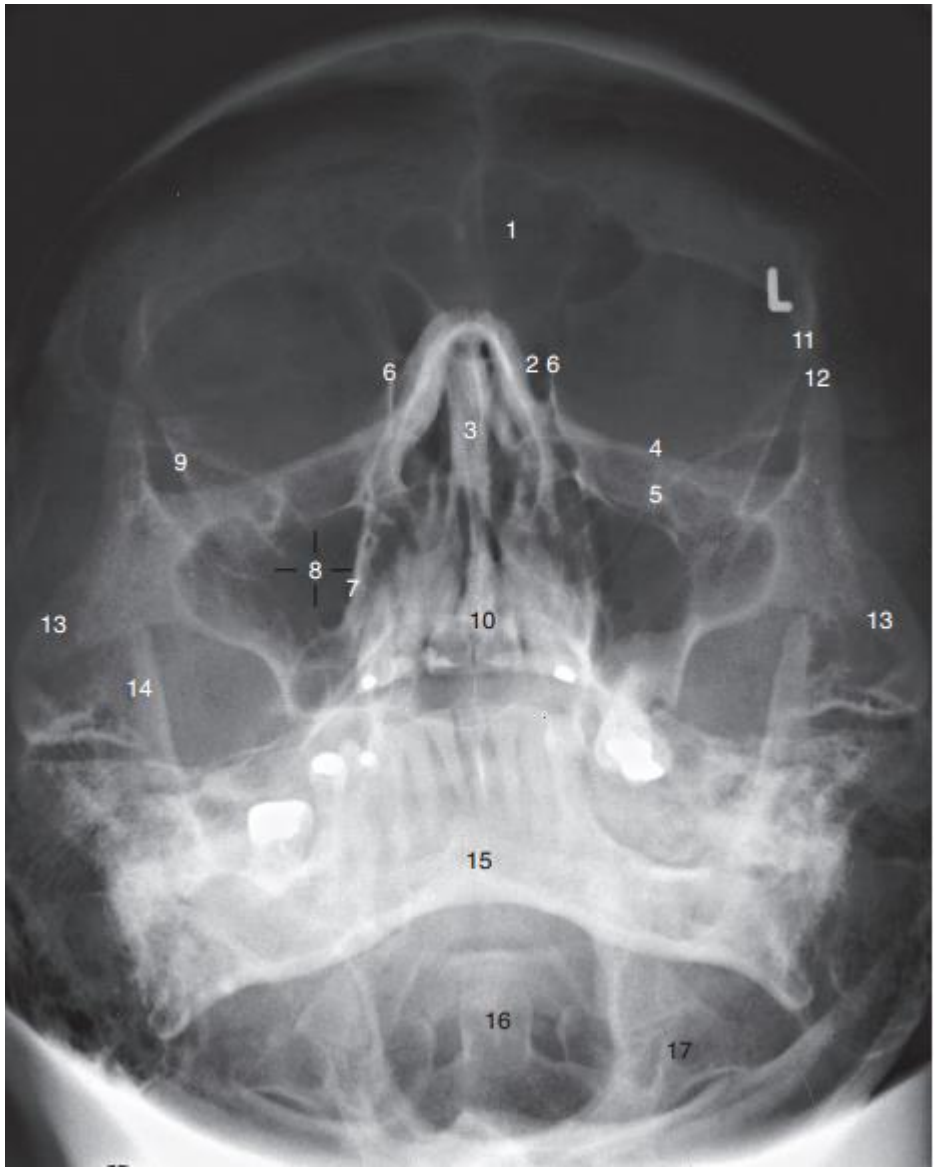
The Facial bones

Dr Zaid Saad Alnasrawi
Dr Maythem Ali Alaraji
Trauma and Orthopedics surgery

The facial bones

Several bones contribute to the bony skeleton of the face

The maxillae, zygomata and mandible contribute most to the shape of the face, and **the orbits, nose and paranasal sinuses** form bony cavities contained by the facial skeleton



1. Frontal sinus
2. Ethmoid sinus
3. Nasal septum
4. Inferior orbital rim
5. Infraorbital foramen
6. Lamina papyracea (medial wall of orbit)
7. Medial wall of maxillary sinus
8. Maxillary sinus
9. Innominate line
10. Anterior nasal spine
11. Zygomatic process of frontal bone
12. Zygomaticofrontal suture
13. Zygomatic arch
14. Coronoid process of mandible
15. Body of mandible
16. Odontoid process of C_2
17. Transverse process and foramen transversarium of C_1

The zygoma

This forms the eminence of the cheek and is also known as the **malar bone**

It is a thin bony bar that articulates with the frontal, maxillary and temporal bones

The zygoma forms the lateral boundary of the **temporal fossa above and the infratemporal fossa below**

The nasal bones

The paired nasal bones are attached to each other and to the nasal spine of the frontal bone

They are grooved on their deep surface by one or more anterior ethmoidal nerves

These vertically oriented grooves can be seen on a radiograph and should not be mistaken for fractures

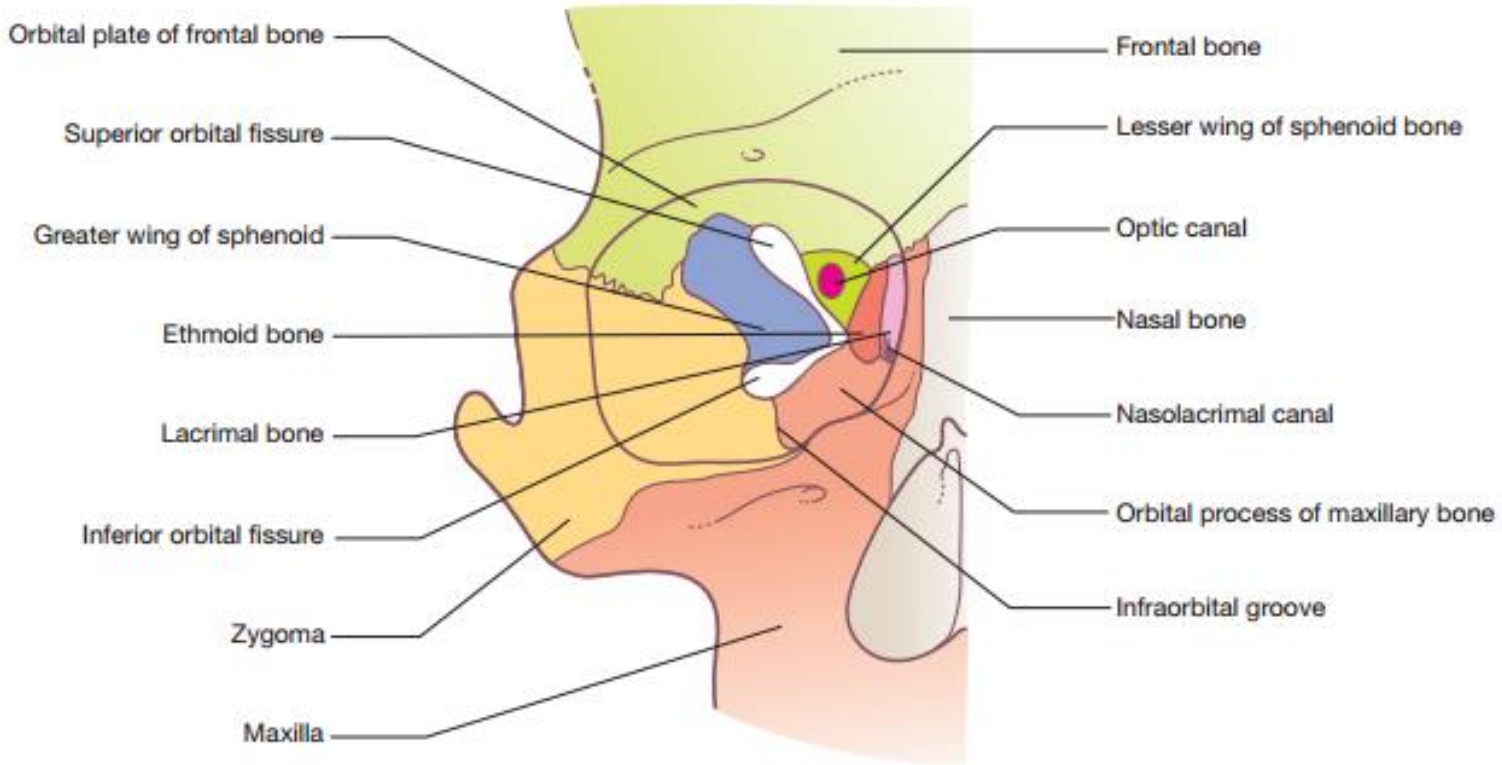
1. Frontonasal synchondrosis
2. Nasal spine of frontal bone
3. Groove for anterior ethmoidal nerve

The bony orbit

The orbit is a **four-sided** pyramidal bony cavity

The base of the pyramid is open and points anteriorly to form the orbital rim

Lateral, superior, medial and inferior walls converge posteromedially to an apex , on to which the optic foramen opens, transmitting the optic nerve and ophthalmic artery from the optic canal


Orbital plate of frontal bone
Superior orbital fissure
Greater wing of sphenoid
Ethmoid bone
Lacrimal bone
Inferior orbital fissure
Zygoma
Maxilla
Frontal bone
Lesser wing of sphenoid bone
Optic canal
Nasal bone
Nasolacrimal canal
Orbital process of maxillary bone
Infraorbital groove

The lateral orbital wall is strong and is formed by the zygomatic bone in front and the greater wing of sphenoid behind

It separates the orbital cavity from the temporal fossa

The superior wall, or roof, is thin and separates the orbit from the anterior cranial fossa

It is formed by the orbital plate of the frontal bone in front and the lesser wing of sphenoid behind

The medial orbital wall is a thin bone contributed by maxillary, lacrimal and ethmoid bones.

It separates the orbit from the nasal cavity, ethmoid air cells and anterior part of sphenoid

The bone between the orbit and ethmoids is paperthin and is known as **the lamina papyracea**

The inferior wall, or floor, is formed by the orbital process of the maxillary bone, separating the orbit from the cavity of the maxillary sinus

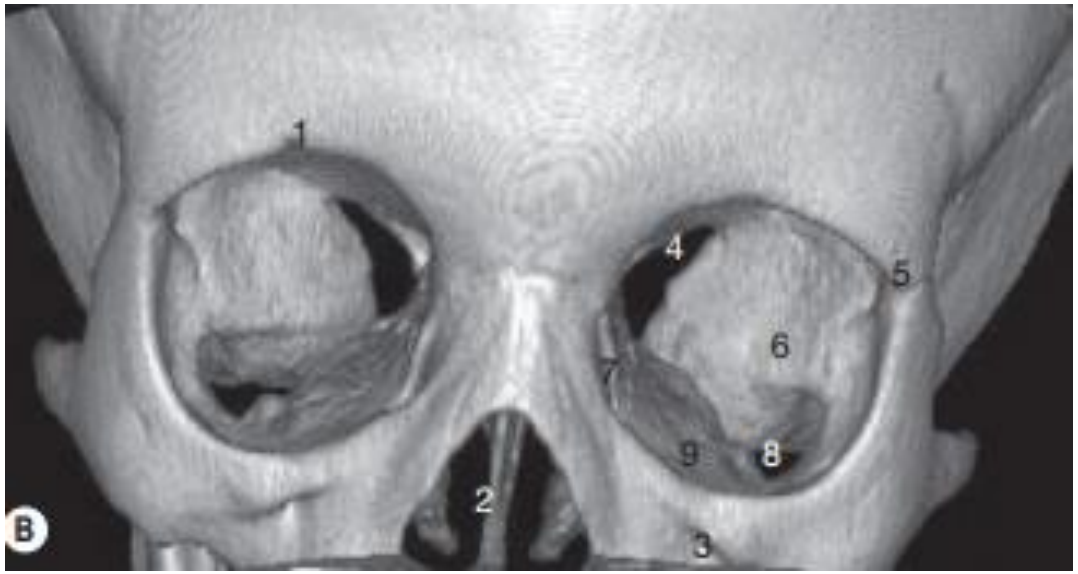
The superior orbital fissure is a triangular slit between the greater and lesser wings of sphenoid

It transmits the first division of the fifth,

and the third, fourth and sixth cranial nerves, as well as the superior ophthalmic veins

The inferior orbital fissure is a slit between the lateral and inferior walls of the orbit as they converge on the apex

It transmits the infraorbital nerve



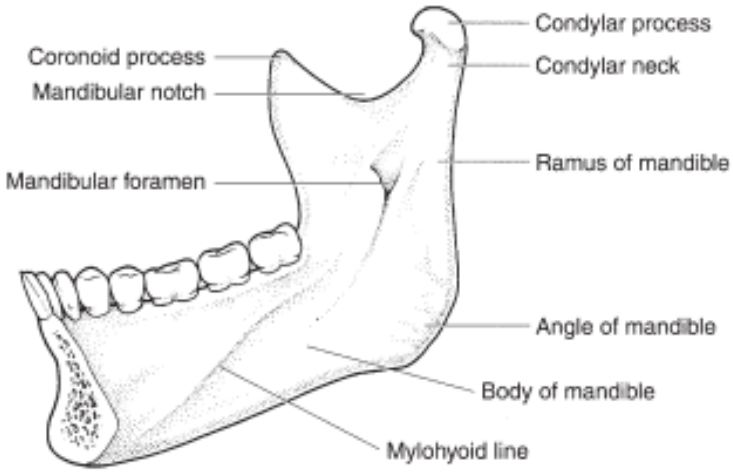
1. Supraorbital notch
2. Nasal septum
3. Infraorbital foramen
4. Superior orbital fissure
5. Zygomaticofrontal suture
6. Greater wing of sphenoid
7. Nasolacrimal canal
8. Lateral aspect of inferior orbital fissure
9. Orbital process of maxillary bone

The mandible

The mandible is composed of two halves united **at the symphysis menti**

Each half comprises a horizontal body and a vertical ramus joined at the angle of the mandible

The ramus has two superior projections, the coronoid process anteriorly and the condylar process posteriorly, separated by the mandibular (or condylar) notch

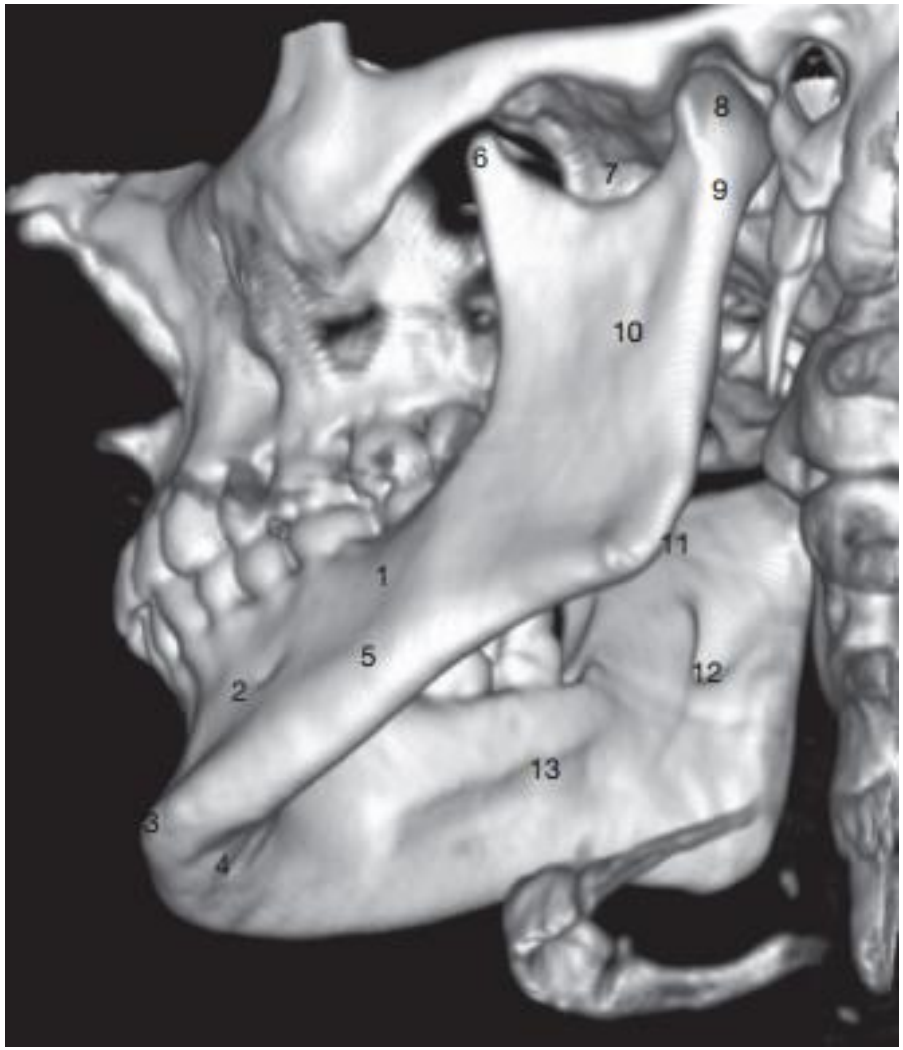


The temporomandibular joint

This is a synovial joint between the condyle of the mandible and the temporal bone

The temporal articular surface consists

of a fossa posteriorly, the temporomandibular fossa , and a prominence anteriorly, the articular tubercle



1. Oblique line
2. Mental foramen
3. Mental protuberance
4. Mental tubercle
5. Body of mandible
6. Coronoid process
7. Mandibular notch
8. Condylar process
9. Neck
10. Ramus
11. Angle
12. Mandibular foramen
13. Mylohyoid line

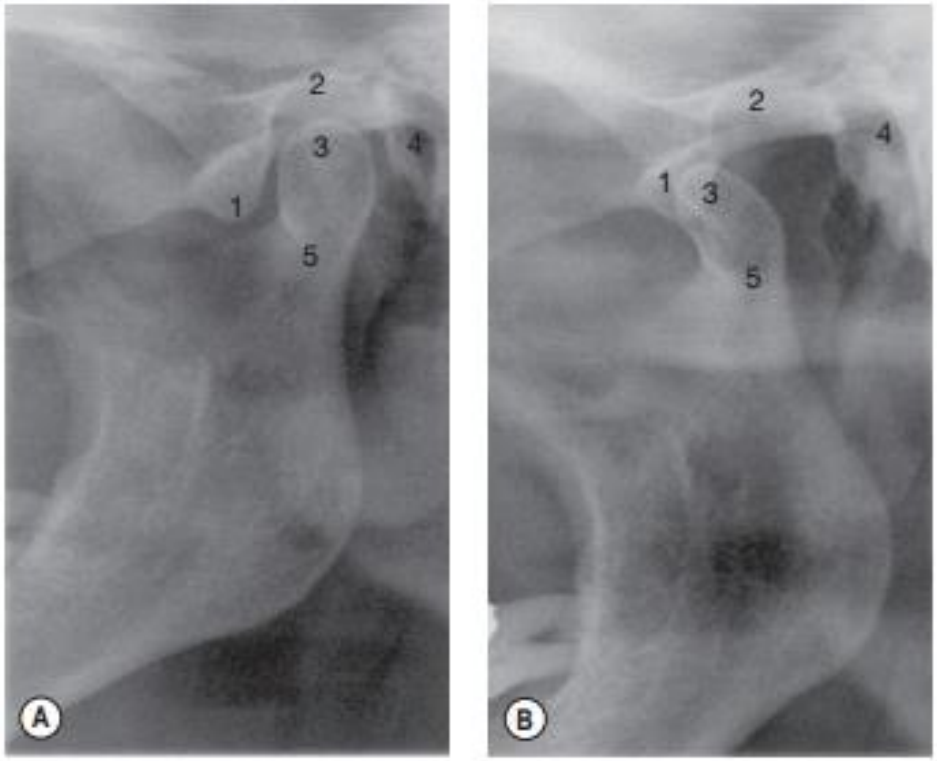


Figure 1.15 • Radiographs of temporomandibular joints, (A) closed mouth and (B) open mouth views.

1. Articular tubercle
2. Temporomandibular fossa
3. Head
4. External auditory meatus
5. Neck