DIET FOR BREASTFEEDING MOTHERS – MYTHS AND FACTS ABOUT NUTRITION DURING LACTATION

DIETA MATKI KARMIĄCEJ – FAKTY I MITY DOTYCZĄCE SPOSOBU ODŻYWIANIA W OKRESIE LAKTACJI

Katarzyna Lewicka

Department of Women's Health, Department of Pregnancy Pathology, Medical University of Silesia in Katowice

https://orcid.org/0000-0003-4418-6751

DOI: https://doi.org/10.20883/pielpol.2019.43

ABSTRACT

Breastfeeding is a special period in the life of a woman and her baby. The nutrition of women during the lactation period is still surrounded by a number of myths and hearsay passed down from one generation to another. The time of motherhood and lactation is full of challenges. In addition to the difficulties and problems associated with breastfeeding, a new mother may have to deal not only with opinions of book authors, midwives and doctors, but also friends, other mothers posting their views on various Internet forums, as well as grandmothers and other family members, serving advice based on their own experience and often on knowledge about nutrition dating back to dozens of years ago. Nutrition during breastfeeding is the perfect time for a woman to change her eating habits, but it should not be associated with any prohibitions, sacrifices or anxiety.

The paper presents general rules for nutrition during the nursing period, recommendations for the supplementation of vitamins and microelements, as well as information on the use of herbs during lactation. The author also discusses the composition of human milk and presents popular myths and facts about the diet of breastfeeding mothers.

KEYWORDS: breastfeeding, diet.

STRESZCZENIE

Okres karmienia piersią jest szczególnym okresem życia kobiety oraz jej dziecka. Sposób odżywiania kobiet w okresie laktacji wciąż owiany jest szeregiem mitów i legend przekazywanych z pokolenia na pokolenie. Macierzyństwo i okres laktacji to czas pełen wyzwań. Świeżo upieczona mama oprócz trudności i problemów związanych z karmieniem piersią niejednokrotnie musi zmierzyć się z opiniami nie tylko autorów książek, położnych i lekarzy, lecz także koleżanek, mam wypowiadających się na różnego rodzaju forach internetowych, babć i innych członków rodziny służących radami opartymi na własnym doświadczeniu i nierzadko wiedzy na temat sposobu odżywiania sprzed kilkunastu czy kilkudziesięciu lat. Odżywianie w okresie karmienia piersią to idealny czas na zmianę nawyków żywieniowych, ale nie powinno wiązać się ono z zakazami, wyrzeczeniami i lękiem.

W pracy przedstawiono ogólne zasady żywienia w okresie karmienia piersią, zalecenia dotyczące suplementacji witamin i mikroelementów oraz informacje dotyczące stosowania ziół w okresie laktacji. W dalszej części pracy przedstawiono skład mleka kobiecego oraz fakty i mity dotyczące diety matki karmiącej piersią.

SŁOWA KLUCZOWE: karmienie piersią, dieta.

Introduction

Nutrition during the nursing period still generates many emotions. It would seem that the subject is easy and it is common knowledge that every breastfeeding woman should eat a healthy diet. However, radically different opinions can still be heard, even among health care professionals.

Harmonizing dietary recommendations and debunking the myths about nutrition during the nursing period is likely to help women maintain a healthy course of lactation, reduce the fear of any adverse symptoms in babies and encourage breastfeeding in general.

The aim of the paper is to show the problem of the approach to nutrition of women during the lactation period. The author presents guidelines for nutrient intake during breastfeeding, including the latest recommendations, as well as discussing the myths surrounding nursing mothers.

General rules for nutrition during breastfeeding

The principles of a healthy lifestyle are crucial during the breastfeeding period. Nutrition in this exceptional time for each mother requires making the menu more diverse, maintaining regularity of meals and ensuring

their good quality. Proper nutrition of a breastfeeding woman affects her health and well-being. However, it does not have a significant impact on the composition of human milk. Malnutrition and dehydration of the woman's body may decrease the production of milk, but it does not significantly affect its quality [1].

During the nursing period, the need for energy, nutrients and minerals increases. However, this does not mean a woman should follow the "eat for two" rule. Depending on the age, body weight and physical activity, the energy demand during breastfeeding increases by about 500–650 kcal and amounts to 2,600–2,900 kcal per day [2].

The percentage of individual nutrients in the daily diet should be as follows: carbohydrates: 55–60%, fats 30% and protein 12–14% [2].

Lactating women are recommended to consume approximately 500 g of carbohydrates per day. The daily diet should consist mostly of complex carbohydrates. Vegetables can be consumed without restrictions, but their amount should not be less than 600–800 g/day. Fruit should be consumed in smaller quantities than vegetables, the recommended daily amount being 200–300 g [2].

Due to the fact that the qualitative composition of fats in human milk is related to food products consumed by the woman, it is important that there are fewer saturated fatty acids and more unsaturated fatty acids in the diet of a nursing mother. Unsaturated fatty acids, in particular DHA acid belonging to long-chain polyunsaturated fatty acids (LCPUFA), play an important role in the healthy growth and development (of the baby), particularly of the retinas and the brain. It is not recommended to follow low-fat diets, as fat is a carrier of vitamins A, D, E and K, and is an important substrate base for the synthesis of prostaglandin, prostacyclin, lipoxin and other important compounds [3].

60% of protein consumed during the lactation period in the amount of about 110 g /day should be of animal origin. The main source of animal protein is milk and milk products, as well as meat and fish. 40% of the demand should be covered by vegetable protein, the main source of which are legumes, grains and vegetables [2].

Proper hydration of the body

Insufficient intake of fluids causes the disorder of water-electrolyte balance and acid-base balance. Therefore, it is recommended that women drink a proper amount of fluids daily during the lactation period, as well as paying attention to their quality [4].

The experts from the Polish Gynecological Society point out that the proper hydration of the body is the basis for the production of the right amount of breast milk. The composition of human milk is 87% water. The demand for water in breastfeeding mothers is higher by about 800–1000 ml/day due to the fact that a woman's body produces about 750 ml of milk daily [5].

For women who breastfeed, the average daily intake of liquids should be about 3,000 ml, including about 2,000–2,500 ml of water. The requirement for liquids depends on a woman's body weight and temperature, and on the amount of adipose tissue. It increases depending on the ambient temperature, air humidity, type of clothing worn and physical activity [5].

According to the recommendations of the Polish Gynecological Society Expert Group, during lactation women should consume water from natural sources, free of organic or inorganic contaminants contained in the soil and on its surface. It is recommended to drink non-carbonated spring water with low electrolyte content or low mineralized water containing less than 500 mg of minerals per liter [5].

In addition to water, it is recommended to drink freshly squeezed juices with no sugar added [2].

Supplementation of vitamins and microelements

The nursing period is a state of increased requirement not only for energy components, but also for vitamins and microelements. The only exception is vitamin K, whose daily intake should be the same as in women who do not breastfeed – 55 mg/day. The deficiency of vitamins and microelements may negatively affect the development of the breastfed baby [2, 6].

During lactation, iron supplementation at a dose of 20 mg/day is recommended, as it prevents the reduction of iron content in breast milk and the occurrence of anemia in the baby, as well as staving off adverse effects on the baby's psychomotor development [2].

The content of iodine in breast milk depends on the amount of iodine released in the thyroid gland and the amount of iodine in the diet. Its deficiency in the baby may lead to hypothyroidism and goiter. According to current recommendations, the daily dose of iodine during the breastfeeding period should be 200 micrograms [2].

The basic source of calcium for the baby is mother's milk. The calcium content in a lactating woman's diet has a small impact on its content in the milk, but

positively affects the woman's health, as it reduces the risk of osteoporosis and is necessary in the blood coagulation process, supports the functioning of the cardiovascular system and allows the maintenance of peak bone mass. It is recommended to supplement calcium at a dose of 1,000–1,300 mg/day [7].

As the content of selenium in the baby's blood is reflected in the content of selenium in the mother's milk, it should be supplemented at a dose of approximately 70 mg/day [2].

In addition to the components listed above, it is recommended to consume the following minerals in approximate amounts: phosphorus 1,250 mg/day, magnesium 320–360 mg/day and zinc 12–13 mg/day [2].

During the nursing period, the requirement for B vitamins increases. For example, the content of vitamin B_6 in breast milk is closely related to the mother's diet, and its deficiency in the milk may have a long-term effect on the healthy development of the baby. It is recommended to supplement vitamin B_6 at a dose of 2 mg/day. In turn, the requirement for vitamin B_{12} during the breastfeeding period is about 2.8 µg. The amount of vitamin B_{12} in the diet is reflected in its concentration in breast milk. Its deficiency in breastfed babies is manifested by apathy and reduced muscle tone [7].

It is also essential to supplement vitamin D, whose only source is its synthesis in the skin. In Central European countries this is possible only from March to September, with at least a 1.5 hour long exposure to sunlight. Breastfeeding women are a group exposed to vitamin D3 deficiency. According to current recommendations, during the lactation period, the daily dose of vitamin D3 should be 50 µg [6)].

Herbs during lactation

In the context of breastfeeding, herbs can be divided into those that promote lactation (galactogogues) or inhibit it (antigalactogogues) [8].

Fennel, dill, anise and cumin are the most commonly used herbal galactogogues in Poland. Although consumed in small amounts they do not pose a threat to the health of the baby, the studies have not explicitly confirmed their effectiveness. Consuming excessive amounts of herbs can cause diarrhea, abdominal pains and irritability in the baby [8].

In addition to fennel, women are more and more willing to buy products containing barley malt. Barley causes increased synthesis of prolactin due to polysaccharides contained in its walls. Its positive effect on lactation is confirmed by studies on lactogenic activity, and what is more, unlike other herbal preparations, no side effects of malt intake have been described so far. A contraindication to the consumption of products containing barley malt is diagnosed celiac disease in a breastfeeding woman [1].

In its position on the use of lactation-promoting plant-derived compounds, the American Academy of Breastfeeding Medicine emphasized that there is no systematic research on the effectiveness of herbs or comprehensive knowledge of their side effects. Barley malt has been found to be useful in lactation problems [1].

The most commonly used herbs in Poland that inhibit lactation are sage, peppermint and parsley. They are used both in the case of a mild reduction in lactation, as well as in the case of excessive milk production during breast engorgement [8].

The use of any herbs to promote or inhibit lactation should be supervised by a midwife, a doctor or a lactation consultant.

What is the composition of human milk and what really penetrates into it

Human milk is composed of the following: triglycerides (98.7%), phospholipids (1%) and cholesterol (0.3–0.4%). Chemically, milk is an aqueous solution of fats, proteins, carbohydrates, vitamins, micronutrients, macroelements and non-nutritive substances, such as hormones, enzymes, growth substances and immune bodies [3].

The composition and nutritional value of human milk depend on the lactation phase, time of day and time of a single feeding session. The diet affects the composition of breast milk to a very small extent. Only minerals, vitamins B and C and one type of fats are reflected in the content of human milk [9].

Elimination diet – the biggest modern myth

There is a general belief in the society that a breastfeeding woman should eliminate potentially allergenic products from her diet, such as citrus fruits, strawberries, cow's milk, eggs, gluten and more. Excluding vitamin sources, such as citrus fruits or strawberries, from the daily diet does not bear major consequences as they can be easily replaced by other fruits rich in vitamins. However, elimination of dairy, gluten and other important products without supplementing the diet with nutrients can be detrimental to health [2].

One should not use elimination diets when breastfeeding. The only exception are diseases affecting the mother directly, such as celiac disease or food intolerance. Introducing elimination diets "just in case" is unjustified and unfounded [2, 10].

Protein allergy in babies caused by consuming dairy products – the second myth

Allergy to cow's milk protein concerns only 0.21% of newborns and only 0.5% of breastfed infants. Unfortunately, many mothers eliminate cow's milk from their diet for fear of triggering symptoms of protein allergy in the baby. Simultaneously, products important for the body and lactation are also eliminated. Replacing milk and dairy products with substances that provide the right amount of calcium is very difficult. Most magazines and websites suggesting the "just in case" elimination of allergy-causing products do not specify what they should be replaced with [2].

Studies show that a woman's diet during the lactation period does not increase the risk of occurrence of atopic eczema or other allergic symptoms in the baby [11].

Scientific studies on the development of infants indicate that the consumption of milk and milk-like products by breastfeeding women increases the chances of acquiring food tolerance, which, in turn, reduces the risk of food allergy [2].

In case of a suspected allergy in the baby, a breastfeeding woman should be referred to an allergist who will confirm the diagnosis and will determine the course of treatment together with the dietician [2].

Alcohol intake during lactaction – the third myth

Harmful substances must be avoided during breastfeeding. These substances penetrate to a greater or lesser extent into the mother's milk [12].

Part of the society believes that alcohol promotes lactation, causing the woman to relax and the baby to sleep better. Meanwhile, already over a decade ago research showed that alcohol does not promote lactation, but may even inhibit it. Consumption of alcohol during lactation affects the smell of breast milk, the amount of milk produced and the amount of milk consumed by the baby [12].

Ethyl alcohol penetrates quite quickly into the breast milk – within about 30–60 minutes. If alcohol was consumed with or after a meal, its concentration in the milk may persist for up to 2 hours. If a woman has consumed a small amount of alcohol (about 5 g of ethanol), she should wait two hours before she breastfeeds. In case of a larger amount of alcohol, she should express milk, discard it, and nurse the baby only after she has sobered up [13].

Other diet myths that nursing women hear most often

Below is a list of myths that are still passed down from generation to generation. Prohibitions on the consumption of individual products are largely explained by the occurrence of adverse symptoms in babies, such as abdominal pain, bloating, colic, anxiety or rash, as well as change in the taste of milk and the baby's reluctance to suckle.

Prohibited consumption of raw fruit and vegetables. Both fruit and vegetables are a source of valuable nutrients. Most fruit and vegetables can be eaten raw after thorough washing. It is recommended to eat 2–3 portions of fruit a day, while vegetables can be consumed without restrictions. There are no contraindications to eating any vegetables or fruit during breastfeeding [2].

Prohibited addition of salt or spices to food. Limiting the amount of salt intake is irrelevant to lactation. The restriction concerns rather the prevention of cardiovascular diseases. An alternative to salt are spices that also have no effect on lactation but improve the taste of food. Breastfeeding mothers can safely use curry, turmeric, ginger, cinnamon and other spices. It is not recommended to use mixtures of spices, such as chicken seasoning, as they often contain large amounts of salt. Only some spices that inhibit lactation should be used with care. These include fennel, sage, parsley and peppermint [2].

Eating fried foods by the mother causes colic in babies. Colic is caused by the immaturity of the newborn's digestive system. Fried foods should be avoided not only by breastfeeding women, but by everyone in their daily diet. This is because high temperatures while frying destroy vitamins and microelements. Boiled and stewed food is simply healthier, which does not mean that one must avoid eating fried foods during lactation [2].

Garlic, onion and broccoli change the taste of breast milk, so the baby will refuse it. Aroma and flavor compounds contained in these products can penetrate into the milk, but in small or even trace amounts. Consumption of garlic, onion and broccoli will not put the baby off the mother's milk [2].

Only poultry is allowed during breastfeeding. Contrary to some beliefs, red meat contains about 2–3 times more iron than poultry. Eating red meat does not affect lactation or the baby's well-being in any way. However, it is recommended to limit the amount of red meat intake to prevent the occurrence of cardiovascular diseases. Its consumption should not exceed 50 g per day and 0.5 kg per week [2].

Prohibited consumption of legumes. A woman during lactation should enrich her diet by products containing protein of high biological value. Such products include not only meat, eggs and fish, but also legumes. Leguminous plants are a source of protein, dietary fiber, calcium, magnesium and vitamins. They should be skillfully prepared so that they do not cause bloating. However, they have no confirmed negative impact on lactation or the health of the baby [2].

Prohibited consumption of coffee and strong tea. There are no contraindications to the consumption of tea and coffee during the breastfeeding period, as long as the daily dose of caffeine does not exceed 300 mg. This means that during a day, a woman can drink no more than about 6 cups of coffee or 10 cups of tea. One should avoid sweetening coffee and tea, or reduce the amount of sweetening substance to the minimum, if necessary. Herbal teas must be carefully selected, as they may affect lactation and adversely affect the infant's health [2].

Prohibited consumption of chocolate. Contrary to the opinion of many, there are no contraindications to eating chocolate during breastfeeding. Theobromine contained in cocoa beans penetrates into breast milk in small amounts. Milk chocolate contains 5 times less theobromine than dark chocolate. Symptoms such as colic, irritability and diarrhea, which are attributed to chocolate, occur when the mother consumes a very large amount – above 450 g/day. Small amounts of theobromine also appear in coffee and tea [13].

Summary

A nursing woman is a healthy person and lactation is not a disease or a pathological condition. Food intake should be based on the principles of healthy nutrition and breastfeeding women should eat what they like and want, within reason. Therefore, one should not talk about "a diet" in this case. The word should be replaced by "nutrition" or "eating style" [14].

To promote and encourage women to breastfeed, experts and health care professionals should inform pregnant and postpartum women about recommendations for nutrition during lactation.

Phrases such as "the diet of a breastfeeding mother" or, what is worse, "a list of products allowed during breastfeeding" or "elimination diet" should not be overused. One should bear this in mind and educate those women who, unfortunately, still apply these practices, persuaded by people without adequate or up-to-date knowledge, and rely only on opinions found on the Internet and on recommendations from before a decade or several decades ago. Although these practices were - and sometimes still are – used in good faith, they only have negative effects. Excessive rules, prohibitions and information about possible side effects in babies discourage women from breastfeeding and can often lead to the occurrence of health risks or even depression in mothers.

References

1. Borszewska-Kornacka MK, Rachtan-Janicka J, Wesołowska A, Socha P, Wielgoś M, Żukowska-Rubik M, Pawlus B. Stanowisko Grupy Ekspertów w sprawie zaleceń żywieniowych dla kobiet w okresie laktacji. Stand Med, Pediatr. 2013; 10: 265–279.
2. Durka A, Rachtan-Janicka J, Wietrak E, Nehring-Gugulska M. Odżywianie kobiet karmiących piersią. W: M. Nehring-Gugulska, M. Żukowska-Rubik, A. Pietkiewicz (red). Karmienie Piersią w teorii i praktyce. Podręcznik dla doradców laktacyjnych i konsultantów laktacyjnych oraz położnych, pielęgniarek i lekarzy Warszawa: Medycyna Praktyczna; 2017. 121–131.
3. Babiszewska M, Ziomkiewicz A, Wesołowska A. Tłuszcz mleka kobiecego – skład, synteza i funkcja kwasów tłuszczowych oraz pochodnych lipidów. Pediatr Pol. 2015; 91(3): 2–3.
4. Bzikowska A, Więch M, Weker H. Żywienie kobiet w okresie laktacji – aktualne spojrzenie. Biuletyn Komitetu Upowszechniania Karmienia Piersią i Szpitali Przyjaznych Dziecku. 2016; 2: 2–4.
5. Niemiec T, Karowicz-Bilińska A, Kotarski J, Kurowska-Mroczek E, Poręba R, Spaczyński M. Stanowisko Zespołu Ekspertów Polskiego Towarzystwa Ginekologicznego dotyczące: Znaczenie nawodnienia w prewencji chorób u kobiet w wieku prokreacyjnym. Ginekol Pol. 2011; 82: 943–945.
6. Karowicz-Bilińska A, Nowak-Markwitz E, Opala T, Oszukowski P, Poręba R, Spaczyński M. Stanowisko Grupy Ekspertów w zakresie stosowania witamin i mikroelementów u kobiet planujących ciążę, ciężarnych i karmiących. Ginekol Pol. 2014; 85 (5): 395–399.
7. Kucia M, Popiel M, Wietrak E. Uzupełnienie diety w okresie laktacji. W: M. Nehring-Gugulska, M. Żukowska-Rubik, A. Pietkiewicz (red), Karmienie Piersią w teorii i praktyce. Podręcznik dla doradców laktacyjnych i konsultantów laktacyjnych oraz położnych, pielęgniarek i lekarzy. Warszawa: Medycyna Praktyczna; 2017. 499–508.
8. Babczyńska-Gratzke M, Nehring-Gugulska M. Zioła i ich stosowanie w czasie laktacji. W: M. Nehring-Gugulska, M. Żukowska-Rubik, A. Pietkiewicz (red). Karmienie Piersią w teorii i praktyce. Podręcznik dla doradców laktacyjnych i konsultantów laktacyjnych oraz położnych, pielęgniarek i lekarzy Warszawa: Medycyna Praktyczna; 2017. 349–354.
9. Banaszkiewicz A. Pokarm kobiecy – skład i funkcja. W: M. Nehring-Gugulska, M. Żukowska-Rubik, A. Pietkiewicz (red). Karmienie Piersią w teorii i praktyce. Podręcznik dla doradców laktacyjnych i konsultantów laktacyjnych oraz położnych, pielęgniarek i lekarzy Warszawa: Medycyna Praktyczna; 2017. 51–54.
10. Szajewska H, Horvath A, Rybak A, Socha P. Karmienie piersią. Stanowisko Polskiego Towarzystwa Gastroenterologii, Hepatologii i Żywienia Dzieci. Stand Med, Pediatr. 2016; 13: 9–24.
11. Jeleń K, Frank W, Paluszyńska D, Królak-Olejnik B. Odżywianie w okresie ciąży i laktacji a ryzyko wystąpienia

choroby atopowej u dziecka. Stand Med, Pediatr. 2015; 12: 587–592.
12. Mennella JA, Beauchamp GA. The transfer of alcohol to human milk. N Engl J Med. 1992; 325 (14): 981–985.
13. Nehring-Gugulska M. Stosowanie używek a laktacja. W: M. Nehring-Gugulska, M. Żukowska-Rubik, A. Pietkiewicz (red), Karmienie Piersią w teorii i praktyce. Podręcznik dla doradców laktacyjnych i konsultantów laktacyjnych oraz położnych, pielęgniarek i lekarzy. Warszawa: Medycyna Praktyczna; 2017. 333–336.
14. Nehring-Gugulska M. Odżywianie matki karmiącej. Pobrane z: http://kobiety.med.pl/cnol/images/cnol/Publikacje/odzywianie.pdf (13.12.2018).

The manuscript accepted for editing: 10.02.2019.
The manuscript accepted for publication: 08.05.2019.

Funding Sources: This study was not supported.
Conflict of interest: The authors have no conflict of interest to declare.

Adres do korespondencji:
Katarzyna Lewicka
Department of Women's Health, Department of Pregnancy Pathology, Medical University of Silesia in Katowice
Katowicka 41/3
40-174 Katowice
phone: 502 594 878
e-mail: katarzyna.moczygemba@med.sum.edu.pl