



جامعة المستقبل
كلية التقنيات الصحية والطبية
قسم تقنيات البصريات



First Stage 2023-2024

ANATOMY

**Practical Lecture Title
Orbit of The Eye**

Lecture Number: 1 / course 2

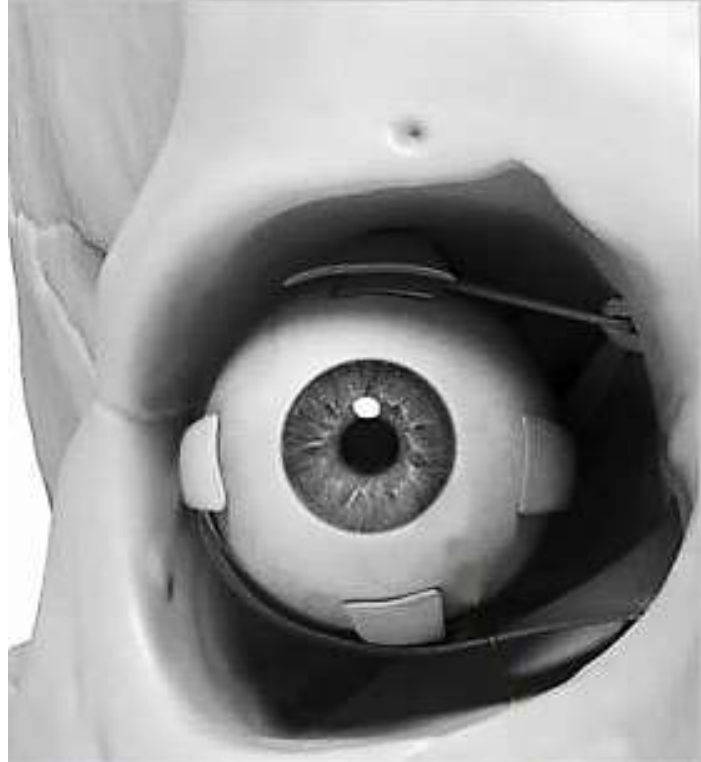
Prepared by

Hassan A. Aljaberi

OPTOMETRIST

Orbit of the Eye **محجر العين**

The orbit is the bony cavity or socket in the skull that contains and protects the eyeball and its associated muscles, nerves, and blood vessels.



Bones of the Orbit

These bones are arranged in a pyramidal shape, with the apex pointing posteriorly towards the optic canal, through which the optic nerve and ophthalmic artery pass.

The bones that form the orbit are:

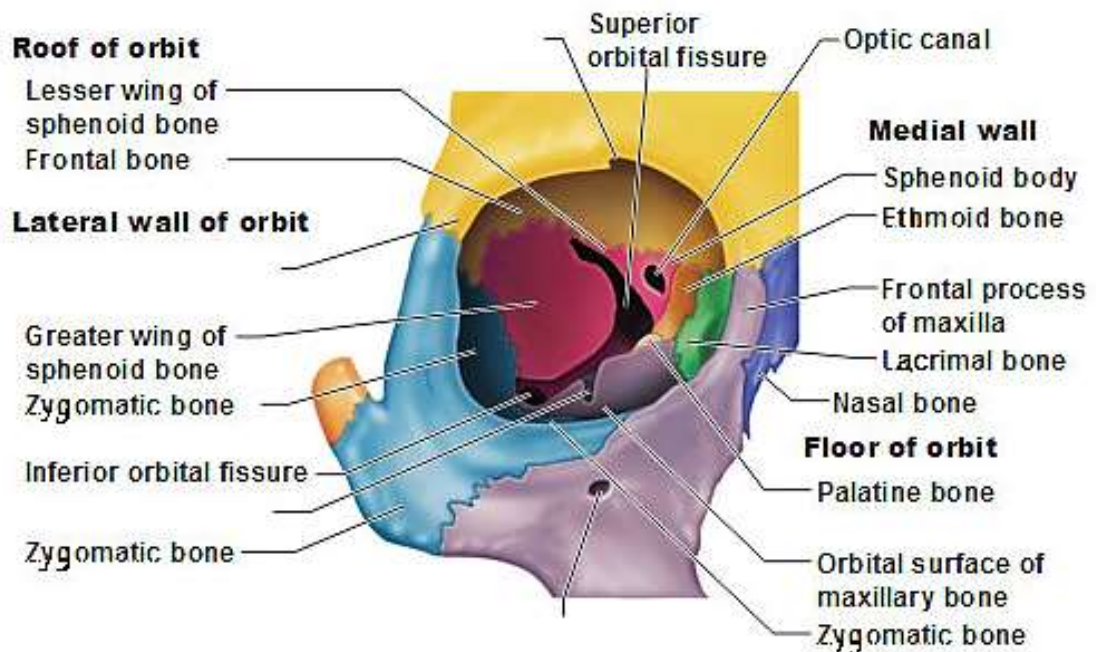
- 1. Frontal bone:** The frontal bone forms the roof of the orbit.
- 2. Zygomatic bone:** The zygomatic bone forms the lateral wall and part of the floor of the orbit.
- 3. Maxilla bone:** The maxilla forms a significant portion of the floor of the orbit.

4. Ethmoid bone: The ethmoid bone forms parts of the medial wall and roof of the orbit.

5. Lacrimal bone: The lacrimal bone forms part of the medial wall of the orbit.

6. Sphenoid bone: The sphenoid bone forms the posterior part of the orbit.

7. Palatine bone: The palatine bone contributes a small portion to the floor of the orbit.

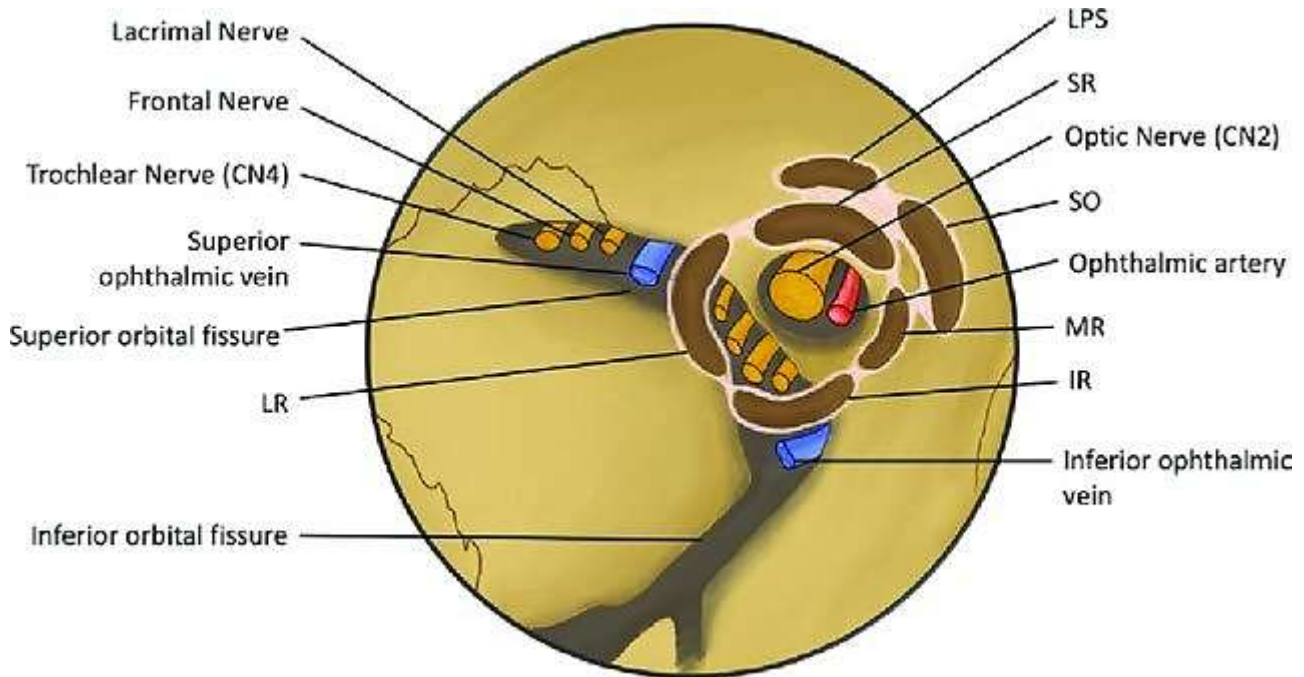


Openings Orbit of The Eye

There are several openings in the orbit walls that allow structures to enter and exit.

- ✓ **Optic canal:** An opening at the back of the orbit through which the optic nerve passes to reach the eyeball.
- ✓ **Superior orbital fissure:** A large opening between the greater and lesser wings of the sphenoid bone that allows several nerves and blood vessels to enter/exit the orbit.

- ✓ **Inferior orbital fissure:** An opening below the orbit that allows passage of nerves and blood vessels.
- ✓ **Nasolacrimal canal:** A bony canal that runs from the lacrimal sac in the orbit to the nasal cavity to drain tears.

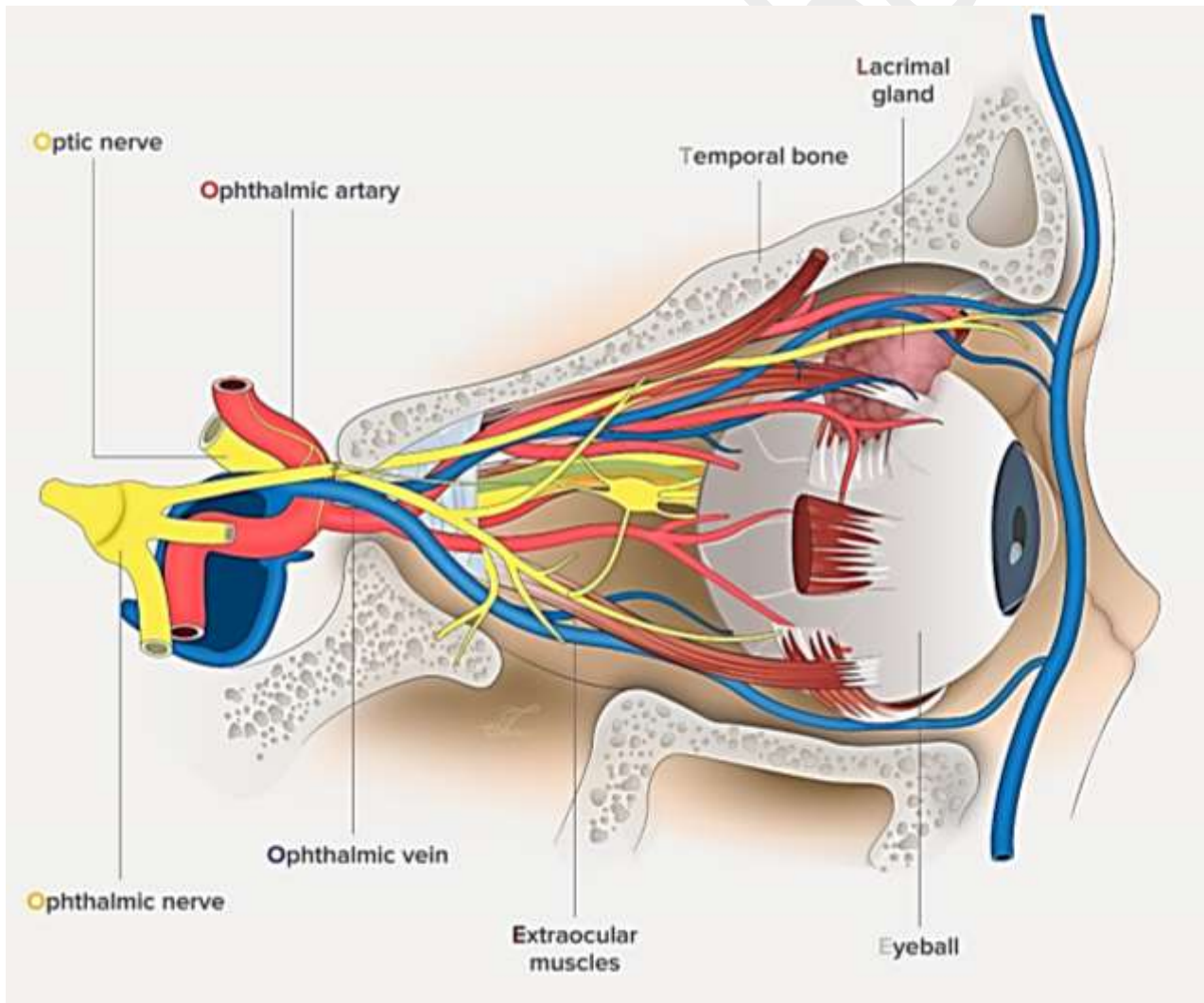


Contents Orbit of The Eye

The orbit of the eye contains several important structures within the bony socket:

- ✓ **Eyeball** - The eye itself, containing structures like the cornea, iris, lens, vitreous humor, retina.
- ✓ **Extraocular muscles** - Six muscles (four rectus and two oblique) that control the movement and positioning of the eyeball.
- ✓ **Optic nerve** - The nerve that transmits visual information from the retina to the brain.
- ✓ **Ophthalmic artery** - The main artery that supplies blood to the orbit and eye.

- ✓ **Veins** - Such as the superior and inferior ophthalmic veins that drain blood from the orbit.
- ✓ **Nerves** - Including the oculomotor, trochlear, abducens, and branches of the ophthalmic and maxillary nerves that innervate structures in the orbit.
- ✓ **Lacrimal gland and ducts** - Producing and draining tears.
- ✓ **Orbital fat/connective tissue** - Filling spaces and cushioning the orbit.
- ✓ **Fascial sheath** - The periosteum lining the inside of the bony orbit.



Functions Orbit of The Eye

The orbit of the eye serves several critical functions:

- 1. Protection of the eye**
- 2. Support for eye movement**
- 3. Transmission of visual information:** The optic nerve passes through the back of the orbit to carry visual signals from the retina to the brain for image processing.
- 4. Blood supply and drainage:** The orbit allows passage of the ophthalmic artery to supply oxygenated blood to the eye and associated tissues, as well as veins for drainage.
- 5. Nerve supply:** Various nerves like the oculomotor, trochlear, and branches of the ophthalmic and maxillary nerves traverse the orbit to innervate the muscles, glands, and other ocular structures.
- 6. Housing of accessory structures:** The orbit contains the lacrimal gland for tear production, as well as fat pads that cushion the eye and extraocular muscles.