



Topics for the doctoral (PhD) complex exam

A

EPIDEMIOLOGY AND RESEARCH METHODOLOGY

1. The concept, subject and history of epidemiology
2. Measuring morbidity . incidence
3. Measuring morbidity – prevalence
4. Risk indicators - relative risk
5. Risk indicators - odds ratio
6. Mortality indicators (mortality rate, cause-specific mortality rate, age-specific mortality rate, neonatal and infant mortality, maternal mortality) and main characteristics
7. Direct and indirect standardization
8. Life expectancy, DALY
9. Early detection of diseases - the role and basic features of screening
10. Descriptive epidemiological studies - descriptive and ecological studies
11. Descriptive epidemiological studies - cross-sectional studies
12. Descriptive epidemiological studies - case reports, case series
13. Analytical epidemiology studies - case-control study
14. Analytical epidemiology studies - cohort study
15. Intervention studies - randomized controlled trial
16. Population intervention studies
17. Basic concepts of sampling (population, target population, inclusion and exclusion criteria, sample, the concept and types of non-probability sampling)
18. Basic concepts of sampling (representativeness, concept and types of random sampling, criteria determining the number of elements in sample)
19. Confounding factors and their control in epidemiological studies
20. Errors in epidemiological studies (random errors and distortions)

Required reading

Cseh Károly, Ember István, Kiss István: Népegészségügyi orvostan PTE-ÁOK, 2013

E book, chapter on epidemiology, recommended for almost all of the topics

Kutatásmódszertani alapsimeretek szerk: Boncz Imre Pécs, 2015

http://www.etk.pte.hu/protected/OktatasiAnyagok/%21Palyazati/sport/Kutatasmodszertan_e.pdf

Recommended chapters: Chapter 1, 2

Bonita, Beaglehole, Kjellström: ***Basic epidemiology*** WHO, 2006

http://apps.who.int/iris/bitstream/10665/43541/1/9241547073_eng.pdf

Selected Bibliography

Ádány Róza: ***Megelőző orvostan és népegészségtan Medicina Könyvkiadó***, 2006

Some of the topics are covered



Ranjit Kumar : *Research methodology A step by step* London, 2011
http://www.sociology.kpi.ua/wp-content/uploads/2014/06/Ranjit_Kumar-Research_Methodology_A_Step-by-Step_G.pdf

Polit and Beck: *Nursing research principle and methods*
[https://web2.aabu.edu.jo/tool/course_file/lec_notes/1001391_Nursing%20research-Principles%20and%20methods%20\(7e_2003\).pdf](https://web2.aabu.edu.jo/tool/course_file/lec_notes/1001391_Nursing%20research-Principles%20and%20methods%20(7e_2003).pdf)
(collecting self report data (questionnaire), sampling method, observation)

Supplementary reading
<https://drive.google.com/open?id=18weOiOpU5OuQldU8HBRmaOHp3Wra1oM3>

B

I. A) HEALTH ECONOMICS

1. Structure of Health Systems (Bismarck, Beveridge, Semashko, Self-Care)
2. Financing Techniques in International Practice (Global Budget, Head Quota, Itemized Settlement, Daily Subscription, Case Composition)
3. Financing in general practitioners' service in Hungary
4. Financing in home care service in Hungary
5. Financing in health visiting service (visiting midwife after birth) in Hungary
6. Financing in specialized outpatient care in Hungary
7. Financing in active inpatient care in Hungary
8. Financing in chronic inpatient care in Hungary
9. Regulations of health capacities
10. Types of Health Economics Analysis (Cost-minimization, Cost-Effectiveness, Cost-Benefit)
11. Measuring quality of life
12. Evidence-based medicine: a hierarchical structure of scientific results and opinions
13. The basics of quality assurance in healthcare
14. Structure, organizational system and tasks of National Health Insurance Fund of Hungary (Hungarian acronym: NEAK)



15. Structure, organizational system and tasks of the National Healthcare Services Center
16. The structure, organization and tasks of the National Public Health and Medical Office Service

I. B) HEALTH SOCIOLOGY

1. Formation and subject of medical and health sociology, the main social processes of their development.
2. Changes in the definition of health.
3. Aaron Antonovsky's theory of salutogenesis.
4. The health sociology aspects of Mihály Csíkszentmihályi's flow theory.
5. Main domestic and international surveys aimed at health measurement.
6. International and domestic databases for health measurement.
7. Changes in life expectancy and healthy life expectancy from the 20th century until nowadays.
8. The health of the Hungarian population based on mortality and morbidity rates.
9. The connections between the quality of life and health.
10. Mental health, social support.
11. Definition of health and risk behaviours; their social determination.
12. The process of seeing a doctor.
13. Patient behaviour and role.
14. The medical profession. The doctor-patient relationship models.
15. Changing roles of healthcare professionals.
16. Disease models.
17. Direct and indirect social causes of diseases.
18. The connections between social inequalities and health: age; sex; occupation or unemployment; ethnicity.
19. Comparison of the different types of health care. Iatrogenesis, medicalization.
20. Sociological aspects of an aging population.



Compulsory reads

Szántó Zsuzsa, Susánszky Éva (szerk.): Orvosi szociológia Semmelweis Kiadó, Budapest 2003/2005.

Pikó Bettina: Egészségszociológia Új Mandátum Kiadó, 2002

Kopp Mária, Kovács Mónika (szerk.) A magyar népesség életminősége az ezredfordulón. Semmelweis Kiadó, Budapest, 2006

Recommended reads

Egészségjelentés 2015. Információk a hazai egészségveszteségek csökkentéséhez. NEFI, Budapest, 2015.

Európai lakossági egészségfelmérés, 2014. Statisztikai tükör 2015/29. KSH

Bálint Lajos, Kovács Katalin: Halandóság. in: Demográfiai portré 2015 NKI p:75-94.
<http://demografia.hu/kiadvanyokonline/index.php/demografiaipotre/issue/view/532>

Kovács Katalin, Tóth Gergely: Egészségi állapot. in: Demográfiai portré 2015 NKI p:95-114.
<http://demografia.hu/kiadvanyokonline/index.php/demografiaipotre/issue/view/532>

Monostori Judit: Öregedés és nyugdíjba vonulás. in: Demográfiai portré 2015 NKI p:115-134.
<http://demografia.hu/kiadvanyokonline/index.php/demografiaipotre/issue/view/532>

Orosz Éva, Kollányi Zsófia: Egészségi állapot, egészségegyenlőtlenségek nemzetközi összehasonlításban in: Társadalmi riport 2016.
<http://www.tarki.hu/hu/publications/SR/2016/16orosz.pdf>

II. CARDIOLOGY

1. Causes of leading deaths in Hungary
2. Frequency of cardiovascular diseases in Hungary
3. Epidemiology of heart failure
4. Physical examination of the heart and circulatory system
5. Non-invasive cardiovascular examination methods
6. Invasive cardiovascular examination methods and interventions
7. Differential diagnosis of chest pain
8. Ischemic heart disease (risk factors, manifestation, diagnostics)
9. Diagnosis of acute coronary syndrome (unstable angina, NSTEMI, STEMI), treatment algorithms
10. Prevention of primary and secondary myocardial infarction, rehabilitation.
11. Early and late complications of myocardial infarction.
12. Heart failure (most common causes, pathophysiology, clinical manifestations and stages)
13. Definition and diagnosis of hypertension



14. Heart rhythm disorders
15. Circulatory diseases causing dyspnoea
16. Heart-derived oedema and cyanosis
17. Central and peripheral circulatory failure
18. Other organ failures caused by heart failure
19. Sudden cardiac death
20. Cardiopulmonary resuscitation (BLS, ALS).

III. BASICS OF PHYSIOTHERAPY

1. Basic elements/definitions in physiotherapy (in physiotherapy, physiotherapy, human kinesiology, biomechanics).
2. Division and systems of physiotherapy.
3. The basic elements, principles, movement types and exercise in physiotherapy.
4. Patient examination and biomechanical examinations in physiotherapy.
5. Essentials in history of national and international physiotherapy.
6. Research methodology in physiotherapy.
7. Clinical sport, basic concepts of sports therapy, guidelines, applicable exercise material.
8. Training theory in physiotherapy.
9. Primary and secondary prevention in physiotherapy.
10. Evidence based medicine in physiotherapy.
11. Cardiovascular physiotherapy, respiratory physiotherapy: methods, mechanism of action, indications, contraindications.
12. The peculiarities of sports physiotherapy and its movement in the field of primary prevention and rehabilitation, by age.
13. Methods in orthopaedic physiotherapy.
14. Physiotherapy methods used in traumatology physiotherapy.
15. Methods in rheumatological physiotherapy, indications, contraindications, other physiotherapy methods.
16. Neurological Physiotherapy.
17. Infant-paediatric physiotherapy.
18. Obstetrics-Gynaecological Physiotherapy.



19. Specialities, principles, and material of psychiatric physiotherapy. Relaxation therapies.
20. Geriatric Physiotherapy.

IV NEONATAL ADAPTATION

1. Postnatal adaptation of circulation and breathing
2. The compromised newborn
3. Perinatal asphyxia
4. Respiratory distress syndrome in newborns
5. Primary care of the newborn in the delivery room
6. Perinatal infections
7. Polycythaemia in newborn
8. Neonatal anaemia
9. Neonatal jaundice (icterus)
10. Morbus haemolyticus neonatorum
11. Infant of a Mother with diabetes
12. Birth injuries during delivery
13. Types of newborn screening
14. Acute and chronic respiratory complications
15. Most common developmental disorders
16. Neonatal encephalopathies
17. Acute surgical disease in a newborn baby
18. Parenteral nutrition in premature infants
19. Acid-base imbalance and electrolyte disturbances in newborns
20. Energy features of premature infants

V. REPRODUCTIVE ENDOCRINOLOGY

1. Division of amenorrhea, diagnostic and therapeutic options
2. Intersexuality, gonad dysgenesis
3. Functional examination of ovaries, periodic diagnostics
4. Hyperandrogenic disorders, PCOS
5. Definition, symptoms and consequences of menopause.



6. Contemporary methods of contraception.
7. Origin, division and diagnosis of endometriosis
8. Treatment of endometriosis.
9. Diagnosis of infertility
10. Treatment of infertility (ovulation induction, AIH)
11. Physiology of puberty and menarche
12. Principles, indications, contraindications and side effects of menopausal hormone therapy.
13. Infertility treatment (IVF, ICSI),
14. Indications, contraindications, beneficial effects, complications of oral anticonception.
15. The relationship between hypothyroidism and infertility
16. Galactorrhoea, hyperprolactinaemia
17. Relationship between insulin resistance and the female reproductive system.
18. Kalmann's syndrome
19. Early ovarian failure.
20. Ovarian hyper stimulation syndrome.

VI. CLINICAL ONCOLOGY

1. The etiology of malignant tumors - physical, chemical, biological factors
2. Tumor evolution models. Genetic factors in cancer development.
3. Major risk factors of tumors
4. Nutrition and tumors
5. Lung cancer: epidemiology, prevention
6. Colorectal cancer: epidemiology, prevention
7. Breast cancer: epidemiology, prevention
8. Prostate cancer, cervical cancer, head and neck cancer: epidemiology, prevention
9. Liver tumors, pancreatic cancer, gastric cancer, esophageal cancer: epidemiology, prevention
10. Bladder tumors, uterine cancer, brain tumors, skin cancer, melanoma: epidemiology, prevention
11. Leukemia, lymphomas, testicular cancer, thyroid cancer: epidemiology, prevention
12. Cancer screening



13. Preblastomatosis. Tumor growth and metastasis. Stages of cancer.
14. Diagnosis of tumors: tumor markers, cytology
15. Diagnosis of tumors: imaging techniques, histology, molecular diagnostics
16. Chemotherapy, targeted cancer therapy
17. Hormone therapy, biological therapy
18. Radiation therapy, surgical therapy for cancer
19. Complementary medicine in oncology
20. Care, rehabilitation, psycho-oncology

Selected Bibliography

Onkológia (2011, szerk.: Dank Magdolna, digitális tananyag: www.tankonyvtar.hu)
Az onkológia alapjai (2. kiadás, Medicina, 2017, szerk.: Kásler Miklós)
Daganatok epidemiológiája (Orsós Zsuzsanna). in: Népegészségügyi orvostan (szerk: Ember-Kiss-Cseh, 2013, Pécsi Tudományegyetem Általános Orvostudományi Kar) 170-191. old.
Karcinogenezis (Ember István – Gyöngyi Zoltán – Kiss István). in: Népegészségügyi orvostan (szerk: Ember-Kiss-Cseh, 2013, Pécsi Tudományegyetem Általános Orvostudományi Kar) 357-374. old.

VII. SPORT AND HEALTH SCIENCE

1. Sport Science - Universal and Body Culture.
2. Phases of the development of Hungarian sports science, criteria of independence.
3. The most important characteristics of sports science research, the objective and subjective possibilities of measuring the level of physical activity.
4. The socialization opportunities and values of sport in relation to a wide range of sporting activities.
5. The role, functions and importance of sport in shaping the quality of life of disabled people.
6. Physiological and psychological effects of regular exercise.
7. Effects of physical activity on health and quality of life.
8. Introduction to the social and economic determinants of physical activity and health.
9. The concept of load and its indicators are some general aspects of load application.
10. Differences between sports training and recreational training. Effects of recreational training.



11. Presentation of conditioning and coordination abilities and their development methods.
12. Description of load physiological examinations, presentation and interpretation of cardiovascular features.
13. Development and improvement of sports organizations in Hungary since 1867.
14. Objectives of sport policy. Strategy, administration and management in sport.
15. The economic basis of professional and recreational sports. Features of Sports Support and Sports Financing.
16. Relationship between sport education and sport science. Directions of development in sport pedagogy, its relation to the theory of physical education.
17. Definition, subject, tasks and main questions of sport pedagogy. Basic concepts of sports education (physical activity, exercises, physical education, health, well-being, fitness)
18. Education for tolerance of success and failure (Development of interest, orientation, self-esteem). Education of conscious discipline, endurance, activity in sport.
19. Tasks of the teacher in physical education and sport. Coach - parent - athlete relationship.
20. Integration aspects physical education and sport at school. Pedagogy of special groups in sports.

VIII. DIETETICS

1. Nutrition- Health Characterization of a healthy diet Nutrition recommendations in Hungary, their principles. Nutrition- Public Health Diseases Clinical nutrition
2. Food quality assurance Knowledge of food science
3. Food Microbiology
4. Food Marketing
5. Elderly nutrition. Diet therapy for osteoporosis.
6. Dietary management in cardiovascular disease. Cardio protective diet
7. Characterization in major food allergies and intolerances.
Dietary management in lactose intolerance (lactose intolerance)



Dietary treatment in celiac disease, gluten-sensitive enteropathy
Diet for Colitis Ulcerosa and Crohn's Disease.
Nutritional factors influencing gastric acidity, dietary treatment of ulcer.

8. Introducing the Unified Diet System (EDR).
Esophageal lesions, dietary treatment of GOR.
Acute pancreatitis (pancreatitis acuta) dietary recommendations.
Dietary treatment of type 1 and type 2 diabetes mellitus.
Diagnostic diets.

9. Diet for acute hepatitis
Diet for chronic hepatitis and cirrhosis of the liver

10. Characterization and role of meat in human nutrition
Grouping and characterization of meat products

11. The role of milk characterization in human nutrition
Grouping and characterization of dairy products

12. Characterization of grain and its role in nutrition
Grouping and characterization of bakery products
Grouping and characterization of confectionery products

13. Classification and characterization of vegetables
Grouping and characterization of fruits
The role of oilseeds in nutrition
The role of honey in nutrition and its characterization

14. Oxidation reactions in the body
The body's antioxidant system
Classification of antioxidants
Antioxidants in food

15. Functional food concept and characterization
Grouping and characterization of dietary supplements
Probiotics, prebiotics, symbiotics.
The role of fibers in maintaining health

16. Assessment of nutritional status, anthropometric characteristics.
Ways to Determine Energy Needs.
Obesity and a low-energy diet.



Malnutrition, recommended methods for screening for malnutrition.

Eating Disorders: Anorexia Nervosa

Eating disorders: bulimia nervosa

17. Healthy, balanced diet for some groups.

Special diets, vegetarianism.

Mediterranean diet.

Detoxification, role of fasting, immune boosting diet, healing nutrients.

18. Nutrition of athletes, basics of sports nutrition.

19. Classification and characterization of edible fats

Linoleic acid and alpha linolenic acid metabolism in the human body.

Changes in fatty acid consumption in the world and in Hungary.

Human cholesterol homeostasis.

20. Relationship between lipid metabolism and inflammation, cardiovascular disease and carcinogenesis.

Lipid analytical assays, Lipid biomarkers in the human body.

Production of Lipid Foods - Potential Food Improvements.