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# Dysphoric milk ejection reflex as a mental health problem of young mothers - literature review

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## Abstract

**Introduction and purpose of the work:** Breastfeeding has many health benefits. The guidelines recommend breastfeeding up to 6 months of age. Many mothers stop breastfeeding early, one reason being the dysphoric ejection reflex (D-MER). It is a negative emotional reaction related to the ejection of milk.

**State of knowledge :** D-MER has been known to science for a short time. Breastfeeding depends on many psychological factors and is regulated by many hormones, including prolactin, oxytocin, and dopamine. A sudden drop in dopamine levels is believed to be the cause of this phenomenon. The main symptoms include dysphoria, sadness, irritability, anxiety and depression. There are no registered preparations for the treatment of D-MER, psychotherapy and lifestyle changes are helpful.

**Summary:** It is important to disseminate knowledge about D-MER to help mothers understand their breastfeeding processes. More research should be done into the safe treatment of this condition.

**Key words:** Dysphoric Milk Ejection Reflex, D-MER, breastfeeding, lactation, dysphoria, breastfeeding mood disorder

## **INTRODUCTION AND PURPOSE**

The process of breastfeeding newborns by their mothers is a physiological process with many benefits for both the newborn baby and the mother. The WHO and American Academy of Pediatrics guidelines [1,2] recommend that only breastfeeding be maintained for the first 6 months of a child's life. Despite this, during the first months, many mothers fail to breastfeed their babies and, according to statistics, only 41% of infants in the 0-6 month age group are fed only breast milk. [1,3]

After giving birth to a child, a young mother may face many difficulties in her new life role. Medical, physical and emotional reasons that receive the least attention and play a significant role in the lactation process may be reasons for stopping breastfeeding. These reasons include dysphoric milk ejection reflex (D-MER). This term refers to a situation where a mother experiences a severe negative emotional reaction related to feeding. This state begins just before milk ejection, lasts a few minutes, and may be repeated with each reflex ejection or only at the beginning of a feeding session. [1, 5] D-MER may lead to less frequent breastfeeding or the inability to continue to breastfeed the baby regularly and weaning the baby earlier. [1, 6]

## **DESCRIPTION OF THE STATE OF KNOWLEDGE**

Dysphoric Milk Ejection Reflex phenomenon was first described in 2007 by Alia Macrina Heise, who a year later created a website dedicated to this issue, D-MER.org. [21] The first described case was published in 2010. [5] This phenomenon is still little known and rarely recognized by medical personnel. [5, 22] Medical literature reports that the incidence of D-MER is 9.1%. [5]

Breastfeeding is one of the most intimate experiences for a woman and creates a strong emotional bond between the mother and her newborn baby. The formation of this bond is favored by one of the hormones responsible for lactation, which is oxytocin. Mothers breastfeeding are considered to be less prone to stress, have less vagal tension, lowered blood pressure and heart rate, greater overall peace of mind, and a lower response to cortisol compared to mothers who do not breastfeed their babies. [1]

From a psychological perspective, breastfeeding plays a role in shaping the identity of a woman as a mother, research shows that people who have problems with finding their new role stop breastfeeding faster. [16] The decision to breastfeed is positively influenced by

various factors, such as the sense of self-agency, social support, psychological well-being after childbirth, maintain greater autonomy. [1]

Newborns are fed through the mammary gland, which belongs to the exocrine glands. [1] The lactation process consists of two phases. The first phase, secretory differentiation, takes place from the 15-20th week of pregnancy and is closely dependent on the hormonal balance. The main hormones that influence the first stage are progesterone and prolactin. [1, 13] The second phase - secretory activation, develops between 24 and 72 hours after delivery. During this phase, the breast is able to produce colostrum, breast milk, and other dairy ingredients. [12] In the second phase, there is a decrease in progesterone levels and an increase in prolactin and oxytocin levels. [14] Prolactin has a stimulating effect on follicular cells, causing milk to be secreted in response to a mechanical stimulus in the nipples. Oxytocin is responsible for the reflex flow of milk in response to stimulation of the breasts by sucking or expressing milk. [1, 14]

It is worth noting that the size or volume gain of pedestrians during pregnancy does not affect the amount of milk produced by the breast glands after the baby is born. [12]

The lactogenesis activation stage is followed by the continuous milk production stage. It is also hormonally regulated, its driving force being the removal of milk from pedestrians both by sucking by the baby and by expressing milk mechanically. [1, 15] According to the guidelines, the recommended number of feedings per day is about 10-12, newborns are fed on demand when the baby feels hungry and demands to eat. [15]

The reflex to eject milk from the breast, or MER, is necessary for the breastfeeding process to take place. It is a neuroendocrine reflex. [15] When suckling, a negative pressure is created, which sends information to the hypothalamus, which reacts with the production of oxytocin. Oxytocin enters the posterior pituitary gland, from where it is released into the bloodstream. Oxytocin production may be influenced not only by mechanical irritation of the nipple. In the case report [24] it was observed that direct stimulation of the nipples was not necessary for the appearance of negative feelings related to D-MER. The release of milk was also caused by expressing milk, thinking about the baby, crying the baby, preparing for feeding, filling the breasts. In all these situations, symptoms of D-MER appeared along with the release of milk. [15, 24]

The most likely hormone responsible for the development of dysphoria is dopamine. [1, 17] The secretion of the lactation hormone - prolactin is dependent on dopamine inhibition. [18] Scientific studies show that dopamine levels fluctuate rapidly during breastfeeding and therefore may affect D-MER. [18] The authors state that a sudden drop in dopamine may occur when milk secretion is initiated, leading to an absolute or relative short-term dopamine deficit in women. [24] Oxytocin levels are generally high during breastfeeding, but research has shown that maternal genetic variation in the oxytocin gene affects the rate at which cortisol levels change during breastfeeding. [19] Increasing the level of oxytocin has an impact on the activation of the reward region in the limbic system, so reducing its concentration may also affect the formation of D-MER. [1]

The main symptom of D-MER is dysphoria. It is physiological, not psychological, as indicated by symptoms such as: occurrence only during the release of milk, in most patients dysphoria does not require contact with the breasts, but only with the presence of MER, this

phenomenon is not related to the woman's personal experiences and may appear suddenly in a woman who had previously had several unproblematic lactations. [24]

D-MER can cause many feelings of varying degrees of intensity, from longing to thoughts of suicide. After the stage of milk separation through the milk ducts, dysphoria disappears. [23]

Mothers experiencing this phenomenon describe it as overwhelming, uncontrollable feelings that strongly influence them, or a sense of duty to the baby, or an experience based on the assumption that a nursing mother should enjoy and fulfill herself in feeding her baby. [1, 4] These feelings cause psychological pressure in a woman and negatively affect her self-confidence as a mother.

In research studies, many women described their feelings in a similar way as anxiety, sadness, irritability, agitation, oversensitivity, tearfulness. These symptoms appeared suddenly and lasted less than 5 minutes. Often the subjects reported coexistence of nausea and stomach discomfort. [5] In another series of case reports [23], subjects reported negative feelings related to milk ejection as longing, anxiety, hopelessness, empty stomach, anxiety, fear, panic, irritability, agitation, paranoia. Depression was the most commonly reported symptom, and agitation was the rarest.

The links between postpartum depression and breastfeeding are still not fully understood. On the one hand, depression is less common among breastfeeding mothers, and based on this information, breastfeeding may be treated as a preventive factor for the development of postpartum depression [10], on the other hand, in other cases, breastfeeding causes depression and may be associated with depression. [11]

Scientists are looking for effective methods and means in the fight against D-MER in order to help women in the difficult and demanding time for them, which is the beginning of motherhood.

In the available literature, we find reports on the role of psychotherapy in alleviating the symptoms associated with this phenomenon. [5] Studies show a positive effect of lifestyle changes on the alleviation of D-MER, which is based on: distracting attention while feeding by reading or watching TV, increasing water consumption and sleep, exercise, reducing caffeine consumption, using music therapy and aromatherapy reducing stress. [5, 23] It is important that medical workers dealing with perinatal and lactation care be able to recognize this phenomenon, because the awareness of women that what they experience is D-MER is of great importance to them, it favors their education and thus they can seek help in support groups that make it easier for patients to cope with D-MER. [23]

In the literature review, we can find reports that foods and drugs that raise or stabilize dopamine levels are effective in alleviating or even eliminating dysphoria. One of them may be bupropion, a dopamine-norepinephrine reuptake inhibitor. [23] However, there is currently no approved medicinal product for the treatment of D-MER. [5, 23] The effectiveness of these preparations, including bupropion, has not been proven and requires further studies on the safety of the drug and its impact on the child. In a scientific study [23], women confirmed the effectiveness of the use of the herbal medicine *R. rosea* and the vitamin B complex, however, there are no studies on safety for infants, therefore it requires extensive research. [23]

## CONCLUSIONS:

Breastfeeding is an amazing gift of nature for a newborn baby, breast milk is the healthiest food for a newborn, which provides him with energy, macro and microelements and supports the fight against infections. The blissful social image of breastfeeding puts pressure on women who struggle to breastfeed. Symptoms of D-MER are difficult for women and are often associated with a shorter period of breastfeeding, which has a negative impact on the health of the woman and the newborn, therefore it is important to disseminate knowledge about its occurrence among obstetricians, lactation advisers and parents. More research is needed on the pathophysiology of D-MER and finding effective and safe measures to prevent or alleviate symptoms to facilitate the beautiful and difficult path of motherhood for women.

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