



ARTICLE

MULTI-MAM BIO-ACTIVE COMPRESSES FOR INTENSIVE NIPPLE CARE



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Content

Content	2
Sore nipples	3
Multi-Mam Compresses, for breastfeeding comfort	4
Prevention of mastitis	4
Tests	5
Ingredients	5
The role of the 2QR-complex in Multi-Mam Compresses	5
The role of glycerin in Multi-Mam	5
Conclusion	6
References	7
References on sore nipples	7
References on Aloe	8
References on Glycerin	8



BIO-ACTIVE COMPRESSES FOR INTENSIVE NIPPLE CARE

Sore nipples

Sore, damaged nipples and the pain suffered by the mother can shake the mother's confidence in her ability to breastfeed and interfere with her relationship with her baby because every feeding is an agony, rather than a loving time together. Painful nipples can also inhibit the let-down (milk ejection) reflex. As the mother becomes more tense a vicious circle has begun that often leads to early weaning (Humble 1994). We should offer the mother the most up-to-date measures of symptomatic relief and accelerated healing.

Normal neonatal sucking induces visible changes in nipple skin especially swelling and eschar (scab). Blisters, inflamed areas and peeling are also frequently observed (Ziemer 1993). Statistics reveal that 80-95 % of breastfeeding women will experience some degree of soreness with 26 % reporting extreme nipple pain (Newton 1952, Walker 1989).

Breastfeeding literature agrees on the importance of proper positioning of the baby at the breast, the effective sucking of the baby and the frequency of sucking (Klaus 1987). However other factors are contributing to cracked/fissured nipples such as products which remove the natural lubrication from the nipple area (soaps, shampoos), thrush and eczema or a tendency to have dry skin.

Fissuring of the nipple occurs by a combination of external trauma and insufficient moisture in the uppermost layer of the skin. While it is important to address the cause of the trauma (e.g. by correct positioning and latch-on of the baby), adequate moisture must be maintained to facilitate the healing process of the fissure. A moisture barrier on the injured area slows down the evaporation of moisture naturally present in the skin. As wounds heal in a moist environment they heal without scab or crust formation. Even tea bag and water compresses were found to be more effective than no treatment. Use of a dressing significantly reduced nipple pain during the study period and summary scores indicated significant reduction in the amount of eschar on the surface of the nipple. (Ziemer)

However when damaged nipples are treated with the still commonly recommended application of air drying and hair dryers, the fissured areas produce scabs, which the baby often loosens while breastfeeding. The nipple then bleeds again and grows another scab. This pattern can go on until healing is complete, causing the mother a very uncomfortable time.

Nipple damage may also create a predisposing factor for infection with microorganisms such as *Candida albicans* or *Staphylococcus aureus* and increase the risk of developing mastitis due to the infection of the ascending lactiferous duct (Amir 1991, Livingstone 1999).

In the early 70s it was established that a moist, scab free, environment enhanced the movement of cells across the wound surface and facilitated healing (Rovee 1972). Current wound treatment methods employ the use of moisture to aid healing. A moist environment is critical for epithelization, the proliferation and migration of epithelial cells across the surface of a wound during healing. (Bolton 2000)



BIO-ACTIVE COMPRESSES FOR INTENSIVE NIPPLE CARE

Oils, including vitamin E oil, do not facilitate wound healing. All oils stay on the surface of the skin and may offer some temporary relief. Dry or cracked skin does not lack oil, it lacks moisture. However for the mother with damaged nipples the most pressing issue may not be the time it will take for her nipples to heal but how quickly she can get relief from her pain.

BioClin has developed 2 products that offer a total and effective solution to sore nipples.

Multi-Mam Compresses, for breastfeeding comfort

Multi-Mam is a completely novel approach to the treatment of sore nipples. Multi-Mam has a strong bio-active effect which greatly enhances the healing process and stimulates epithelisation. The unique application by an impregnated compress helps maintain a moist environment, does not stick to skin, decreases the chance of bacterial infection, and is easy to use. Multi-Mam provides immediate relief of pain and swelling. The components of Multi-Mam have been chosen for their well researched wound healing, pain stopping, antimicrobial and moisturizing properties. Multi-Mam is non-toxic and no preservatives have been added. All its compounds are herbal. The bio-active gel has a pleasant sweet taste and is totally safe when swallowed by the baby.

The bio-active gel is impregnated in a soft protective pad that can be placed over the nipple and carried under the bra. The viscosity of the fluid is such that it will not drip from the compress. The outside of this pad is coated with a thin layer of plastic to prevent staining of the cloths.

Prevention of mastitis

A breast infection (mastitis) is an infection in the tissue of the breast. Breast infections are usually caused by common bacteria found on normal skin (*Staphylococcus aureus*). The bacteria enter through a break or crack in the skin, usually the nipple. The infection takes place in the parenchymal (fatty) tissue of the breast and causes swelling. This swelling pushes on the milk ducts. The result is pain and swelling of the infected breast.

Breast infections usually occur in women who are breastfeeding.

1. Multi-Mam Compresses prevents mastitis by treating and preventing cracked nipples.
2. Multi-Mam Compresses has been tested against the 4 most threatening infectious microorganisms: *Staphylococcus aureus*, *Beta hemolitical Streptococcus agalactiae*, *Escherichia coli* and *Listeri monocytogenes* (Bactimm test). Multi-Mam Compresses gel neutralizes these microbes, which are often present on the nipples of breastfeeding mothers.



BIO-ACTIVE COMPRESSES FOR INTENSIVE NIPPLE CARE

Tests

Multi-Mam Gel has been tested against the 4 most life threatening infectious microorganisms for babies: Staphylococcus aureus, beta hemolitical Streptococcus agalactiae, Escherichia coli and Listeria monocytogenes. Multi-Mam gel appears to kill these microbes which are often present on the nipples of breastfeeding mothers. Multi-Mam Compresses have been submitted to Stability Testing according to the ICH Harmonised Tripartite Guidelines 135, 1995 and the IFSCC, UK, 1992 Stability Testing. Multi-Mam Compresses have been patch tested for sensitization on human volunteers.

Ingredients

Multi-Mam Compresses contain the following ingredients:

Galactoarabinan Polyglucuronic Acid Crosspolymer (2QR-complex), Glycerin, Xanthan Gum, Caprylyl Glycol.

The role of the 2QR-complex in Multi-Mam Compresses

Multi-Mam® Compresses are compresses impregnated with bio-active gel for use in the sore and cracked nipples of breastfeeding mothers. The compress also creates an optimal situation for the natural healing process by creating a moist wound healing environment. The bio-active gel is based on Galactoarabinan Polyglucuronic Acid Crosspolymer (2QR-complex), Aloe Barbadensis extract, Xanthan Gum, Glycerine, Caprylyl Glycol. The main constituent of Multi-Mam® Compresses is the negatively charged acetylated polymannose complex called 2QR-complex derived from the Aloe Barbadensis plant which is reputed for its anti adhesive properties.

The 2QR-complex provides a physical block to harmful bacteria: preventing them from adhering to skin tissues, thus preventing inflammation which in turn prevents infection and supports the natural healing process thereby eliminating the discomforts of irritated skin (pain, swelling, redness). *So 2QR-complex provides a physical block to harmful bacteria: preventing them from adhering to the tissues of the skin.*

The role of glycerin in Multi-Mam

Glycerol creates a stimulus for barrier repair, improves the stratum corneum hydration and initiates a regenerative skin protection. Water does not appear to be the optimal plasticizer of human skin.

Studies have shown the influence of glycerol on the recovery of damaged stratum corneum barrier function. Significant differences between glycerol open vs. untreated and glycerol occluded vs. untreated were observed at day 3. Stratum corneum hydration showed significantly higher values in the sites treated with glycerol+occlusion, compared with all other sites. A faster barrier repair was seen in glycerol-treated sites. The observed effects were based on the modulation of barrier repair and were not biased by the humectant effect of glycerol. As the glycerol-induced recovery of barrier function and stratum corneum hydration were observed even 7 days after the end of treatment, glycerol can be regarded as a barrier stabilizing and moisturizing compound. Furthermore, by using glycerol, the mechanical properties of the skin can be influenced: long term used leads to increased elasticity.



BIO-ACTIVE COMPRESSES FOR INTENSIVE NIPPLE CARE

Also in veterinary medicine a more rapid reconstitution of the protective skin barrier differences in udder health could be proven. Control studies revealed that 10% glycerol as an emollient of a postmilking teat spray improved teat skin condition within 3 weeks from being slightly rough to being smooth for lactating cows. Glycerin tastes sweet which is a pleasant feature as well for its application in Multi-Mam.

Conclusion

Multi-Mam® Compresses treats and prevents sore and cracked nipples of breastfeeding mothers, prevents infection, optimizes the skin condition and alleviates pain from sore and cracked nipples. Multi-Mam® Compresses supports the natural healing process of sore and cracked nipples. These claims originate from the physical blocking of adhesion of harmful micro organisms to the skin nipple. This physical blocking is effectuated by the anti-adhesive properties of the active ingredient of Multi-Mam® Compresses, the negatively charged acetylated polymannose complex called 2QR-complex derived from Aloe barbadensis plant. The other constituents of Multi-Mam® Compresses contribute in its claimed effects of supporting natural healing and optimizing the skin condition. The result of the challenge test in Bactimm laboratory (2000) shows how gel impregnated in the compress prevents infection from four main bacteria in the nipple skin and the elimination of these bacteria prevents mastitis. This test doesn't show how these bacteria are eliminated.



BIO-ACTIVE COMPRESSES FOR INTENSIVE NIPPLE CARE

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BIO-ACTIVE COMPRESSES FOR INTENSIVE NIPPLE CARE

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BIO-ACTIVE COMPRESSES FOR INTENSIVE NIPPLE CARE

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