

Division of Occlusion and Removable Prosthodontics

Department of Oral Rehabilitation

Outline

The specialty of occlusion and removable prosthodontics is concerned with the study of the effects of stomatognathic function on the recovery and maintenance of general physical function. We perform translational research based on morphological, immunohistological, physiological and epidemiological approaches in the field of geriatric dentistry and sports dentistry. Our research area also covers diagnostic prosthodontics, esthetic dentistry, biomaterials, bioengineering, and prosthodontic treatment for xerostomia. Our ongoing research projects are shown below.

Faculty members

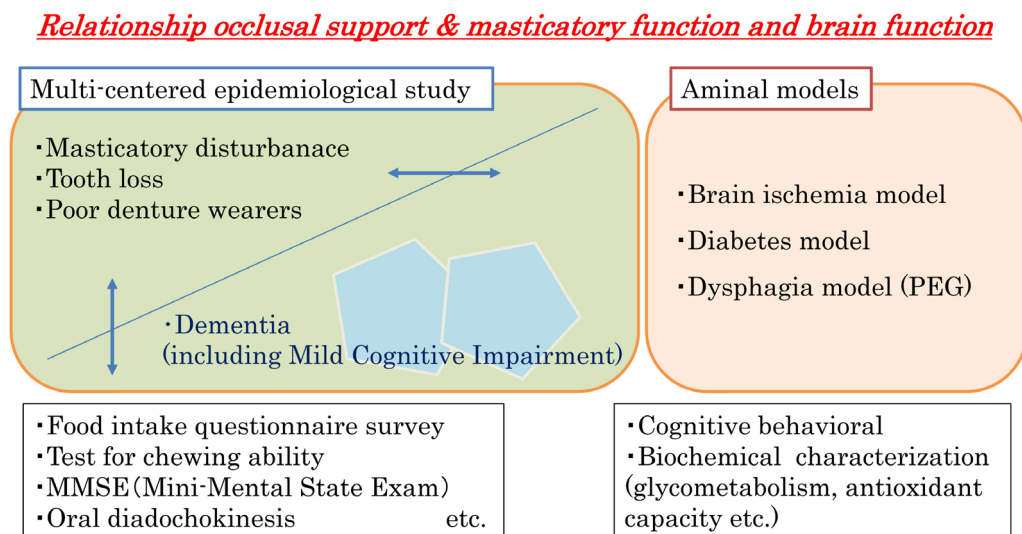
Professor;	Hisashi Koshino D.D.S., Ph.D.
Associate professor;	Yoshifumi Toyoshita D.D.S., Ph.D.
Assistant professor/full-time lecturer;	Katsuya Kawanishi D.D.S., Ph.D.
Assistant professor/research associate;	Mizuho Sasaki D.D.S., Ph.D.
	Yuuki Kan D.D.S., Ph.D.
	Sari Takada D.D.S., Ph.D.
Clinical instructor;	Kaaya Sato D.D.S.



Hisashi Koshino

Main research in progress

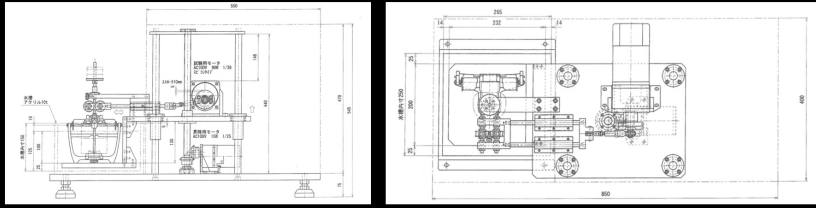
- 1) Relationship masticatory function and whole body
 - i) Epidemiological study on the relationship between oral and physical function among independent living of elderly people
 - ii) Mastication accelerates rehabilitation of brain function after cerebral infarction
 - iii) Control or prevention of diabetes by mastication



Prosthodontic treatment contributes to the oral health care and rehabilitation for disorder such as Dementia, Diabetes and Cerebrovascular Disorder in elderly. ?

2) Abrasion wear resistance of artificial teeth

Abrasion Wear Resistance of Artificial Teeth



This is a draft of our uniquely crafted machine that wears artificial teeth mechanically. The machine is equipped with a mean value articulator and an electric motor and incisal pin connected with the motor moving from side to side. Consequently the artificial teeth will be worn out by lateral movement like on human jaws. It is for an experiment that anti-monson curve is reproduced on the articulator or artificially. The anti-monson curve is a convex curve on artificial teeth that appears due to long term use of a denture. The curve makes the denture unstable during mastication. This machine is useful for development of a new artificial teeth that will resist against the anti-monson curve.

Current publications

- *Toyoshita et al. Intraoral Evaluation of Elderly People Wearing Complete Dentures with a Risk of Cognitive Decline by MMSE — Comparison with Subjects without Dentures and Difference due to Edentulous Area —. Japanese journal of gerodontology. 35:95-105, 2020
- * Kawanishi et al. Usefulness of the newly developed artificial denture plaque for practical denture care training. Clinical and Experimental Dental Research <https://doi.org/10.1002/cre2.270>, 2020
- * Koshino et al. Observation of the dental support in case of large-scale disaster. Journal of Japanese Society of the General Dentistry. 11:8-15, 2019
- *Kawanishi et al. The relationship between formative and overall evaluation in the self-assessments of students through prosthodontics practical training of partial dentures. Dent J Health Sci Univ Hokkaido 36:17-26, 2017
- *Kan et al. The effect of mastication by food form on the secretion of GLP-1 in mice. Journal of Japanese Society for Masticatory Science and Health Promotion 27:72-79, 2017
- *Toyoshita et al. Relationship between masticatory function and mild cognitive impairment in elderly people wearing removable dentures. Dental, Oral and Craniofacial Research 7:1-3, 2017
- * Kono et al. NaOCl-mediated biofunctionalization enhances bone-titanium integration. Dent Mater J 34:537-44, 2015.
- * Sasaki et al. Effectiveness of mastication for recovery from higher brain dysfunction in rat models of cerebral infarction. J Masticat & Health Soc 24:50-58, 2014.
- * Watanabe et al. Upregulation of cholesterol synthesis via BDNF by mastication. Ann Jpn Prosthodont Soc 6:167-174, 2014.
- * Suzuki et al. Alteration of masticatory function by diet change induces stress responses in wistar rats. In Vivo 27:611-616, 2013.