

Advanced Course in Oral Physiology

Lecture/Lab. Academic year 1,2 credits 2,4

[Keywords] Orofacial functions, Autonomic reflexes, Regulatory system of blood flow, Salivary secretion

[Academics] Hisayoshi Ishii

[Course aims]

This course deals with orofacial functions, especially the autonomic regulation of orofacial blood flow that is important for maintaining orofacial functions such as mastication, salivation, and swallowing. In this course, students are expected to understand the principle of the trigeminal-mediated reflex method to activate the parasympathetic nervous system, and physiological experimental procedures using anesthetized animals. In addition, students are expected to understand the physiological significance of autonomic functions in the orofacial area and their regulatory systems mediated by peripheral and central nervous systems.

[Course objectives]

The goals of this course are for the student to be able to:

- (1) Explain the principle of the trigeminal-mediated reflex method.
- (2) Explain the effects of drugs using physiological experiments.
- (3) Use experimental apparatuses such as the artificial ventilator, electrical stimulator, blood flow meter, oscilloscope, etc.
- (4) Learn physiological experimental techniques using anesthetized animals.
- (5) Measure the salivary secretion and blood flow changes using the trigeminal-mediated reflex method.

[Course content]

Class	Theme	Content	Academics
1	Classroom lectures	Orofacial functions, Autonomic blood flow regulation of the orofacial area, Physiological experiments	Hisayoshi Ishii
2	Laboratory courses focused on understanding the trigeminal-mediated reflex method and learning this technique for measurements of blood flow and salivary secretion in anesthetized animals.	1) Anesthesia (Intravenous or Inhalation anesthesia) 2) Cannulations (Measurements of arterial blood pressure, heart rate, and injection of drugs) 3) Artificial ventilation 4) Activation of the nervous systems (Peripheral or Central) 5) Measurements of blood flow (Laser Doppler flowmeter or Laser speckle imaging)	Hisayoshi Ishii

[Class implementation method]

Combination of face-to-face learning and distance learning

* Class implementation depends on the implementation policy of each department (graduate school), interdisciplinary studies, and school.

[Grading policies]

Your overall grade in the class will be decided based on class attendance and reports.

[Textbook]

Students will be informed which textbook will be used.

[Reference book]

See above

[Preparation for course]

Students must understand the course objectives and prepare properly for the classes.