Retinopathy of prematurity (ROP)

Children's Healthcare of Atlanta

What is retinopathy of prematurity (ROP)?

Retinopathy of prematurity (ROP) is a disorder that may cause vision problems and blindness. ROP mainly affects premature babies (preemies). It most often happens in both eyes and with:

- Babies who are very premature (30 weeks or less gestation at birth).
- Babies who weigh less than 3 pounds and 5 ounces at birth (or less than 1,500 grams).

What causes ROP?

The cause of ROP is prematurity. When preemies are born too early, the blood vessels in the eyes are not yet fully developed. The blood vessels may:

- Be weak, fragile, tear or leak.
- Grow away from the tissue that lines the back of the eye, called the retina. This is not normal.
- Make the retina pull away from the back of the eye. This is called a retinal detachment or detached retina. It is the main cause of blindness.

What are the possible symptoms?

Babies most often have no symptoms. ROP can be mild or severe and often only seen by an eye exam. It happens in the 5 stages listed below.

Stage	Level of blood vessel growth	What this means
Stage 1	Mildly abnormal	Vision may be normal. Most often, no treatment is needed.
Stage 2	Somewhat abnormal	Vision may be normal. Most often, no treatment is needed.
Stage 3	Abnormal	If condition called "plus disease" happens (when the blood vessels are twisted and widened), the risk of progression to stage 4 or 5 is higher. Avastin or laser treatment to prevent progression to stage 4 may be needed if stage 3 becomes severe. Mild stage 3 can be closely watched.
Stage 4	Very abnormal with the retina beginning to pull away from the back of the eye	This is called a partial retinal detachment. Vision problems and blindness may happen. Avastin or laser treatment may be helpful but may not work at this stage. Surgery is often needed.

In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.

Stage	Level of blood vessel growth	What this means
Stage 5	Very abnormal with the retina totally pulled away from the back of the eye	This is called a complete retinal detachment. Vision problems and blindness may happen. Laser therapy may be used in a few cases but most often does not work at this stage. Surgery can be done to try to reattach the retina, but vision will be poor.

What tests could my baby have?

Your baby may need regular eye exams.
- The first eye exam is most often done at 4 to 9 weeks after birth by an ophthalmologist (eye doctor).
- Your baby will get eye drops before the exam. This allows the doctor to see into the back of the eye better.
- Most often, your baby will need more follow-up eye exams.

What is the treatment?

The doctor will talk with you about specific care for your baby.

For stage 3 ROP and/or when there is plus disease, treatment may include:
- Laser therapy (photocoagulation)
- Avastin injection
- Avastin or laser treatment to reduce the risk of blindness. Either treatment can reduce the growth of abnormal blood vessels, but both have side effects. Your baby's doctor will talk with you about side effects before advising for a certain treatment.
- Even with successful treatment, some babies may have vision problems or blindness from other causes.

Does my baby need follow-up care?

Follow-up eye exams for your baby are very important. ROP can:
- Worsen and cause blindness even after your baby goes home from the hospital.
- Worsen even after your baby gets better in other ways.

Your baby will likely need eye exams until the blood vessels in the eye have completely developed.
- A qualified pediatric ophthalmologist or retinal specialist should do the eye exams.
- Your baby should get eye exams until the specialist tells you that your baby does not need them.

ROP can cause blindness. Do not miss any follow-up visits after your baby goes home. They are vital for your baby's eye health.

**This teaching sheet contains general information only. Talk with your child's doctor or
a member of your child's healthcare team about specific care of your child.**

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