

# Ophthalmic examinations on premature babies

Information to parents



All babies born very prematurely are regularly examined by ophthalmologists to detect which may need treatment for ROP (retinopathy of prematurity), an illness that can affect eyes following premature birth.

### **Normal development**

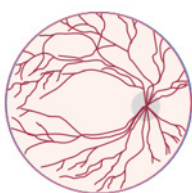
The retina is a layer on the inside rear of the eye that contains light-sensitive cells, which receive visual signals and convey them via the optic nerve to the brain, where they are processed and interpreted. Retinal blood vessels begin to grow out of the optic nerve during weeks 14-15 of pregnancy and normally cover the entire retina at full term.

### **ROP**

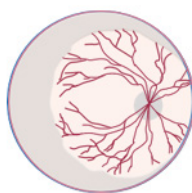
In the case of premature birth, the growth of retinal blood vessels can be disturbed, and the earlier a baby is born, the greater is the risk of abnormal growth of these blood vessels. Of all babies examined, fewer than 5% have serious changes that need to be laser treated to prevent retinal detachment and loss of vision. In the vast majority of cases such treatment has a good outcome and it is very rare for a child to become blind due to ROP in Sweden these days. ROP is divided into different stages as described in the figure.

### **Ophthalmic examinations**

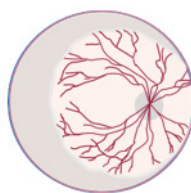
In Sweden, ophthalmic examinations are carried out on all babies born before the 30th week of pregnancy to detect those who may need treatment for ROP. The first examination is done after 1-2 months and the examinations continue at 1-2 week intervals until the retina has been covered by blood vessels, which is usually when the baby is full-term and has reached an age corresponding to 40 weeks of pregnancy. The baby is given eye drops that dilate the pupils, which makes them sensitive to light for the rest of the day, so remember to protect your baby during that time. The ophthalmologist generally uses a camera to photograph the fundus, but may also use a lamp and a magnifying



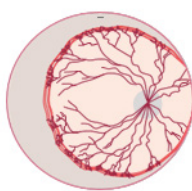
Normal  
vessel  
growth



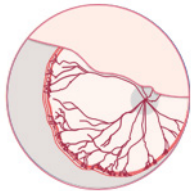
Stage 1



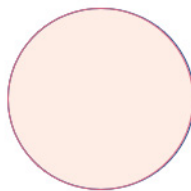
Stage 2



Stage 3



Stage 4



Stage 5

*In stage 1, vessel growth has stopped for a short time and in stage 2, vessel growth has stopped for a longer period of time. Stages 1 and 2 often improve without treatment. In stage 3, blood vessels grow abnormally and out of control and may need laser treatment to prevent the retina from detaching. In stage 4, part of the retina is detached from its base and in stage 5, the entire retina is detached.*

glass held in front of the eye.

During the examination, the eyelids need to be kept open, usually made easier by the baby relaxing and sucking on a pacifier dipped in breast milk or sugar solution. During an examination using a camera, a local anaesthetic is dripped into the baby's eyes.

The examinations are discontinued when the development of blood vessels is judged to be complete, whether or not the baby has been treated. If ROP is not reversed and if vascular development is not complete and your baby moves to another department or another hospital, it is important to continue the ophthalmic examinations in the new department or at your baby's eye clinic.

## **Treatment**

Laser treatment is the most common form of care and is carried out to suppress abnormal development of the blood vessels in the outer part of the retina. It is usually done under anaesthesia. In the vast majority of cases, the treatment has a good outcome and it is very rare for a baby to become blind due to ROP. In some cases, however, several laser treatments may be required and sometimes another type of treatment using a medicine called Anti-VEGF, which is injected into the eye under anaesthesia or sedation. This treatment also suppresses abnormal vessel growth and reduces the risk of retinal detachment.

## **What happens next?**

Before your baby is allowed to go home or moved to another ward or hospital, it is important that the doctor responsible arranges a check-up either at the new ward or at the eye clinic where your baby is registered. Premature babies also have an increased risk of strabismus and refractive errors that may need to be treated with glasses, and if you suspect that there is something wrong with your baby's vision or if you have any other questions, you are welcome to contact us at the Children's Eye Clinic, Queen Silvia's Children's Hospital, via 1177.

## **Quality register**

To improve the quality of healthcare, we collect information about your baby in a quality register ([www.SWEDROP.com](http://www.SWEDROP.com)). You have the right not to register your baby and have their data removed. Contact the Children's Eye Clinic, Sahlgrenska University Hospital.