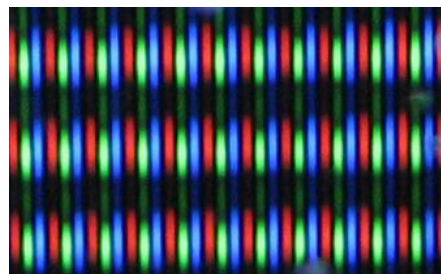




## Introduction to the Eyes

# Cool Facts about the Eyes and Answers to Questions

1. **(D) Our eyes account for about 80% of what we perceive.** They give us insight into the depth, distance, color, shape and movement of objects and the world around us. Also, visual images from our eyes are involved in 80% of what we remember.
2. **(C) Our eyes have 12 million photoreceptors!** An adult eye is about 1 inch (2.54 cm) in diameter and contains about 12 million photoreceptors (light sensitive cells)
3. **(D) Human eyes adjust focus instantaneously** to follow moving objects, or jump from object to object seamlessly. Muscles in our eye adjust the shape of the lens to focus on far and near objects.
4. **(A) Our eyes adjust to the amount of light that is present.** In bright light, our pupils contract, letting in less light. In darker settings, they dilate to allow more light in and improve our night vision.
5. **(A) We see upside down.** The light that enters our eyes passes through the lens and then forms a perfect up-side-down image on the retina in the back of our eye. Our brain automatically flips this image so that everything seems right side up.
6. **(B) We can see at night!** Our eyes contain 130 million photosensitive rods. The rods contain a chemical called rhodopsin, which is sensitive to even the tiniest amount of light. When light hits the rhodopsin it breaks down into two separate molecules, retinal and opsin. These two molecules slowly recombine into rhodopsin. This is why it takes a while for your eyes to adjust to the dark after being in bright light. Retinal is derived from vitamin A, so if you lack vitamin A in your diet, you may have trouble seeing in the dark.
7. **(C) We can see in color!** Our eyes contain 6-7 million color photosensitive cones. The cones are concentrated around the center of our retina so they pick up the light around where are eyes are focusing. They pick up three colors, blue, green and red. All the other colors are combinations of these three. If you put your face close to an old color television (turned on) you will see that each pixel is one of these colors and they brighten and dim to create the other colors (see below).



Macro image of television screen color pixels.

8. **(D) We blink once every 5 to 10 seconds.** At every five seconds that is roughly 12,000 times a day. We blink less when our eyes are concentrating on something such as reading a book. Blinking spreads tears over our eyes to keep them moist and clean.
9. **(A) We can see in 3-D!** Because our eyes are set about 6 cm apart, we see two different images, one with each eye. Our eyes have to change position to focus on images that are close and far. This alerts our brain to the distance between us and the object. If you close one eye and hold out your finger, and then switch eyes, notice that your finger moves a good bit more than objects in the background. Objects really far away hardly move at all. This is known as depth perception. It is what allows us to tell how close a ball that is thrown is getting to our hand as we reach out and catch it. With only one eye it is hard to judge the location of moving objects. Typically, predators and animals that live in trees have binocular vision (two eyes whose vision overlaps) so they can hunt prey and judge the distance of branches. Prey animals usually have monocular vision (one eye on each side of the head) so that they have a wider field of view to spot predators.

*Source:* Anitel, Stefan. "11 Amazing Facts and Myths about Eyes." Softpedia.

<http://news.softpedia.com/news/10-Amazing-Facts-and-Myths-About-Eyes-74813.shtml>