

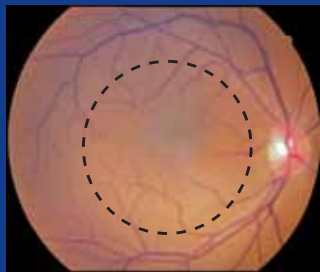
SIMPLY Speaking

Common Eye Diseases

Macular Disease

The eye can be likened to a camera. In the front portion is a series of transparent lenses; at the back is the film, a thin light-sensitive membrane, called the retina. The retina is made up of several layers of cells starting from the cells with photoreceptive processes (called rods or cones), ending up with ganglion cells that connect to the brain. Chemical reactions initiated by exposure to light happen in the rods and cones causing an electrical charge that is propagated all the way to the occipital lobe of the brain where the different impulses are put together to form an image we recognize. Diseases of the retina affect vision acutely if the macula is involved. Visual symptoms can range from nonspecific blurring, distorted or wavy vision, to the development of a blind spot in the center of vision.

The macula (within the dashed lines) is the central portion of the retina where sensitive photoreceptors (cones) are packed in compact rows. This anatomical arrangement in the macula makes it possible for us to see fine details, perceive color, and read in good light. Ophthalmoscopy allows your eye doctor to view the macula directly. Various views can be taken using a fundus camera. Fluorescent dye injected during fundus photography can expose abnormalities in the blood flow of the retina that can affect the macula. Other analytical instruments (OCT and HRT) can provide even more detailed and higher resolution images of the macula.



There are many conditions that primarily arise in the macular area. The more common ones are discussed below.

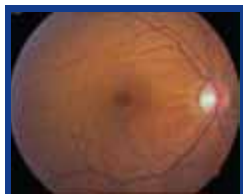
Central Serous Retinopathy (CSR)

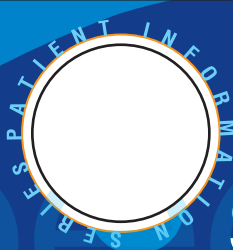
In this disease, vision is blurred at the center or very close to it. The blurring can be described as a mild gray or a dense dark spot in the center of vision of the affected eye. CSR is more common in young to middle-aged males, typically affecting only one eye. The condition is usually self-limited and may resolve without treatment but may recur in the same eye or the other. Examination and fundus photography will reveal round elevation of the macula due to fluid accumulation (edema) in the deeper layers of the macula. Fluorescein angiography (see *Fluorescein Angiography*) may reveal the source of the leaking fluid which can then be treated by laser photocoagulation if it does not resolve spontaneously.



Macular Hole

Senile or idiopathic macular hole develops more frequently in elderly females often diagnosed incidentally with the probability of 16% developing in the other eye within 5 years. In a macular hole, the center of the macula, the fovea, thins out and disappears for reasons unknown, leaving an oval or round defect that enlarges until finally stabilizing within weeks to several months. Because of the loss of photoreceptor tissue, the patient may notice a blind spot in the central vision corresponding to the size of the defect. Elevation of the macula surrounding the hole can cause further visual problems. Unfortunately, there is no treatment that can reverse the formation of a hole. Surgical removal (vitrectomy) of the gel adjacent to the retina (see *Vitreous Degeneration*) and injection of a gas in its place can push the macula down. If performed early enough, the size of the blind spot may diminish resulting in better visual acuity from the area surrounding the hole.





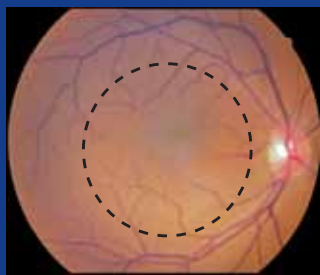
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