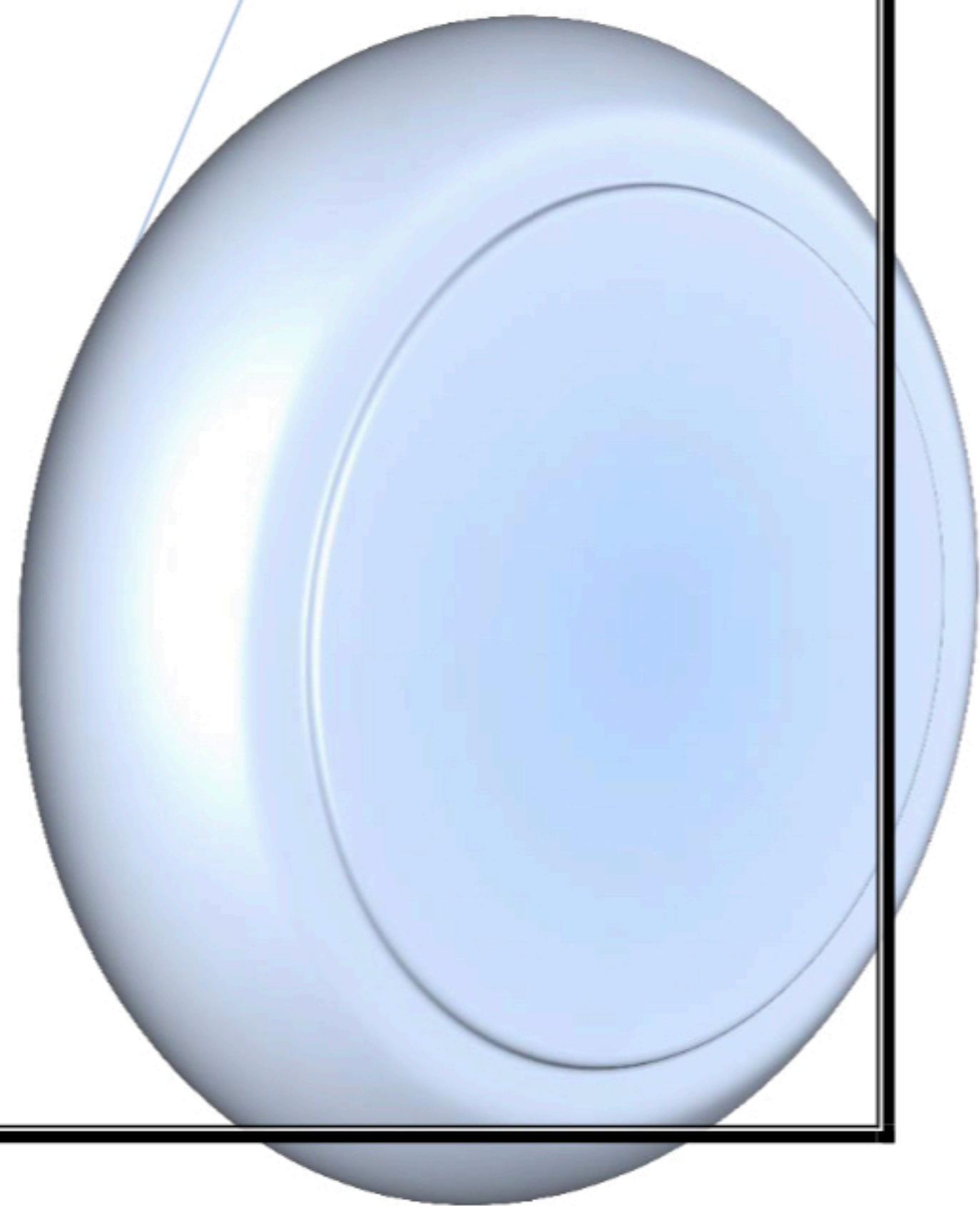


**Al-Mustaqbal University College  
Medical Physics Department  
Lecture 8/ Optics – Second Stage  
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## **Lecture 8 Outline**

### **Optical Device or Instrument**

#### **Human Eye**

#### **Defect of Human Eye**

***The optical instruments are divided into two groups:***

1) First group: Forms real images of an object, which is an object that is used to project rays of light, especially an apparatus with a system of lenses for projecting slides or film onto a screen or photographic plate.

2) Second group: the virtual image formed by the tool is transformed by the eye into a real image. This is instrument called optical aids, such as Spectacles, microscope and telescope.

تنقسم الأدوات البصرية إلى مجموعتين: (1) المجموعة الأولى: تشكل صورًا حقيقية لجسم ، وهو كائن يستخدم لإظهار أشعة الضوء ، وخاصة الجهاز المزود بنظام عدسات لإسقاط الشرائح أو الفيلم على الشاشة. أو لوحة فوتوغرافية. (2) المجموعة الثانية: يتم تحويل الصورة الافتراضية التي تشكلها الأداة بالعين إلى صورة حقيقية. تسمى هذه الأداة بالمساعدات البصرية ، مثل النظارات والميكروسكوب والتلسكوب.

### **The human eye**

***The human eye*** the optical behavior of the eye is similar to that of a camera.it is protected by an eyelid (shutter) and lens system.

- The human eye is one of five sense organs which is the most valuable and sensitive.
- It helps us to see the surroundings and the colors around us.
- The eyeball is approximately spherical in shape with a diameter of about 2.3 cm to 2.5 cm.
- Refraction of the light rays entering the eye mostly occurs at the outer surface of the cornea.
- The crystalline convex lens in eye merely provides the finer adjustment of focal length required to focus.
- Near point of the eye is 25 cm and far point of the eye is infinity.
- The distance between near point and far point of the eyes is called Range of vision.