

Retinopathy of prematurity - ophthalmologic examination and follow up

Guideline Responsibilities and Authorisation

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| Target Audience | RN, Nurse Practitioner, Clinical Nurse Specialist, Medical Staff |
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Guideline Review History

| Version | Updated by | Date Updated | Summary of Changes |
|---------|------------------|--------------|---|
| 1 | Chantelle Hill | May 2015 | Process of booking updated |
| 2 | Kimberley Fraser | March 2022 | Change in criteria, updated process, changed to guideline |
| 2.1 | Kimberley Fraser | April 2023 | Clarification of eye drop application |
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Retinopathy of prematurity - ophthalmologic examination and follow up

1 Overview

1.1 Purpose

To outline the guideline for nurse-initiated preparation of infant for eye examination by Ophthalmologist.

1.2 Scope

Te Whatu Ora Waikato staff working in Neonatal Intensive Care Unit (NICU).

1.3 Patient group

Babies and infants in NICU.

1.4 Definitions

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| NICU | Neonatal Intensive Care Unit |
| ROP | Retinopathy of Prematurity |

1.5 Indications

All infants with a gestational age ≤ 30 weeks regardless of birth weight, or weight $< 1250g$ will be examined for retinopathy of prematurity. Examination may be considered in some high risk infants weighing $> 1250g$ and > 30 weeks with an unstable clinical course or conditions such as:

- In utero hydrops
- Grade 3/4 IVH, or post haemorrhagic hydrocephalus
- Severe sepsis treatment with nitric oxide for PPHN
- Affected twin to twin transfusion infants
- Prolonged period in high inspired oxygen, or
- Other conditions as indicated e.g. CHARGE syndrome, embryotoxin, family history of cataracts.

The first screening examination will be done at 4 weeks postnatal age unless $< 26/40$ at birth. If $< 26/40$ at birth the first ROP screening examination will be performed at 30-31 weeks corrected gestational age.

1.6 Contraindications:

- Any sign of infection in the eye.
- Any known hypersensitivity to Tropicamide 0.5% or Phenylephrine 2.5%

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2 Clinical Management

2.1 Equipment

- Sterile Gauze
- Tropicamide 0.5% eye drops
- Phenylephrine 2.5% eye drops
- If Tropicamide is not available, Cyclopentolate 0.5% may be used as an alternative.

2.2 Guideline

1. The NICU receptionist is responsible for making up a list of babies to be examined and recording them with patient stickers in the Eye Book (NICU Office next to receptionist computers). The receptionist is also responsible for notifying Ophthalmologist of the number of infants and babies to be examined.

2. Preparatory eye care:

- 60 minutes before examination instil:
 - Tropicamide 0.5%, one drop to each eye
 - Phenylephrine 2.5%, one drop to each eye

Note: If Tropicamide is not available, Cyclopentolate 0.5% may be used as an alternative.

- The eyes should be checked approximately 30 minutes after drops are instilled and the drops should be repeated if the pupils are not adequately dilated.
- These drops are a standing order in NICU. They are to be recorded in the ONCE ONLY section of the National Medication Chart and double checked with another certificated RN/EN.

3. Use swaddling and give [Sucrose 25%](#) oral liquid prior to exam for pain relief.

- Position and hold baby for Ophthalmologist to obtain optimal viewing during procedure.

4. For babies transferred or discharged from NICU

If the initial retinal examination is not carried out at Waikato Hospital because of early transfer **OR** the infant is transferred to another Te Whatu Ora facility prior to clearance by the ophthalmologist, then a recommendation for ongoing eye examinations should be clearly noted in all discharge letters by medical staff/NNP, stating an appropriate time and follow up plan.

- Any infant discharged from the Newborn Intensive Care unit who has either been seen by an ophthalmologist, or is due to be seen, is to have their next eye clinic

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appointment made prior to discharge by the NICU receptionist. Record the date and time of the appointment in the Eye Book (NICU Office) alongside a patient sticker.

- If the infant is discharged outside clinic hours, make the appointment the next working day.

2.3 Potential complications

Eye pain, stinging, blurred vision, conjunctival sensitization or allergic reaction, photophobia, corneal clouding, raised intra-ocular pressure, palpitations, tachycardia, hypertension, rash, and trouble breathing.

2.4 After care

- Observe for patient condition deterioration
- Observe for adverse reactions that require medical intervention
- Inform parents of outcome
- Arrange for follow up examination as per assessment, e.g. next eye examination due in 2 weeks - follow procedure under 2.2.
- Outpatient follow up to be arranged by NICU Receptionist by email to Ophthalmology Booking Clerk. Receptionist to alert Medical Staff if patient has been discharged or transferred prior to planned follow up examination.

3 Audit

3.1 Indicators

- All infants and babies meet the criteria for retinal screening
- Preparatory eye drops are administered as per this Guideline
- A physiological assessment of the eyes is undertaken at the required intervals (and documented)

4 Evidence base

4.1 References

- *Auckland DHB* (2018). Retinopathy of prematurity – information on screening. *Newborn Service Clinical Guidelines*. Retrieved Jan 25, 2019 from <https://www.starship.org.nz/for-health-professionals/newborn-services-clinical-guidelines/r/retinopathy-of-prematurity-information-on-screening/>
- Carter, A., Gratny, L. & Carter, B.S. (2016). *Merenstein & Gardner's Handbook of Neonatal Intensive Care*, 8th Edition (online resource electronic book). St Louis, Missouri: Elsevier, Inc.

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4.2 Associated Te Whatu Ora Waikato Documents

- [Documentation Standards in the Neonatal Intensive Care Unit](#) guideline (Ref. 6332)
- [Phenylephrine 2.5% eye drops](#) standing order (Ref. 1614)
- [Sucrose for Analgesia](#) standing order (Ref. 6373)
- [Sucrose Oral Liquid for Analgesia in Neonates and Infants](#) drug guideline (Ref. 2905)
- [Tropicamide 0.5% eye drops](#) standing order (Ref. 1613)

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