



**Karolinska  
Institutet**

Course syllabus for

# **Aging and Age-Related Disorders from a Biological, Epidemiological and Clinical Perspective, 15 credits**

Åldrande och åldersrelaterad sjuklighet ur ett biologiskt, epidemiologiskt och kliniskt perspektiv, 15 hp  
This course syllabus is valid from spring 2024.

Please note that the course syllabus is available in the following versions:

Autumn2023 , Spring2024

Course code	2QA343
Course name	Aging and Age-Related Disorders from a Biological, Epidemiological and Clinical Perspective
Credits	15 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Not applicable
Level	Second cycle, in-depth level of the course cannot be classified
Grading scale	Fail (U) or pass (G)
Department	Department of Neurobiology, Care Sciences and Society
Decided by	Education committee NVS
Decision date	2022-12-13
Revised by	Education committee NVS
Last revision	2023-09-06
Course syllabus valid from	Spring 2024

## **Specific entry requirements**

A Bachelor's degree or a professional degree equivalent to a Swedish Bachelor's degree of at least 180 credits in health care or medicine. Alternatively, a degree in social work. And proficiency in English equivalent to English B/English 6.

## **Objectives**

The overall objective of this course is to equip students with a comprehensive understanding of the particularities of health and care needs in old age, encompassing diverse topics related to geriatric syndromes, life-course determinants of healthy aging, and geriatric health and social care. By exploring these areas, students will develop critical thinking skills, apply research methodologies, and gain a deep appreciation of the complexities of health in older age, enabling the advancement of knowledge and effective care practices for the aging population.

Specifically, upon completion of the course, the student should independently be able to:

- assess the consequences of multimorbidity and polypharmacy for patients, care providers and healthcare systems, and the opportunities for the primary-to-quaternary prevention of multimorbidity
- discuss the challenges and opportunities within the field of dementia research, e.g. clinical definition of cognitive disorders, use of biomarkers
- appraise the implications of different methodologies employed in epidemiological studies to define and operationalize frailty, sarcopenia and measures of physical functioning in older adults
- evaluate the evidence from life course studies on aging, with particular emphasis on interacting effects of biological, psychological, and social factors, and their inequalities across time, space, and historical contexts
- discuss the challenges linked to the current organization of health and social care, and the extent to which it is able to respond to older people's health needs

## Content

The course consists of three parts.

### **Health challenges and geriatric syndromes in the elderly, 4.0 hp**

Grading scale: GU

Covers various topics, including chronic diseases, multimorbidity and polypharmacy (Topic 1); Cognitive function and Dementia (Topic 2); Frailty, sarcopenia and physical function (Topic 3).

### **Life-course determinants of healthy aging, and social geriatric care, 3.5 hp**

Grading scale: GU

Covers the topic of Life-course determinants of health, aging, and resilience (Topic 4) and Medical and social geriatric care (Topic 5).

### **Advanced project, 7.5 hp**

Grading scale: GU

Consists of writing and presenting an advanced project.

## Teaching methods

The content of the course is based on recent research findings in the field, followed by different activities where students are asked to critically reflect in relation to their work/professional role. The learning activities consist of a blended learning approach with campus meetings mixed with online teaching in the form of lectures, interactive group discussions, and interactive seminars.

## Examination

The course is examined through group assignments (formative assessment) and individual written examination (summative assessment).

- Part **Health challenges and geriatric syndrome in elderly (4 hp)** and **Life-course determinants of healthy aging and social geriatric care (3,5 hp)** are examined by individual written test related to the subject areas.

- Part **Advanced project (7,5 hp)** is examined by writing and presenting an advanced project.

In addition, active participation in the group discussions and peer review of other students' assignments are mandatory.

The examiner decides whether, and if so how, absence from or failure to complete compulsory course elements can be made up. Study results cannot be reported until the student has participated in or completed compulsory course elements or compensated for any absence in accordance with instructions from the examiner. Absence from, or failure to complete a compulsory course element could mean that the student cannot retake the element until the next time the course is offered.

Late examinations will not be considered. Students who do not submit their assignment on time are referred to the re-examination. The examiner will decide whether a student has special reasons for the delay.

Students who have not passed the regular examination are entitled to participate in five more examinations. This does not apply when the course has been discontinued or undergone major changes. Students who do not pass the examination after three completed examinations can be offered to retake parts or the entire course one more time. This option will be subject to course availability.

If there are special reasons, or a need for adaptation for students with disabilities, the examiner may decide to deviate from the syllabus' regulations in terms of examination form, number of examinations, possibility of supplementation or exemption from compulsory educational elements, etc. Content and learning outcomes as well as the level of expected skills, knowledge and abilities must not be changed, removed or lowered.

## Other directives

Language: English

Course evaluation is carried out according to the guidelines that are established by the Committee for Higher Education, at Karolinska Institutet.

The course may not be credited in a degree together with another course the student has completed and passed the contents of which completely or partly correspond to the contents of this course.

## Literature and other teaching aids

Scientific publications and reports.

*Barnett K, Mercer SSW, Norbury M, Watt G, Wyke*

**Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study**

Lancet, 2012

URL: [Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study](#)

*Clegg A, et al.*

**Frailty in elderly people**

Lancet, 2013

URL: [Frailty in elderly people](#)

*Solomon A, et al.*

**Advances in the prevention of Alzheimer's disease and dementia**

J Intern Med., 2014

URL: [Advances in the prevention of Alzheimer's disease and dementia](#)

*Chatterji S, Byles J, Cutler D, et al.*

**Health, functioning, and disability in older adults - Present status and future implications**

Lancet, 2015

URL: [Health, functioning, and disability in older adults - Present status and future implications](#)

*Olde Rikkert MGM, Melis RJF, Cohen AA, Geeske P*

**Why illness is more important than disease in old age**

Age & Ageing, 2020

*Kingston A, Wohland P, Wittenberg R, et al*

**Is late-life dependency increasing or not? A comparison of the Cognitive Function and Ageing Studies**

Lancet, 2017

URL: [Is late-life dependency increasing or not? A comparison of the Cognitive Function and Ageing Studies](#)

*Ferraro KF, Shippee TP*

**Ageing and Cumulative Inequality: How Does Inequality Get Under the Skin?**

Gerontologist, 2009

URL: [Ageing and Cumulative Inequality: How Does Inequality Get Under the Skin?](#)

*Hendry, Anne; et al.*

**ADVANTAGE Joint Action (JA) key components of an integrated approach to prevent and manage frailty**

International Journal of Integrated Care,

URL: [Länk](#)

*Araujo de Carvalho, Islene; et al.*

**Organizing integrated health-care services to meet older peoples needs**

Bull World Health Organ, 2017

URL: [Länk](#)

*Barboza Solís, Cristina; et al.*

**Adverse childhood experiences and physiological wear-and-tear in midlife: Findings from the 1958 British birth cohort**

PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, 2015

URL: [Länk](#)

*Bennett, Kate M.*

**Emotional and personal resilience through life. Future of an ageing population: evidence review**

UK governments Foresight Future of an Ageing Population project, University of Liverpool, 2015

URL: [Länk](#)

*Ben-Shlomo, Yoav; et al.*

**Life Course Epidemiology**

Springer Science+Business Media New York, 2014

URL: [Länk](#)

*Ben-Shlomo, Yoav; et al.*

**The last two decades of life course epidemiology, and its relevance for research on ageing**

International Journal of epidemiology, 2016

URL: [Länk](#)

*Colón-Emeric, Cathleen; et al.*

**Two Approaches to Classifying and Quantifying Physical Resilience in Longitudinal Data**

The Journals of Gerontology, 2020

URL: [Länk](#)

*Cosco, TD; et al.*

**Healthy ageing, resilience and wellbeing**

Epidemiol Psychiatr Sci, 2017

URL: [Länk](#)

*Cruz-Jentoft, AJ; et al.*

**Sarcopenia**

The Lancet, 2019

URL: [Länk](#)

*Cruz-Jentoft, AJ; et al.*

**Sarcopenia: revised European consensus on definition and diagnosis**

Age Ageing, 2019

URL: [Länk](#)

**2021 Long-Term Care in the EU. Trends, challenges and opportunities in an ageing society**

European Commission (DG EMPL), 2021

URL: [Länk](#)

*Fabbri, Elisa; et al.*

**Ageing and Multimorbidity: New Tasks, Priorities, and Frontiers for Integrated Gerontological and Clinical Research**

Journal of the American Medical Directors Association, 2015

URL: [Länk](#)

*Fratiglioni, Laura; et al.*

**Ageing without dementia: can stimulating psychosocial and lifestyle experiences make a difference?**

The Lancet Neurology, 2020

URL: [Länk](#)

*Fried, LP; et al.*

**Frailty in older adults: evidence for a phenotype**

The Journals of Gerontology, 2001

URL: [Länk](#)

*Garattini, Livio; et al.*

**Integrated care: easy in theory, harder in practice?**

Internal and Emergency Medicine, Springer Link, 2021

URL: [Länk](#)

*Goddard, Maria; et al.*

**Integrated Care: A Pill for All Ills?**

Int J Health Policy Manag, 2017

URL: [Länk](#)

*Guralnik, JM; et al.*

**A short physical performance battery assessing lower extremity function: association with**

**self-reported disability and prediction of mortality and nursing home admission**

Journal of Gerontology, 1994

URL: [Länk](#)*Calderón-Larrañaga, Amaia; et al.***International Symposium: Multimorbidity research at the crossroads: developing the scientific evidence for clinical practice and health policy**

Journal of Internal Medicine (JIM), Aging Research Center, Karolinska Institutet, University of Exeter, KI Strategic Research Area in Epidemiology (SfoEpi), European Network on Multimorbidity Threads &amp; Yarns, 2018

URL: <https://youtu.be/ROJjZDm-Ay4>*Kodner, DL; et al.***Integrated care: meaning, logic, applications, and implications a discussion paper**

International Journal of Integrated Care, 2002

URL: <https://ijic.org/articles/10.5334/ijic.67>*Marengoni A, et al.***Aging with multimorbidity: a systematic review of the literature**

Lancet, 2012

URL: [Aging with multimorbidity: a systematic review of the literature](#)*McCormack, B; et al.***Person-Centred Healthcare Research**

Wiley Publishers, Oxford, 2017

URL: <https://www.wiley.com/en-gb/Person+Centred+Healthcare+Research-p-9781119099604>**Multimorbidity: clinical assessment and management. NICE guideline (NG56). Baseline assessment tool**

National Institute for Health and Care Excellence, 2016

URL: <http://chd.bestsciencemedicine.com/calc2.html>**Multimorbidity: clinical assessment and management. NICE guideline (NG56). Database of treatment effects.**

National Institute for Health and Care Excellence, 2016

URL: <https://www.nice.org.uk/guidance/ng56/resources>**Patient-Centred Innovations for Persons with Multimorbidity (PACE in MM)**

PACE in MM,

URL: <http://www.paceinmm.recherche.usherbrooke.ca/en/index/>*Rydberg Sterner, T; et al.***Depression and neuroticism decrease among women but not among men between 1976 and 2016 in Swedish septuagenarians**

Acta Psychiatrica Scandinavica, 2019

URL: <https://onlinelibrary.wiley.com/doi/10.1111/acps.13005>*Shaw, Sara; et al.***What is integrated care ? An overview of integrated care in the NHS**

Nuffield Trust, UK, 2011

URL:

<https://www.nuffieldtrust.org.uk/sites/default/files/2017-01/what-is-integrated-care-report-web-final.pdf>

*Studenski, Stephanie; et al.*

**Gait speed and survival in older adults**

JAMA network, 2011

URL: <https://jamanetwork.com/journals/jama/fullarticle/644554>

*Thompson, CM*

**Why Is It Difficult for Social Network Members to Support People Living with Mental Illnesses?: Linking Mental Illness Uncertainty to Support Provision**

Health Communication, 2020

URL: <https://doi.org/10.1080/10410236.2020.1831166>

**WHO ICOPE guidance for person-centered assessment and pathways**

World Health Organization,

URL: <https://www.who.int/publications/i/item/WHO-FWC-ALC-19.1>,

**WHO ICOPE integrated care implementation guidance for systems and services**

World Health Organization, 2019

URL: <https://www.who.int/publications/i/item/9789241515993>

*Wilson, Daisy; et al.*

**Frailty and sarcopenia: The potential role of an aged immune system**

Ageing Research Reviews, 2017

URL: <https://www.sciencedirect.com/science/article/pii/S1568163716302719?via%3Dihub>

**WHO ICOPE integrated People-Centred Care**

World Health Organization,

URL: [https://www.who.int/health-topics/integrated-people-centered-care#tab=tab\\_1](https://www.who.int/health-topics/integrated-people-centered-care#tab=tab_1)