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Original Articles

Functional Changes of Temporomandibular Joint Mechanoreceptors Induced by Reduced Masseter Muscle Activity in Growing Rats

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Abstract

Objective: To determine the influence of masseter muscle activity during growth on the functional characteristics of temporomandibular joint (TMJ) mechanoreceptors.

Materials and Methods: Sixty-six 3-week-old male Wistar rats were divided into an experimental group, in which the masseter muscles were bilaterally resected at 3 weeks of age, and a control group. Single-unit activities of the TMJ mechanoreceptors were evoked by indirect stimulation of passive jaw movement. Electrophysiologic recordings of TMJ units were made at 5, 7, and 9 weeks of age.

Results: During this period, the firing threshold of the TMJ units was significantly lower and the maximum instantaneous frequency of the TMJ units was significantly higher in the experimental group than in the control group.

Conclusion: Reduced masseter activity during the growth period alters the response properties of TMJ mechanoreceptors.

Keywords: [Temporomandibular joint](#), [Mechanoreceptor](#), [Masseter muscle activity](#), [Primary afferent](#), [Mandible](#), [Rat](#)

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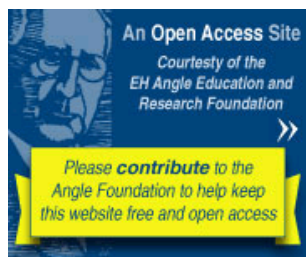
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