

When your baby has ROP:

1. In case of mild ROP, follow-up examinations are necessary within 1 to 2 weeks' time. When no progression is seen at the follow-up examination, ROP will mostly regress spontaneously. Luckily this happens in most babies.
2. More severe ROP will require earlier re-examination, usually within a week.

After the screening exam you will be informed about the findings.

### Treatment

In a small number of children, severe ROP occurs and treatment is needed. Mostly treatment consists of laser treatment, which is carried out by an experienced ophthalmologist. It is possible that treatment is not performed by the same doctor who screened your baby and sometimes temporary transfer to another hospital is required for the procedure.

In laser surgery a small laser beam is used to scar the peripheral retina, aiming to decrease the production of substances that stimulate growth of the bad quality vessels. Sometimes one procedure is not enough and another treatment is needed. Although ROP surgery has a good success rate, not all babies respond to treatment. Unfortunately occasionally, babies who have received ROP surgery might still lose some or all vision.

### The screening exam

When your child is scheduled for a screening exam for ROP, you will be informed about the day of the examination. The first exam may be difficult to witness, however your presence can be comforting for your baby. We advise to consult your physician or the nurse on whether or not you wish to be present.

When your child is transferred to another unit or hospital, the doctors there will be informed on the date of the next due examination. In case your baby is discharged home from the hospital before the last eye exam, an outpatient appointment will be scheduled. If for some reason you cannot attend this appointment it is important to reschedule the appointment as soon as possible.

If you have any further questions about ROP after reading this brochure, please consult your ophthalmologist or paediatrician for further information.

### Your doctors

Neonatologist / Paediatrician: .....

Ophthalmologist: .....

Find more information on  
[www.nedrop.nl](http://www.nedrop.nl)

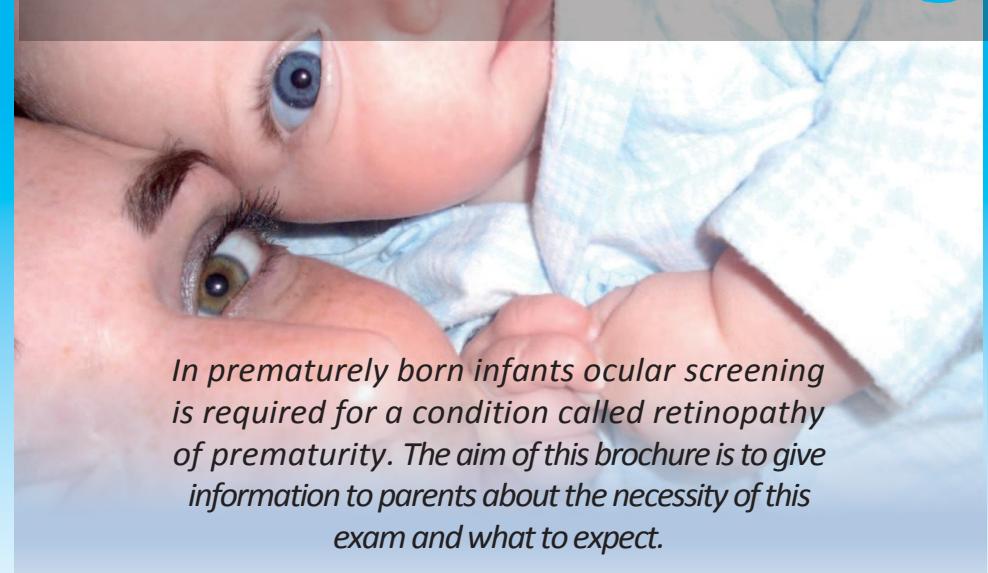
NOG

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NVK

VOC  
Vereniging van Ouders van Couveusekinderen

# ROP screening



*In prematurely born infants ocular screening is required for a condition called retinopathy of prematurity. The aim of this brochure is to give information to parents about the necessity of this exam and what to expect.*

### What is Retinopathy of Prematurity?

Retinopathy of prematurity (ROP) is a condition of the premature and developing eye, affecting blood vessels of the retina. The retina is a layer of tissue in the eye that detects light and enables us to see. Normally, blood vessel development in the retina is complete around the baby's due date. In prematurely born children, retinal vessels have to develop during the first few months after birth. For many reasons the outgrowth of retinal vessels can be delayed or occur abnormally. This is called ROP.

### What is screening for ROP and why does my baby need it?

Mostly, the course of ROP is mild and the disease regresses spontaneously without any treatment. But in a few babies (usually the smallest and most premature), ROP does not regress and treatment is required. If not treated, severe cases of ROP can result in permanent loss of vision. Therefore it is crucial that ROP is detected in an early stage. ROP has no outer signs or symptoms. The only way to detect it is through screening examinations of the eye, performed by an ophthalmologist (eye specialist).

### Who are screened for ROP?

All babies born with a gestational age (GA) under 30 weeks and/or a birth weight (BW) less than 1250 grams need at least one screening exam.  
and All babies with GA 30-32 weeks and/or BW 1250-1500 grams, who have been affected by one or more of the following conditions or therapies:

artificial ventilation, sepsis, necrotising enterocolitis (NEC), received drugs for very low blood pressure (cardiotonic agents) and/or (postnatal) corticosteroids.

In some hospitals all babies born under 32 weeks of GA and/or under 1500 grams of BW are examined. Your physician can provide you with more information.

### When to expect the first screening?

Your baby's initial eye exam is determined by his/her gestational age at birth and subsequent hospital course. The ophthalmologist will determine how frequently to recheck your baby after that initial exam based on what is seen during the exam. The first screening examination will be performed at the age of 5 weeks, however never before a gestational age of 31 weeks.

### What happens during the examination, is it painful?

About an hour prior to the exam, eye drops are administered in the eye to dilate the pupil. This is necessary for the doctor to see your baby's retina. Directly before the exam, anesthetic eye drops are given by the ophthalmologist to ensure your baby does not feel any pain.

Once your baby's pupils are enlarged, the ophthalmologist examines the retina using an 'ophthalmoscope' by shining a light through a lens or sometimes uses a camera placed gently on the surface of the baby's eye. A speculum is used to open the eyelids to enable a better view of the retina. Your baby may not like the examination but should only feel slight pressure, no pain.

Witnessing the exam can be stressful for parents as babies sometimes cry or show signs of discomfort. An experienced nurse is present to prepare and assist during the exam to ensure the best comfort for your child. The ophthalmologist will then perform the exam as quick as possible although they do need enough time to see the retina properly. Usually it takes about 15 minutes.

### Why does ROP occur and how is it categorized?

Retinal blood vessels supply the retina with oxygen and nutrients. An oxygen deficiency can occur in areas where the vessels have not yet developed. The body compensates this deficiency by producing substances (so called angiogenic factors) that stimulate vessel growth. If excess amounts of these substances are produced, abnormal vessels grow, that tend to leak and bleed. This abnormal growth pattern may cause scarring or pulling on the retina. In the most severe cases, traction on the retina may cause the retina to detach from the back of the eye, resulting in blindness.

ROP is graded, or classified into zones and stages of severity.

### Zones

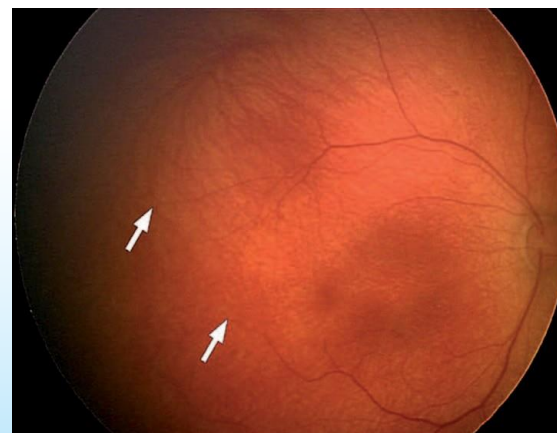
The extent in which the vessels have grown along the retina can be divided into 3 zones. In zone 1, vessel outgrowth is the least, in zone 3 they have almost developed entirely.

### Stages

The severity of ROP can be categorised into 5 stages. Stages 1 or 2 are most commonly found. They are mild forms of ROP. In stadium 3 the blood vessels of poor quality start to develop increasing the chance of leakage or bleeding. If bleeding occurs, just like in any wound, in time scar tissue develops in the eye. When this scar pull on the retina, it can lead to partial (stadium 4) or total (stadium 5) detachment of the retina.

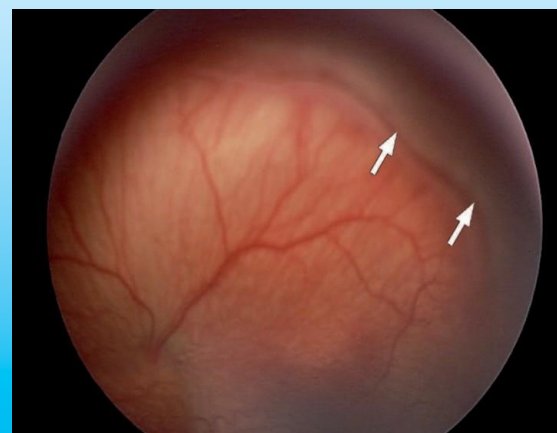
### Plus disease

The ophthalmologist also carefully examines the vessels that already have developed. Normally they are thin and relatively straight. But in case of so called "plus disease", thick and twisting/serpentine vessels are seen. This generally suggests worsening of the condition of the eye and often indicates the need for treatment.



*Photo of underdeveloped blood vessels*

The arrows indicate the area in which vessel growth has terminated.



*Photo of ROP*

The arrow points at the border between vascularised and not yet vascularised retina.

On this border, a thick ridge is seen with newly formed (poor quality) vessels.

The vessels are also thick and twisted, a sign of 'plus disease'. This photo shows an example of ROP stage 3+.