GEORGIAN MEDICAL NEWS

ISSN 1512-0112

NO 6 (363) Июнь 2025

ТБИЛИСИ - NEW YORK

ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

Monthly Georgia-US joint scientific journal published both in electronic and paper formats of the Agency of Medical Information of the Georgian Association of Business Press. Published since 1994. Distributed in NIS, EU and USA.

GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

GEORGIAN MEDICAL NEWS
No 6 (363) 2025

Содержание:

THE IMPORTANCE OF PROMOTING BREASTFEEDING-MATERNAL NUTRITION DURING LACTATION.

Nino Totadze.

PhD., Pediatrician, Nutritionist, Associate professor of European University, Expert of the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs of Georgia. Tbilisi, Georgia.

Abstract.

Despite the availability of extensive information and numerous clinical studies confirming the benefits of breastfeeding, breastfeeding rates remain a significant challenge globally, including in Georgia, according to the World Health Organization (WHO). In our consultations with mothers, many—particularly those living in regional areas—expressed concern that breastfeeding requires strict dietary restrictions. In response, we developed a medical brochure designed to be accessible, easy to understand, and practical. We believe it will be effective, as a similar guide created previously for pregnant women proved successful. This topic was also discussed in an article I published in your journal one year ago.

In the current article, I present a new initiative and research project that I consider highly important—both as a pediatrician and nutritionist—and view as a meaningful step toward promoting breastfeeding in Georgia.

Key words. Breastfeeding, balanced nutrition, lactation, booklet, disease prevention.

Introduction.

The significance of breastfeeding has been recognized and studied for centuries [1-10]. Georgia is a country with an ancient cultural heritage. However, historical documentation related to breastfeeding is scarce. Most of what we know is preserved in early Christian iconography [11-15].

Today, with a wealth of reliable, evidence-based data from clinical research, promoting breastfeeding remains highly relevant, (the entire medical community—particularly pediatricians—endorses breastfeeding in accordance with the recommendations of authoritative organizations such as the World Health Organization (WHO), the American Academy of Pediatrics (AAP), UNICEF, and others [16-32].

Results and Discussion.

Breastfeeding provides numerous benefits for both mother and child. Human milk provides all the nutrients, calories, and fluids needed for a baby's health. It supports brain development and growth and is easiest for infants to digest. Breastfeeding continues to deliver the healthy antibodies infants naturally receive in the womb. It boosts a baby's immunity against everything from the common cold to more serious conditions. In fact, research shows that breastfeeding offers protection from asthma, eczema, diabetes, obesity, leukemia, tooth decay, ear infections, persistent diarrhea, and more. Studies also show that breastfeeding reduces a child's risk for Sudden Infant Death Syndrome (SIDS) and other causes of infant death and is even linked to higher IQ [27,29].

After exclusive breastfeeding for the first six months, breastfeeding can continue for as long as the mother and child desire. Nutritious solid foods containing iron and zinc should be introduced at around six months of age. The only additional needs for a baby are vitamin D supplements starting soon after birth and possibly iron supplements. Breastfeeding strengthens the bond between parent and child. Feeding a baby always provides cuddle time; however, the physical skin-to-skin contact during breastfeeding helps to form a special bond. The baby is soothed by the scent of the mother's skin, her heartbeat, and even the taste of the milk. Breast milk has a naturally sweet taste, but its flavor also changes depending on what the mother eats during lactation [1].

Breastfeeding is economical, saving both money and preparation time. Unlike infant formula, breast milk does not need to be purchased, mixed, or sterilized. It also has environmental advantages, eliminating the need to wash bottles or dispose of formula packaging. Additional environmental benefit of exclusive breastfeeding is the saving of CO2 per baby. A study conducted by Imperial College London shows that exclusive breastfeeding for six months saves 95-153kg of CO2 per baby that equals eliminating between 55,000 and 77,500 cars off the road each year [1,30].

In addition to its convenience and sustainability, breastfeeding offers significant maternal health benefits. It is associated with a reduced risk of several conditions, including excessive menstrual blood loss, breast cancer, ovarian cancer, endometrial cancer, thyroid cancer, hypertension, type 2 diabetes, and rheumatoid arthritis [2,3,10,11].

Breast milk is inherently safe and hygienic. There is no risk of contamination, and it is always available at the correct temperature, making it an ideal source of nutrition even in emergency situations such as natural disasters, where access to clean water, electricity, or formula may be limited [4,13].

The WHO's 2025 target is to increase exclusive breastfeeding rates in infants under six months to at least 50% [5,6]. As of 2023, the global rate of exclusive breastfeeding was 48%, close to the 2025 target. This represents a significant increase of 10 percentage points compared to a decade earlier, indicating progress across regions and countries [6].

Breastfeeding is one of the most effective ways to ensure child health and survival. However, contrary to WHO recommendations, fewer than half of infants under six months are exclusively breastfed. Breast milk provides all the energy and nutrients the infant needs during the first months of life and continues to provide up to half or more of a child's nutritional needs during the second half of the first year, and up to one third during the second year of life [7,9].

Medical contraindications to breastfeeding are rare. Pediatricians play a vital role in advocating for breastfeeding within hospitals, clinical practices, and communities. To fulfil this role effectively, pediatricians must be well-trained not only in understanding the broad health benefits of breastfeeding for both mother and child but also in providing clinical support and management of breastfeeding [8].

The importance of breastfeeding is likely well understood by all doctors, especially pediatricians, including in Georgia. Significant steps have been taken in the last decade to promote breastfeeding in maternity hospitals. Conferences are often held, and there is a Breastfeeding Promotion Council at the Ministry of Health, of which I am a member. However, at this stage, we still face significant challenges regarding breastfeeding statistics.

An important study conducted by UNICEF in 2018 showed the following results: 33% of newborns were put to breast within one hour after childbirth. Women delivering by cesarean section were less likely to initiate early breastfeeding compared to women having vaginal deliveries. Only one in five infants aged 0–5 months received exclusively breast milk. Minimum dietary diversity was higher in urban areas (53%) than in rural areas (45%). Thirty-two percent of children aged 12–15 months continued breastfeeding at one year, while 23% of children aged 20–23 months continued breastfeeding at two years (Figure 1) [32].

Although no large-scale global study has been conducted recently, breastfeeding data continue to be collected in Georgia. Furthermore, Georgia has established a legal framework supporting this issue, reflected in the national law on "Breastfeeding Promotion and Regulation." However, significant progress still lies ahead.

Promoting breastfeeding is of significant importance to me as a pediatrician and nutritionist. Over the past three years, I conducted a research study based on a questionnaire survey administered to mothers. Participation was voluntary. A total of 188 mothers with children aged 1 to 2 years took part in the study. All participating mothers visited the hospital either for consultations or for clinical examinations. I met them in my professional capacity as a professor of pediatrics. The survey included both mothers residing in the capital city and those arriving from various regions.

The survey included mothers both from the capital and from various regions:

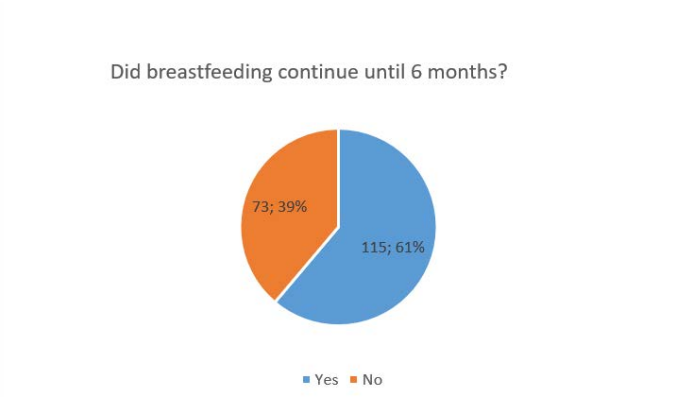
Mothers living in urban areas (with children aged 1–2 years): 102

- Mothers living in rural areas (with children aged 1–2 years): 86

The survey was based on the following question:

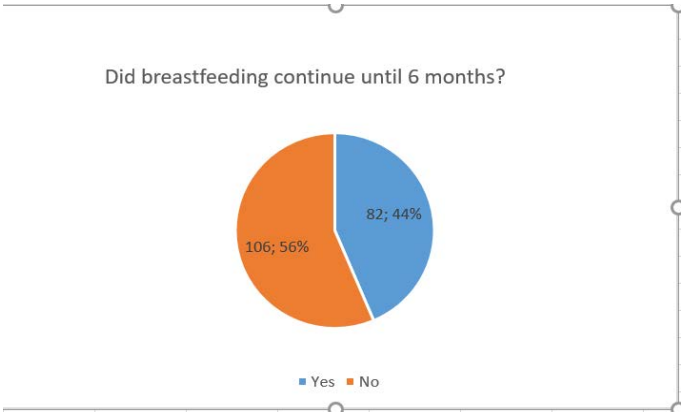
1. Do you have sufficient information about the importance of breastfeeding?

- **Yes:** 115 mothers (61%)
- **No:** 73 mothers (39%)



2. Was exclusive breastfeeding continued up to 6 months?"

- **Yes:** 82 cases (44%)
- **No:** 106 cases (56%)



Out of 82 cases, breastfeeding continued up to 2 years of age (with the introduction of complementary feeding from 6 months) in 45 mothers, which accounts for approximately 24% of the total.

3. What was the reason for not choosing to breastfeed until the child was 2 years old?

143 mothers provided the following reasons:

a) Return to work – 48%

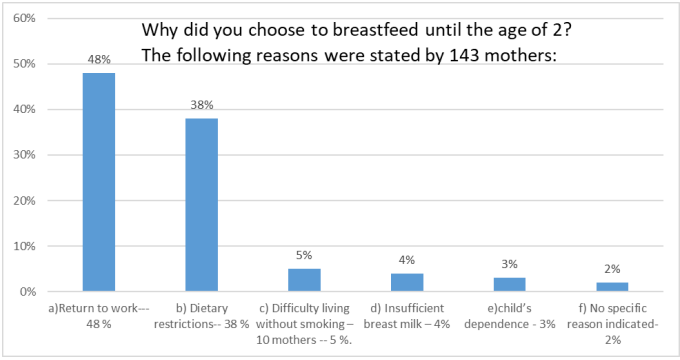
b) Dietary restrictions – 38%

c) Difficulty living without smoking – 10 mothers (5%)

d) Insufficient breast milk – 4%

e) Difficulty leaving the house due to the child's dependence on me – 3%

f) No specific reason indicated-2%

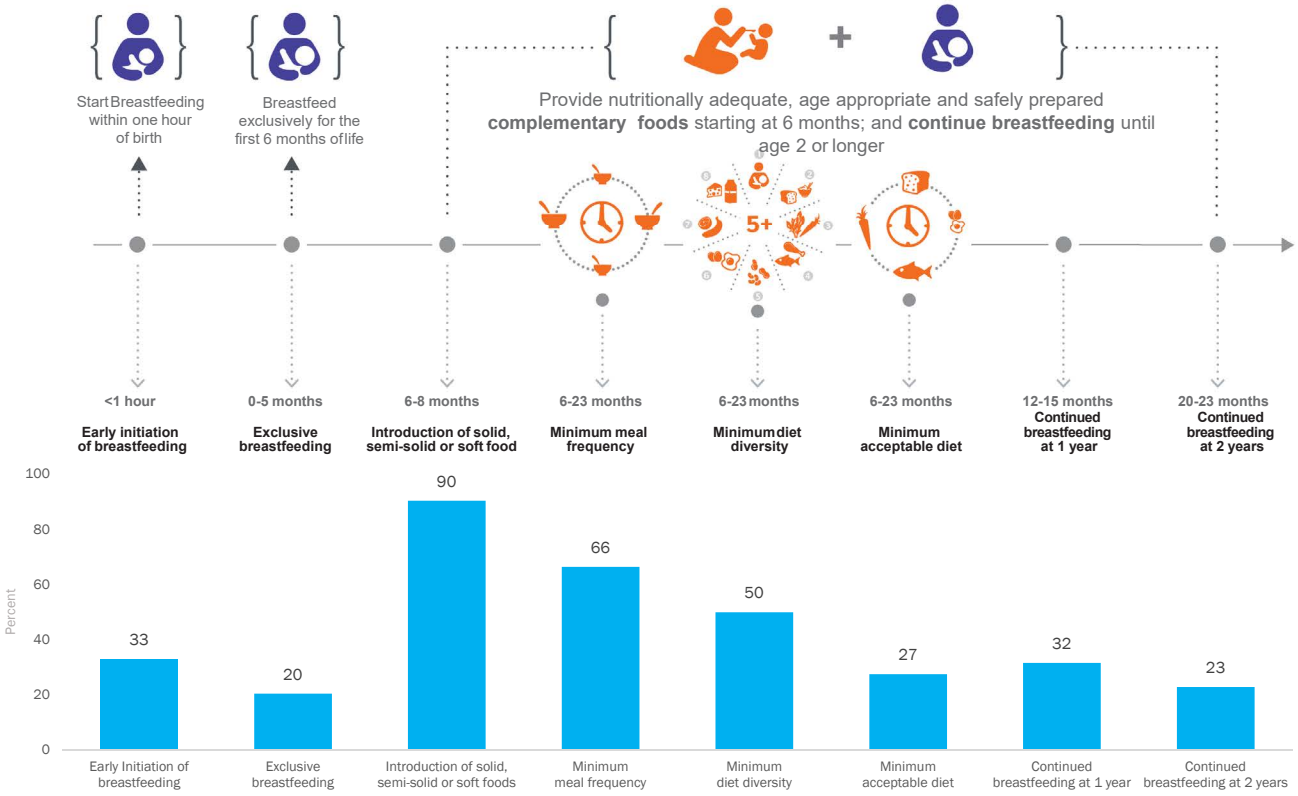


Georgia 2018

Infant & Young Child Feeding (IYCF)

Multiple Indicator Cluster Surveys

Infant & Young Child Feeding



Early initiation: percentage of newborns put to breast within 1 hour of birth; **Exclusive breastfeeding:** percentage of infants aged 0-5 months receiving only breastmilk; **Introduction to solids**: percentage of infants aged 6-8 months receiving solid or semi-solid food; **Minimum diet diversity:** percentage of children aged 6-23 months receiving 5 of the 8 recommended food groups; **Minimum meal frequency:** percentage of children aged 6-23 months receiving the recommended minimum number of solid/liquid feeds as per the age of child; **Minimum acceptable diet:** percentage of children aged 6-23 months receiving the minimum diversity of foods and minimum number of feeds; **Continued breastfeeding at 1 year:** percentage of children aged 12-15 months who continue to receive breastmilk**; Continued breastfeeding at 2 years:** percentage of children aged 20-23 months who continue to receive breastmilk.

Key Messages

- 33% of newborns were put to breast within 1 hour from child birth.
- Women delivering through C-section are less likely to initiate early breastfeeding compared to women having a vaginal delivery.
- 1 out of 5 infants aged 0-5 months are receiving only breastmilk.
- 9 out of 10 children aged 6-8 months are receiving solid, semi-solid food or soft food.
- Half of all children aged 6-23 months receive 5 of the 8 recommended food groups. Minimum dietary diversity is higher in urban areas than in rural areas, and equal to 53% and 45% respectively.
- The lowest rate of the minimum diet diversity is among children in the Samtskhe-Javakheti region (42%)
- 66% of children aged 6-23 months receive the recommended minimum number of solid/liquid feeds as per the age of child.
- 27% of children aged 6-23 months received the minimum diversity of foods and minimum number of feeds.
- 32% of children aged 12 -15 months continued breastfeeding at 1 year, while 23% of children aged 20-23 months continued breastfeeding at 2 years.

Figure 1

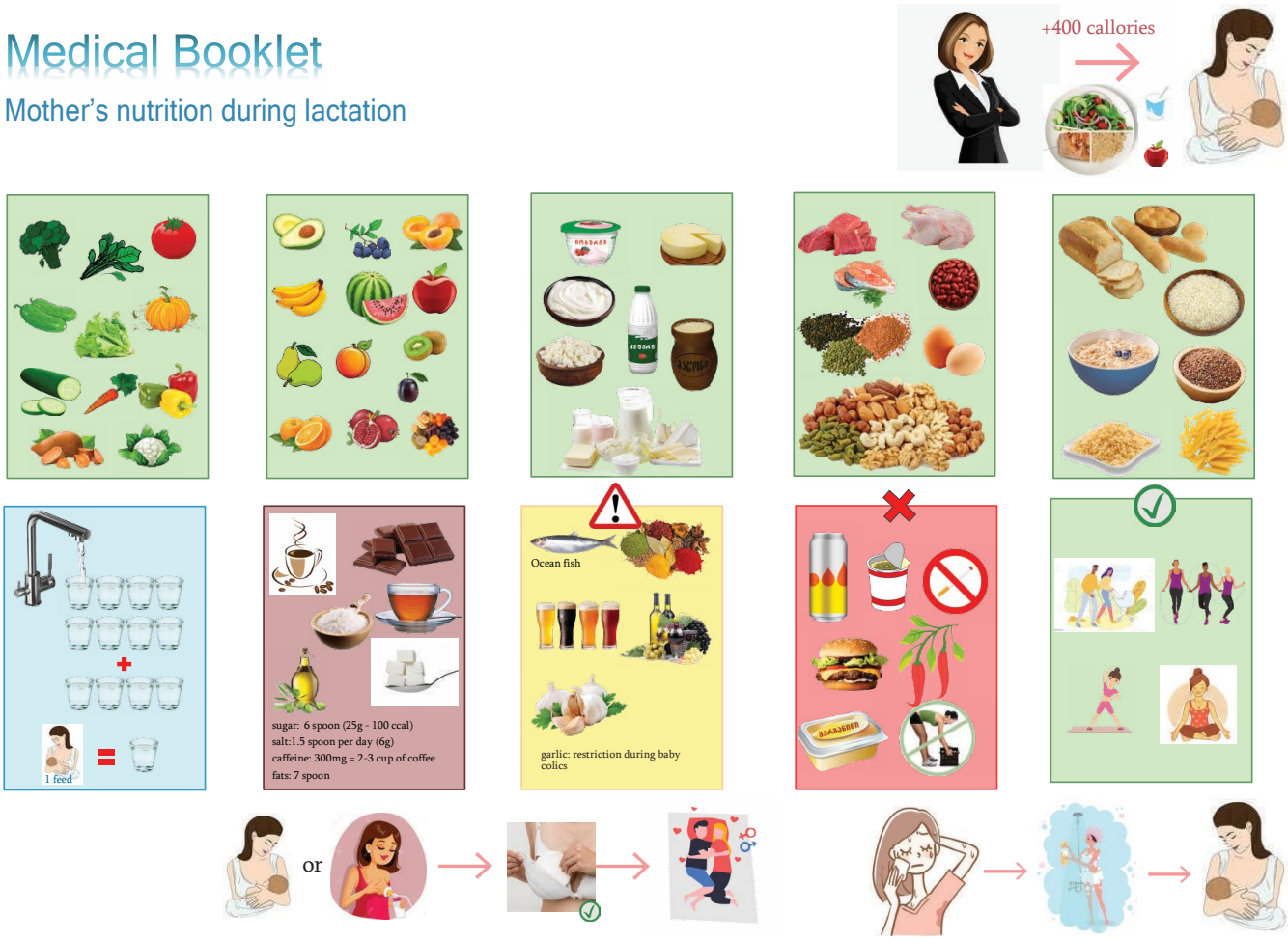


Figure 2

The mothers participating in the study confirmed that all children who were not breastfed were fed with artificial adapted formula.

According to the survey results, mothers cited various reasons that posed challenges to continuing breastfeeding, especially in the long term. One particularly noteworthy finding for me was that many mothers identified maintaining a healthy, balanced diet as one of the major obstacles.

It is also worth mentioning that although healthy nutrition is frequently discussed in Georgia, the involvement of nutritionists with patients—particularly with mothers during lactation—remains limited. Yet, providing mothers with information about proper nutrition during breastfeeding is crucial for supporting continued breastfeeding and ensuring both the mother's and baby's well-being. Studies show that a balanced diet, potentially supplemented with specific nutrients, helps mothers maintain their nutritional status and produce healthy breast milk. This, in turn, encourages continued breastfeeding and provides optimal benefits for the infant's growth and development.

Here's why nutrition information is vital for breastfeeding mothers:

1. Nutrient needs are increased during lactation.
2. Breastfeeding mothers require more calories and specific nutrients to produce milk and maintain their own health.
3. Diet directly impacts milk composition and quantity.
4. A mother's diet influences the nutrient content of her breast milk and the overall volume of milk she produces.

Do breastfeeding mothers need more calories? Yes. they need approximately 340 to 400 more kilocalories (kcal) per day than before pregnancy. In practical terms, this translates to a daily intake of about 2,000 to 2,800 kcal for breastfeeding women, compared to 1,600 to 2,400 kcal per day for moderately active women who are neither pregnant nor breastfeeding.

The additional calories needed vary depending on factors such as age, body mass index (BMI), physical activity level, and whether the mother is exclusively breastfeeding or combining breastfeeding with formula feeding. While there is no need for a special or restrictive diet during breastfeeding, it is important—just as for the general population—to maintain a healthy and balanced diet. Consuming a variety of nutrient-rich foods daily supports both maternal health and optimal milk production [12].

A Healthy Diet Includes.

Vegetables:

Breastfeeding mothers should aim for 2.5 to 3.5 cups of vegetables per day. Those exclusively breastfeeding should aim for 3 cups, while those combining breastfeeding with formula feeding can target 2.5 cups. Vegetables are rich in essential

nutrients such as vitamins and antioxidants crucial for milk production and replenishing the body's needs.

Examples: Carrots, tomatoes, spinach, red sweet peppers, kale, sweet potatoes.

Vegetables provide potassium, folate, vitamins A and C, and fiber, all beneficial for mother and baby [14].

Fruit:

Two servings per day are recommended. Limit 100% unsweetened fruit juice or smoothies to one 150 ml glass per day. The recommended serving of dried fruits is 30 grams (about 1.5 tablespoons of raisins or 4 halves of dried apricots) [14,15].

Protein:

Two to three servings daily are recommended. One serving equals 3–4 ounces (about 67 grams) of meat, fish, or poultry. This is an increase from the general recommendation of 46 grams per day for women aged 19–50. A daily intake of 1.1 grams of protein per kilogram of body weight is also recommended. Protein needs increase during lactation to support milk production and infant growth.

Good sources include lean meats (chicken, beef), fish (salmon, tuna), dairy products (milk, yogurt), eggs, beans, lentils, nuts, seeds, and soy products [15,18].

Fish provide protein, healthy fatty acids, and many vitamins and minerals. Breastfeeding women should eat fish 2–3 times per week, choosing low-mercury options such as salmon, trout, and tilapia. They should avoid high-mercury fish like shark, swordfish, king mackerel, and tilefish to minimize mercury exposure through breast milk. Each serving can be up to 4–6 ounces.

General fish intake recommendations:

- 2–3 servings (8–12 ounces) of low-mercury fish per week.
- Portion size: up to 6 ounces per serving.
- Limit shark, swordfish, and king mackerel to one portion per week [15,16,18].

Important: Consult a healthcare professional or registered dietitian for personalized advice during lactation [12].

Cereals and Grains:

Aim for 4 to 8 servings per day from breads and cereals, including breakfast cereals, whole-grain breads, rice, pasta, and other grains. Whole grains provide fiber, folate, vitamins, and minerals that support maternal health and milk production.

Serving sizes: a slice of bread, half a cup of cooked rice or pasta, or 2/3 cup of breakfast cereal flakes. Limit sugary breakfast cereals [14].

Fat:

Aim for 20–35% of daily calories from fat, focusing on healthy fats like omega-3 and monounsaturated fats. Limit saturated fats.

Healthy fat sources include avocados, olives, nuts and seeds, and oily fish. Omega-3 fatty acids (DHA and EPA) are particularly important for maternal health and baby's development. The NIH suggests at least 200 mg DHA/day; many recommend 250–375 mg daily of combined DHA and EPA.

Limit saturated and trans fats found in high-fat meats, butter, lard, and hydrogenated oils [16].

Calcium:

Recommended intake for breastfeeding mothers is 1,300 mg per day. One cup of milk or yogurt contains about 300 mg calcium. Good sources include milk, yogurt, hard cheeses, and calcium-fortified orange juice [18].

Iron:

Recommended daily allowance is 10 mg for those 18 years and younger and 9 mg for those 19 and older. Sources include meat, poultry, seafood, dried beans, dried fruit, and egg yolks [18].

Vitamin C:

Nursing mothers need slightly more vitamin C than during pregnancy. Recommended intake is 115 mg for mothers aged 18 and under and 120 mg for those 19 and older. Good sources: citrus fruits, broccoli, cantaloupe, potatoes, bell peppers, tomatoes, kiwi, cauliflower, and cabbage [18].

Vitamin D:

While breastfed infants are strongly recommended to receive daily vitamin D supplements, maternal supplementation depends on individual circumstances. Mothers with low vitamin D levels may benefit from supplementation to improve their health and breast milk vitamin D content. The infant's 400 IU supplement remains the primary recommendation. Maternal supplementation should be discussed with a healthcare provider [19].

Water:

Breast milk is 88% water, so adequate hydration is essential. The recommendation is about 125 ounces (16 cups) per day—preferably one glass at each breastfeeding session. Water makes up 70–83% of a newborn's body weight; inadequate fluids can cause dehydration, leading to serious complications. Exercise and high temperatures increase fluid needs. Limit sweet carbonated drinks as they provide calories without nutrients [20].

Sugar and Salt:

Sweet cravings may have evolutionary roots linked to fruit energy sources, as recommended by the NHS. Excessive sugar intake should be avoided for maternal and infant health.

Sodium intake should be balanced, not restricted. General guidelines suggest about 2,300 mg of sodium daily [31].

Caffeine:

Limit caffeine to 200–300 mg per day. For reference:

- 1 mug of filter coffee = 140 mg.
- 1 mug of instant coffee = 100 mg.
- 1 mug of tea (including green tea) = 75 mg.
- 1 (250 ml) can of energy drink = 80 mg (larger cans may have up to 160 mg).
- 1 (354 ml) cola drink = 40 mg.
- 1 (50 g) plain chocolate bar = up to 50 mg [15].

Alcohol:

Alcohol consumption during breastfeeding is less safe, but infrequent, moderate intake (1–2 units once or twice a week) is

unlikely to harm the baby. Maintain a 2-3-hour interval between drinking and breastfeeding once breastfeeding is established to allow alcohol clearance from milk. Mothers may express milk before drinking to feed the baby later. Avoid missing feeds to prevent breast engorgement.

One unit of alcohol is roughly equivalent to:

- A small glass of wine (125 ml).
- Half a pint of beer.
- A single measure of spirits (25 ml).

Importantly, mothers who have been drinking should never share a bed or sleep on a sofa with their baby [17,18].

Peanuts and Breastfeeding:

Mothers can consume peanuts and peanut-containing foods, such as peanut butter, as part of a balanced diet unless allergic [15].

Herbs (Peppermint, Parsley, and Sage):

Certain herbs in large amounts can reduce milk production. For example, large quantities of parsley, sage, or mint may decrease lactation. Some mothers report sensitivity to mint-flavored toothpaste and candies.

It is advisable to avoid spicy foods, energy drinks, and trans fats during lactation [21].

Vegan or Vegetarian Diet:

Are there recommendations for breastfeeding mothers who follow a vegan or vegetarian diet?

Yes. Breastfed infants of women who consume no animal products may receive very limited amounts of vitamin B12. Low vitamin B12 levels can put infants at risk of neurological damage. Iron is also a potential concern, as plant-based foods contain only non-heme iron, which is less readily absorbed than the heme iron found in red meat, fish, and poultry.

More specifically, vegetarian and vegan breastfeeding mothers should consider taking certain supplements, especially vitamin B12, and potentially iron, calcium, vitamin D, and omega-3 fatty acids. The CDC recommends that strictly vegan breastfeeding mothers take a B12 supplement. The Mayo Clinic advises those who do not eat fish to consider an omega-3 supplement.

Reasons for Supplementation:

- **Vitamin B12:** Primarily found in animal products. Vegan and strict vegetarian diets can lead to deficiency in the mother and/or infant.
- **Iron:** Plant-based iron sources are less bioavailable than animal-based heme iron, so supplementation may be needed.
- **Calcium and Vitamin D:** Both are essential—calcium for milk production and vitamin D for calcium absorption. Supplementation may be necessary if dietary intake is insufficient [22].

Lactation and Physical Activity.

Regular physical activity throughout life—including during pregnancy and lactation—promotes numerous health benefits. Exercise, defined as planned, structured, and repetitive bodily movement to improve physical fitness, is an essential element of a healthy lifestyle. Obstetricians, gynecologists, and other care providers should encourage patients to continue or begin exercise for optimal health. Women who engaged in vigorous aerobic activity before pregnancy can usually continue during pregnancy and postpartum.

Observational studies show that exercise during pregnancy is associated with decreased risks of gestational diabetes mellitus, cesarean birth, operative vaginal delivery, and faster postpartum recovery.

Exercise benefits mothers by improving heart health, overall physical condition, mental well-being, energy levels, reducing stress, assisting weight control, improving bone strength, and aiding treatment of postnatal depression.

If a mother wants to lose weight, moderate exercise four times a week—resulting in about 0.5 kg weight loss per week—will not negatively affect the baby's nutrition or growth.

A woman's body is designed for pregnancy, childbirth, and breastfeeding. Hormonal changes loosen pelvic ligaments to allow delivery, so physical activity is generally recommended. Beneficial activities include walking, gentle exercise, and yoga; heavy lifting is discouraged.

Lactating mothers can usually exercise without impacting milk supply, though increased sweating may occur. Some babies may be fussy if milk tastes salty after exercise. Exercising during lactation also may reduce the baby's risk of obesity and diabetes. Maintaining aerobic exercise at about 80% of maximal heart rate ensures the baby notices no difference. Because exercise causes sweating, mothers should shower or at least dry their nipples after exercise so the baby is not deterred by salty milk.

Breast milk remains fully nutritious even after exercise [23].

Lactation and Smoking.

Smoking during lactation poses risks to both mother and baby. Nicotine and other harmful substances can pass through breast milk, potentially affecting the baby's development and health. Smoking can also reduce milk supply and increase infant crying and colic. Whether the mother breastfeeds or uses infant formula, second-hand smoke exposure too puts infants at risk of:

- Sudden Infant Death Syndrome (SIDS).
- Lower respiratory illnesses, such as bronchitis and pneumonia.
- Ear infections.
- Impaired lung function.

E-cigarette use during lactation is discouraged as nicotine and other chemicals can pass into breast milk, potentially affecting the infant's health and development. The American College of Obstetricians and Gynecologists and the American Academy of Pediatrics recognize pregnancy and breastfeeding as two ideal times to promote tobacco and smoking cessation.

The benefits of breastfeeding are so significant that—even in cases of light smoking—it may be permissible to continue, with a physician's recommendation; nonetheless, it is imperative to place the child's well-being above all else.

Any family member who smokes:

- Do Not smoke near the infant.
- Smoke outdoors.
- Maintain smoke-free rules for cars and homes.

After smoking, it is advisable for to change clothes and wash their hands before handling the baby [24,25].

Lactation and Sexual Activity.

Milk may be released during sexual activity due to oxytocin release. To avoid discomfort from overly full breasts, it is advisable to feed the baby before sex. Wearing a bra during sexual activity and placing diapers to protect clothing may also help manage milk leakage.

Medical studies that provide the above-mentioned important information—such as what a mother's nutritional regimen and daily physical activity should look like within the framework of a healthy lifestyle—as well as the findings from my own research, serve as a basis for promoting and supporting breastfeeding. For promoting breastfeeding, I have created a medical booklet designed to assist mothers during lactation (Figure 2).

As mentioned earlier, I produced a similar booklet last year for pregnant women, which was published in your journal and received positive feedback. Many mothers who came for consultations appreciated that booklet for its clarity and practical help. I find this particularly meaningful, as I believe a well-managed pregnancy lays the foundation for healthy birth, growth, and development.

Promoting breastfeeding remains one of my top priorities as a pediatrician. I hope this new booklet will serve as a valuable resource for mothers, especially first-time mothers, by providing accessible information that does not demand excessive time, effort, or mental strain.

As an expert affiliated with the Ministry of Health, an expert pediatrician for the Office of the Public Defender, and a nutritionist, I plan to distribute this booklet in all maternity hospitals, providing it to mothers upon discharge. Additionally, I place special emphasis on supporting mothers in rural areas who often have limited access to accurate, up-to-date information.

My action plan includes monthly visits across different regions of Georgia, where I will organize Q&A sessions to support mothers, help them establish effective breastfeeding routines, and provide evidence-based guidance.

As a pediatrician and nutritionist, I intend to actively participate in global breastfeeding promotion initiatives and am committed to contributing to this important public health effort. I will share the results with you in due course.

REFERENCES

1. Why Breastfeed: Benefits for You & Your Baby. healthychildren.org from the American Academy of Pediatrics. 2022. https://www.healthychildren.org/English/ages-stages/baby/breastfeeding/Pages/Why-Breastfeed.aspx
2. Meek JY, Noble L. Technical Report: Breastfeeding and the Use of Human Milk. Pediatrics. 2022;150:e2022057989.
3. Human Milk: Composition, Clinical Benefits and Future Opportunities Editors Sharon M. Donovan Urbana, IL J. Bruce German Davis, CA Bo Lönnerdal Davis, CA Alan Lucas. Nestlé Nutrition Workshop (90th: 2017: Lausanne, Switzerland). Basel Switzerland; New York: Karger; Switzerland : Nestle Nutrition Institute; 2019.
4. Bartick M, Zimmerman DR, Sulaiman Z, et al. Academy of Breastfeeding Medicine Position Statement: Breastfeeding in Emergencies. Breastfeed Med. 2024;19:666-682.
5. Global nutrition targets 2025: breastfeeding policy brief. WHO. 2014. https://www.who.int/publications/i/item/WHO-NMH-NHD-14.7
6. Global breastfeeding scorecard 2023. Rates of breastfeeding increase around the world through improved protection and support. World Health Organization & United Nations Children's Fund ([UNICEF)]. 2023.
7. Breastfeeding. World Health Organisation. https://www.who.int/health-topics/breastfeeding#tab=tab_1
8. Meek JY, Noble L, Section on Breastfeeding. Policy Statement: Breastfeeding and the Use of Human Milk. Pediatrics. 2022;150:e2022057988.
9. Guideline: protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services. ISBN 978-92-4-155008-6 © World Health Organization 2017.
10. Mother's Milk Magic: Dr. Meenakshi Bansal Explores the Benefits of Breastfeeding. https://lifelinehisar.com/2024/01/19/mothers-milk-magic-dr-meenakshi-bansal-explores-the-benefits-of-breastfeeding/
11. Unveiling the predatory tactics of the formula milk industry. The Lancet. 2023. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(23)00118-6/fulltext
12. Maternal Diet and Breastfeeding. CDC. 2024. https://www.cdc.gov/breastfeeding-special-circumstances/hcp/diet-micronutrients/maternal-diet.html
13. IOM Operational Guidance: Use of Breast-Milk Substitutes in Humanitarian Crisis Settings. 2023.
14. Foods to eat and avoid while breastfeeding. Medically reviewed by Natalie Olsen, Written by Zawn Villines. 2023, MEDICAL NEWS TODAY.
15. Breastfeeding and diet. HNS. 2022. https://www.nhs.uk/baby/breastfeeding-and-bottle-feeding/breastfeeding-and-lifestyle/diet/
16. Questions & Answers from the FDA/EPA Advice about Eating Fish for Those Who Might Become or Are Pregnant or Breastfeeding and Children Ages 1 to 11 Years. FDA. 2022. https://www.fda.gov/food/consumers/questions-answers-fdaepa-advice-about-eating-fish-those-who-might-become-or-are-pregnant-or
17. Diet for Breastfeeding Mothers. Children's Hospital of Philadelphia. https://www.chop.edu/centers-programs/breastfeeding-and-lactation-program/diet-breastfeeding-mothers
18. Nutrition Tips for Breastfeeding Mothers. University of California, San Francisco. https://www.ucsfhealth.org/education/nutrition-tips-for-breastfeeding-mothers
19. Natha C, D. Garner C. Vitamin D Supplementation and Breastfeeding. Infant Risk Center, Texas Tech university Heakth Sciences Center. 2024. https://infantrisk.com/content/vitamin-d-supplementation-and-breastfeeding
20. Mehta P, Durning MV, Sachdev P. What to Know About Staying Hydrated While Pregnant and Breastfeeding. 2025.
21. Sachdev P. Can I Eat That? I'm Breastfeeding. 2024. https://www.webmd.com/parenting/baby/ss/slideshow-breastfeeding-foods
22. Breastfeeding nutrition: Tips for moms. Appoitments at Mayo Clinic. 2025. https://www.mayoclinic.org/healthy-lifestyle/infant-and-toddler-health/in-depth/breastfeeding-nutrition/art-20046912

23. Physical Activity and Exercise During Pregnancy and the Postpartum Period. ACOG. Committee on Obstetric Practice. 2013. https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2020/04/physical-activity-and-exercise-during-pregnancy-and-the-postpartum-period
24. Tobacco and Electronic Cigarettes. CDC. 2025. https://www.cdc.gov/breastfeeding-special-circumstances/hcp/vaccine-medication-drugs/tobacco.html
25. Breastfeeding and smoking. NHS. 2022. https://www.nhs.uk/baby/breastfeeding-and-bottle-feeding/breastfeeding-and-lifestyle/smoking/
26. Marshall NE, Abrams B, Barbour LA, et al. The importance of nutrition in pregnancy and lactation: lifelong consequences. Am J Obstet Gynecol. 2021;226:607-632.
27. Breastfeeding: achieving the new normal. THE LANCET. 2016 https://www.thelancet.com/action/showPdf?pii=S0140-6736%2816%2900210-5
28. Broers B, Królak-Olejnik. A history of breastfeeding. Wrocław Medical University, Department of Neonatology, University Hospital in Wrocław, Poland. GinPolMedProject. 2018;47:030-032.
29. Feldman-Winter L. Breastfeeding: AAP Policy Explained. 2024.
30. Scarlett L. The Lancet Series on Breastfeeding 2023. AIMS Journal. 2023;35:2.
31. Strohm D, Bechthold A, Ellinger S, et al. Revised Reference Values for the Intake of Sodium and Chloride. Ann Nutr Metab. 2017;72:12-17.
32. Infant & Young Children Feeding (IYCF) Unicef, MICS, Georgia. 2018.

Аннотация

Несмотря на то что польза грудного вскармливания подтверждена многочисленными клиническими исследованиями и имеется широкий доступ к соответствующей информации, по данным Всемирной организации здравоохранения (ВОЗ) показатели грудного вскармливания по-прежнему остаются низкими, в том числе и в Грузии. В ходе опроса матерей, пришедших на консультацию, одной из часто упоминаемых причин отказа от грудного вскармливания были названы предполагаемые строгие ограничения в питании, особенно среди женщин, проживающих в регионах. Именно поэтому мы разработали медицинскую брошюру, которая будет простой для понимания, доступной и, как мы полагаем, эффективной, поскольку аналогичное руководство, созданное ранее для беременных женщин, показало хорошие результаты. Я уже упоминала об этом в статье, опубликованной в вашем журнале год назад.

В статье я также рассказываю о новой важной инициативе и исследовании, которые имеют для меня большое значение как для педиатра и диетолога, и которые, по моему мнению, являются одним из важных шагов на пути к продвижению грудного вскармливания в Грузии.

Ключевые слова: Грудное вскармливание, сбалансированное питание, лактация, буклет, профилактика заболеваний.

აბსტრაქტი

მიუხედავად იმისა, რომ დღეს მრავალი კლინიკური კვლევა ამტკიცებს ძუძუთი კვების შეუცვლელ სარგებელზე და შესაბამისად აღნიშნული ინფორმაციაც ხელმისაწვდომია, მაინც მნიშვნელოვან გამოწვევად რჩება ძუძუთი კვების სტატისტიკური მაჩვენებლები ჯანმოს მონაცემებით, მათ შორის საქართველოში. მიზეზების ჩამონათვალში, როდესაც კონსულტაციაზე მოსული დედების გამოკითხვას ვაწარმოებდით, ისინი ასახელებდნენ საკუთარი კვების რაციონის მნიშვნელოვნად შეზღუდვას, განსაკუთრებით რეგიონში მცხოვრებნი. ამიტომ შევქმენით სამედიცინო ბროშურა, რომელიც მათთვის ადვილად გასაგები, ხელმისაწვდომი იქნება და ვფიქრობთ ეფექტურიც, რადგან მსგავსი ფორმატით შექმნილი დამხმარე გზამკვლევმა ორსულებისთვის წარმატებულად იმუშავა. (აღნიშნულის შესახებ სწორედ თქვენს ჟურნალში განთავსებულ სტატიაში ვსაუბრობდი 1 წლის წინ)

სტატიაში ასევე ვსაუბრობ იმ მნიშვნელოვან ახალ წამოწყებაზე და კვლევაზე, რომელიც ჩემთვის, როგორც პედიატრისთვის, ნუტრიციოლოგისთვის მნიშვნელოვანია და ვფიქრობ ერთ-ერთი სწორი ნაბიჯია ძუძუთი კვების ხელშეწყობისთვის საქართველოში.

საკვანძო სიტყვები: ძუძუთი კვება, დაბალანსებული კვება, ლაქტაცია, ბუკლეტი, დაავადებების პრევენცია.