

# Newborn Eye Prophylaxis

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## Preamble

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Guidelines outline recommendations, informed by both the best available evidence and by midwifery philosophy, to guide midwives in specific practice situations and to support their process of informed decision-making with clients. The midwifery philosophy recognizes the client as the primary decision maker in all aspects of her care and respects the autonomy of the client (1).

The best evidence is helpful in assisting thoughtful management decisions and may be balanced by experiential knowledge and clinical judgment. It is not intended to demand unquestioning adherence to it's' doctrine as even the best evidence may be vulnerable to critique and interpretation.

The purpose of practice guidelines is to enhance clinical assessment and decision-making in a way that supports practitioners to offer a high standard of care. This is supported within a model of well-informed, shared decision-making with clients in order to achieve optimal clinical outcomes.

## Background

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Ophthalmia neonatorum (ON) is diagnosed by conjunctival inflammation within the first 30 days of the newborn period (2). ON is most frequently acquired following a vaginal birth where an infected mother passes the organism to her infant. Further risk factors include prolonged rupture of membranes and localized eye injury from birth. Untreated cases may result in blindness, corneal damage and infantile pneumonia (3). *Chlamydia trachomatis* (CT) is the most common pathogen causing ON in North America, while Gonococcal infections cause more severe complications (4). Organisms such as *Staphylococcus albus or aureus*, *Streptococcus pneumoniae*, *E coli*, *Bacillus proteus* or *Pseudomonas aeruginos* and herpes virus have been named less frequently as pathogens of ON. Health regulations in British Columbia state that all newborns are to receive ophthalmic chemical prophylaxis within the first hour of birth to decrease incidence of infectious conjunctivitis, however parents are permitted to decline such treatment following informed choice discussions (2). Erythromycin antibiotic ointment is the current prophylaxis of choice in Canada, as it is an effective agent against gonococcal infections, though less efficacious for Chlamydia. Current research continues to test agents with high efficacy for both pathogens with few adverse effects.

## Prevalence

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The transmission rate of Chlamydia and/or Gonorrhoea from an untreated mother to her infant is 30-50 percent, where 50 percent of affected mothers are asymptomatic (2).

## Incidence

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The incidence of ON in North America is 0.3/1000, where 20 percent of cases develop corneal damage and 3 percent exhibit blindness (3). Newborn eye prophylaxis decreases the frequency of these complications to 7.4 percent of Chlamydia infections and 0.03-1.0 percent of Gonorrhoeal infections.

## Definition

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Erythromycin antibiotic (0.5%) is in the form of a topical ointment when used as prophylaxis against ON, prepared in single dose ampules (10mL) (2). May cause inflammation, redness and swelling of the eye area. May also decrease eye openness and inhibit visual response therefore disrupting visual interaction between mother and baby.

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## **Contraindications**

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- Allergic or sensitive to erythromycin

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## **Technique (2)**

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- Prophylactic topical ophthalmic administration given within one hour of birth
- One ampoule per baby to avoid cross contamination
- A line of ointment 1-2cm long is placed in the lower conjunctival sac
- Gently massage closed eyelids to aid in absorption and dispersion of ointment
- Remove any excess ointment from eye area after one minute if desired with sterile gauze
- Do not rinse

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## **Refusal of Prophylactic Treatment**

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- Mother (or parents) must sign a written statement of declination, stating that she (they) understand the benefits and risks of the treatment as explained by the midwife (2).
- Benefits to Treatment
  - Decreases incidence of ON and complications of ON
  - Protects infant when CT and GC screening tests in pregnancy are falsely negative
  - Protects infant when CT and GC or other infections are asymptomatic
  - Protects infant when maternal CT and GC status is unknown
  - Protects infant when if fidelity/sexual health of client or her partner are at question or not certain
  - In areas where bacterial ophthalmia is prevalent, routine prophylaxis may be useful
- Risks to Treat:
  - May cause inflammation, redness, and swelling of eye area
  - May negatively affect bonding between infants and parents due to possible inhibition of visual functioning and decreased eye openness

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## **Responsibilities Associated with Newborn Eye Care**

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- Offer and perform CT and GC screening in pregnancy to all clients
- Recommend treatment of CT and GC in pregnancy for clients who test positive and offer re-screening closer to the end of pregnancy
- Conduct an antenatal informed choice discussion about eye prophylaxis for the neonate
- Ensure clients comprehend benefits and risks of prophylactic treatment versus no treatment
- Observe for signs and symptoms of ophthalmic conjunctivitis in ALL newborns, as ON occurs within the first 30 days of life.
  - If signs and symptoms present, swab discharge for culture and sensitivity, treat promptly with erythromycin unless otherwise indicated. Consult if necessary.
  - Differentiate signs of ON with “sticky eyes” that are common in the first few weeks of life caused by blocked lacrimal ducts (7).
  - Chlamydia conjunctivitis: usually appears within 5-14 days, develops from a watery to purulent discharge (8).
  - Gonorrhoea conjunctivitis: usually appears within the first week, discharge is copious and purulent, often with redness and swelling (8).
  - Blocked lacrimal ducts: Parents can cleanse the eyes starting inside then outward with a clean cotton ball dipped in warm sterile water and can apply breast milk directly into the eyes to cleanse and prevent infection. Teach parents how to massage lacrimal ducts with clean fingers to open up blocked ducts. Gently massage in an upward motion (toward the nose) about six times at every diaper change. Massaging applies pressure so the fluid in the ducts eventually drains (8).

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