

Muscle fiber type composition, fiber diameter, capillary density in temporalis and masseter muscles and correlation with bite force [Tipos de fibras musculares, diámetro de fibras y densidad capilar en los músculos masetero y temporal y su correlación con la fuerza de mordida]

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The jaw muscles are essential components in the stomatognathic system. Their complex architecture allows them to execute several motor tasks. One of the structural peculiarities is the presence of hybrid and neonatal fibers. We studied the differences of the fiber-type in masseter and temporalis muscles along the first to ninth decades in both genders. Seventy-four (74) samples were analyzed by immunohistochemistry. Slow and fast muscle fibers distribution was similar in both muscles in both genders. Hybrid fiber was observed in all decades, and its frequency decreased significantly ($p < 0.001$) with aging in masseter. Neonatal myosin expression was observed in all decades, its expression was more frequent in masseter ($p = 0.01$), and males in temporalis ($p = 0.025$). Decrease of the cross sectional area of fast and slow fibers, and decrease of capillary density were detected with aging. These morpho-immunohistochemical alterations on masseter and temporalis muscles correlated to the decrease in bite force with aging.

Bite force

Capillary density

Masseter

Muscle fiber type

Temporalis