The Cornea and What It Does

- The cornea is the clear, front portion of the eye (where a contact lens would sit).
- The cornea provides 75% of the focusing power of the eye. The lens provides the other 25% of focusing. The lens sits behind the iris (colored part of the eye).

**Corneal Blindness**

- A damaged or diseased cornea prevents light from entering the eye, or prevents proper focusing on the retina in the back of the eye. This type of blindness is known as corneal blindness.
- Corneal blindness accounts for about 10% of all blindness in the United States. Worldwide, it is the second leading type of blindness second only to cataracts.
- There are many causes of corneal blindness. The most common are a variety of diseases specific to the cornea, corneal infections and trauma to the eye.
- The prevalence of corneal blindness varies from region to region and even country to country. For example, in Africa, corneal disease accounts for 90% of blindness. In the United States, nearly 40,000 people undergo corneal transplants each year.

**Cornea Transplants**

- A cornea transplant is a surgical procedure that replaces a disc-shaped segment of an impaired cornea with a similarly shaped piece of a healthy donor cornea.
- Corneal transplant is one of the most frequently performed human transplant procedures. Since 1961, more than 549,889 corneal transplants have been performed in the United States, restoring sight to men, women, and children ranging in age from nine days to 103 years.
- Each year, nearly 600 people in Colorado receive a cornea transplant.
- Over 90% of all corneal transplant operations successfully restore the corneal recipient’s vision.

Continued on reverse
• NOTE THAT OTHER PARTS OF THE EYE CAN ALSO BE TRANSPLANTED. For example the sclera, or white of the eye is used in reconstruction of the eye after trauma or disease. Limbal stem cells (found near the edge of the cornea) are transplanted to help patients whose eye disease prevents their own stem cells from functioning properly.

Features of the Teaching Cornea

• For one reason or another, the teaching cornea is not suitable for transplant. It is available for education because the family of the donor consented to this use. If you hold it up to a light source you may notice that the teaching cornea has “folds,” or is a bit cloudy. This may or may not be why it could not be transplanted. The fluid used to preserve non-transplantable corneas (formalin) can sometimes produce these conditions.

• The white ring around the cornea is part of the sclera, or “white” of the eye. This ring is not transplanted. It is there to give the eye bank and the surgeon an area to hold on to while manipulating the cornea so as not to damage the very delicate layers of the cornea. Only the clear, inner portion of the cornea is transplanted.

• The eye bank uses two very powerful microscopes to evaluate the cornea. During this evaluation, the eye bank measures the maximum graft size that can be transplanted from the cornea. It also counts the number of cells on the back of the cornea. These very delicate cells are only one cell-layer thick and are extremely important for a successful transplant. These two criteria will assist the eye bank in finding a suitable recipient.

• The chamber holding the cornea allows the eye bank and the surgeon to view it through a microscope from both sides (something your eye doctor can’t do).

About The Rocky Mountain Lions Eye Bank

• The mission of the Rocky Mountain Lions Eye Bank is to fulfill the wishes of eye donors and their families to help another overcome blindness through transplantation and research.

• The Rocky Mountain Lions Eye Bank is the world’s second largest eye bank in both numbers of donors and number of transplants performed. It has helped establish eye banking programs in several countries, including Ireland, Italy, Saudi Arabia, the Dominican Republic, Japan and China.

• As an international eye bank, the Rocky Mountain Lions Eye Bank ensures that no transplantable cornea is ever wasted. Donated eye tissues are first placed with recipients on a local transplant waiting list. If a suitable recipient cannot be found locally, a search is conducted with other eye banks in the United States. If a suitable recipient still cannot be found, a search is conducted through international networks to find a recipient in other parts of the world.