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## **Masseter muscle thickness in growing individuals and its relation to facial morphology.**

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It is widely accepted that an interaction exists between masticatory muscle function and craniofacial growth. In adults, correlations have been found between facial dimensions and jaw-muscle cross-sectional area, and between facial dimensions and masseter muscle thickness. Little is known about growth of the human masticatory muscles and its relation with facial dimensions at different ages. In 329 Greek individuals, aged 7-22 yr, masseter muscle thickness was measured by ultrasonography. Muscle thickness was related to age, stature and weight, and to facial dimensions, measured by means of anthropological calipers. Muscle thickness was statistically assessed by univariate analysis of variance, after the males and females had been divided into three age groups. Facial dimensions were assessed by multivariate analysis of variance, age being considered as a covariate. The relation between muscle thickness and facial dimensions was subjected to stepwise multiple regression analysis. Masseter muscle thickness increased with age in both sexes. No differences were found between the left- and right-hand side. For each age group (and corrected for stature and weight), males had significantly thicker masseters than females ( $p < 0.01$ ). Variation in muscle size and facial dimensions mainly coincided with variation in age, stature and weight. Apart from these, muscle thickness showed a significantly negative relation with anterior facial height and mandibular length, and a significantly positive relation with intergonial width and bizygomatic facial width.

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