

## MUSCULOSKELETAL BIOMECHANICS IN THE HUMAN JAW

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Most computer simulations treat the mandible as a rigid or as a flexible beam acted upon by muscles capable of differential contraction, and predict dental and articular reaction forces at selected sites. The more advanced models employ finite element analysis to include estimations of local skeletal stress, strains and deformations. It seems certain that the jaw bends three-dimensionally in a complex manner when loaded by muscle action, and how it does so depends on the clenching task. In addition, compressive loads on the mandibular condyles vary with the bite point, and are unevenly distributed between them with asymmetric biting on the dental arches. The problem of morphological definition is difficult to overcome, since this varies so much between individuals, especially when accompanied by pathology. Variations in jaw motion are common too, making it hard to define normal patterns of behavior.

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