

## Yeast Protocol

*Candida* infections, commonly known as yeast infections, of the nipples may occur any time while the mother is breastfeeding. *Candida albicans* likes warm, moist, dark areas. It normally lives on our skin and other areas, and 90% of babies are colonized by it within a few hours of birth. It, like many other germs that live on us normally, only becomes a problem under certain circumstances.

*Candida* infections of the skin or mucous membranes are more likely to occur when there is a breakdown in the integrity of the skin or mucous membrane—another reason why a good latch is very important from the very first day. Many *Candida* infections would, perhaps, not have occurred if the mother had not had sore nipples and a breakdown of the skin of the nipples and areola. The oozing of liquid that occurs often in cracked nipples encourages *Candida albicans* to change from its harmless form to a disease causing form.

The widespread use of antibiotics also encourages the overgrowth of *Candida albicans*. Many pregnant women, women in labor, and new mothers, as well as their babies receive antibiotics, sometimes with very little justification.

### Diagnosing Candida

There is no good test which helps makes the diagnosis. A positive culture from the nipple(s) does not prove your pain is due to *Candida*. Neither does a negative culture mean your pain is not due to *Candida*. The best way to make a diagnosis is by history.

The presence or absence of a *Candida* infection in the baby is not helpful. A baby may have thrush all over his mouth, but the mother may have no pain. A mother may have the classic symptoms of a *Candida* infection of the nipples, and the baby may have no thrush or diaper rash.

**If mom is diagnosed with a yeast infection her baby must also be treated, even if the baby has no obvious signs of infection. If only mom is treated, the yeast can be transferred back to her while breastfeeding.**

### Symptoms

- Nipple pain that begins *after* a period of pain free nursing. Though there are a few other causes of nipple pain that begin later, *Candida* infection is definitely the most common. The nipple pain of *Candida* may begin without an interval of pain free nursing, however.
- **Burning** nipple pain that continues *throughout* the feeding, sometimes continuing after the feeding is over.
- Pain in the breast that is “shooting” or “burning” in nature and which goes through to the mother’s back and shoulder. This pain is usually worse toward the end of the feeding, and

worsens still more *after the feeding is over*. It also tends to be much worse at night. This pain may occur *without* any nipple pain.

- Pain, as above, which is made much better with the use of gentian violet, though unfortunately, gentian violet does not seem to work as well as it used to.

### **Treatment**

Initially, expose nipples to lots of air and light. Yeast grows where it is dark, moist and sweet, like the inside of a bra. Also see tips on the 4<sup>th</sup> page for destroying and decreasing the spread of yeast. Most painful yeast will require some medical intervention.

Medically, start with *local* treatment (applied on the nipple) with:

#### **1. Dr. Newman's Nipple Cream or 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). Using powder gives a better concentration of antifungal agent (miconazole or clotrimazole) and the concentrations of the mupirocin and betamethasone remain higher. Sometimes, ibuprofen powder is added 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. Using nystatin ointment or miconazole cream (15 grams) as part of the mixture works well enough, but the use of powdered miconazole (or even clotrimazole powder) gives better results. These ointments can be used for *any cause* of nipple soreness ("all purpose nipple ointments"), not just for yeast. Use the ointment until you are pain free and then decrease frequency over a week or two until stopped. 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 two or three weeks to keep pain free, ***get help or advice***.

Dr. Newman's Nipple Cream requires a prescription. The cream is only available at compounding pharmacies, such as:

- Fowler's Pharmacy (Greenville) 288-5920 M-F 9-6, Sat 9-5, Sun closed
- Upstate Medical at Patewood (Greenville) 454-2369
- Script Shop(Greer) 879-2325
- Shertech (Spartanburg) 585-3850
- Mauldin's (Seneca) 888-2232 M-F 8-6, Sat 9-1, Sun closed

**2. Gentian violet:** Use once a day for four to seven days. If pain is gone after four days, stop gentian violet. If better, but not gone after four days, continue for seven days. Stop after seven days no matter what. If not better at all at four days, stop the gentian violet, continue with the ointment as below and call lactation. 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. 2% gentian violet *should*

**not** be used. Gentian violet is available for very low cost and over the counter. Most pharmacies will carry it, but you may want to call before making the trip.

Apply gentian violet directly on nipples and then nurse the baby. Gentian violet is very messy and it stains, but it works. We suggest doing the Gentian Violet at the last feeding before bed since it will turn baby's mouth and mom's nipples purple. If you are not directly nursing, paint the gentian violet on once per day after pumping. If baby needs to be treated swab his mouth once a day.

3. **Fluconazole/Diflucan:** If pain continues and you are reasonable sure the problem is *Candida*, *add* fluconazole 400 mg loading, then 100 mg twice daily for at least two weeks, **until 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 can be used instead. 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. Fluconazole as a generic product is less than Diflucan. Fluconazole should not be the first line treatment for suspected yeast infection. Before using fluconazole, nipple pain should be treated aggressively with good latch, gentian violet and all purpose nipple ointment. If used, fluconazole should be *added* to treatment of the nipples, not used alone. Fluconazole takes three or four days to start working, though occasionally, in some situations, it has taken 10 days to even start working. If you have had *no relief at all* with 10 days of fluconazole, it is very unlikely it will work, and you should stop taking it. Fluconazole is sometimes useful to treat the baby as well. The dose for the baby would be 6 mg/kg as a first dose, followed by 3 mg/kg/day as one dose for the same period of time as the mother.

4. For deep breast pain, ibuprofen up to 800 mg every six-eight hours may be used until definitive treatment is working (maximum daily dose is 2400 mg/day).

5. **Grapefruit seed extract** (*not* grape seed extract, **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 per day (though this is not as effective). Oral 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.**

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 five to 10 drops in 30 ml (1 ounce) of water (preferably, but not necessarily, distilled).
- Use cotton swab or Q-tip to apply on both nipples and areolas *after* the feeding.
- Let dry a few seconds, then apply "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 two to three 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 or pure olive oil for APNO 1-3x/day.**
- Laundry can be treated as well: add 15-20 drops in the rinse cycle of all wash loads

### **Destroying Yeast**

To kill yeast on surfaces other than skin, immersion in very hot water (50°C or 122°F) will work in minutes. A bleach solution (10% bleach and 90% water) will also kill yeast as well as discolor fabric and irritate skin. Boiling is preferred where possible. Laundered wet, all-cotton underwear may be microwaved on high for five minutes to kill yeast. Exposure to sunshine also kills yeast; hanging clothing outside to dry during an outbreak may be helpful. Freezing does **not** kill yeast. Prudence suggests that milk expressed at this time should not be stored for feeding until after the yeast infection has cleared.

If a dishwasher is used, the hottest water setting should be selected. If pump parts, bottles, teats (nipples), pacifiers (soothers, dummies), teethingers and other items in contact with the baby's mouth or milk are handwashed, dipping these into a 10% bleach solution before thoroughly rinsing will prevent the spread of yeast. Rubber gloves can be worn to protect hands from the bleach solution. If there is yeast on the hands, the gloves should be replaced frequently.

Using distilled vinegar (heat treated to remove mold spores) and water solution to add to baths, final rinses of washing machines and directly on affected or at risk skin can also be effective. The resulting pH change makes it less congenial to yeast.