

# The Important Muscles in Dentistry – The Muscles of Mastication

Zoha Haider • Issue 2

What’s the first thing that comes to mind when you hear the word “Dentistry”? Teeth, right? The human dentition is one of our main foci as dental students and it’s easy to overlook the importance of another anatomical essentiality, namely muscles. During the patient screening process, whilst conducting an extraoral examination, we check the function of the lymph nodes, TMJ, and the muscles essential to normal oral function.

## The Muscles of Mastication

Mastication (chewing) is not something we frequently think about, but it is an essential and complex action vital for the digestion of food.

The muscles of mastication aid jaw movements and are one of the main muscle groups present within the head, (the other being the muscles of facial expression). There are four muscles of mastication – the masseter, temporalis, medial pterygoid and lateral pterygoid. Each muscle has its own origin, insertion and specific function to assist mastication. (1)

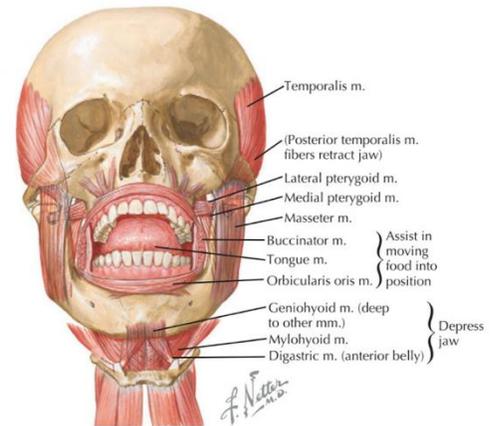


Figure 1: The Muscles of Mastication (1)

### 1. Masseter

The strongest muscle of mastication composed of two heads – one superficial and one deep. It works to **elevate and protrude the mandible** and helps with lateral excursion (sideways movement). (1)

	Masseter: Superficial Head	Masseter: Deep Head
Origin	Maxillary process of the zygomatic bone and the anterior 2/3 of the zygomatic arch	Medial border of zygomatic arch Inferior border of posterior 1/3 of zygomatic arch
Insertion	Angle of mandible	Coronoid process
Innervation	Masseteric nerve from the V <sub>3</sub> mandibular division of the trigeminal nerve	
Clinical Examination	Inspect visually and palpate. Place fingers over cheek, posterior to the third molar region, and ask patient to clench their teeth	

Table 1: The Masseter Muscle (1) (2)

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## Temporalis

The temporalis is the main postural muscle involved with upholding the mandible at rest. It is responsible for **elevation and retrusion of the mandible**. (2) Along with the masseter, it aids the mandible in lateral excursion. (1)

	Temporalis
Origin	Temporal Fossa
Insertion	Coronoid process of the mandible, medial surface of the anterior border of the ramus, and the temporal crest of the mandible
Innervation	Deep temporal nerves from the V <sub>3</sub> mandibular division of the trigeminal Nerve
Clinical Examination	Place two fingers over the patient's temples and ask them to clench their teeth several times

Table 2: The Temporalis Muscle (1) (2)

## Medial Pterygoid

Similar to the masseter, the medial pterygoid muscle also has deep and superficial heads, which work to **elevate and protrude the mandible**, and assist lateral excursion. (1)

	Medial Pterygoid: Superficial Head	Medial Pterygoid: Deep Head
Origin	Maxillary tuberosity	Medial surface of the lateral pterygoid plate
Insertion	Medial surface of the ramus and angle of the mandible	
Innervation	Medial Pterygoid branch of V <sub>3</sub> Mandibular division of the Trigeminal nerve	
Clinical Examination	Place two fingers at a 45° angle to the base of the relaxed tongue and angle of the mandible and palpate	

Table 3: The Medial Pterygoid Muscle (1) (3)

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## Lateral Pterygoid

The lateral pterygoid muscle also has two heads, and acts to **depress and protrude the mandible**, as well as aid lateral excursion. (1)

	Lateral Pterygoid: Superior Head	Lateral Pterygoid: Inferior Head
Origin	Greater wing of the sphenoid bone	Lateral surface of the lateral pterygoid plate
Insertion	Articular disc and fibrous capsule of the TMJ	Neck of the condyle of the mandible
Innervation	Lateral pterygoid branches of the V <sub>3</sub> mandibular division of the trigeminal nerve	
Clinical Examination	Place index finger lateral to the maxillary tuberosity and medial to the coronoid process. Press the finger upwards and inwards and a painful response can be gauged	

Table 4: The Lateral Pterygoid Muscle (1)

## Bibliography

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