Screening for Retinopathy of Prematurity

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The aim of this leaflet is to inform you about the screening of premature babies on the neonatal unit.

If your baby was born before 32 weeks of pregnancy, weighed under 1500g or was thought to be growth restricted, the doctor will ask an ophthalmologist (eye specialist) to examine your baby’s eyes for ROP (retinopathy of prematurity).

The premature baby’s eyes

When growing in the womb, all of your baby’s organs were developing in a safe environment. Even after full term pregnancy eyes are not fully developed and changes occur to improve vision over the first year of life.

The retina, the inner lining of the back of the eye is sensitive to light and acts like the film of a camera. The blood supply to the retina develops from the optic nerve at the back of the eye and gradually extends to the front of the eye just before full term.

If the baby is born early the blood vessels will not have reached the front part of the retina.

What is ROP?

Retinopathy of prematurity (ROP) is the name of the disease that can affect the eyes of very small premature babies. The cause is thought to be due to abnormal development of the blood vessel in the retina.

Do all babies get ROP?

- Smaller and more premature babies are more likely to develop ROP.
- Oxygen therapy can have an impact on the development of ROP.

In spite of the best care that the neonatal unit can give, ROP still develops in some babies.
If my baby has ROP will he/she need treatment?

Most babies who are examined for ROP have very mild forms of the condition – called Stage 1 and Stage 2. Babies who have this form of ROP usually get better by themselves, do not require treatment and do not develop any long term visual problems.

Some babies will have a more severe form of the disease – Stage 3, where abnormal blood vessels appear on the retina. In these cases frequent eye examinations are needed to check on the progress of the ROP and treatment may be recommended.

When will my baby be screened for ROP?

As we do not know which babies will develop the more severe form of disease we screen all babies whose birth weight is less than 1500g or born before 32 weeks of pregnancy.

The eye specialist will initially see your baby’s eyes between four and five weeks after birth and then regularly every two weeks or weekly if necessary until it is felt that your baby is no longer at risk.

What are the benefits of the screening?

If your baby does not have the screening we will not be able to identify whether or not your baby has ROP. It is important to start treatment early in those babies who have Stage 3 disease to limit problems with their vision in the future.
Where does the screening take place?
The screening is carried out at the cot-side in the neonatal unit. Your baby is given some eye drops about an hour before the examination which dilate the pupil of the eye to make it easier for the eye specialist to see the back of both eyes. Immediately before the examination a numbing anaesthetic drop is put in each eye as well.

The nurse looking after your baby will assist the doctor by holding your baby still and give comfort while the eye examination is performed.

How does the doctor examine the eye?
It is necessary to use a small clip (speculum) to keep the eyes open and a probe to move the eye into different positions so that the whole retina can be seen. The eye specialist will either use a bright light mounted on a headband or a special camera to examine the retinas.

Will the examination hurt my baby?
Premature babies are sensitive to any handling and although the examination may be stressful, its importance in preventing blindness means that the eye examination must be carried out. The eye specialist is trained to perform the examination quickly with minimal discomfort to your baby.

Your baby may cry because of being examined and be uncomfortable but as soon as the examination is over will settle back to sleep. If your baby is more than 27 weeks gestation at the time of examination and showing signs of discomfort, the nurses may give a small drop of sucrose (sugar liquid) on your baby’s tongue to help make them feel more comfortable.

Are there any risks in having the examination?
Following the examination your baby’s eyes may be a little red or swollen but this usually settles within 24 hours.

Are there any alternatives to having the screen?
There are currently no alternatives.

Contacts/further information
If you need further information, the nurse caring for your baby can contact the ophthalmologist.

References/sources of evidence