

10.15-10.45.Theme: Visceral pain

Why is Irritable Bowel Syndrome painful, and how can we help these patients?

Hans Törnblom, Gothenburg University

In my lecture I will give a basic overview of the broader topic disorders of gut-brain interaction, previously known as functional gastrointestinal disorders. Based on my extensive research on the link between the core symptoms of irritable bowel syndrome, among them abdominal pain, and measures of gut function, I will provide an update on best clinical practice in IBS.



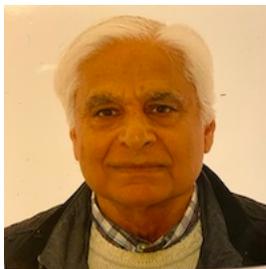
Hans Törnblom is a Consultant Gastroenterologist and Hepatologist at Sahlgrenska University Hospital in Gothenburg, Sweden, a tertiary referral center for complex intestinal problems, particularly within the field of neurogastroenterology. He is co-chair in the Rome Foundation Gastroduodenal disorders committee, former scientific secretary of the Scandinavian Association for Gastrointestinal Motility (SAGIM) as well as the Swedish Society of Gastroenterology.

His current research includes a wide area of translational and basic science studies, involving pathogenetic and pathophysiologic mechanisms in disorders of gut-brain interaction and their possible link to symptoms, particularly in irritable bowel syndrome (IBS). In studies of severe IBS, enteral dysmotility and intestinal pseudo-obstruction, a thorough knowledge of both diagnostic and treatment aspects of visceral neuropathies has resulted. Based on these, he has been part of a Rome Foundation Working Team report on the use of neuromodulators in the pharmacotherapy of disorders of gut-brain interaction.

10.45-11.15 The Harald Breivik lecture 2020

Why three drugs instead of just one? Unveiling the secrets of the *Breiviks blandning*,
Narinder Rawal, Örebro University

Breivik's blandning has been used at Rikshospitalet (Oslo) since 1982 to manage postoperative pain after major surgery. This epidural solution consists of a combination of local anaesthetic, fentanyl and adrenaline, it is widely used in Norway and Sweden but hardly anywhere else in the world. The role of adrenaline is considered crucial for the remarkable results achieved by Niemi and Breivik in two publications (1998 and 2002). Essentially, they say 'no adrenaline – no analgesia'. Current literature does not support this claim, after 30 years the jury is still out. Nevertheless, this author recommends Breivik's blandning for reasons that may be incomprehensible to many.



Narinder Rawal MD, PhD, FRCA (Hon), EDRA is a professor of Anaesthesiology at Örebro University, Sweden. He is on the Editorial Board of many regional anaesthesia and pain journals and the recipient of awards and honours from over 30 societies/institutions including the European Society of Regional Anaesthesia and Pain Therapy (ESRA) Carl Koller award, the American Society of Regional Anesthesia (ASRA) Labat award as well as FRCA from the Royal College of Anaesthetists. He was Secretary-General of ESRA from 2000-2009. Prof. Rawal is a founding member of European Diploma of Regional Anaesthesia (EDRA) examinations. He is also a founding member of several international pain

management initiatives including PROSPECT, PAINOUT and IASP-Acute Pain SIG. Currently he is co-chair EDRA examination and examiner for EFIC diploma.

Professor Rawal has published over 270 articles and written over 100 book chapters/review articles/books. He has published extensively on postoperative pain and its management, spinal opioids, epidural technique, combined spinal-epidural technique, regional techniques for pain management after day-case and inpatient surgery and organization of Acute Pain Services.

11.30-12.30 Theme: Glial cells and pain

Why study satellite glial cells in pain?

Sara Jager, KCL, London

The molecular and cellular reasons for the development of neuropathic pain are still not fully understood and involves changes in both the peripheral and central nervous system. The focus of this talk is the role of the peripheral nervous system, more specifically the satellite glial cells. Satellite glial cells support the primary sensory neurons and are believed to play a role in the development of neuropathic pain. This talk will give an overview of the research in these cells and highlight new advances within the field.



Sara E. Jager obtained her PhD degree from Aarhus University, Denmark where she researched satellite glial cells in the development of neuropathic pain. Following these studies, she secured a fellowship from the Lundbeck Foundation to continue her research at King's College London together with Professor Stephen McMahon and Dr Franziska Denk.

Why do we need to look closer at the peripheral nerve ending? New sensory organ in the skin

Patrik Enfors, Karolinska Institutet

That sensory neurons alone transduce mechanical stimuli was challenged by the discovery of nociceptive Schwann cells that can initiate pain. Thus, our results show that nociceptive nerves are not “free”, but similar to touch sensitive nerves, terminate in a sensory end-organ in mice. The sensory structure consists of the nociceptive nerves and specialized nociceptive Schwann cells forming a mesh-like organ in subepidermis with pain transduction initiated at both these cellular constituents. I will discuss the role of sensory Schwann cells for light touch and pain sensation and how the demise of these cells can lead to neuropathic-like pain in the mouse.



Dr. Enfors received his Ph.D. in molecular neurobiology in 1991 at Karolinska Institutet, where he studied with Håkan Persson. After postdoctoral studies with Rudolf Jaenisch at the Whitehead Institute for Biomedical Research between 1992-1994, Dr. Enfors returned to Sweden as a member of the junior faculty at Karolinska Institutet where he obtained a full professorship in 1999. Dr. Enfors is a member of the Royal Swedish Academy of Sciences, has served as head of the department of medical biochemistry and biophysics and as a member of the Board of Research.

13.30-15 Theme: Pain rehabilitation

Who benefits from Interdisciplinary Pain rehabilitation?

Björn Gerdle, Linköping University

Using large cohorts from the Swedish Quality Registry for Pain Rehabilitation (SQRP) the clinical pictures of patients with chronic pain will be presented. Furthermore, the indications for and the content of Interdisciplinary Pain Rehabilitation Programs (IPRPs) are introduced. The outcomes of IPRPs in large cohorts from SQRP are presented. Both the clinical picture and the outcomes of IPRP are analyzed in different subgroups.



Björn Gerdle is a senior consultant and a professor emeritus in Pain - and Rehabilitation Medicine at Linköping University hospital. He has published 332 peer-reviewed articles including systematic reviews and 30 book chapters mainly within the fields of chronic pain. Currently, his research areas are focused in two areas. The first area concerns peripheral and central biomarkers for chronic pain with a special focus on proteomics. In the second area, using the Swedish quality register for Pain Rehabilitation (SQRP), the effects of interdisciplinary pain rehabilitation programs are examined.

Why use the mHealth agile research lifecycle to develop a digital behavioral treatment for chronic pain?

Sara Bartels, Karolinska institute

In the context of chronic pain, pharmacological interventions are commonly insufficient to produce relief and recovery of functioning. Behavioural health treatment is necessary to generate lasting benefits across outcome domains. However, most people with chronic pain cannot easily access evidence-based behavioural interventions; but digital solutions may be able to bridge that gap.

This presentation will elaborate on the mHealth agile research lifecycle (Wilson et al., 2016), which mirrors traditional clinical research methods in its attention to safety and efficacy, while also accommodating the rapid and iterative development and evaluation required to produce effective, evidence-based, and sustainable digital innovations. How this framework can be applied will be demonstrated on the DAHLIA project, which aims to improve access to care for people with chronic pain in Sweden.



Dr. Sara Laureen Bartels works as a postdoctoral researcher at Karolinska Institutet, Department of Clinical Neuroscience, in the research group of Dr. Rikard Wicksell. Dr. Bartels is passionate about understanding and improving well-being in everyday life, and facilitating access to care through digital solutions. Her research focuses on the development, evaluation and implementation of digital psychosocial interventions for people with complex health issues, such as chronic pain, cognitive problems, or caregivers of people with dementia. Furthermore, Dr. Bartels is involved in studies using the experience sampling method and single case experimental design. She worked in Germany, the Netherlands, the UK, and Sweden with multi-disciplinary, international teams and is a Marie-Curie alumni.

Why is physical exercise beneficial in chronic pain?

Henrik Bjarke Vægter, University of Southern Denmark

In individuals with chronic pain, physical exercise can induce hypoalgesia in addition to several other physical and mental benefits thus serving as a promising evidence-based treatment for many chronic musculoskeletal pain conditions. However, individuals with chronic pain often experience several barriers to exercising such as increases in pain and beliefs that hurt equals harm. Possible mechanisms underlying these barriers will be discussed from a mechanistic point of view and possible implications for rehabilitation will be addressed.



Henrik Bjarke Vaegter is in a position as Associate Professor in Physiotherapy at the Department of Clinical Research at the University of Southern Denmark and is head of the Pain Research Group at the interdisciplinary Pain Center at the University Hospital Odense. Henrik received his bachelor in Physiotherapy in 2004 and holds a PhD in Pain Neuroscience from Aalborg University, Denmark and a MSc degree in Pain Management from University of Edinburgh, Scotland. His research focuses on interdisciplinary rehabilitation and clinical and experimental manifestations of chronic pain with a special focus on the effect of exercise on pain sensitivity and pain modulatory mechanisms.

SASP 2020: Friday 8 October

Session 10-16

10-11.30 Theme: Widespread pain

Why should the brain be considered in fibromyalgia?

Eva Kosek, Karolinska Institutet/Uppsala University

Fibromyalgia is a nociplastic pain condition characterized by profound derangements in endogenous pain modulation. Imaging studies of fibromyalgia patients have revealed aberrations in cerebral pain processing and a relative inability to activate descending pain inhibitory mechanisms. Furthermore, activation of glia cells, the immunocompetent cells of the central nervous system as well as increased concentrations of inflammatory markers in the cerebrospinal fluid indicate a neuroinflammatory response. The lecture will provide an overview of the most important findings and discuss their clinical relevance.



Eva Kosek, MD, PhD is holding a position as full Professor in Clinical Pain Research at the Department of Clinical Neuroscience, Karolinska Institute, Stockholm and at the Department of Surgical Science, Uppsala University, Uppsala, Sweden. She is a senior consultant at the Pain Center at Uppsala University Hospital. Dr. Kosek received her medical degree from the Uppsala University in 1986 and her PhD from the Karolinska Institute in 1996. She is a specialist in rehabilitation medicine since 2001 and pain relief since 2004 and has been clinically active for the most part of her professional carrier. Prof. Kosek's research focuses on pathophysiological mechanisms in chronic musculoskeletal pain, with special reference to central pain modulation and neuroinflammation in fibromyalgia, chronic low back pain, osteoarthritis and rheumatoid arthritis. The research is hypothesis driven and the research groups use a wide variety of techniques such as genetics, analysis of inflammatory substances in cerebrospinal fluid and blood, quantitative sensory testing and neuroimaging

(functional magnetic resonance imaging (fMRI), magnetic resonance spectroscopy (MRS), positron emission tomography (PET)).

Dr. Kosek was an elected Councilor of the International Association for the Study of Pain (IASP) 2012-18 and chairs the IASP Terminology Task Force. She is a member of several professional associations such as Scandinavian Association for the Study of Pain (SASP), the Swedish Medical Association and the Swedish Pain Society. Dr. Kosek is a section editor for the Scan J Pain and a reviewer for several scientific journals. She has published more than 100 scientific papers and lectured at conferences and symposia worldwide.

Why should the peripheral nerve be considered in fibromyalgia? (pending)
Nurcan Üçeyler, University of Würzburg

How could autoantibodies play a role in fibromyalgia?
Emerson Krock, Karolinska Institutet

Despite affecting approximately 2% of the population, the underlying causes of fibromyalgia remain elusive. We recently tested the hypothesis that autoreactive antibodies could drive symptoms of fibromyalgia. Remarkably, injecting IgG antibodies from fibromyalgia patients to mice induced evoked and non-evoked pain-like behaviour, whereas IgG from healthy individuals had no effect. Following injection, fibromyalgia antibodies accumulated in the dorsal root ganglia, primarily binding to satellite glia cells as well as neurons. IgG from fibromyalgia patients also had elevated binding to satellite glia cells and neurons in human DRG tissue. Finally, we found a subset of individuals with more severe fibromyalgia have elevated levels of satellite glia cell-binding IgG compared to those with more mild fibromyalgia. Taken together, our data suggests that autoreactive IgG antibodies and autoimmunity underlies a subset of fibromyalgia.



Emerson Krock completed his PhD at McGill University under the supervision of Lisbet Haglund and Laura Stone. At McGill, he investigated the role of toll-like receptors and nerve growth factor in intervertebral disc degeneration and chronic low back pain. Emerson then joined Professor Camilla Svensson's lab at Karolinska Institutet for his postdoc to study the role of autoantibodies in chronic pain conditions. His postdoc research has primarily focused on the pathogenic role of autoreactive antibodies in fibromyalgia and on the role of satellite glia cells in rheumatoid arthritis. He has been funded by fellowships from the International Association for the Study of Pain and the Canadian Institutes for Health Research.

11.45-12.15 Abstract Award presentations

2 x 10 min with 5 min QA (TBD)

13.30-15.00 Theme: Sleep and pain

The Sleep Revolution -health and technology

Erna Sif, Reykjavik University

A brief overview on sleep and its impact on health. The telemedicine aspects and technological advances in Sleep Revolution project as this type of approach could also be beneficial in the study of sleep and pain.



Dr. Erna Sif Arnardottir is an Assistant Professor at the Department of Engineering and Department of Computer Science at Reykjavik University, Iceland. She is also the Director of the Reykjavik University Sleep Institute and has over 15 years of experience within the field of clinical and scientific sleep research. Dr. Arnardottir is the Principal Investigator of the EU Horizon 2020 grant, SLEEP REVOLUTION - Revolution of sleep diagnostics and personalized health care based on digital diagnostics and therapeutics with health data integration (#965417) from 2021-2025.

Why may shiftwork be a risk factor for pain?

Dagfinn Matre, National Institute of Occupational Health (STAMI)

Sleep disturbances seems to sensitize the pain system and may increase the risk for developing pain. In my talk I will present recent studies that have indicated why working at night may increase the risk for pain.



Dagfinn Matre has his PhD in biomedical engineering from Aalborg University, Denmark. His main interests is human experimental models, and the association between sleep and pain. He has special focus on occupational health and factors in working life associated with pain.

Why would the glymphatic system affect pain?

Lilius Tuomas, University of Helsinki

The glymphatic system is a recently recognised fluid flow pathway that allows the fast influx of cerebrospinal fluid to the brain to clear the parenchyma of endogenous waste such as amyloid-beta and lactate. Glymphatic clearance is high during sleep and certain anesthesia, implicating that sleep has a critical role in the brain clearance of harmful substances. The talk will discuss pharmacological modulation of the glymphatic system, its influence on the pharmacokinetics of intrathecal analgesics, and the potential involvement of glymphatic disturbance in the chronification of pain.



Tuomas Lilius, MD, PhD, is specialist in clinical pharmacology, adjunct professor of pharmacology at University of Helsinki and associate professor at the Center for Translational Neuromedicine, University of Copenhagen. He received his medical degree in 2012 and PhD in 2014 from the University of Helsinki. Dr. Lilius' research currently focuses on the glymphatic system, a recently recognised fluid flow pathway in the brain that allows the interchange of cerebrospinal fluid and brain interstitial fluid. His other lines of research focus on opioid pharmacology, pharmacokinetic interactions of anesthetics and analgesics, and the involvement of neuroinflammation in pain.

15.20-16 General assembly