

Semmelweis University, Faculty of Medicine - undivided, one-tier training in general medicine

Name of the host institution (and any contributing institution):

Gyermekgyógyászati Klinika - Bókey utcai részleg

Name of subject in Hungarian: Szoptatás és humán laktáció elmélete, egyéni és közösségi támogatása

Name of subject in English: Course on human lactation and breastfeeding – theory, support and promotion

Name of subject in German: Das Stillen und die Theorie der Laktation beim Menschen. Individuelle und gemeinschaftliche Förderung

Credit value of the course: 2

Semester: 5th semester, 6th semester, 7th semester, 8th semester, 9th semester, 10th semester, 11th semester, 12th semester

(in which the subject is taught according to the curriculum)

Weekly hours	Lecture	Practice	Seminar
2.0	2.0	0.0	0.0

Semester hours	Lecture	Practice	Seminar
0.0	0.0	0.0	0.0

Type of course:

elective

Academic year:

2026/27

Language of instruction (for optional and elective subjects):

english

Course code:

AOSNNT884_1A

(in the case of a new course, to be completed by the Dean's Office, following approval)

Course coordinator name: Dr. Szabó Miklós (tanszékvezető egyetemi tanár)

Course coordinator location of work, telephone availability: 06-1-334-3186 / 52786

Course coordinator position: head of department, university professor

Course coordinator Date and number of habilitation: Budapest, June 13. 2017. No: 03/2017

Objectives of the course, and its place in the curriculum of the medical training program:

Optimal infant feeding is one of the most efficient interventions to improve child health and psychosocial wellbeing of mother and child. The gold standard of infant feeding is exclusive

breastfeeding/human milk feeding for the first 6 months and while introducing complementary feeding at around 6 month, continuing breastfeeding at least in the first year of life, preferably until 2 years of age.

To achieve this goal, it is paramount, that all health professionals, regardless of their subspecialty are equipped with sufficient knowledge, competence and skills to help families in their decision on infant feeding, establishment, maintenance and support of breastfeeding and treatment of breastfeeding complications. The WHO, UNICEF and the Academy of Breastfeeding Medicine has called for action, that theory and evidence-based practice of breastfeeding should be incorporated into the medical school curricula.

Format of the course (lectures, group work, practical lessons, etc.):

lectures

Competencies acquired through completion of course:

Theory based competencies:

1. Knowledge about the basic anatomy (normal and pathological) and physiology (including hormones related to breastfeeding) of the breast and the mechanism of breast milk production and secretion.
2. Describe contraception related to breastfeeding.
3. Describe the mechanism of sucking on the breast and compare the mechanism of breast and bottle feeding.
4. Understand, what is the role of breastfeeding and human milk feeding in maintaining health and prevention of illnesses in the mother and child and the potential problems related to artificial (formula) feeding.
5. Understand, why exclusive breastfeeding is important and what is it's association with optimal health outcome.
6. Understand the advantages of S2S contact immediately after birth. Describes preventive measures for SUPC.
7. Knowledge about the existence and aims of the Code (International Code on Marketing Breast milk Substitutes).
8. Knowledge about potentially adverse outcomes of the infant, mother and society in those cases, when the infant is not breastfeeding.
9. Understand the meaning of the Baby-friendly Hospital Initiative 10 steps.

10. Understand the possible impact of medical interventions and drugs during labor and childbirth on the outcome of breastfeeding. The student is aware of it, how to support the mother in breastfeeding after caesarean section

11. Understand the role of behavioral, social, cultural and environmental factors in the breastfeeding-related decision and practice.

12. Knowledge about the evidence-based contraindications of breastfeeding/human milk feeding.

Skill based competencies

1. Obtain detailed breastfeeding history and perform breastfeeding-related examination of the breast

2. Describe the effect of intrapartum interventions and drugs on breastfeeding. Advise the mother on breastfeeding after caesarean section.

3. Facilitation and support of the golden hour.

4. Recognize the correct position, attachment on the breast, the signs of milk transfer and can suggest corrections, if needed.

5. Counsel mothers about establishing and maintaining lactation in case of separation (illness, returning to school/employment).

6. Counsel mothers on the normal course of lactation and on the prevention of potential complications (not enough breast milk, painful nipple, jaundice, etc.).

7. Discuss family planning options with the breastfeeding mother.

8. Describe signs of adequate milk intake by the infant and guide the mother, in case she has the perception not to have enough milk.

9. Understand the need to encourage the mother to breastfeed after introduction of complementary feeding and after one year of age.

10. Understand the normal growth pattern of the breastfed infant.

11. Discuss with the pregnant women the beneficial effects of breastfeeding for baby and mother, share with her information on the expected care in the birthing facility and give practical advice on breastfeeding.

12. Explain, why is the Code protecting breastfeeding and how to follow the Code in the birthing facility.

Course outcome (names and NEPTUN ID of related subjects):

Prerequisites for course registration and completion: (NEPTUN ID):

In the case of multi-semester courses, position on the possibility of and conditions for concurrent registration:

none

The number of students required to start the course (minimum, maximum), method of selecting participants:

min 10-max 80 students

Detailed course syllabus (if the course can be divided into modules, please indicate): (Theoretical and practical instruction must be broken down into hours (weeks), numbered separately; names of instructors and lecturers must be listed, indicating guest lecturers/instructors. It cannot be attached separately! For guest lecturers, attachment of CV is required in all cases!)

Topics of the 14 session course

1. The importance of breastfeeding/human milk feeding for the child, the mother and the society. Risks of not breastfeeding and less than optimal breastfeeding. Definitions related to breastfeeding. Hungarian data on breastfeeding rates, international goals. Communication skills from the aspect of the breastfeeding mother. (Dr. Erzsébet Várady, Dr. Miklós Szabó)
2. Anatomy of the breast, physiology of breastmilk production and secretion. The effect of hormones related to breastfeeding on the mother and child. Delayed lactogenesis II. Mechanism of breastfeeding. Difference in the mechanism of breast and bottle feeding. The changing composition of breastmilk (colostrum, transitional milk, mature milk, change during the day, the breastfeeding session and the course of lactation). Biochemical and immunological properties of breastmilk. Special properties and advantages of breast milk for preterm infants. (Dr. Erzsébet Várady)
3. Breastfeeding positions, latching on the breast, milk transfer. Signs of good latch and suckling. Breastfeeding observation. Signs, that breastfeeding is going well. Special issues about the support of mothers after caesarean section. Physiological parameters of breastmilk intake and elimination (stool, urine) during the first week of life. The normal course of breastfeeding during the first year of life. Normal weight gain of the breastfed infant. Continuing breastfeeding after the introduction of complementary feeding. Long term breastfeeding (in the second year). (Dr. Erzsébet Várady, Dr. Miklós Szabó)
4. Baby-friendly Hospital Initiative - Ten steps to successful breastfeeding. Supporting breastfeeding after hospital discharge - the role of health professionals, family, community. (Dr. Erzsébet Várady, Dr. Miklós Szabó)
5. The golden hour - skin to skin (S2S) contact between mother and infant immediately after birth. Facilitation of S2S care in the delivery room or operating room. Beneficial effects and safety issues. Observation during the golden hour. Sudden unexpected postnatal collapse (SUPC) - risk factors, prevention. (Dr. Erzsébet Várady, Dr. Miklós Szabó)

6. Responsive feeding and care – importance and practice. Rooming-in (couplet) care in birthing facilities. Safe sleeping after discharge home. (Dr. Erzsébet Várady)
7. Consultation, in small groups and elaboration of homework mini reviews. (Dr. Miklós Szabó)
8. Family-friendly maternity care. International Childbirth Initiative. Non-pharmacological pain management during childbirth. Impact of intrapartum procedures and medications on breastfeeding and lactation. Support of mothers after caesarean section. (Dr. Erzsébet Várady, Dr. Miklós Szabó)
9. Biological, sociological, psychological and cultural aspects of breastfeeding. Breastfeeding protection. International Code of Marketing Breastmilk Substitutes (The Code). (Dr. Erzsébet Várady).
10. Contraindications to breastfeeding/human milk feeding. Conditions and illnesses of concern. Breastfeeding and drugs. Evidence-based resources on drugs for the lactating mother. Caffeine, alcohol consumption, and smoking of the breastfeeding mother. Acceptable medical reasons for supplementing breastfeeding. Breastfeeding-friendly methods of supplementation. At breast supplementers. Nipple shields. Pacifiers- pros and cons. (Dr. Erzsébet Várady)
11. Obtaining medical and feeding history. Breastfeeding-related examination of the mother and child. Common breastfeeding problems (engorgement, mastitis, flat, inverted, painful, cracked nipples, breast edema, not enough breastmilk, jaundice, etc.). Prevention and treatment. (Dr. Erzsébet Várady)
12. Maintenance of lactation during separation (illness, returning to employment/school). Methods of breast milk expression (hand expression, using breast pump, “hands on pumping”, “power pumping”). Cleaning breast pump kits and infant feeding items. Handling and storage of breastmilk. (Dr. Erzsébet Várady)
13. Preparing to breastfeed during pregnancy. Topics to share with the mother (individual counseling by health professional and breastfeeding class). Contraception for the breastfeeding mother. Lactation amenorrhea method – conditions of efficacy. Other methods of contraception suitable for the breastfeeding mother. Advise on interpregnancy interval. Breastfeeding during pregnancy and tandem breastfeeding. (Dr. Erzsébet Várady, Dr. Miklós Szabó).
14. Consultation, in small groups and elaboration of homework mini reviews and virtual practical session: online participation in streaming of lactation consultation with patients. (Dr. Erzsébet Várady, Dr. Miklós Szabó)

Other courses with overlapping topics (obligatory, optional, or elective courses) in interdisciplinary areas. To minimize overlaps, topics should be coordinated. NEPTUN ID(s) of courses (to be provided):

Requirements for attendance, options for making up missed sessions, and method of absence justification:

None specific.

Assessment methods during semester (number, topics, and dates of midterms and reports, method of inclusion in the course grade, opportunities for make-up and improvement of marks):

(number, topics, and dates of midterms and reports, method of inclusion in the course

grade, opportunities for make-up and improvement of marks)

none

Number and type of individual assignments to be completed, submission deadlines:

Consultation in small groups and elaboration of homework mini reviews

Requirements for the successful completion of the course:

Mini reviews

Type of assessment:

term grade

Exam requirements (list of topics, topics of the test exam, and the optional project topics accepted as an exam)

Written test from the following topics:

Definitions related to breastfeeding. Hungarian data on breastfeeding rates

Anatomy of the breast, physiology of breastmilk production and secretion.

The changing composition of breastmilk.

Special properties and advantages of breast milk for preterm infants.

Breastfeeding positions, latching on the breast, milk transfer. Signs of good latch and suckling.

The normal course of breastfeeding during the first year of life.

Continuing breastfeeding after the introduction of complementary feeding.

Ten steps to successful breastfeeding.

Family-friendly maternity care.

The golden hour.

Rooming-in (couplet) care in birthing facilities. Safe sleeping after discharge home.

International Code of Marketing Breastmilk Substitutes (The Code).

Contraindications to breastfeeding/human milk feeding. Conditions and illnesses of concern.

Breastfeeding and drugs.

Obtaining medical and feeding history. Breastfeeding-related examination of the mother and child. Common breastfeeding problems.

Methods of breast milk expression.

Contraception for the breastfeeding mother.

Other methods of contraception suitable for the breastfeeding mother. Breastfeeding during pregnancy and tandem breastfeeding.

Clear, specific minimum requirements for assessment. (The list of mandatory concepts, parameters, diagrams, calculations, and practical skills required to obtain a passing grade, as well as the criteria for the completion and evaluation of project assignments accepted as an exam.) A link published on the department's website referring to the minimum requirements of the course.

To obtain a sufficient grade, the student must:

Knowledge:

- Know the physiological basis of human lactation (phases of lactogenesis, hormonal regulation)
- Know the composition of breast milk and its changes
- Know the short- and long-term benefits of breastfeeding for mother and infant
- Know the WHO recommendations (basic principles of exclusive breastfeeding, complementary feeding)
- Recognize the most common breastfeeding problems (e.g. incorrect breastfeeding, mastitis, insufficient milk production)

Practical skills:

- Recognize the basic principles of correct breastfeeding (based on diagram and case study)
- Describe the steps of basic breastfeeding counseling
- Apply communication principles in supporting mothers

Form and minimum of assessment:

- Written test (multiple choice)
- Minimum requirement: at least 60% performance
- At least partially correct problem recognition in a case-based question required

Project:

- Preparation of a breastfeeding support educational material or case presentation in small groups
- Minimum: professionally relevant content, correct application of basic recommendations

Method and type of grading (Share of theoretical and practical examinations in the overall evaluation. Inclusion of the results in the end-of-term assessment. Possibilities of and conditions for offered grades.): (Share of theoretical and practical examinations in the overall evaluation, Inclusion of the results in the end-of-term assessment, Possibilities of and conditions for offered grades)

88 % - 100 % Excellent

76 % - 87 % Good

64 % - 75 % Satisfactory

51 % - 63 % Pass

Under 51% Fail

Artificial intelligence systems used in the teaching of the subject and the manner of their application

During the teaching of the subject, artificial intelligence-based systems are used in a complementary manner, in order to support the educational process.

The 25-minute blocks built into the education, during which a problem is analyzed together in a small group for 10 minutes, followed by another 10-minute discussion with the AI

- if the student were a strategic decision-maker, how would he improve breastfeeding support in Hungary?
- what are the most common breastfeeding problems?
- what are the most common environmental influences that hinder breastfeeding?
- mastitis treatment and what does the AI recommend?
- how to support breastfeeding in case of premature birth - compare the suggestions of 3 different AI platforms (e.g. chatGPT, AI Doctor, Elicit...)

Printed resources:

Type	Recommended
Author	WHO
Title	Infant and young child feeding. Model Chapter for textbooks for medical students and allied health professionals.
Publisher	WHO
Year of publication	2009

Type	Recommended
Author	Gary, A. J., Birmingham, E. E., & Jones, L. B.
Title	Improving breastfeeding medicine in undergraduate medical education: A student survey and extensive curriculum review with suggestions for improvement.
Publisher	Education for Health, 30(2), 163.
Year of publication	2017

Type	Recommended
Author	Meek, J. Y., & Academy of Breastfeeding Medicine.
Title	Educational objectives and skills for the physician with respect to breastfeeding, Revised 2018.
Publisher	Breastfeeding Medicine, 14(1), 5-13.
Year of publication	2019

Type	Recommended
Author	Wambach, K., & Riordan, J. (Eds.).
Title	Breastfeeding and human lactation. 5th ed.
Publisher	Jones & Bartlett Learning
Year of publication	2016

Signature of habilitated instructor (course coordinator) announcing the course:

Signature of the director of the host institution:

Date of submission:
