Outline
The specialty of orthodontics is concerned with the study and treatment of malocclusions, which may be a result of tooth irregularity, disproportionate jaw relationships and orofacial malfunctions. Orthodontic treatment focuses not only on dental and occlusal problems, but also deals with the control and modification of maxillofacial growth and morphology. High-quality outcomes of orthodontic treatment can only be accomplished with comprehensive knowledge about growth and development of maxillofacial region, occlusion, materials sciences, and diagnostics and therapeutics of malocclusion. Our research interests were shown below.

Faculty members
Professor: Masahiro IIJIMA, D.D.S., Ph.D.
Assistant professor/full-time lecturer: Takeshi MUGURUMA, D.D.S., Ph.D., Miki OKAYAMA, D.D.S., Ph.D.
Assistant professor/research associate:
Atsue YAMAZAKI, D.D.S., Ph.D., Yuya NAKAO, D.D.S., Ph.D., Naohiko KAWAMURA, D.D.S., Ph.D.
Clinical instructor:

Postgraduate students
Main research in progress
1) Extracellular matrix in the temporomandibular joint (TMJ)
2) Orthodontic materials research
3) Three dimensional (3D) analysis of orthodontic tooth movement
4) Development of 3D bioprinting scaffold for bone replacement in craniofacial region
5) Development of bioabsorbable magnesium alloys for bone fixation plates and orthodontic mini-implants
6) Signaling by mechanical strain in human periodontal ligament cells in vitro

Current publications