

THRUSH

Thrush is an infection that is caused by a yeast called *Candida Albicans*. This yeast thrives in warm, moist areas of the body. Common sites for *Candida* infection include the infant's mouth and diaper area, the mother's breasts and nipples, and the mother's birth canal. *Candida Albicans* is easily spread from one person to another. It is essential to treat all sites of infection adequately and at the same time. IF this is not done, the infection usually recurs.

How Does Thrush Occur?

Candida Albicans is normally present in our body. Sometimes, an overgrowth of the yeast occurs and infection is then present.

While moving through the birth canal, a baby can become infected with *Candida Albicans*. Often symptoms will not appear for a few weeks. If the infant's mouth is infected, the *Candida* can easily be transmitted to the mother's nipples while breastfeeding.

Antibiotics are often associated with an overgrowth of *Candida Albicans*. Infants and women who receive antibiotic therapy are more susceptible to this infection.

When a woman has recurrent yeast infections, it is important to consider her sexual partner as a possible source of the infection.

Objects such as artificial nipples, breast pads, and underwear can harbour spores and be a source of recurrent infection with *Candida Albicans*.

Symptoms of Thrush in the Baby

1. **Mouth** - White patches which are not easily removed, may be seen on the baby's tongue, cheeks, palate (roof of mouth), gums, or inner lips. The white patches are often surrounded by a generalized redness of the area. The mouth can be sore.
2. **Diaper Area** - The diaper area may have a rash that is red, raised, and has spots that are sore looking and contain pus. Other times, the skin will look red, scalded and may even peel. A diaper rash caused by yeast will not respond to ordinary measures.
3. **Behaviour** - The baby with *Candida Albicans* is often fussy. Soreness of the mouth and/or the diaper area can contribute to this. The yeast is often present in the infant's intestinal tract and can cause gassiness as well.

Symptoms of Thrush in the Mother

1. **Nipples** - The nipples and areola are sore, may be slightly swollen, and look inflamed (often a deep pink colour). Sometimes tiny blisters are present. Some women feel a sense of burning or itchiness. Usually, the discomfort is the most severe during and immediately after feedings. If breastfeeding has been comfortable and suddenly your nipples feel sore, always suspect thrush.
2. **Breasts** - When *Candida Albicans* infection of the breast is severe, it can involve the lower ducts and sinuses as well as the skin. When this occurs, it often results in a deep burning sensation or a shooting pain deep in the breast. This feeling can persist for several minutes after the baby comes off breast. The pain will disappear if the infection is properly treated.

Treatment

IT IS IMPORTANT TO REMEMBER THAT MOTHER OR BABY MAY HAVE ALL OR NONE OF THE SYMPTOMS. Both mother and baby, however, must be treated at the same time. Treatment measures must also be continued for the recommended time even though symptoms are improving or seem to disappear. Treatment of mother alone, baby alone or treatment stopped too soon usually results in re-infection and relapses.

1. **Treatment of Baby's Mouth**
 - Wipe the baby's mouth with a clean cloth dipped in plain boiled water after each feeding to remove milk curds on which the *Candida Albicans* can thrive.
 - Obtain the proper medication from the doctor. Nystatin (mycostatin) suspension is usually the drug that is prescribed. Apply this thoroughly to all affected parts of the baby's mouth. This should be done after the feeding. A clean swab or the corners of a clean wash cloth are helpful in spreading the medication. Some of the medication will be swallowed and will treat any yeast present in the baby's intestinal tract.
 - Swabbing the baby's mouth with gentian violet solution is sometimes recommended. The solution will stain everything it touches purple. Prolonged or excessive use of gentian violet can cause irritation and soreness to the mucous membranes of the mouth. Some babies may refuse to feed.
2. **Treatment of the Baby's Diaper Area**
 - If the baby does not have a diaper rash, it is not uncommon for one to appear after treatment of the mouth begins. If the baby does have a diaper rash, then expect it to worsen at first and then start to improve.
 - The doctor can prescribe the proper medication to be applied to the diaper area. The cream form of nystatin (mycostatin) is commonly selected.
 - If gentian violet solution is used on the diaper area, it will stain the skin purple. The skin often peels and becomes red one to two days after the gentian violet is applied.

3. Treatment of Mother's Nipples

- Gently wipe the nipple and areola with a clean cloth dipped in plain water to remove any milk residue, as the yeast thrives on milk curds.
- Allow the nipple area to air dry.
- Apply the prescribed medication to the nipple and areola. Nystatin (mycostatin) or Clotrimazole (mycelex) or Miconazole (monistat) are commonly used.
- If gentian violet solution is used, remember that it will stain. You may wish to wear old clothes.
- Wear clean breast pads or a clean bra after every feeding.

4. Other Treatment Considerations

- Any object that comes in contact with the baby's mouth such as artificial nipples on bottles or pacifiers, teethingers, toys or feeding devices must be washed and boiled daily for at least 10 minutes.
- Any object that comes in contact with the mother's breasts such as breast pump parts, reusable breast pads, or bras must be washed and boiled daily for at least 10 minutes.
- If mother has a vaginal yeast infection, the appropriate prescribed medication must be taken. She may also wish to consider boiling her underpants as described above to kill spores.
- Condom use during sexual relations is wise since *Candida Albicans* is easily transmitted from one partner to the other.

References

1. Huggins, K. 1990. The Nursing Mother's Companion. Revised Ed. Boston: The Harvard Common Press. 59-60, 127.
2. Lawrence, R. 1989. Breastfeeding: A Guide For The Medical Profession. 3^d Ed. St. Louis: The C.V. Mosby Company. 392.
3. Riordan, J. and K. Auerbach. 1993. Breastfeeding and Human Lactation. Boston: Jones and Bartlett Publishers Inc. 384-387.

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Candida Protocol

It is important to get the best latch possible when you have sore nipples. Even if the cause of sore nipples is Candida, improving the latch can decrease the pain. Note that with the "ideal" latch, the baby covers more of the areola (brown part of the breast) with his lower lip than the upper lip. Note also that the baby's nose does not usually touch the breast (except when the mother's breasts are very large, and even then). It is not always easy, though, to change the latch of the older baby.

Start with local treatment (applied on the nipple) with:

1. **Gentian violet** Use once a day for 4 to 7 days. If pain is gone after 4 days, stop gentian violet. If better, but not gone after four days, continue for 7 days. Stop after 7 days no matter what. If not better at all at 4 days, stop the gentian violet, continue with the ointment as below and call. Gentian violet comes as a 1% solution in water. It also usually dissolved in 10% alcohol, as gentian violet is not soluble in pure water. This amount of alcohol is negligible, as the baby will only get a drop of gentian violet. Apparently some pharmacists will dissolve it in glycerine instead of alcohol. 2% gentian violet should not be used.

Plus:

2. **APNO (All Purpose Nipple Ointment)** as below:

- Mupirocin 2% ointment (15 grams)
- Betamethasone 0.1% ointment (15 grams)
- To which is added miconazole powder so that the final concentration is 2% miconazole.

This combination gives a total volume of just more than 30 grams. Clotrimazole powder to a final concentration of 2% may be substituted if miconazole powder is unavailable, but both exist (the pharmacist may have to order it in, but compounding pharmacies almost always have it on hand). I believe clotrimazole is not as good as miconazole. Using powder gives a better concentration of antifungal agent (miconazole or clotrimazole) and the concentrations of the mupirocin and betamethasone remain higher. Sometimes we will add ibuprofen powder to a final concentration of 2%.

The combination is applied sparingly after each feeding (except the feeding when the mother uses gentian violet). "Sparingly" means that the nipple and areola will shine but you won't be able to see the ointment. Do not wash or wipe it off, even if the pharmacist asks you to. In Canada, Kenacomb (easier to find) or Viaderm KC (less expensive) ointments (not cream) can be substituted for the above combination, but are distinctly inferior. I used to use nystatin ointment or miconazole cream (15 grams) as part of the mixture, and these work well enough, but I believe the use of powdered miconazole (or clotrimazole powder) gives better results. These ointments can be used for **any cause** of nipple soreness ("all purpose nipple ointments"), not just for Candida (yeast). Use the ointment until you are pain free and then decrease frequency over a week or two until stopped. (See Treatments for Problems under "all purpose nipple ointment"). If you are not having less pain after 3 or 4 days of use, or if you need to be using it for longer than 2 or 3 weeks to keep pain free, get help or advice.

3. **Grapefruit seed extract** (not grape seed extract – **the active ingredient must be citricidal**), 250 mg (usually 2 tablets) three or four times a day orally (taken by the mother), seems to work well in many cases. If preferred the liquid extract can be taken orally: 5 drops in water three times/day (though this is not as effective). GSE can be used before trying fluconazole, instead of fluconazole, or in addition to fluconazole in resistant cases. See below for information on grapefruit seed extract used directly on the nipples.

4. If pain continues and it is sure that the problem is Candida, or at least reasonably sure, add fluconazole 400 mg loading, then 100 mg twice daily for at least 2 weeks, **until the mother is pain**

free for a week. The nipple ointment should be continued and the gentian violet can be repeated. If fluconazole is too expensive, ketoconazole 400 mg loading, then 200 mg twice daily for same period of time (or grapefruit seed extract can be used). If Candida is resistant, itraconazole, same dose and time period as fluconazole, can be used and has worked, though Candida actually is less sensitive to itraconazole, generally, than it is to fluconazole. (See handout Fluconazole). Fluconazole is apparently now available as a generic product (therefore less expensive). Fluconazole should not be used as a first line treatment or if nystatin alone does not work (which it usually doesn't). Before using fluconazole, nipple pain should be treated aggressively with good latch, gentian violet, all purpose nipple ointment and grapefruit seed extract. If used, fluconazole should be added to treatment of the nipples, not used alone. Fluconazole takes 3 or 4 days to start working, though occasionally, in some situations, it has taken 10 days to even start working. If you have had no relief with 10 days of fluconazole, it is very unlikely it will work, and you should stop taking it.

5. For deep breast pain, ibuprofen 400 mg every four hours may be used until definitive treatment is working (maximum daily dose is 2400 mg/day).

Grapefruit Seed Extract

Grapefruit seed extract (**active ingredient must be citricidal**) should be used in conjunction with the APNO (All Purpose Nipple Ointment). Apply the diluted liquid grapefruit seed extract on the nipples, and then follow with the ointment (always after the feeding).

Apply solution directly on the nipples. It does not need to be refrigerated. It may be covered and used until solution is finished.

- Mix very well 5 to 10 drops in 30 ml (1 ounce) of water (preferably distilled).
- Use cotton swab or Q-tip to apply on both nipples and areolas after the feeding.
- Let dry a few seconds then apply "APNO" (all purpose nipple ointment).
- If using Gentian Violet, do not use GSE on that particular feed, but use after all other feeds.
- Should be used in conjunction with oral GSE, either tablets, capsules, or liquid extract (see above).
- Use until pain is gone and then wean down slowly over the period of at least a week.
- If pain is not significantly improving after 2-3 days, increase the dose by 5 drops per 30 ml (ounce) of water. Can continue increasing until 25 drops per 30 ml of water.
- If flaking, drying, or whiteness appears on the skin, substitute vitamin E oil or pure olive oil for APNO 1- 3 x /day.
- Laundry can be treated as well: add 5-20 drops in the rinse cycle of all wash loads.

If not using Gentian Violet, it may be helpful to treat baby with Acidophilus by rolling a wet finger in Acidophilus powder (break open a capsule), and let baby suck on the finger right before a feeding. Use 2x first day, 2x second day only. Mother may want to ingest Acidophilus as well, 3x/day for 1 – 2 weeks.

Questions? (416) 813-5757 (option 3) or drjacknewman@sympatico.ca or my book **Dr. Jack Newman's Guide to Breastfeeding** (called **The Ultimate Breastfeeding Book of Answers** in the USA)

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