

**THE ACTIVITY PATTERN OF THE GENIOGLOSSUS MUSCLE DURING
CORTICALLY EVOKED RHYTHMIC JAW MOVEMENTS IN THE
ANESTHETIZED RABBIT**

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Previous studies have shown that the genioglossus (Gg) muscle has varying activity patterns during different types of jaw movements in anesthetized as well as freely behaving animals. The objective of this study was to ascertain the burst pattern of the Gg muscle during mastication, evoked by stimulation of the cortical masticatory area in the anesthetized animal.

Experiments were carried out on six Japanese white rabbits weighing 2.0 - 2.5 kg, anesthetized with urethane. Electromyographic activity (EMG) was recorded using copper wire electrodes which were inserted into the masseter (Mas) muscle, Gg muscle, digastric and styloglossus muscles. Jaw movements were tracked using a laboratory made pair of magnet sensors and a magnet fitted to the mandible. The cortical masticatory area was stimulated electrically. A locus, which brought about crescent shaped jaw movements was found and the electrode was fixed. A recording was made for 30 seconds during cortically evoked rhythmic jaw and tongue movements (CRJTM) (Control). A wooden stick was inserted (Insertion) between the molar teeth during the latter 15 seconds of CRJTM. Three such trials were recorded with an interval of 5 minutes in between trials.

The Gg muscle was active at the same time as the digastric muscle in the jaw opening phase while the Mas muscle was active with the styloglossus muscle during the jaw closing phase. The Gg muscle had a double burst activity in one masticatory cycle. The first burst had its onset, peak and offset in the early jaw opening phase. The second burst was active immediately after the first burst and the offset of this burst was during the early part of the jaw closing phase. During insertion the activity of both bursts of the Gg muscle were increased.

Further studies are necessary to ascertain if this is the case in the freely behaving animal also.