



Notes on the Head

Anatomy

RHS 241

Lecture 18

Dr. Einas Al-Eisa

Skull

- Bones of the skull:
 - The **cranium** (cranial skeleton): supports, surrounds, and protects the brain
 - The **facial skeleton**, which includes the **mandible** (lower jaw)

Skull

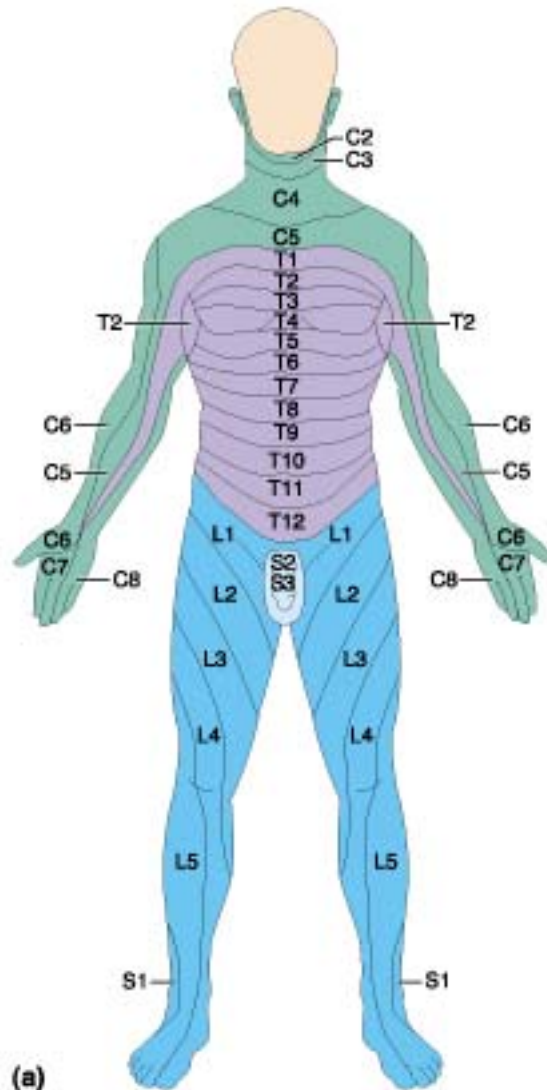
- Bones of the skull are held together by joints termed **sutures** (no movement)
- The mandible articulates with the skull by synovial joints (**tempromandibular joint**)

Cranium

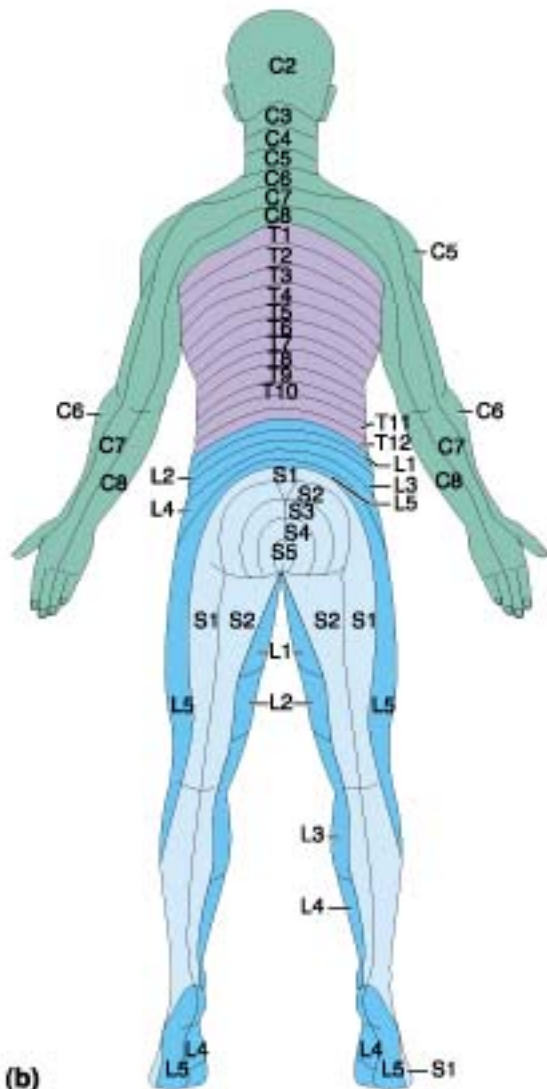
- **Frontal bone** (unpaired)
- **Parietal bones** (paired, posterior to the frontal bone)
- **Occipital bone:** forms the most posterior portion of the skull (unpaired)
 - **Foramen magnum:** through which the lower part of the brainstem joins the spinal cord

Cranium

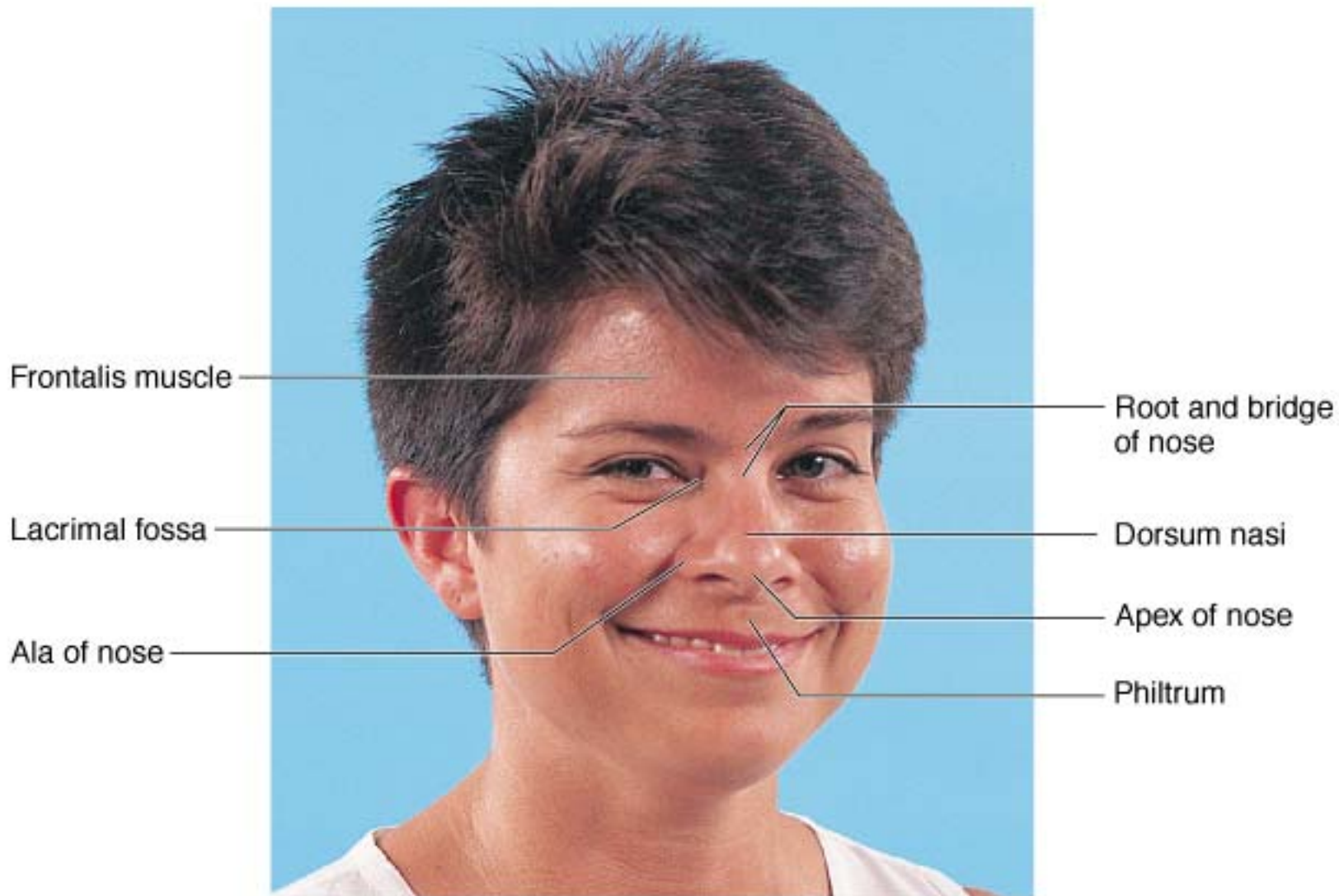
- **The sphenoid:** unpaired bone anterior to the occipital bone in the floor of the cranial cavity
- **The ethmoid** bone: unpaired bone between the cranial cavity and the nose in the floor of the skull- helps to form the septum separating the two nasal passages

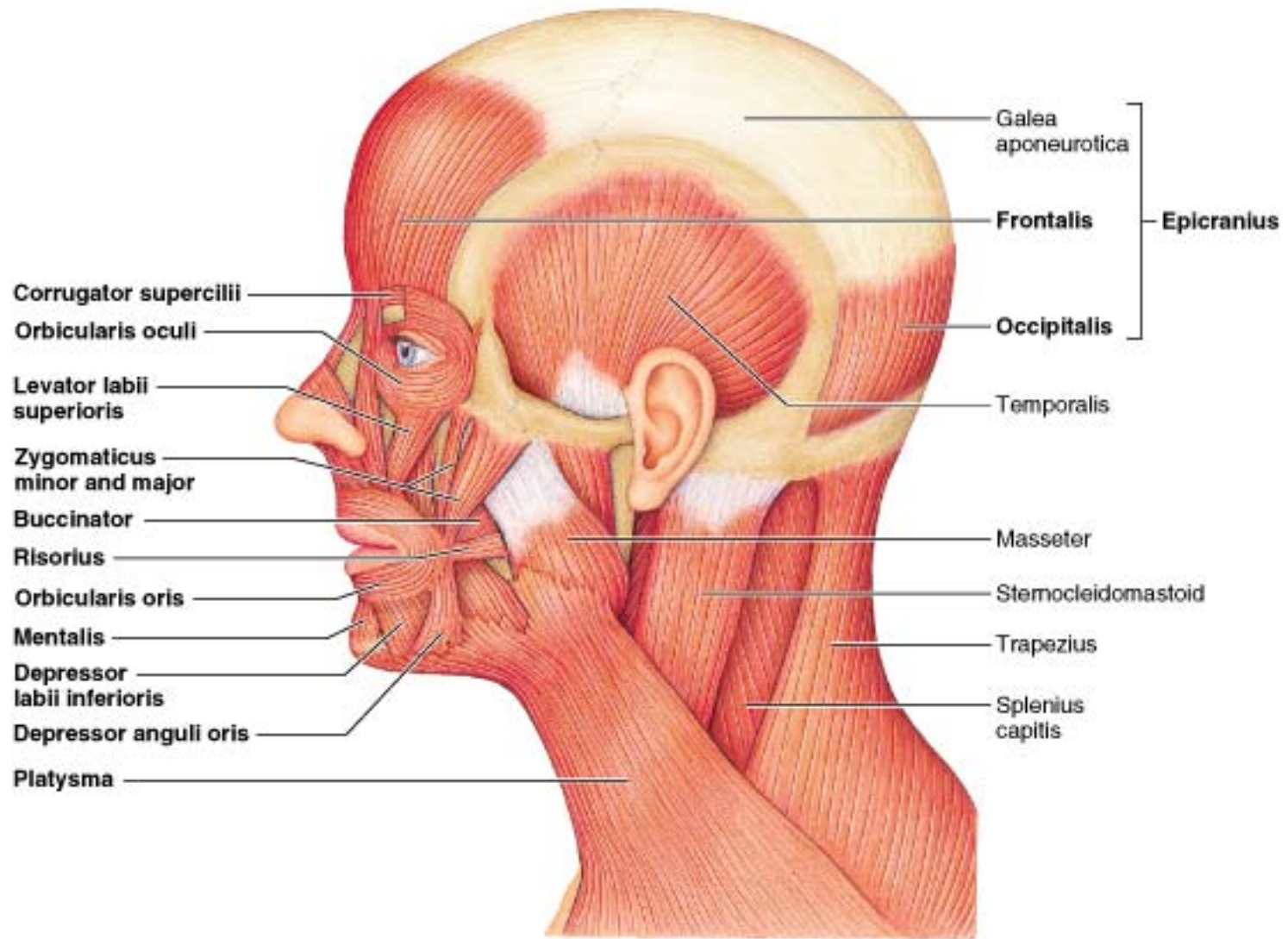


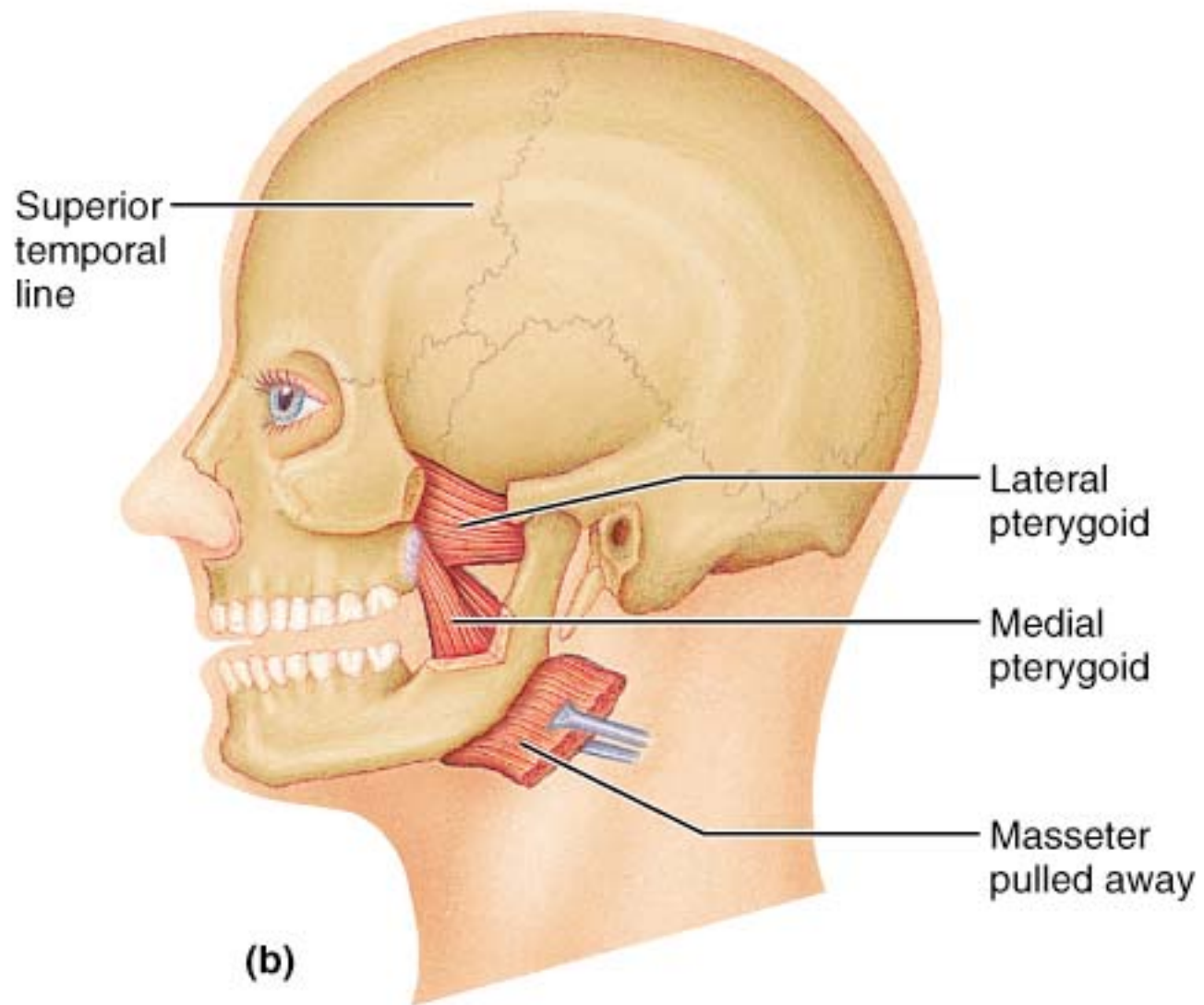
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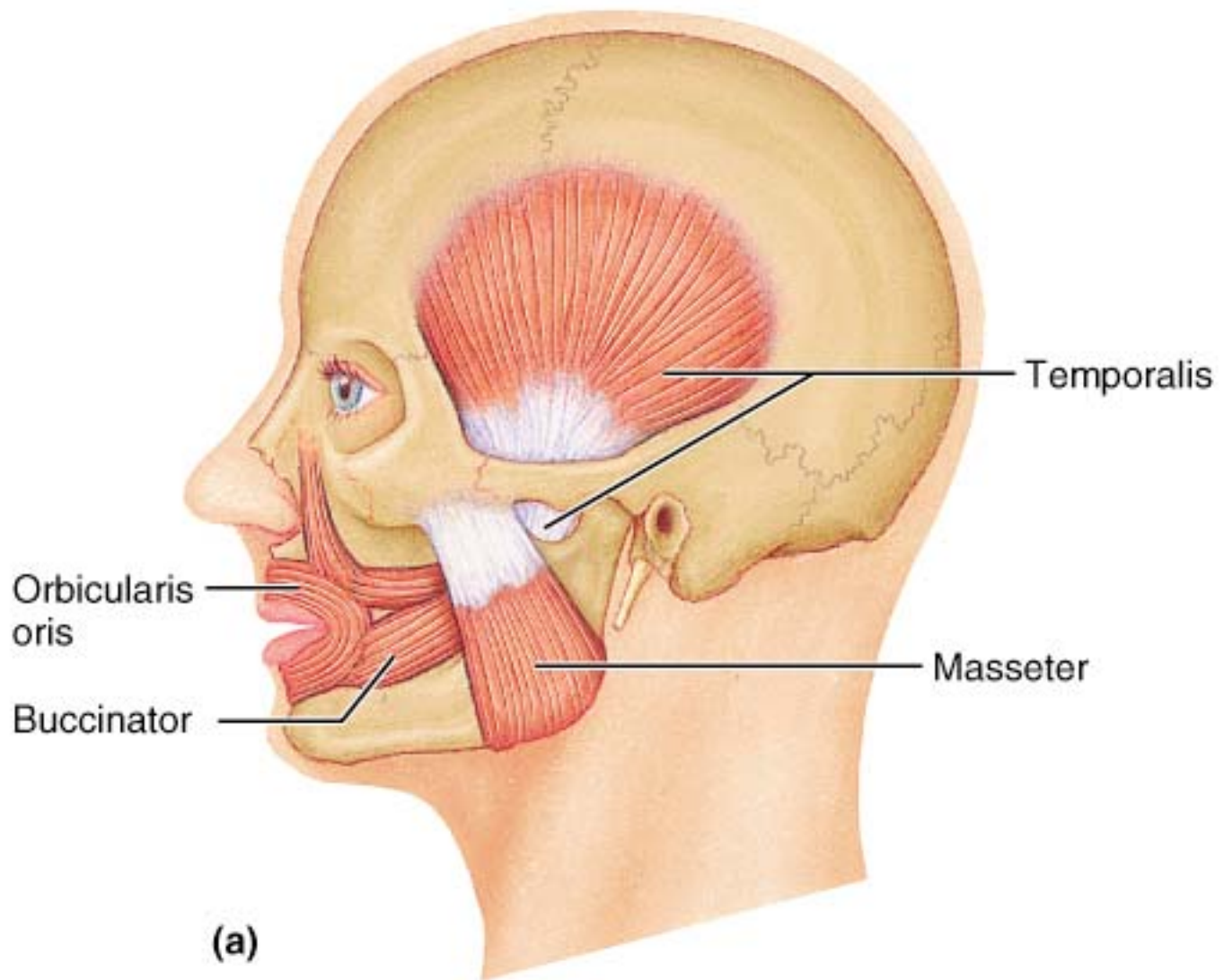


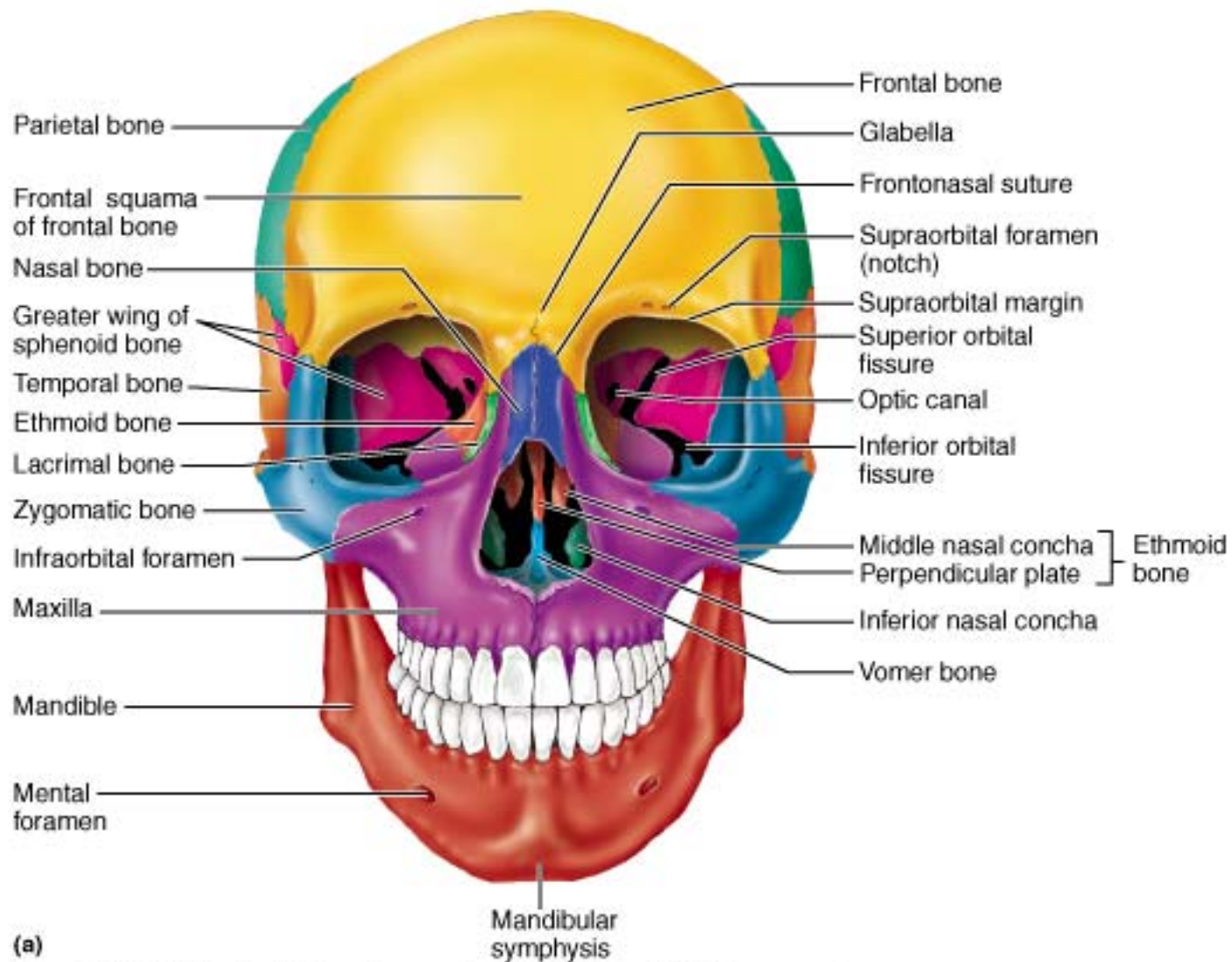
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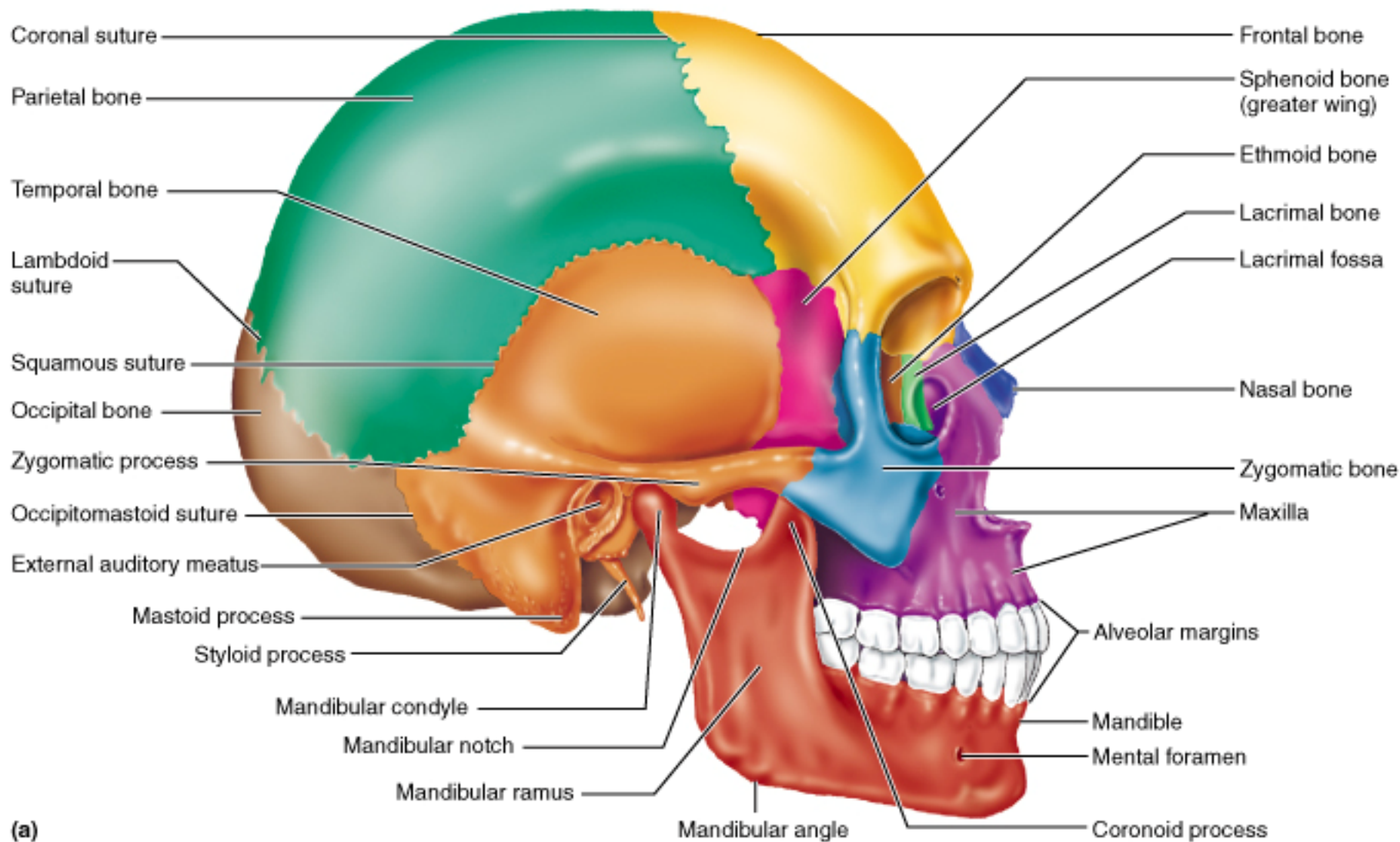






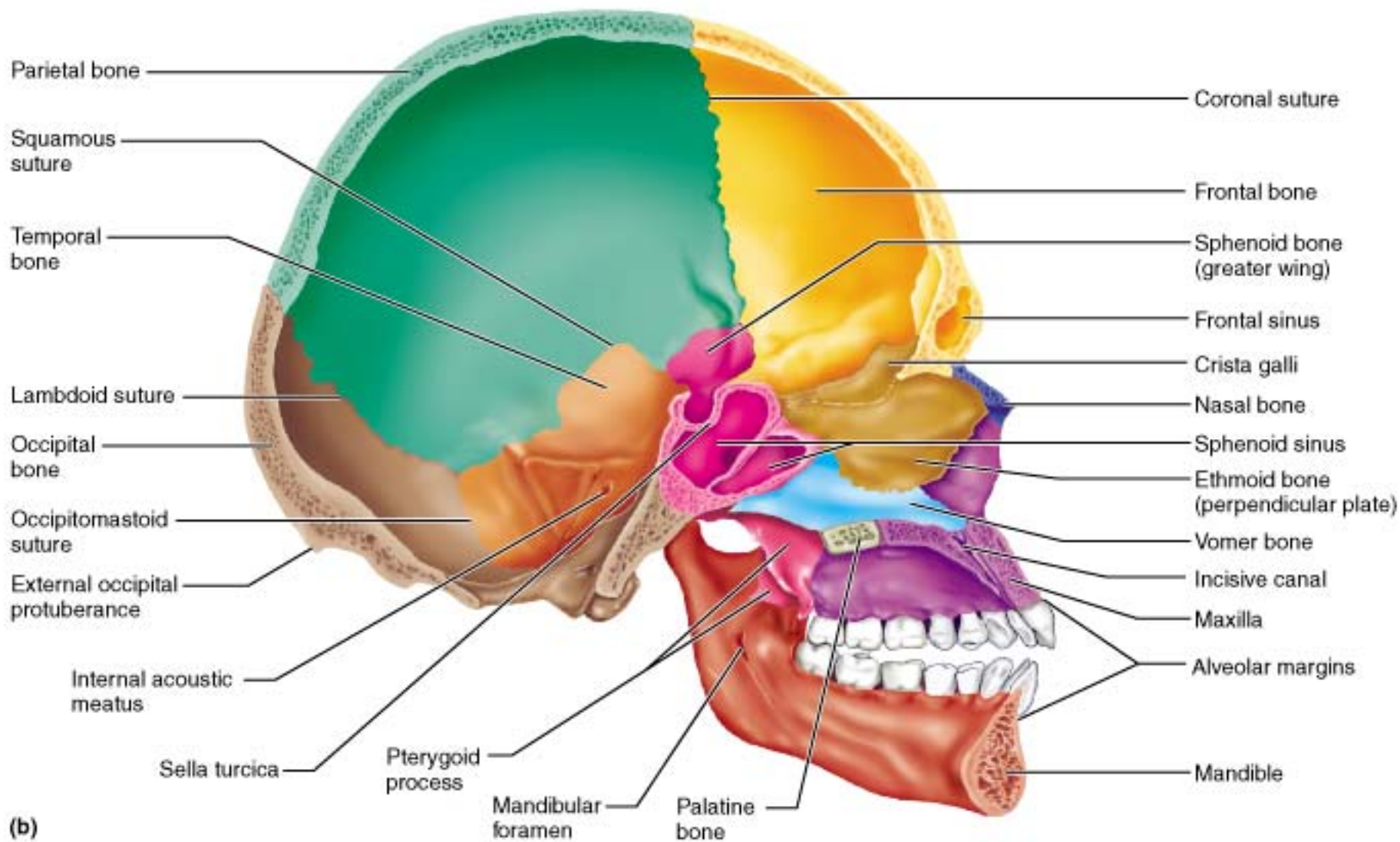






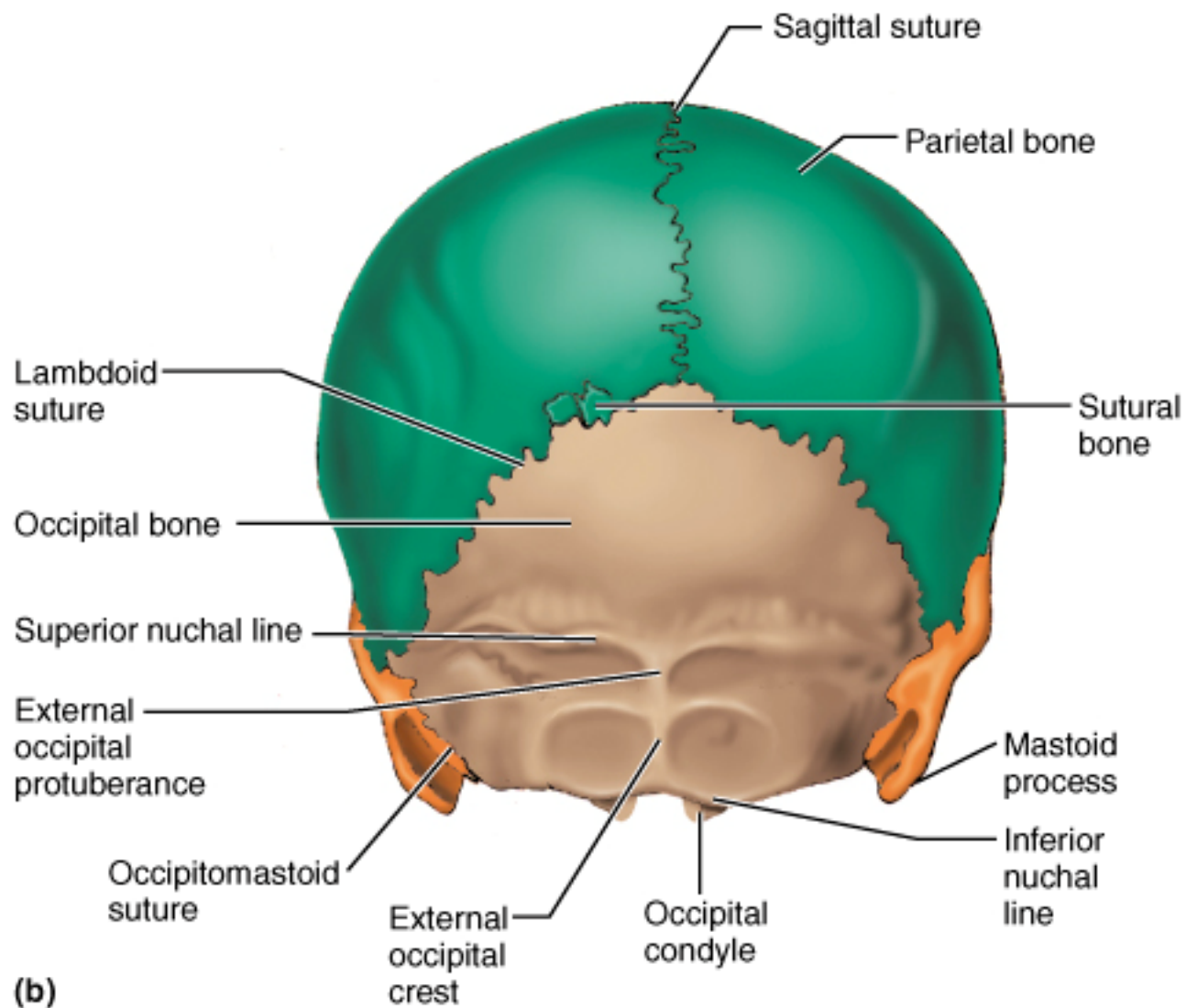
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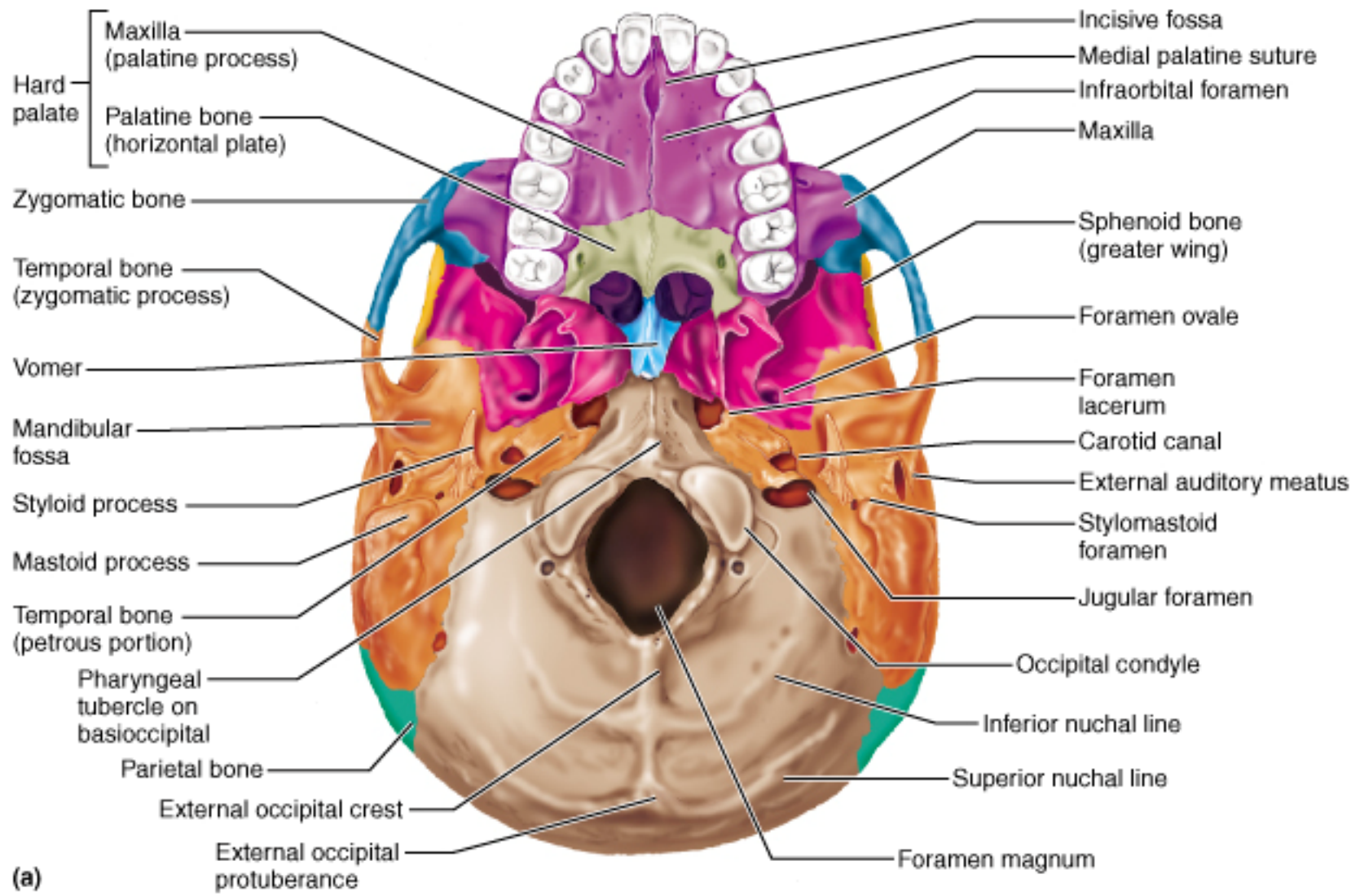


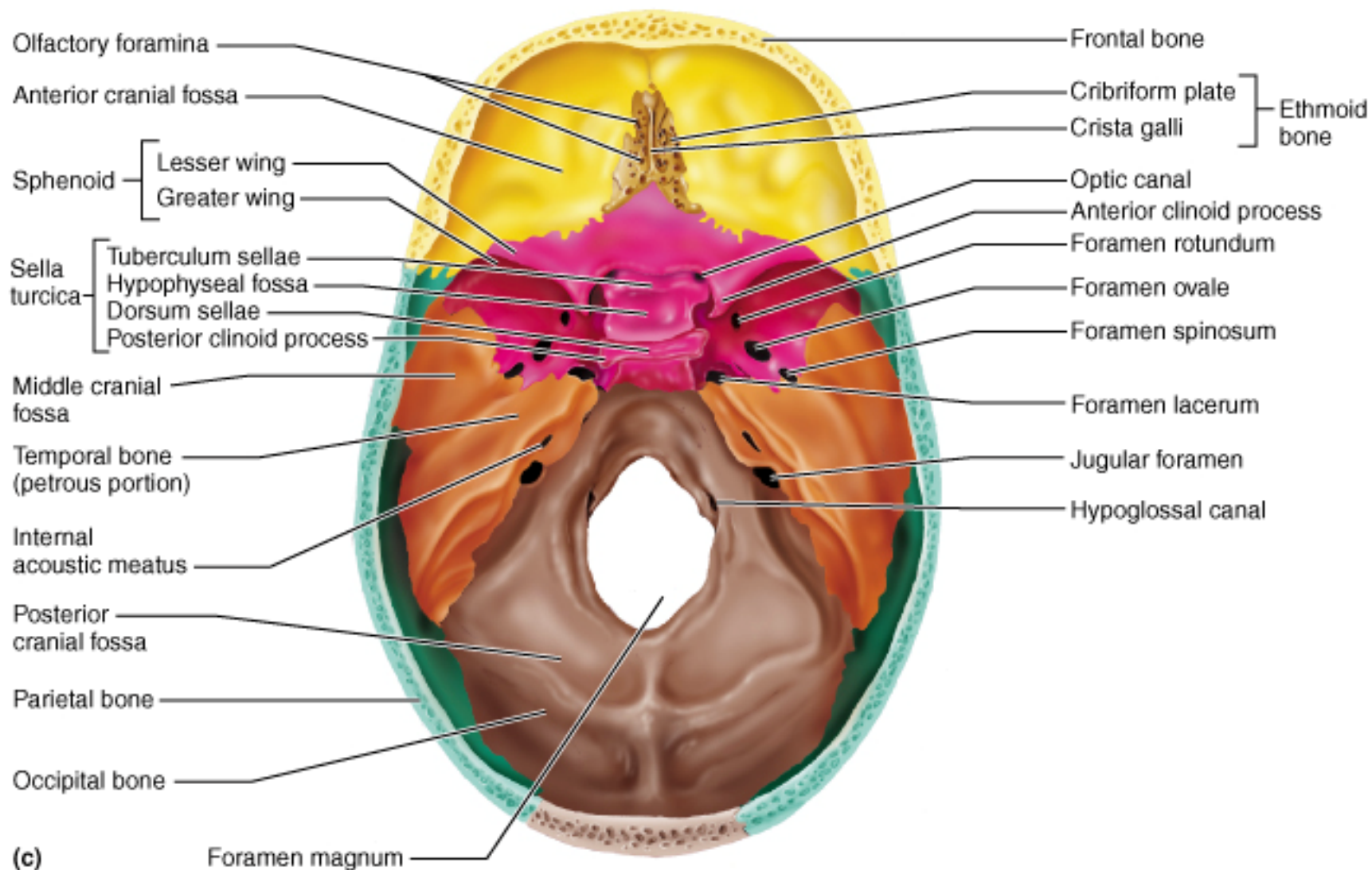
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(b)





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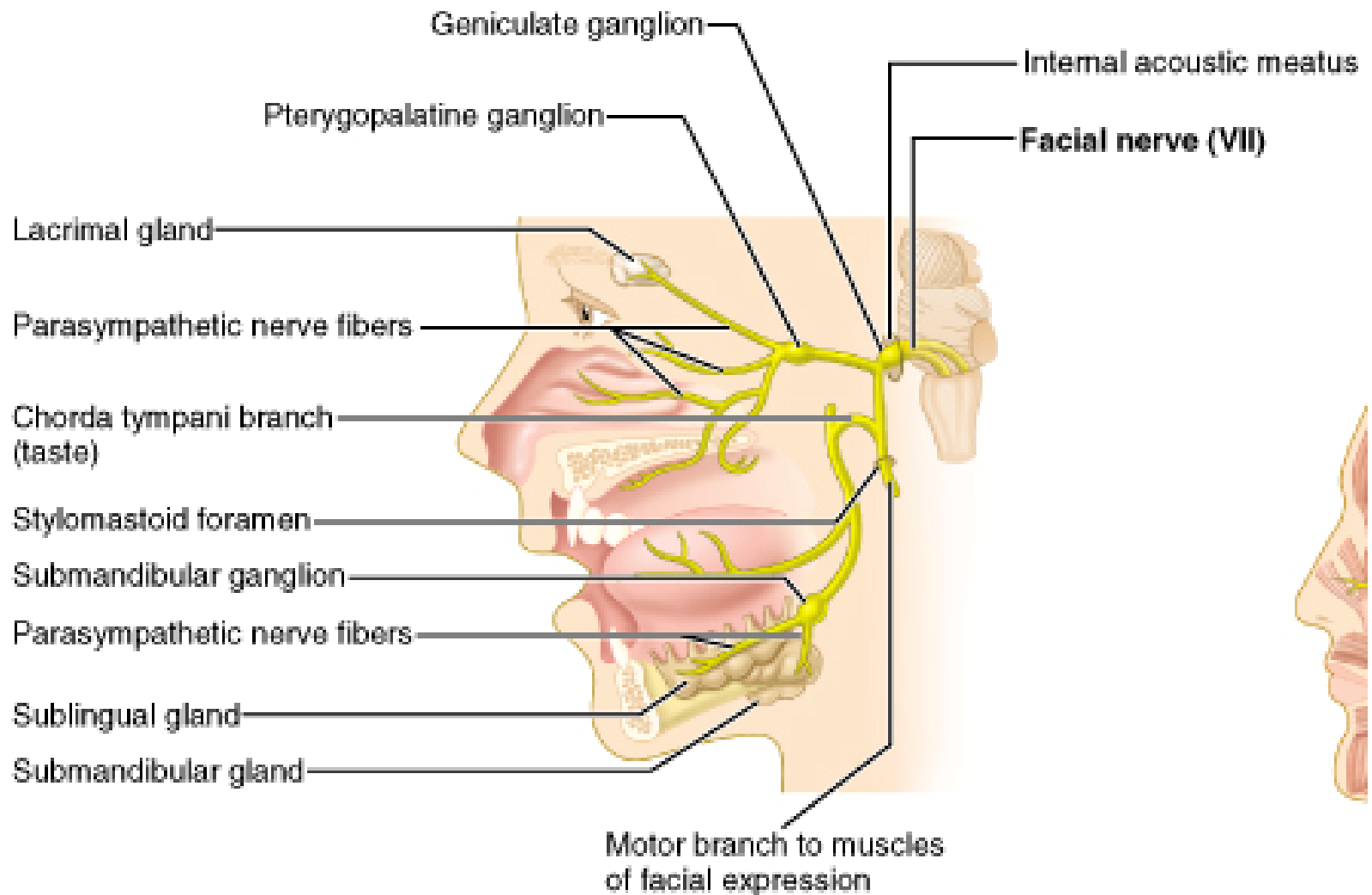
Muscles of facial expression

- Superficial muscles inserted into the facial skin
- Innervated by 6 branches of the facial nerve (CN VII)
- Important for communication & for moving the mouth and orbit

Facial nerve

1. Primarily **motor** nerve (supplying the muscles of facial expression)
2. Carries the **special sensation** of taste from the anterior 2/3 rd of the tongue
3. **Parasympathetic** innervation (secretomotor) to salivary glands & mucous membrane of the mouth, tongue, nasal cavities & lacrimal gland



Facial – CNVII- motor, sensory, PS



(a) Parasympathetic efferents and sensory afferents

(b) Mot faci

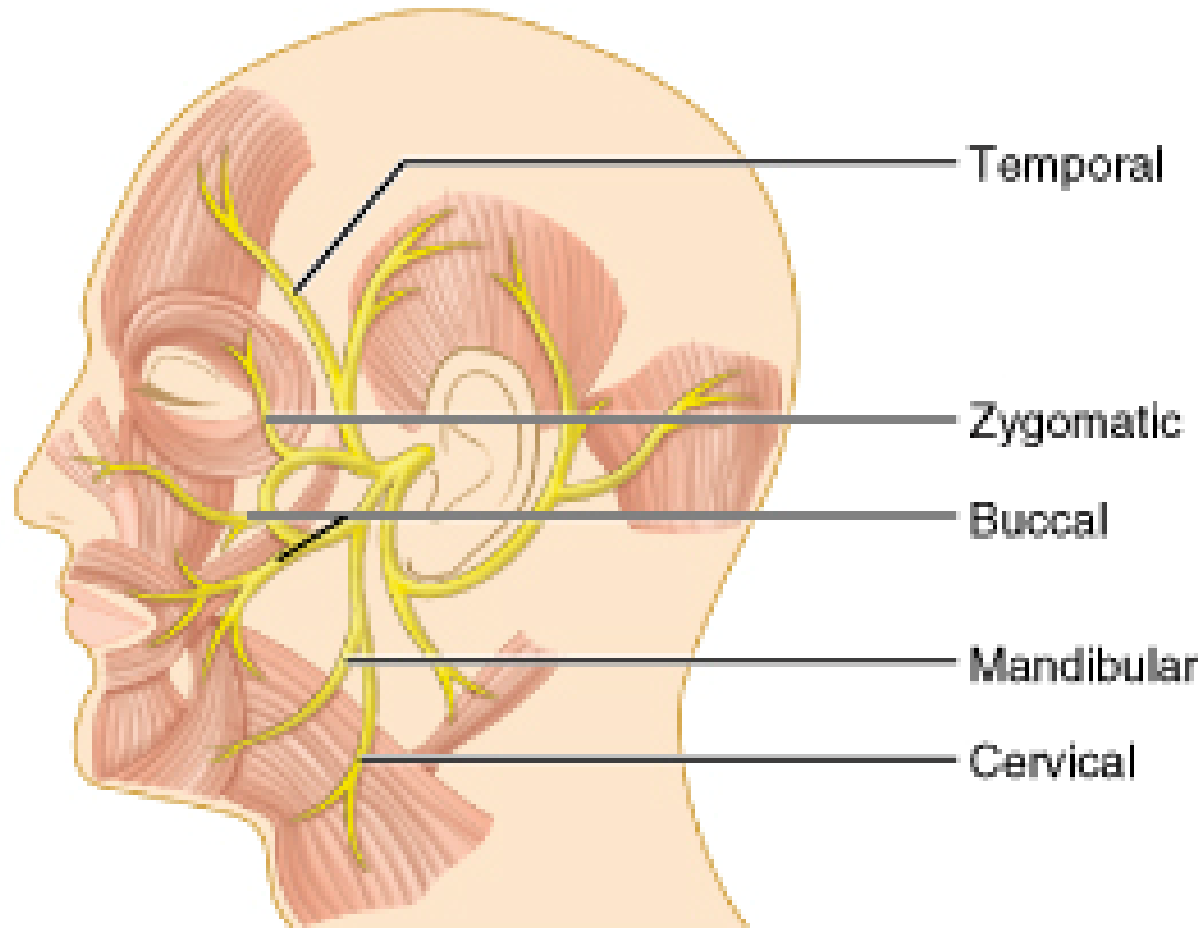
Facial nerve

- Intracranial origin: posterior cranial cavity and coursing through the temporal bone
- Internal **auditory meatus** 
petrous part of **temporal bone** 
stylomastoid foramen

Facial nerve

- **Geniculate ganglion:** contains cell bodies of special sensory (taste) neurons from the anterior 2/3rd of the tongue

Facial – CNVII- motor, sensory, PS



(b) Motor branches to muscles of facial expression and scalp muscles

Facial nerve

motor branches:

- **Posterior auricular** (to occipitalis)
- **Temporal** (to frontalis)
- **Zygomatic** (to orbicularis oculi)
- **Buccal** (to orbicularis oris, levators of the angle of the mouth, and buccinator)
- **Marginal mandibular** (to depressors of lower lip and lower fibers of orbicularis oris)
- **Cervical** (to platysma)

Facial nerve

- Other motor branches to:
 - The **stapedius** muscle
 - The **stylohyoid**
 - The **posterior digastric** muscles

Facial nerve

- The **greater petrosal** branch:
 - taste fibers from the palate
 - parasympathetic fibers to the palate, nasal cavities, & lacrimal gland
- **Stapedial** branch:
 - sends motor branches to the stapedius muscle

Facial nerve

- The **chorda tympani** branch:
 - carries taste fibers from the anterior 2/3rd of the tongue
 - distributes parasympathetic fibers to the submandibular & sublingual salivary glands

Facial nerve

- Secretory function via **parasympathetic** fibers to the submandibular & sublingual salivary glands, mucous membrane of anterior 2/3rd of the tongue, floor of mouth, palate, nasal cavities, and lacrimal gland via:
 - Parasympathetic ganglia
 - Submandibular ganglion
 - Pterygopalatine ganglion

Muscles around the mouth

- **Orbicularis oris** (surrounds the oral fissure)
- Several muscles insert into the orbicularis oris in a radial fashion:
 - **Levator anguli oris:** elevates the angle (corner) of the mouth
 - **Depressor anguli oris:** depresses the angle (corner) of the mouth

Muscles around the mouth

- **Levator labii superioris:** elevates the upper lip
- **Depressor labii inferioris:** depresses the lower lip
- **Buccinator:** a deep muscle that sends fibers to the upper and lower lips at the corner of the mouth

Muscles around the orbit

- Orbicularis oculi: encircles the orbit
- Frontalis: emerges from the orbicularis oculi and passes superiorly