

RESEARCH FOR PATIENTS WITH MACULAR DISEASES

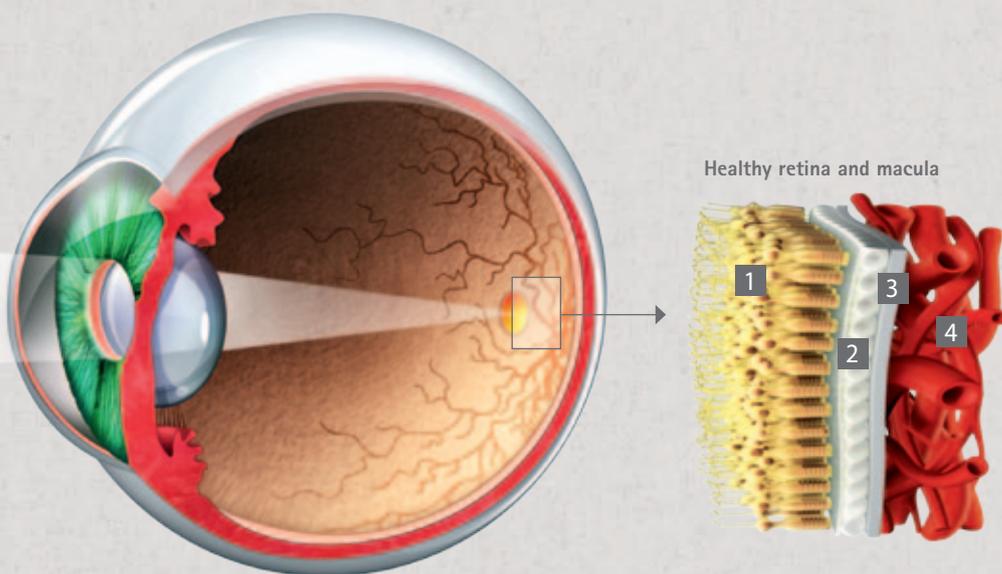
Focus on the retina

The eyes are our window on the world: the retina forms a projection surface for what we see. With advancing age, however, there is a risk that the vision cells in this layer may die off. One of the most common causes of this is dry or wet age-related macular degeneration. The eyes may also be damaged by diabetes. Bayer researchers are working on new treatments for these disorders.



“Our aim is to develop innovative, highly effective and safe treatments for people with eye diseases.”

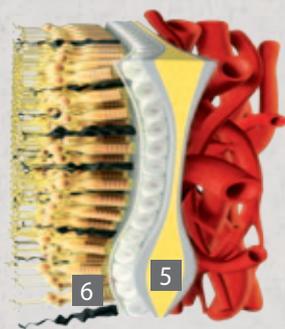
Dr. Georges von Degenfeld,
Bayer HealthCare



When light stimuli hit the retina, they are absorbed and processed by light-sensitive cells, the vision cells or photoreceptors **1**. The area of sharpest vision is the “macula lutea,” also known as the macula or the yellow spot. The retinal pigment epithelium **2** serves as a light filter. In addition, like Bruch's membrane **3**, it transports nutrients away from the choroid **4**.

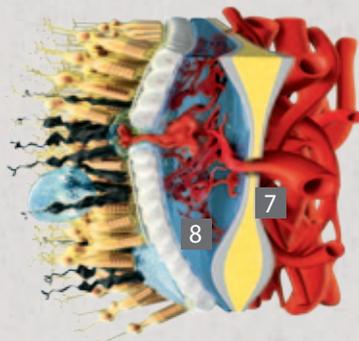
All three disease manifestations lead to deteriorating vision in patients:

Dry macular degeneration ...



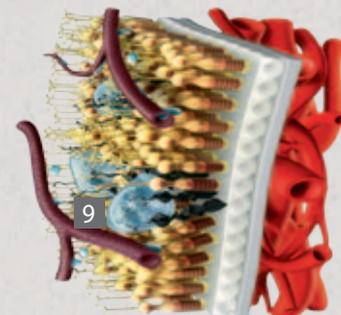
... is the most common form of age-related macular degeneration. In the early phase, fatty deposits **5**, also called drusen, form under the retina. At the advanced stage, these cause the photoreceptors to function poorly or even to die off **6**.

Wet macular degeneration ...



... involves the growth of blood vessels **7** into the retina. As a result, blood and fluid **8** collect under the macula. Vision cells may be destroyed. Patients see a dark spot in the center of their vision. Bayer HealthCare has developed an active substance that stops the growth of blood vessels and consequently preserves vision.

Diabetes-related macular degeneration ...



... may develop in people who have had diabetes for over 20 years or whose blood sugar is not optimally managed. A change takes place in the retinal blood vessels: they become porous and permeable to fluid **9**. This collection of fluid may cause destruction of vision.