



SEMMELWEIS UNIVERSITY

Doctoral School - Health Sciences Division

Head of Division

DR. ZOLTÁN ZSOLT NAGY

Semmelweis University Doctoral School Health Sciences Division

Complex exam information

(Program 3. and 4.)

Valid from February 2025*

* Mandatory for individual ("untrained") candidates and students admitted in February 2025 and thereafter, optional for previously enrolled students

In the theoretical part, the doctoral student takes an exam in two subjects: 1 main and 1 additional subject.

*The topics of the **main subject** cover the scientific theoretical background of the Health Sciences Division and its four programs. As the Health Sciences Division offers the broadest multidisciplinary programme within the Doctoral School of Semmelweis University, the committee usually asks questions based on the candidates' research topic and professional background.*

The candidates, with the help of their supervisor, select at least 10 items from the list of questions below. The selected items must be submitted to the Secretary of the Health Sciences Division at the same time as the application for the complex exam.

Additional subject: *The candidates, with the help of their supervisor, define the title of the additional subject, which covers the narrow scientific field related to their research topic, and compile a list of 8-10 questions from the subtopics of the additional subject.*

The title and questions of the additional subject must be submitted to the Secretary of the Health Sciences Division at the same time as the application for the complex exam.

Main subject: Health Sciences

1. Concepts and definitions of health and disease in different health science paradigms (Bio-psycho-social model of health, WHO definition of health, alternative approaches)

- 2. Epidemiology and prevention of chronic diseases** (Prevalence of chronic diseases globally and locally, identification of risk factors, prevention strategies)
- 3. Methodology of health promotion and health education** (Community health promotion, individual level health promotion, design of education strategies and programs)
- 4. The relationship between mental health and psychosocial health** (The impact of stress on health, psychosocial factors and their role in the development of illness, treatment of mental illness)
- 5. Health systems and their efficiency in different countries** (Financing of health systems, accessibility and quality of health care in different countries)
- 6. The role of lifestyle in maintaining health** (The impact of diet, physical activity, sleep and other lifestyle factors on health)
- 7. Principles and current challenges of epidemiology and public health** (Prevention and control of infectious diseases, strategies of epidemiology, lessons learned from COVID-19)
- 8. Strategies to address and reduce health inequalities** (The relationship between socio-economic status and health status, equal access to health care, discrimination in health care)
- 9. Research methodology in health sciences** (Design, conduct, data collection and analysis of clinical and social science studies)
- 10. Ethical questions of research in health sciences:** Discuss ethical issues in research and how to address them (ethical issues, ethical approvals and good practices)
- 11. Using quantitative research methods. Statistical analysis and data management:** describe the most commonly used statistical analysis techniques (e.g. analysis of variance, regression) and data management methods in health research
- 12. Using qualitative research methods in health sciences:** Discuss the role and benefits of qualitative research methods (e.g. interviews, focus groups)
- 13. Publication strategies in health sciences:** Explain the importance of effective publication strategies, including the selection of targeted journals, the peer-review process, and dissemination of research results
- 14. Communicating and using research results:** Talk about how to effectively communicate research results to different target groups (e.g. scientific audience, policy makers, public) and about best practices in scientific communication.
- 15. The role of digital technologies in health sciences and healthcare** (Telemedicine, mHealth applications, management and use of digital health data in healthcare)