



THE CORNEA AND SCLERA

جامعة ساوة

كلية التقنيات الصحية والطبية

قسم تقنيات البصريات

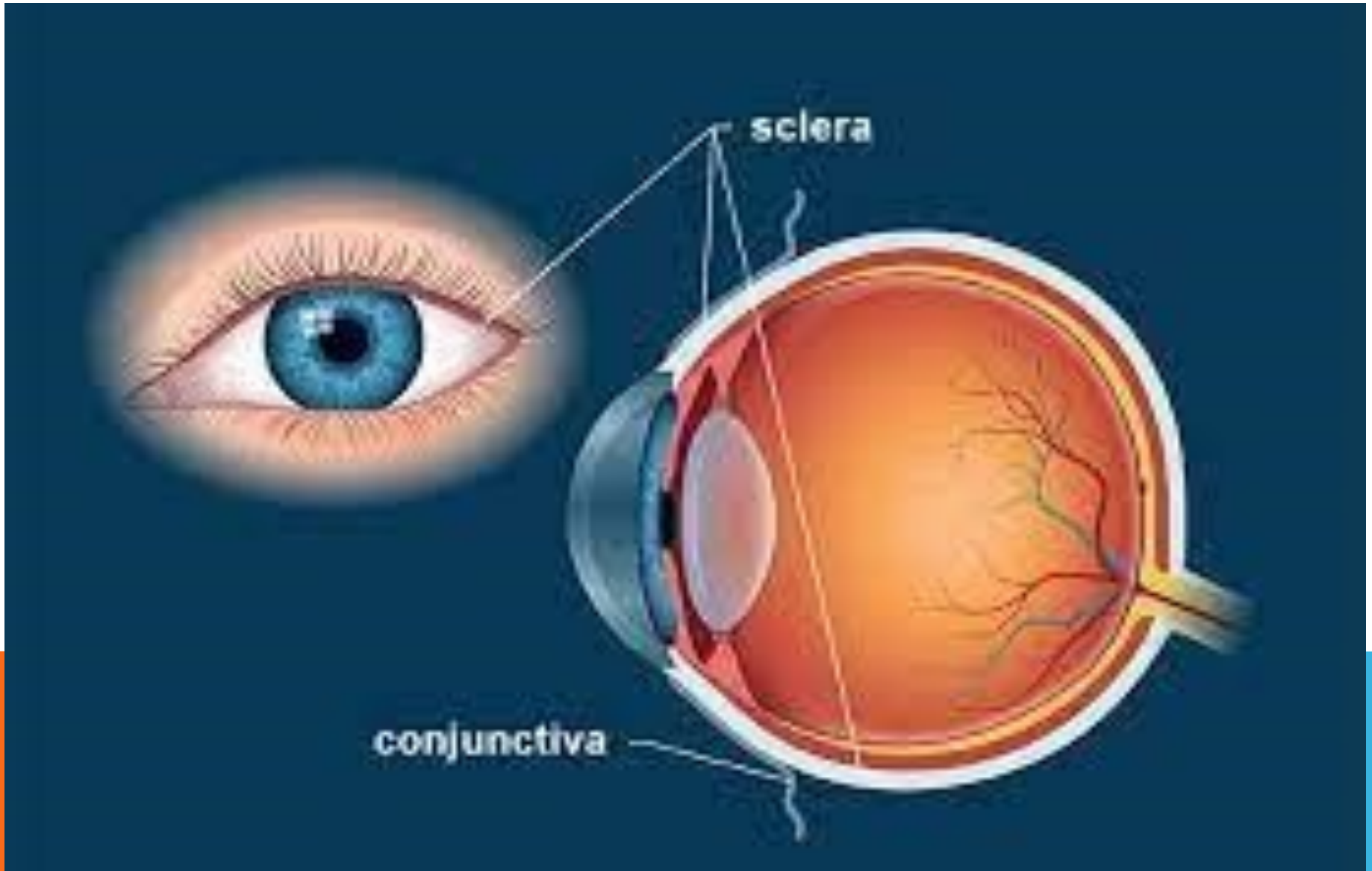
المرحلة الثانية

فسلجة العين

Lec 3
نظري

Lecture
Dr.Ruaa Jawad Jaber

Sclera: The White Of The Eye



Sclera

The sclera is the white part of the eye that surrounds the cornea. In fact, the sclera forms more than 80 percent of the surface area of the eyeball, extending from the cornea all the way to the optic nerve, which exits the back of the eye. Only a small portion of the anterior sclera is visible.



The sclera ranges in thickness from about 0.3 millimeter (mm) to 1.0 mm. It is composed of fibrils (small fibers) of collagen that are arranged in irregular and interlacing bundles. The random arrangement and interweaving of these connective tissue fibers are what account for the strength and flexibility of the eyeball



The sclera is relatively inactive metabolically and has only a limited blood supply. Some blood vessels pass through the sclera to other tissues, but the sclera itself is considered avascular (lacking .blood vessels)



Sclera Function

- 1.The sclera, along with the intraocular pressure (IOP) of the eye, maintains the shape of the eyeball.
- 2.The tough, fibrous nature of the sclera also protects the eye from serious damage such as laceration or rupture from external trauma.
- 3.The sclera also provides a sturdy attachment for the extraocular muscles that control the movement of the eyes.



Sclera Problems

Here are a few conditions that can affect the sclera:

1.Scleral icterus (yellow eyes). This condition — also called icteric sclera — is a yellowing of the white of the eye. It is associated with hepatitis and other liver disease. Increased blood serum levels of bilirubin (an orange-yellow pigment formed in the liver) is commonly associated with scleral icterus. If you develop yellow eyes, you should have blood tests to see if you have this condition and associated liver problems.



2. Blue sclera. As you would expect, this condition is when a normally white sclera has a somewhat blue color. Blue sclera is caused by a congenitally thinner-than-normal sclera or a thinning of the sclera from disease, which allows the color of the underlying choroidal tissue to show through it.



3.Episcleritis. This is inflammation of the episclera that lies atop the sclera and under the conjunctiva. Episcleritis is relatively common and tends to be benign and self-limiting.

4.Scleritis. This is inflammation of both the episclera and the underlying sclera itself. Scleritis is a more serious and typically more painful red eye than Episcleritis. Up to 50 percent of cases of scleritis involve an underlying systemic disease, such as rheumatoid arthritis.



Scleritis typically

is treated with oral non-steroidal anti-inflammatory drugs (NSAIDs) and corticosteroids. In some cases, immunomodulatory therapy may also be prescribed. Scleritis may remain active for several months or even years before going into long-term remission.



summary

The sclera is the white, tough outer layer of the eye. It gives the eye its shape and protects the inner parts. It connects with the cornea in the front and the optic nerve in the back.

Common Diseases of the Sclera:

1. Scleritis :Inflammation of the sclera

Causes: autoimmune diseases (like rheumatoid arthritis)

Symptoms: severe eye pain, redness, blurred vision

2. Episcleritis :Inflammation of the outer layer of the sclera (milder than scleritis)

Symptoms: mild pain, redness. Often self-limiting or treated with mild medication

3. Blue Sclera :Sclera appears blue due to thinning
Seen in diseases like osteogenesis imperfect

4. icteric sclera — is a yellowing of the white of the eye.

Causes: hepatitis and other liver disease

1. anterior surface is circular (11.7mm horizontally, 10.6mm vertically), whereas its posterior surface is elliptical

2. Endothelium The outermost layer; protects the eye and absorbs oxygen and nutrients

3. the sclera itself is considered avascular

4. Scleritis. This is inflammation of both the episclera and the underlying sclera itself

Thank you

