

The Vision Sensation



Practical Physiology

Dr . Mohammed faires

MSc Oral physiology



- Vision Sensation occurs in the eyes, the optics of the eye produce an inverted image on the Retina. Through the transparent cornea which allows the light rays to enter the eye, the front surface of the cornea acts as a fixed lens.



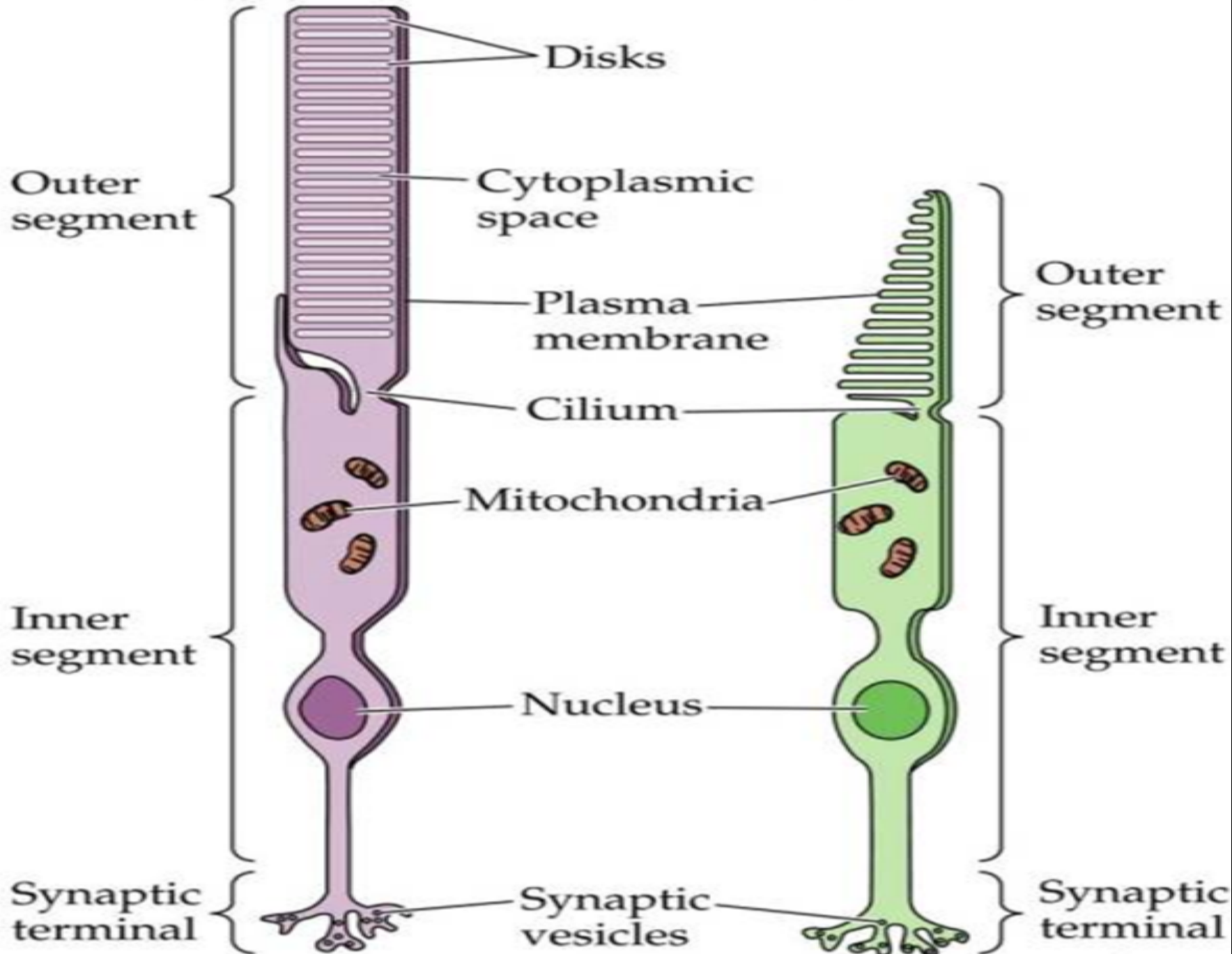
- The retina - is the light sensitive portion of the eye that contains:
 1. The cones - which are responsible for color vision.
 2. The rods - which are mainly responsible for black and white vision and vision in the dark.



- The Major Functional segments of either rod or cone (photoreceptors) are:
 - The outer segment.
 - The inner segment.
 - The nucleus.
 - The synaptic body

(A) Rod

(B) Cone



Lacrimal gland

Eyelid

Superior
lacrimal can

Lacrim
sac

Lacrimal
gland ducts

Pupil

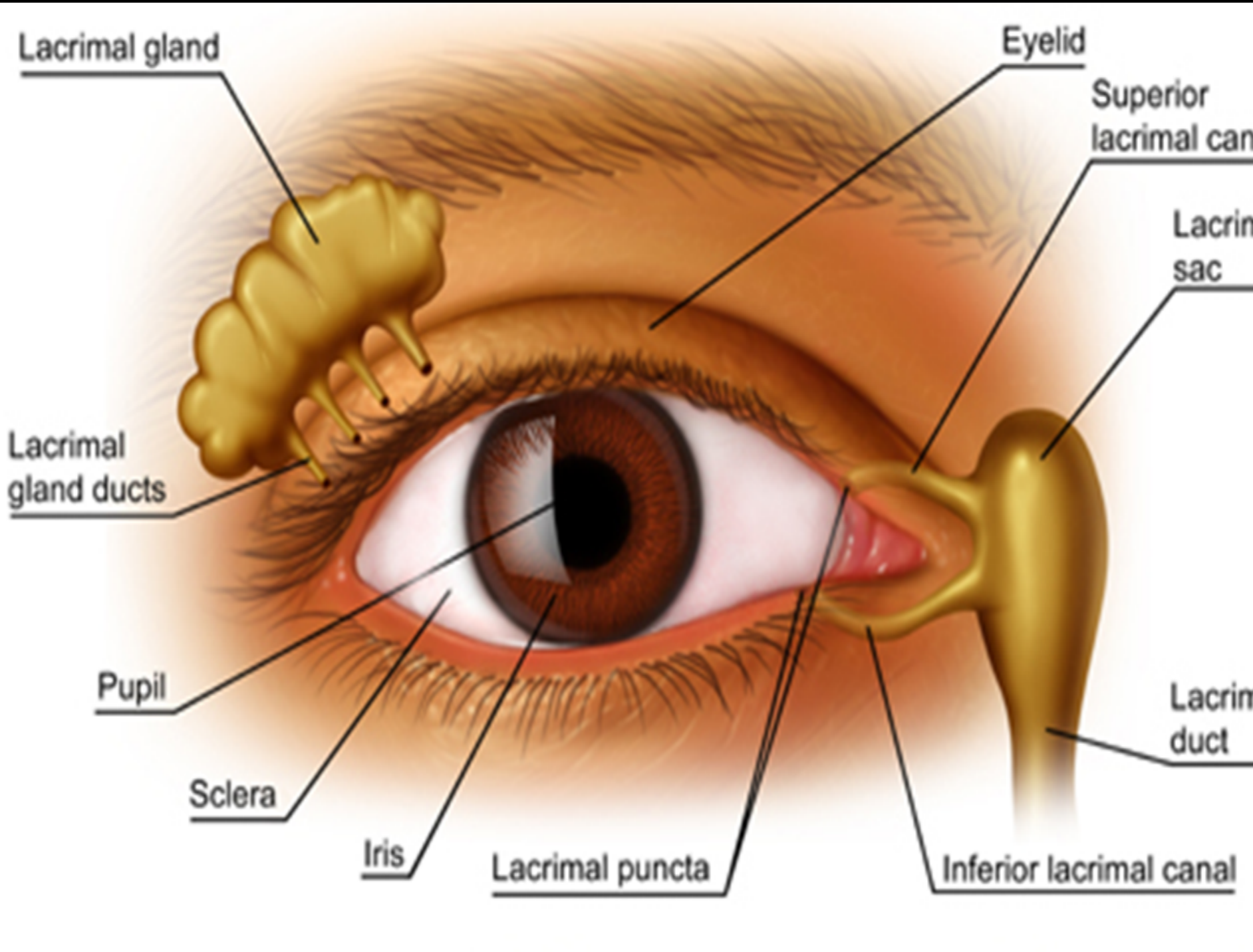
Sclera

Iris

Lacrimal puncta

Lacrim
duct

Inferior lacrimal canal



The Vision Disorder



- **Night Blindness**

Called night blindness because the amount of light available at night is too little to permit adequate vision in vitamin A deficient person.



- **color Blindness:**

Red — Green color blindness: when a single group of color receptive cones is missing from the eye, the person is unable to distinguish some colors from others which are normally distinguished by red and green cones.



- Occasionally blue cannot be seen and this condition is very rare that blue cones missing, called blueness.

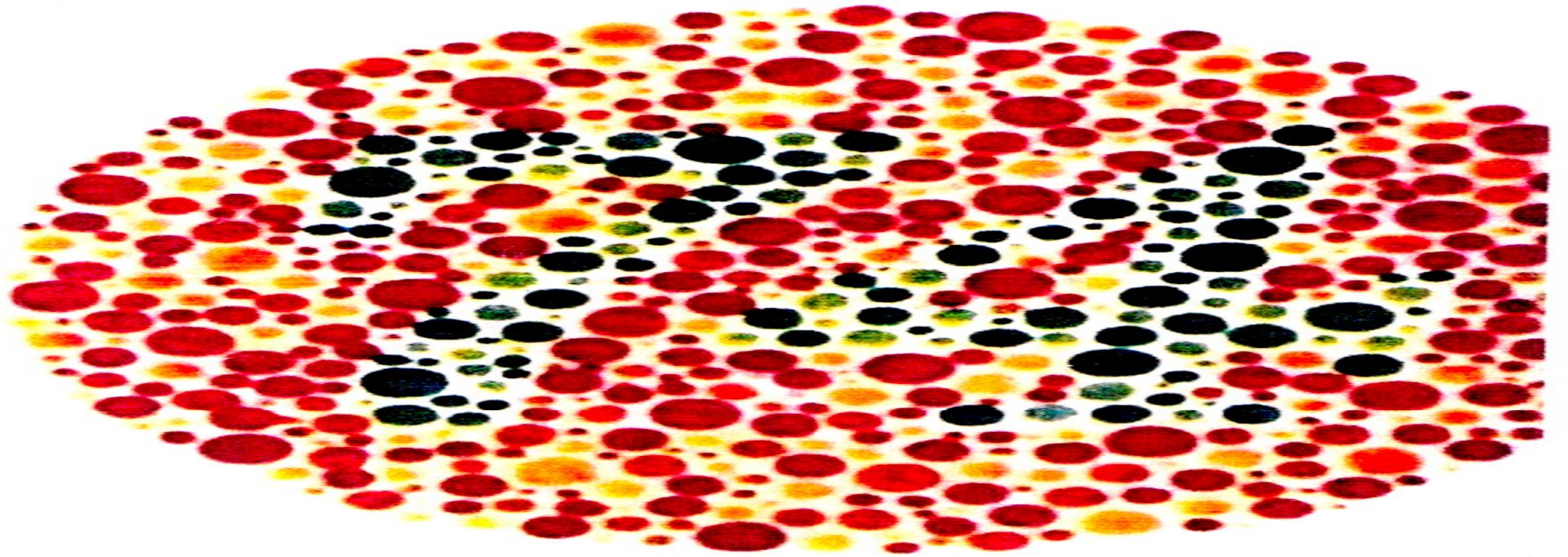
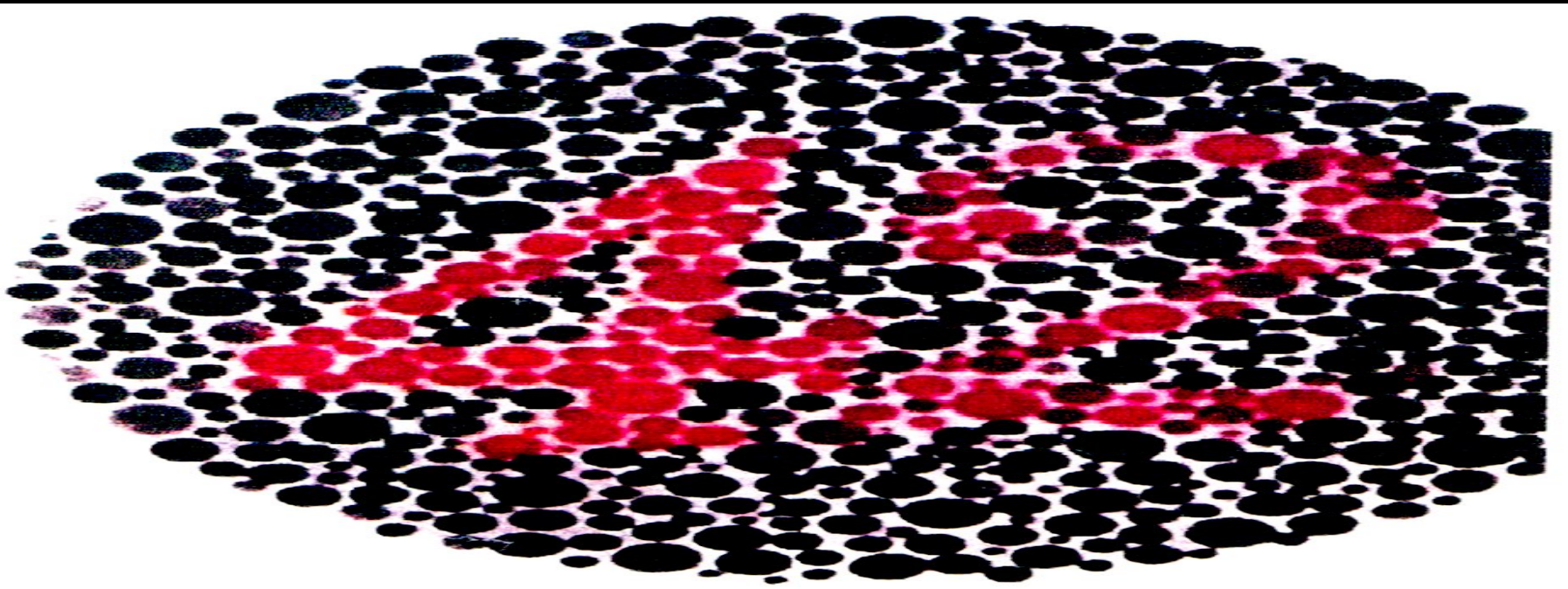
Color Test Chart



- A rapid method for determine color blindness is based on the use of spot charts (Ishihara chart) this charts are arranged with a confusion of spots of several different colors.



- In the top chart, the person with normal color vision read 74, whereas the red — green color blind person reads 21.
- In the bottom chart, the person with normal color vision reads 42, whereas the red - blind person reads 2 and the green — blind person read 4.



(Ishihara chart)