivary Occult Blood With General and Oral Health Status in Employees of a Japanese

- Department Store. Segawa K, Shigeishi H, Fujii M, Noumi K, Yamanaka F, Kamikawa K, Arakawa S, Sugiyama M. *J Clin Med Res.* 11(3):179-187, 2019.
- 5 : Association of Oral Function With Long-Term Participation in Community-Based Oral Exercise Programs in Older Japanese Women: A Cross-Sectional Study. Miyoshi S, Shigeishi H, Fukada E, Nosou M, Amano H, Sugiyama M. *J Clin Med Res.* 11(3):165-170, 2019.
- 6 : Detection of oral bacteria on the tongue dorsum using PCR amplification of 16S ribosomal RNA and its association with systemic disease in middle-aged and elderly patients. Su CY, Shigeishi H, Nishimura R, Ohta K, Sugiyama M. *Biomed Rep.* 10(1):70-76, 2019.
- 7 : Association of physical performance with oral function in older women participating in community-based health exercise programs. Miyoshi S, Saito A, Shigeishi H, Sugiyama M. *Clin Exp Dent Res.* 28 December 2019.
- 8 : Dental pulp cell-derived powerful inducer of TNF- α comprises PKR containing stress granule rich microvesicles. Suzuki S, Fukuda T, Nagayasu S, Nakanishi J, Yoshida K, Hirata-Tsuchiya S, Nakao Y, Sano T, Yamashita A, Yamada S, Ohta K, Shiba H, Nishimura F. *Sci Rep.* 9(1):3825, 2019.
- 9 : Study on characteristics of various kinds of plaque scoring method : Yoshino Kaneyasu, Misaki Morooka, Amane Ooshima, Hideo Shigeishi, Masaru Sugiyama: *J. Hiroshima Univ. Dent. Soc* 51(1), 7-14, 2019.
- 10 : Influence of Professional Education on Oral Health Behavior and Gingival Condition of Students in A Dental Hygienist Course: Tomoko Maehara, Shoko Kimura, Eri Sambuichi, Rumi Nishimura, Hideo Shigeishi, Hisako Sasahara, Masaru Sugiyama: *J. Hiroshima Univ. Dent. Soc* 51(2), 73-84, 2019.
- 11 : Study on what students learned during clinical practice in a dental hygienist course as to knowledge and skills required at dental intervention for people with medical diseases: Saki Matsuda, Rumi Nishimura, Atsue Matsumoto, Hideo Shigeishi, Toshinobu Takemoto, Hideaki Amano, Masaru Sugiyama: *J. Hiroshima Univ. Dent. Soc* 51(2), 91-103, 2019.
- 12 : Relationship between Oral Health Behavior and Oral Health Status in a Group with Good Oral Health Status-Oral Health Instructions in the Times When More Than Half of 80-Year-Old Persons Have Over 20 Teeth- : Sasahara K., Nishimura R., Maehara T., Takahashi A., Nikawa H., Sugiyama M.: *J. Hiroshima Univ. Dent. Soc.*, 51(1), 15-22, 2019.
- 13 : A huge compound odontoma arising in the mandible of a child.: Tada M, Ohta K, Ninomiya Y, Fukui A, Uetsuki R, Takechi M.: *Japanese Journal of Oral and Maxillofacial Surgery* 65(5): 351-356, 2019.
- 14 : A case of solitary intraosseous neurofibroma of the mandible in an elderly patient.: Ishida F, Ohta K, Fujimoto S, Naruse T, Takechi M.: *Japanese Journal of Oral and Maxillofacial Surgery* 65(11): 752-756, 2019.
- 15 : A Case of Skeletal Maxillary Protrusion with Open Bite and Hypoplasia of the Condyle Treated Using Maxillary Surgery Alone. : Ono S, Nakagawa T, Kaku M, Yamamoto T, Ohta K, Kubozono K, Uetsuki R, Mizuta K, Tanimoto K and Takechi M.: *The Japanese Journal of Jaw Deformities* 29: 59-65, 2019.

C) Review

- 1 : Smoking and periodontal microorganisms. Hanioka T, Morita M, Yamamoto T, Inagaki K, Wang PL, Ito H, Morozumi T, Takeshita T, Suzuki N, Shigeishi H, Sugiyama M, Ohta K, Nagao T, Hanada N, Ojima M, Ogawa H. *Jpn Dent Sci Rev.* 55(1):88-94, 2019.

D) Publications

- 1 : Oral Surgery 4th Edition, Chapter 5, Oral maxillofacial inflammation, General remarks, Hideo Shigeishi, Masaru Sugiyama , Ishiyaku syuppan, 2019
- 2 : Oral Surgery 4th Edition, Chapter 5, Oral maxillofacial inflammation, Particular remarks, 10, odontogenic infection, Hideo Shigeishi, Masaru Sugiyama , Ishiyaku syuppan, 2019
- 3 : Oral Surgery 4th Edition, Chapter 5, Oral maxillofacial inflammation, Particular remarks, 3, inflammation round jawbone, 4. Odontogenic maxillary sinusitis, 5. Oral candidiasis, 6. Specific i inflammation, 8. Treatment for oral infection and inflammation, 1) Anti-inflammatory surgery, Hideo Shigeishi, Masaru Sugiyama , Ishiyaku syuppan, 2019
- 4 : Oral medicine for dental hygienists. Chapter 3, Systemic diseases associated with dental care, 6, dental treatment for perinatal patients : Hideo Shigeishi, Masaru Sugiyama , Ishiyaku syuppan, 2019

D) Other Publications

- 1 : Dental education and medical security in Indonesia, Vietnam and Cambodia: the home countries of International Dental Course students in Hiroshima University School of Dentistry : Atsushi Shimazu, Hideo Shigeishi, Nguyen Thi Phuong Thao, Hiroko Oka, Makiko Fujii and Masaru Sugiyama. *J. Hiroshima Univ. Dent. Soc* 51(1), 34-41, 2019.

E) Presentations at Scientific Meetings

- 1 : Association between oral HPV prevalence and smoking in people without oral cancer. SYMPOSIA – TOBACCO OR ORAL HEALTH: TOBACCO DEPENDENCE TREATMENT BY ORAL HEALTH PROFESSIONALS: Hideo Shigeishi: 15th Annual Conference of the International Society for the Prevention of Tobacco Induced Diseases, 2019.

- 2 : Association of physical performance with oral function in older women participating in community-based health exercise programs : Miyoshi S, Saito A, Shigeishi H, Sugiyama M : The 68th General Meeting of Japanese Society for Oral Health, 2019.
- 3 : Changes of bristles' wear and plaque removal ability of manual toothbrushes after use : Kaneyasu Y, Shigeishi H, Maehara A, Fukada E, Amano H, Sugiyama M : The 68th General Meeting of Japanese Society for Oral Health, 2019.
- 4 : The effect of hydrogel stiffness on morphology and gene expression pattern in CD44high oral squamous cell carcinoma cells: Sho Yokoyama, Hideo Shigeishi, Hiroshi Murozumi, Miyuki Sakuma, Hiroki Kato, Kouji Ohta, Masaru Sugiyama, Masaaki Takechi: The 52th Annual Meeting of the Hiroshima University Dental Society, 2019.
- 5 : The association between oral HPV16 infection and oral health status in Japanese female aged ≥ 60 years: Hideo Shigeishi, Cheng-Yih Su, Yoshino Kaneyasu, Mari Matsumura, Mariko Nakamura, Momoko Ishikawa, Ayumi Saito, Kouji Ohta, Masaru Sugiyama: The 52th Annual Meeting of the Hiroshima University Dental Society, 2019.
- 6 : Relationship between physical performance and oral function in older Japanese women participating in community-based health exercise programs: Sanae Miyoshi, Ayumi Saito, Hideo Shigeishi, Kouji Ohta, Masaru Sugiyama: The 52th Annual Meeting of the Hiroshima University Dental Society, 2019.
- 7 : Association of physical performance with oral function in older people participating in community-based health exercise programs: Miyoshi S, Saito A, Yamane T, Miyamoto Y, Shigeishi H, Sugiyama M: The 14th Annual Meeting of the Japan Society for Dental Hygiene, 2019.
- 8 : Prevention of frailty in community-dwelling older people participating in a long-term care prevention program including oral health instruction: Iwao Y, Shigeishi H, Uchida S, Takahashi S, Kawano S, Sugiyama M. The 14th Annual Meeting of the Japan Society for Dental Hygiene, 2019.
- 9 : The association between oral HPV16 infection and oral health status/periodontopathic bacteria : Hideo Shigeishi, Kouji Ohta, Masaru Sugiyama : The 28th Annual Meeting of Japanese association of Oral Infectious Disease, 2019.
- 10 : Analysis of mechanism of Melatonin-induced Runx2 expression in human jawbone-derived osteoblastic cells: Hiroshi Murodumi, Hideo Shigeishi, Kouji Ohta, Masaaki Takechi, The 67th annual local meeting of Chugoku-Shikoku Branch, Japanese Stomatological Society, 2019.
- 11 : An evaluation for dental hygienist students of the oral health counseling training using a self-affirmation consciousness standard. : Matsumoto A., Nishimura R., Niitani Y., Maehara T.: The 14th Annual Meeting of the Japan Society for Dental Hygiene (Aichi), 2019.
- 12 : The investigation of study conditions and study satisfaction in dental hygienists' students at Hiroshima University graduate school.: Matsumoto A., Maehara T., Nishimura R., Sugiyama M., Ohta K., Mariko N. : The 30th general meeting of Kinki, Chugoku, Shikoku Society for Oral Health(Osaka), 2019.

- 13 : Dental hygienist cooperation Committee report – 2018 meet the menter questionnaire result- : Dental hygienist collaboration committee member of the Japanese Society for Disability and Oral Health, Kaji M., Aritomo T., Iwanuma T, Terada H., Maehara T., Minami N., Taniji M., Yonehana K.: The 36th Annual Meeting of the Japanese Society for Disability and Oral Health (Gifu), 2019.
- 14 : Our university’s approach to “cultivate advanced medical personnel contributing to healthy longevity in a specialist team”: Nishimura R., Matsumoto A., Maehara T., Niitani Y., Sugiyama M.: The 10th Annual Conference of the Japan society of Dental Hygiene Education (Fukuoka), 2019.
- 15 : Occlusal Reconstruction Using Bone Anchored Device for Wide Edentulous After Surgical Treatments of Carcinoma of the Maxillary : Ono S, Mizuta K, Uetsuki R, Ohta K, Takechi M : The 37th Annual Meeting of Japanese Society of Oral Oncology (Nagasaki), 2019.1.24
- 16 : A Case report of Left Cervical Metastasis of Tongue Cancer During Pregnancy : Mizuta K, Ohta K, Ono S, Sasaki K, Kato H, Takechi M : The 37th Annual Meeting of Japanese Society of Oral Oncology (Nagasaki), 2019.1.24
- 17 : A case of skeletal maxillary protrusion with open bite and hypoplasia of the condyle treated using maxillary surgery alone : Uetsuki R, Ono S, Kaku M, Yamamoto T, Ohta K, Mizuta K, Tanimoto K, Takechi M : The 52th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2019.6.15
- 18 : Nucleic Acid Transfection Mechanism and Inflammatory Response Through Antibacterial Peptide LL-37 in Oral Mucosal Keratinocyte : Kato H, Ohta K, Naruse T, Ishida Y, Shigeishi H, Takechi M : The 73rd Annual Meeting of Japanese Stomatological Society (Saitama), 2019.
- 19 : Observation of Structure of the Bone by Computed Tomography and Clinical Study of Initial Fixation of Implant : Ishioka Y, Ninomiya Y, Yokoyama S, Sasaki K, Mizuta K, Ohta K, Takechi M : The 73rd Annual Meeting of Japanese Stomatological Society (Saitama), 2019.
- 20 : Induced expression in Antimicrobial Peptides DEFB-129 by Candida albicans of gingival fibroblasts : Sakuma M, Ohta K, Kato H, Ishida Y, Naruse T, Takechi M: The 12th Japanese Society for Evidence and the Dental Professional, The 30th Annual Meeting of the Japanese Society of Oral Pathology, The 29th Japanese Society of Oral Medicine, The 32th the Japanese Society of Oral Diagnosis/Oral Medicine (Tokyo), 2019.
- 21 : A Clinical Study of Implant treatment with bone augmentation in oral and maxillofacial trauma : Ishioka Y, Ninomiya Y, Yokoyama S, Sasaki K, Ohta K, Takechi M: The 49th Japan Society of Oral Implantology General Session & Exhibition (Fukuoka), 2019.
- 22 : A Clinical Study of implant cases having oral and maxillofacial trauma at our department : Ishioka Y, Ninomiya Y, Yokoyama S, Sasaki K, Ohta K, Takechi M; The 67th Japanese Stomatological Society The Chugoku & Shikoku Districts (Hiroshima), 2019.
- 23 : Expression in Antimicrobial Peptides by Candida albicans of gingival fibroblasts : Sakuma M, Ohta K, Kato H, Ishida Y, Naruse T, Shigeishi H, Takechi M: The 28th Japanese Association for Oral Infection Diseases General Session & Exhibition (Osaka), 2019.10.12

- 24 : A case of mesenchymal chondrosarcoma of the mandible.: Tada M, Ono S, Ohta K, Okuda S, Ogawa I, Sakamoto S, Kakimoto N, Konishi M, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.
- 25 : A case of adenosquamous carcinoma of the mandibular.: Fukui A, Ono S, Ohta K, Tada M, Ogawa I, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.
- 26 : Expression of inflammatory genes induced by transfected nucleic acids in the minor salivary glands.: Naruse T, Ohta K, Sakuma M, Kato H, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.
- 27 : Antimicrobial peptide LL-37 transfects nucleic acids into cytoplasm via endocytosis in oral keratinocytes.: Kato H, Ohta K, Sakuma M, Naruse T, Ishida Y, Shigeishi H, Takechi M. The 64th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgery (Sapporo), 2019.

F) Special lectures in academic meetings

G) Contribution to Community

- 1 : Maehara T : Dental hygienist collaboration committee member of the Japanese Society for Disability and Oral Health, 2019.
- 2 : Maehara T : The 32nd Annual Meeting of the Japanese Society for Disability and Oral Health, committee program management, 2019.
- 3 : Nishimura R, Maehara T : Assessment of oral function at special nursing home “Kosei-En” (Hiroshima), 2019.

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

- 1 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Shigeishi H (Main researcher) : Study on the mechanisms of regulation of cancer stem cell properties via mechanical stress in oral squamous cell carcinomas. (No. 17K11837).
- 2 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Shigeishi H (Co-researcher): Study on the mechanisms of malignant transformation via gene methylation in HPV16-positive oral squamous cell carcinomas. (No. 18K097910A).
- 3 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Ohta K (Main researcher): Investigation of novel regulation system by antimicrobial peptide and nucleic acid recognition. (No. 17K11840).
- 4: Grants-in-Aid for Scientific Research (Scientific Research (C)) : Ohta K (Co-researcher):Development of high functional porous hydroxyapatite with osteogenic and antibacterial activity. (No. 18K09790).

- 5: Grants-in-Aid for Scientific Research (Scientific Research (C) : Ohta K (Co-researcher): Novel inflammatory regulation system of HO-1 and recognition of Candida albicans in oral mucosal cells. (No. 17K11841).
- 6 : Grants-in-Aid for Scientific Research (Scientific Research (C) : Ohta K (Co-researcher): Oral mucosal inflammation induction mechanism of H. pylori cell components and change of oral flora in gastric cancer patients (No. 17K11839).
- 7 : Grants-in-Aid for Scientific Research (Scientific Research (C) : Ohta K (Co-researcher): Effects of perioperative oral function management by probiotics (No. 18K09880).

(5) Academic Awards, etc.

(6) Patents

- (共通)
- ・用 紙 : A 4 版
 - ・余 白 : 上下左右 3 cm
 - ・活 字 : 明朝, Times New Roman, 10 ポイント
 - ・文字数 : 標準の文字数を使う (N)
 - ・行 数 : (平均 43 文字, 56 行)
 - ・数字, 英語 : 見出し 全角, 文中 半角
 - ・項目で行が変わる時は 1 行目の先頭にあわせる。(: の次)

(参考)

(Word で作成, 書式→段落→インデントと行間隔 : 両端揃え, インデントと行間隔は 0, 行間 1 行)

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Department of Oral Epidemiology

(1) Staff and Students

Professor : NAITO Mariko

Research Associate : TSURUDA Keiko

NISHIMURA Rumi

Graduate Student : MAEHARA Tomoko

HIGASHI Mayuka

KOBAYASHI Teruo

YOSHITAKE Akari

(2) Main Research Activities

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

(3) Achievements

A) Original Papers (including Case Reports)

- 1 : Relationship between Oral Health Behavior and Oral Health Status in a Group with Good Oral Health Status-Oral Health Instructions in the Times When More Than Half of 80-Year-Old Persons Have Over 20 Teeth- : Sasahara H., Nishimura R., Maehara T., Takahashi A., Nikawa H., Sugiyama M.: J. Hiroshima Univ. Dent. Soc.51(1): 15-22, 2019.
- 2 : Detection of oral bacteria on the tongue dorsum using PCR amplification of 16S ribosomal RNA and

- its association with systemic disease in middle-aged and elderly patients.:Su CY, Shigeishi H, Nishimura R, Ohta K, Sugiyama M. : Biomed Rep. 10(1):70-76.2019.
- 3 : Dental Health Checkups for Freshmen Performed by Trainee Dentists at the Beginning of Postgraduate Clinical Training: The Significance of Experiencing Health Checkups in Clinical Dental Training.: Sasahara K., Wakabayashi Y., Nishimura R., Nikawa H., Sugiyama M.: JJDEA. 35:113-120.2019.
- 4 : Influence of Professional Education on Oral Health Behavior and Gingival Condition of Students in Dental Hygienist Course.: Maehara T., Kimura S., Sambuichi E., Nishimura R., Shigeishi H., Sasahara H., Sugiyama M. : J. Hiroshima Univ. Dent. Soc.51(2):73-84. 2019.
- 5 : Study on What Students Learned during Clinical Practice in a Dental Hygienist Course as to Knowledge and Skills Required at Dental Intervention for People with Medical Diseases.:Matsuda S., Nishimura R., Matsumoto A., Shigeishi H., Takemoto T., Amano H., Sugiyama M.: J. Hiroshima Univ. Dent. Soc., 51(2):91-103. 2019.
- 6 : Analysis of question survey on dental hygienist national examination preparations using Text-Mining : Study of the efficacy to visualize free descriptive answer by Co-occurrence Network: Fukuda M., Higashi M. Yokoyama M.: The journal of Japan Society of Dental Hygiene Education 10(1) :43-50. 2019.
- 7 : Genome-wide identification of host genes required for toxicity of bacterial cytolethal distending toxin in a yeast model. Denmongkholchai S, Katare P, Choochuay S, Thanyasrisung P, Tsuruda K, Sugai M, Mongkolsuk S, Matangkasombut O. Front Microbiol, 10: article 890, 2019.
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- 1 1 : Nishida Y, Hachiya T, Hara M, Shimanoe C, Tanaka K, Sutoh Y, Shimizu A, Hishida A, Tsukamoto M, Kadomatsu Y, Oze I, Koyanagi YN, Kuriyama N, Koyama T, Ibusuki R, Takezaki T, Ikezaki H, Furusyo N, Takashima N, Kadota A, Uemura H, Katsuura-Kamano S, Suzuki S, Nakagawa-Senda H, Kuriki K, Mikami H, Nakamura Y, Momozawa Y, Kubo M, Nakatochi M, Naito M, Wakai K; Japan Multi-Institutional Collaborative Cohort Study Group. The interaction between ABCA1 polymorphism and physical activity on the HDL-cholesterol levels in a Japanese population. J Lipid Res. 2020;61:86-94.

- 1 2 : Niikura N, Nakatukasa K, Amemiya T, Watanabe KI, Hata H, Kikawa Y, Taniike N, Yamanaka T, Mitsunaga S, Nakagami K, Adachi M, Kondo N, Shibuya Y, Hayashi N, Naito M, Kashiwabara K, Yamashita T, Umeda M, Mukai H, Ota Y. Oral Care Evaluation to Prevent Oral Mucositis in Estrogen Receptor-Positive Metastatic Breast Cancer Patients Treated with Everolimus (Oral Care-BC): A Randomized Controlled Phase III Trial. *Oncologist*. 2019 Oct 8. pii: theoncologist.2019-0382.
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- 1 5 : Islam Z, Akter S, Kashino I, Mizoue T, Sawada N, Mori N, Yamagiwa Y, Tsugane S, Naito M, Tamakoshi A, Wada K, Nagata C, Sugawara Y, Tsuji I, Matsuo K, Ito H, Lin Y, Kitamura Y, Sadakane A, Tanaka K, Shimazu T, Inoue M; Research Group for the Development and Evaluation of Cancer Prevention Strategies in Japan. Meat subtypes and colorectal cancer risk: A pooled analysis of 6 cohort studies in Japan. *Cancer Sci*. 2019;110:3603-3614.
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- 1 7 : Oze I, Charvat H, Matsuo K, Ito H, Tamakoshi A, Nagata C, Wada K, Sugawara Y, Sawada N, Yamaji T, Naito M, Tanaka K, Shimazu T, Mizoue T, Tsugane S, Inoue M. Revisit of an unanswered question by pooled analysis of eight cohort studies in Japan: Does cigarette smoking and alcohol drinking have interaction for the risk of esophageal cancer? *Cancer Med*. 2019;8:6414-6425.
- 1 8 : Kadomatsu Y, Tsukamoto M, Sasakabe T, Kawai S, Naito M, Kubo Y, Okada R, Tamura T, Hishida A, Mori A, Hamajima N, Yokoi K, Wakai K. A risk score predicting new incidence of hypertension in Japan. *J Hum Hypertens*. 2019;33:748-755.
- 1 9 : Abe SK, Saito E, Sawada N, Tsugane S, Ito H, Lin Y, Tamakoshi A, Sado J, Kitamura Y, Sugawara Y, Tsuji I, Nagata C, Sadakane A, Shimazu T, Mizoue T, Matsuo K, Naito M, Tanaka K, Inoue M; Research Group for the Development and Evaluation of Cancer Prevention Strategies in Japan. Green

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- 2 8 : Hishida A, Ugai T, Fujii R, Nakatochi M, Wu MC, Ito H, Oze I, Tajika M, Niwa Y, Nishiyama T, Nakagawa-Senda H, Suzuki S, Koyama T, Matsui D, Watanabe Y, Kawaguchi T, Matsuda F, Momozawa Y, Kubo M, Naito M, Matsuo K, Wakai K. GWAS analysis reveals a significant contribution of PSCA to the risk of *Helicobacter pylori*-induced gastric atrophy. *Carcinogenesis.* 2019;40:661-668.
- 2 9 : Mori H, Naito M, Nakane A, Tohara H. Caregivers' Perspectives on the Slight Recovery of Oral Intake of Home-Dwelling Patients Living With a Percutaneous Endoscopic Gastrostomy Tube: A Qualitative Study Using Focus Group Interviews. *Nutr Clin Pract.* 2019;34:272-279.
- 3 0 : Suzuki K, Akiyama M, Ishigaki K, Kanai M, Hosoe J, Shojima N, Hozawa A, Kadota A, Kuriki K, Naito M, Tanno K, Ishigaki Y, Hirata M, Matsuda K, Iwata N, Ikeda M, Sawada N, Yamaji T, Iwasaki M, Ikegawa S, Maeda S, Murakami Y, Wakai K, Tsugane S, Sasaki M, Yamamoto M, Okada Y, Kubo M, Kamatani Y, Horikoshi M, Yamauchi T, Kadowaki T. Identification of 28 new susceptibility loci for type 2 diabetes in the Japanese population. *Nat Genet.* 2019;51:379-386.
- 3 1 : Tamura T, Naito M, Maruyama K, Tsukamoto M, Sasakabe T, Okada R, Kawai S, Hishida A, Wakai K. The association between self-rated health and high-sensitivity C-reactive protein level: a cross-sectional and 5-year longitudinal study. *BMC Public Health.* 2018;18:1380.
- 3 2 : Yodsurang V, Tang Y, Takahashi Y, Tanikawa C, Kamatani Y, Takahashi A, Momozawa Y, Fuse N, Sugawara J, Shimizu A, Fukushima A, Hishida A, Furusyo N, Naito M, Wakai K, Yamaji T, Sawada N, Iwasaki M, Tsugane S, Hirata M, Murakami Y, Kubo M, Matsuda K. Genome-wide association study (GWAS) of ovarian cancer in Japanese predicted regulatory variants in 22q13.1.

PLoS One. 2018;13:e0209096.

- 3 3 : Tamura T, Kadomatsu Y, Tsukamoto M, Okada R, Sasakabe T, Kawai S, Hishida A, Hara M, Tanaka K, Shimoshikiyo I, Takezaki T, Watanabe I, Matsui D, Nishiyama T, Suzuki S, Endoh K, Kuriki K, Kita Y, Katsuura-Kamano S, Arisawa K, Ikezaki H, Furusyo N, Koyanagi YN, Oze I, Nakamura Y, Mikami H, Naito M, Wakai K; Japan Multi-Institutional Collaborative Cohort (J-MICC) Study. Association of exposure level to passive smoking with hypertension among lifetime nonsmokers in Japan: a cross-sectional study. *Medicine (Baltimore)*. 2018;97:e13241.
- 3 4 : Aoki T, Ota Y, Sasaki M, Aoyama KI, Akiba T, Shirasugi Y, Naito M, Shiroywa T. To what extent does the EQ-5D-3L correlate with the FACT-H&N of patients with oral cancer during the perioperative period? *Int J Clin Oncol*. 2019;24:350-358.

B) Review

C) Publications

D) Other Publications

E)

- 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): 126-130,2019.
- 2 : Dysphagia Rehabilitation for Dental Hygienists 2nd : Nishimura R(ed. By Inoue M, Kikutani T, Sato Yshimoyama K, Fujitani J, Huruya J, Mizugami M and Mukai Y) : Ishiyaku Publishers,Inc (Tokyo): 135-144,2019.

F) Presentations at Scientific Meetings

- 1 : Analysis of secretion mechanism of cytolethal distending toxin in *Aggregatibacter actinomycetemcomitans* : Tsuruda K : The 68th General Meeting of Japanese Society for Oral Health (Otsu), 2019.
- 2 : Development of comprehensive oral function self-training related to swallowing and continuous effect for 4 weeks: Kojima M., Shimizu A., Hara K., Higashi M., Hama Y.: The 30th Annual Meeting of the Japanese Society of Gerodontology (Sendai), 2019.
- 3 : Effects of joint practice of interprofessional education for nursing students and dental hygiene students: Taniguchi Y., Sawada M., Ako K., Higashi M., Hara K.: The 30th Annual Meeting of the Japanese Society of Gerodontology (Sendai), 2019.

- 4 : Examination of effectiveness of " Experience-based self-training program to improve oral function " : Hara K., Higashi M., Hama Y., Kojima M., Shimizu A.: The 14th Annual Meeting of the Japan Society for Dental Hygiene (Nagoya),2019.
- 5 : An evaluation for dental hygienist students of the oral health counseling training using a self-affirmation consciousness standard. : Matsumoto A., Nishimura R., Niitani Y., Maehara T.: The 14th Annual Meeting of the Japan Society for Dental Hygiene (Nagoya), 2019.
- 6 : The impact of disasters on oral health : A systematic review.: Saiki A., Kurisu M., Nishimura R., Tsuruda K., Naito M. : The 14th Annual Meeting of the Japan Society for Dental Hygiene (Nagoya),2019.
- 7 : The investigation of study conditions and study satisfaction in dental hygienists' students at Hiroshima University graduate school.: Matsumoto A., Maehara T., Nishimura R., Sugiyama M., Ohta K., Mariko N. : The 30th general meeting of Kinki, Chugoku, Shikoku Society for Oral Health (Osaka), 2019.
- 8 : Dental Hygienists' relationship with the use of "thickened foods" in hospitals and facilities in Hiroshima Prefecture.: Nishimura R., Sanbuichi E., Matsumoto A., Amano H.: The 30th general meeting of Kinki, Chugoku, Shikoku Society for Oral Health (Osaka), 2019.
- 9 : Dental hygienist cooperation Committee report – 2018 meet the menter questionnaire result- : Dental hygienist collaboration committee member of the Japanese Society for Disability and Oral Health, Kaji M., Aritomo T., Iwanuma T, Terada H., Maehara T., Minami N., Taniji M., Yonehana K.: The 36th Annual Meeting of the Japanese Society for Disability and Oral Health (Gifu), 2019.
- 1 0 : Our university's approach to "cultivate advanced medical personnel contributing to healthy longevity in a specialist team": Nishimura R., Matsumoto A., Maehara T., Niitani Y., Sugiyama M.: The 10th Annual Conference of the Japan society of Dental Hygiene Education (Fukuoka), 2019.
- 1 1 : Results of practical training including experimental elements related to the past three liquid preparations- Analysis of questionnaires and impression of practical training- : Hara K., Higashi M., Iwasaki S., Shimazu A.: The 10th Annual Meeting of the Japan Society for Dental Hygiene Education (Fukuoka), 2019.
- 1 2 : Effect of material on continuing to use Interdental brush: Higashi M., Sambuichi E., Nishimura R., Kanehisa Y., Kajita K., Hara K.: The 10th Annual Meeting of the Japan Society for Dental Hygiene Education (Fukuoka), 2019.
- 1 3 : Study on factors affecting rate of continuing to use Interdental brush : Higashi M., Sambuichi E., Nishimura R., Kanehisa Y., Kajita K., Hara K.: The 8th Kobe Tokiwa Academic Forum(Kobe), 2019.
- 1 4 : A program to cultivate advanced medical personnel : "Cultivation of dental personnel contributing to healthy longevity in a specialist team" : Rumi Nishimura*, Atsue Matsumoto, Tsuyoshi Taji, Hiroki Nikawa, Masaru Sugiyama : 2019 International Symposium On Dental Hygiene. (Brisbane Australia), 2019.
- 1 5 : Oral care to prevent oral mucositis and the health-related quality of life in estrogen receptor-positive

metastatic breast cancer patients treated with everolimus (Oral Care-BC): a randomized controlled phase III trial : Mariko Naito, et al. : 26th Annual Conference of the International Society for Quality of Life Research. San Diego, USA, October 20-23, 2019.

G) Lectures

- 1 : Higashi M.: Open lecture” Introduction to medical care” : 2019 summer open school in Kobe Tokiwa girls' high school (Hyogo), 2019.
- 2 : Higashi M.: Special lecture ” Dental hygienists protect the lives and support healthy longevity ! ”: Cooperation of high schools and universities in Kobe Suzurandai high school (Hyogo), 2019.
- 3 : Nishimura R.: Oral Rehabilitation Society Advanced Course (Daejeon, Korea),2019.
- 4 : Nishimura R.: Oral Rehabilitation Society Advanced Course (Busan, Korea),2019.
- 5 : Nishimura R.: Aspiration prevention and oral care: Ninoshima Area Comprehensive Support Center (Hiroshima) ,2019.
- 6 : Nishimura R.: Aspiration prevention and oral care: Ujina Area Comprehensive Support Center (Hiroshima) ,2019.
- 7 : Nishimura R.: Hiroshima Prefecture Dental Hygienist Education Study Group : ”Project for Developing a Program for Cultivating Global Dental Care Professionals” (Hiroshima) ,2019.
- 8 : Nishimura R.: Oral Health Promotion for citizens of Hiroshima city(Hiroshima), 2019.
- 9 : Nishimura R.:Lecture for the class for diabetics: Hiroshima Teishin Hospital (Hiroshima) ,2019.

G) Social Contributions

- 1 : Higashi M.: Nagata festival in Kobe : Assessment of oral function at Tetsujin Square (Hyogo) ,2019.
- 2 : Higashi M.: KOBE TOKIWA Kenko-Fureai Festa2019: Assessment of oral function at Kobe Tokiwa University (Hyogo) ,2019.
- 3 : Higashi M.: Experience-based training for the purpose of the improvement of the oral function ”Kuchi-Building Championship Training Program”: Design Creative Center (Hyogo) ,2019.
- 4 : Higashi M.: Hyogo Inamino school festival “Inamino Festival” : Assessment of oral function at Inamino Campus (Hyogo) ,2019.
- 5 : Maehara T : Dental hygienist collaboration committee member of the Japanese Society for Disability and Oral Health, 2019.
- 6 : Maehara T : The 32nd Annual Meeting of the Japanese Society for Disability and Oral Health, committee program management, 2019.
- 7 : Nishimura R, Maehara T: Assessment of oral function at special nursing home “Kosei-En”(Hiroshima), 2019.
- 8 : Nishimura R.: Program for kids from elementary schools, Dental Kids: Hiroshima University Faculty

of Dentistry : Hiroshima University (Hiroshima),2019.

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

- 1 : Research grant :Higashi M((Principal Investigator): Study on effectiveness of respiratory training: In case of People with a medical history of bronchial asthma : The Promotion and Mutual Aid Corporation for Private Schools of Japan Young researcher Incentives. ¥400,000.
- 2 : Grant-in-Aid for Young Scientists: Nishimura R (Principal Investigator).: Is quantitative perceptual testing a screening test for dysphagia?. No. 18K17121. ¥1,100,000.
- 3 : Grant-in-Aid for Scientific Research (C): Naito M (Principal-Investigator). No. 18K09908. ¥1480,000.
- 4 : Grant-in-Aid for Scientific Research (C): Naito M (Co-Investigator). No. 17K09221.
- 5 : Grant-in-Aid for Scientific Research (C): Naito M (Co-Investigator). No. 17K12001.
- 6 : Research grant 2018 for National Cancer Center Japan: Naito M (Co-Investigator). ¥700,000.
- 7 : Grant for Ministry of Health, Labour and Welfare (Projects to set up dental hygienists' training programs) ¥44,706,000.

(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 : Tzu-Yu Peng(Taiwan), Yuki Wakabayashi

Undergraduate Student : Yuka Kawasaki, Kanade Morimoto, Ayaka Koizumi, Yuka Nishi, Arisa Tuji, Nanako Kajikaw, Tomomi Nakamura, Yukari Matsui, Mai Kato, Mona Shimtani, Shiho Tendo, Hazumi Nakamoto, Yui Tamura, Momoyo Higo

Research Student : Chao Fan Yi, Shogo Iwaguro

(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 : Acetaminophen reduces apical root resorption during orthodontic tooth movement in rats: Kaku M, Yamamoto T, Yashima Y, Izumino Z, Kagawa H, Ikeda K, Tanimoto K: Archives of Oral Biology, 102, 83-92, 2019.
- 2 : Influences of mouth breathing on memory and learning ability in growing rats: Tsubamoto-Sano N, Ohtani J, Ueda H, Kaku M, Tanne K, Tanimoto K: Journal of Oral Science, 61, 119-124, 2019.
- 3 : Correction of skeletal class II severe open bite with temporomandibular joint disorder treated by miniscrew anchorage and molar extraction: Kaku M, Yamamoto T, Yashima Y, Izumino J, Kagawa H, Ikeda K, Tanimoto K: J Med Case Rep, 7;13:207, 2019. doi: 10.1186/s13256-019-2132-6.
- 4 : A case of skeletal maxillary protrusion with open bite and hypoplasia of the condyle treated using maxillary surgery alone. : Ono S., Nakagawa T., Kaku M., Yamamoto T., Ohta K., Kubozono K., Uetsuki R., Mizuta K., Tanimoto K., Takechi M. : Jpn. J. Jaw Deform. 29:59-65, 2019.

- 5 : An orthodontic treatment case of mandibular protrusion with canted occlusal plane and asymmetry of mandible.: Kojima S., Kaku M., Yamamoto T., Yashima Y., Kyomen S., Tanimoto K. J. Chu-shi. Orthod. Soc., 31:23-30, 2019.
- 6 : Effect of disinfection of agar-alginate combined impressions to stone models: Yuki Wakabayashi, Saiji Shimoe, Syoga Haruki, Toshinobu Takemoto, Takahiro Satoda: Journal of Nippon Academy of Dental Technology, Vol.40, (1), pp.15–22, 2019.
- 7 : Analysis of chemical interaction between alumina-blasted silver-palladium-copper-gold alloy and primer containing a phosphate monomer: Mai Ohtaku, Saiji Shimoe, Yoshimasa Nagadori, Isao Hirata, Hiroyasu Koizumi, Hideo Matsumura, Takahiro Satoda: Journal of Nippon Academy of Dental Technology, Vol.40, (1), pp.23–28, 2019.
- 8 : Abrasion resistance of indirect composite resin treated with various surface smoothing agents: Yuki Wakabayashi, Saiji Shimoe, Takahiro Satoda: Journal of Nippon Academy of Dental Technology, Vol.40, (2), pp.99–104, 2019.
- 9 : Fatigue resistance of yttria-stabilized tetragonal zirconia polycrystal clasps for removable partial dentures: Tzu-Yu Peng, Saiji Shimoe, Naomi Tanoue, Hiroyuki Akebono, Takeshi Murayama, Takahiro Satoda: European Journal of Oral Sciences, 127(3), 269-275, 2019.
- 1 0 : Finite-element analysis and optimization of the mechanical properties of polyetheretherketone (PEEK) clasps for removable partial dentures: Tzu-Yu Peng, Yuki Ogawa, Hiroyuki Akebono, Shogo Iwaguro, Atsushi Sugeta, Saiji Shimoe: Journal of Prosthodontic Research: 63(4), 420-426, 2019.
- 1 1 : Influence of various airborne-particle abrasion conditions for on bonding between zirconia ceramics and an indirect composite resin material: Saiji Shimoe, Tzu-Yu Peng, Mai Otaku, Nozomi Tsumura, Shogo Iwaguro, Takahiro Satoda: Journal of Prosthodontics Dentistry: 122(5), 491-499, 2019.
- 1 2 : Effect of microslit retention on the bond strength of zirconia to dental materials: Shogo Iwaguro, Saiji Shimoe, Isao Hirata, Takeshi Murayama, Takahiro Satoda: Dental Materials Journal, 38(6), 1043-1052, 2019.

B) Review

C) Publications

- 1 : Tanne K., Ohtani J., Sunagawa H., Kaku M., Fujita T. : Treatment of Class II open bite malocclusion supported by skeletal anchorage. In: Skeletal Anchorage in Orthodontic Treatment of Class II Malocclusion – Contemporary application of orthodontic implants, miniscrew implants and miniplates (Editor: Moschos M. Papadopoulos). Mosby Elsevier, London, New York, Toronto etc, 235-238,

2014~

- 2 : Tanne K., Tanaka E., Kaku M., et al. : Comprehensive dental care for orthodontics -basic technology and development-. Tokyo RinshoShuppan, (Tokyo), 2005~
- 3 : Kawata T., Kaku M., Owada T.: Safety and high quality of IPS cells manufacture. –Cryopreservation and transportation of IPS cells.: Technical Information Institute Co. LTD, 2016~
- 4 : The newest series of textbooks for dental technologist-Dental Materials Science: Takayuki Yoneyama, Nikawa Hiroki, Saiji Shimoe, Hideo Matsumura, Hideyuki Imai et al, Ishiyaku Publishers, Inc (Tokyo), 201, 2016~.
- 5 : The newest series of textbooks for dental technologist-Dental Technology for Fixed Dental Protheses and Restoration: Hideo Matsumura, Yasushi Kumono, Saiji Shimoe, Kazuhiko Suese et al, Ishiyaku Publishers, Inc (Tokyo), 181, 2017~.
- 6 : The newest series of textbooks for dental technologist-Practice of Dental Technology: Tateo Ozaki, Masahiro Kuwata, Saiji Shimoe, Hiroyuki Miura, Takeshi Murayama et al, Ishiyaku Publishers, Inc (Tokyo), 215, 2017~.
- 7 : The Newest Series of Textbooks for Dental Technologist - Dental Technology for Fixed Dental Protheses and Restorations (Book language: Traditional Chinese): Hideo Matsumura, Kazuhiko Suese, Akio Shintani, Saiji Shimoe, Hideyuki Imai, et al, Ho-Chi Book Publishing (Taiwan), Total of 182 pages, 2018~
- 8 : The Newest Series of Textbooks for Dental Technologist - Oral and Maxillofacial Anatomy (Book language: Traditional Chinese): Tzu-Yu Peng (Sole Translator), Ho-Chi Book Publishing (Taiwan), Total of 208 pages, 2019. (ISBN: 9789863682592)
- 9 : The Newest Series of Textbooks for Dental Technologist - Dental Technology for Removable Dentures (Book language: Traditional Chinese): Tzu-Yu Peng (Sole Translator), Ho-Chi Book Publishing (Taiwan), Total of 308 pages, 2019. (ISBN:9789863683094)

D) Other Publications

- 1 : What dental technicians in Taiwan learned after studied abroad in Japanese graduated school: Tzu-Yu Peng: The International Journal of Dental Technology, vol.47, no.10, p.1032-1035, 2019.

E) Presentation at Scientific Meeting

- 1 : A case of orthognathic surgery for facial asymmetry with condyle fracture in childhood: Mizuta K., Ono S., Hanaoka K., Hanaoka H., Kaku M., Sasaki K., Murozumi K., Yamamoto T., Tanimoto K.,

- Takechi M: The 29th Annal Meeting of The Japanese Society for Jaw Deformities (Tokyo), 2019.
- 2 : A case of skeletal maxillary protrusion with open bite and hypoplasia of the condyle treated using maxillary surgery alone: Uetsuki R., Ono S., Kaku M., Yamamoto T., Ohta K., Mizuta K., Tanimoto K., Takechi M: The 52th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2019.
- 3 : The effect of hyperbaric oxygen on bone regeneration of calvarial defects in addescent mice: Izumino J., Kaku M., Yamamoto T., Takeda Y., Kagawa H., Ikeda K., Tanimoto K: The 52nd Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2019.
- 4 : A case of malocclusion with Parry Romberg syndrome. : Yashima Y., Kaku M., Yamamoto T., Izumino J., Kagawa H., Ikeda K., Tanimoto K.: The 62st Annual Meeting of the Chu-Shikoku Orthodontic Society(Kure) , 2019.
- 5 : Application of conditioned media of stem cells from human exfoliated deciduous teeth to bone regeneration: Hiraki T., Kunimatsu R., Nakajima K., Abe T., Yamada S., Rikitake K., Awada T., Yoshimi Y., Tsuka Y., Kaku M., Tanimoto K: The 78th Annal Meeting of The Japanese Orthodontic Society (Nagasaki), 2019.
- 6 : Effects of mechanical force on osteocytes at presser side of alveolar bone.: Yashima Y., Kaku M., Yamamoto T., Izumino J., Kagawa H., Ikeda K., Tanimoto K: The 78th Annual Meeting of the Japanese Orthodontic Society (Nagasaki), 2019.
- 7 : Optimum Design Analysis of Polyetheretherketone Clasp via Finite Element Method: Tzu-Yu Peng, Saiji Shimoe, Shogo Iwaguro, Takahiro Satoda: 97th General Session & Exhibition of the International Association for Dental Research (IADR) (Vancouver, BC, Canada), June 19-22, 2019.
- 8 : Stress analysis of zirconia clasp for FEA : Ayaka Koizumi, Arisa Tsuji, Peng TY, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 9 : Investigation of the labor conditions of dental technicians based on job registration, Arisa Tuji, Yuka Kawasaki, Mai Otaku, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 1 0 : Effect of pretreatment on adhesion of PEEK and composite resin : Yuka Nishi, Kanade Morimoto, Yuki Wakabayashi , Shogo Iwaguro, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 1 1 : Effect of undercoat on adhesion between UV-irradiated zirconia and indirect composite resin : Yuka Kawasaki, Ayaka Koizumi, Yuki Wakabayashi Peng TY, Shogo Iwaguro, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 1 2 : Effects of deterioration on mechanical strength, surface roughness and glossness of acrylic denture base resins : Haruki Shoga, Saiji Shimoe, Shogo Iwaguro, Mai Otaku, Peng TY, Toshihide Hatanaka : The 41th the meeting of the Nippon Academy of Dental Technology

(Kanazawa), 11/2-3, 2019.

- 1 3 : Bond strength of PEEK and denture base resin by different surface treatments : Kanade Morimoto, Yuka Nishi, Yuki Wakabayashi, Mai Otaku, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 1 4 : Optimum design analysis of polyetheretherketone (PEEK) clasp via finite element method : Peng TY¹⁾, Shogo Iwaguro, Siji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 1 5 : Support of tooth preparation for CAD/CAM restoration using 3D PDF: Shogo Iwaguro, Ryoji Kato, Yukihiro Takayama, Mai Otaku, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 1 6 : Dental technician year employment status by age group in 2018 in Hiroshima Prefecture: Tetsuya Matsui, Katsuya Eto, Kazuhiko Miyata, Saiji Shimoe: The 58th Scientific Meeting of Hiroshima Prefecture Dental Association, The 103nd Hiroshima University Dental Society (Hiroshima), 11/17, 2019.

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

- 1 : Tongue-palatal contact changes during swallowing in patients with skeletal deformities after orthognathic surgery. Rhokufukai in Hiroshima University Hosipital, 2019. 200000 Yen.

(5) Academic Awards, etc.

- 1 : Hiraki Tomoka et al. : The 78th Annal Meeting of The Japanese Orthodontic Society, Poster Award, 2019.11.22.
- 2 : Saki Okamoto : The 21th Student's Carving Contest, Gold Award, 2019.3.23
- 3 : Ryouhei Yamamoto : The 21^h Student's Carving Contest, Silver Award, 2019.3.23
- 4 : Yumi Yasuyoshi : The 21th Student's Carving Contest, Bronze Award, 2019.3.23
- 5 : Yuki Wakabayashi, Saiji Shimoe, Takahiro Satoda : The Nippon Academy of Dental Technology Young Researcher's Best Paper Award in 2019 「Abrasion resistance of indirect composite resin treated with various surface smoothing agents」 , 2019.11.3
- 6 : Mai Ohtaku, Saiji Shimoe, Yoshimasa Nagadori, Isao Hirata, Hiroyasu Koizumi, Hideo Matsumura, Takahiro Satoda: The Nippon Academy of Dental Technology Best Paper Award in 2019 「Analysis of chemical interaction between alumina-blasted silver-palladium-copper-gold alloy and primer containing a phosphate monomer」 , 2019.11.3
- 7 : Shogo Iwaguro, Ryoji Kato, Yukihiro Takayama, Mai Otaku, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology Best Presentation Award 「Support of tooth preparation

for CAD/CAM restoration using 3D PDF」, 2019.11.3

- 8 : Peng TY ¹⁾, Shogo Iwaguro, Siji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology Best Presentation Award「Optimum design analysis of polyetheretherketone (PEEK) clasp via finite element method」, 2019.11.3

(6) Patents

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Department of Medical System Engineering

(1) Staff and Students

Professor	: Takeshi Murayama
Lecturer	: Yuichi Mine
Graduate Student	: Memori Minoda, Riho Kawaguchi, Kousei Tabira, Kentaro Nakamura
Graduation Research Students	: Mana Ishioka, Kohei Enomoto, Karin Okuda, Aya Kawasaki, Sazanami Sasaki, Saori Takeda, Akane Hatsuzaki, Mari Fujii, Natsuki Fujiyoshi, Reina Yoshioka, Yukine Ashikari, Shiho Urabe, Yuuki Sasaki, Akari Tanaka, Saki Nishibayashi, Momo Hiraoka

(2) Main Research Activities

- 1: Application of manufacturing system technologies (e. g., CAD/CAM, 3-d printing) to dentistry
- 2: Application of artificial intelligence to dentistry
- 3: 3-d modeling and computer simulation in dentistry
- 4: Simulation-based analysis of work processes in dental technology
- 5: Study on mechanisms of anti-resorptive agents-related osteonecrosis of the jaw (ARONJ)
- 6: Anti-resorptive agents for postmenopausal breast cancer
- 7: Translational research

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Applying deep learning approach to maxillofacial prostheses coloration: Mine Y, Suzuki S, Eguchi T, Murayama T: Journal of Prosthodontic Research in press.
- 2: Fatigue resistance of yttria-stabilized tetragonal zirconia polycrystal clasps for removable partial dentures: Peng TY, Shimoe S, Tanoue N, Akebono H, Murayama T, Satoda T: European Journal of Oral Sciences, 127(3): 269-275. 201, 2019.
- 3: Effect of micro slit retention on the bond strength of zirconia to porcelain and indirect composite resin and acrylic resin: Iwaguro S, Shimoe S, Hirata I, Murayama T, Satoda T: Dental Materials Journal 38(6): 1043-1052. 2019.
- 4: Antifungal Effect of Etak (Immobilizing Antibacterial and Antiviral Agent)-treated Sports Mouthguard:

Arimoto N, Mine Y, Taji T, Nikawa H: The Journal of Hiroshima University Dental Society 51(1):1-6. 2019

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Study on simultaneous optimization of release time and scheduling -2nd report-: Omae K, Eguchi T, Murayama T: 2019Annual Congress of The Japan Society of Mechanical Engineers (Tokyo), 2019.
- 2: Minamizaki T, Toshishige M, Yoshioka H, Ahmed F, Mine Y, Yoshiko Y A synthetic peptide derived from the sibling protein mepe inhibits ectopic mineralization but not bone formation World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (WCO-IOF-ESCEO 2019) (Paris) 2019.
- 3: Attempt to immobilized of sports mouth guard by antibacterial and antiviral agent Etak: Arimoto N, Mine Y, Taji T, Nikawa H: The 128th Annual Meeting of the Japan Prosthodontic Society (Sapporo), 2019.
- 4: Study on maxillofacial prosthesis fabrication using machine learning: Mine Y, Suzuki S, Manabe H, Eguchi T, Murayama T: The 58th Annual Conference of Japanese Society for medical and Biological engineering (Naha), 2019
- 5: Evaluation of alveolar bone in bisphosphonate-medicated mice with hyperocclusive state: Okuda K, Mine Y, Nikawa H, Murayama T: The 52nd General Meeting of Hiroshima University Dental Society (Hiroshima), 2019.
- 6: TRAF1-derived Peptide CRADNLHPVS Inhibits Osteoclastogenesis *in vitro*: Minoda M, Mine Y, Shuto T, Nikawa H, Murayama T: The 52nd General Meeting of Hiroshima University Dental Society (Hiroshima), 2019.
- 7: Applying deep convolutional neural network approach for detection of oral and dental anomalies: Nakamura K, Mine Y, Iwamoto Y, Enomoto S, Eguchi T, Mitsuhata C, Kozai K, Murayama T: The 52nd General Meeting of Hiroshima University Dental Society (Hiroshima), 2019.
- 8: Machine learning approach to coloration of maxillofacial prostheses: Manabe H, Mine Y, Fujiyoshi N, Suzuki S, Eguchi T, Murayama T: The 52nd General Meeting of Hiroshima University Dental Society (Hiroshima), 2019.
- 9: Mask fitting by using 3-d printed facial models: Tabira K, Mine Y, Eguchi T, Murayama T: The 52nd General Meeting of Hiroshima University Dental Society (Hiroshima), 2019.

- 10: Computer-aided design and fabrication of nasal prostheses applying morphing technology: Kawaguchi R, Hatsusaki A, Mine Y, Eguchi T, Murayama T: The 52nd General Meeting of Hiroshima University Dental Society (Hiroshima), 2019.
- 11: Detection of Dental and Oral Anomalies Using Deep Learning Approach: Mine Y, Iwamoto Y, Nakamura K, Mitsuhashi C, Kozai K, Murayama T: 2019 IADR/AADR/CADR General Session & Exhibition (Vancouver) 2019.
- 12: Evaluation of alveolar bone in bisphosphonate-medicated mice with experimental hyperocclusive state: Okuda K, Mine Y, Minoda M, Yoshioka R, Makihira S, Nikawa H, Murayama T: 2019 Japan Prosthodontic Society Chugoku & Shikoku Branch (Fukuyama), 2019.
- 13: Proton Pump Inhibitor delays healing of extraction sockets in BRONJ model mice: Yoshioka R, Mine Y, Minoda M, Okuda K, Makihira S, Nikawa H, Murayama T: 2019 Japan Prosthodontic Society Chugoku & Shikoku Branch (Fukuyama), 2019.
- 14: Oral-derived lactic acid bacteria give tight junctions of gingival epithelial cells influence: Ito R, Takata A, Mine Y, Taji T, Kumagai H, Sasaki M, Nikawa H: 2019 Japan Prosthodontic Society Chugoku & Shikoku Branch (Fukuyama), 2019.
- 15: Toxicity test with the metal ions using a mesenchymal stem cell and osteoblasts: Takata A, Ito R, Mine Y, Taji T, Kumagai H, Sasaki M, Nikawa H: 2019 Japan Prosthodontic Society Chugoku & Shikoku Branch (Fukuyama), 2019.
- 16: Job shop scheduling using genetic algorithm incorporating priority rule. -Experimental performance comparison with EGRASP-: Eguchi T, Nishioka D, Murayama T: 2019 Annual Congress of The Japan Society of Mechanical Engineers (Akita), 2019.
- 17: Job shop scheduling with capacity adjustment (Optimization with consideration to group work by multiple operators) -2nd report-: Yamashita T, Eguchi T, Murayama T: 2019 Annual Congress of The Japan Society of Mechanical Engineers (Akita), 2019.
- 18: Development of molecular target therapy for malignant mesotheliomas using small molecule inhibitor: Suehiro T, Nguyen HTD, Mine Y, Fujii M: The 78th Annual Meeting of the Japanese Cancer Association (Kyoto), 2019.
- 19: Establishment and activity of Translational Research Center in Hiroshima University: Shigemoto, Sugiyama D, Mine Y, Kisaka T, Kurosaki T, Matsuura Y, Sako H, Takahashi H, Tanaka K, Amagase H, Kihara Y, Kurisu K: ARO Council the 7th Annual Meeting (Sendai), 2019.
- 20: Deep learning approach to coloration of maxillofacial prostheses –optimization of hyper parameters–: Fujiyoshi N, Mine Y, Eguchi T, Murayama T: 5th Annual Meeting of the International Academy for Digital Dental Medicine (Nara) 2019
- 21: Lansoprazole delays healing of extraction sockets in BRONJ model mice: Yoshioka R, Mine Y, Nikawa H, Murayama T: 2019 Japanese Stomatological Society Chugoku & Shikoku Branch (Hiroshima), 2019.
- 22: Role of zoledronic acid for CYP19/aromatase expression in MCF-7 human breast cancer cell line: Kawasaki A, Mine Y, Nikawa H, Murayama T: The 58th Hiroshima Prefectural Dental Association/The

- 103rd Hiroshima University Dental Society (Hiroshima), 2019.
- 23: Applying artificial intelligence for cytodiagnosis with discriminating benign/malignant: Fujii M, Mine Y, Eguchi T, Murayama T: The 58th Hiroshima Prefectural Dental Association/The 103rd Hiroshima University Dental Society (Hiroshima), 2019.
- 24: Fabrication workflow for nasal prosthesis with 3d technologies and artificial intelligence: Hatsusaki A, Kawaguchi R, Fujiyoshi N, Mine Y, Eguchi T, Murayama T: The 58th Hiroshima Prefectural Dental Association/The 103rd Hiroshima University Dental Society (Hiroshima), 2019.
- 25: Evaluation of alveolar bone in bisphosphonate-medicated mice with hyperocclusive state: Okuda K, Mine Y, Nikawa H, Murayama T: 4th Meeting of the International Association for Dental Research and Asia Pacific Region 2019 (Brisbane) 2019.
- 26: Effect of fluoride and abrasive in toothpastes on implant materials: Shuto T, Mine Y, Wachi T, Kakimoto K: 4th Meeting of the International Association for Dental Research and Asia Pacific Region 2019 (Brisbane) 2019.

F) Special Lectures in Academic Meetings

- 1: Murayama T: Applying Artificial Intelligence to Dentistry: 2019 Winter seminar of the Japanese Society for Dental Materials and Devices Chugoku & Shikoku Branch/7th Japanese Society for Biomaterials Chugoku & Shikoku Branch symposium (Hiroshima), 2019.
- 2: Murayama T: Application of Additive Manufacturing to Medical Treatment: The 3rd Seminar on Next-generation Manufacturing Technology (Higashi-hiroshima), 2019.
- 3: Murayama T: Digital Dentistry -A New World Opened by Artificial Intelligence and 3D printer-: The 62nd Annual Meeting of the Chu-shikoku Orthodontic Society (Kure), 2019.
- 4: Murayama T: Fundamentals of dental CAD/CAM systems (2019 Workshop on Dental Technique Practices for Trainers, Japan Society for Education of Dental Technology) (Osaka), 2019.
- 5: Mine Y: The Japanese Tissue Culture Association Cell culture basic technology course I (Hiroshima), 2019.

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

- 1: OTC Self-Medication Promotion Foundation: (Principal Investigator) Mine Y, Risk evaluation of the combination use of OTC medicines on the onset of BRONJ
- 2: KOSE COSMETOLOGY RESEARCH FOUNDATION: (Principal Investigator) Mine Y, Development of innovative maxillofacial prosthesis fabricating system applying deep learning

- 3: KAKENHI Grant-in-Aid for Young Scientists (B): (Principal Investigator) Mine Y, Development of presymptomatic diagnosis for anti-resorptive agents-related osteonecrosis of the jaw (ARONJ), Grant Number 17K17181.
- 4: KAKENHI Grant-in-Aid for Scientific Research (B): (Co-Investigator) Mine Y, Development of Multidisciplinary Therapy for Oral Mucosa Malignant Melanoma, Grant Number 19H03826.
- 5: AMED Practical Research Project for Rare/Intractable Diseases: (Co-Investigator) Mine Y, Development of an anti-calcification agent, Grant Number 17ek0109242h0001

(5) Academic Awards, etc.

- 1: Karin Okuda: Special Award from President of Hiroshima University Dental Society, The 52nd meeting of Hiroshima University Dental Society, 2019.

(6) Patents

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Department of Oral Biology & Engineering

(1) Staff and Students

Professor : Hiroki Nikawa

Associate Professor : Tsuyoshi Taji

Lecturer : Hisako Sasahara

Education and Research Support Staff : Kaori Taguchi

Research Student : Kazuko Kawahara

Graduate Student : Yukihiro Takayama, Satoshi Miyauchi, Sakura Omori, Tomoya Suehiro, Yurina Endo,
Mina Ishida, Mako Shinoda, Rei Ito, Honami Oki, Akari Kumagai, Atsushi Takata,
Kouhei Matsushima

Undergraduate Student : Yuka Ayabe, Shiori Hirata, Tomoka Yasutomi, Misa Hamaoka, Yoshie Yumisashi,
Azumi Sato, Saki Koyanagi

(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 : Occlusal support is associated with nutritional improvement and recovery of physical function in patients recovering from hip fracture : Sawa Y, Kayashita J, Nikawa H. : Gerodontology, Epub ahead of print. 2019

- 2 : Simulation and navigation of living donor hepatectomy using a unique three-dimensional printed liver model with soft and transparent parenchyma : Kuroda S, Kihara T, Akita Y, Kobayashi T, Nikawa H, Ohdan H : Surg Today, Epub ahead of print 2019.
- 3: Effect of bovine milk fermented with *Lactobacillus rhamnosus* L8020 on periodontal disease in individuals with intellectual disability : a randomized clinical trial : Yuki O, Furutani C, Mizota Y, Wakita A, Mimura S, Kihara T, Ohara M, Okada Y, Okada M, Nikawa H : J Appl Oral Sci, 1-9, 2019.

4:

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: The effect of bovine milk fermented with *Lactobacillus rhamnosus* L8020 on periodontal burdens in individuals with intellectual disability : Yuki Oda, Chiaki Shimizu, Tsuyoshi Taji, Yuika Mizota, Mayuko Watari, Tomoko Tokikazu, Aya Oda, Tomohiro Mukai, Keita Yoshida, Yoshiyuki Okada, Hiroki Nikawa: 1th AADOH (Kaohsiung), 2019
- 2: L8020 Effects of lactic acid bacteria metabolite compounded gummi on oral environment : Mako Shinoda, Tsuyoshi Taji, Hisako Sasahara, Kazuko Kawahara, Hiroki Nikawa: The 52th Meeting of The Hiroshima University Dental Society (Hiroshima), 2019
- 3: L8020 Effects of lactic acid bacteria metabolite compounded gummi on oral environment : Mako Shinoda, Tsuyoshi Taji, Hisako Sasahara, Kazuko Kawahara, Hiroki Nikawa: 97th IADR (Vancouver), 2019
- 4: A program to cultivate advanced medical personnel:"Cultivation of dental personnel contributing to healthy longevity in a specialist team" : Rumi Nishimura, Atsue Matsumoto, Tsuyoshi Taji, Hiroki Nikawa, Masaru Sugiyama: 2019 International Symposium On Dental Hygiene (Brisbane), 2019

F) Symposium and special lecture

- 1: Application of Probiotics strain *Lactobacillus rhamnosus* L8020 to oral health : Nikawa H : International Association for Disability and Oral health (Taipei), 2019.4.12.

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

- 1 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Hiroki Nikawa (Co-investigators),
Research Project Number: 17K009440B. ¥20,000
- 2 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Tsuyoshi Taji (Head), Hiroki
Nikawa (Co-investigators), Research Project Number: 17K11752. ¥500,000
- 3 : Collaborative Research budget from Tokyo Electronics Co.,Ltd to Hiroki Nikawa. ¥1,500,000
- 4 : Collaborative Research budget from Earth Pet Co.,Ltd to Hiroki Nikawa. ¥1,000,000
- 5 : Donation from Shikoku nyugyou corporation to Hiroki Nikawa. ¥300,000
- 6 : Donation from ROHTO Pharmaceutical Co., Ltd. to Hiroki Nikawa. ¥600,000

(5) Academic Awards, etc.

(6) Patents

- 1 : Hiroki Nikawa : (Greece Patent) BACTERIOCIN DERIVED FROM LACTOBACILLUS
RHAMNOSUS(NO. 3097996) (Hiroshima University)
- 2 : Hiroki Nikawa : (Turkey Patent) BACTERIOCIN DERIVED FROM LACTOBACILLUS
RHAMNOSUS(NO. 201816786) (Hiroshima University)

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Graduate School of Biomedical and Health Sciences Central Research Laboratory

(1) Staff and Students

Director : Chisa Syukunami (by-work)

Assistant Professor : Ikue Hayashi

(2) Main Research Activities

1 : Proteome analysis and metabolome analysis using mass spectrometry

2 : Structural analysis of biologically active substances

(3) Research Achievements

A) Original Papers (including Case Reports)

1 : Nucleolar protein nucleolin functions in replication stress–induced DNA damage responses : Kawamura K., Qi F., Meng Q., Hayashi I., Kobayashi J. : *Journal of Radiation Research*, 60 (3), 281–288, 2019.

2 : Exopolysaccharide Produced by *Lactobacillus paracasei* IJH-SONE68 Prevents and Improves the Picryl Chloride-Induced Contact Dermatitis : Noda M., Sultana N., Hayashi I., Fukamachi M., Sugiyama M. : *Molecules*, 24(16), 2970-2984, 2019.

B) Review

C) Publications

D) Other Publications

E) Presentations at Scientific Meetings

1 : Effects of inflammatory marker on the relationship between intracellular ROS in blood and radiation exposure among atomic bomb survivors : Hayashi T., Furukawa K., Hayashi I., Yoshida K., Kyoizumi S., Ohishi W. : 16th International Congress of Radiation Research (Manchester), 2019.

2 : Effects of aging and radiation exposure on influenza vaccine responses among Hiroshima atomic-bomb survivors: Hayashi T., Lynch HE., Geyer SM., French B., Yoshida K., Hayashi I., Kyoizumi

S., Kusunoki Y., Ohishi W., Fujiwara S., Shterev I., Nikolich-Zugich J., Murasko D., Hale LP., Sempowski GD., Nakachi K. : 17th International Conference on Immunology and Vaccine Research (Osaka) 2019.

- 3 : Relationship between active oxygen in blood cells and IL-6R: Hayashi T., Furukawa K., Yoshida K., Hayashi I., Ohishi W., Kyoizumi S. : 42nd Annual Meeting of the Molecular Biology Society of Japan (Fukuoka) 2019.

F) Special lectures in academic meetings

- 1 : Basic study on the search for inflammation-related biomarkers by serum metabolomics : Hayashi I. : Research Report on Smoking Science Foundation (Tokyo), 2019.

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

- 1 : Smoking Science Foundation: Hayashi I. : Molecular epidemiological study of cigarette smoking effects on metabolome and inflammation-related biomarkers: 2,000,000JPY.

(5) Academic Awards, etc.

(6) Patents

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Graduate School of Biomedical and Health Sciences

(1) Staff and Students

Assistant Professor: KATO, Fuminori

(2) Main Research Activities

- 1 : Toxin-antitoxin systems in *Staphylococcus aureus*
- 2 : Transcriptional regulators of pathogenic genes in *Staphylococcus aureus*
- 3 : Molecular genetic tools in *Staphylococcus aureus*

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Kato F, Yoshizumi S, Yamaguchi Y, Inouye M. 2019. Genome-wide screening for identification of novel toxin-antitoxin systems in *Staphylococcus aureus*. *Applied and Environmental Microbiology*, 85(20): e00915-19

B) Review

C) Publications

D) Other Publications

E) Presentations at Scientific Meetings

- 1 : Secondary structure analysis of DNA gyrase inhibitor derived from *Staphylococcus aureus* by Vacuum-ultraviolet circular-dichroism spectroscopy: Fuminori Kato and Koichi Matsuo
The 23rd Hiroshima International Symposium on Synchrotron Radiation. HigashiHiroshima, 2019
- 2 : Characterization of novel toxin inhibiting DNA gyrase in *Staphylococcus aureus*: Fuminori Kato
The 92nd Annual Meeting of Japanese Society for Bacteriology (Sapporo), 2019
- 3 : Characterization of *Staphylococcus aureus* toxin-antitoxin system targeting DNA gyrase:
Fuminori Kato and Masayori Inouye: The 52nd General Meeting of Hiroshima University Dental Society (Hiroshima), 2019
- 4 : Identification of chromosomally encoded toxin-antitoxin system in *Staphylococcus aureus*:

Fuminori Kato, Yoshihiro Yamaguchi, Masayori Inouye: The 72nd Annual Meeting of Japanese Society for Bacteriology, Chugoku-Shikoku Branch (Yonago), 2019

- 5 : Characterization of toxin-antitoxin system in *Staphylococcus aureus*: Fuminori Kato and Masayori Inouye: The 42nd Annual Meeting of the Molecular Biology Society of Japan (Fukuoka), 2019

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

- 1 : JSPS Grant-in-Aid For Scientific Research(C) (Continuance): *Staphylococcus aureus* toxin-antitoxin system controlling DNA topology: Fuminori Kato, Grant Number JP16K08776, 780,000 yen

(5) Academic Awards, etc.

(6) Patents

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Center for Cause of Death Investigation Research & Education

(1) Staff and Students

Associate Professor/Lecturer: Hiroko Oka (Specially appointed)

(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 et al. A report on dental disaster victim identification system in overseas countries –A comparison among twelve countries and Japan-. Forensic Dental Science 11(1):1-6,2018.
- 2 : Kitagawa M, Murakami S, Akashi Y, Oka H, Shintani T, Ogawa I, Inoue T, Kurihara H. Current status of dental metal allergy in Japan. J Prosthodont Res, 63(3):309-312, 2019.

B) Review

C) Publications

D) Other Publications

E) Presentations at Scientific Meetings

- 1 : A report of the observation experience for dental clinical students at Center for Cause of Death Investigation Research & Education in Hiroshima University: Hiroko Oka, Katsuyuki Kozai, Naoya Kakimoto. : The 38th Annual Academic Meeting of Japanese Dental Education Association (Fukuoka), 2019.
- 2 : An approach of the DVI tabletop exercise with interdisciplinary team and its educational effects on

dental participants: Seiko Katsumura, Hiroko Oka, Akiko Kumagai, Hisako Saitoh.: The 38th Annual Academic Meeting of Japanese Dental Education Association (Fukuoka), 2019.

- 3 : What and how dental students learn in the student life with international students: Hiroko Oka, Tsuyoshi Taji.: The 38th Annual Academic Meeting of Japanese Dental Education Association (Fukuoka), 2019.
- 4 : Education of Disaster Dentistry on Undergraduate/ Dental Trainee Program in Hiroshima University: Hiroko Oka, Katsuyuki Kozai, Hiroyuki Kawaguchi, Kotaro Tanimoto: The 38th Annual Academic Meeting of Japanese Dental Education Association (Fukuoka), 2019.
- 5 : Approach of Disaster Dentistry Education on Trainee Dentists in Hiroshima University Hospital: Hiroko Oka, Hiromi Nishi, Taizo Ohbayashi, Hiroyuki Kawaguchi.: The 38th Annual Academic Meeting of Japanese Dental Education Association (Fukuoka), 2019.
- 6 : Study on Development of Age Estimation methods based on Teeth DNA methylation DNA using HRM: Hiroko Oka: The 13th Annual Meeting of Japanese Society of Forensic Dental Science (Hiroshima), 2019.
- 7 : Current status of the forensic dentistry section at seven hub centers for cause of death investigation research and education in Japan: Akiko Takeuchi, Katsuhiko Suzuki, Rieka Katsuragi, Hisako Saitoh, Koichi Sakurada, Hiroko Oka, Hiromi Yamashita: The 13th Annual Meeting of Japanese Society of Forensic Dental Science (Hiroshima), 2019.

(plus other 4 presentations)

F) Special lectures in academic meetings

- 1 : The importance of training to reconsider now: a facilitator
Hiroko Oka: JUMP Workshop (March 2019, Tokyo)
- 2 : A Tabletop training using ICPO DVI post mortem record format: a facilitator
Hiroko Oka: The 2nd Seminar of the Cause of Death Investigation Research & Education, Hiroshima (March 2019, Hiroshima).
- 3 : What can I can we do as dentists in disasters
Hiroko Oka: A Seminar for Dental Trainees at Hiroshima University Hospital (April 2019, Hiroshima)
- 4 : Let's think about medical and dental education for disaster conditions
Hiroko Oka et al.: The 73th MEDC Workshop WS-7 (August 2019, Aichi)
- 5 : The Latest Knowledge of Forensic Dental Science
Hiroko Oka: A Seminar of Fukukama City Dentists Association (September 2019, Hiroshima)

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

- 1 : Grants-in-Aid for Scientific Research (Scientific Research(C)) : Hiroko Oka, Development of Asian age prediction method based on DNA methylation DNA. No.18K09910
- 2 : The Murata Science Foundation : Hiroko Oka, 岡 広子, Construction of Japanese DVI system in the international community - Comparison of current status and verification by tabletop training -

(5) Academic Awards, etc.

(6) Patents

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Division of General Dentistry

Department of General Dentistry

(1) Staff and Students

Professor :Hiroyuki Kawaguchi

Assistant Professor : Hiromi Nishi, Taiji Obayashi, Syuichi Munenaga

Resident : Nami Obayashi

Graduate Student : Noriaki Ide

(2) Main Research Activities

1. Research in patient-centered dentistry based on narrative approach
2. Research in general dentistry
3. Examination of postgraduate dental training program
4. Research in health communication strategy
5. Research in clinical education
6. Research in assessment of clinical skills
7. Research in development and standardization of simulated patients
8. Research in taste disorder of patients receiving chemotherapy

(3) Research Achievements

A) Original Papers (including Case Reports)

1. Kuramoto Y, Nishi H, Kawaguchi H, Kurihara H. Perioperative oral management required for dental hygienists. 36(2):43-48,2019 Feb.
2. Memida T, Matsuda S, Kajiya M, Mizuno N, Ouhara K, Fujita T, Hirata S, Yoshida Y, Sugimoto T, Nishi H, Kawaguchi H, Sugiyama E, Kurihara H. Multiple External Root Resorption of Teeth as a New Manifestation of Systemic Sclerosis – a Cross-sectional Study in Japan –, *Journal of Clinical Medicine*. . 8(10), 1628, 2019

B) Review

C) Publications

1. Nishi H (Contribution writing): Oral care through collaboration between dentistry and medical treatment is effective in preventing systemic diseases. Ed: Medical Evaluation Guide. Family dentist when we were in trouble. Nannansya (Hiroshima) p.226-231, 2019/2/15
2. Kawaguchi H (Contribution writing): How to get good care of a dental clinic. Ed: Medical Evaluation Guide. Family dentist when we were in trouble. Nannansya (Hiroshima) p.232-236, 2019/2/15

D) Other Publications

1. Kawaguchi H (Contribution writing): Dental hygiene dictionary. Nagasueshoten (Tokyo) 2019.

E) Presentations at Scientific Meetings

1. ○Ouhara K, Munenaga S, Hamamoto H, Hirata S, Kurihara H, Sugiyama E. Elucidation of rheumatoid arthritis induction mechanism by virulence factor ACAP : 14th Young Researchers in Advanced Rheumatology (Osaka) 2019/01/05.
2. ○Munenaga S, Ouhara K, Hamamoto H, Kajiya M, Mizuno N, Fujita T, Sugiyama E, Kurihara H, Kawaguchi H. Relationship of rheumatoid arthritis with periodontitis and *Porphyromonas gingivalis* infection : The 58th Hiroshima Prefecture Dental Association, The 103th Hiroshima University Dental Society (Hiroshima) 2019/11/17.
3. ○Hamamoto H, Ouhara K, Munenaga S, Kajiya M, Mizuno N, Fujita T, Kurihara H. Effects of *Porphyromonas gingivalis* infection on intestinal flora and arthritis exacerbation in rheumatoid arthritis model mice : The 58th Hiroshima Prefecture Dental Association, The 103th Hiroshima University Dental Society (Hiroshima), 2019/11/17.
4. ○Oka H, Nishi H, Obayashi T, Kawaguchi H. Approach of Disaster Dentistry Education on Trainee Dentists in Hiroshima University Hospital : The 38th Meeting of Japanese Dental Education Association (Fukuoka), 2019/07/19
5. ○Nakamori M, Hosomi N, Nishi H, Shiga Y, Matsushima H, Aoki S, Nezu T, Kinoshita N, Imamura E, Wakabayashi S, Maruyama H. Serum IgG titers of periodontal disease pathogens predicts hemorrhage growth and 3-month outcome in patients with cerebral hemorrhage. : **International Stroke Conference.** (Hawaii) Feb 6-8, 2019.
6. ○Kuramoto Y, Nishi H, Kurihara H. Infection prophylaxis by mouth care. Oral hygiene management based on the risk assessment The 34th Annual Meeting of Japanese Society for Infection Prevention and Control. (Kobe), 2019/2/22
7. ○Ohta K, Nishi H, Ohge H, Kurihara H. Identification and antifungal agent susceptibility of the

- Candida isolated from oral candidiasis of the perioperative patients : The 34th Annual *Meeting of Japanese Society for Infection Prevention and Control*. (Kobe), 2019/2/22
8. ○ Shiga Y, Hosmi N, Nezu T, Nishi H, Aoki S, Nakamori M, Kinoshita N, Maruyama H. Association between periodontal disease serum antibody titer and brain small vessel disease : The 60th Annual Meeting of the Japanese society of neurology(Osaka), 2019/5/22
 9. ○ Nishi H, Kuramoto Y, Obayashi T, Ohara M, Kurihara H, Kawaguchi H . Febrile neutropenia and oral environment in chemotherapy. The 62nd Spring Meeting of the Japanese Society of Periodontology(Kanagawa) 2019/5/24
 10. ○ Sasada S, Nishi H, Gouta N, Emi J, Kjitani K, Masumoto N, kadoya M, Okada M. Intraoral environment and febrile neutropenia in the breast cancer TC therapy. : The 17th Japanese Society of Medical Oncology Annual *Meeting* (Kyoto) ,2019/7/18~20
 11. ○ Yano K, Kakuda A, Hirayama J, Suzuki K, Nishi H, Nakaoka M, Kawaguchi H, Kurihara H. The intervention situation of dentistry in Hiroshima University Hospital NST : The 12nd Annual Meeting of the Japanese Society for clinical Nutrition and Metabolism.(yamaguchi) 2019/8/10
 12. ○ S.Ohshimo, H.Nishi, K.Hosokawa, Y.Horimasu, S.Miyamoto, H.Iwamoto, H.Hamada, H. Kawaguchi, F.Bonella, J.Guzman, U.Costabel, N.Hattori, N.Shime. Imbalance in the oral bacterial flora as a risk factor for acute exacerbation in idiopathic pulmonary fibrosis. European Respiratory Society International Congress 2019 (Spain, Madrid) 2019/09/28~10/02
 13. ○ Nishi H, Obayashi T, Ide N, Munenaga S, Obayashi N, Kurihara H, Kawaguchi H. Association between complications and periodontitis metrics PISA in the chemotherapy : The 12nd Annual Meeting of Japanese of general dentistry, 2019/11/3.
 14. ○ Memida T, Matsuda S, Mizuno T, Ouhara K, Nishi H, Kajiya M, Fujita T, Kawaguchi H, Kurihara H. : *A case report and clinical analysis of multiple bone substitution-related root resorption to be found in patients with systemic scleroderma : The 103rd Hiroshima University conference, 2019/11/17*

F) Implementation of Seminars / Workshops

1. The 3rd Kids infection summer school : sponsored by NPO Corporation Hiroshima Infection Network (Hiroshima) 2019/8/15
2. Hospice palliative care week event : Dry degree of the mouth. sponsored by Hiroshima University Hospital Cancer Therapy Center Palliative Care Section (Hiroshima) 2019/10/17

G) Lecturer • Symposium

1. Symposium: Nishi H: A point and the practice of nosocomial infection measures. The 91st Higashi-ku, Hiroshima Medical Association Conference (Hiroshima), 2019/1/21.

2. Lecture: Nishi H: Regional alliances. Hiroshima Dental Association Training Seminar (Hiroshima), 2019/2/3
3. Lecture: Kawaguchi H: Patient safety and infection control. AY2018 Kagoshima University Seminar on Instructor of Dentist Clinical Training (Kagoshima), 2019/2/3
4. Symposium: Kawaguchi H: How does ICN relate to oral care? ~What is infection control required for oral management? ~ The 8th Academic Meeting of Infection Control Network of Japan (Tokushima), 2019/5/24
5. Lecture: Nishi H : Mouth care to learn from a common case. BOC Provider Hiroshima Conference (Hiroshima), 2019/07/28
6. Lecture: Nishi H : Mouth care as the pneumonia prevention. Nursing Intervention Education Training Center Workshop (Hiroshima), 2019/9/24
7. Panelist: Nishi H : Role of the dentist in perioperative care. The 41st Japan Surgeon Society General Meeting (Tokyo), 2019/9/27
8. Lecture: Nishi H : Why is the mouth care effective? The 46th Hiroshima Infection Workshop (Hiroshima), 2019/11/23
9. Lecture: Nishi H : Complications prevention under treatment with the control of oral bacteria. The 1st Oral Infection Seminar (Hiroshima), 2019/11/27

H) Attending of Lectures, Seminars, and Workshops

1. Kawaguchi H: AY2018 Post-CC-OSCE evaluator training workshop. sponsored by KATO (Tokyo), 2019/2/10,11
2. Obayashi T: The 10th follow-up session for medical communication facilitators. sponsored by Japanese Association for Dental Education (Fukuoka), 2019/07/18
3. Kawaguchi H: The 13th facilitator training seminar for dentist. (behavior change) sponsored by Japanese Association for Dental Education (Aichi), 2019/8/31,9/1
4. Obayashi T: The Lecture for Program Supervisor. (Hayama), 2019/09/08-11
5. Nishi H: Workshop for the dentistry educator. sponsored by Japanese Association for Dental Education (Chiba), 2019/12/06-10

D) Implementation of OSCE, CSA

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

1. Munenaga S. Grant-in-Aid Scientific Research. 4,100,000Yen. 19K18999
 「Elucidation of the rheumatoid arthritis mechanism via periodontal tissue-induced HuR and

exosomes]

2. Nishi H. Grant-in-Aid Scientific Research. 4,420,000Yen. 17K11839
「Bacterial flora of the mouth of inflammatory instruction mechanism and patients in the oral mucosa of H.pylori with gastric cancer」
3. Kawaguchi H. Grant-in-Aid Scientific Research. 4,030,000Yen. 18K09880
「Utility of the perioperative oral management by the probiotics」

(5) Academic Awards, etc.

1. Munenaga S : 2018 Japanese Society of Periodontology Encouragement Award : 2019/05/24
2. Munenaga S : The 22th Hiroshima University Faculty of Dentistry the Alumni Association Encouragement Award : 2019/05/25
3. Obayashi T : The 17th Japanese Dental Education Association Excellent Paper Award : 2019/07/19

(6) Patents

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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: Hisako Sasahara, Hideo Shigeishi, Atsue Matsumoto

Assistant Professor: Yoshie Niitani, Rumi Nishimura, Tomoko Maehara

Education and Research Support Staff: Minako Ogawa, Naomi Nakashima, Sanae Miyoshi,
Yuko Kurawaki, Momoko Ishikawa, Mari Matsumura, Nishiki Arimoto

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

- Department of Public Oral Health: Kouji Oota, Hideo Shigeishi, Tomoko Maehara,
Momoko Ishikawa, Mari Matsumura
- Department of Oral Epidemiology: Mariko Naito, Rumi Nishimura
- Department of Oral Health Management: Toshinobu Takemoto, Atsue Matsumoto, 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 oral health in times of disaster

(3) Achievements

A) Original Papers (including Case Reports)

- 1 : Association of Oral Function with Long-Term Participation in Community-Based Oral Exercise Programs in Older Japanese Women : A Cross-Sectional Study: Sanae Miyoshi, Hideo Shigeishi, Eri Fukada, Maki Nosou, Hideaki Amano, Masaru Sugiyama. J Clin Med Res 11(3): 165-170, 2019.
- 2 : Association of physical performance with oral function in older women participating in community-based health exercise programs. : Sanae Miyoshi, Ayumi Saito, Hideo Shigeishi, Masaru Sugiyama. Clin Exp Dent Res: 1-7, 2019.

3 : Awareness-raising activities on oral hygiene management for residents in the affected areas during the torrential rains in July 2018 : Sanae Miyoshi, Atsue Matsumoto, Masaru Sugiyama : J of Dental Health 69 : 143-146, 2019.

4 : Issues in Dental Health Activities during Emergencies such as Natural Disasters - Report on Heavy Rainfall in July 2018- : Ken Inohara, Ayako Yamaguchi, Sanae Miyoshi, Yuri Goto, Saori Sakano : Japanese Journal of Gerodontology 33(3), 378-381, 2019.

B) Review

C) Publications

D) Other Publications

E) Presentations at Scientific Meetings

1 : Relationship between physical performance and oral function in older Japanese women participating in community-based health exercise programs : Sanae Miyoshi, Ayumi Saito, Hideo Shigeishi, Kouji Ohta, Masaru Sugiyama : The 51th Annual Meeting of the Hiroshima University Dental Society, 2019.

2 : The relationship between oral and physical function in community-dwelling older adults : Sanae Miyoshi, Ayumi Saito, Hideo Shigeishi, Masaru Sugiyama : The 68th General Meeting of Japanese Society for Oral Health (Shiga), 2019.

3 : The relationship between oral and physical function of the elderly who participate in community-based health exercise programs. : Sanae Miyoshi, Ayumi Saito, Tomoko Yamane, Yumiko Miyamoto, Hideo Shigeishi, Masaru Sugiyama : The 14th Annual Meeting of the Japan Society for Dental Hygiene (Nagoya), 2019.

4 : Community dental health activities in the July 30, 2018 torrential rains : Sanae Miyoshi, Tomoko Yamane, Yumiko Miyamoto : The 34th Hiroshima Prefectural Association of Dental Hygienists Research Presentation Meeting, 2019.

F) Lectures

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

(4) Academic Awards, etc.

(5) 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

Associate Professor/Lecturer : Yuki Oda (lecturer in Hospital)

Clinical Staff : Chiaki Furutani

Medical Doctor : Kota Miyahara, Hironori Miyazaki

Research Student : Chiaki Furutani, Kota Miyahara, Hironori Miyazaki

Clinical Trainee : Fumiko Hayashi, Masaki Hayashiuchi, Chisato Morimoto(～March)

(2) Main Research Activities

- 1: Evaluation of the circulatory systems in patients with cardiovascular and congenital heart diseases.
- 2: Effects of vasoconstrictor in local anesthesia on baroreflex sensitivity.
- 3: Relationship between central artery stiffness and periodontal diseases, and the influence on baroreflex sensitivity.
- 4: Influences of sleep bruxism in hypoxia on the central cardiovascular control system.
- 5: Underlying mechanisms of suppressed pressor responses to pain stimulation by N2O.
- 6: Alterations of pulse wave reflection by sedative agents.
- 7: A study on risk of dental caries and periodontal disease in patients with disabled
- 8: A study about the influence of L. Rhamnosus on caries and periodontal risk with disabled patients
- 9: A study on the frequency of bruxism and clenching during sleep in patients with cerebral palsy
- 10: A Study on relationship between autism spectrum disorder and oral-intestinal flora

(3) Research Achievements

A) Original Papers (including Case Reports)

1. Cerebral Abscess Following the Self-Extraction of Teeth in Patient With Ebstein's Anomaly: A Case Report: Soichiro Kawase, Yoshiyuki Okada, Kazushige Isono, Hitoshi Iwasaki, Takashi Kuno, Kohei Matsumura, Yiwen Fu, Yorikazu Harada, Tadashi Ogasawara: *BMC Oral Health*, 19 (1): article number

200 (Open Access), 2019

2. Arterial Stiffness During Whole-Body Passive Heat Stress in Healthy Older Adults: Zachary J Schlader, Yoshiyuki Okada, Stuart A Best, Qi Fu, Craig G Crandall: *Physiol Rep*, 7 (9): e14094, 2019
3. Role of Corin in Blood Pressure Regulation in Normotensive and Hypertensive Pregnancy: Mark B Badrov, Sun Young Park, Jeung-Ki Yoo, Michinari Hieda, Yoshiyuki Okada, Sara S Jarvis, Abigail S Stickford, Stuart A Best, David B Nelson, Qi Fu: *Hypertension*, 73 (2): pp432-439, 2019
4. Effect of bovine milk fermented with *Lactobacillus rhamnosus* L8020 on periodontal disease in individuals with intellectual disability: a randomized clinical trial: Yuki Oda, Chiaki Furutani, Yuika Mizota, Atsuko Wakita, Sumiyo Mimura, Takuya Kihara, Masaru Ohara, Yoshiyuki Okada, Mitsugi Okada, Hiroki Nikawa: *Journal of Applied Oral Science*, 27: e20180564, 2019
5. Correction Mechanism of Crossbite by Mouthpiece Type Functional Orthodontic Appliance Finite -Element Analysis-: Yukiko Yokoi, Norimasa Oka, Yukiko Yamakawa, Yoko Yamakawa, Yoshiyuki Okada, Naoto Osuga: *The Japanese Journal of Pediatric Dentistry* 57(4): pp437-443, 2019
6. Severe lip biting as self-mutilation behavior has reduced in patient with Lesch-Nyhan Syndrome by continuous use of mouth-guard under regional alliance: A case report: Yuki Oda, Chiaki Furutani, Chisato Morimoto, Keita Yoshida, Aya Oda, Tomohiro Mukai, Atsuko Wakita, Yuika Mizota, Mayuko Watari, Masahiro Irifune, Yoshiyuki Okada : *JJSDH* 40 (1): 7-13, 2019

B) Review

C) Publications

1. Child Health - スペシャルニーズのある子どもの歯科診療 - (in Japanese): Yoshiyuki Okada (coauthored): *Shindan-to-Chiryosha* (Tokyo), pp820-824, 2019.

D) Other Publications

1. Featured article スペシャルニーズのある患者に対応した包括的歯科医療音構築に向けて (in Japanese): Yoshiyuki Okada: *Ootakgawa* 26, pp2-5, 2019
2. Topics - Cardiovascular diseases- 疾患別にみる歯科治療時の注意点(series) (in Japanese)
 - (1) Introduction :Yoshiyuki Okada: *The Quintessence* 38(7): pp1465-1467, 2019
 - (2) Hypertension:Yoshiyuki Okada: *The Quintessence* 38(8): pp99-101, 2019
 - (3) Coronary artery diseases: Yoshiyuki Okada: *The Quintessence* 38(9): pp1919-1921, 2019
 - (4) Heart failure: Yoshiyuki Okada: *The Quintessence* 38(10): pp2158-2161, 2019
 - (5) Valvular disease: Yoshiyuki Okada: *The Quintessence* 38(11): pp2409-2411, 2019

(6) Congenital heart defects: Yoshiyuki Okada: *The Quintessence* 38(12): pp2649-2651, 2019

E) Presentations at Scientific Meetings

1. Research on the probiotics with *Lactobacillus rhamnosus* L8020 on periodontal disease in individuals with an intellectual disability: Yuki Oda, Tsuyoshi Taji, Hiroki Nikawa: 8th Prosthesis Congress of Young Researchers (Kagoshima), 2019.
2. The effect of bovine milk fermented with *Lactobacillus rhamnosus* L8020 on periodontal burdens in individuals with intellectual disability: Yuki Oda, Chiaki Furutani, Tsuyoshi Taji, Yuika Mizota, Kota Miyahara, Mayuko Watari, Tomoko Tokikazu, Aya Oda, Tomohiro Mukai, Keita Yoshida, Yoshiyuki Okada, Hiroki Nikawa: 1st Congress of Asia Association for Disability & Oral Health (Kaohsiung), 2019.
3. Changes in the age demographic of dental patients with special needs during the last decade : Chiaki Furutani, Yuki Oda, Kota Miyahara, Yuika Mizota, Mayuko Watari, Tomoko Tokikazu, Aya Oda, Tomohiro Mukai, Akari Mukai, Keita Yoshida, Yoshiyuki Okada: 1st Congress of Asia Association for Disability & Oral Health (Kaohsiung), 2019.
4. Perioperative anesthesia management for an autism spectrum disorder patient who was thought to be difficult to be hospitalized: Aya Oda, Keita Yoshida, Takahiro Kochi, Tomohiro Mukai, Yuka Kikuchi, Tamayo Takahashi, Taiga Yoshinaka, Kana Oue, Akari Mukai, Chiaki Furutani, Yuki Oda, Yoshiyuki Okada, Masahiro Irifune: 1st Congress of Asia Association for Disability & Oral Health (Kaohsiung), 2019.
5. Tracheal tube blockage by mucus during nasal intubation in patients with Autism Spectrum Disorder-Rare Airway complication: Yoko Hama, Miwa Miyauchi, Mizuki Oishi, Sayo Okada, Maki Yamamoto, Eri Okino, Mimi Nishimura, Yuki Oda, Hiroki Shintani, Atushi Mito: 1st Congress of Asia Association for Disability & Oral Health (Kaohsiung), 2019.
6. Relationship between oral bacterial flora and membranous substances on the palates of bedridden elderly people with tube feeding: Hironao Asahina, Kota Miyahara, Noriyasu Mochizuki, Hiroyuki Haishima, Makoto Taniguchi, Yasuaki Kakinoki, Akihiro Yoshida, Hiromasa Hasegawa, Yoshiyuki Okada, Tadashi Ogasawara: The 30th Congress of Japanese Society of Gerodontology (Sendai), 2019.
7. The effects of sleep bruxism on baroreflex control of the circulation in humans: Yoshiyuki Okada, Yuki Oda, Chiaki Furutani, Yudai Higuchi, Tadashi Ogasawara, Hiroshi Nose, Hiroshima shigaku 51(1): pp47-48, 2019
8. Effects of nitrous oxide sedation on sympathetic baroreflex sensitivity: Yoshiyuki Okada, Shigehiko Isono, Yudai Higuchi, Chiaki Furutani, Yuki Oda, Tadahi Ogasawara: Hiroshima shigaku 51(1): pp47, 2019
9. Research of the effect of bovine milk fermented with *Lactobacillus rhamnosus* L8020 on periodontal

- pathogens and oral flora in patients who have difficulties in self oral care: Yuki Oda, Chiaki Furutani, Tsuyoshi Taji, Kota Miyahara, Yoshiyuki Okada: The 30th Congress of Japanese Society of Gerodontology (Sendai), 2019.
10. Changes in the age demographic of dental patients with special needs during the last decade: Chiaki Furutani, Yuki Oda, Kota Miyahara, Yoshiyuki Okada: The 30th Congress of Japanese Society of Gerodontology (Sendai), 2019.
 11. Investigation on consultation status of elderly patients at Hiroshima Oral Health Center: Yoko Hama, Mimi Nishimura, Yuki Oda, Mitsuyoshi Yoshida: The 30th Congress of Japanese Society of Gerodontology (Sendai), 2019.
 12. Study on arterial pressure at optimum sedative condition during IVS for patients with intellectual disabilities who take antipsychotic drugs: Yuki Oda, Keita Yoshida, Taiga Yoshinaka, Kana Oue, Aya Oda, Tomohiro Mukai, Yoko Hama, Miwa Miyauchi, Masahiro Irifune, Yoshiyuki Okada : The 47th Annual Meeting of the Japanese Dental Society of Anesthesiology (Okayama), 2019.
 13. Current status of dental treatment under intravenous sedation in outpatients with intellectual disabilities : Yuki Oda, Keita Yoshida, Aya Oda, Tomohiro Mukai, Akari Mukai, Eiji Imado, Tamayo Takahashi, Mayuko Watari, Masahiro Irifune, Yoshiyuki Okada: the 47th Annual Meeting of the Japanese Dental Society of Anesthesiology (Okayama), 2019.
 14. The effect of *Lactobacillus rhamnosus* L8020 on periodontal burdens and oral flora in individuals with intellectual disabilities: Yuki Oda, Chiaki Furutani, Kota Miyahara, Hironori Miyazaki, Mayuko Watari, Tomoko Tokikazu, Tsuyoshi Taji, Yoshiyuki Okada, Hiroki Nikawa: The 36th Japanese Society for Disability and Oral Health (Gifu), 2019.
 15. Comparison of the relative abundance of periodontal pathogens in oral flora between intellectually disabled individuals and healthy individuals: Yuki Oda, Chiaki Furutani, Kota Miyahara, Hironori Miyazaki, Mayuko Watari, Tomoko Tokikazu, Tsuyoshi Taji, Yoshiyuki Okada, Hiroki Nikawa : The 36th Japanese Society for Disability and Oral Health (Gifu), 2019.
 16. Effects of mepivacaine on sympathetic baroreflex sensitivity : Chiaki Furutani, Kota Miyahara, Hironori Miyazaki, Yuki Oda, Yoshiyuki Okada : The 36th Japanese Society for Disability and Oral Health (Gifu), 2019.
 17. Changes in baroreflex sensitivity by propofol and compensated heart rate response to hypertension : Hironori Miyazaki, Chiaki Furutani, Kota Miyahara, Yuki Oda, Yoshiyuki Okada : The 36th Japanese Society for Disability and Oral Health (Gifu), 2019.
 18. Clinico-statistical case study an patients underwent dental treatment under intravenous sedation and physical restraint in special care dental clinic of Hiroshima University Hospital : Aya Oda, Yuki Oda , Keita Yoshida, Takahiro Kochi, Tomohiro Mukai, Taiga Yoshinaka, Tamayo Takahashi, Kana Oue, Akari Mukai, Chiaki Furutani, Yoshiyuki Okada, Masahiro Irifune : The 36th Japanese Society for Disability and Oral Health (Gifu), 2019.

19. A case whose swallowing function evaluation was effective after dental treatment under general anesthesia for a cerebral palsy infant with dysphagia: Akari Mukai, Taiga Yoshinaka, Tamayo Takahashi, Tomohiro Mukai, Aya Oda, Yuka Kikuchi, Takahiro, Kochi, Eiji Imado, Kana Oue, Mitsuhiro Yoshida, Chiaki Furutani, Yuki Oda, Yoshiyuki Okada, Masahiro Irifune: The 36th Japanese Society for Disability and Oral Health (Gifu), 2019.
20. The effects of the dry state in parts of the palate on a change of the film formation of detachment: Kota Miyahara, Akinao Asahina, Tosihe Akieda, Kohei Matsumura, Mai Syoji, Komugi Naha, Riko Kimura, Tamaki Kuroda, Shinichiro Uematsu, Astuko Wakita, Hiromasa Hasegawa, Yoshiyuki Okada, Tadashi Ogasawara: The 36th Japanese Society for Disability and Oral Health (Gifu), 2019.

F) Special lectures in academic meetings

- 1 : Yoshiyuki Okada : Special Need in Dentistry : Indonesian Society of Special Care Dentistry Joint Scientific Meeting in Special Care Dentistry (Indonesia) 2019
- 2 : Yoshiyuki Okada : Special care for medically compromised patients -congenital heart defects- : School of Dentistry, Airlangga University (Indonesia) 2019
- 3 : Kota Miyahara : Life at Hiroshima University: School of Dentistry, Airlangga University (Indonesia) 2019
- 4 : Yoshiyuki Okada : Special care for disable patients by general practitioners in dental clinic : Kure Dental Association (Kure, Japan) 2019
- 5 : Yoshiyuki Okada : Characteristics of and dental management for disabled patients: Hiroshima prefectural dental association (Hiroshima, Japan) 2019
- 6 : Yoshiyuki Okada : Regional dental cooperation system based on behavioral managements for special needs patients: Hokkaido Society for Disability and Oral Health (Sapporo, Japan) 2019
- 7 : Yoshiyuki Okada : Special care for the medically compromised patients — Cardiovascular diseases — : Nagoya Dental Association (Nagoya, Japan) 2019
- 8 : Yoshiyuki Okada : Special Lecture: Today's managements in special needs dentistry —to develop referral criteria— : Alumni association of Hokkaido university (Tokyo) 2019

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

1. Grants-in-Aid for scientific research (C) (New): Yoshiyuki Okada, Underlying mechanisms and predictive factors for reduction in blood pressure during intravenous sedation with propofol in patients with arteriosclerosis. 18K09927. 4,420,000yen.
2. Grants-in-Aid for scientific research (C) (New): Yoshiyuki Okada (Co-investigator), 22. Analysis of

oral bacterial flora and membranous substances on the palates by using Next Generation Sequencing in bedridden elderly people with tube feeding. 18K09897. 4,290,000yen.

3. Grants-in-Aid for young scientists : Yuki Oda, Research of the effect of bovine milk fermented with Lactobacillus rhamnosus L8020 on periodontal disease in intellectually disabled patients. No. 18K17285. 4,290,000 yen.

(5) Academic Awards, etc.

- 1 : Yuki Oda: Excellent Presentation Award, The 36th Japanese Society for Disability and Oral Health (Gifu), 2019.
- 2 : Yuki Oda: The 22th Hiroshima University Dental Alumni Association Encouragement Award (Hiroshima), 2019.

(7) Patents

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Central Clinical Divisions Special Dental Clinic Section

(1) Staff and Students

Chief Professor : Kotaro Tanimoto

Research Associate : Sachiko Yamada

Research Associate : Yukimi Yasuhara

(2) Main Research Activities

- 1 : Perceptual Evaluation of Cleft Palate Speech
- 2 : Clinical Application of Electropalatography
- 3 : Research for improvement in articulation problem
- 4 : Research for relation between lingual pressure and the function of speech/swallowing

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : The feasibility of simultaneous swallowing videofluoroscopy and endoscopy examinations in patients with post-operative oral cancer : Nagasaki T., Yamada S., Yoshida M., Yoshikawa M., Verdonschot R., Yasuhara Y., Konishi M., Suei Y., Kakimoto N.: 22nd International Congress of DentoMaxilloFacial Radiology, Philadelphia (USA), 2019.

F) Special lectures in academic meetings

- 1 : Assessment and actuality of Dysphagia Rehabilitation : Yasuhara Y.: Hiroshima pref. community-based health care and nursing mutual security project : Workshop of the swallowing functional training (Hiroshima), 2019.

- 2 : Rehabilitation of Dysphagia : Yasuhara Y.: Hiroshima International University Civil Seminar (Higashi Hiroshima), 2019.
- 3 : Rehabilitation of Dysphagia : Yasuhara Y.: Hiroshima International University Civil Seminar (Higashi Hiroshima), 2019.
- 4 : Dementia Prevention - Aspiration Prevention Activity for Senior Citizen : Yasuhara Y.: JA Health Seminar (Kure), 2019.
- 5 : Dementia Prevention - Aspiration Prevention Activity for Senior Citizen : Yasuhara Y.: JA Health Seminar (Kure Hirominami) (Kure Hirokita), 2019.
- 6 : Dementia Prevention- Aspiration Prevention Activity for Senior Citizen : Yasuhara Y.: JA Health Seminar (Kure Hironishi) (Kure Hirohigashi), 2019.
- 7 : Speech Therapist's work : Yasuhara Y.: Gokou Highschool(Kure), 2019.
- 8 : Assessment and actuality of Dysphagia Rehabilitation : Yasuhara Y.: Hiroshima pref. community-based health care and nursing mutual security project : Workshop of the swallowing functional training (Kure), 2019.
- 9 : Assessment and actuality of Dysphagia Rehabilitation : Yasuhara Y.: Hiroshima pref. community-based health care and nursing mutual security project : Workshop of the swallowing functional training (Fukuyama), 2019.

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

(5) Academic Awards

(6) Patents

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Central Clinical Divisions

Center of Oral Clinical Examination

(1) Staffs and Students

Director: Hidemi Kurihara
Associate Professor: Ikuko Ogawa (Clinic)
Lecturer: Masae Kitagawa (Clinic)
Research Associate: Tomoaki Shintani
Dentist: Sakamoto Shinnichi
Technician: Rie Miyata

(2) Main Research Activities

- 1 : Diagnostic pathological study on head and neck lesions.
- 2 : Study on test and treatment of metal allergy and dry mouth.
- 3 : Molecular pathological study on development and progression of oral squamous cell carcinoma.
- 4 : Study on molecular target therapy to oral cancer targeted with HBp17/FGFBP.
- 5 : Analysis of actual condition of oral bacterial infection.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Oral environment and taste function of Japanese HIV-infected patients treated with antiretroviral therapy : Shintani T., Fujii T., Yamasaki N., Kitagawa M., Iwata T., Saito S., Okada M., Ogawa I., Unei H., Hamamoto K., Nakaoka M., Kurihara H., Shiba H.: *Aids Care*, 19:1-6, 2019.
- 2 : Current status of dental metal allergy in Japan. Kitagawa M., Murakami S., Akashi Y., Oka H., Shintani T., Ogawa I., Inoue T., Kurihara H.: *J Prosthodont Res.*, 63(3), 309-312, 2019.
- 3 : The transition of tissue inhibitor of metalloproteinases from -4 to -1 induces aggressive behavior and poor patient survival in dedifferentiated liposarcoma via YAP/TAZ activation.: Shrestha M., Ando T., Chea C., Sakamoto S., Nishisaka T., Ogawa I., Miyauchi M., Takata T.: *Carcinogenesis*, 40(10), 1288-1297, 2019.
- 4 : Pathological factors involved in local failure in squamous cell carcinoma of the oral cavity: retrospective study and proposal of a new clinical classification : Toratani S., Ogawa I., Sasahara H., Yoshioka Y., Kanda T., Tani R., Okamoto T. : *Int J Oral Maxillofac Surg.*, 48(2), 143-151, 2019.

- 5 : Characteristics of 5015 Salivary Gland Neoplasms Registered in the Hiroshima Tumor Tissue Registry over a Period of 39 Years : Sentani K., Ogawa I., Ozasa K., Sadakane A., Utada M., Tsuya T., Kajihara H., Yonehara S., Takeshima Y., Yasui W. : *J Clin Med.*, 8(5). pii: E566, 2019.
- 6 : Detection of MAPK/ERK pathway proteins and KRAS mutations in adenomatoid odontogenic tumors : Bologna-Molina R., Ogawa I., Mosqueda-Taylor A., Takata T., Sánchez-Romero C., Villarroel-Dorrego M., Takeda Y., Mikami T. : *Oral Dis.*, 25(2), 481-487, 2019.
- 7 : A case of venous aneurysm in the submandibular region : Uetsuki R., Ono S., Tada M., Inoue S., Ogawa I., Takechi M. : *Jpn J Oral Maxillofac Sur.*, 65(10), 689-693, 2019.
- 8 : A case of low-grade mucoepidermoid carcinoma showing Warthin tumor-like morphology : Taniguchi K., Ichiura S., Morito T., Takata S., Ogawa I., Yoshino T. : *Diag Pathol.*, 36(2), 103-108, 2019.
- 9 : Establishment of genome pathology for genetic test in the dentistry : Mikami T., Inoue T., Okada Y., Ogawa I., Kitagawa M., Kumamoto H., Sakamoto K., Senba I., Takata T., Takeda Y. : *JJADS.*, 38, 52-56, 2019.
- 1 0 : A case of eosinophilic granulomatosis with polyangiitis which bilateral sublingual painless swelling occurred first : Nobumoto T., Kanda T., Hayashi S., Tani R., Ogawa I., Okamoto T. : *J Jpn Stomalol Soc.*, 68(4), 294-298, 2019.
- 1 1 : A case of lipoma of the oral floor filling the sublingual space : Higashikawa K., Sasaki K., Nakagawa T., Shimasue H., Ono S., Mizuta K., Ishioka Y., Seino S., Nasuse T., Utsuki R., Sakanoto S., Orita M., Miyauchi M., Ogawa I., Takechi M. : *Hiroshima Univ Dent Soc.*, 51(2), 121-126, 2019.
- 1 2 : A case of the dental noncooperativity Down's syndrome boy with a maxillary cyst-like lesion : Mitsuhashi C., Niizato N., Ohta K., Murizumi H., Takechi M., Sakamoto S., Ogawa I., Kozai K. : *Hiroshima Univ Dent Soc.*, 51(2), 131-135, 2019.
- 1 3 : A case of angioleiomyoma of the hard palate : Higashikawa K., Ishida H., Nonomiya Y., Ono S., Ishioka Y., Tada M., Fukui A., Uetsuki R., Ogawa I., Miyauchi M., Takechi M. : *Hiroshima Univ Dent Soc.*, 51(2), 116-120, 2019.
- 1 4 : A case of sialolithiasis of the minor salivary glands in buccal mucosa : Nobumoto T., Yoshioka Y., Higaki M., Sakamoto S., Ogawa I., Toratani S., Okamoto T. : *Hiroshima Univ Dent Soc.*, 51(2), 112-115, 2019.

B) Review

C) Publications

- 1 : Pleomorphic adenoma : Practice of pathological diagnosis for guideline for cancer treatment. Salivary gland/Oral • Odontogenic tumors (Aozasa K., Nagao T., Takata T, edt.): Ogawa I., Ohbayashi M.: Nakayama Shoten Co., Ltd. (Tokyo), p.134-148, 2019.

- 2 : Case 6 Cystic mucoepidermoid carcinoma of jaw : Practice of pathological diagnosis for guideline for cancer treatment. Salivary gland/Oral • Odontogenic tumors (Aozasa K., Nagao T., Takata T, ed.): Ogawa I., Nagao T., Ohta S.: Nakayama Shoten Co., Ltd. (Tokyo), p.352-355, 2019

D) Other Publications

E) Presentations at Scientific Meetings

- 1 : Alveolar rhabdomyosarcoma occurring in the right forearm: A case report: Sakamoto S., Kuraoka K., Saito A., Iwahiro K., Kan A., Fujisawa H., Yasumura N., Kagawa A., Toda T., Zaitu J., Ishikawa A., Taniyama K.: International Session of the 30th Annual Fall Meeting of the Korean Society for Cytopathology (The 18th Japan-Korea Joint Meeting for Diagnostic Cytopathology) (Sokcho), 2019
- 2 : Clinical outcomes of post-exposure prophylaxis following occupational exposure to human immunodeficiency virus at dental departments of Hiroshima University Hospital : Shintani T., Iwata T., Okada M., Yamasaki N., Fujii T., Shiba H. : The 33th Annual Meeting of Japanese Society for AIDS Research (Kumamoto), 2019.
- 3 : Investigation of the oral environment and function based on the oral screening examination of first-visit dental patients : Shintani T., Kitagawa M., Ogawa I., Kawaguchi H., Tsuga K., Shiba H., Kurihara H. : The 12th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2019.
- 4 : Exploratory performance comparison trial of titanium allergy diagnostic agent -Specificity and safety-: Kitagawa M., Oka H., Iwamoto K., Tanaka M., Ogawa I., Hide M., Kurihara H. : The 12th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2019.
- 5 : The oral environment and taste function in HIV-positive patients : Shintani T. : The 1st Chugoku / Shikoku Block AIDS Treatment Center Hospital Liaison Council (Hiroshima), 2019.
- 6 : Enhancement of multi-occupational collaboration by dental hygienists for diabetic patients : Emura Y., Kozono C., Kajiya M., Dainobu K., Takeda E., Ikeda S., Shintani T., Nakaoka M., Fujita T., Kurihara H. : The 62nd Autumn Meeting of the Japanese Society of Periodontology (Kitakyusyu), 2018.
- 7 : Initiatives to improve hand hygiene for dental outpatients ~a multifaceted approach by dental hygienists~ : Kozono C. Nagatani Y., Nakaoka M., Kajiya M., Iwata T., Mizuno N., Shintani T., Ohta K., Kawaguchi H., Shiba H., Kurihara H., Tsuga K. : The 36th Annual Meeting of Japanese Society for Infection Prevention and Control (Kobe), 2019.
- 8 : Report on the usefulness of the Hiroshima Dental Medical Safety Support Organization Audit System via the Internet : Iwata T., Sawa A., Mizuno N., Nakaoka M., Nagatani Y., Kozono C., Nagahara T., Ohta K., Shintani T., Shiba H., Tsuga K., Kawaguchi H., Kurihara H. : The 36th Annual Meeting of Japanese Society for Infection Prevention and Control (Kobe), 2019.

- 9 : *Porphyromonas gingivalis* (P.g.) FimA Type II and Type IV serum antibody titers are markers for periodontitis-related preterm birth: Takagi H., Furusho H., Miyauchi M., Ouhara K., Fujita T., Urabe S., Shintani T., Kurihara H., Kudo M., Takata T. : The 62nd Spring Meeting of the Japanese Society of Periodontology (Yokohama), 2019.
- 1 0 : Analysis of actual condition of *cnm*-positive *Streptococcus mutans* carriers in Japanese: Nagamine K., Kitagawa M., Ouhara K., Shintani T., Ogawa I., Kurihara H.: The 22nd Annual Meeting of Japanese Society of Metabolism and Clinical Nutrition (Yokohama), 2019.
- 1 1 : Rapid genetic testing of *cnm*+ *Streptococcus mutans* by LAMP method: Nagamine K., Kitagawa M., Ouhara K., Kurihara H.: The 42nd Annual Meeting of the Molecular Biology Society of Japan (Fukuoka), 2019.
- 1 2 : Analysis of actual condition of *cnm*-positive *Streptococcus mutans* carriers: Kitagawa M., Ouhara K., Awata T., Shintani T., Ogawa I., Kurihara H.: The 58th Meeting of Hiroshima Prefectural Dental Association/ The 103 rd Meeting of Hiroshima University Dental Society (Hiroshima), 2019.
- 1 3 : A case of anti-centromere antibody-positive dry mouth patient who showed a marked decrease in salivary secretion 4 years after the first visit: Kitagawa M., Nojima T., Uchisako K., Obayashi F., Ogawa I., Okamoto T., Sugiyama E., Kurihara H.: The 64th Annual Meeting of Japan Salivary Gland Society (Tokyo), 2019.
- 1 4 : Development of a diagnostic kit for bad bacteria of dental caries: Nagamine K., Kitagawa M., Kurihara H.: Innovation JAPAN 2019 (Tokyo), 2019.
- 1 5 : Rapid genetic testing of *cnm* positive *Streptococcus mutans* in oral cavity: Nagamine K., Kitagawa M., Ouhara K., Kurihara H.: The 140th Annual Meeting of the Pharmaceutical Society of Japan (Kyoto), 2019.
- 1 6 : Porphyromonas gingivalis-Odontogenic Infection Promotes Development and Progression of NASH-Related Hepatocellular Carcinoma via Integrin Signalling.: Sakamoto S., Shrestha Madhu., Furusho H., Miyauchi M., Takata T.: The 108th Annual Meeting of the Japanese Society of Pathology (Tokyo), 2019.
- 1 7 : Relationship between salivation and skeletal morphology in Orthodontic Clinic in Hiroshima University Hospital : Yoshimi Y., Sumi I., Yamada S., Okada M., Tokui F., Kunimatsu R., Ogawa I., Tanimoto K. : 78th Annual meeting of Japanese Orthodontic Society (Nagasaki), 2019.
- 1 8 : Survey on caries risk test using saliva in Orthodontic Clinic in Hiroshima University Hospital: Okada M., Kunimatsu R., Yoshimi Y., Sumi I., Yamada S., Kitagawa M., Tanimoto K. : 78th Annual meeting of Japanese Orthodontic Society (Nagasaki), 2019.
- 1 9 : Objective evaluation of functional recovery by implant treatment using oral function test: Maruyama M., Doi K., Kubo T., Kitagawa M., Takechi M., Tsuga K.: 39th Meeting of branch of Chugoku • Shikoku of Japanese Society of Oral Implantology (Matsuyama), 2019.
- 2 0 : A case of adenoid cystic carcinoma with high-grade transformation in the palate : Yada N., Sato Y.,

- Takeuchi K., Ogawa I., Hirabayashi F., Yoshiga D., Matsuo H. : 65th Annual meeting of Japan Salivary Gland Society (Tokyo), 2019.
- 2 1 : A case of parotid tumor (Intraductal salivary duct carcinoma ex pleomorphic adenoma) : Ogawa I., Ohbayashi M., Miyauchi M., Hijihara M. : 21st of Annual meeting of Society of Salivary Gland Tumor Pathology (Tokyo), 2019.
- 2 2 : A case of thrombus suspected of tumor of left submandibular gland : Shimabukuro N., Nakamoto T., Nagasaki S., Wongratwanich P., Verdonschot RG., Ohtsuka M., Suei Y., Furusho H., Ogawa I., Uetsuki R., Ono S., Kakimoto N. : 38th Meeting of branch of Kansai • Kyushu of Japanese Society for Oral and Maxillofacial Radiology (Kagishima), 2019.
- 2 3 : Central giant cell lesions of the mandibular condyle: 2 case reports : Wongratwanich P., Suei Y., Konishi M., Nagasaki S., Ohtsuka M., Verdonschot RG., Ono S., Okuda S., Koizumi K., Hirota I., Sakamoto S., Ogawa I., Miyauchi M., Nakamoto T., Kakimoto N. : 39th Meeting of branch of Kansai • Kyushu of Japanese Society for Oral and Maxillofacial Radiology (Okayama), 2019.
- 2 4 : Parotid gland tumor (Intraductal carcinoma ex pleomorphic adenoma) : Ogawa I., Ohbayashi M., Miyauchi M., Fujihara M. : 72nd Meeting of Hiroshima Pathological Conference (Hiroshima), 2019.
- 2 5 : A case of adenosquamous cell carcinoma of the mandible : Fukui A., Ono S., Ohta K., Tada M., Ogawa I., Takechi M. : 64th Annual Meeting of Japanese Society of Oral & Maxillofacial Surgeons (Sapporo), 2019.
- 2 6 : Parotid tumor (Non-sebaceous lymphadenoma): Sakamoto S., Obayashi M., Ogawa I., Miyauchi M., Fujihara M., 129th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Kochi), 2019.
- 2 7 : Mandibular tumor (Mesenchymal chondrosarcoma): Sakamoto S., Furusho H., Ono S., Nakamoto T., Miyauchi M., Hirose T., Ogawa I.: 30th Annual Meeting of Japanese Society of Oral Pathology (Tokyo), 2019.

F) Special lectures in academic meetings

- 1 : Meeting of Young Oral Pathologist : Pathological diagnosis “ What ?, Why ? to Understanding !”: Ogawa I. : 30th Annual Meeting of Japanese Society of Oral Pathology (Tokyo), 2019.

G) Reports

- 1 : 「Dry mouth」 : Kitagawa M.: NHK (Choice), 2019.
- 2 : 「Specialist consults Dry mouth」 : Kitagawa M.: Chugoku newspaper, 2019.

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

- 1 : Grants-in-Aid for Scientific Research (C): Shintani T.: Development of oral cancer treatment with exosome-derived miRNA that regulates HBp17 / FGFBP1. 19K10332, 1,200,000 yen
- 2 : Grants-in-Aid for Scientific Research (C): Ogawa I.: Pathological and Molecular diagnosis of salivary gland and odontogenic tumors. 17K11614, 1,300, 000 yen

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Central Clinical Divisions

Dental Technicians Section

(1) Staff and Students

Director of Dental Technicians Section : Hiroki Nikawa (Prof.)
 Assistant Chief Dental Technician : Ryoji Kato
 Dental Technician : Eisaku Habu, Yoshihiro Otani, Shogo Iwaguro,
 Yukihiro Takayama, Mai Ohtaku

(2) Main Research Activities

- 1 : Management of the patients' 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

A) Original Papers (including Case Reports)

- 1 3 : Analysis of chemical interaction between alumina-blasted silver-palladium-copper-gold alloy and primer containing a phosphate monomer: Mai Ohtaku, Saiji Shimoe, Yoshimasa Nagadori, Isao Hirata, Hiroyasu Koizumi, Hideo Matsumura, Takahiro Satoda: Journal of Nippon Academy of Dental Technology, Vol.40, (1), pp.23–28, 2019.
- 1 4 : Finite-element analysis and optimization of the mechanical properties of polyetheretherketone (PEEK) clasps for removable partial dentures: Tzu-Yu Peng, Yuki Ogawa, Hiroyuki Akebono, Shogo Iwaguro, Atsushi Sugeta, Saiji Shimoe: Journal of Prosthodontic Research: 63(4), 420-426, 2019.
- 1 5 : Influence of various airborne-particle abrasion conditions for on bonding between zirconia ceramics and an indirect composite resin material: Saiji Shimoe, Tzu-Yu Peng, Mai Otaku, Nozomi Tsumura, Shogo Iwaguro, Takahiro Satoda: Journal of Prosthodontics Dentistry: 122(5), 491-499, 2019.
- 1 6 : Effect of microslit retention on the bond strength of zirconia to dental materials: Shogo Iwaguro,

Saiji Shimoe, Isao Hirata, Takeshi Murayama, Takahiro Satoda: Dental Materials Journal, 38(6), 1043-1052, 2019.

- 1 7 : Occlusal support is associated with nutritional improvement and recovery of physical function in patients recovering from hip fracture : Sawa Y, Kayashita J, Nikawa H. : Gerodontology, Epub ahead of print. 2019
- 1 8 : Simulation and navigation of living donor hepatectomy using a unique three-dimensional printed liver model with soft and transparent parenchyma : Kuroda S, Kihara T, Akita Y, Kobayashi T, Nikawa H, Ohdan H : Surg Today, Epub ahead of print 2019.

B) Review

C) Publications

- 1 0 : The newest series of textbooks for dental technologist-Dental Materials Science: Takayuki Yoneyama, Nikawa Hiroki, Saiji Shimoe, Hideo Matsumura, Hideyuki Imai et al, Ishiyaku Publishers, Inc (Tokyo), 201, 2016～.

D) Other Publications

E) Presentation at Scientific Meeting

- 1 7 : Optimum Design Analysis of Polyetheretherketone Clasp via Finite Element Method: Tzu-Yu Peng, Saiji Shimoe, Shogo Iwaguro, Takahiro Satoda: 97th General Session & Exhibition of the International Association for Dental Research (IADR) (Vancouver, BC, Canada), June 19-22, 2019.
- 1 8 : Investigation of the labor conditions of dental technicians based on job registration, Arisa Tuji, Yuka Kawasaki, Mai Otaku, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 1 9 : Effect of pretreatment on adhesion of PEEK and composite resin : Yuka Nishi, Kanade Morimoto, Yuki Wakabayashi, Shogo Iwaguro, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 2 0 : Effect of undercoat on adhesion between UV-irradiated zirconia and indirect composite resin : Yuka Kawasaki, Ayaka Koizumi, Yuki Wakabayashi Peng TY, Shogo Iwaguro, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 2 1 : Effects of deterioration on mechanical strength, surface roughness and glossness of acrylic denture base resins : Haruki Shoga, Saiji Shimoe, Shogo Iwaguro, Mai Otaku, Peng TY,

Toshihide Hatanaka : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.

- 2 2 : Bond strength of PEEK and denture base resin by different surface treatments : Kanade Morimoto, Yuka Nishi, Yuki Wakabayashi, Mai Otaku, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 2 3 : Optimum design analysis of polyetheretherketone (PEEK) clasp via finite element method : Peng TY¹⁾, Shogo Iwaguro, Siji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.
- 2 4 : Support of tooth preparation for CAD/CAM restoration using 3D PDF: Shogo Iwaguro, Ryoji Kato, Yukihiro Takayama, Mai Otaku, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology (Kanazawa), 11/2-3, 2019.

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

(5) Academic Awards, etc.

- 9 : Mai Ohtaku, Saiji Shimoe, Yoshimasa Nagadori, Isao Hirata, Hiroyasu Koizumi, Hideo Matsumura, Takahiro Satoda: The Nippon Academy of Dental Technology Best Paper Award in 2019 「Analysis of chemical interaction between alumina-blasted silver-palladium-copper-gold alloy and primer containing a phosphate monomer」, 2019.11.3
- 1 0 : Shogo Iwaguro, Ryoji Kato, Yukihiro Takayama, Mai Otaku, Saiji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology Best Presentation Award 「Support of tooth preparation for CAD/CAM restoration using 3D PDF」, 2019.11.3
- 1 1 : Peng TY¹⁾, Shogo Iwaguro, Siji Shimoe : The 41th the meeting of the Nippon Academy of Dental Technology Best Presentation Award 「Optimum design analysis of polyetheretherketone (PEEK) clasp via finite element method」, 2019.11.3

(6) Patents

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Central Clinical Divisions

Dental Hygiene Section

(1) Staff and Students

Director of Dental Hygiene Section: Hidemi Kurihara (by-work)

Chief Dental Hygienist : Miyuki Nakaoka

Sub Dental Hygienist : Kanako Matsui (From April)

Dental Hygienists : Atsuko Wakita, Yukiko Nagatani (Till March), Kanako Yano, Tomoko Tokikazu, Miho Okada, Maiko Kawagoe, Kana Dainobu, Yurie Nakano (Till July), Chika Kozono, Yuri Kuramoto (Till March), Yuki Emura, Yuka Wakabayashi, Fumi Tokui, Yuika Mizota, Natsumi Ino, Miku Ishikawa, Mayuko Watari, Momoko Okizono, Ayaka Yoshimoto, Saori Ikeda, Yoshimi Ikuho (Till March), Yasuda Haruka (From April), Nakamura Mariko (From April), Kimura Shoko (From April), Iwata Sayaka (From April)

Dental Assistants: Tamamoto Yuka, Keiko Kodani, Yuko Matsuda (Till April), Saori Nagamine, Masuda Ayako (From September), Kumadaki Machiko (From September)

(2) Main Research Activities

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Perioperative oral management required for dental hygienists : Kuramoto Y., Nishi H., Kawaguchi H., Kurihara H. : Journal of the Japanese Academy of Clinical Periodontology, 36(2), 43-48, 2019.

B) Review

C) Publications

1: Journal of Infection Prevention and Control Practices Vol.10, Suple.2 : Nagatani Y., Kozono C., Kurihara H. : Edix International Co. Ltd (Tokyo), 104-113, 2019.

D) Other Publications

1: Characteristics handicapped person and how to deal with them (DVD): Wakita A.: Japan Visiting Dental

Association(Tokyo), 2019.

E) Presentation at Scientific Meeting

- 1: Dental intervention at Hiroshima University Hospital NST:Yano K., Kadota A., Hirayama J., Suzuki K., Nishi H., Nakaoka M., Kawaguchi H., Kurihara H., Ohge H., Tazuma S.: 12th Japanese Society for Parenteral and Enteral Nutrition (Ube), 2019.
- 2: Comparison of the relative abundance of periodontal pathogens in oral flora between intellectually disabled individuals and healthy individuals: Oda Y., Furutani C., Miyahara K., Miyazaki H., Watari M., Tokikazu T., Tazi T., Okada Y., Nikawa H.: The 36th Annual Meeting of Japanese Society for Disability and Oral Health(Gifu), 2019.
- 3: The effect of Lactobacillus rhamnosus L8020 on periodontal burdens and oral flora in individuals with intellectual disabilities:Oda Y., Furutani C., Miyahara K., Miyazaki H., Watari M., Tokikazu T., Tazi T., Okada Y., Nikawa H.: The 36th Annual Meeting of Japanese Society for Disability and Oral Health(Gifu), 2019.
- 4: Watch a change of the film formation in detachment from the dry state by the part of the palate: Miyahara K.,Asahina H.,Akieda T.,Matsumura K.,Syouji M.,Nasu K.,Kimura R.,Kuroda T.,Uematsu S.,Wakita A.,Hasegawa H., Okada Y., Ogasawara T.: The 36th Annual Meeting of Japanese Society for Disability and Oral Health(Gifu), 2019.
- 5: Survey on caries risk test using patient's saliva in Orthodontic Clinic in Hiroshima University Hospital: Okada M., Kunimatsu R., Yoshimi Y., Kado I., Yamada S., Tokui F., Kitagawa M., Tanimoto K.: The 78th Annual Meeting of the Japanese Orthodontic Society (Nagasaki), 2019.
- 6: Response to HIV Exposure in the Dental Outpatient Clinic of Hiroshima University Hospital:Sintani T., Iwata T.,Okada M., Yamasaki N., Hujii T., Shiba H.: The 33th Annual Meeting of the Japanese Society for AIDS Research (Kumamoto), 2019.
- 7: Strategies to improve the hand hygiene compliance in a dental outpatient.~A multifaceted approach by dental hygiene~: Kozono C., Nagatani Y., Nakaoka M., Kajiya M., Iwata T., Mizuno N., Shintani T., Oota K., Kawaguchi H., Shiba H., Kurihara H., Tuga K.: The 34th Annual Meeting of Japanese Society for Infection Prevention and Control (Kobe), 2019.
- 8: Dental hygienists may enforce the interprofessional collaboration on diabetic therapy: Emura Y., Kozono C., Kajiya M., Dainobu K., Takeda E., Ikeda S., Shintani T., Nakaoka M., Fujita T., Kurihara H.: The 62nd Autumn Meeting of the Japanese Society of Periodontology(Kokura), 2019.
- 9: A case report that Severe chronic periodontitis patients who repeated fever after SRP:Nagatani S., Emura Y., Nakaoka M., Kurihara H.: The 62nd Autumn Meeting of the Japanese Society of Periodontology(Kokura), 2019.

F) Lecture

- 1: Oral care in Special care dentistry:Wakita A.: Hiroshima prefecture regional medical care nursing comprehensive securing business Education at Hiroshima Oral Health Center· Research function development project Hiroshima prefecture dental health care service provision difficult person consultation physician training workshop(Hiroshima), 2019.
- 2: Oral care in Special care dentistry:Yano K.:Hiroshima prefecture regional medical care nursing comprehensive securing business Education at Hiroshima Oral Health Center· Research function development project Hiroshima prefecture dental health care service provision difficult person consultation physician training workshop(Hiroshima), 2019.
- 3: Oral care in Special care dentistry:Yano K.:Dental health workshop at Akitakata(Akitakata), 2019.
- 4: Oral care in Hospital:Yano K.:Oral Rehabilitation Society Advanced Course(Daejeon), 2019.
- 5: Oral care in Hospital:Yano K.:Oral Rehabilitation Society Advanced Course(Busan), 2019.
- 6: Oral care in Hospital:Yano K.:Oral Rehabilitation Society Advanced Course(Gwangju), 2019.
- 7: Team approach in diabetes treatment:Kozono C.:The 2th Shikoku Diabetes Medical Care Treining Skill Improvenment seminar(Hiroshima), 2019.
- 8: Oral hygiene management based on risk assessment-Searching for a common language in multi-disciplinary collaboration:Kuramoto Y.,Nishi H.,Kurihara H.: The 34th Annual Meeting of Japanese Society for Infection Prevention and Control(kobe), 2019.

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

(5) Academic Awards, etc.

(6) Patents

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Dental Clinic

(1) Staff and Students

Director : Takamune Hino

(2) Main Research Activities

- 1 : Pathogenesis of the periodontal diseases
- 2 : Studies on the scientific technology for public dental health

(2) Research Achievements

(3)

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

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E) Presentation at Scientific Meeting

F) Seminar, Workshop, etc.

1. The 62st Spring Meeting of the Japanese Society of Periodontology, May. 24-25, 2019 in Yokohama
2. The schizophrenia disease lecture of the psychiatry emergency hospital, Sept. 6, 2019 in Hiroshima
3. The 62st Autumn Meeting of the Japanese Society of Periodontology, Oct. 26, 2019 in Kitakyushu
4. The 58st Meeting of the Hiroshima Prefectural Dental Association, November. 17, 2019
5. The seminar of Hiroshima Akichiku Medical Association, December. 1, 2019
6. The seminar of Center for Integrated Medical Research, December. 20, 2019
7. The guidance for residents: 2 (Tue)/4/2019

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

(5) Academic Awards, etc.

(6) Patents

1. Utility Model Registration: RN:3182420, Takamune Hino

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Dental Medical Information Section

(1) Staff and Students

Director : Katsuyuki Kozai(Co.)
Assistant Professor : Masahiko Ohtsuka (Co.), Takeshi Tanaka
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 : Tanaka T et al: A Test Production of Medical Institution Webpage Available in Browsing by a Smartphone or Using Extremely Expanded Characters: Japan Journal of Medical Informatics, 39 (Suppl.): 946-951, 2019.
2 : Imazu M, Ujima K, Tanaka T: The effects of retinal eccentricity and type of character on visual perception: Journal of Japanese Society for Low-vision Research and Rehabilitation (Accepted).

B) Review

None.

C) Publications

None.

D) Other Publications

None.

E) Presentation at Scientific Meeting

1 : Tanaka T: A Preliminary Survey for Constructing Medical Institution Webpage Model Accessible to Visually-Impaired Persons Based on the Semantic Model of HTML5: Japan Association for Medical Informatics Spring Conference 2019 (Kumamoto, Japan), 2019.

2 : Tanaka T et al: A Test Production of Medical Institution Webpage Available in Browsing by a Smartphone or Using Extremely Expanded Characters: The 39th Joint Conference on Medical Informatics (Chiba, Japan), 2019.

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. 18K11548. 700 thousand JPY.

2 : MEXT KAKENHI Grant-in-aid for Scientific Research(C), No. 19K12699. 50 thousand JPY.

(5) Academic Awards, etc.

None.

(6) Patents

None.

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