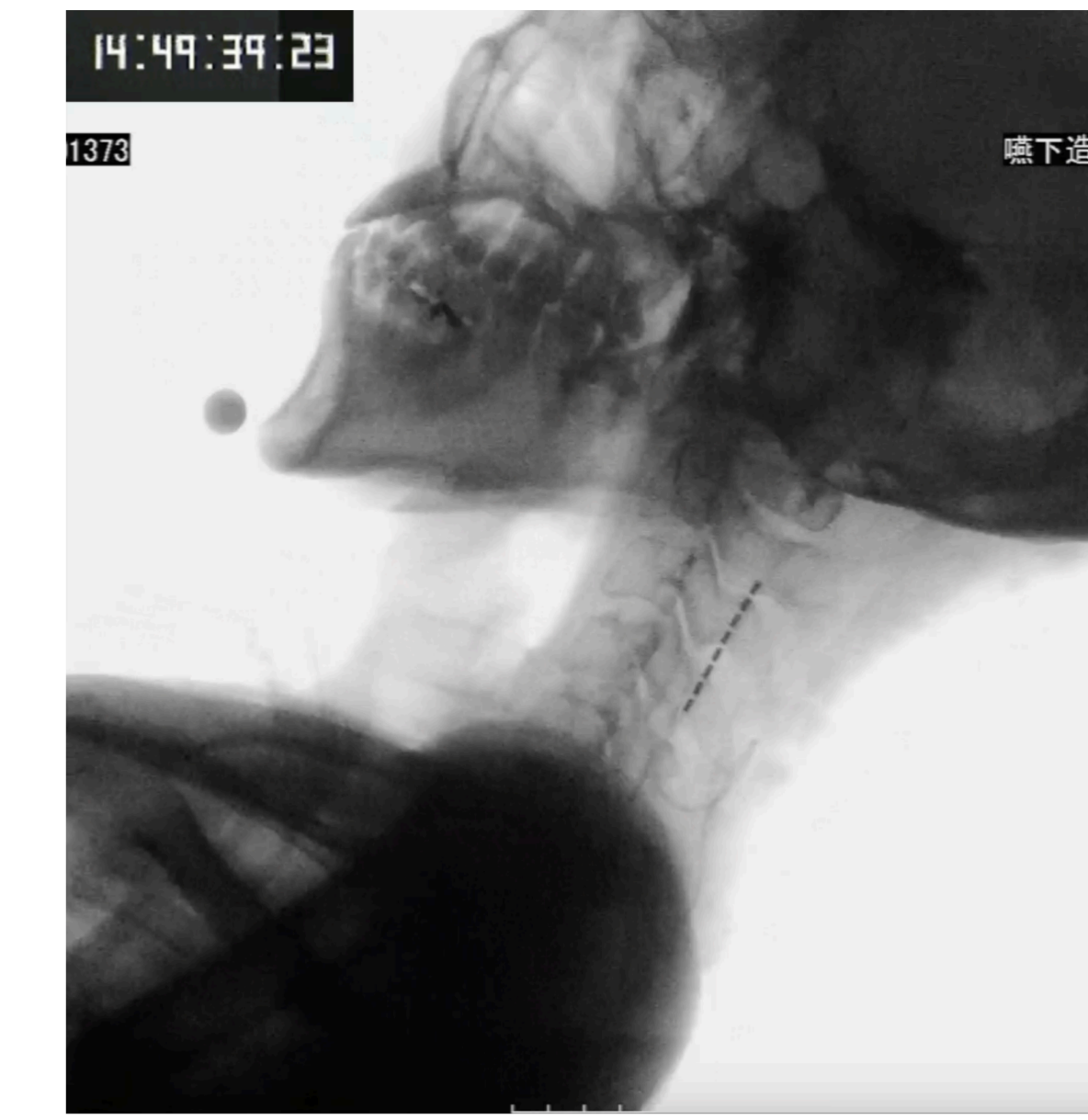


Swallowing Function and its Factors Influencing Oral Feeding in Patients with Persistent Disorder of Consciousness

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【 PURPOSE 】

Dysphagia is common for patients who experience disorders of consciousness (DOC) after severe acquired brain injury. However, there are no large studies investigating chronic swallowing dysfunction in this population.

This study aimed to describe swallowing in patients with persistent DOC after severe acquired brain injury using videofluoroscopy and to understand the factors influencing oral feeding.

【 SUBJECTS & METHODS 】

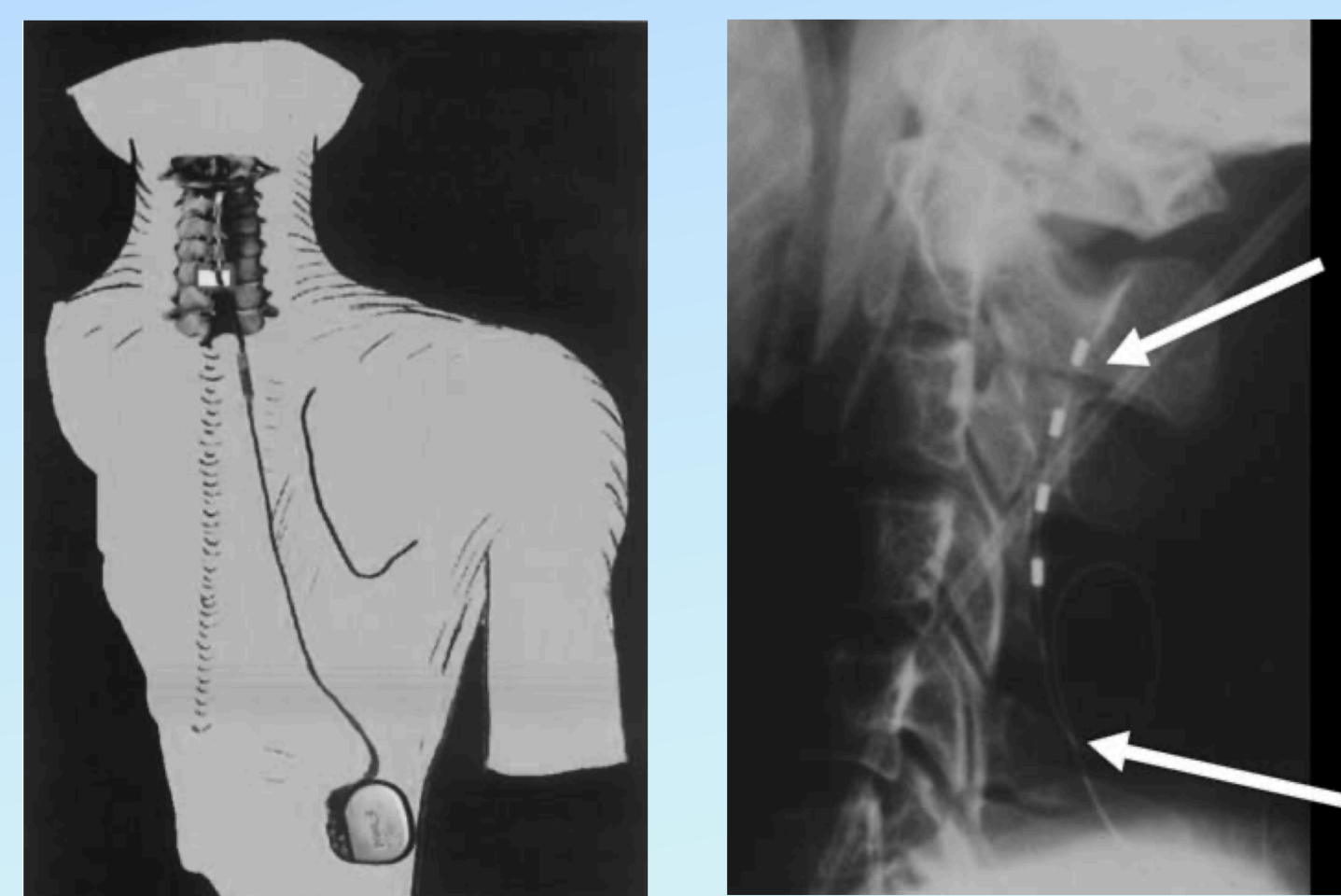
- ◆ Seven-eight patients in persistent vegetative state (37 ± 7 years old), who were hospitalized between January 2001 and October 2018 for performing treatment of DOC using dorsal column stimulation and for dysphagia rehabilitation. Average hospital stay: 20 ± 19 months.
- ◆ Three parameters were analyzed in swallow of thick liquid from videofluoroscopic study, which was performed after DCS in all patients;
 - 1) Bolus transport from the oral cavity to pharynx - active use of the tongue vs. gravity
 - 2) Spontaneous Swallowing - triggered without facilitation, triggered with facilitation, or no swallowing triggered
 - 3) Presence of aspiration and cough- Penetration-Aspiration Scale
- ◆ Relationship between these parameters and the outcome of eating status (Tube<Oral, Tube>Oral, NPO) were further analyzed.

Dorsal column stimulation

Electrodes are inserted into the epidural space at the mid-line of the C5 level and advanced crania to either the C2, C3, or C4 levels.

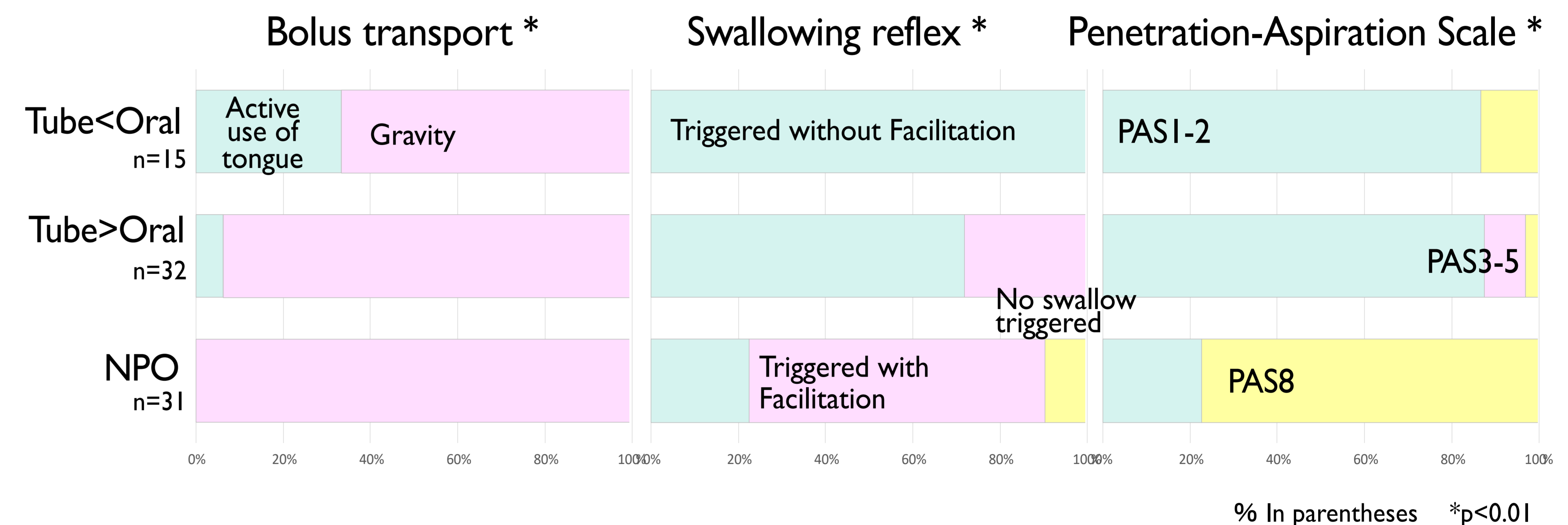
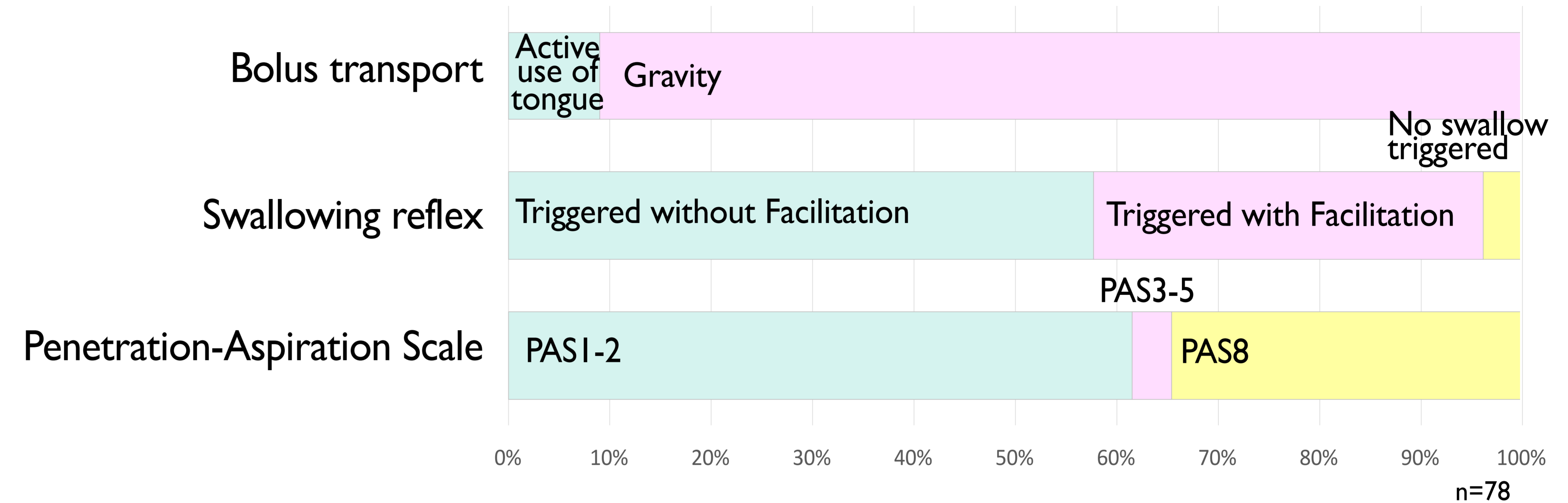
Posterior columns are stimulated.

A daily stimulation protocol – 12 hours of stimulation on during daytime hours.



Amplitude: 2.0-3.0V, a rate of 70Hz, and pulse width of 120 μ sec using a cyclic mode of 15-min on and 15-min off.

【 RESULTS 】



【 CONCLUSIONS 】

- Bolus transport was mostly due to gravity and tongue propulsion was rare in patients with DOC.
- Those who could start some oral feeding were more likely to have active bolus transport using the tongue, swallowing without facilitation, and less aspiration.
- Evaluating the ability to trigger a swallow without facilitation and the presence of aspiration is essential to determine the possibility of oral feeding for patients with DOC.
- VF is useful to evaluate risks and to identify the compensating strategies to allow for oral feeding in these patients.

Cited from Kanno T et al. Dorsal Column Stimulation in Persistent Vegetative State. *Neuromodulation*. 12; 33-39, 2009