

# Retinopathy of Prematurity (ROP)

Retinopathy of Prematurity (re tin OP uh thee of pree mah TURE i tee), also known as ROP, is an eye problem that affects premature babies.

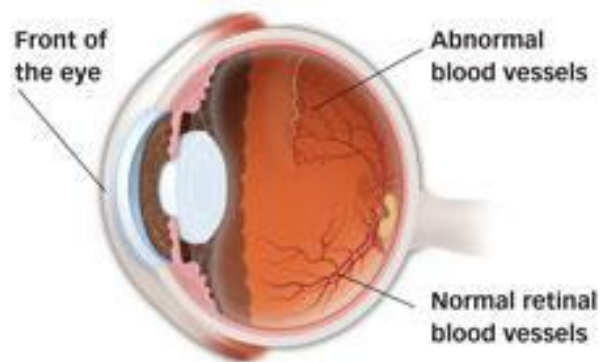
## What ROP is

The retina is the inner lining on the inside back part of the eye. A healthy retina is required for good vision. (If the eye were a camera, the retina would be the film – the part that captures the image.)

The blood vessels that supply the retina with Oxygen and nutrients are not completely developed or mature until around 40 weeks gestation, the age of a full term baby. But when a baby is born early the blood vessels are immature and need to continue to grow. About 4 to 8 weeks after birth the vessels may start to grow abnormally because the retina produces abnormal amounts of various factors which encourage rapid blood vessel growth. When this happens, the new vessel growth is too fragile. It may leak fluid, bleed, and cause scarring. This is called ROP.

The smaller the baby, the more likely he or she is to develop ROP. More than 80 per cent of infants who weigh less than 2 pounds, 3 ounces at birth get ROP. Problems such as respiratory difficulties, infection, poor weight gain, multiple births, multiple blood transfusions, to name a few, can increase the development of ROP.

**That is why all babies born less than 3 pounds 5 ounces and/or are born before 31 weeks are screened and monitored for ROP by a doctor who specializes in the care of children's eyes (pediatric ophthalmologist.)**



## How ROP affects my baby

There are no symptoms of vision loss if babies only develop mild ROP. Most babies with a mild to moderate form of ROP see normally for their age. This is because the ROP goes away when the normal blood vessels finish growing. Fortunately, for most babies, mild to moderate ROP does go away without scarring or vision loss.

Only severe ROP threatens vision loss. Severe ROP can cause a detached retina and total blindness. No one can predict which babies will do well and which ones will develop significant problems.

Because premature infants are often discharged before their due date, ongoing eye exams may be necessary to monitor ROP.

## The ROP exam

- Dilating drops will be given to your baby. This allows the doctor to see through the pupil to the blood vessels during the exam.
- Babies cannot hold their eyes open for an eye exam, so a speculum is needed to open the eye. The speculum is a rounded instrument that holds the eye open during the exam. A depressor is an instrument used to direct the eye so the doctor can see into the eye better. Both of these instruments only go on the outside of the eye. They do not poke or puncture the eye. They are removed immediately after the exam is over. The infant feels pressure, not pain.
- The bright light that is needed to see through the lens is also irritating to the infant. He or she will cry. However, it will be a quick exam and you can offer comfort right after the exam. The light will not harm your infant but you can shade him after the exam if you wish.
- Your infant's eyes will stay dilated from 3 to 8 hours after the procedure. Then pupils will return to normal. You may notice the baby closing his eyes more until the medicines wear off.

## The treatment for severe ROP

If your baby shows signs of severe ROP, the ophthalmologist may recommend treatment. If severe ROP is left untreated, it can cause retinal detachment, vision loss, and even blindness. Of the 14,000 babies who are diagnosed with ROP each year, about 1,000 to 1,500 require treatment because they develop a severe form of ROP.

Right now, there are two types of treatment for ROP:

**Laser:** Laser surgery stops the growth of abnormal blood vessels by placing many tiny laser marks on the peripheral retina inside the eye where there is a lack of blood

vessel development. This eliminates pulling on the retina and the risk of detachment. Each eye takes about 30 to 45 minutes to complete. There is no incision (cut).

**Avastin:** Avastin (bevacizumab) is a medicine that is injected into the eye. It blocks the production of a chemical that is causing the abnormal blood vessels to grow in the eye. Blood vessels resume normal growth, but still need to be monitored for a while after the injection. This form of treatment is most often used in extremely premature infants with an aggressive form of ROP.

**What to expect after surgery:** You may notice redness of the eye and puffy eye lids for 1 to 3 days. Your infant should have minimal pain.

**You should call IMMEDIATELY for:**

- fever greater than 101 degrees F
- increased pain signals
- increasing redness of the eye
- drainage from the eye.

Eye drops may need to be given at home for 1 to 2 weeks. These eye drops are very important to help the eye heal.

## **Research to prevent ROP**

Modern medical care in the NICUs and special care nurseries has helped smaller babies survive. Because there are more premature infants than ever before, doctors are also seeing more ROP.

Research on ROP is currently being done here at Nationwide Children's. These research projects study the treatment of severe ROP and the outcome of children with mild or moderate ROP. Children whose ROP does not require treatment usually have good vision. Rarely, they can be affected by the same scarring and retinal detachments that affect eyes with severe ROP. Some children who have had ROP need glasses sooner than children who were not premature and did not have ROP. We hope someday to prevent all vision loss from this disease.

## **Follow-up appointments**

Follow-up appointments are **VERY** important to monitor the treatment and progress of your infant's eyes. When your baby is sent home, be sure to ask your doctor or nurse when your follow-up appointment will be. These appointments could be daily or weekly at first and then will be less frequent if your infant is doing well. The timing of exams is important. Missed appointments could delay needed treatment.

It is very important that you give your current phone number and address to your child's care team. This helps the ophthalmologist's office contact you about appointments and updates on your infant.

If you have questions or need to make an appointment for your child, please call the Eye Clinic at 614-722-4076.