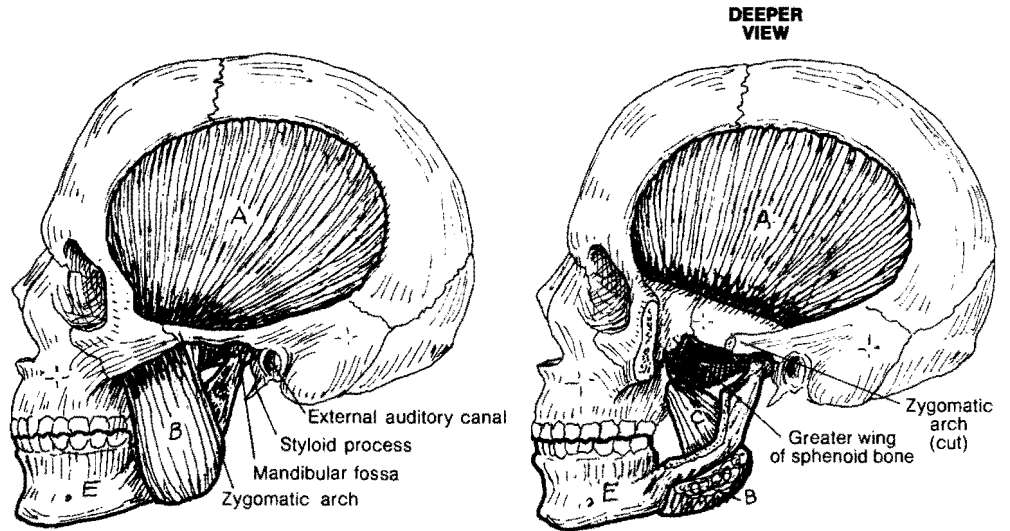


V. MUSCULAR SYSTEM/HEAD

MUSCLES OF MASTICATION

CN: Use a bright, yellowish color for the mandible (E) which appears in all the illustrations.
 (1) Begin at the upper left and work your way through the various movements of the mandible.
 (2) In coloring the temporomandibular joint, note that the superior and inferior joint spaces (I, I') are colored black.

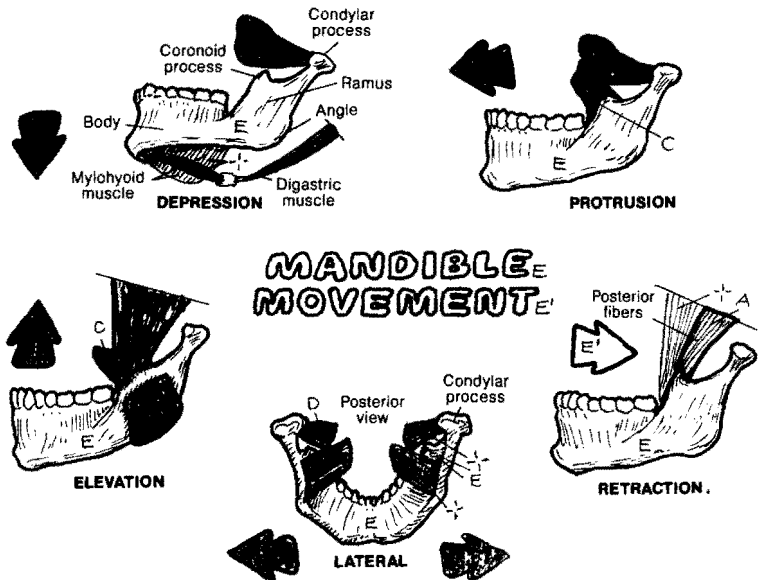
- MUSCLES:***
- TEMPORALIS^A**
 - MASSETER^B**
 - MEDIAL PTERYGOID.^C**
 - LATERAL PTERYGOID.^D**



The act of chewing is called mastication. The *muscles of mastication* move the temporomandibular joint and are largely responsible for elevation, depression, protrusion, retraction, and lateral motion of the mandible. These muscles function bilaterally to effect movements of the single bone (mandible) at two joints.

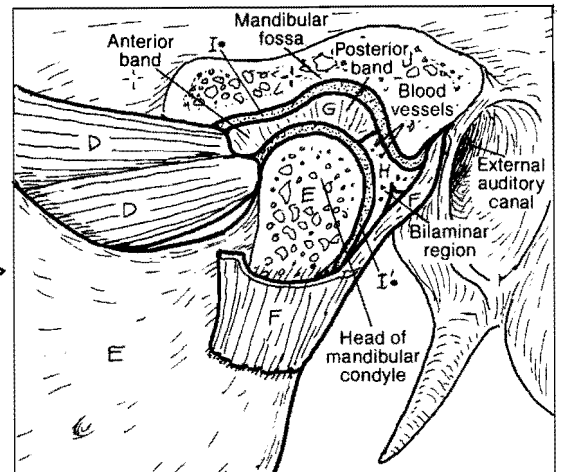
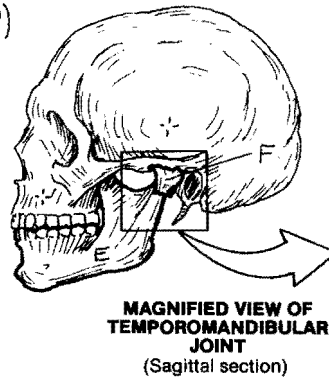
The *temporalis* and *masseter* muscles are often contracted unconsciously (clenching teeth) when stressed, giving rise to potentially severe bilateral and preauricular headaches. The muscles can easily be palpated when contracted.

The *medial and lateral pterygoids* are in the infratemporal fossa and cannot be palpated. In the lowest drawing at right, note how the two heads of the lateral pterygoid insert on the anterior part of the articular disc. During mouth opening, the muscle pulls the articular disc forward as the mandibular head rotates forward in the fossa. On mouth closing, the muscle relaxes, permitting the disc to move posteriorly. Rapid, forced jaw opening may disrupt the articular disc.



TEMPOROMANDIBULAR* (CRANIOMANDIBULAR) JOINT:*

- JOINT CAPSULE^F**
- ARTICULAR DISC (MENISCUS)^G**
- RETRODISCAL PAD^H**
- SUP. JOINT SPACE^I**
- INF. JOINT SPACE^{I'}**



The mandible has two condylar processes (left and right) each of which articulates with a mandibular fossa of the temporal bone. Two *temporomandibular joints* are connected by one bone, hence the alternate term: *craniomandibular joint*. Intervening between the mandibular fossa and the head of the condylar process is a fibrocartilaginous, movable oval plate called the *articular disc* or *meniscus*. The disc embodies two (anterior and posterior) avascular fibrous bands, their long axes directed in the coronal plane. The two bands are separated by a thinner intermediate zone. With closed mouth, the mandibular head rests against the posterior band; with full opening (35-50 mm between upper and lower incisors), the head lies against the anterior band. Posterior to the disc is the *retrodiscal pad*, a

two-layered (bilaminar) region of loose fibrous, vascular, sensitive connective tissue from which the disc gets its nutrition. Medially and laterally, the disc is attached to the condyle of the mandible. The mandibular head, the disc, and the fossa are enclosed by a joint capsule. The disc divides the joint space into two compartments, one above and one below the disc. The disc may be structurally incomplete from birth, even perforated. It frequently tends to fray with aging. Disc displacement may be responsible for clicking and limited range of jaw motion.