

# ERACOL|research lines Karolinska Institutet

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## General information

<b>Institution:</b>	Karolinska Institutet
<b>City:</b>	Stockholm
<b>Country:</b>	Sweden

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<b>1. research line 1:</b>
Cardiovascular Epidemiology
<b>2. general description of the research line:</b>
The overarching aim of our line of research is to identify novel genetic, molecular and biochemical pathways involved in the onset and evolution of the atherosclerotic plaques, the biological lesions underlying coronary heart diseases. The interaction among inflammation, thrombosis, angiogenesis and the immune system determines different growth patterns thus leading to acute (myocardial infarction) or chronic (effort angina) clinical manifestation.
<b>3. specific subtopics within the research line:</b>
Genetic epidemiology, inflammation, thrombosis, cardiovascular diseases
<b>4. contact person for interested students/teaching staff:</b>
Bruna Gigante MD, PhD, Institute of Environmental Medicine, e-mail: <a href="mailto:Bruna.Gigante@ki.se">Bruna.Gigante@ki.se</a>
<b>5. Field of research (for example: epidemiology, public health, statistics, medicine):</b>
Public health, Epidemiology
<b>6. for which levels the research line is applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)</b>
Master, doctorate, post-doctorate

<b>1. research line 2:</b>
Diabetes Epidemiology
<b>2. general description of the research line:</b>
Epidemiological studies of diabetes aimed primarily at extending current knowledge on the etiology of diabetes focusing both on environmental factors and heritage.
<b>3. specific subtopics within the research line:</b>
LADA-diabetes (LADA-latent autoimmune diabetes in adults). We aim at expanding current knowledge of the occurrence of LADA, the etiology of LADA and the complications the disease may cause.
<b>4. contact person for interested students/teaching staff:</b>
Sofia Carlsson, Associate Professor of Epidemiology, Institute of Environmental Medicine, Karolinska Institutet, e-mail: <a href="mailto:Sofia.Carlsson@ki.se">Sofia.Carlsson@ki.se</a>
<b>5. Field of research (for example: epidemiology, public health, statistics, medicine):</b>
Public health, Epidemiology
<b>6. for which levels the research line is applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)</b>
Master, doctorate, post-doctorate

<b>1. research line 3:</b>
Cancer Epidemiology
<b>2. general description of the research line:</b>
The aim of our line of research is to identify risk factors for brain tumours in children and adults, in order to increase our understanding of the aetiology of these serious diseases. Outcomes of interest are glioma, meningioma, and acoustic neuroma. Risk factors can be environmental, including life style, anthropometric, genetic, as well as gene-environment interactions.
<b>3. specific subtopics within the research line:</b>
Brain tumour epidemiology, genetic epidemiology, childhood cancer
<b>4. contact person for interested students/teaching staff:</b>
Professor Maria Feychting, PhD, Institute of Environmental Medicine, e-mail: <a href="mailto:Maria.Feychting@ki.se">Maria.Feychting@ki.se</a>
<b>5. Field of research (for example: epidemiology, public health, statistics, medicine):</b>
Epidemiology
<b>6. for which levels the research line is applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)</b>
Doctorate, post-doctorate

<b>1. research line 4:</b>
Environmental Epidemiology
<b>2. general description of the research line:</b>
<ul style="list-style-type: none"> <li>- Health effects of ambient air pollution</li> <li>- Health effects of community noise</li> <li>- Causes of allergy in children</li> <li>- Gene-environment interactions</li> </ul>
<b>3. specific subtopics within the research line:</b>
<ul style="list-style-type: none"> <li>- Cardiovascular effects of particles in air</li> <li>- Cardiovascular effects of noise</li> <li>- Effects of air pollution on asthma and allergy in children</li> <li>- Interactions between air pollution and genes involved in epithelial function</li> </ul>
<b>4. contact person for interested students/teaching staff:</b>
Professor Göran Pershagen, MD, PhD, Institute of Environmental Medicine, e-mail: <a href="mailto:Goran.Pershagen@ki.se">Goran.Pershagen@ki.se</a>
<b>5. Field of research (for example: epidemiology, public health, statistics, medicine):</b>
Epidemiology
<b>6. for which levels the research line is applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)</b>
Undergraduate, master, doctorate, post-doctorate

<b>1. research line 5:</b>
Rheumatoid Arthritis Epidemiology
<b>2. general description of the research line:</b>
<p>The aim of the project EIRA - Epidemiological Investigation of Rheumatoid Arthritis - is to study the influence of individual as well as environmental factors, on the incidence and prognosis of rheumatoid arthritis. The study is of case-control design and incident cases of rheumatoid arthritis (18-70 years of age) together with randomly selected controls are questioned regarding previous exposures at work, at home or during leisure hours. For cases and controls a blood sample is taken in order to analyze gene-environment interaction.</p> <p>A related study, called EIRA-Outcome, aims to provide knowledge that can improve the treatment and care of RA patients. In the EIRA-Outcome study, the cases included in EIRA answer questions about their lives with joint disease at different time points after diagnosis. The project also tests new ways of gathering information by giving the respondents the option to answer their questionnaire electronically.</p>
<b>3. specific subtopics within the research line:</b>
Risk factors for rheumatoid arthritis, gene-environment interaction, prognosis of rheumatoid arthritis, treatment outcome
<b>4. contact person for interested students/teaching staff:</b>
Professor Lars Alfredsson, PhD, Institute of Environmental Medicine, e-mail: <a href="mailto:Lars.Alfredsson@ki.se">Lars.Alfredsson@ki.se</a>
<b>5. Field of research (for example: epidemiology, public health, statistics, medicine):</b>
Epidemiology
<b>6. for which levels the research line is applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)</b>
doctorate, post-doctorate

<b>1. research line 6:</b>
Multiple sclerosis Epidemiology
<b>2. general description of the research line:</b>
We have initiated a population based case-control study called EIMS - Epidemiological Investigation of Multiple Sclerosis - , where lifestyle- and environmental factors for the first time are examined systematically with concurrent genetic information. Newly diagnosed cases of MS and randomly chosen controls are identified and questioned about e.g. socio-demographic factors, smoking, physical activity, sunlight exposure, oral contraceptives/hormonal factors, butyrophilin (a milk protein), vaccinations, infections, atopic disease, trauma, organic solvents, mineral oils and different psychosocial factors. For both cases and controls blood samples are taken for analysis of putative risk genes since environmental exposures probably contribute to disease only in individuals with certain genotypes. Today data from 1100 cases and 2200 controls have been gathered and interesting findings have emerged.
<b>3. specific subtopics within the research line:</b>
Risk factors for multiple sclerosis, gene-environment interaction
<b>4. contact person for interested students/teaching staff:</b>
Professor Lars Alfredsson, PhD, Institute of Environmental Medicine, e-mail: <a href="mailto:Lars.Alfredsson@ki.se">Lars.Alfredsson@ki.se</a>
<b>5. Field of research (for example: epidemiology, public health, statistics, medicine):</b>
Epidemiology
<b>6. for which levels the research line is applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)</b>
Doctorate, post-doctorate

<b>1. research line 7:</b>
Musculoskeletal Epidemiology
<b>2. general description of the research line:</b>
We have established a centre for research concerning musculoskeletal disorders, especially back and neck pain, called Musculoskeletal Intervention Centre (MUSIC). The centre takes a holistic approach of the care giving area of back and neck pain with the patient in focus, and creates interdisciplinary and inter-professional translational research with clinically active representatives for primary care. The aim of the activity is mainly to develop a mutual understanding between the professions so that empiric experiences are included in projects with the aim of evaluate and secure the quality of methods and models for diagnostics and rehabilitation of neck and back pain and other musculoskeletal disorders. The activity in MUSIC is based on experiences and results from the Music-Norrtälje project, and from The Bone and Joint Decade 2000–2010 Task Force on Neck Pain and Its Associated Disorders.
<b>3. specific subtopics within the research line:</b>
Development of evidence based care by performing clinical studies, exploring prognostic factors for back and neck pain, including whiplash-associated disorders (WAD) by analyses of extensive prospective cohort studies, validation of outcome instruments.
<b>4. contact person for interested students/teaching staff:</b>
Eva Skillgate, Dr Med Sci, DN, Institute of Environmental Medicine, e-mail: <a href="mailto:Eva.Skillgate@ki.se">Eva.Skillgate@ki.se</a>
<b>5. Field of research (for example: epidemiology, public health, statistics, medicine):</b>
Epidemiology, manual therapy, public health
<b>6. for which levels the research line is applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)</b>
Doctorate, post-doctorate



<b>1. research line 8:</b>
Environmental Health - Toxicology
<b>2. general description of the research line:</b>
The research in toxicology aims at identifying and characterizing molecular and biochemical processes that are induced at exposures to toxic agents.
<b>3. specific subtopics within the research line:</b>
<ul style="list-style-type: none"> <li>- Mechanisms of cell death</li> <li>- Development of alternative screening methods</li> <li>- Mechanisms of action of endocrine disrupting substances</li> <li>- Metals and health</li> <li>- Chemicals in the work environment</li> <li>- Nanotoxicology</li> <li>- The function of the Ah-receptor</li> <li>- Mathematic modeling, toxicokinetics and methods of risk assessment</li> </ul>
<b>4. contact person for interested students/teaching staff:</b>
Professor Agneta Rannug PhD, Institute of Environmental Medicine, e-mail: <a href="mailto:Agneta.Rannug@ki.se">Agneta.Rannug@ki.se</a>
<b>5. Field of research (for example: epidemiology, public health, statistics, medicine):</b>
Public health, biomedicine
<b>6. for which levels the research line is applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)</b>
Doctorate, post-doctorate