

# ANATOMY LAB

PNS  
MED 324

*Done by:*

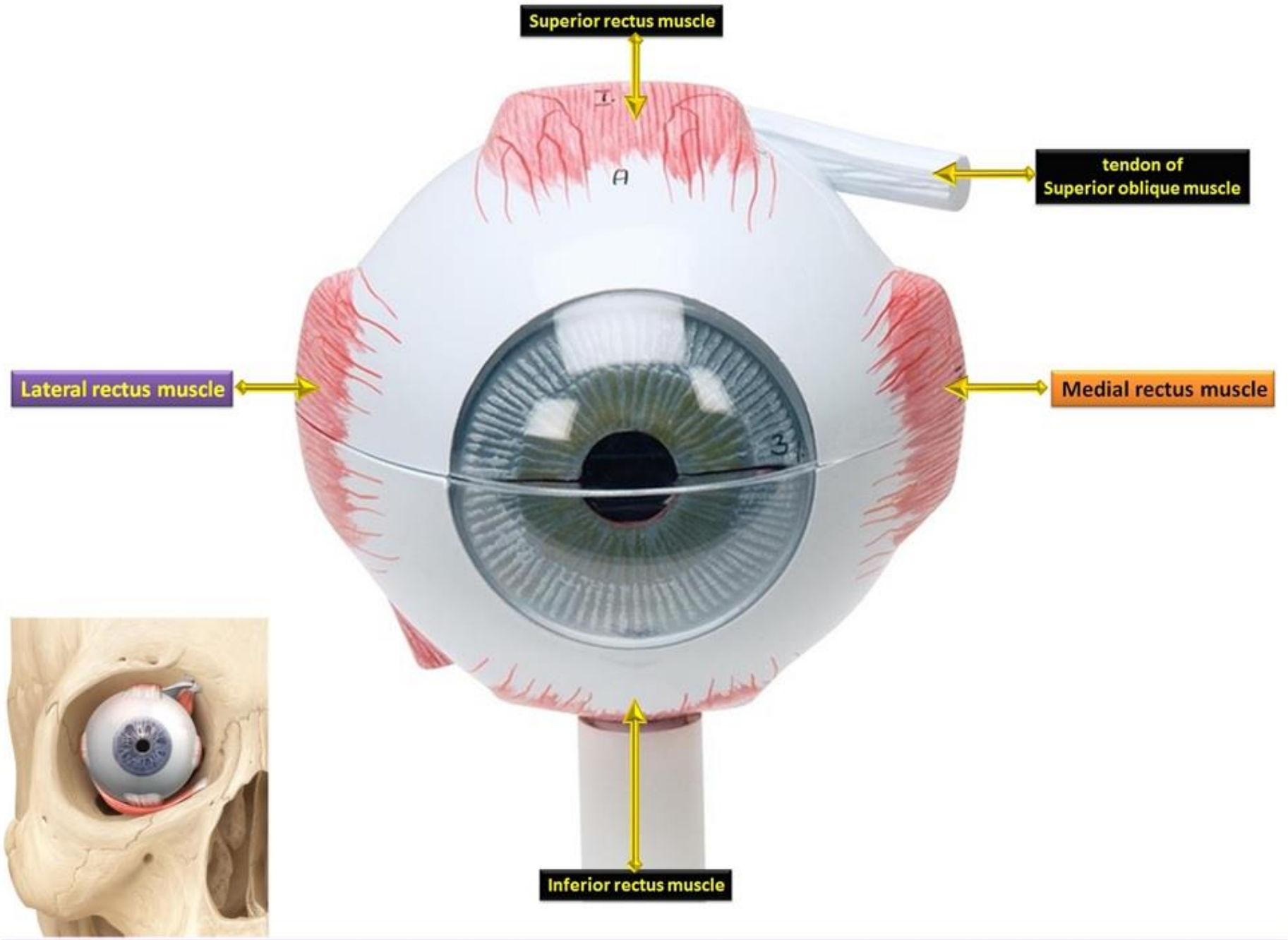
*Osama Yahmani*

*Instructor - Faculty of Medicine*



## **Extrinsic (extra-ocular) muscles**

<b>Levator palpebrae superioris</b>
<b>Superior rectus</b>
<b>Inferior rectus</b>
<b>Medial rectus</b>
<b>Lateral rectus</b>
<b>Superior oblique</b>
<b>Inferior oblique</b>



Superior rectus muscle

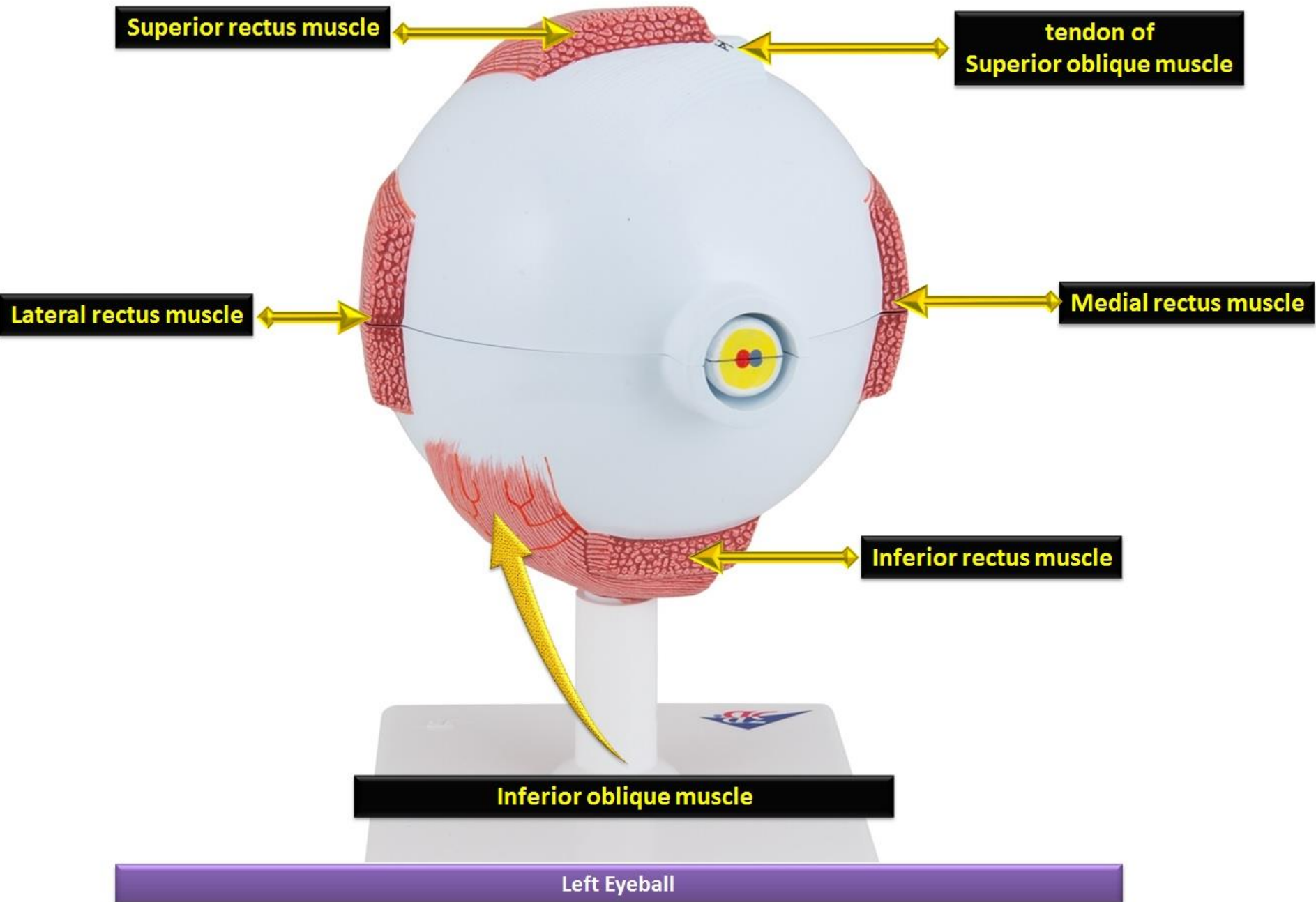
tendon of Superior oblique muscle

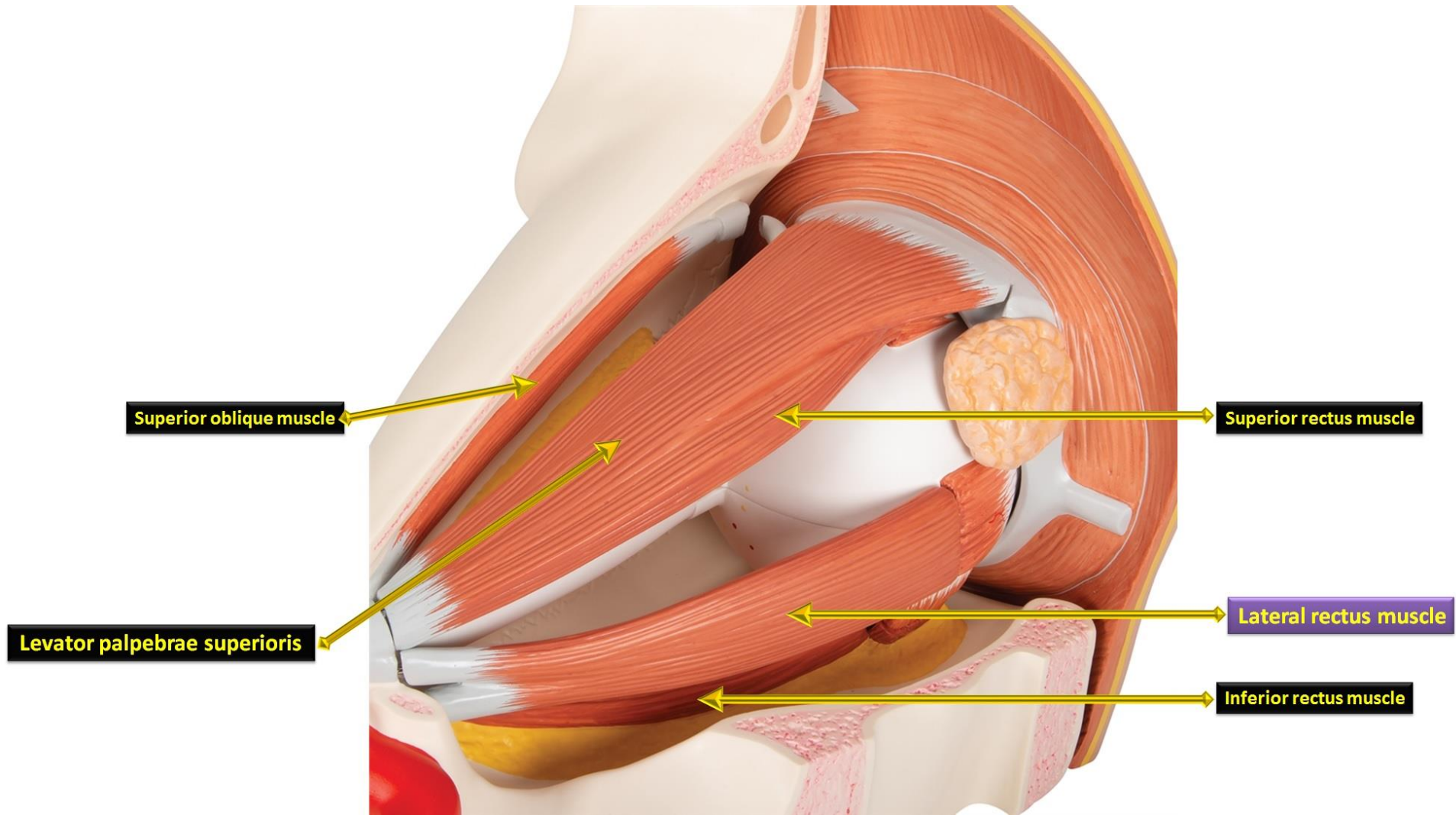
Lateral rectus muscle

Medial rectus muscle

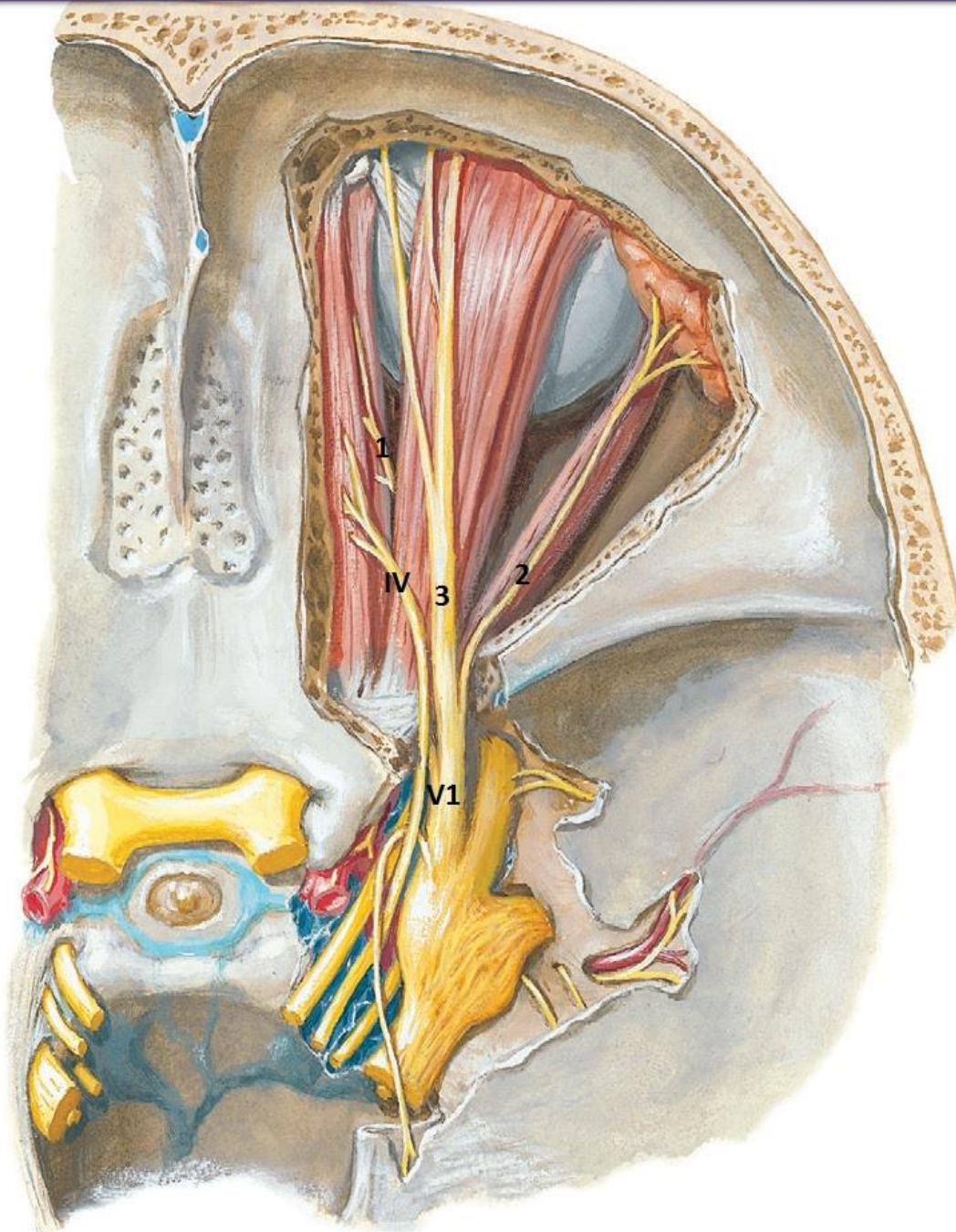
Inferior rectus muscle

Right Eyeball





## Ophthalmic nerve [V1] and its divisions , Trochlear nerve (IV)



### Ophthalmic nerve (V1)

#### Nasociliary nerve (1)

crosses the superior surface of the optic nerve as it passes in a medial direction below the superior rectus muscle

#### Lacrimal nerve (2)

passes forward along the upper border of the lateral rectus muscle

#### Frontal nerve (3)

runs forwards between levator palpebrae superioris and periosteum lining the roof of the orbit

### Trochlear nerve (IV)

curves medially above the levator palpebrae superioris

# Walls of the eyeball

## Fibrous layer :

- Sclera
- Cornea

## Vascular layer :

- Choroid
- Ciliary body :
  - ✓ Ciliary muscle
  - ✓ Ciliary processes
- Iris

## Inner layer :

- Retina :
  - ✓ optic disc
  - ✓ ora serrata

# TUNICS OF THE EYEBALL

# COMPARTMENTS OF THE EYEBALL

## OUTER FIBROUS COAT OF THE EYEBALL

Sclera (1)

Cornea (2)

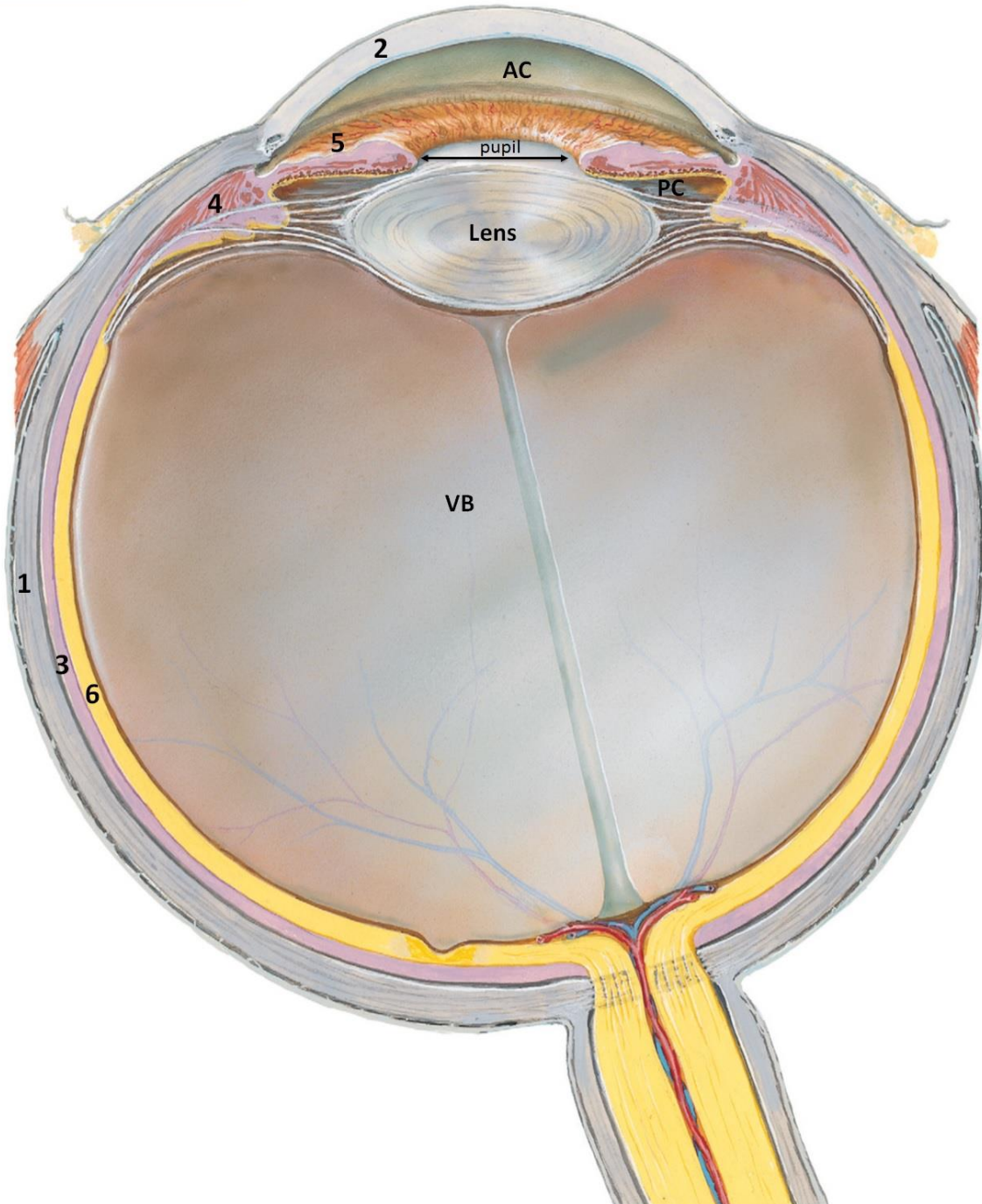
## MIDDLE VASCULAR COAT OF THE EYEBALL

Choroid (3)

Ciliary Body (4)

Iris (5)

RETINA (6)



Anterior compartment

Anterior chamber ( AC)

Posterior chamber ( PC)

Posterior compartment

Vitreous body (VB)



# TUNICS OF THE EYEBALL

## OUTER FIBROUS COAT OF THE EYEBALL

Sclera (1)

Cornea (2)

## MIDDLE VASCULAR COAT OF THE EYEBALL

Choroid (3)

Ciliary Body (4)

Ciliary processes (4A)

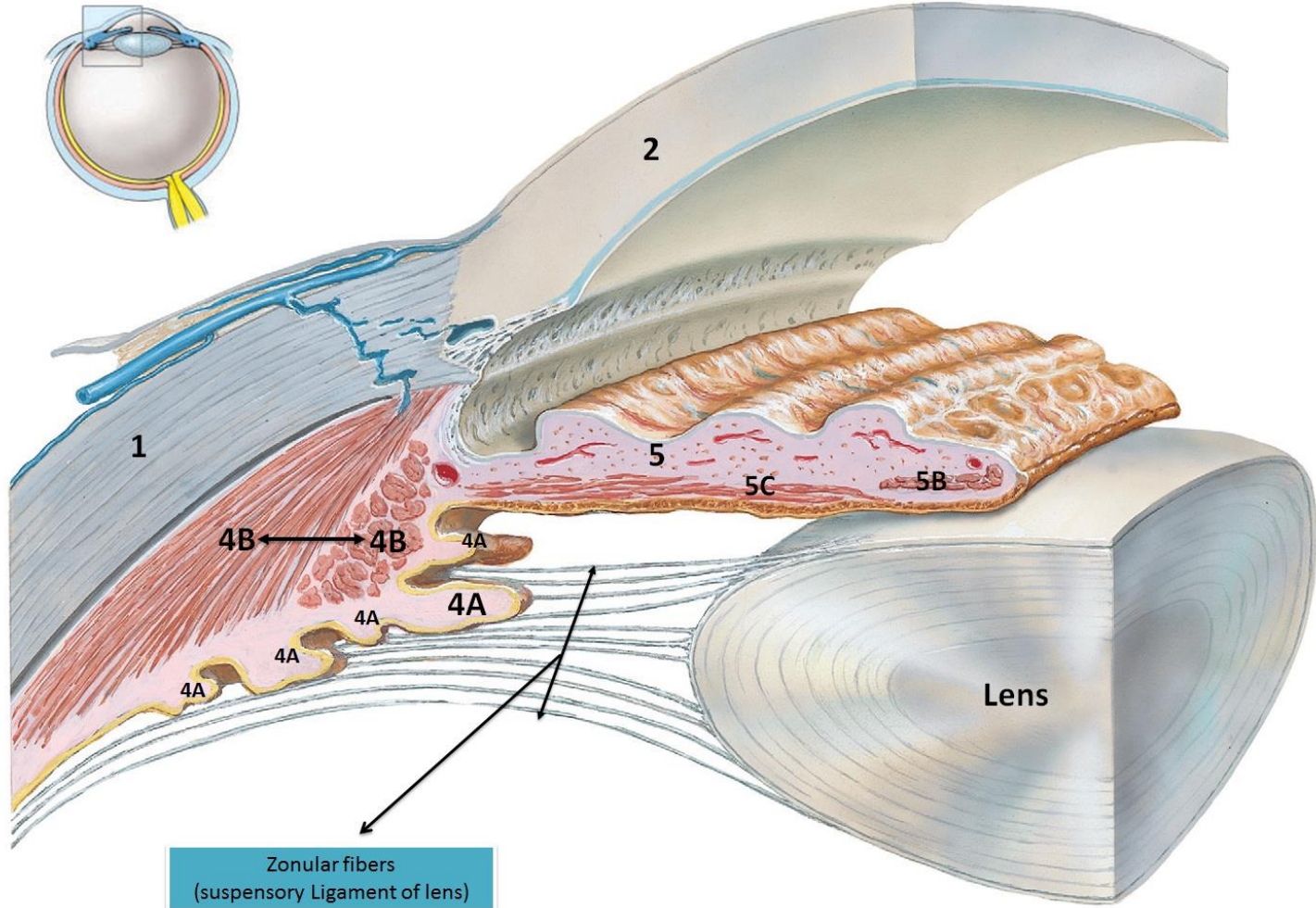
Ciliary muscle (4B)

Iris (5)

Pupil (5A)

Constrictor pupillae (5B)

Dilator pupillae (5C)

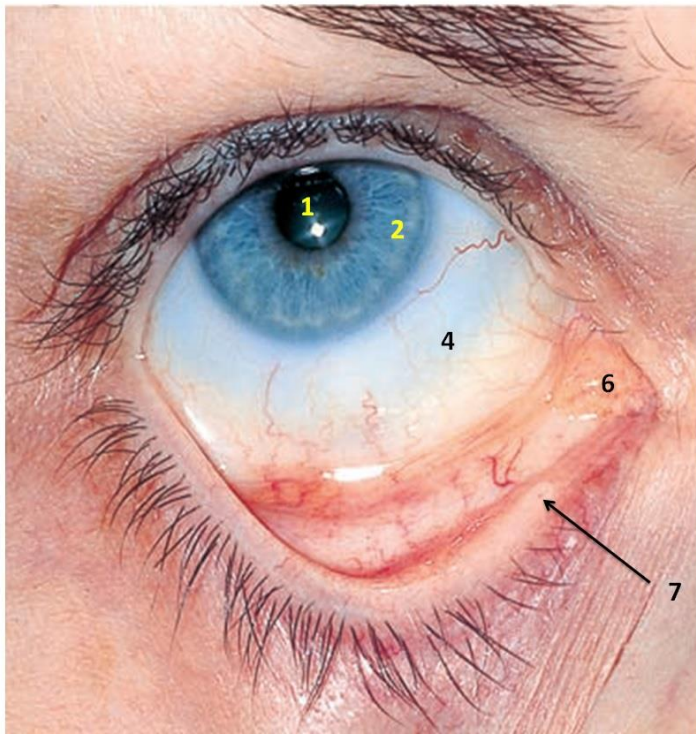
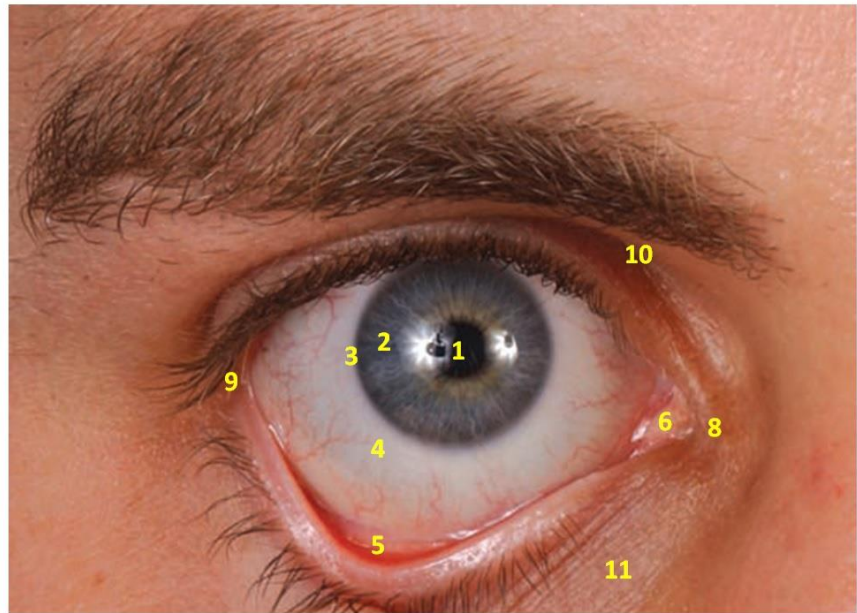


Zonular fibers  
(suspensory Ligament of lens)

## Surface anatomy of the eye

Pupil (as seen through cornea)	1
Iris (as seen through cornea)	2
Corneoscleral junction	3
Bulbar conjunctiva covering sclera	4
Palpebral conjunctiva of inferior eyelid reflecting onto eyeball at inferior conjunctival fornix, becoming bulbar conjunctiva	5
Lacrimal caruncle in lacus lacrimalus*	6
Inferior lacrimal papilla and punctum	7
Medial angle of the eye	8
Lateral angle of the eye	9
Upper eyelid	10
Lower eyelid	11

\* small, pink, globular nodule at the inner corner (the medial canthus) of the eye. It is made of skin covering sebaceous and sweat glands



## A normal retina, as seen through an ophthalmoscope



### Fovea centralis

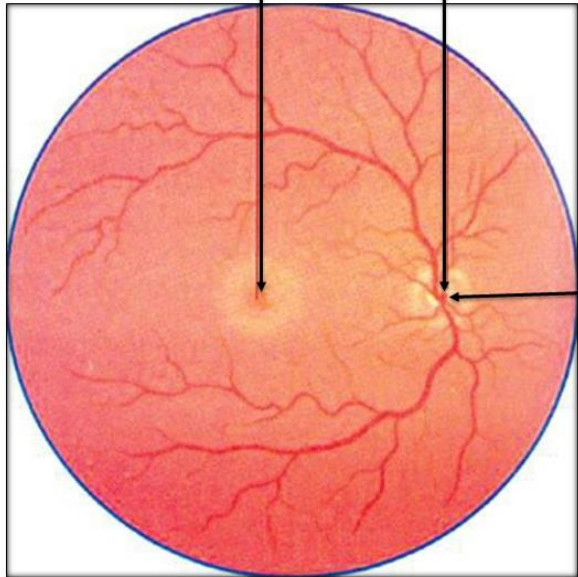
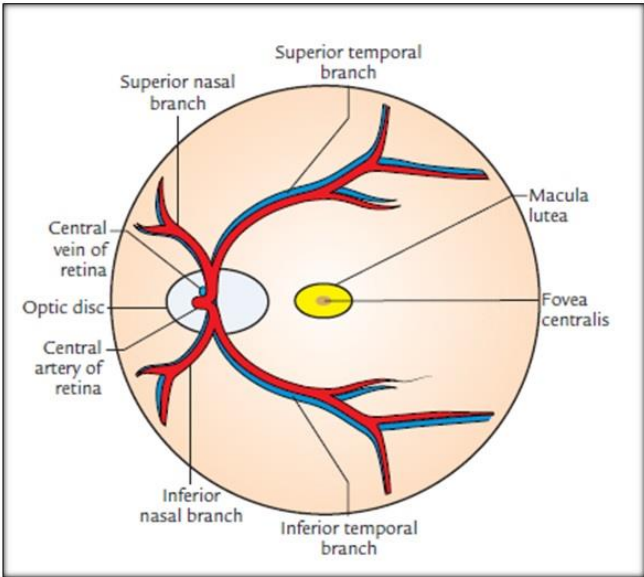
- small depression in the center of the macula lutea
- is the area of highest visual acuity

### Macula lutea

pale yellowish area in the exact center of the posterior portion of the retina, at the visual axis of the eye

### Optic disc

site where the optic (II) nerve exits the eyeball



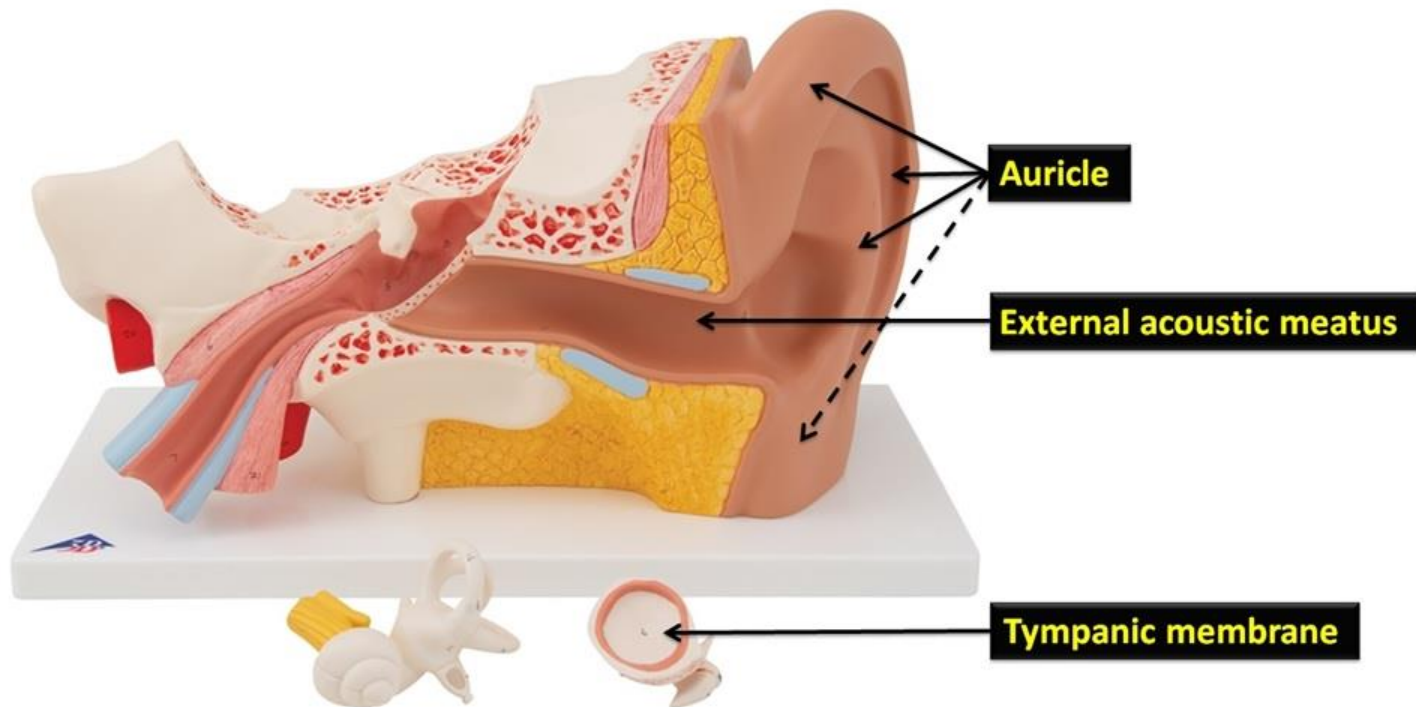
Central retinal artery

# External Ear

Auricle

External acoustic meatus

Tympanic membrane (eardrum) :



**Examination of tympanic membrane**

**Umbo (1)** : the point of maximum concavity

**Handle of Malleus (2)** : as a yellow streak extending from umbo upwards and forwards

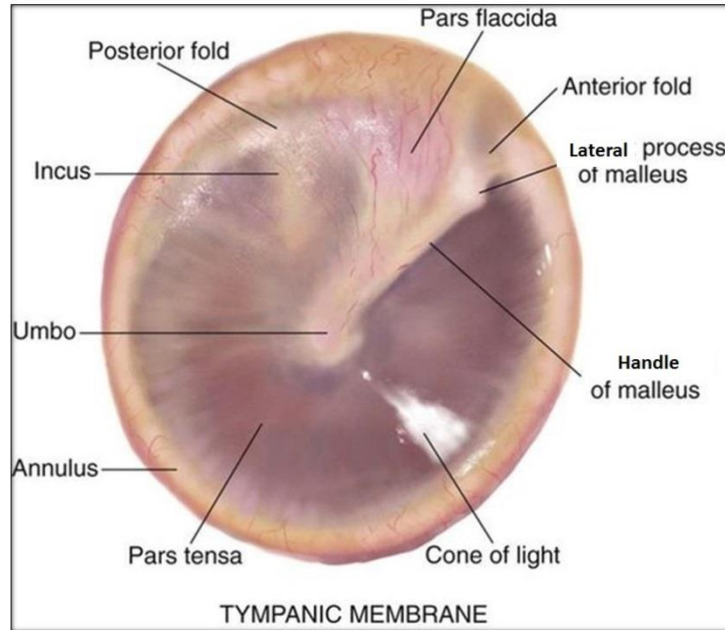
**Lateral process of malleus (3)** : as a white prominence in the upper part of the streak of handle of malleus

**Long processes of incus(4)** : as white streaks behind and parallel to the upper part of the handle of malleus

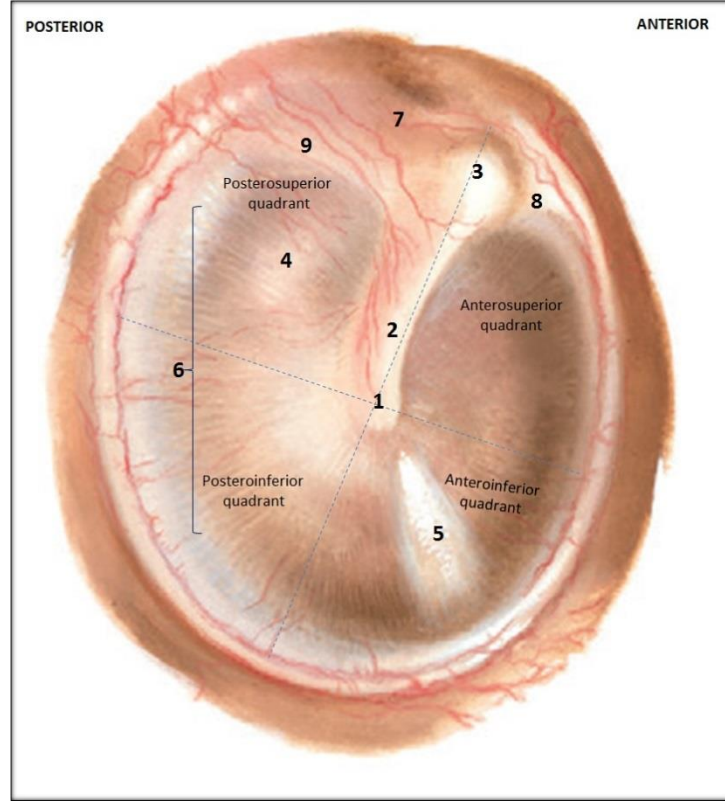
**Cone of light (5)** : at 5 o'clock position in anteroinferior quadrant

**Pars tensa (6)** : forms most of the tympanic membrane

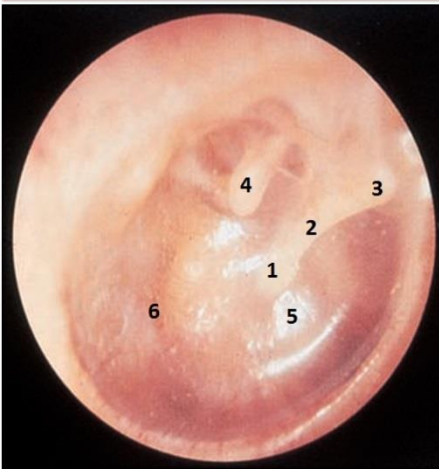
**Pars flaccida (7)** : is a small triangular area above the lateral process of malleus between anterior(8) and posterior(9) malleolar folds



**TYMPANIC MEMBRANE**



**Otoscopic (Lateral) View**



## Middle ear

Tympanic cavity

Pharyngotympanic tube

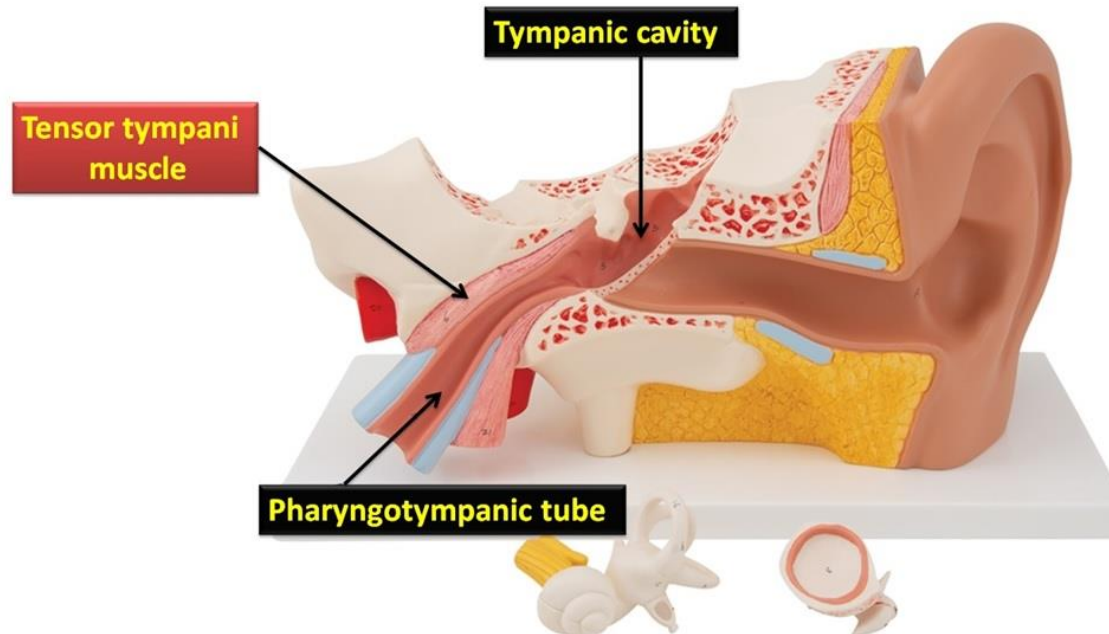
Auditory ossicles :

➤ Malleus

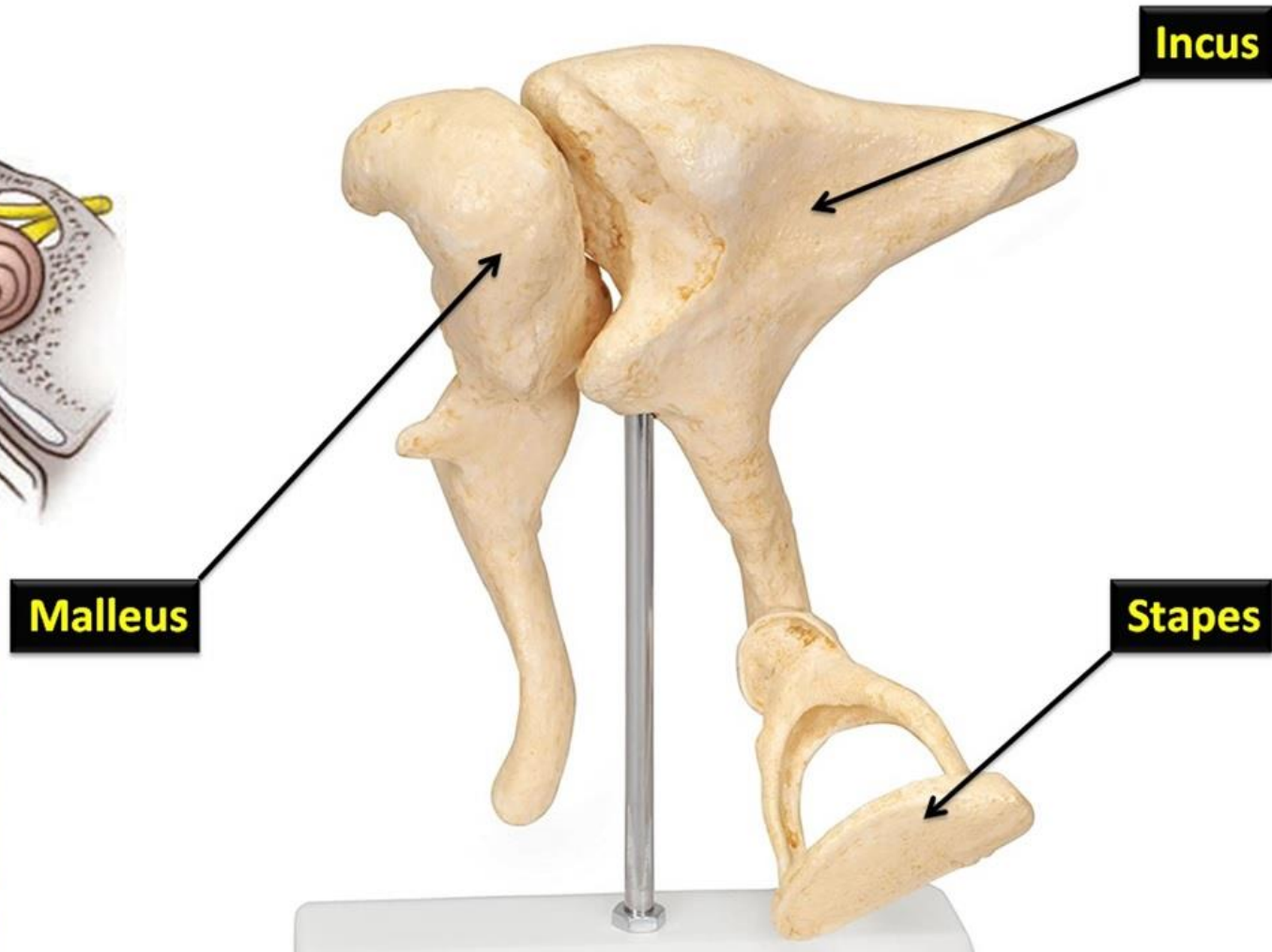
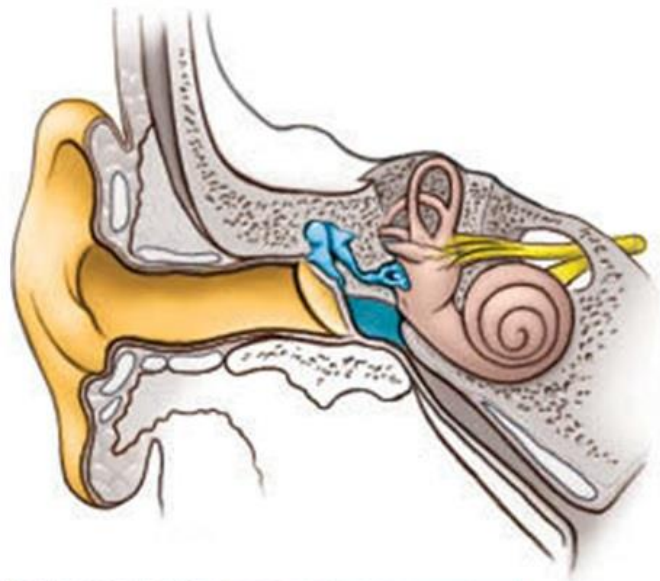
➤ Incus

➤ Stapes

Tensor tympani muscle



## Auditory ossicles



# Internal ear

Semicircular canals :

- Lateral semicircular canal
- Posterior semicircular canal
- Anterior semicircular canal

Vestibule

Oval window

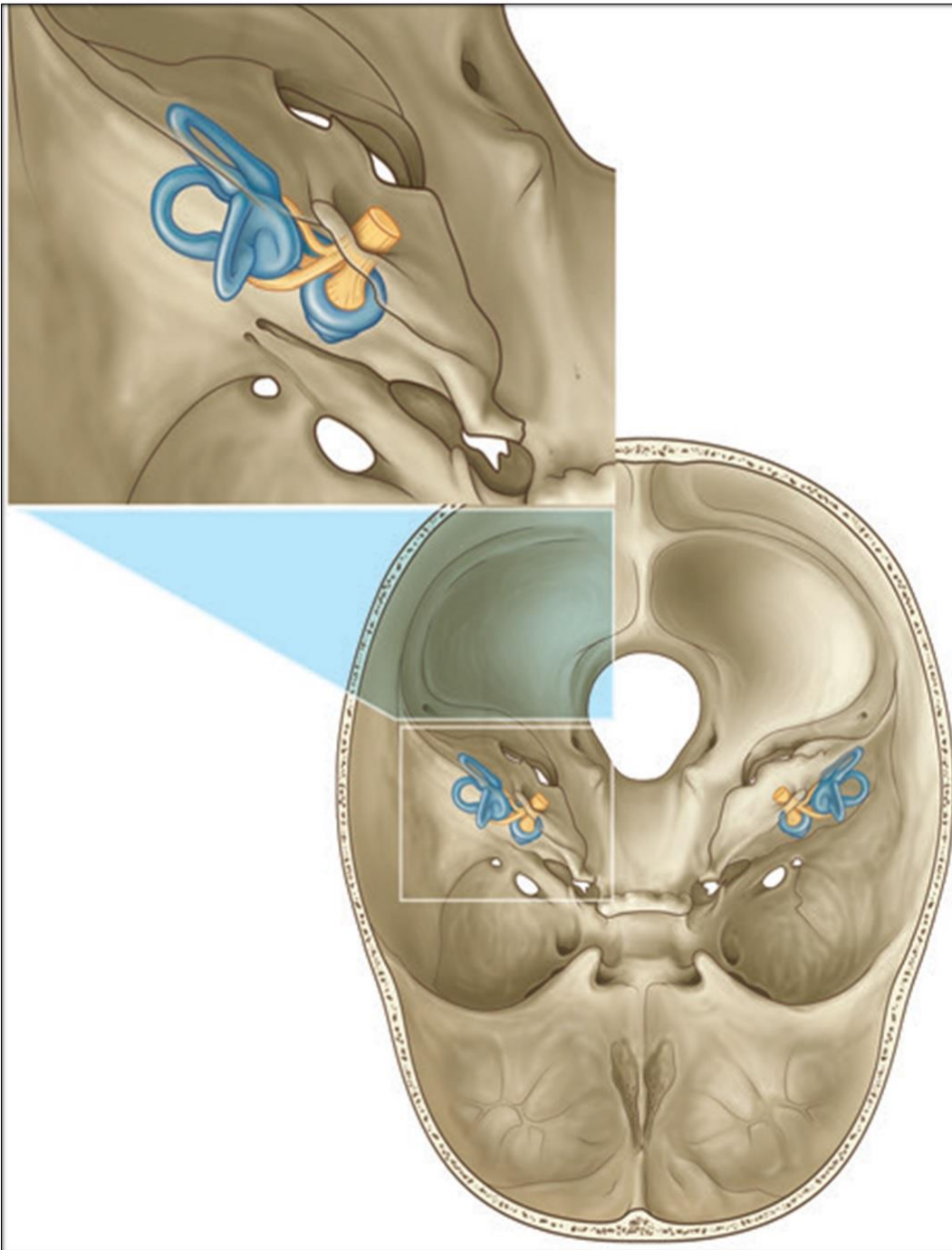
Round window

Cochlea

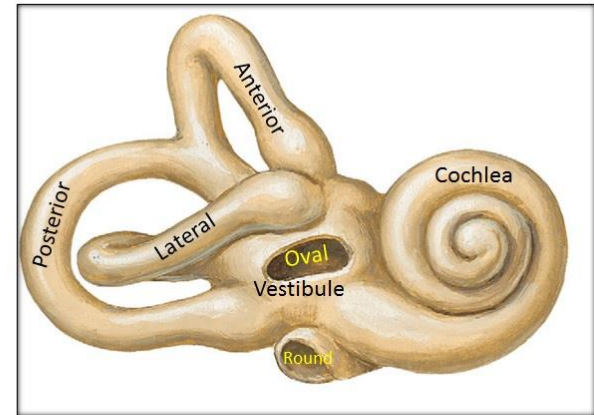
Vestibulocochlear nerve



Location of the internal ear in temporal bone



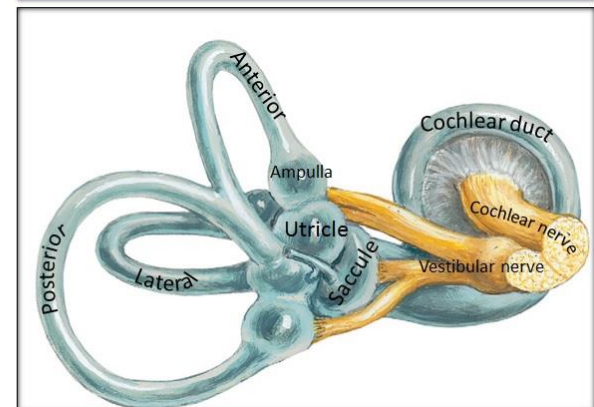
Right bony labyrinth : anterolateral view



Dissected right bony membranous labyrinth removed

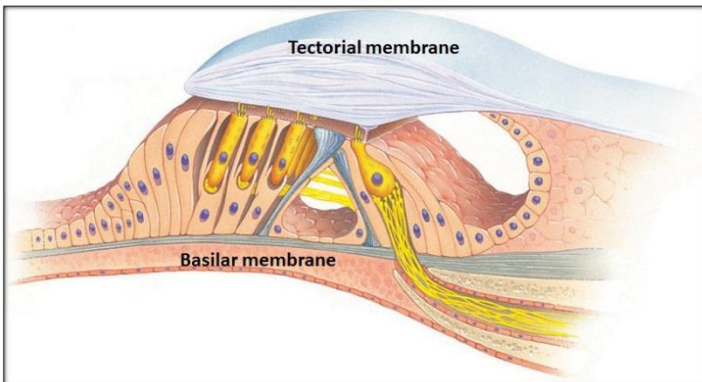
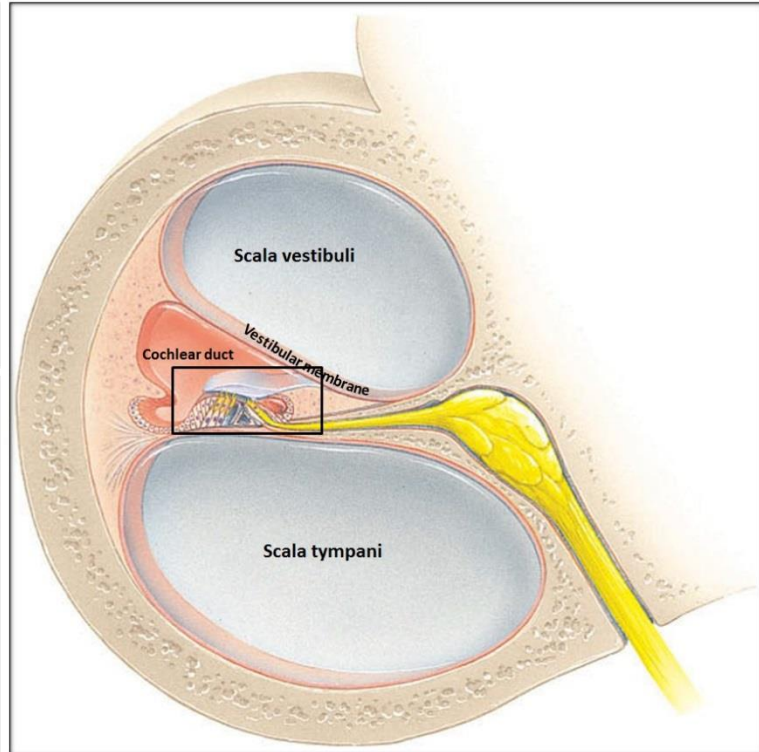
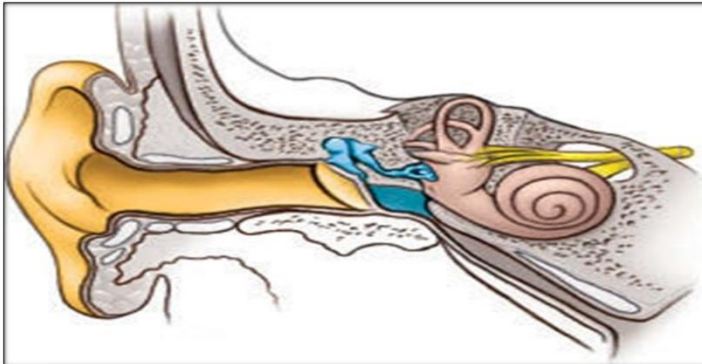
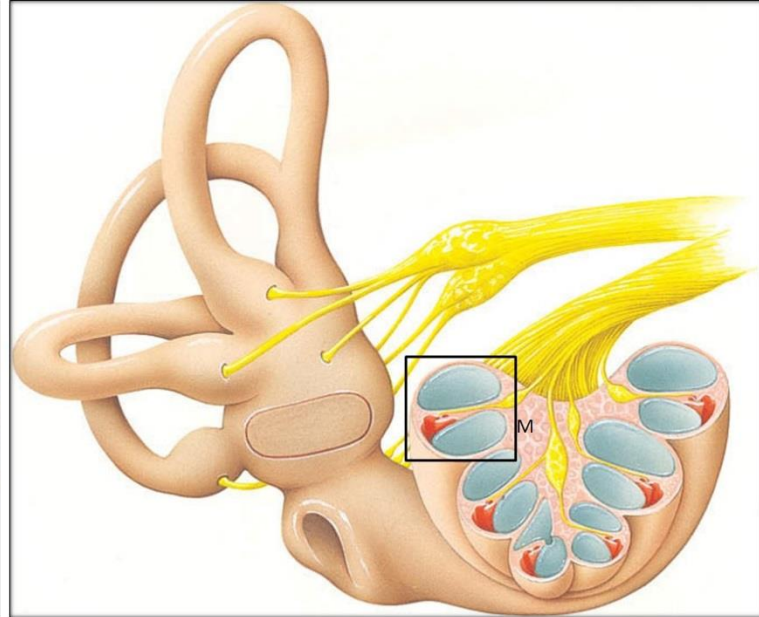
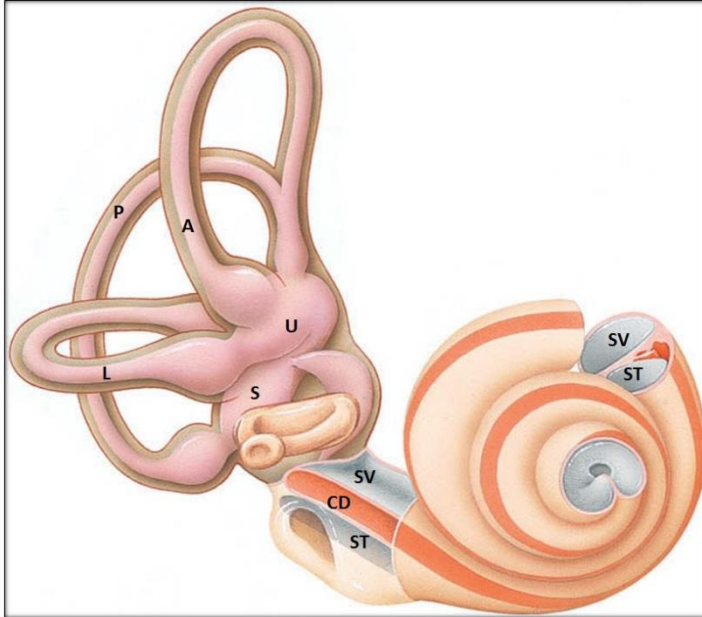


Right membranous labyrinth with nerves: medial view



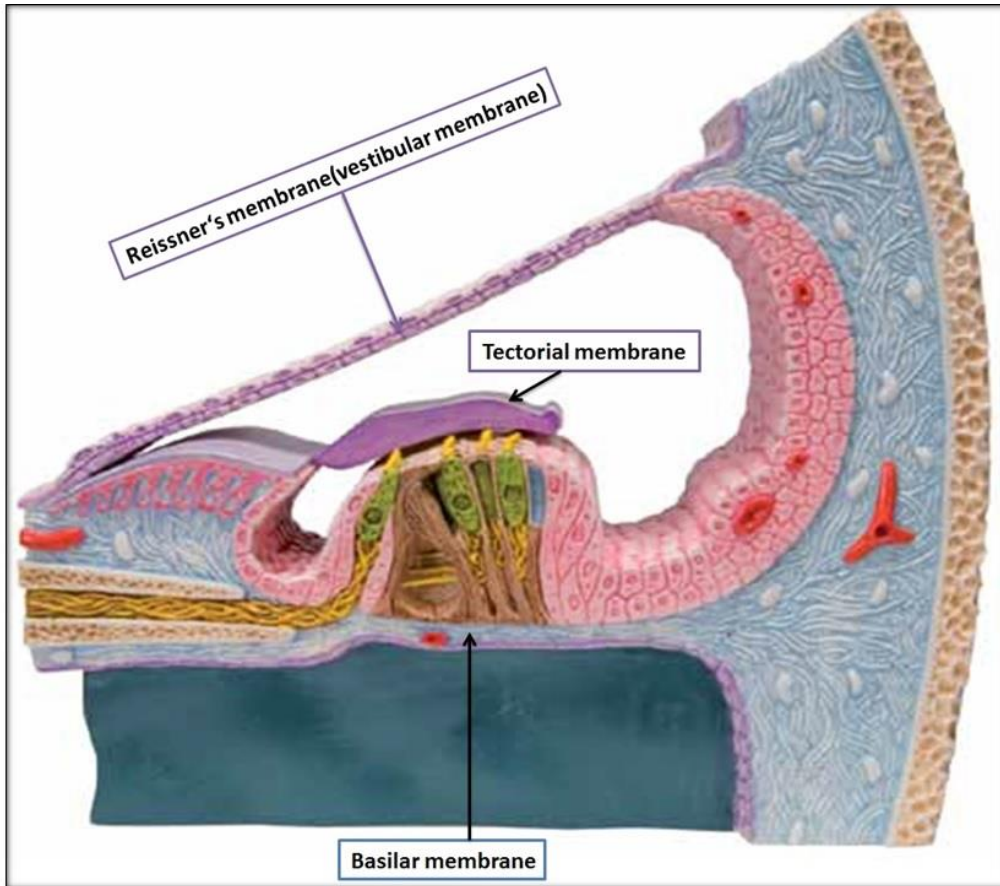
## **Section through one turn of the cochlea**

<b>Scala vestibuli</b>
<b>Scala tympani</b>
<b>Cochlear duct</b>
<b>Vestibular membrane</b>
<b>Basilar membrane</b>
<b>Tectorial membrane</b>
<b>Spiral organ (organ of Corti)</b>



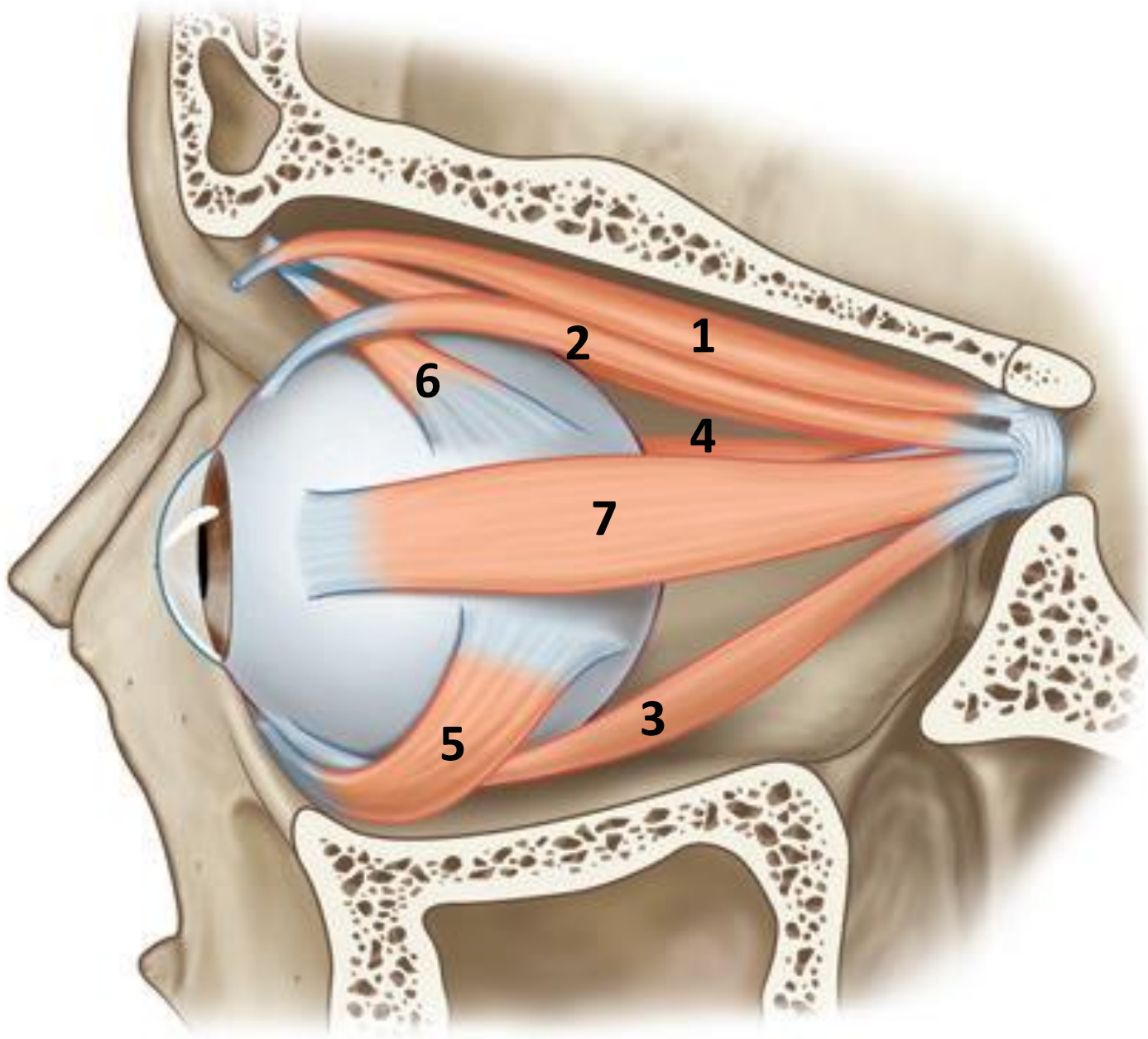
Enlargement of spiral organ (organ of Corti)

Section through one turn of the cochlea



# Cranial Nerves

Cranial nerve	Motor supply	Muscle #
<b>Oculomotor nerve (III)</b>	Levator palpebrae superioris	<b>1</b>
	Superior rectus	<b>2</b>
	Inferior oblique	<b>3</b>
	Medial rectus	<b>4</b>
	Inferior oblique	<b>5</b>
<b>Trochlear nerve (IV)</b>	Superior oblique	<b>6</b>
<b>Abducent nerve (VI)</b>	Lateral rectus	<b>7</b>



# Cranial Nerves

Cranial nerve	Division	Sensory	Motor	Muscle supply	
Trigeminal nerve [V]	Ophthalmic nerve [V1]	Supra-orbital nerve			
		Supratrochlear nerve			
		Infratrochlear nerve			
		External nasal nerve			
	Maxillary nerve [V2]	Infra-orbital nerve			
		Zygomaticofacial nerve			
		Zygomaticotemporal nerve			
	Mandibular nerve [V3]	Mental nerve		Deep temporal nerves	Temporalis muscle
		Buccal nerve		Masseteric nerve	Masseter muscle
	Auriculotemporal nerve				

# Cutaneous distribution of the trigeminal nerve [V]

## Ophthalmic nerve [V1]

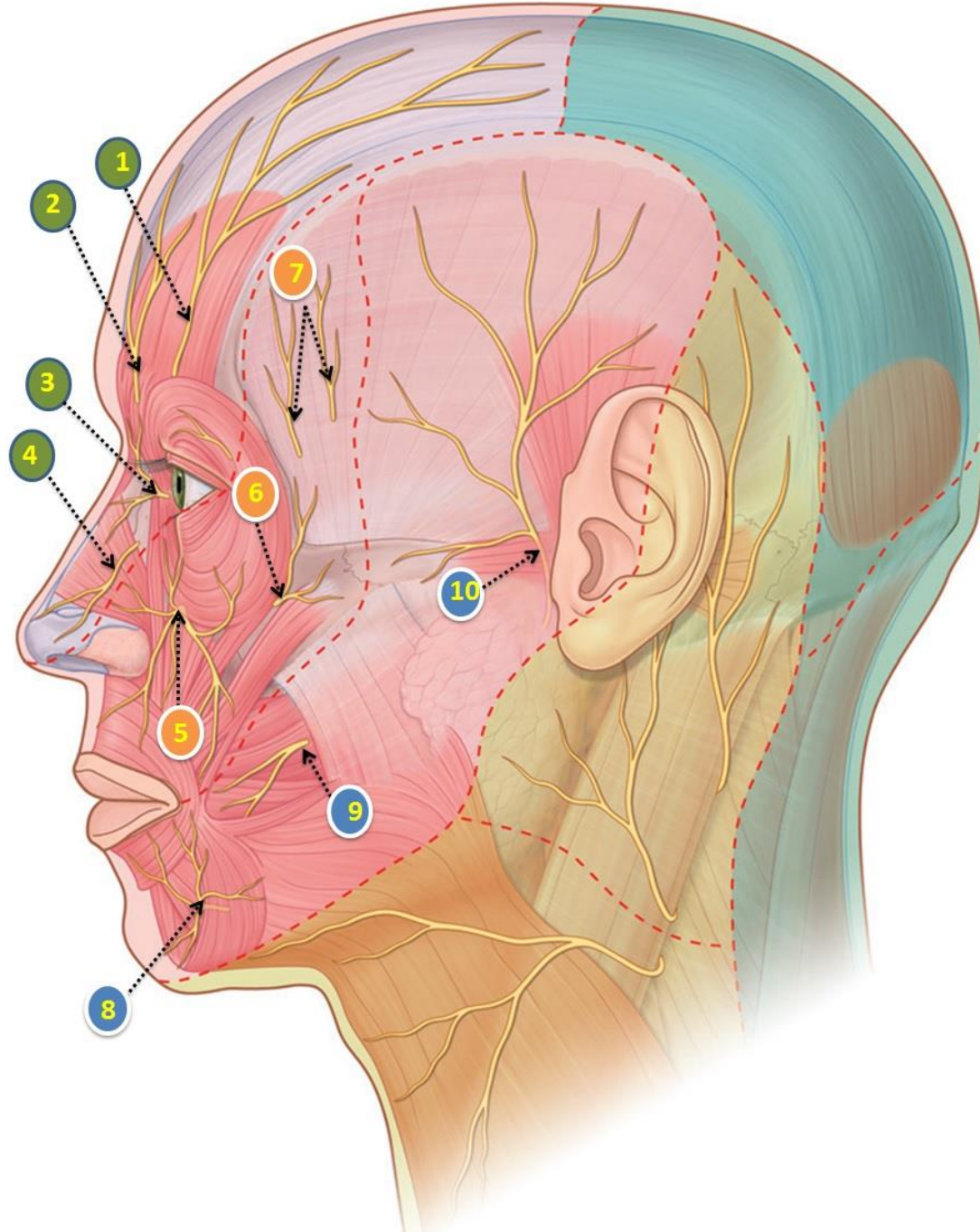
- 1 Supra-orbital nerve
- 2 Supratrochlear nerve
- 3 Infratrochlear nerve
- 4 External nasal nerve

## Maxillary nerve [V2]

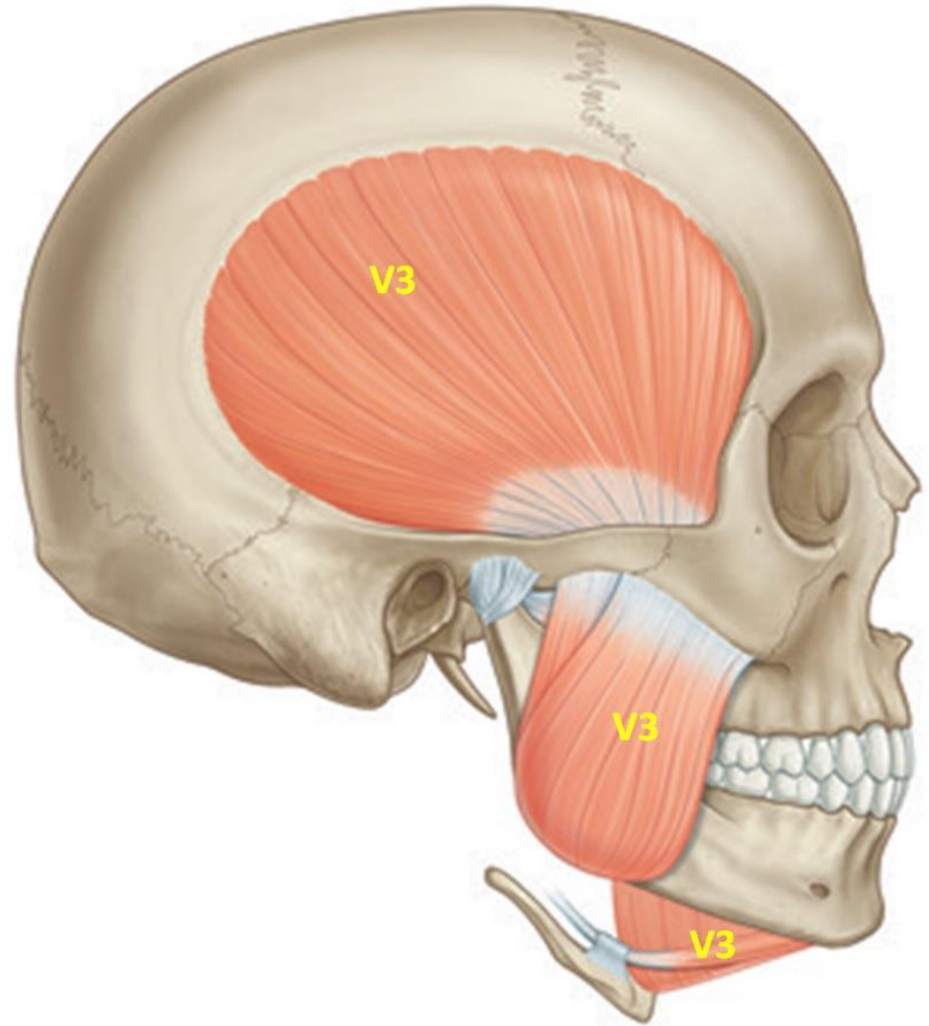
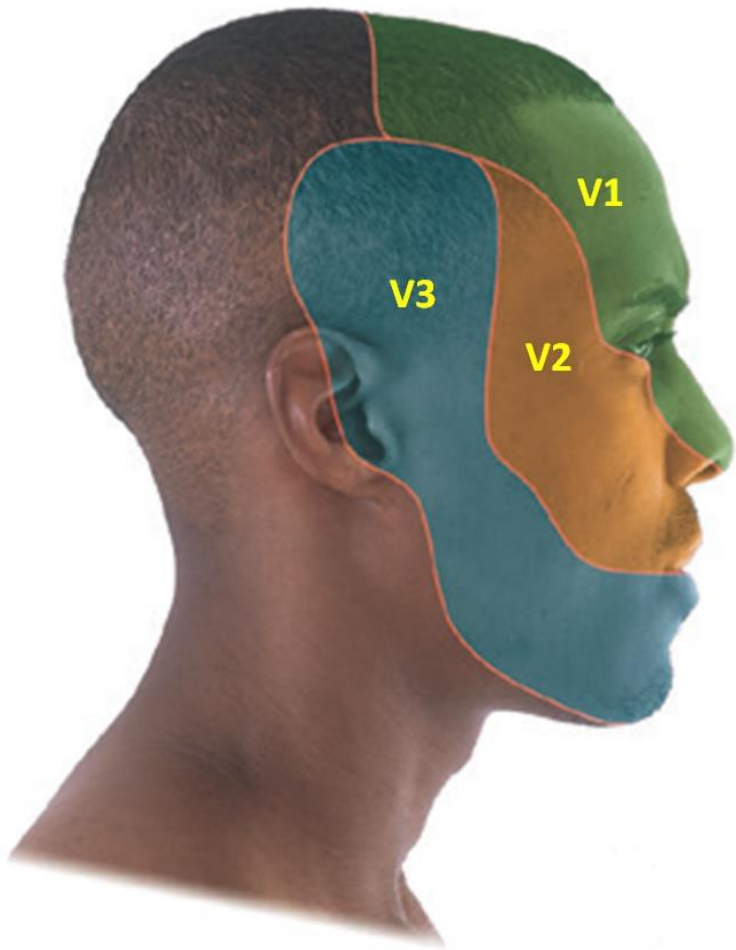
- 5 Infra-orbital nerve
- 6 Zygomaticofacial nerve
- 7 Zygomaticotemporal nerves

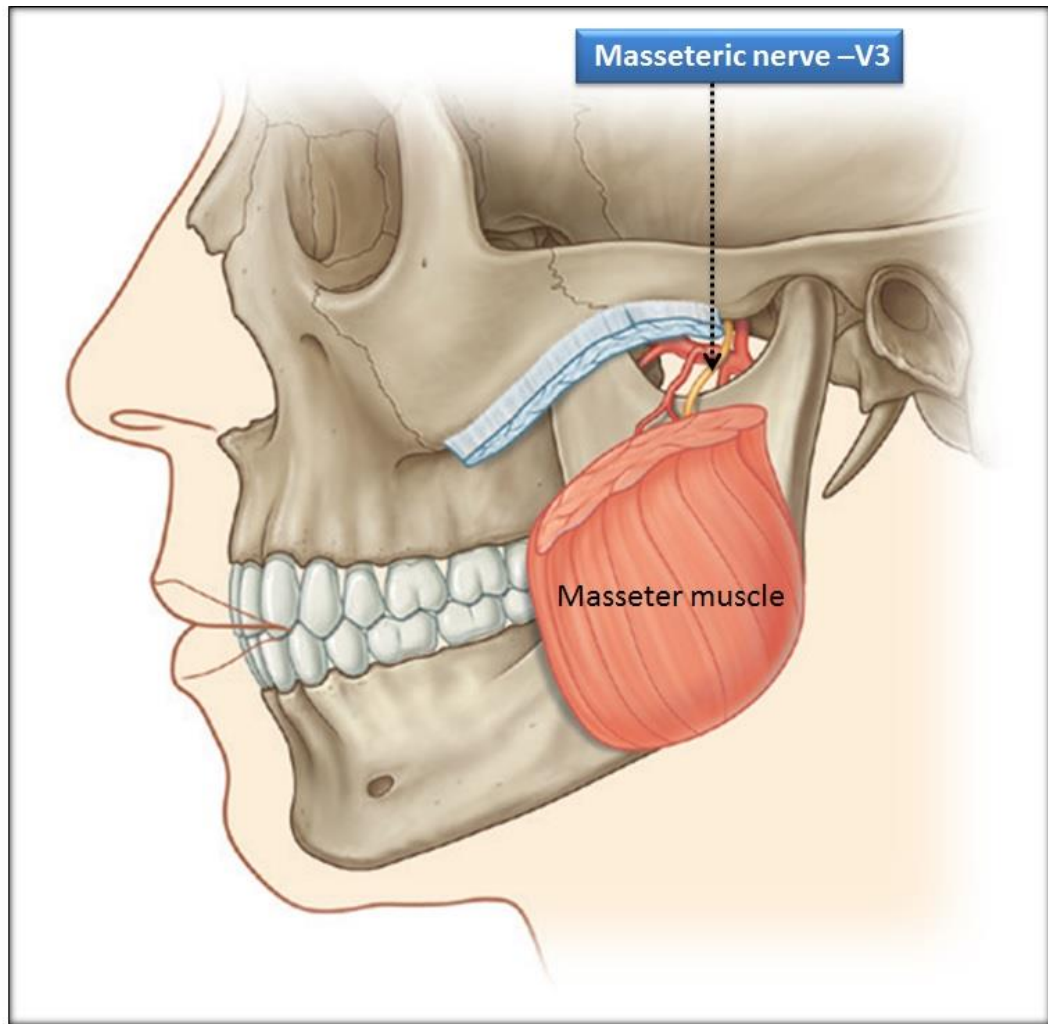
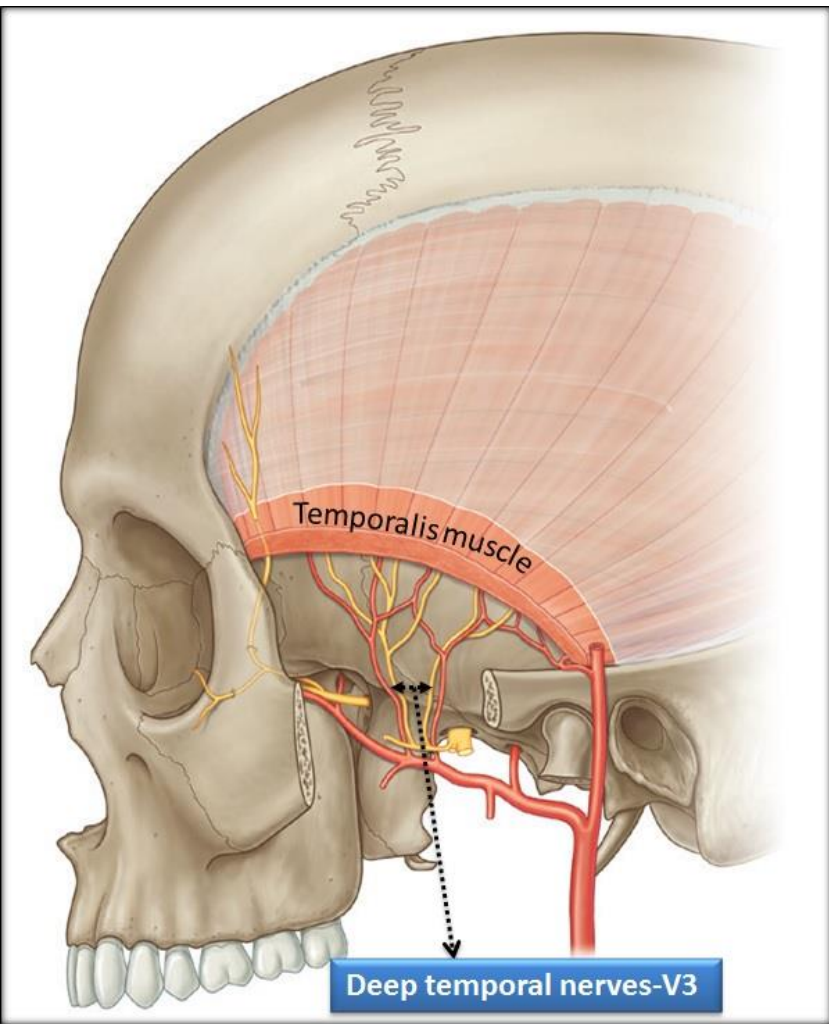
## Mandibular nerve [V3]

- 8 Mental nerve
- 9 Buccal nerve
- 10 Auriculotemporal nerve

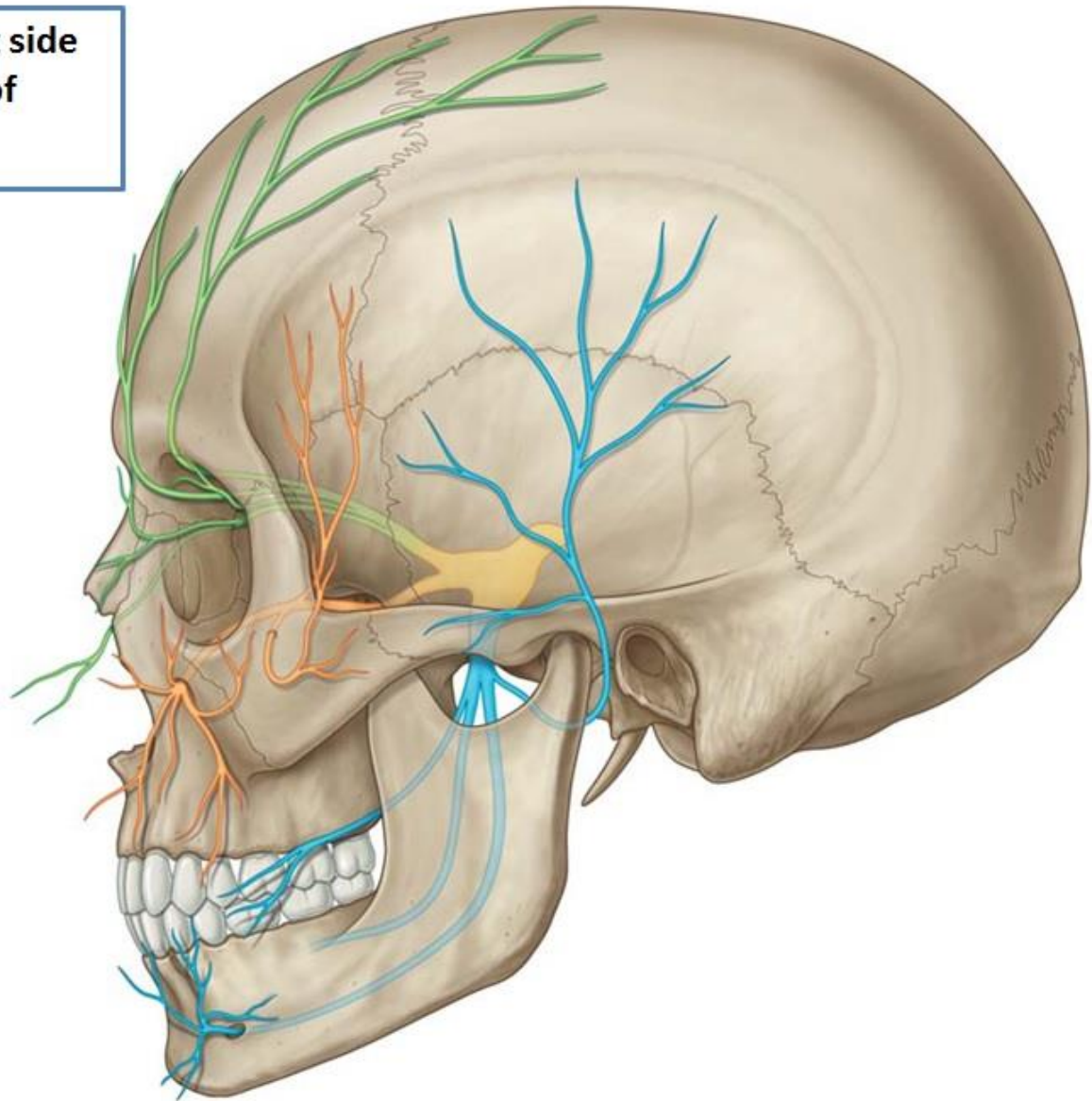








The nerves show in the left side of the head are branches of **Trigeminal nerve**



**Cutaneous distribution of the trigeminal nerve [V].**

# Cranial Nerves

Cranial nerve	Terminal branches	Motor supply
<b>Facial nerve</b>	<b>Temporal branches</b>	<b>Muscles of facial expression</b>
	<b>Zygomatic branches</b>	
	<b>Buccal branches</b>	
	<b>Marginal mandibular branches</b>	
	<b>Cervical branches</b>	

## Facial nerve [VII] on the face - Terminal branches

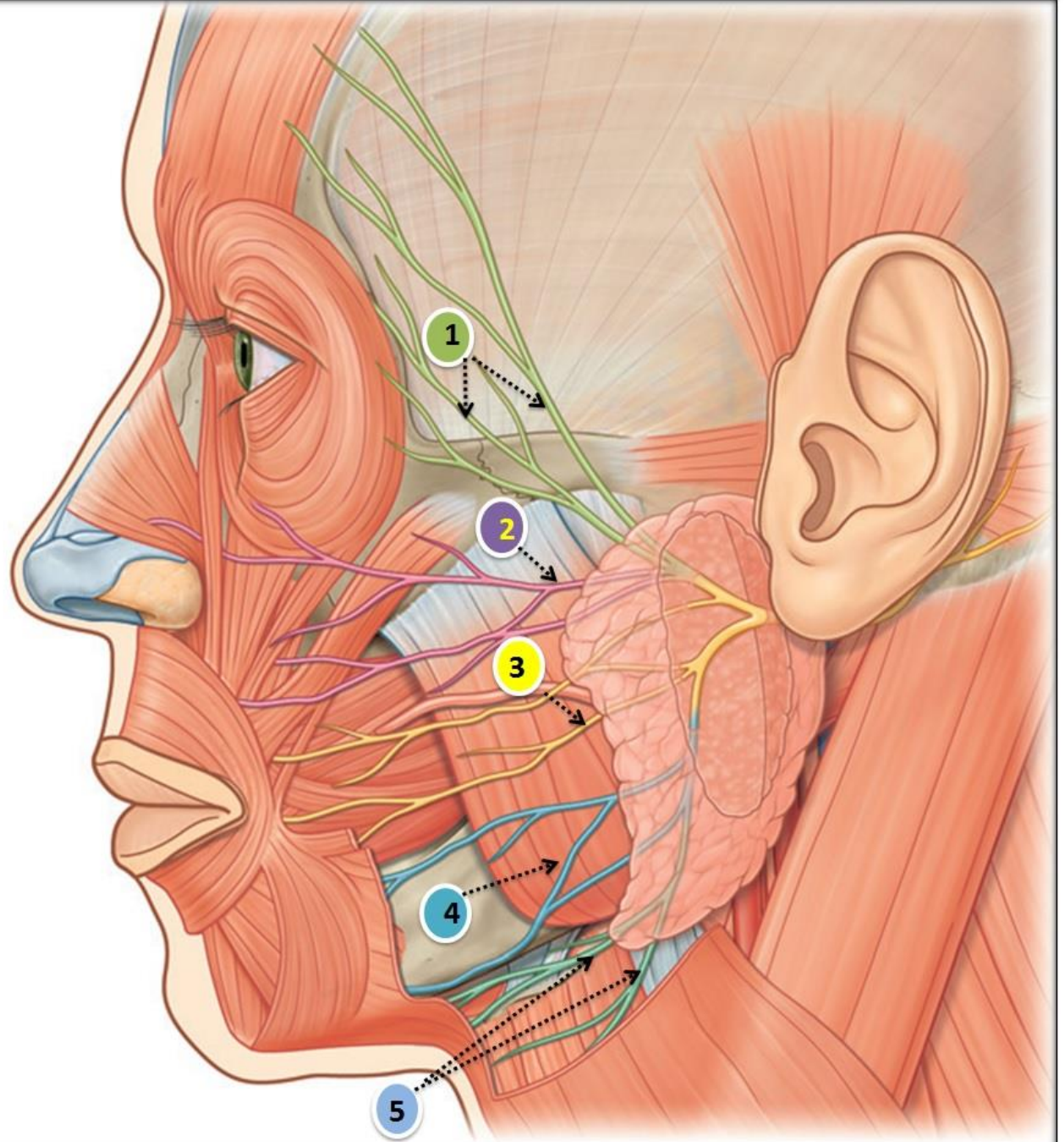
1 Temporal branches

2 Zygomatic branches

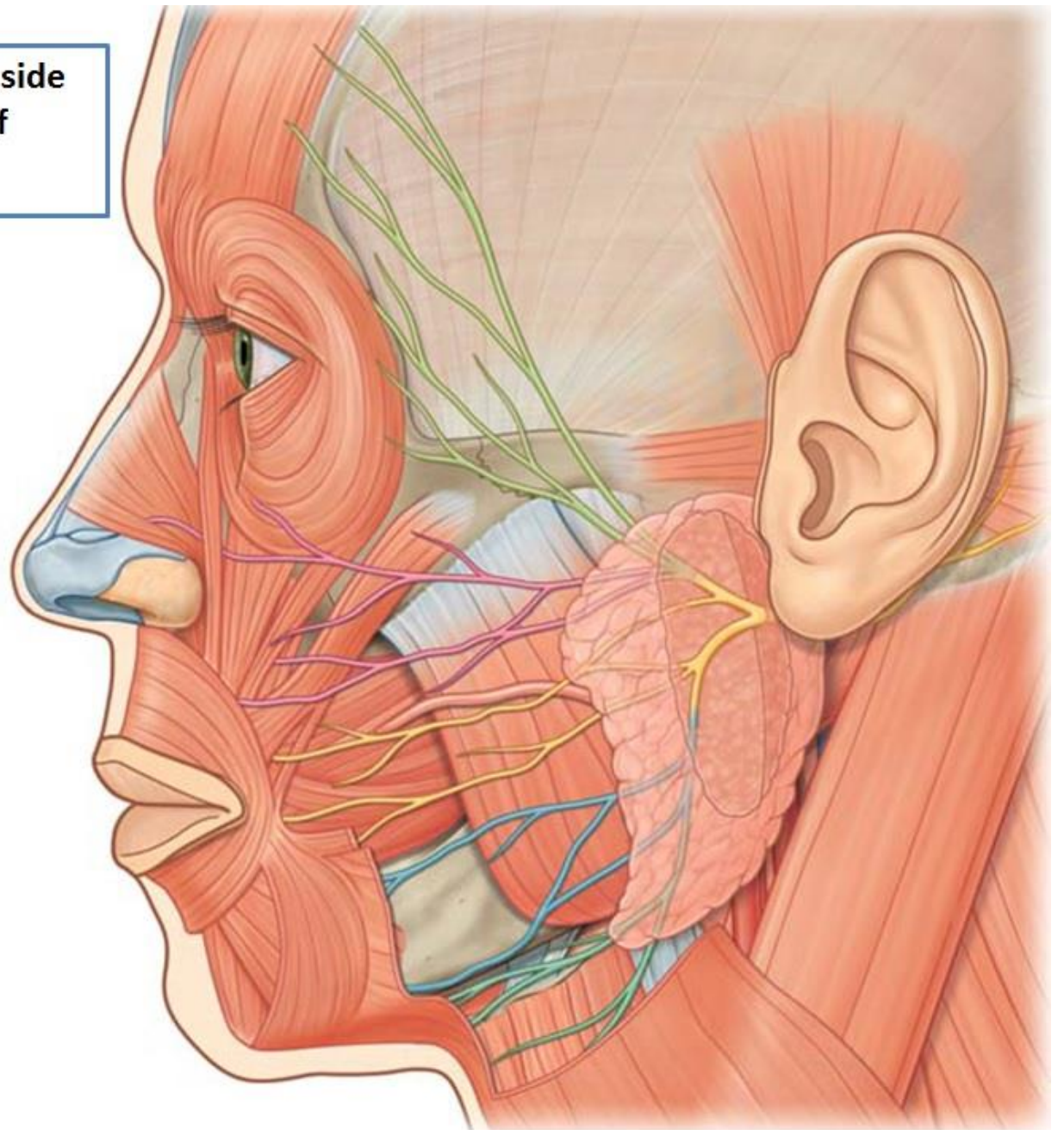
3 Buccal branches

4 Marginal mandibular branches

5 Cervical branches



The nerves show in the left side of the head are branches of **Facial nerve**



# Brachial Plexus

**Musculocutaneous nerve**

**Axillary nerve**

**Radial nerve**

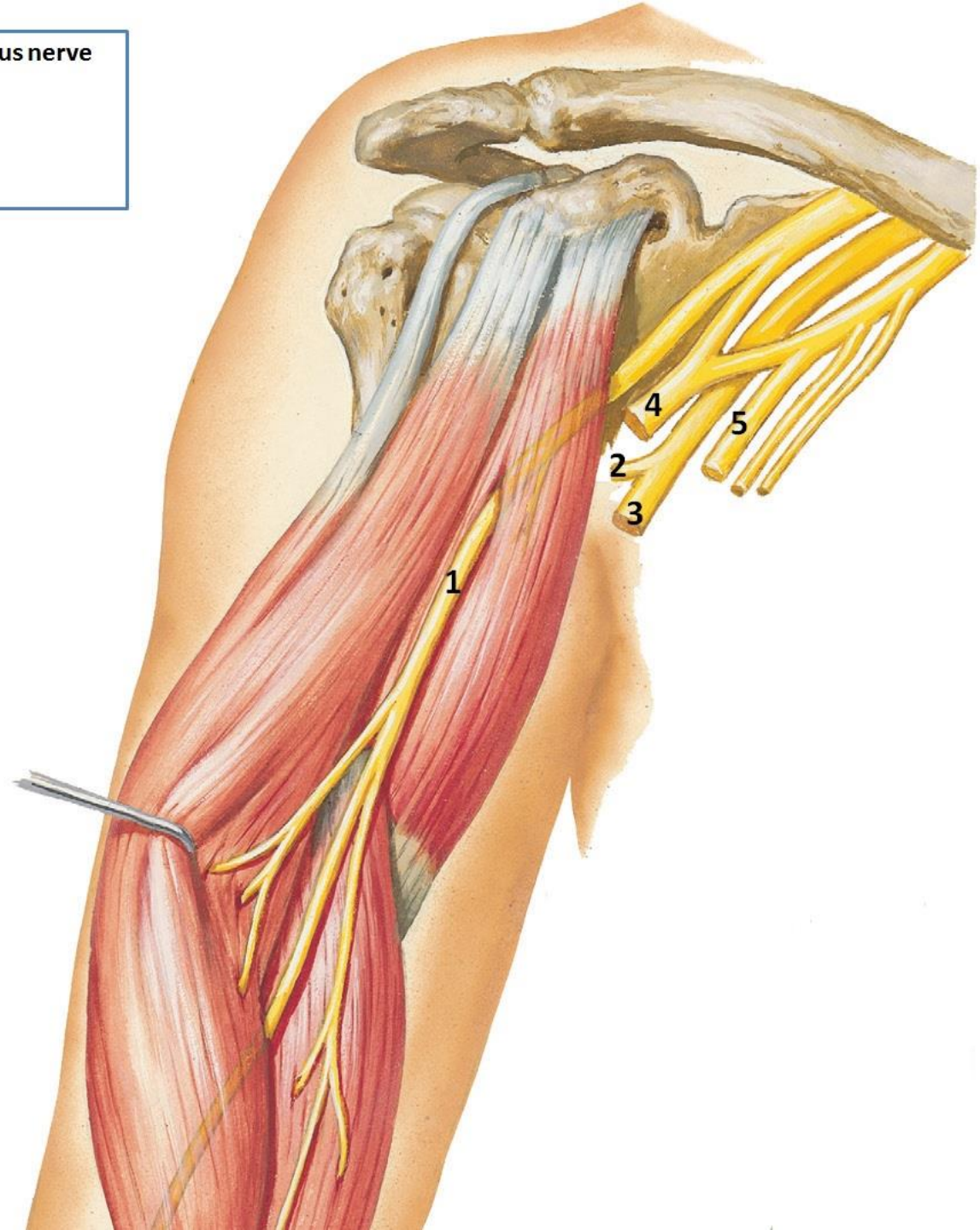
**Median nerve**

**Ulnar nerve**

**Cutaneous distribution of the ulnar nerve in the hand**

**Cutaneous distribution of the median nerve in the hand**

1. Musculocutaneous nerve
2. Axillary nerve
3. Radial nerve
4. Median nerve
5. Ulnar nerve





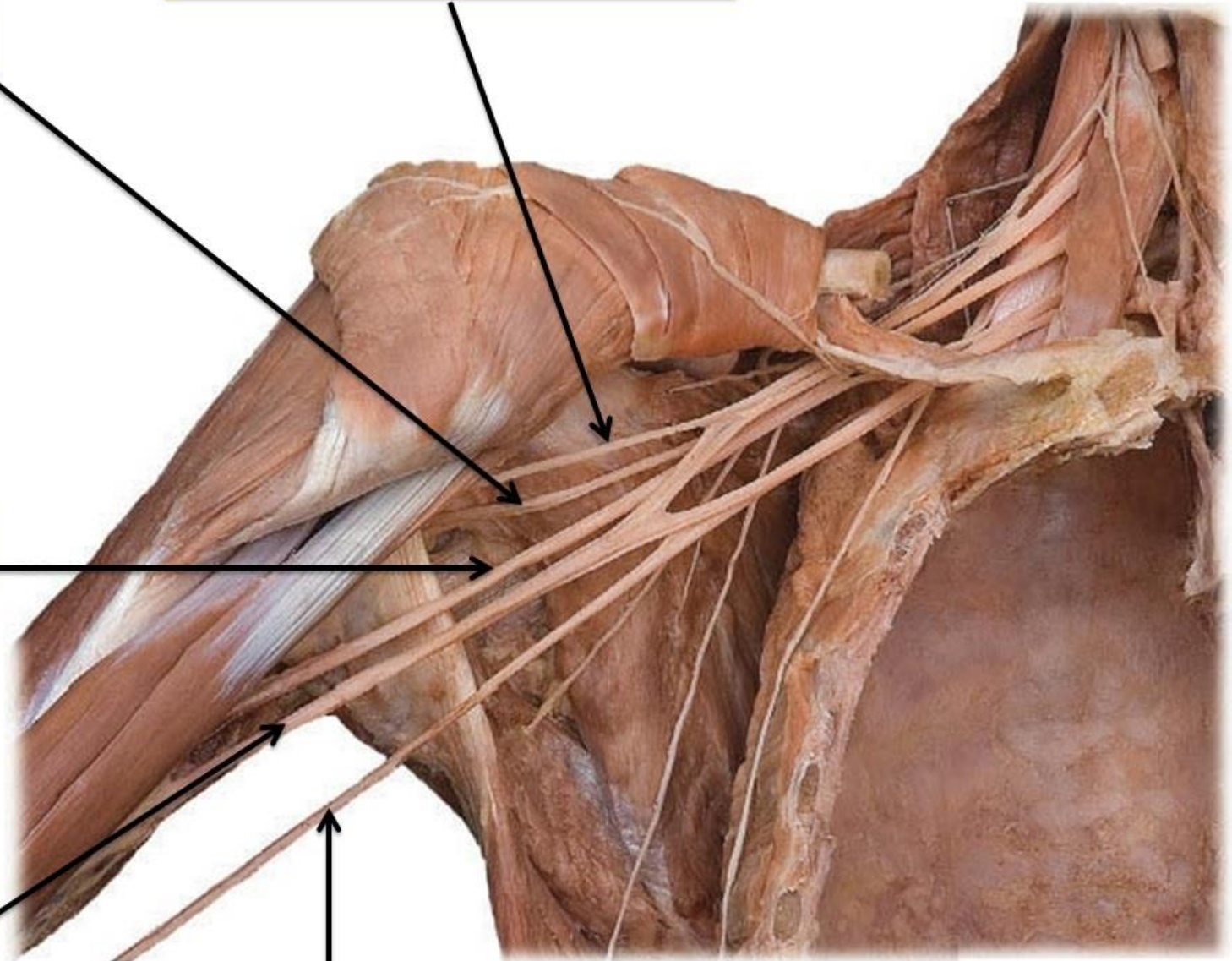
Musculocutaneous nerve

Axillary nerve

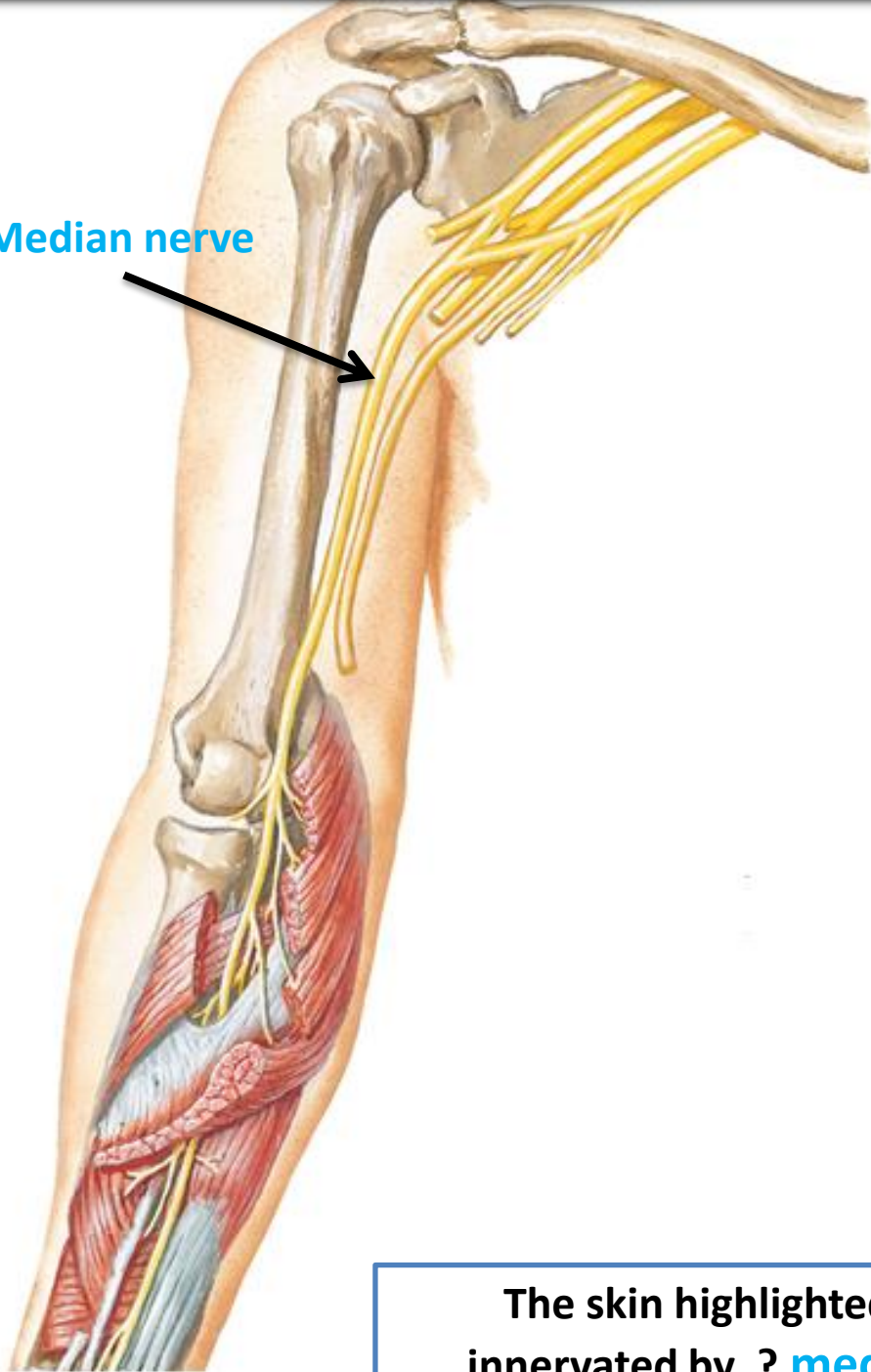
Radial nerve

Median nerve

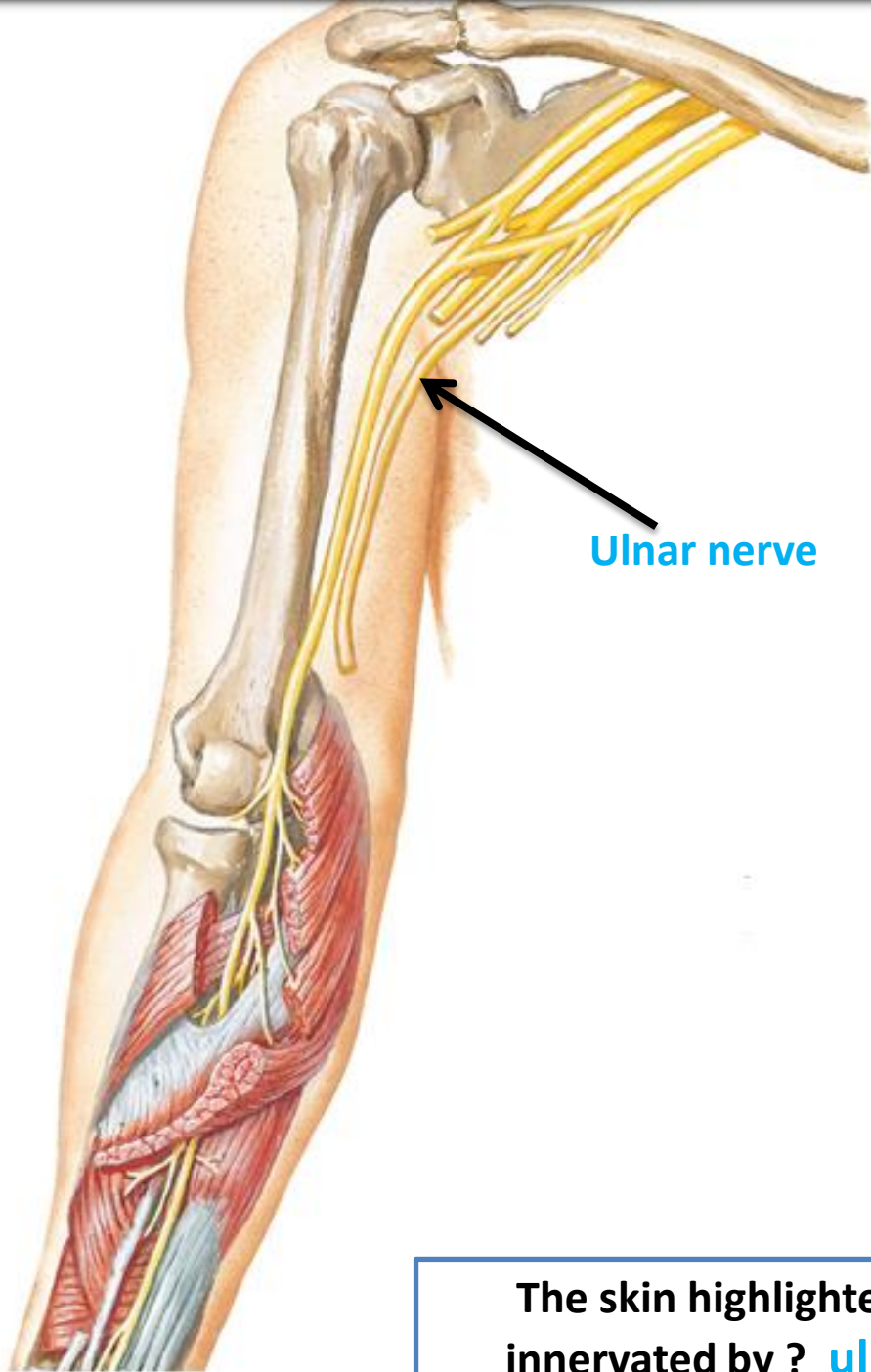
Ulnar nerve



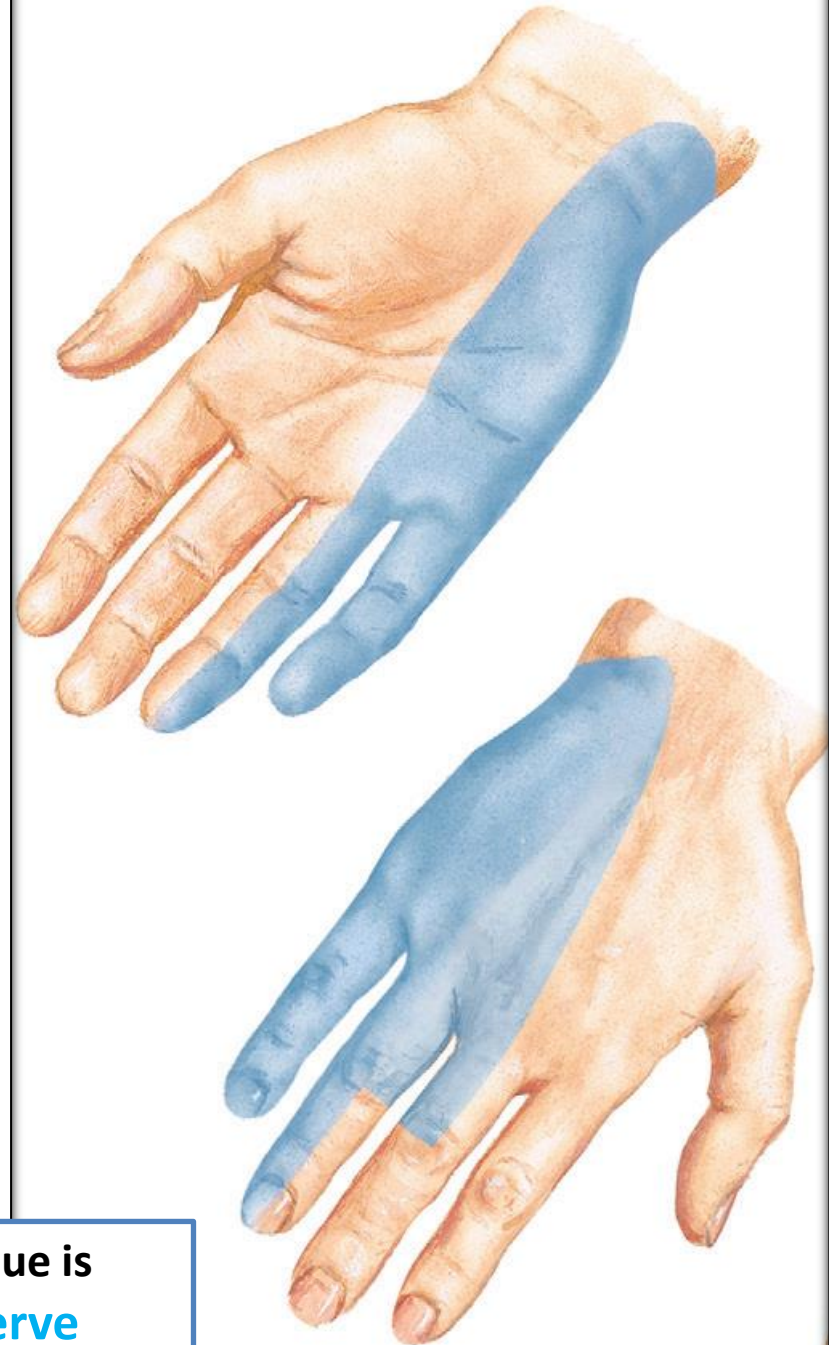
Median nerve



The skin highlighted in blue is innervated by ? **median nerve**



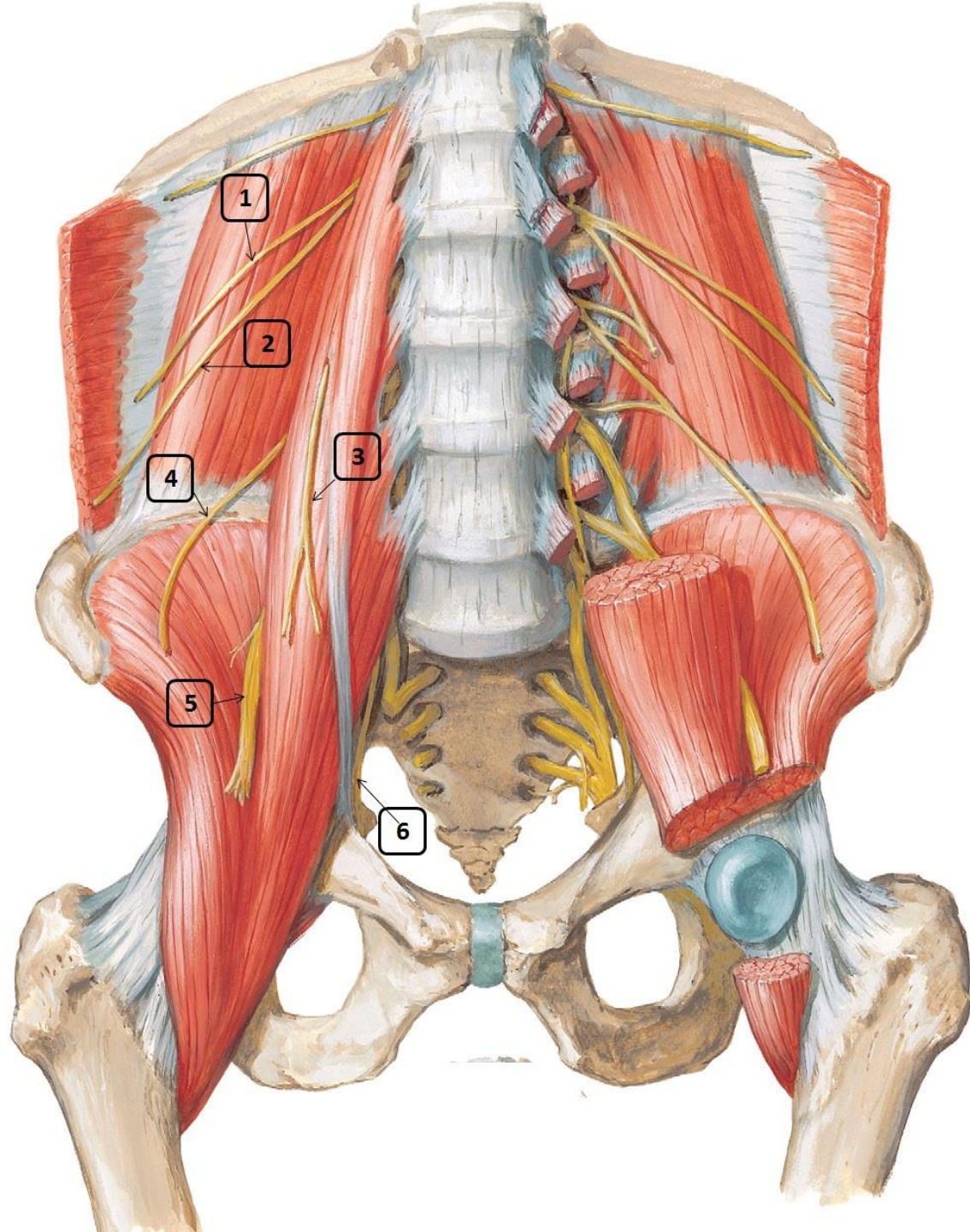
Ulnar nerve

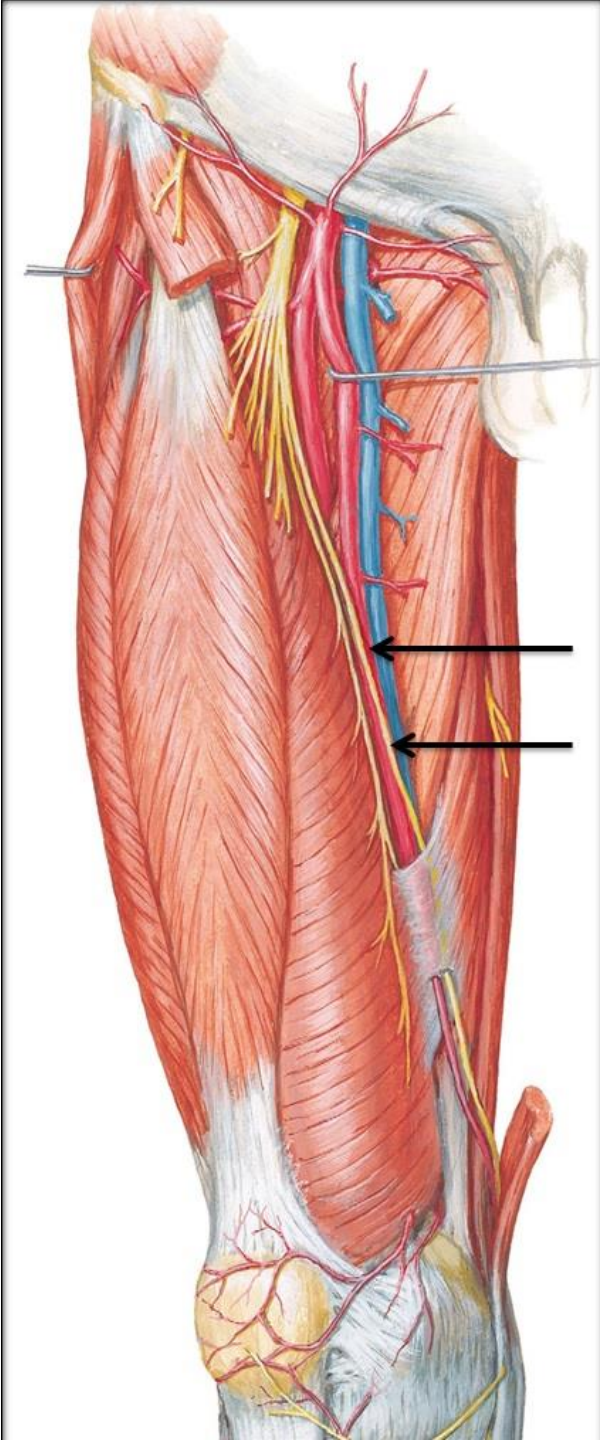


The skin highlighted in blue is innervated by ? **ulnar nerve**

# Lumbar plexus

Lumbar plexus	Branches	
	Iliohypogastric nerve	1
	Ilioinguinal nerve	2
	Genitofemoral nerve	3
	Lateral cutaneous nerve of thigh	4
	Femoral nerve	5
	Obturator nerve	6

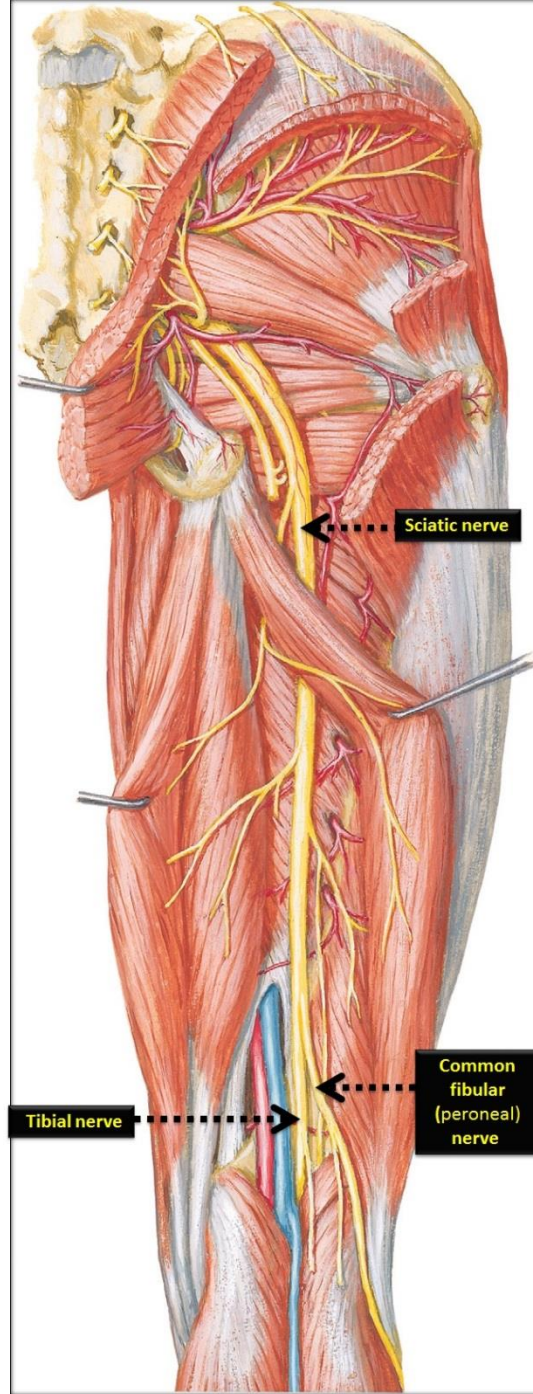




The **saphenous nerve**  
longest cutaneous nerve of the  
body

# Sacral plexus

<b>Sacral plexus</b>	<b>Branches</b>		
	<b>Sciatic nerve</b>		
		<b>Tibial nerve</b>	
		<b>Common fibular (peroneal) nerve</b>	
			<b>Superficial fibular (peroneal) nerve</b>
			<b>Deep fibular (peroneal) nerve</b>





**GOOD LUCK**  
**GOOD F\*CK**

