

RESEARCH FOR PATIENTS WITH MACULAR DISEASES

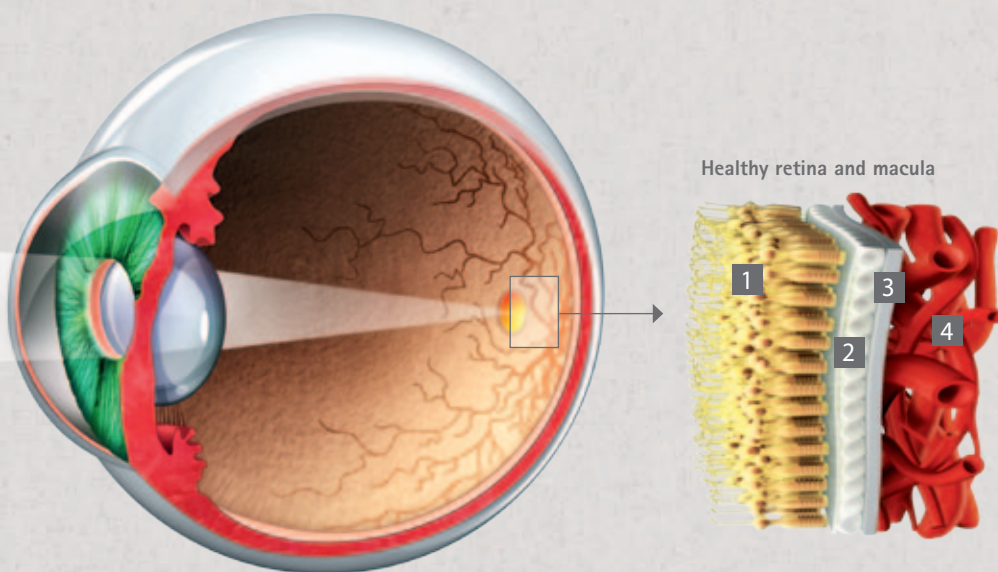
# Focus on the retina

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

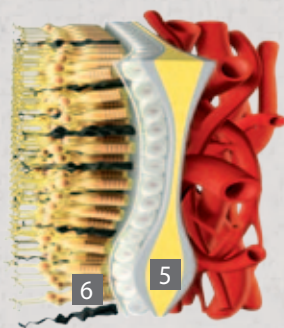


Healthy retina and macula

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**.

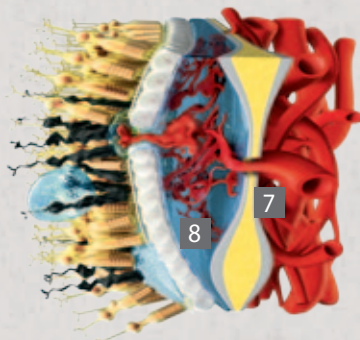
## All three disease manifestations lead to deteriorating vision in patients:

### Dry macular degeneration ...



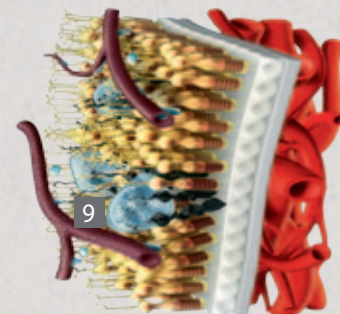
... is the most common form of age-related macular degeneration. In the early phase, fatty deposits **5**, also called drusen, form under the retina. At the advanced stage, these cause the photoreceptors to function poorly or even to die off **6**.

### 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.