

EXPANDED ABSTRACT**Parotid salivary secretion induced by stimulation of periodontal regions with toothbrush in humans**Kiyotoshi Inenaga¹, Tomohiro Inangaki^{1,2}, Ryuji Hosokawa², and Kentaro Ono¹*¹Division of Physiology, Department of Biosciences, ²Division of Oral Reconstruction and Rehabilitation, and Department of Oral Functional Reconstruction, Kyushu Dental College, Kitakyushu, Japan*

Abstract : The act of brushing teeth induces salivary secretion (1). However, there is no evidence to show which particular regions of the teeth and oral cavity in brushing induces the most effective salivary secretion. We investigated the effects of tooth brushing in different oral regions on parotid salivary secretion in humans. Saliva was collected using a modified Lashley cup. Brushing of the gingival margin was performed according to the Bass method, which may stimulate periodontal mechanoreceptors. The occlusal surface of the molars, gingiva, tongue, and palatal rugae were also brushed with a toothbrush. Compared to the flow rate of saliva from the unstimulated parotid gland, the salivary flow rates were enhanced when every oral region was brushed. The flow rate produced by brushing the palatal gingival margin of the ipsilateral maxillary molars was greater than that produced by brushing the occlusal surface of ipsilateral maxillary molars and palatal gingiva beside the molars. The flow was also significantly greater than that produced by brushing the palatal gingival margins of the contralateral maxillary molars, the maxillary/mandibular incisors, the dorsum of tongue and the palatal rugae. No significant difference was observed between brushing the gingival margins of the ipsilateral maxillary versus mandibular molars. These data indicate that brushing the gingival margin of molars is the most effective region to stimulate parotid saliva secretion. This likely activates periodontal mechanoreceptors, and this technique may be a simple way to improve salivary secretion in oral rehabilitation. The degree of salivary secretion caused by brushing the teeth is specific to particular oral regions. Brushing of the gingival margins is the most effective location to induce parotid salivary secretion. *J. Med. Invest.* 56 Suppl. : 277, December, 2009

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Address correspondence and reprint requests to Kiyotoshi Inenaga, Division of Physiology, Department of Biosciences, Kyushu Dental College, 2-6-1, Manazuru, Kokurakita, Kitakyushu 803-8580, Japan and Fax : +81-93-582-8288.

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