



Process Model of Feeding: Linking Oral Physiology and Dysphagia Rehabilitation

The process model of feeding provides an integrated framework for understanding how humans chew, manage, and swallow food through a continuous sequence of physiological events. Rather than viewing mastication and swallowing as separate functions, this model conceptualizes feeding as a coordinated process encompassing chewing, bolus formation, oropharyngeal transport, pharyngeal swallowing, and airway protection. It highlights how food properties interact with oral physiology to shape safe and efficient deglutition.

Central to this model is the temporal and spatial coordination of the jaw, tongue, hyoid, soft palate, and oropharyngeal structures. Mastication requires rhythmic jaw movements synchronized with dynamic tongue positioning to break the food into particles and form them as a bolus. During oropharyngeal transport, the tongue generates patterned pressure sequences while stabilizing against the palate, ensuring controlled propulsion toward the pharynx (so called stage II transport). This pre-swallow bolus transport and the timing of swallow initiation are significantly altered by food consistencies and gravity (body position).

The process model provides a robust foundation for the importance of mastication in dysphagia management. This presentation will connect oral physiology and clinical approaches for improving mastication and swallowing outcomes in dysphagia rehabilitation.

MARCH 9, 2026 (MONDAY)
15:00 - 16:00

(VENUE CHANGED)

ROOM 754, MENG WAH COMPLEX, HKU

CHAIR: PROFESSOR IVY CHENG



Professor Koichiro Matsuo
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About the speaker:

Professor Matsuo earned both D.D.S. and Ph.D. degrees from Tokyo Medical and Dental University, Tokyo, Japan. He joined the Department of Physical Medicine and Rehabilitation, Johns Hopkins University as a post-doctoral research fellow and an assistant professor for 6 years (2005-08). He was back to Japan in 2008, and has appointed to current position as of 2021.

He dedicates in hospital dentistry and his clinical interests are gerodontology or special care dentistry for frail elderly individuals having physical disabilities, systemic diseases, and/or feeding difficulties. His recent research has focused on oral health and oral frailty in older individuals and fundamental understanding of physiology and pathophysiology of mastication and swallowing.

Registration

