

## Thrush in Lactation

**Breast and nipple thrush is the over-growth of *Candida albicans*, in the nipples and in breast ducts, which can cause significant breast and nipple pain. It is usually diagnosed symptomatically, for example, mother may complain of 'nipple pain' that does not resolve despite improved attachment of the baby to the breast. The pain of maternal thrush infections may lead to early weaning, which can be avoided with early diagnosis and treatment.**

### Medical history

There may be a history of antibiotic treatment preceding thrush symptoms. This may have been prescribed postnatally, for example, to prevent infection following a caesarean section or for mastitis.

The mother may have a past history of vaginal thrush.

Nipple trauma commonly precedes nipple thrush symptoms. It is assumed that the break in the skin allows the organisms to enter.

The baby may have signs of thrush such as white oral plaques in the mouth (tongue and inside cheeks) or red papular rash with satellite lesions around the anus and genitals. Although these signs are not always obvious, it should be assumed that the baby is colonized with the organism if the mother has evidence of nipple thrush.

### Signs and symptoms

Nipple/areola:

- Burning, itching, stinging which continues during and after the feed. Nipples may appear pink; areola may be reddened, dry or flaky. The nipples are often very tender to touch and even light clothing can cause pain.

Breast:

- Shooting, stabbing, or deep aching breast pain. Pain may also be felt radiating into the back or down the arm. The breast pain typically occurs after feeding or expressing. The let-down reflex may be more painful than normal.
- The pain may be localized to one nipple or breast or may be bilateral.

### Treatment

Both mother and baby should be treated at the same time to prevent re-infection. Current management takes into account the duration of infection and the severity of symptoms.

Early treatment includes:

- Nipples: Miconazole oral gel/cream or Nystatin cream applied to nipples
- Oral treatment for mother: Nystatin 500,000 units per tablet / capsule, 2 tablets/capsules 3 times per day (quantity supplied: 50)
- Baby's mouth: Miconazole oral gel 4 times a day for 1 week then once daily for one (1) week after signs / symptoms disappear.

### Review in 1 week

- If pain is improving, continue current treatment. However, if symptoms are not resolving, consider adding fluconazole 150 mg capsules, one capsule every second day for 3 doses, followed by another course of oral nystatin (2 tablets/capsules 3 times per day) for one to two weeks.
- If breast pain persists, consider a further course of fluconazole 150mg capsules, either one capsule every second day for 3 doses or one capsule daily up to 10 days (available only on private prescription).
- If breast pain does not respond to fluconazole reconsider the diagnosis or consider oral ketoconazole (as the infection may be caused by non-albicans candida which may be resistant to fluconazole).

### If nipple pain is not resolving:

- Consider gentian violet 0.5% aqueous paint applied after breastfeeding twice a day for up to 7 days (gentian paint is made up by pharmacy departments -RWH & Monash Medical Centre).

### Miconazole Oral Gel (Daktarin®)

Note: In May 2006, Janssen-Cilag (the manufacturers of Daktarin gel) issued an alert advising pharmacists not to supply Daktarin (miconazole) oral gel for use in infants under 6 months of age. This alert originates from concerns regarding the administration of the gel, not the medication itself. Health care providers must ensure, when recommending this product, that the client understands how to apply the product safely (see below).

If the client is unsure about application or is unable to purchase the product from her pharmacy, she can be advised to try another pharmacy or to use Nilstat oral drops (see below). However, it should be noted that the drops are not as effective for oral thrush in infants as the gel.

Miconazole oral gel is an antifungal agent with poor oral absorption (~25 - 30%). When applied topically onto the nipples, miconazole has minimal systemic absorption (0.1%). The first line treatment of nipple thrush is direct application to nipples and to baby's mouth.

**Dose:**

## Baby

- Use the spoon to measure a ¼ teaspoon dose. The spoon should not be used for administering the gel.
- Using a clean finger, apply small amounts of gel at a time to the inside cheeks and over the tongue.
- Apply the gel four times a day after feeds for one week then once a day.

## Nipples

- apply to nipples after each feed (or 3-4 hourly during the day). It is not necessary to wipe the gel/cream from the nipples before the next breastfeed.

**Possible side effects:**

- Mother- gel may irritate skin; if irritation occurs cease gel. Consider changing to miconazole cream or nystatin cream.
- Baby - may cause some babies to gag or vomit. Consider changing to nystatin oral drops - apply 1mL under tongue or in buccal cavity four times per day.

**Nystatin (Nilstat®, Mycostatin®)**

Nystatin is an antifungal agent used in the treatment of thrush (candidiasis) and is available as topical preparations and oral preparations such as tablets or capsules. Oral absorption is poor with undetectable plasma levels following oral doses.

**Dose:**

Nystatin drops (brand names: Nilstat , Mycostatin, N-statin)

- Baby - apply 1mL to mouth four times a day for one week then once a day.

Nystatin topical cream: (brand names Nilstat , Mycostatin )

- Nipples - apply after feeds (at least 4 times a day).

Nystatin tablets or capsules 500,000 units

- Oral (mother) - 2 tablets/capsules three times a day (preferably with food) for a course of 50 tablets

**Possible side effects:**

- Mother - bad taste, diarrhoea, nausea, vomiting
- Baby - None reported (commonly used in infants)

**Fluconazole (Diflucan®):**

Fluconazole is an antifungal agent commonly used for systemic candida infections. Oral absorption is high at >90%, with peak plasma concentration occur in 1 - 2 hours after the dose. Plasma half-life = 30 hours.

**Dose:**

- The Royal Women's Hospital Protocol: Oral 150mg tablets - one tablet every second day for 3 doses, may need to be repeated.

**Possible side effects**

- Mother - Fluconazole is generally very well tolerated. Reported side effects include: vomiting, diarrhea, abdominal pain and skin rashes.
- Baby - No complications have been reported from exposure via breastmilk.

**Gentian Violet 0.5% Paint (manufactured by Pharmacy Department, Royal Women's Hospital & MMC):**

Gentian violet is a topical antifungal and antibacterial agent. It is effective against fungi (such as Candida species) and bacteria (such as Staphylococcus species).

Currently, gentian violet has a place in the treatment of nipple thrush when other treatment options have failed.

**Use of gentian violet:**

Available as a 0.5% aqueous paint. A prescription is required for this preparation and can be made up in some pharmacies on request.

This paint is applied twice a day to the nipples using a cotton bud. Breastfeed the baby before each application. The recommended duration is a few days and should not be used for longer than 7 days.

**Contra-indications for use:**

- Hypersensitivity to gentian violet
- On ulcerative lesions, open or broken wounds
- In patients with porphyria
- Ophthalmic use

Note: Gentian violet is a purple dye and may stain any material it comes into contact with eg: bathroom basin, clothing.

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