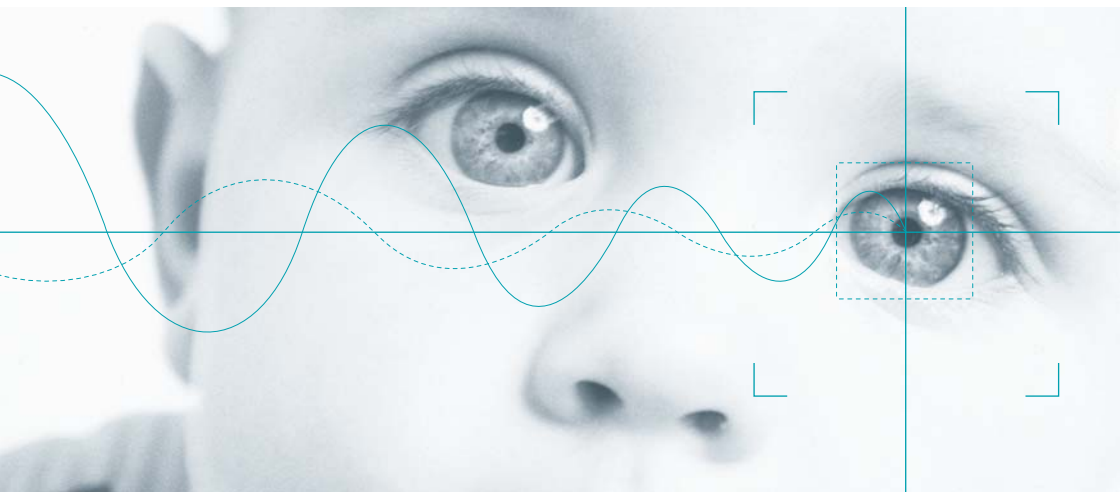


# Retinopathy of prematurity (ROP) in premature babies

Elizabeth Ward and Constance Green Ward  
Royal London Hospital



---

## Introduction

As your baby was born prematurely, it is very important for us to carry out an eye test to screen your baby for a condition called retinopathy of prematurity (ROP). ROP damages the retina (inner lining) of the eye in premature babies and can lead to reduced vision, or even blindness.

Whether or not your baby has ROP depends on how well their eyes developed before birth. Babies who are born earlier than 32 weeks, or with a birth weight of less than 1,500gm (3lbs 5ozs), are most at risk and all these babies are routinely examined for ROP.

If your baby is found to have the condition our team of specialists will provide him or her with the highest quality care and limit the effect on your baby's sight.



**The ROP team, left to right.**

Caridad Pangilinan (ROP nurse)

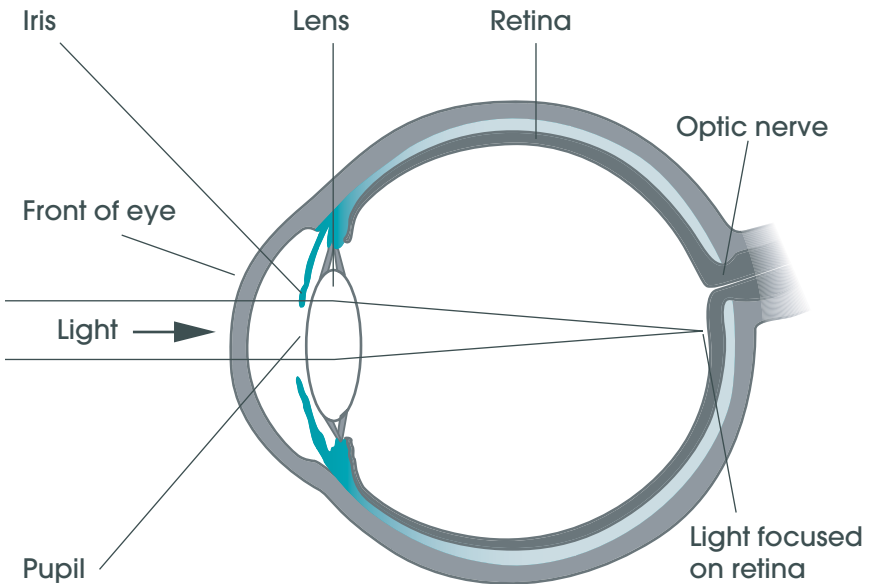
Mr Reddy (Consultant Paediatric Ophthalmologist)

Yolanda Solinap (ROP nurse)

## Structure of the eye

As can be seen from this diagram, the retina is the inner lining of the back of the eye. It is like a film in a camera and senses the light rays that enter the eye. After light stimulation the retina sends signals to the brain which processes them to create the images we see.

### Cross-section of the eye



---

## What causes ROP?

To understand why infants develop ROP it is important to know something of the normal development of the eyes in babies.

The eye starts to develop when a baby in the womb is about 16 weeks old. The blood vessels of the retina begin to form at the optic nerve, and they grow gradually toward the edges of the developing retina. These blood vessels supply the retina with oxygen and nutrients.

During the last 10-12 weeks of pregnancy, when the baby is 28-30 weeks old, the eye develops rapidly. Retinal blood vessel growth (known as vascularisation) is nearly finished when a baby is born full term, and is complete a few weeks to a month after birth.

If a baby is born prematurely, before these blood vessels have reached the edges of the retina, normal vessel growth may stop. The edges of the retina (known as the periphery) may not get enough oxygen and nutrients.

As a result new, abnormal vessels begin to grow. The new blood vessels are fragile and weak and bleeding from them can lead to retinal scarring. When these scars shrink they pull on the retina and can cause it to detach from the back of the eye. This damage is what is known as retinopathy of prematurity or ROP.

---

## Checking for ROP

There are no outward symptoms of ROP and therefore examining the back of your baby's eyes is very important. We use a strong light to check for abnormal blood vessels in the retina. If your baby has mild ROP, treatment may not be necessary. If we find severe ROP is present, or if we feel there is a chance of it developing, we will treat your baby to reduce the damage to the retina and therefore the effects on your baby's sight.

## When your baby will be examined

The first examination we will do is when your baby is around six to seven weeks old. Following examinations will be carried out once every week to once every three weeks, depending on the individual baby.

## How is the examination done?

We will give your baby special eye drops to enlarge (dilate) their pupils. The pupil is the dark area in the centre of the iris, the coloured part of the eye. The drops usually take 30 minutes to an hour to work, but sometimes a bit longer. We will then check your baby's retina by shining a bright light into their eye with an ophthalmoscope or retinal camera.

---

## The examination procedure

Before starting the actual examination, we will put in another type of eye drop to numb the surface of your baby's eyes. The examination is uncomfortable but your baby should not feel any pain - only gentle pressure. We will try to make him or her as comfortable as possible by wrapping them in a blanket and carefully holding them still. The doctor will use an instrument called speculum to gently hold your baby's eyelids apart.

Your baby will cry, as babies do in general, as he or she will not like being held down or having a bright light shone into their eyes, but the examination will take only a few minutes.

After the examination a member of the ROP team will explain the condition of your baby's eyes to you. The doctor or nurse may use the terms 'stage', 'zone' and 'pre-plus' or 'plus-disease' to explain the outcome.

- The **stage** represents the severity of the condition, stage one being the best and stage five being the worst.
- The **zone** is graded from one to three and explains how far the blood vessels have grown on the retina.
- **Plus-disease** is a marker of severity and may indicate the need for laser surgery.

Please ask one of the ROP nurses for pictures of your baby's retina if you would like to see them.

## How do we treat ROP?

Your doctor will discuss with you the treatment that will best suit your baby. Laser surgery, and very occasionally

---

invasive surgery, may be needed. Please ask a nurse for the ROP treatment leaflet if you would like further information about what can be done. It is very important that your baby continues to be checked after any treatment.

### **Eye clinic appointments after you leave hospital**

If your baby is less than 44 weeks of corrected age when you leave hospital, he or she will need to come back to be screened by Mr Reddy and his team in the Eye Clinic, 2nd floor Outpatients Department. The ROP nurses will give you an appointment before you leave.

Please arrive at **8:45am** on the date of your appointment. Your baby will have their eyes dilated and you should be able to leave within the hour. If you come later or are delayed, you may have to wait three to four hours in clinic.

Your baby will need to be seen again in the eye clinic when they are older (between 6 and 12 months). Mr Reddy and his team will check your child and an orthoptist will assess your child's vision. This is because premature babies are at risk of:

- Refractive error (glasses will be needed)
- Squint or cross eyes (strabismus)
- Lazy eye (amblyopia)

### **Please make sure that you attend the eye clinic after your child has been discharged.**

Coming to the eye clinic means that your child can be diagnosed earlier and treated before his or her vision is permanently affected.

## Further information

If you have any questions, or would like more information, please speak to one of the ROP nurses, Yolanda Solinap or Caridad Pangilinan, on Elizabeth Ward.

**Elizabeth Ward** Tel: 020 7377 7176

**Mr Reddy's secretary** Tel: 020 7377 7426

## Eye (Ophthalmology) Clinic

2nd floor Outpatients  
The Royal London Hospital  
Whitechapel  
London E1 1BB  
Tel: 020 7277 7000 ext. 2482

The following website is helpful:  
Information for parents: Retinopathy of Prematurity, Royal College of Ophthalmologists;  
<http://www.rcophth.ac.uk/docs/publications/ROPLet.pdf>

To enable us to improve the quality of the care that we provide, your child's health records are kept by the Trust and may be used for teaching, training, audit and research.

[http://www.bartsandthelondon.nhs.uk/forpatients/know\\_your\\_rights.asp](http://www.bartsandthelondon.nhs.uk/forpatients/know_your_rights.asp)