Master's Course | Doctoral Course

Tohoku University
Graduate School of Dentistry

2027

The road from Interface Oral Health Science at
Tohoku University Graduate School of Dentistry to
Oral Health Scientist and Oral Health Care Professional

TOHOKU
UNIVERSITY

Tohoku University Graduate School of Dentistry —A Pathfinder of Dentistry, Dental Care, and Oral Health for the Next Generation

Ken Osaka
Dean,
Tohoku University
Graduate School of Dentistry
School of Dentistry

What is the mouth's function? Of course, it is directly related to the maintenance of life, such as breathing and eating, and it may also involve playing wind instruments in a brass band or singing songs. In addition, communication is necessary for living in society. Researchers and clinicians are trying to contribute to society by studying and clinically researching the mouth, which plays an important role in various aspects.

The Graduate School of Dentistry's mission is to train global leaders and highly specialized professionals in dentistry, dental care, and oral health for the next generation. With the advantages of Tohoku University — one of the world's leading comprehensive universities —we ensure the potential leaders a high standard of education and research systems in various fields. Besides, in the framework of our special programs, such as the Interface Oral Health Science program, the Master's course, and the Asia Double Degree Program, students develop a sense of a research-oriented outlook and a scientific mind.

First of all, let me briefly introduce the history of Tohoku University. It was originally founded in 1907 as the third Imperial University in Japan after Tokyo Imperial University and Kyoto Imperial University and is now a designated national university along with them. Blessed with many intellectual assets and excellent human resources, the university continues to produce world-class results and is a game-changer in the world.

As a graduate school of Tohoku University, the Graduate School of Dentistry was established in 1972, seven years after the foundation of the School of Dentistry. Since then, we have focused on education and research based on Tohoku University's philosophy of "Research first," "Open doors," and "Practice-oriented research and education."

Dental health plays a vital role in individuals' quality of life. How does dentistry help your life? Have you ever thought about what a mouth is? The mouth has a variety of functions, including eating, staying alive, and speaking and facial expressions to communicate. All these functions are essential to life, and at the same time, they are deeply related to our vitality, enjoyment, and fulfillment in human relationships. The mouth is a "gateway" connecting our outer and inner worlds. When we interact with the outside world, our mouth serves as an "interface." Many oral diseases, such as dental caries and periodontal disease, occur at the interface where the different systems coincide. Therefore, keeping the interface healthy can help us maintain and improve our oral health, as well as our overall health. In this era of 100 years of life, dentistry plays a crucial role in extending the period people enjoy a healthy and high-quality life, or "healthy life expectancy".

In 2002, based on the terminology "Interface," we presented the new concept of dentistry, "Interface Oral Health Science (IOHS)," which encompasses the various functions and roles of the oral cavity. The IOHS concept views the oral cavity as consisting of three systems. The first consists of the tissues and organs that form the mouth, including the teeth, bone, and oral mucosa; the second of the vast microorganisms that live there; and the third of the biomaterials, which are essential and inevitable for dental treatment. Mechanical stresses, or complex forces such as occlusal force, are also applied alongside these three systems.

Since the proposal of the new concept "IOHS" and with the clear direction where dentistry research should proceed, advanced research rooted in the uniqueness and universality of dentistry has been promoted through several research/education projects adopted by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT). These projects, however, are not carried out by the Graduate School of Dentistry alone but are the fruit of university-wide wisdom, mainly thanks to the Institute for Materials Research; the Graduate School of Medical Engineering; the Graduate School of Engineering; and the Graduate School of Agricultural Science, as well as with other educational and research institutions in Japan and overseas. These initiatives have blazed the "interdisciplinary fusion," trail, ranging from the biomaterials research since establishing IOHS to the latest "SHOKU-gaku research project – Transdisciplinary Science of Eating, Food, and Nutrition for Health and Wellbeing." We have also established a Liaison Center for Innovative Dentistry that links these fields with other departments at the university, external research institutions, and local communities to realize cross-disciplinary research and interdisciplinary fusion. These are the strengths of Tohoku University, an institution with a long history and tradition and a track record of world-class results.

In 2004, we also established Japan's first Double Degree course and a Master's program in dentistry to expand the horizon of dental care and oral health. These establishments boost "Open doors" in dental science education and research. Students from various professions—ranging from medical and co-medical to engineering; nutrition science; health welfare; and medical administration—are studying at the Graduate School. To develop research/education in the Master's course, we increased the quotas on students and strengthened ties with the Doctoral course in 2020.

The Graduate School of Dentistry has a high level of international competence. As a base for dental education and research in Asia, our education and research are conducted with the world's leading dental schools. Approximately a quarter of graduate students are from outside Japan. It is common for us that students from various cultural backgrounds strive together toward the same goal of pursuing dental science. Tohoku university has received the full evaluation in Japan according to Times Higher Education rankings. With abundant academic resources and excellent talent, the university continues to create world-renowned achievements. We strive to become the foundation of Japan's future.

HISTORY

History of Dental Medicine and Tohoku University Graduate School of Dentistry・School of Dentistry

Milestones in the history of modern dental medicine and Japanese dental medicine

1723	Pierre Fauchard (known the father of modern dental medicine) announces "Le Chirurgien Dentist."
1728	Fauchard makes full maxillary dentures.
1840	First modern dental medicine school in the world, Baltimore School of Dentistry, established in U.S.
1844	Tooth extraction conducted under general anesthesia using nitrous oxide.
1846	Oral surgery conducted using ether anesthesia in the U.S.
1860	American dentist William Clark Eastlake opens dental clinic in Yokohama.
1876	Mizuhoya imports dental equipment from U.S. to Japan. Production of dental equipment starts in Japan.
1878	Kisai Takayama goes to the U.S. to study dental medicine at his own expense, returns to Japan after passing exam to practice medicine as a dentist.
1881	Takayama publishes first dental technical book in Japan, "Hoshishinron."
1883	Medical practice test rules established and dental medicine becomes specialized field.
↓	American dentist Willoughby D. Miller announces "Miller's chemico-parasitic theory."
1888	First school of dental medicine in Japan, Tokyo College of Dental Medicine, established (closed the next year).
1890	Takayama School of Dentistry established. (In 1900, changes name to Tokyo College of Dentists; in 1946 restructured into Tokyo Dental College.)
1891	Fact that dental plaque causes tooth decay discovered in U.S.
1893	Dental Practitioners Association established (in 1926, changes name to Japan Dental Association).
1902	Japan Association for Dental Science established.
1903	School of Dentistry at School of Medicine, University of Tokyo established.
1906	Dental Practitioners Law instituted.
1911	Dental College established.
1916	Dental Practitioners Law revised to restrict doctors from practicing dentistry.
1928	Cavity Prevention Day instituted.
⋮	Tokyo High School of Dental Medicine (currently Institute of Science Tokyo) established.
↓	Dentist training by national institutions in Japan starts.
1946	Dental Education Council begun under the General Headquarters orders.
1947	Dentist National Examination begins.
1948	Dental Education Standards Draft passed.

History of the Graduate School of Dentistry, School of Dentistry

1965	Tohoku University School of Dentistry established, advocating the philosophies of "Training dentists who can think," "One mouth is a unit," and "Holistic dentistry."
1967	Tohoku University Dental Hospital opens.
1972	Tohoku University Graduate School of Dentistry established.
1975	Dental Technicians School established.
1993	Prof. Emeritus Hajime Yamamoto awarded Japan Imperial Prize for "Research into applications related to prevention of tooth decay by laser irradiation."
2000	Tohoku University Graduate School of Dentistry, responding to the government's educational policy of emphasizing graduate schools by educating students with inquiring minds and scientific perspective who can be leaders in dental research.
2002	Interface Oral Health Science concept proposed by Tohoku University Graduate School of Dentistry.
2003	Organizational integration of Tohoku University Dental Hospital and University Hospital.
↓	Tohoku University Hospital opens.
2004	Graduate School of Dentistry establishes first Master's course in dentistry in Japan.
↓	Graduate School of Dentistry starts conducting special education in oral science for people other than those in the medical and dental field.
2005	First International Symposium on Interface Oral Health Science held.
2007	Tohoku University Dental Hospital and Medical Center renamed, beds and operating rooms moved to new location.
↓	"Living body biomaterial high-performance interface science project" begins, sponsored by Ministry of Education, Culture, Sports, Science and Technology.
2008	Implant outpatients accepted at Dental Medical Center of Tohoku University Hospital.
2009	Renovation of Lecture Building of Graduate School of Dentistry completed.
2010	Prof. Emeritus Shobu Hinuma awarded Order of Culture.
↓	Medical Dental Center outpatient clinic transferred and integrated as Dental Department of Tohoku University Hospital.
2011	Liaison Center for Innovative Dentistry established.
2012	Renovation of Clinical Research Building, Graduate School of Dentistry completed.
2013	Center for Environmental Dentistry established.
↓	Dental and Digital Forensics established.
2014	Center for Epidemiology, Biostatistics and Clinical Research established.
2015	Center for Advanced Stem Cell and Regenerative Research established.
2017	Next generation Dental Materials Research established.
↓	Advanced Free Radical Science established.
2020	Courses restructured; Ecological Dentistry, Community Social Dentistry, Disease Management Dentistry, and Rehabilitation Dentistry established.
↓	Liaison Center for Innovative Dentistry reorganized as an affiliated educational research institute.
2021	Dental Technicians School closed.
2025	Asahi Roentgen x Tohoku Univ. Co-Creation Research Center for "Imaging new visions." established.

CONTENTS

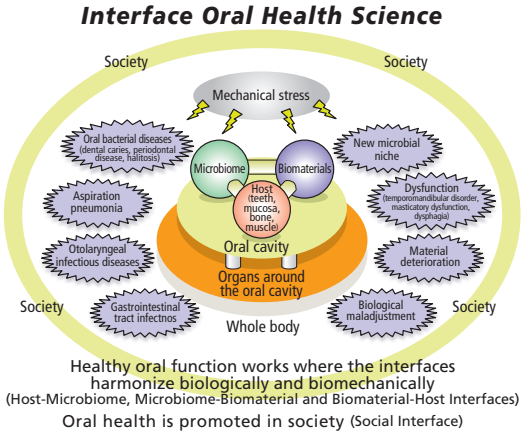
"What is Interface Oral Health Science?"

The Birth of Interface Oral Health Science

The academic field that is acknowledged as dentistry (dental medicine) nowadays was mainly treatment theory. Etiology and basic dentistry were subdivided and far from systematized. In 2002, Tohoku University Graduate School of Dentistry proposed connecting the various areas of expertise, which were at that time subdivided, and systematizing them as Interface Oral Health Science.

The oral cavity consists of 1) oral tissue (teeth, mucosa, bone, muscles, etc. –the living body); 2) parasitic microorganisms that live in the oral cavity; and 3) biomaterials, as well as mechanical stress as represented by the occlusal force. These are the characteristics of the oral cavity.

Interface oral health science concerns itself with the places where the various systems interact. In other words, healthy oral function works where the interfaces harmonize biologically and biomechanically. In addition, the oral cavity is itself an interface, between the inner body and the outside world. It is understood that oral cavity related diseases, such as aspiration pneumonia and gastrointestinal tract infections, occur due to the collapse of the interfaces between systems.



From Oral Cavity Interface to Academic Interface – and Society Interface

This concept not only covers the area of oral health science and dental science, it relates to a wide range of academic disciplines, including medicine, agriculture, materials science, pharmacology and so on. Practicing interface oral health science leads to further promotion of dental research and activation of interdisciplinary research in related areas.

In 2007, the "Highly-functional Interface Science: Innovation of Biomaterials with Highly-functional Interface to Host and Parasite" program was approved by Japan's Ministry of Education, Culture, Sports, Science and Technology, and we began collaborating with Tohoku University's Institute for Materials Research and Kyushu University's Research Institute for Applied Mechanics to conduct research and development on new biomaterials and develop clinical applications aimed at interface control. As a successor project, moreover, "Creation of a Biological and Non-Biological Intelligent Interface" was launched in 2012. These are the realization of the "Academic Interface" that aims to link existing academic fields and create a new academic discipline.

In addition, in order to achieve healthy oral function in local and international communities, it is essential to communicate with local and international communities interactively (two-way communication). In other words, it is necessary to gain an understanding of the status of the oral health of local residents, solve existing problems, and return these solutions to local communities. We also must investigate the oral health status overseas and provide what is needed, as well as cooperate with overseas research institutes and contribute to the general good by returning the outcomes of Japanese dental research to the international community.

We have set up a Liaison Center for Innovative Dentistry in 2011 to enhance cooperation with local communities and foreign research institutes; it has concluded international academic partnerships with core schools in Asia (38 universities), Europe (5 universities), North America (1 universities and 1 research institute), South America (1 university), and Oceania (1 university). Under the MEXT's program "Innovative Oral Health Scinece Liaison for Multimodal Reserach and Education (2013-2019 and 2020-)", the Liaison Center is playing an important role as "Regional and International Interfaces."

Sending out 'Interface Oral Health Science' to the World

At present, the concept of Interface Oral Health Science is widely recognized in Japan and abroad as the next generation of dentistry and oral science. In 2005, the International Symposium for Interface Oral Health Science: IS-IOHS was held in Sendai and many researchers gathered there from Japan and overseas. Every 2 years since 2005, IS-IOHS has been held in Sendai, with publication of an English book about the new outcomes of IOHS. In addition to Sendai, satellite symposia were held regularly at the Harvard-Forsyth Institute in the United States, The University of Hong Kong and Peking University in China, National Taiwan University in Taiwan, Seoul National University in Korea and University of Sydney in Australia. Since its foundation about a quarter of a century ago, Interface Oral Health Science is spreading more and more, with adding international education and transdisciplinary food and eating science "Shoku-gaku" within the new framework of a University for International Research Excellence. Its foundation is in the characteristics of Tohoku University Graduate School of Dentistry –the uniqueness of dentistry and oral science and the desire to conduct unique research with universality to other academic disciplines; the passion of research educators and graduate students who gather at the place; and finally, the orientation toward international, interdisciplinary and fusion-oriented research.

Interface Oral Health Science(IOHS), since 2002

Next-generation oral health science from Tohoku University Graduate School of Dentistry

International joint education to establish standards of dental education in Asia

We have launched a multi-modal dentistry innovation program. This is a graduate school educational project aimed at establishing a setup for accepting overseas students, focusing on the Joint Graduate School Education system through collaboration with some of Asia' s core universities. Another of its goals is to construct an "Asian standard" through dentistry innovations with "global knowledge" and "integrated knowledge" as the keywords and to enhance the level of dentistry and dental treatment in Japan and Asia.

Specifically, we will step up educational and research collaborations by focusing on developing and implementing the Double-Degree Program (DD Program) with influential dentistry graduate school in China and South Korea. Under this program, a graduate student will be registered at two university graduate schools, receive education from the school of both universities, and earn academic degrees from both universities if he or she meets the requirements. By means of this setup, we aim to establish dentistry and dental treatment based on a foundation common to all of Asia (the "Asian standard"), and realize dental innovation.

While still enrolled in graduate school, participants in the DD Program study abroad at the partner university for a set period of time, and carry out joint research. An agreement has been made with several universities, including Peking University, Sichuan University, Wuhan University, and Tianjin Medical University in China, and Seoul National University, Yonsei University, and Chonnam National University in South Korea, and Chulalongkorn University in Thailand, and Universitas Indonesia in Indonesia. These schools have already begun accepting graduate students from abroad.

▲Seoul National University-Tohoku University 2024 Conference in Dentistry (2024.11.14)

▲2023 Scientific Annual Meeting of Association for Dental Education, Asia Pacific CA+inD (CAMPUS Asia Plus in Dentistry) International Symposium (2023.1.19)

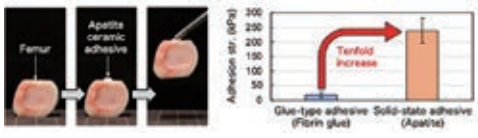
Study case of IOHS

Anterior crossbite associated with a 48% higher risk of tooth loss

Malocclusion has been suggested as a risk factor for tooth loss; however, the extent to which anterior occlusal abnormalities affect dentition has remained unclear. In this study, we analyzed data from 17,349 adults aged 40 years and older who participated in the Tohoku Medical Megabank Project survey (2013–2017). Individuals with anterior crossbite showed a 48% higher risk of having fewer than 20 remaining teeth and exhibited greater molar tooth loss compared with those without crossbite. These findings suggest that orthodontic treatment may contribute to the prevention of tooth loss and support the extension of healthy life expectancy. (Clinical Oral Investigations.2026 Jan 8: DOI: https://doi.org/10.1007/s00784-025-06715-5)

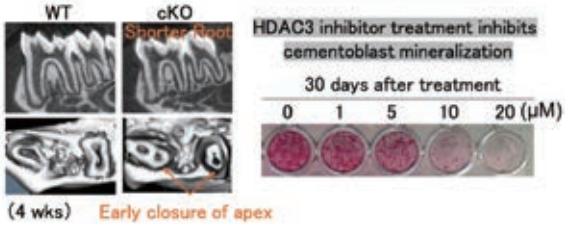
Robust adhesion between solid-state ceramics and biological tissues

The current biological tissue adhesives are "liquid-state(glue-type)," but there were issues with the heat generation during curing reaction and/or insufficient adhesive strength. In this study, a "solid-state ceramic adhesive" was developed using porous apatite–the bone mineral component–and its adhesion strength could be controlled by the porous structure and was more than 10 times stronger than glue-type soft tissue adhesives. The solid-state ceramic adhesives are expected to be applied as a simple and quick technique for device fixation on biological tissues.(Bioactive Materials. Volume 2026 Mar: 57 632-645 DOI: https://doi.org/10.1016/j.bioactmat.2025.11.030)



Identification of postnatal mechanisms regulating tooth root length and morphology

Tooth regeneration is considered a promising therapeutic approach; however, methodologies to precisely regulate the morphology of regenerated teeth remain insufficiently established. In the present study, we performed a detailed analysis of tooth phenotypes in conditional knockout (cKO) mice lacking expression of histone deacetylase 3 (HDAC3), a key epigenetic regulator. Comparative morphological assessment revealed that cKO mice exhibited significantly shortened tooth roots relative to wild-type (WT) controls, accompanied by premature closure of the apical foramen—the anatomical structure at the root apex that permits the passage of neurovascular bundles. In addition, pharmacological inhibition of HDAC3 in cementoblasts resulted in marked downregulation of mineralization-associated gene expression, concomitant with a significant reduction in mineralized matrix deposition. Collectively, these findings elucidate a previously unrecognized postnatal regulatory mechanism governing tooth root development and provide a potential mechanistic and technological framework for controlling root morphology in regenerative dental therapies. (Journal of Bone and Mineral Research. 2025 Jul 25: DOI:https://doi.org/10.1093/jbmr/zjaf102)



"What we study at the Graduate School of Dentistry"

Graduate School of Dentistry Admissions Policy

The Tohoku University Graduate School of Dentistry strives to foster researchers and sophisticated professionals who: possess advanced knowledge and skills in dentistry, oral care, and oral health, as well as the sensibilities and fundamental human qualities that support that expertise; are closely attuned to the needs of society; and can identify problems on their own and develop concrete solutions for various challenges of dentistry.

Specifically, we seek applicants who aspire to become sophisticated professionals capable of contributing to society with their specialized knowledge and skills backed by sensibilities and fundamental human qualities, or to become researchers able to contribute to new advances in dentistry.

To attract such candidates we offer three admissions tracks: general admissions, special admissions for Working-adults, and special admissions for international students. We use these admissions processes to assess and select applicants, placing emphasis on whether each candidate has the high-level competencies and qualities needed to engage in research aligned with our educational principles and goals.

I The Doctoral Course

Admissions policy

The doctoral course seeks students who are highly motivated to study dental science, possess outstanding competencies, a broad perspective, and flexibility, and are able to pursue original, advanced, transdisciplinary, and exploratory research founded on bench founded on unity in specialization and academics.

The general admissions track evaluates applicants through four exams: a written exam of basic knowledge and understanding of specialized disciplines, an externally administered certification exam of English reading comprehension, an interview, statement of purpose, and transcript review for comprehensively assessing whether the applicants possess strong motivation to study dental science, outstanding competencies, a broad perspective, and flexible sensibilities. These exams are given approximately equal weight in the selection process.

Special admissions for Working-adults evaluates applicants through four exams: a written exam of knowledge and understanding of specialized disciplines, an externally administered certification exam of English reading comprehension, and an interview and a review of transcripts and statement of purpose for comprehensively assessing whether the applicants possess strong motivation to study dental science, a broad perspective, and flexible sensibilities. These exams are given approximately equal weight in the selection process.

Special admissions for international students evaluates applicants through four exams: a written exam of basic knowledge and understanding of specialized disciplines, an English certificate to measure reading comprehension, an interview, statement of purpose, and transcript review for comprehensively assessing whether the applicants possess strong motivation to study dental science, and outstanding competencies. These exams are given approximately equal weight in the selection process.

Those who are not native speakers of English are expected to acquire sufficient ability in English comprehension and communication before enrolling.

Curriculum policy

The Graduate School of Dentistry formulates and implements the curriculum based on the following policy in order to enable students to achieve the aims of the Diploma Policy.

(1) Facilitate the acquisition of sophisticated knowledge and skills in specialized fields and transdisciplinary domains by providing specialized and transdisciplinary courses necessary for dental science research, and having students develop abundant expertise in dental science, dental care, and oral health, and write a dissertation based on that expertise.

(2) Provide opportunities to develop the high ethical standards and leadership necessary for engaging in research, and opportunities in Japan and abroad to learn about and report the latest findings in cutting-edge research.

(3) Achievement is evaluated by determining, using tests and reports, whether the student has reached the objectives described in the syllabus. The Doctoral dissertation is evaluated by determining whether it contributes to advanced research from an original perspective, and whether the student, as an independent researcher, has advanced research capabilities and extensive knowledge necessary for research activities and highly professional duties, and by evaluating final exams.

Diploma policy

The Graduate School of Dentistry awards a Doctoral degree to students who has studied the required subjects set according to the school's educational philosophy and objectives, has completed the credits required by the school, has acquired the knowledge and skills as described below, and has passed the Doctoral dissertation review and the final examination.

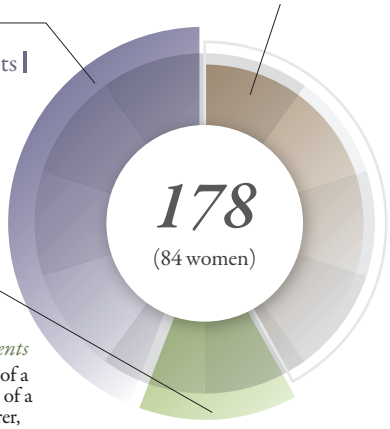
(1) Be able to complete independent, original, and transdisciplinary research in dentistry using one's abundant expertise and high-level specialized knowledge and skills.

(2) Be able to contribute to the advancement of society and scholarship by carrying out next-generation research as a leader in dentistry who tackles societal and scholarly challenges with original ideas, high ethical standards, and a firm sense of responsibility.

(3) Be able to lead dental research in Japan and abroad by utilizing one's international perspective and communication skills, and by disseminating world-class research findings.

Number of graduate students in the doctoral course

(as of May1, 2026)



Doctoral course program

IOHS course

Completion from Lectures in Dental Sciences, Seminars in Dental Sciences, Technical Courses in Dental Sciences is required.

Classes (minimum credits, 30)

- **Lectures in Dental Sciences** (3 credits) — Introduction to the specific research field
- **Seminars in Dental Sciences** (6 credits) — Exercise in the specific research field
- **Technical Courses in Dental Sciences** (2 credits) — Technical training in experiments

Special training for doctoral thesis preparation (9credits) — Students will earn credits by attending the class "Foundation of Graduate Research," presenting a research progress report and acquiring technical knowledge

CA⁺ in D course

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Special training for doctoral thesis preparation (9credits) — Students will earn credits by attending the class "Foundation of Graduate Research," presenting a research progress report and acquiring technical knowledge

Common to both courses

- **Psychosocial Science of Oral Health and Wellbeing** (3credits)
- **Entrepreneur Science of Oral Health and Wellbeing** (3credits)
- **Cross-sectional Science of Oral Health and Wellbeing** (3credits)
- **Global Exposure in Oral Health and Wellbeing** (1credits)

Course acceleration — Students with excellent research achievement (eg, a first-authored paper accepted by an established journal) may complete the course in 3 years.

A Transformative PhD Journey at Tohoku University

Student's Message

Tohoku University has been recognized as the No. 1 university in Japan by Times Higher Education and is now Japan's first university for International Research Excellence—and I can confidently say I understand why.

I am incredibly fortunate to receive mentorship from Dr. Tetsuhiro Kajikawa and Prof. Satoru Yamada in the Department of Periodontology and Endodontology. Through daily learning and experiments, I have gained not only research knowledge but also the ability to embrace curiosity and change, which has helped me grow both academically and personally. Tohoku University provides state-of-the-art research facilities and an excellent learning environment. My academic advisors have guided me in utilizing these resources effectively, allowing me to develop my research skills and critical thinking.

Beyond academics, Sendai is a beautiful and serene city, making it an ideal place for students. It also offers a remarkable environment for family life. Surrounded by stunning natural landscapes, you can experience the beauty of Japan's four seasons just by traveling nearby. As someone from a tropical country, winter here has always been the most special for me. Destinations like Ginzan Onsen and Zao Ski Resort are just an hour's drive away. Additionally, Sendai frequently hosts major cultural events, making it a perfect blend of modern convenience and traditional Japanese living.

For me, Sendai and Japan are more than just a place to study, and pursuing a PhD is more than just earning a degree—it is a transformative journey, and perhaps the most fulfilling phase of my life so far. I wholeheartedly recommend the Tohoku University Graduate School of Dentistry to those eager to develop their research skills and embrace the joy of learning something new every day.

Doctoral 3rd year | from Indonesia

Elfira Megasari

New Knowledge every day

Student's Message

After I graduated from my master's program at the Department of Removable Prosthodontics, Damascus University, I thought that studying abroad will improve both my professional and personal skills, and what better place than Tohoku university with its impressive records and up-to-date interesting research fields. I was lucky to be accepted as a PhD candidate in the Rehabilitation Dentistry Department, Aging and Geriatric Dentistry Division under Prof. Yoshinori Hattori where we study advanced methods to improve the oral function and overall oral health related quality of life of the elderly population that is constantly growing both in Japan and worldwide. Despite the many challenges that international students face while studying abroad, my professors and colleagues are very understanding and supportive. And I am very content with the new skills and knowledge I am earning from a wild range of lectures, lab training and seminars where other lab mates share the latest finds in the field. Tohoku University also offers well planned Japanese courses by great teachers to prepare you for the research path ahead. Furthermore, Tohoku University provides a variety of financial support systems. In fact, I was very fortunate to be accepted in the Tohoku Pioneering Research Support Project for PhD Students' generous intensive stipend program, where I can concentrate on my studies without having to worry about any financial issues. This scholarship also provides a grant that covers any expenses for business trips, research materials and equipments I may need. In addition, Sendai is a great city with kind people, delicious and affordable healthy food choices, and beautiful scenery. I will be forever grateful for this university and its professors and staff for all the care and support, skills and knowledge I am obtaining every day.

Doctoral 4th year | from Syria

Hala Al Khalili

Endless opportunities at Tohoku University

Student's Message

Since I started my bachelor's program in dentistry, I knew that I wanted to study abroad. Studying abroad not only helps you gain more professional skills/knowledge but also gives you an opportunity to widen your horizons. Coming to Tohoku university, which has been the number one university in Japan for several years now, has given me the chance to truly find myself and understand what I want in life. It was a great honor to get accepted here first as a master's degree student and now as a doctoral program student. Thanks to my professors and all my colleagues, the experience has been challenging but at the same time exciting and smooth, and it still continues to be so.

I'm currently studying at the Department of International Oral Health. Public health is an essential part of the community that promotes a safer, healthier environment for everyone, and so I've always wanted to be a part of that. Tohoku university has a strong, active department full of expertise, and hence, that is what attracted me to it. Moreover, everyone around me is highly skilled at what they do and always lend a helping hand when needed.

Besides school life, Sendai city offers a very comfortable and convenient living. It is unique in that it combines the calmer, more relaxed pace of the countryside and the bustling lively nature of a big city. The locals here are quite helpful and kind, and there are many foreign students that aid and support each other.

I believe it would be a great opportunity for anyone looking for a postgraduate degree to choose Tohoku as it offers strong knowledge-rich departments, advanced research facilities, and much more. My gratitude for everything that I have learnt and have yet to learn is immense and I only dream of being able to give back in the future.

Doctoral 1st year | from Egypt

Nada Emad Alshafei

II The Master's Course

Chronology of events that led to the establishment of the Master's course

Dental medicine has been progressing rapidly in recent years, and dental treatment support staff, such as dental hygienists, technicians and other professionals, is now being expected to acquire an even wider range of advanced knowledge and to possess specialized skills based on such knowledge. To promote the research and development of dental equipment and materials that support advanced dental medicine, moreover, it is becoming an urgent task to train researchers and developers who are familiar with the latest advances in dentistry and oral science.

On the other hand, the importance of oral functions such as eating and speaking is becoming more broadly recognized. People in occupations who have no opportunities to receive specialized dentistry education, such as nurses, speech therapists, nursing teachers, and health administration officials are increasingly being called on to demonstrate knowledge and skills relating to dental and oral care in executing their nursing, long-term care, health guidance, public relations, and other awareness-raising activities. Examples include the provision of oral health guidance and management, and education on maintenance of the oral cavity.

In April 2004, the Tohoku University Graduate School of Dentistry established a new Master's program especially for these types of individuals, and opened the door for specialized education and research in dentistry and oral science with the aim of cultivating the abilities needed for such advanced specialist professions, or the ability to conduct research on dentistry and oral science.

Admissions policy

The master's course seeks students who have diverse specialized knowledge and skills in disciplines such as oral hygiene, public health, health science, speech therapy, medical sociology, agriculture, engineering, science, and food/nutritional science and highly motivated to study dental science, dental care, oral health, and other such fields.

The general admissions track evaluates applicants through four exams: a written exam of basic knowledge and understanding of specialized disciplines, an externally administered certification exam of English reading comprehension, an interview, statement of purpose, and transcript review for comprehensively assessing whether the applicants possess strong motivation to study dental science, outstanding competencies, a broad perspective, and flexible sensibilities. These exams are given approximately equal weight in the selection process.

Special admissions for Working-adults evaluates applicants through four exams: a written exam of knowledge and understanding of specialized disciplines, an externally administered certification exam of English reading comprehension, and an interview and a review of transcripts and statement of purpose for comprehensively assessing whether the applicants possess strong motivation to study dental science, dental care, and oral health, as well as a broad perspective and flexible sensibilities. These exams are given approximately equal weight in the selection process.

Special admissions for international students evaluates applicants through four exams: a written exam of basic knowledge and understanding of specialized disciplines, an English certificate to measure reading comprehension, an interview, statement of purpose, and transcript review for comprehensively assessing whether the applicants possess strong motivation to study dental science and dental health, and outstanding competencies. These exams are given approximately equal weight in the selection process.

Those who are not native speakers of English are expected to acquire sufficient ability in English comprehension and communication before enrolling.

Curriculum policy

The Graduate School of Dentistry formulates and implements the curriculum based on the following policy in order to enable students to achieve the aims of the Diploma Policy.

(1) Provide specialized and transdisciplinary courses in dental science, dental care, and oral health, as well as an educational environment that enables students to focus on research for their master's thesis and other purposes.

(2) Provide opportunities to develop the high ethical standards expected of researchers and sophisticated professionals, opportunities to learn about the latest advances in Japanese/international dental science research and dental care technologies, and practical opportunities enabling students to acquire communication skills and advanced specialized techniques.

(3) Achievement is evaluated by determining, using tests and reports, whether the student has reached the objectives described in the syllabus. The Master's thesis is evaluated by determining whether it contributes to research from an original perspective, and whether the student has in-depth knowledge that functions as a foundation for research and operational duties with expertise, and by evaluating final exams.

Diploma policy

The Graduate School of Dentistry awards a Master's degree to a student who has studied the required subjects set according to the school's educational philosophy and objectives, has completed the study credits required by the school, has acquired the knowledge and skills as described below, and has passed the Master's thesis review and the final examination.

(1) Be able to carry out specialized research in one's field or engage in a high-level specialized occupation with a broad perspective and leveraging specialized knowledge and advanced technology in dental science, dental care, oral health, and other such disciplines.

(2) Be able to contribute to the improvement of health and welfare by addressing societal and scholarly needs regarding dental science, dental care, and oral health with high ethical standards and a firm sense of responsibility.

(3) Possess an international perspective and communication skills, and be able to apply them to dissemination of one's specialized research findings, or to one's high-level specialized occupation.

Master's course program

Classes (minimum credits, 30)

Required (16 credits)

Introduction to Dentistry, Special Training for Master's Thesis Preparation, Basic Technical Course in Dental Minimum of 3 classes in each of the following courses to be completed:

Electives (14 credits) Minimum of 7 of the following courses to be completed:

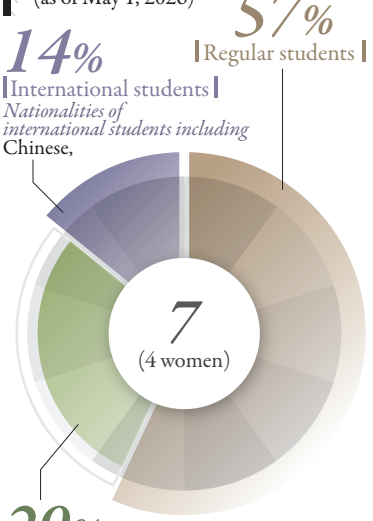
Oral Biology, Oral Pathophysiology, Biomaterials for Regenerative Medicine, Introduction to Digital Engineering in Dentistry, Food Science, International Dental Health, Social Dentistry, Comprehensive Dentistry, Oral Health Care for Children and Adolescents, Oral Restoration, Special Needs Dentistry, Dental Infection Control, Oral and Maxillofacial Reconstruction, Digital Engineering in Dentistry, Disaster Dental Science, Environment Dental Science, Oral Health Science, Medical Ethics and Social Ethics, Innovative Dentistry, Introduction to Physical Anthropology, Oral Health Management for Cancer Patients, Introduction to Clinical Dentistry Tour of Dental Clinic

Course acceleration Students with excellent research achievements (eg, a first-authored paper accepted by an established journal) may complete the course in one year.

Long-term enrollment Working students and those with a compelling reason for long-term enrollment may stay in the course for up to 4 years with no extra cost other than the 2-year tuition.

Number of graduate students in the master's course

(as of May 1, 2026)



Admission fee and tuition

Admission fee *282,000 yen*

Tuition (yearly) *535,800 yen*

However, tuition fee for international graduate students in a Master's program is 900,000 yen.* The term "international student" refers to an individual residing in Japan with the residence status of "Student" as listed in Appended Table I (4) of the Immigration Control and Refugee Recognition Act (Cabinet Order No. 319 of 1951).

*The amount of the admission fee and tuition is subject to change. The newly established amount will be applicable at admission or while the student is enrolled.

Financial support system

Admission fee/tuition deferment

For students who are recognized as having difficulty in paying the admission fee at the time of enrollment for economic reasons and who are recognized as having outstanding academic capabilities, or students who are recognized as having other unavoidable circumstances, the payment may be deferred by the application.
For students who are recognized as having difficulty in paying tuition for economic reasons and who are recognized as having outstanding academic capabilities, or students who are recognized as having other unavoidable circumstances, the tuition payment may be deferred or paid by the month by the application.
The application must be submitted in each semester.

Tohoku University Advanced Graduate School LEAP Program
Comprehensive support package for Doctoral Students

This program aims to cultivate outstanding researchers who will lead next-generation innovation and play active roles globally, and to supply highly specialized human resources to diverse sectors. The core of this support is financial assistance for all students in the 1st through 4th years who meet the eligibility criteria. It also aims to comprehensively improve the research environment surrounding doctoral students by providing diverse educational content that contributes to strengthening research capabilities and supporting the acquisition of transferable skills.

Scholarship

Japanese Government (MEXT) Scholarship with Embassy Recommendation

You are advised to contact the Japanese Embassy 1.5-2 years before your enrollment. For details, please contact the Japanese Embassy or a consulate directly.

Tohoku University Global Hagi Scholarship

This scholarship is aimed to nurture "leaders capable of creativity and innovation" who will contribute to scientific and technological development.
This scholarship is open to Master's students of all years who plan to proceed to a Doctoral program.
With the scholarship (600,000 yen annually), the students are promised to be concentrated on their research. The Educational Affairs Section will inform you when the application opens.

Other Scholarships

Self-financed students have opportunities to apply for various scholarships funded by Tohoku University and private foundations. You can apply for them only after your enrollment. The Educational Affairs Section will inform eligible students every time the application opens.

Funding

Part-time job within the university as a Teaching Assistant (TA) and/or a Research Assistant (RA)

Students who assist in classes or research activities will be paid an allowance (hourly rate). The program provides students with financial support as well as opportunities to teach and instruct other students or learn how to proceed with research activities and construct theories.

School of Dentistry Researcher Development Program

The School of Dentistry has a researcher development program to help doctoral students become international researchers and enhance their research activities. Up to 300,000 yen will be paid per student as travel expenses and conference participation fees.

Japan Society for the Promotion of Science Fellowship Program

The program provides fellowship support to researchers with excellent research ability, who are taking or have completed the doctoral course and wish to join research institutes such as universities in the future. A monthly amount of 227,000 yen (estimated in 2027) will be provided to fellows in the doctoral course.

Student's Message

Pursuing Innovative Dentistry with Harmonious Academics and Student Life

"Progress is not linear", a renowned quote by Maria Montessori, aptly reflects my learning journey in the field of Dentistry. Following graduation from the University of Dental Medicine (Yangon), I embarked on an exploration of opportunities to further studies abroad in Japan. Through the MEXT (the Ministry of Education, Culture, Sports, Science, and Technology) Scholarship, the Japanese Government has graciously granted me to pursue my ambitious aspirations under the supervision of Professor Guang Hong in the Division of International Collaborative and Innovative Dentistry.

With the surge of technological advancements in dentistry, implant dentistry has evolved with the cutting-edge technical aids, contributing to quality dental care though time and labor-saving operative procedures. This is a crucial aspect that aligns with my research interest at the Graduate School of Dentistry, Tohoku University. In our lab, we vigorously conduct research on innovative approaches for biomaterials, such as cellulose nanofibers (CNF), enhancement of implant surface modifications, recycled dental zirconia for environmental-friendly biomaterials, and artificial intelligence (AI) and augmented reality (AR) assisted guided implant surgeries. Equipped with well-mounted facilities, regular journal clubs coupled with student-friendly coaching from our assistant professors and supervision by Professor Guang Hong, we are encouraged to explore our curiosity, foster critical thinking, and engage in scientific inquiry in a productive atmosphere. Beyond the excellence of educational assistance, Tohoku University Graduate School of Dentistry provide daily life support through its Student Affairs section, along with The International Support Center (ISC) aiding in the adaptation not only to student life but also day-to-day practices in the city of Sendai by sharing information about seasonal festivals, sightseeing, and relaxing travel spots in the Tohoku region. In terms of my student life, I not only excel in academic performances but also engage in extracurricular activities by serving as one of the board members of TUIDSO (Tohoku University International Dental Student Organization), a core team-member of Tohoku University International F.C. , aiming to expand my social network and enrich my campus experience with fantastical and memorable moments.

Thanks to the MEXT scholarship, my journey of learning and research in innovative dentistry has been flourishing constructively on this campus, where I have gained insight into achieving a balanced life. If anyone were to ask me about studying abroad, my unequivocal recommendation would be Tohoku University for those seeking a balanced academic and extracurricular experience.

Doctoral 4th year | from Myanmar

Kyaw Zaww

Variety of educational programs

Double degree program

The double degree (DD) program of Tohoku University Graduate School of Dentistry is a graduate school educational project involving the major graduate schools of dentistry in China and South Korea to improve dentistry and dental care in Asia by developing Asian standards through innovative dentistry based on global and integrated knowledge.
In the DD program each graduate student enrolls at two universities and studies at the sister school for a specific period of time. The DD program offers an opportunity to study under the faculties of two universities at the same time. Students will be able to earn degrees from both universities if the requirements are met.

The International Priority Graduate Program – Advanced Graduate Course for International Students –

Tohoku University Graduate School of Dentistry has launched the new PhD degree program "The International Priority Graduate Program- Advanced Graduate Course for International Students-" since 2014. The international students being accepted at this program can be adopted as a Japanese Government (Monbukagakusho: MEXT) Scholarship student. This program accepts excellent students from Southeast Asia, Southwestern Asia, Southern Asia and the East Asia countries.

Coordination with other research departments and institutions

A cross-department, integrated educational program involving the Schools of Medicine, Pharmacy and Engineering is available for the students at Tohoku University School of Dentistry. Students will be able to receive guidance from members of non-dentistry faculties.

Future Global Leadership Program

Tohoku University Graduate School of Dentistry has launched the new course "Interface Oral Health Science Course" taught entirely in English since 2011.
The conceptual objective of the "Interface Oral Health Science Course" is to integrate the diverse research achievements of the Graduate School of Dentistry in order to advance the understanding of issues concerning oral health. We offer an English education program covering wide range of Oral Health Science.

Mater's Degree and Internship Program of African Business Education Initiative for Youth (ABE Initiative)

Tohoku University Graduate School of Dentistry has launched the new Master's course "Mater's Degree and Internship Program of African Business Education Initiative for Youth (ABE Initiative)" since 2015. The objective of this program is to support young personnel who have the potential to contribute to the development of industries in Africa. This program offers opportunities for young African personnel to study at master's courses in Tohoku University as international students. Japan International Cooperation Agency (JICA) will provide the tuition fee, living allowance and round-trip airfare for participant of the program.

Dental oncologist training course

This course provides training for dentists to become dental oral surgeons specializing in oral cancer treatment.
Students will take the systematic lecture course to obtain general and particular knowledge about clinical oncology required for cancer treatment, participate in clinical work at affiliated institutions and related departments at the School of Medicine and prepare a thesis related to oral oncology in the doctoral dissertation program.

Student's Message

Embracing Opportunities

Since graduating from Chulalongkorn University, I have been working as a dentist and instructor at Chiang Mai University. Alongside my responsibilities, I also assisted in forensic odontology cases.

I was privileged to receive the MEXT scholarship, enabling me to pursue a doctoral degree in Dental and Digital Forensics at the Graduate School of Dentistry, Tohoku University. The beauty, safety, and rich cultural heritage of Japan, combined with the exceptional academic environment and supportive faculty and staff at Tohoku University, have surpassed my expectations.

As an international student, I am gradually adapting to life in Sendai. The region's stunning natural landscapes throughout the seasons, coupled with an affordable cost of living, have enhanced my experience.

Currently, as a second-year doctoral student, my research focuses on age estimation in adults using dental radiographs, with the aim of further advancing this field in the future. This journey has not only deepened my academic knowledge but also fostered meaningful friendships and contributed to one of the most memorable parts of my life.

Doctoral 3rd year | from Thailand

Pornpattra Chulamanee

Entrance examination information

Selection procedures

	Doctoral course	Master's course
Special screening for foreign exchange students	Written examination (specialized subject) Interview Application screening	Written examination (Short essay writing) Interview Application screening

Qualification Screening

Applicants who graduated from foreign universities have to undergo the qualification screening for application in advance. Please contact us by e-mail before the beginning of qualification screening, if applicants want to obtain more detail information.

e-mail:den-global@grp.tohoku.ac.jp

Examination schedule

	Admission in October 2026	Admission in April 2027	
		First Recruitment	Second Recruitment
Accepting applications for Qualification Screening	May 18 to 22, 2026	May 18 to 22, 2026	October 13 to 19, 2026
Accepting application	June 8 to 12, 2026	June 8 to 12, 2026	November 2 to 9, 2026
Examination date	July 10, 2026	July 10, 2026	December 4, 2026
Announcement date of examination results	July 23, 2026	July 23, 2026	December 17, 2026

ECOLOGICAL DENTISTRY

"Oral Ecology and Biochemistry"

Professor | Ken Osaka (collateral office)

The oral cavity forms an ecosystem where the host (humans) and microbiome (a tremendous number of microorganisms) cohabit. Using leading-edge techniques, we conduct research on the role of oral microbiome in oral/systemic health and disease from an oral ecological viewpoint. In addition, we propel clinical research on caries/periodontitis-preventive effects of xylitol, fluoride, tea catechins etc, and on microbiome-induced deterioration of biomaterials. We also conduct metabolic studies on host cells, including oral cancer cells.

▲"The anaerobic experimental system" that creates anaerobic and hypoxic conditions

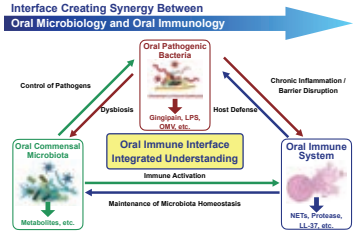
Main research themes

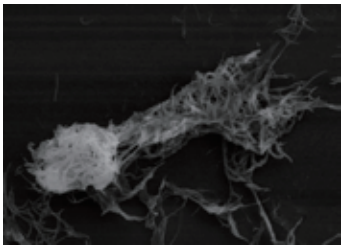
- Genomics, proteomics and metabolomics of oral microbial ecosystem (oral microbiome)
- Biochemical and molecular biological studies on metabolism of oral microorganisms using an anaerobic experimental system and the association with systemic / oral health and diseases
- Biochemical studies on caries / periodontitis preventive properties of fluorides, sugar alcohols and tea catechins
- Evaluation of cariogenic potential of food products and sweeteners by pH-telemetry using miniature transistor pH electrode
- Biochemical studies on oral microbiome-induced deterioration of dental biomaterials
- Metabolism of host cells, including oral cancer cells

"Oral Microbiology and Immunology"

Professor | Hiroyuki Tada

Interactions among oral mucosal cells, saliva, and immune cells — mediated through immune regulatory factors and direct cell-to-cell contact — are critical for mucosal defense. Dysfunction of these interactions can lead to the onset of oral mucosal diseases. We investigate the underlying molecular mechanisms of these diseases using molecular biological and immunological approaches, with the aim of developing strategies to overcome them. In addition, we investigate innate immune responses triggered by infection with oral bacteria, with particular focus on the enhancement or impairment of immunological homeostasis in the oral mucosa.





▲Neutrophil extracellular traps released by neutrophils in response to infection by periodontal bacteria

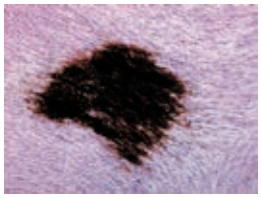
Main research themes

- Research on the interface between oral pathogenic bacteria and oral immune system
- Studies on immune responses induced by periodontal bacteria
- Research on chronic inflammation and dysfunction of biological barriers in oral infections
- Studies on immune responses of bacterial cell components
- Research on the pathological mechanisms of metal allergies

"Periodontology and Endodontology"

Professor | Satoru Yamada

One of our projects is studying on the onset mechanism of periodontal disease (marginal and apical periodontitis), representative chronic inflammation in the oral cavity, in terms of the interaction between host cells and bacteria, and also we study on the regenerative mechanism of periodontal tissue. In addition, I perform the study for apply ME such as lasers for periodontics and endodontics.



▲The calcified nodule formed of Periodontal Ligament Cells.

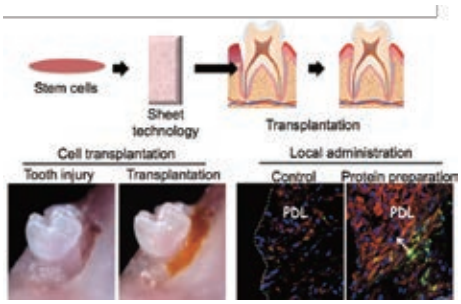
Main research themes

- Analysis of the onset mechanism of marginal and apical periodontitis
- Analysis of the interaction between cells in the periodontium
- Analysis of the periodontal regenerative mechanism and application to the treatment
- Development of method for periodontal diagnosis using ME
- Development of periodontal regenerative therapy using new biomaterials

"Operative Dentistry"

Professor | Masahiro Saito

We work mainly on research of the following topics from a clinical perspective: physical properties of composite resins used in restoration for diseases of the hard tissues such as the dental carries; measurement of adhesive strength onto enamel and dentin; observation of adhesion/joining conditions by electron microscope; long-term clinical performance of oral restorative materials using the replica method; conformity precision with respect to castability of titanium restorative materials and dentin; and strengthening of the physical properties of porcelain inlays. We also work on clinical studies that are re-restoration treatment with materials not containing allergic materials, and application of novel disinfecting technique using functional water. In addition to these studies, we develop regenerative therapy which expected to create innovative dental therapeutic systems in the 21st century. A feasibility study of the realization of tooth regeneration therapy is performed in research projects that are stem cell transplantation and local administration of bioactive molecules.



▶Development of tooth regeneration therapy
A model for tooth regeneration therapy (Upper panel)
Cell transplantation by using sheet technology (Lower left panel)
Local administration of bioactive molecules (Lower right panel).
Arrow indicated regeneration of fibers in tooth.

Main research themes

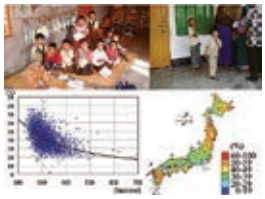
- Development of Tooth Regeneration Therapy
- Investigation of Molecular Mechanisms that regulate Periodontal ligament formation
- Research Related to Physical Properties and Adhesion/Joining Conditions onto Dentin of Composite Resin
- Research Related to Dental Precision Casting and Level of Conformity of Pure Titanium and Titanium Alloys
- Research Related to the Strengthening of Physical Properties and Clinical Application of Ceramic Inlays

COMMUNITY SOCIAL DENTISTRY

"International Oral Health"

Professor | Ken Osaka

Our research mainly focuses on the influence of socioeconomic and behavioral factors on oral health. Our studies have consistently shown that socioeconomic status has an impact on oral health. On the other hand, studies have shown that oral health is associated with the tendency to become functionally dependent and increased risk of pneumonia deaths.
We have worked on training young researchers in developing countries as a kind of international collaboration. As well as analyzing the oral health conditions and health inequalities in Japan and deepening our understanding of the dental care system and long-term care insurance system for the older population.



Main research themes

- Association between oral health and social-economic and behavioral factors.
- Understanding the underlying mechanisms that lead to associations between broader social determinants and health (oral & general).
- The oral health care system and health inequalities.
- Infectious disease countermeasures and risk management.

"Dental and Digital Forensics"

Professor | Ken Osaka (collateral office)

Forensic dentistry is the science concerning the application of dental evidence to the resolution of legal problems. We aim to integrate the advanced knowledge and skills of information science into conventional research methods in forensic dentistry. Our division is the first and only one laboratory in the northern Japan, engaged in research and education of forensic dentistry. The education goal of the division is that the students gain knowledge and understanding of the process of forensic dentistry in Japan and of personal identification using dental records or skeletal remains.

Main research themes

- Morphological studies on the human skeletal remains
- Mass fatality incident management and assistance
- Comparative odontology on the mammals
- Application of dental Information in identification
- Morphological studies on the teeth of Japanese

"Preventive Dentistry"

Professor | Takeyoshi Koseki

The Division of Preventive Dentistry aims to prevent all oral disorders and to promote and maintain oral health and its full function. We are also in charge of the Department of Oral Supportive Management and Care at Tohoku University Hospital, developing clinical and research activities focusing on perioperative oral functional management of cancer patients.

◀Portable measuring system of oral malodor

Main research themes

- Prevention and treatment of cancer therapy-induced oral adverse events/oral mucositis
- Patient survey of consciousness on perioperative oral management and care
- Research on protective devices in tongue brachytherapy
- Association of breath and oral environment with bone metastases and skeletal related events of breast cancer
- Impact of COVID-19 on oral cavity
- Study of diagnosis and prevention of early caries of enamel and root surfaces
- Development of evaluation methods and recording systems of dental clinical skills

"Pediatric Dentistry"

Professor | Kan Saito

In order to promote the healthy development of children by managing their oral health during childhood, we are investigating caries, abnormal tooth formation, and oral dysfunction from various angles, such as basic, clinical, and epidemiological research.

▲Gene mutation produced hairs instead of enamel

Main research themes

- Identification and functional analysis of disease genes related to the oral
- Analysis of enamel and dentin formation
- Research on differentiation mechanisms of ectodermal organs
- Research on anti-tumor method by inducing calcification
- Development of novel dental materials for calcification and anti-caries
- Research on relationship between lifestyle and development in children

"Craniofacial Anomalies"

Professor | Hiroyasu Kanetaka(collateral office)

Our division is a clinical dentistry field specializing in research on the diagnosis and treatment of craniofacial anomalies, including cleft lip and palate.

▲Anterior maxillary distraction osteogenesis (AMDO) appliance

Main research themes

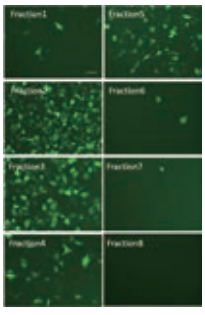
- Research on the diagnosis and treatment of craniofacial anomalies, including cleft lip and palate
- Research on the role of immune cells in osteoclastogenesis
- Research on growth and development of children with cleft lip and palate
- Objective evaluation of oral sensation with somatosensory evoked magnetic fields
- Development of a new anti-inflammatory bisphosphonate that also promote bone formation

"Orthodontics and Dentofacial Orthopedics"

Professor | Hiroyasu Kanetaka

One of the clinical dental department that focus on a research related to the diagnosis and treatment of abnormal morphological and functional occlusion. Our aim is to develop a new diagnosis and treatment methods and to elucidate craniofacial growth mechanics, by various clinical and basic scientific research.

We also offer a 3-year postgraduate orthodontic clinical training program with addition to the PhD course. Our department is accredited by the Japanese Orthodontic Society as a training institute for orthodontic specialists.



▲Fluorescent images of osteocytes

Main research themes

1. Clinical research
- Development of temporary anchorage devices for orthodontic treatment
- Evaluation on outcomes of orthodontic treatment
- Analysis on maxillofacial morphology and facial soft tissue
- Study on the relationship between malocclusion and orofacial function
- 3D simulation of surgical orthodontic treatment

2. Basic research
- Clarification of biomolecular mechanism of orthodontic tooth movement
- Clarification of biomolecular mechanism of craniofacial development
- Clarification of responses of osteocytes, periodontal tissue cells and chondrocytes against mechanical stress
- Development of orthodontic materials
- Development of acceleration techniques of orthodontic tooth movement with physical stimulation
- Clarification of regulatory mechanism in endochondral ossification
- Study on effects of joint loading on extracellular matrix (ECM) expression of temporomandibular joint

Disease Management Dentistry

"Oral Physiology"

Professor | Minoru Wakamori (collateral office)

We are in the field of fundamental studies that establishes basic theories from our understanding of physiological functions, such as mastication, oral sensation including gustatory sensation, function of saliva and vocalization. Presently, many still unanswered questions exist in regards to the oral and maxillofacial region's connection to overall bodily functions, including higher brain functions. In the department of oral physiology we focus on individual organism and cell level research that investigate these questions by using electrophysiological and molecular biological techniques.

▲A spinal dorsal horn neuron and serotoninergic axon terminals.

▲Distribution of synapses between a spinal dorsal horn neuron and serotoninergic axon terminals.

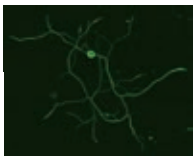
Main research themes

- Neural mechanisms of sensory and motor system
- Psychophysical studies on gustatory function and oral fat sensitivity
- Molecular mechanisms of differentiation, regeneration, and apoptosis in osteoblasts and neurons
- Membrane trafficking genes and disease models involved in oral diseases

"Dental Pharmacology"

Professor | Minoru Wakamori

The major goal of our research programs is to elucidate the operating principles of the body to keep homeostasis on the molecular level by utilizing electrophysiological and molecular biological techniques. Specifically, we are interested in "mechanisms to regulate intracellular Ca^{2+} concentration", "transduction mechanisms of oral sensations", and "regenerative medicine".



▶Periodontal ligaments enhance neurite outgrowth in trigeminal ganglion neuron through Wnt5a production induced by mechanical stimulation.

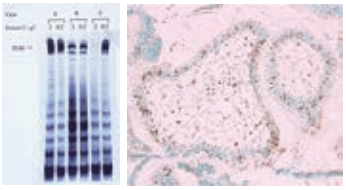
Main research themes

- Functional analysis of Ca^{2+}-permeable cation channels
- Molecular and neurobiological studies of taste, pain and mechanical stress sensations
- Developmental biology and morphogenesis of bone and teeth
- Chemical and pharmacological approach to stem-cell biology and regenerative medicine

"Oral Pathology"

Professor | Hiroyuki Kumamoto

To clarify the etiology, pathogenesis, pathophysiology, and outcome of various lesions occurring in the oral and maxillofacial region, basic macroscopic and microscopic observations as well as further analyses are performed. Our division research fields are as follows.



▲Expression of telomerase in ameloblastoma (a: TRAP assay, b: immunohistochemistry)

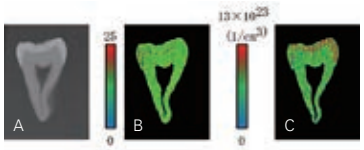
Main research themes

- Molecular pathology of lesions of the jaws
- Clinicopathological and genetic studies of developmental abnormalities of the teeth
- Clinicopathological and immunohistochemical studies of the oral immune diseases and cancer
- Investigation on regeneration of the oral and maxillofacial tissues and application of biomaterials

"Dental Informatics and Radiology"

Professor | Masahiro Iikubo

Our main research themes include the development of new medical devices and new treatment support systems in collaboration with other faculties, and research on improving diagnostic accuracy for oral and maxillofacial diseases using the latest imaging modalities, such as CT, MRI, Ultrasonogram, and nuclear medicine imaging. In addition, clinical research on oral management for patients with systemic diseases is performed in collaboration with the Perioperative Oral Health Management Department.



▲X-ray imaging using a semiconductor detector, which is currently under development, can reveal the effective atomic number and electron density of a material. A; Plane X-ray image, B; Color image of effective atomic number, C; Color image of electron density

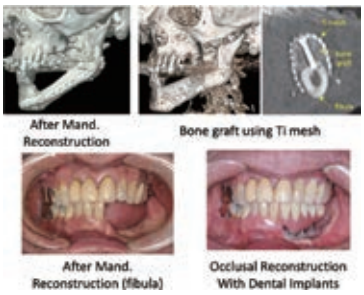
Main research themes

(1) Development of new medical devices
(2) Imaging diagnosis of oral and maxilla-facial lesion
(3) Study on the relationship between systemic diseases and oral conditions

"Oral and Maxillofacial Reconstructive Surgery"

Professor | Kensuke Yamauchi

Our department focuses on the treatment of diseases with skeletal deformities in the maxillofacial region, with the goal of reconstructing morphology and function up to the restoration of occlusal function. We strive to restore function through reconstruction, including dental implants, not only for jaw deformities, temporomandibular joint disorders, congenital and acquired deformities, and traumatic injuries, but also for secondary problems caused by morphofunctional abnormalities resulting from treatment of inflammation (including osteomyelitis), tumors, and other diseases.



▲Occlusal reconstruction using dental implants for the resected mandible caused by oral cancer

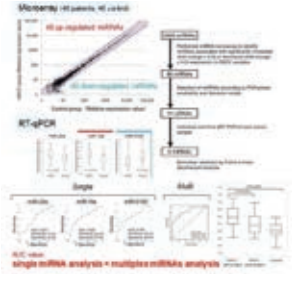
Main research themes

- Molecular biological analysis of bone morphogenetic mechanisms and bone morphological repair processes
- Development of bone regenerative method by applying the fracture healing process
- Development of new medical technology applying advanced medical equipment in the treatment of jaw deformities
- Molecular biological analysis of trauma and temporomandibular joint diseases to minimally invasive surgical therapy
- Development of futuristic oral surgical treatment by telemedicine and computer-assisted surgery

"Oral and Maxillofacial Oncology and Surgical Sciences"

Professor | Tsuyoshi Sugiura

With the goal of reducing the number of patients who die from oral cancer to zero, we asked questions such as, "How can we detect it at an early stage?", "Can we prevent oral cancer?" "How can I treat it so that it does not cause functional impairment?"
We are conducting research on these questions,



▶It is possible to diagnose oral cancer by measuring miRNA in serum.

Main research themes

- Development of early detection methods and biomarkers for oral cancer
- Development of oral cancer diagnostic method using AI
- Research on control of oral cancer
- Study of oral cancer circulating tumor cells(CTC)
- Analysis of genetic abnormalities in oral cancer
- Research on oral microbiota that triggers oral cancer
- Study of oral microbiota that triggers cancer in other organ
- Development of new treatments for oral cancer
- Research on surgical reconstruction treatment for oral cancer

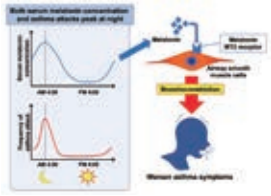
"Dento-oral Anesthesiology"

Professor | Kentaro Mizuta

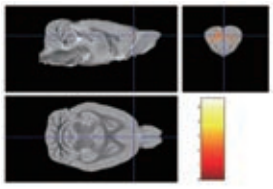
Our research advances discovery in perioperative medicine and in a variety of related studies. The department's current studies include research in lung physiology and immunology, neuroscience, orofacial pain, clinical outcomes, robotic anesthesia, and more.

Main research themes

- Exploring novel therapeutic targets for bronchospasm, asthma, and COPD.
- Exploring pathogenesis of orofacial pain by in vivo multiscale brain imaging.
- Development of artificial intelligence-assisted robotic system for anesthesia.
- Development of new strategies to expand regulatory T cells for the therapy of allergic and autoimmune diseases.
- Clarification of the regulatory mechanisms of histamine production and its function.
- Exploring the effects of anesthetics on cell metabolism.



▲ Melatonin MT2 receptor-mediated exacerbation of asthma symptoms



▲ Analysis of brain function in animal models of neuropathic orofacial pain

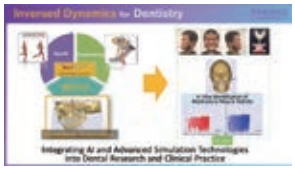
"Comprehensive Dentistry"

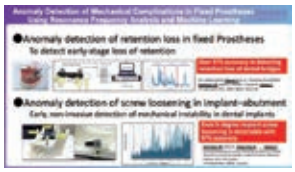
Professor | Toru Ogawa

The Division of Comprehensive Dentistry aims to serve high-quality comprehensive dental care and also practice the management of clinical education to dental students and postgraduate residents.
We emphasize a holistic approach to diagnosing oral diseases, considering not only the condition of the oral cavity but also its relationship with systemic health, lifestyle habits, and social environment. Based on these comprehensive diagnoses, we provide high-quality standard treatments and continuous care for common dental diseases, also pursuing integrated support through collaboration with specialized divisions.
To advance the field of General Dentistry, we actively engage in a wide range of research activities that contribute to its further development.

Main research themes

- Development of an educational support program for clinical training and internship based on AI technology
- Medical-engineering collaborative research on an anomaly detection device for dental restorations and prostheses
- Basic and clinical research on stomatognathic functions, orofacial pain, sleep dentistry, sports dentistry, and oral implantology
- Development of oral medicine-based treatments for taste disorders and research on establishing an Umami sensitivity test
- Research on the development of a treatment for xerostomia targeting minor salivary glands





REHABILITATION DENTISTRY

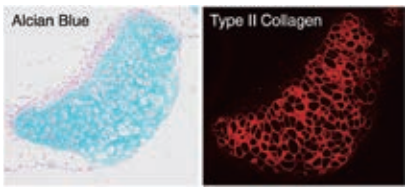
"Oral and Craniofacial Anatomy"

Professor | Yuji Hatakeyama

The research themes of our division are as follows: 1) Macroscopic anatomical research on oral and craniofacial regions. 2) Bone formation with the application of proteins derived from tooth. 3) The gene and protein expression profiles of endoplasmic reticulum chaperones in the cranial base. 4) The mechanism of mouse tooth malformation in the genetic point mutations.

Main research themes

- Macroscopic anatomical research on oral and craniofacial regions
- Research on bone formation with the application of proteins derived from tooth
- Research on the expression profiles of endoplasmic reticulum chaperones in the cranial base
- Research on malformation of mouse tooth in the genetic point mutations



▲ Cartilage-like tissue formed by long-term high density micromass culture using mesenchymal cell.

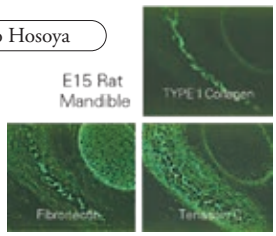
"Craniofacial Development and Tissue Biology"

Professor | Akihiro Hosoya

We have been morphologically studying how hard tissues such as bones and teeth are formed in vivo. By analyzing the characteristics and differentiation potential of dental pulp and periodontal ligament stem cells, we aim to develop the regenerative therapy using tissue stem cells.

Main research themes

- Development and healing mechanisms of hard tissues
- Mechanisms of odontoblast differentiation
- Identification and characterization of odontogenic mesenchymal stem cells
- Development of regenerative therapy using tissue stem cells



▲ Expressions of extracellular matrix molecules in a rat embryonic mandible

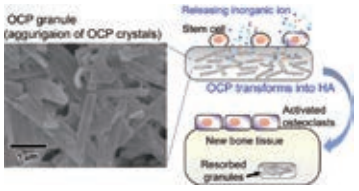
"Biomaterials Science and Engineering"

Professor | Osamu Suzuki

We are focusing on the fundamental science and the applied research of biomaterials and medical devices used especially for tissue engineering of various bone defects in the fields of dentistry, oral surgery, and an orthopedic surgery. Especially, we are developing new functional biomaterials and new devices based on biomimetics in terms of biomaterials science and biology.

Main research themes

- Bone regeneration using the synthetic Octacalcium phosphate, which transforms into hydroxyapatite (HA) spontaneously when implanted in vivo.
- Device development of the controlled release of the growth factor which regenerate bone and periodontal tissue.
- Development of organic-inorganic composites by applying biomineralization.
- Evaluation of biomaterials by using 3D-cell culture devices which control the cell differentiation.
- Development of new dental materials and their evaluation system.
- Development of soft biological adhesives and their clinical application.



▲ Bone regeneration by synthetic octacalcium phosphate (OCP)

▲ Development of the culture device to load a mechanical stress on osteoblasts and chondrocytes. Analysis of stem cel differentiation process into osteoblasts and chondrocytes using the micro-nano manipulation technology.

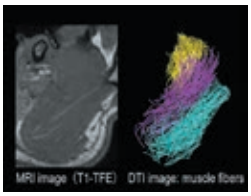
"Advanced Prosthetic Dentistry"

Professor | Nobuhiro Yoda

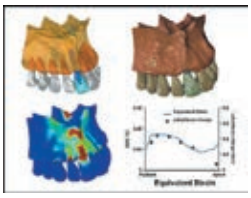
Focus of research and education of our division is on reconstruction of morphology and function of the patients with partial edentulism or maxillofacial defects. In addition to developing the conventional prosthodontic modalities such as removable and fixed dentures, we aim to create novel prosthodontics utilizing the dental implant, tooth transplantation, and tissue regeneration, and to clarify the biomechanical and mechanobiological interaction at the interface between prostheses consisting with biomaterials and living tissues, which is essential for the success of prosthodontics.

Main research themes

- Biomechanics and mechanobiology for stomatognathic morphology and function based on in vivo measurements and evaluation
- Studies on development and clinical application of novel biomaterials and creation of novel interfaces for prosthodontics, implantology and maxillofacial rehabilitation
- Developmental and translational research for novel dental treatment technology and dental equipment based upon multi-disciplinary research and academia-industrial collaboration
- Studies on clinical outcome of prosthodontics, implantology and maxillofacial rehabilitation



▲Muscle fiber analysis using Diffusion Tensor Imaging



▲Peri-implant bone stress distribution analysis by FEM

"Molecular and Regenerative Prosthodontics"

Professor | Hiroshi Egusa

Our major research focus is the development of next-generation biotechnology to 1) regenerate missing alveolar bone and teeth for functional and esthetic rehabilitation using cells and biomimetic materials and 2) introduce tailor-made diagnostics for prosthetic and implant treatments to prevent further tooth loss.

Main research themes

- iPS cell-based oral tissue engineering
- Biomimetic materials for bone regeneration/dental implant
- Osteo-immunology in alveolar bone resorption
- Bone organoid fabrication focusing on clock genes
- Development of therapeutic protein drugs for periodontal tissue regeneration
- Development of genome-based diagnostics for prosthetic/implant treatments
- Basic and clinical research on CAD/CAM-generated dental restorations
- Basic/Clinical research for dental metal allergy
- Development of AI evaluation system for tooth preparation

▲The patient's gingiva resected during dental treatment is a promising iPS cell source for oral tissue engineering applications, as well as for in vitro applications for tailor-made diagnostics.

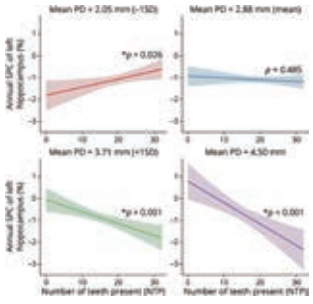
"Aging and Geriatric Dentistry"

Professor | Yoshinori Hattori

Through various health and medical practices, including outpatient care and home visit dentistry in collaboration with multiple professions, we explore the ideal approaches to dental and oral health care for the older adults, as well as diverse ways to contribute to society in a super-aged society through dental and oral health care. Our research focuses on epidemiological studies to elucidate the relationship between dental and oral health and overall health/QoL, as well as enhancing the practical value of measuring, analyzing, and evaluating oral functions to improve and maintain the oral functions of the older adults.

Main research themes

- Research on the relationship and causality between dental/oral health and overall health/QoL
- Development of methods for measuring, analyzing, and evaluating oral functions using various modalities
- Research on the supply system of geriatric dental care based on multidisciplinary collaboration
- Research on the appropriate selection of food textures based on oral function evaluation



▲Influence of the Number of Remaining Teeth and the Severity of Periodontal Disease on the Rate of Hippocampal Atrophy

"Bio Dental Engineering"

Professor | Masahiro Yamada

In the oral cavity, cells and tissues are continuously influenced by a variety of mechanical stimuli. Our laboratory integrates bioengineering with electrical and mechanical engineering to design and develop biomaterials and medical devices using nanotechnology. Through mechanobiology-based research on tissue regeneration and disease control, we translate fundamental discoveries into clinical applications and aim to establish personalized dental medicine.

Main research themes

- Elucidation of disease mechanisms induced by occlusal and masticatory forces
- Hard tissue regeneration and disease modulation using biomimetic nanobiomaterials
- Development of intraoral diagnostic devices and biofunctional chips utilizing nanotechnology
- Oral tissue regeneration and disease modulation through intracellular redox regulation
- Translational research for the social implementation of regenerative dental medicine

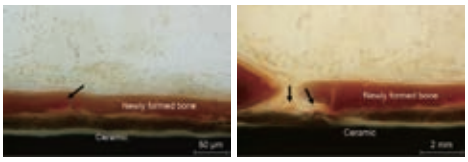
▲Biomimetic nanotechnology controls material physicochemical properties to promote tissue regeneration and prevent disease.

Innovative Liaison Dentistry

"International Collaborative and Innovative Dentistry"

Professor | Guang Hong

Our major research is focus on development and applied research of biomaterials and digital transformation in health care and educational settings and research on the recycling of dental materials based on the international industry-academia/interdisciplinary collaboration to improve oral health related QOL.



▲Newly formed bone on a Zirconia Surface

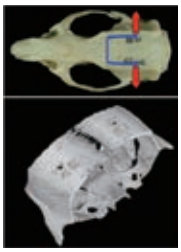
Main research themes

- Development of functional biomaterials
- Rheology of biopolymer materials
- Development of metal free dental implant materials
- Establishment of the international standard of dental materials
- Research and development on digital transformation in healthcare and educational settings
- Research on the recycling of dental materials

"Co-Creative Dentistry"

Professor | Hiroyasu Kanetaka(collateral office)

Our major researches are focus on translational research and regulatory science based on interdisciplinary research, industry-government-academia collaboration research.



▶Cranial suture expander using newly developed nickel-free shape memory alloy (Upper figure) Application of expanding force to the rat parietal sagittal suture (Lower figure) Micro CT image (2 weeks after application): The suture enlargement and bone addition were confirmed.

Main research themes

- Translational research on medical device / material development
- Regulatory science through industry-government-academia collaboration
- Formulation of international and domestic guidelines for various medical devices and materials
- Development of advanced medical device / material through interdisciplinary research
- Development of medical system applying the latest AI technology
- Development of new functional food through industry-academia-government collaboration
- Functional brain analysis of oral functions
- Application of next-generation synchrotron radiation to the dental field

Molecular Pathogenesis of Oral Tumor

"Dental Nuclear Medicine and Radiology"

Professor | Yasuyuki Taki

It is important to preserve our cognitive function for entire life by preventing us from pathological brain aging in a super-aging society like Japan. In the situation, we aim to understand the recent researches for the relationship between dental issues and dementia, and also understand the methodology of brain MRI image analysis.

Main research themes

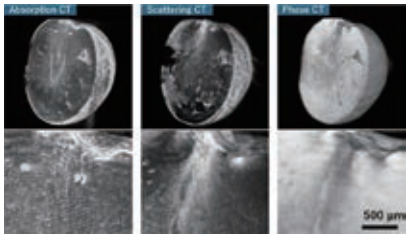
- Pathogenesis of the relationship between dental issues and dementia
- Methodology of brain MRI image analysis
- Methodology of brain and dental imaging epidemiology

Quantum Beam-Based Dental Metrology

"Quantum Beam-Based Dental Metrology"

Professor | Wataru Yashiro

By pioneering new frontiers in quantum beam (mainly X-ray) imaging technology that visualizes previously invisible worlds, we aim to establish a foundation for new dental insights and to contribute to society through their practical application. Specifically, we aim to develop imaging modalities that contribute to the advancement of basic dental science by utilizing state-of-the-art synchrotron facilities such as NanoTerasu, as well as to develop prototype devices and analysis algorithms that benefit clinical dentistry.



▲Three-dimensional image of plant tissue acquired without contrast agents using X-ray phase-contrast imaging (doi.org/10.1107/S1600577526000512)

Main research themes

- Development and application of a new X-ray phase-contrast imaging method
- Development of X-ray elastography methods for high-resolution visualization of elastic moduli
- Development of elemental technologies for X-ray imaging systems for clinical dental research
- Development of new X-ray image analysis methods and X-ray computed tomography (CT) reconstruction methods
- Development of imaging methods using other quantum beams, such as neutrons

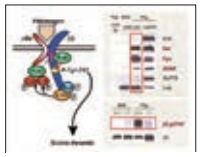
Immune Regulation and Oral Immunity

"Immune Regulation and Oral Immunity"

Affiliate Professor | Satoshi Takaki

The oral mucosa is a front line of host defense system against microbes and hazardous antigens. It also becomes targets of inflammation caused by autoimmune or allergic responses. Immune regulation of oral immunity is critical issue to control infections and keep Quality of Life (QOL) of disease patients. We are investigating, 1) Signal transduction and regulation by microenvironments operating in the host defense system, 2) Mechanisms for the production of autoantibodies involved in the disease development and maintenance of autoimmune disorders including Sjögren syndrome, 3) Regulations for the maintenance and expansion of tissue stem cells, to manipulate and regulate immune responses in oral mucosa.

▲Lymphocyte progenitor cells growing on bone marrow stromal cells



▲A newly identified regulation by Lnk adaptor protein in signaling through integrins

Main research themes

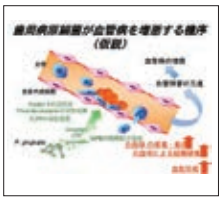
- Signal transduction and regulation in humoral immune responses
- Mechanisms for the generation and function of auto-antibodies involved in various autoimmune diseases
- Development of methods for manipulating or reconstituting the immune system

Geriatric Oral Science

"Geriatric Oral Science"

Affiliate Professor | Kenji Matsushita

Japan has the highest longevity in the world. Maintaining the quality of life (QOL) of elderly is important for each individual and society. Our department conducts research on the molecular and cellular biology of bone and joint diseases (including alveolar bone and the temporomandibular joint) that lower the QOL of the elderly, and basic and clinical research on caries and periodontal disease causing tooth loss from the viewpoint of vascular biology and bone metabolism.



◀▲Relation of vascular and bone metabolism

Main research themes

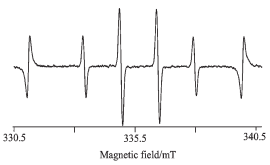
- The role and application of nitric oxide in the periodontal tissue
- Diagnosis and control of the periodontosis
- Exploratory research of the aging and disease related biomolecule by Omics analysis

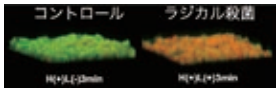
Advanced Free Radical Science

"Advanced Free Radical Science"

Professor | Keisuke Nakamura

Free radicals are generated in the innate immune system to kill or inactivate invading microorganisms. On the other hand, excessive free radical generation causes damage on healthy tissue. Thus, the control of free radical generation is a critical issue in the field of medicine. In our laboratory, we have conducted research to develop dental therapeutic devices based on antimicrobial chemotherapies utilizing the control technology of free radical generation.





▶◀▲Free radicals can be determined by using an electron spin resonance spectrometer. Microorganisms in biofilms are effectively killed by the radicals.

Main research themes

- R&D of dental therapeutic devices based on radical disinfection technique
- Development of novel antimicrobial treatment utilizing pro-oxidant activity of photo-irradiated polyphenol

Next-Generation Dental Material Engineering

"Next-Generation Dental Material Engineering"

Professor | Hiroshi Egusa (collateral office)

Our major research focus is the development of innovative technologies in the dental field through the study of various dental materials. In particular, we develop effective dental biomaterials by designing them for the repair and reconstruction of tooth and bone, while also evaluating their physicochemical properties and biological effects.

▲Biological effects of our bioactive glass that releases various ions.

Main research themes

- Development of bone regeneration materials and dentin regeneration materials using novel bioactive glass
- Development of a new dental implant using piezoelectric materials
- Fabrication of highly compatible prostheses using 3D printing and their clinical research
- A clinical study of CAD/CAM-fabricated resin-based fixed partial dentures
- Research on dental adhesives to improve the bond strength of prostheses

Tohoku University Hospital has its roots in the Sendai-han (domain) Medical School established in 1817. It is a hospital with a long history and tradition, having opened as the Tohoku Imperial University College of Medicine Hospital in 1915. The scale of our inpatient beds is among the largest of any national university hospital in Japan, attracting patients not only from the Tohoku region but also from all over the country and even from overseas.Our hospital is government-certified as an "Advanced Treatment Hospital" (Tokutei Kino Byoin). Beyond providing sophisticated medical care, our mission includes the development of advanced medical technologies and the provision of professional training. Furthermore, we were one of the first to be accredited as a "Clinical Research Core Hospital" in Japan. Under our fundamental philosophy, "Advanced medical care with kindness," we actively promote the research and development of cutting-edge medical technologies. Within this historic and advanced general hospital, the Dental Division is composed of 11 specialized clinical departments, 6 special clinical divisions, and 4 advanced treatment centers. The dental facilities span three floors of the outpatient building and are equipped with approximately 140 dental chairs. In addition, there are approximately 30 inpatient beds in the wards for patients undergoing dental surgery. Approximately 260 dentists work in the Dental Division, providing team-based medical care in collaboration with various professionals, including dental hygienists, dental technicians, physicians, nurses, radiological technologists, clinical laboratory technicians, speech-language pathologists, and registered dietitians. Under this system, the Dental Division treats approximately 600 patients per day.

Our hospital is a university hospital where "interprofessional collaboration" and "medical-dental collaboration" are advanced to a high level even by national standards. Because medical and dental departments are located within the same hospital building and cooperate closely, we are characterized by our ability to provide patients with sophisticated and comprehensive medical care. While many oral diseases originate in the mouth itself, they can also appear as symptoms of systemic diseases. Conversely, it has become clear that oral diseases or tooth loss can lead to systemic illnesses or post-operative complications. In other words, we are in an era where dentistry increasingly collaborates with medicine to contribute to the recovery of patients' systemic health and the maintenance and improvement of their quality of life.In terms of collaboration, we are also advancing "industry-academia collaboration," providing patients with cutting-edge medical care born from joint research with corporations. Students at the Tohoku University School of Dentistry have the opportunity to experience clinical practice as early as their second year through General Dentistry Practice. Furthermore, from their fifth year, they learn the knowledge, skills, and attitudes required of a dentist through actual patient care as "Student Dentists". It is our sincere hope that our students, as members of the medical team, will learn much from their patients and become dentists who respond to the needs of society. We are dedicated to clinical education with the goal of nurturing leaders who will contribute to dental care both locally and globally and lead the advancement of dental science.

General Vice Director,
Head of Dental Division
Tohoku University Hospital

Prof.
Masahiro Iikubo
(Oral and Maxillofacial Radiology,
Perioperative Oral Health Management)

Tohoku University Hospital

Tohoku University Hospital → **Dental Division**

Oral Health Enhancement

Pediatric Dentistry　Orthodontics

Oral Medicine and Surgery

Oral Supportive Care and Management
Oral and Maxillofacial Radiology　Oral and Maxillofacial Surgery
Oral Anesthesia and Pain Management

Oral Reconstruction

Endodontics　Fixed Prosthodontics

Oral Rehabilitation

Advanced Prosthetic Dentistry　Periodontics
Rehabilitation of Oral Function

Facilities for Specific Disorders

Comprehensive Dentistry　Dental Safety and System Management
Orthodontics and Speech Therapy for Craniofacial Anomalies
Dentistry for Disabled　Perioperative Oral Health Management
Maxillofacial Prosthetics Clinic　Dental Implant Center
Oral Medicine Liaison Center　Center for Dysphagia (Dentistry)
Advanced Dental Treatment Center

Sendai: the City of Trees.

Tohoku University is located in Sendai called the "City of Trees", Sendai is a great combination of beautiful greenery and urban sophistication and is also known as an academic city rich in culture and history.

HISTORY

The quintessence of Date culture is still present

Surrounded by greenery and located along the Hirose River, Sendai used to be a castle town that yielded 3 million gallons of rice. Built by Masamune Date 400 years ago, Sendai still has the legacy of the Date Domain such as Sendai Castle, Zuiho-den and Rinno-ji Temple. It is also an academic town where a large number of students live. Apart from the museums, cultural activities at Sendai Mediatheque draw much public attention.

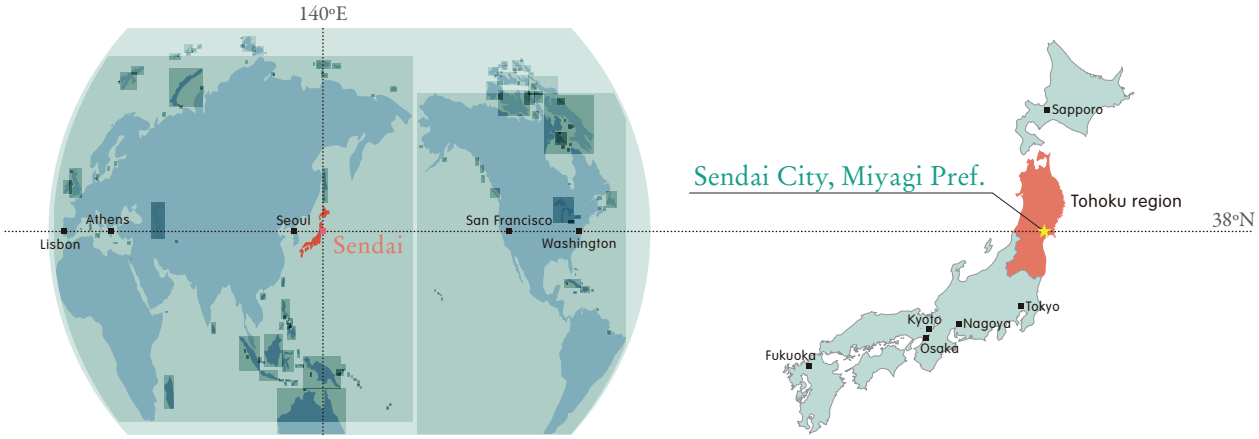
FESTIVALS

Traditional festivals taking place throughout the four seasons

Popular festivals taking place in Sendai include the Sendai Aoba Festival with floats and dances, a heritage of Date culture, in spring; Sendai Tanabata Festival with paper art blowing in the breeze in summer; Jozenji Street Jazz Festival that fills the streets with music in the fall; and in winter the Sendai Pageant of Starlight that feels as if it has come right out of a fairy tale.

Photo credit: Tourist Division, Miyagi Prefectural Government

Location of Tohoku University



Tohoku University Graduate School of Dentistry

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