

Annual Report 2010

Research Unit for Musculoskeletal Function and Physiotherapy

Institute of Sports Science and Clinical Biomechanics

University of Southern Denmark

Årsrapport 2010

Forskningsenheden for Muskuloskeletal Funktion og Fysioterapi

Dansk resume



UNIVERSITY OF SOUTHERN DENMARK

Årsrapport 2010

Forskningsenheden for Muskuloskeletal Funktion og Fysioterapi

Dansk resume (Summary in Danish)

INTRODUKTION

Forskningsenheden for Muskuloskeletal Funktion og Fysioterapi (FoF) blev først etableret som et forskningsinitiativ (Forskningsinitiativet for Fysioterapi, FiF) d. 1. maj 2007, men ændrede status til en permanent forskningsenhed d. 1. januar 2010. FoF er placeret på Institut for Idræt og Biomekanik, som er en del af Det Sundhedsvidenskabelige Fakultet på Syddansk Universitet. Forskningsenheden tilbyder et unikt forskningsmiljø for undersøgelse og forbedring af fysioterapeutiske behandlingsmetoder i samarbejde med forskere fra idrætsvidenskab, ortopædkirurgi og kiropraktik.

Mål

Det er FoF's mål at etablere universitetsbaseret og langsigtet forskning indenfor fysioterapifeltet. For at opnå dette mål stræber FoF efter at blive:

- kendt for den høje kvalitet af sin forskning
- respekteret som en forskningspartner indenfor det muskuloskeletale område såvel på instituttet som regionalt, nationalt og internationalt.
- anerkendt for at udvide det akademiske grundlag for fysioterapi
- værdsat for sit bidrag til sundhedsvæsenet

Finansiering

Forskningsenheden er et resultat af et samarbejde mellem Syddansk Universitet og Danske Fysioterapeuter og yderligere støtte fra Gigtforeningen og Praksisfonden. Oprindeligt etableredes enheden som et 5-årigt initiativ med et økonomisk grundlag til at ansætte forskere. Der var ikke økonomi til etablering og drift af forskningsprojekterne, som blev søgt støttet gennem ansøgninger til eksterne finansieringskilder.

Med udsigten til at den oprindelig finansiering udløb, accepterede Syddansk Universitet at overtage finansieringen af en fuldtids professor og leder af forskningsenheden fra 1. oktober 2010. Denne støtte er givet i anerkendelsen af FoFs værdi for Det Sundhedsvidenskabelige Fakultet og sikrer den nødvendige kontinuitet og bæredygtighed i vejledning af ph.d.-studerende og gennemførelse af forskningsprojekter. Der vil være behov for yderligere økonomisk støtte af øvrige seniorforskere efterhånden som FoFs aktiviteter vokser og flere studerende søger om at gennemføre deres ph.d.-forløb på forskningsenheden.

Vurdering af forskningsenhedens indsats

En styringsgruppe bestående af medlemmer fra hver af de støttende organisationer bidrager med råd og fulgt op på om FoF har opfyldt de opstillede mål. I tillæg hertil er FoF så heldig at to internationalt anerkendte akademikere fungerer som konsulenter med løbende vejledning af studerende og evaluering af FoFs forsknings- og

uddannelsesaktiviteter.

Professor Maura Iversen blev adjungeret professor på FoF i juni 2009. Professor Iversen er professor og leder af Fysioterapiafdelingen på Bouve College of Health Sciences på Northeastern University, Boston og adjunkt i Medicin på Harvard University, Boston, USA. Hun er anerkendt for sin ekspertise i muskuloskeletal rehabilitering og uddannelse. I 2010 kunne FoF med glæde udvide staben med Stefan Lohmander. Professor Lohmander er ortopædkirurg og internationalt ledende ekspert i artrose med mere end 250 publikationer indenfor dette område, samt chefredaktør for det videnskabelige tidsskrift Osteoarthritis and Cartilage.

Opsummering af årets resultater

Årets to højdepunkter var dels at både FoF og FoF's professor og forskningsleder Ewa Roos blev en permanent del af SDU i januar 2010, og dels at forslaget til en kandidatuddannelse i fysioterapi opnåede fuld akkreditering.

Forskningsenheden fortsatte sin vækst i 2010 med opnåelse af 2.212.000,- kr i ekstern finansiering, produktionen af 41 peer-reviewed artikler og et udvidet netværk af nationale og internationale samarbejdspartnere. Antallet af ph.d.-studerende forøgedes til 7 indskrevne, 1 der har indsendt sin ansøgning og en enkelt ansat som videnskabelig assistent for at udarbejde sin ph.d.-ansøgning.

Et unikt karakteristika ved FoFs forskningsgruppe er dets engagement i at formidle dets forskningsresultater til forskellige grupper (ortopædkirurger, idrætsfolk, fysioterapeuter, reumatologer, biomekanikere, træningsfysiologer og såvel patienter, patientorganisationer som politikere) for at løfte FoFs profil og skabe fremtidige muligheder for fælles forskningsprojekter.

Annual Report 2010
Research Unit for Musculoskeletal Function and Physiotherapy
(Forskningsenheden for Muskuloskeletal Funktion og Fysioterapi)

INTRODUCTION

The Research Unit for Musculoskeletal Function and Physiotherapy (Forskningsenheden for Muskuloskeletal Funktion og Fysioterapi - FoF) became a research unit in its own right from 1 January 2010. FoF has evolved from its original form as the Research Initiative for Physiotherapy (Forskningsinitiativet for Fysioterapi - FiF), which was established on 1 May 2007. As part of the Institute of Sports Science and Clinical Biomechanics within the Faculty of Health Sciences at the University of Southern Denmark, it has provided a unique forum to study and improve Physiotherapy treatment, in collaboration with researchers from Sports Science, Orthopedic Surgery and Chiropractic.

Purpose

FoF's purpose has been to establish university-based, long-term research within the field of Physiotherapy. To achieve this end, FoF aspires to be:

- known for the high quality of its research,
- respected as a partner in the field of musculoskeletal research within the Institute, as well as regionally, nationally and internationally,
- acknowledged for expanding the academic foundation of the discipline of Physiotherapy, and
- valued for its contribution to the health sector.

Funding

The Research Unit is the result of collaboration between SDU and the Association of Danish Physiotherapists, with additional financial support from the Danish Rheumatism Association. It was initially established as a five-year initiative with funding provided to employ researchers. Funding for research projects was not provided; this has been sought through grant applications from external sources.

With the original funding about to expire, SDU agreed to take over the funding of the permanent full-time position of professor and head of the research unit from 1 October 2010. Such support is in recognition of the value of FoF to the Faculty of Health Sciences and provides the continuity essential for on-going PhD supervision and research project sustainability. Additional funding for other senior researcher positions will be required as FoF's research projects grow and more students seek to complete their PhDs within the Research Unit.

Performance monitoring

A steering committee comprised of members from each of the funding organisations has provided advice and monitored FoF's progress against established performance criteria.

In addition, FoF is very fortunate to have the support of two acclaimed academics to fulfil the role of international advisors who provide on-going mentorship, research evaluation and educational input. Professor Maura Iversen accepted her title as Adjunct Professor in FoF in June 2009. Professor Iversen is Professor and Chair, Department of Physical Therapy, Bouve College of Health Sciences, Northeastern University, Boston and an Assistant Professor in Medicine at Harvard University, Boston, USA. She is a recognised expert in musculoskeletal rehabilitation and education. In 2010, FoF was delighted to add Professor Stefan Lohmander to its faculty. Professor Lohmander is an orthopaedic surgeon and a world-leading osteoarthritis expert with more than 250 publications in the area and the current Editor-in-Chief of the journal *Osteoarthritis and Cartilage*.

Summary of the Year's achievements

The two main highlights for the year were firstly, FoF's becoming a research unit in its own right from 1 January 2010, with the professor and head of the Research Unit position receiving permanent funding from the University of Southern Denmark; and secondly, FoF's new Master of Science in Physiotherapy course (Kandidat i Fysioterapi) receiving full accreditation.

The Research Unit continued its growth in 2010 with DKK 2.212.000 in external funding for research, its production of 41 peer-reviewed manuscripts, and its expanded network of national and international collaborators. The number of PhD students in FoF increased to 7 students enrolled in PhD study, 1 student who has made application for PhD candidature, and another who is employed as a research assistant and preparing to enrol in the PhD program.

A unique attribute of the FoF research team is its commitment to disseminating its research outcomes to various groups (orthopaedics, sports, physiotherapy, rheumatology, biomechanics, exercise physiology, as well as to patients, patient organisations and politicians,) to raise the profile of FoF and create future opportunities for collaborative research projects.

FACULTY

Professor **Ewa Roos**, PhD (100% FTE) became a permanent professor at SDU during 2010 and continued in her role as Head of the Research Unit, building a cohesive team of researchers and administrative staff. Her first PhD student in FoF became the recipient of an 'Elite Research' travel grant in January 2010 awarded by the Ministry of Science, Technology and Innovation, which he used to fund three months of research work at the Centre for Exercise, Health and Sports Medicine (CHESM) at the Department of Physiotherapy, University of Melbourne in Australia. Between October and December, Ewa also went to Australia where she completed a three-month sabbatical as the only international collaborator on a research project funded by a National Health and Medical Research Council grant at the University of Melbourne. A further highlight during the year was the publication of one of Ewa's manuscripts in the high calibre New England Journal of Medicine.

Professor **Karen Søgaard** PhD (80 % FTE) acted as Head of the Research Unit during Ewa's absence in Australia. Karen established two research collaborations during the year, one with the Praxisfonden for an 'udviklingsklinik' and the other with the Sønderborg municipality. Both are associated with PhD projects that will help to demonstrate FoF's interest in translating research findings into clinical practice.

Associate Professor (Lektor) **Hans Lund** PhD (50 % FTE) continued his vital role as the individual responsible for marketing the progress of the research unit, maintaining collaborations and communication with stakeholders to advance the research and educational objectives of FoF. His leadership in the development of the background material and rationale for the introduction of a Master of Science in Physiotherapy (Kandidat i Fysioterapi) was rewarded with the course's full accreditation at the end of 2010.

Associate Professor (Lektor) **Birgit Juul-Kristensen** PhD (100% FTE) continued to coordinate the monthly meetings and learning exchanges for the PhD students, which involved oral presentations and discussions amongst FoF and the Orthopaedics Department at the Odense University Hospital, and seminars on various important research topics led by SDU and international academics. For the first time, Birgit accepted the role as main supervisor for one of FoF's PhD students.

External Associate Professor **Robin Christensen** PhD (20% FTE) provided methodological and statistical support to FoF researchers on an individual basis and through regular seminars.

Secretary **Jette Tromborg** (20 % FTE) and Academic Administrator **Suzanne Capell** MEd. MTESOL (25% FTE) provided the FoF faculty with administrative and language support throughout the year.

PHD STUDENTS

The following PhD students made significant progress in their respective research projects:

- Jonas Bloch Thorlund, MSc (Sports and Health). Accepted January 2008
- Carsten Juhl, Physiotherapist, MPH. Accepted July 2009
- Camilla Marie Larsen, Physiotherapist (who suspended her PhD for 12 months from September 2010 to give birth to, and look after, her twins). Accepted September 2009
- Allan Villadsen, MD. Accepted September 2009

Three PhD students were formally accepted into FoF's PhD program in 2010:

- Silje Stensrud, Physiotherapist. Accepted January 2010
- Inge Ris Hansen, Physiotherapist. Accepted March 2010
- Kristoffer Borbjerg Hare, MD. Accepted August 2010.

One student submitted her PhD applications during the year:

- Lotte Nygaard Andersen (Application submitted to the Faculty Autumn 2010)

RESEARCH ACTIVITIES

FoF's research staff members have spent the year focussing their attention on a range of collaborative research projects. The research activities within FoF all relate to physical activity, exercise, and muscle function. They are divided into three areas:

1. Prevention and treatment of joint injury and osteoarthritis (Leader: Ewa Roos)
2. Systematic reviews and meta-analyses of the literature (Leader: Hans Lund)
3. Prevention and treatment of neck and shoulder disorders (Leader: Karen Sjøgaard)

1. Prevention and treatment of joint injury and osteoarthritis

Four PhD-students are involved in this area. Their projects relate to the identification of muscle function in meniscectomized patients at high risk of developing knee osteoarthritis, exercise and surgery as treatments for meniscectomized patients, and exercise in patients waiting for hip or knee joint replacement.

PhD research projects

Professor Ewa Roos is the main supervisor for the following four PhD students:

- 1.1 Jonas Bloch Thorlund. Cand Scient, Inst of Sports Science and Clinical Biomechanics, University of Southern Denmark, Denmark. Title: Neuromuscular Function in Meniscectomized Individuals. Accepted January 2008
- 1.2 Allan Villadsen, MD, Inst of Sports Science and Clinical Biomechanics, University of Southern Denmark, Denmark. Title: Preoperative exercise of patients undergoing total hip or knee replacement – A randomised, controlled trial. Accepted September 2009
- 1.3 Silje Stensrud, PT, Inst of Sports Science and Clinical Biomechanics, University of Southern Denmark, Denmark. Title: Surgical or conservative treatment of degenerative meniscus tears in middle-aged patients. A randomized, controlled trial. Accepted January 2010
- 1.4 Kristoffer Borebjerg Hare, MD, Inst of Sports Science and Clinical Biomechanics, University of Southern Denmark, Denmark. Title: Arthroscopic partial meniscectomy in middle-aged patients. A randomized, sham-controlled trial with a 2-year follow-up. Accepted August 2010.

Additionally, Professor Roos has been co-supervising six other PhD students. She contributes her expertise to the fields of osteoarthritis in the young and middle-aged, exercise as treatment for joint injury and osteoarthritis and outcomes methodology through her work with many international task forces and collaborations, resulting in joint publications (see peer-reviewed publications).

2. Systematic reviews of the literature

One PhD-student is directly involved in this area, and his project is related to questions regarding who specifically will benefit from exercise amongst patients with knee osteoarthritis, and the dose-response relationship for exercise in knee osteoarthritis.

PhD research project

Associate Professor Hans Lund continues to supervise the following PhD project:

- 2.1 Carsten Juhl, PT, Inst of Sports Science and Clinical Biomechanics, University of Southern Denmark. Title: The effect of exercise therapy on pain, function and quality of life in osteoarthritis of the knee - A meta-regression analysis (MEREX). Accepted July 2009.

Hans Lund is also involved in the updating and preparation of two Cochrane Reviews (Aquatic exercise for knee and hip osteoarthritis, and Weight reduction for obese knee osteoarthritis patients). Other systematic reviews and clinical guidelines are prepared in cooperation with Robin Christensen, Ewa Roos and a number of international collaborators, concerning treatment for osteoarthritis. Hans also co-supervised three other PhD students in this research area.

3. Prevention and treatment of neck and shoulder disorders

Two PhD-students are working in this area. The first PhD is part of a larger research project, BIONEX, and relates to the reliability of the clinical diagnostic test for myalgic and impingement patients as well as the identification of scapular function in patients at high risk of developing chronic pain. Overall the BIONEX study focuses on the effect of biofeedback-guided physical exercise as treatment. The second PhD project is also part of a larger project on chronic neck pain (KRONEX) and focuses on the effect of combined physical exercise and behavioural training on whiplash patients.

PhD research projects

Professor Karen Sjøgaard is the main supervisor for the following PhD project:

- 3.1 Camilla M. Larsen, PT, Inst of Sports Science and Clinical Biomechanics, University of Southern Denmark. Title: Scapular function and selective activation of scapular stabilizing muscles in patients with neck/shoulder pain compared to a group of controls (ScapFunc). Accepted September 2009.

Karen Sjøgaard also contributes her expertise to the domain of work-related musculoskeletal disorders through national and international collaborations, resulting in joint publications (see peer-reviewed publications). She also co-supervised six other PhD students in this field of research in 2010.

Associate Professor Birgit Juul-Kristensen is the main supervisor for the following PhD project:

- 3.2 Inge Ris Hansen, PT, Inst of Sports Science and Clinical Biomechanics, University of Southern Denmark. Title: Physical and cognitive behavioural graded activity as a treatment for patients with chronic neck pain – a randomised controlled study with a one-year follow up. Accepted March 2010.

Birgit Juul-Kristensen is co-supervisor for another PhD student in the area of hypermobility, knee, neck and shoulder disorders, mainly in children.

Co-supervision of PhD students in 2010

Ewa Roos was co-supervisor for the following six PhD students:

- Kristian Thorborg, PT, Faculty of Health Sciences, University of Copenhagen. Preliminary title: Groin injury. Development and evaluation of outcome measures. (Main supervisor: Per Hölmich). Accepted January 2008
- Maria Örtqvist, PT, Karolinska Institute, Sweden. Preliminary title: Anterior cruciate ligament injury of the knee in children. (Main supervisor: Eva Broström) Accepted May 2008.
- Aksel Paulsen, MD, University of Southern Denmark. Title: Validation of patient-reported outcome in total hip arthroplasty. A longitudinal study of 6000 patients from the Danish Hip Arthroplasty Registry. (Main supervisor: Søren Overgaard). Accepted February 2009.
- Carsten Juhl, PT, University of Southern Denmark. Title: The effect of exercise therapy on pain, function and quality of life in osteoarthritis of the knee - A meta-regression analysis. (Main supervisor: Hans Lund). Accepted July 2009.
- Erika Omega Huber, PT, Maastricht University, Holland. Title: Role of early physiotherapy in rehabilitation of older adults after Total Knee Replacement. (Main supervisor: Rob de Bie). Accepted March 2010.
- Mikael Rathleff, PT, Aalborg University, Denmark. Title: Early intervention in teenagers with patellofemoral pain syndrome. (Main supervisor: Sten Rasmussen). Accepted September 2010.

Hans Lund was co-supervisor for the following three PhD students:

- Eva Wæhrens, OT, MSc, Umeå University, Sweden. Title: Measuring quality of occupational performance based on self-report and observation: Development and validation of instruments to evaluate ADL task performance. (Main supervisor: Anne Fischer). Eva successfully defended her thesis on May 2010.
- Eva Jespersen, PT, University of Southern Denmark, Denmark. Title: The importance of increased physical activity for current and future health of children and adolescents. An intervention project over three years in Svendborg municipality (Main supervisor: Niels Wedderkopp). Accepted December 2008.
- Lene Nyboe Jacobsen, PT, University of Aarhus, Denmark. Title: Metabolic syndrome in patients with newly diagnosed schizophrenia - prognosis and prevention. (Main supervisor: Poul Videbech) Accepted March 2010.

Karen Sjøgaard was co-supervisor for the following six PhD students:

- Afshin Samani Medico engineer, University of Aalborg. Title: Advanced biofeedback and trapezius muscular activity during computer work (Main supervisor: Pascal Madeleine) Afshin successfully defended his thesis on 23 September 2010
- Marie Birk Jørgensen, Cand Scient, National Research Centre for the Working Environment, Denmark. Title: Coordination training, cognitive behavioural training and health check, - an intervention among cleaners. (Main supervisor: Nicolas Petersen,) Accepted March 2007
- Jeanette R Christensen. Cand Scient San, OT, University of Aarhus, Denmark. Title: Physical activity, diet and cognitive behavioral training as a combined intervention for reduction of body weight among health care workers. (Main supervisor: Kristian Overgaard,) Accepted August 2007
- Anne Faber Hansen, Cand Scient, National Research Centre for the Working Environment, Denmark. Title: Interaction between physical capacity, work exposure and future health, sickness absence and job status among Danish wage earners (A § 15.2 thesis) (Main supervisor: Karen Sjøgaard). (§ 15.2.). To be defended in 2011.
- Bibi Gram, Cand Scient, University of Southern Denmark, Denmark. Title: Musculoskeletal disorders among employees with physically heavy work and the importance of physical training in leisure time or during work time. (Main supervisor: Gisela Sjøgaard). Accepted March 2009.
- Inge Ris Hansen, PT, Inst of Sports Science and Clinical Biomechanics, University of Southern

Denmark, Denmark. Title: Physical and cognitive behavioural graded activity as a treatment for patients with chronic neck pain – a randomised controlled study with a one-year follow up. (Main supervisor: Birgit Juul-Kristensen). Accepted March 2010.

Birgit Juul-Kristensen was co-supervisor for the following PhD student:

- Camilla M. Larsen, PT, Inst of Sports Science and Clinical Biomechanics, University of Southern Denmark. Title: Scapular function and selective activation of scapular stabilizing muscles in patients with neck/shoulder pain compared to a group of controls. Accepted September 2009.

Examiner duties

Three FoF staff members assisted with the oral examination of the following PhD students:

- On 12 May 2010, **Ewa Roos** was first opponent at Heidi Kapstad's oral defense of her PhD entitled 'Pain and health status in patients with osteoarthritis of the hip or knee undergoing joint replacement surgery. Measurement issues and outcomes'. Heidi has been studying at the Department of Public Health, Division of Nursing Science, University of Bergen, Norway.
- On 5 February 2010; **Karen Søgard** was second opponent at Vegaard Strom's oral defense of his PhD entitled "': 'Shoulder and neck pain during office work – the significance of muscle activity and microcirculation'. Vegaard has been studying at the Faculty of Medicine, University of Oslo, Norway.
- On 8 April 2010, **Karen Søgard** was first opponent at Vigdis Schnell Husby's oral defense of her PhD entitled 'Rehabilitation of patients undergoing total hip arthroplasty. With focus on muscle strength, walking and aerobic endurance performance'. Vigdis has been studying at the Faculty of Medicine, Norwegian University of Science and Technology (NTNU) Trondheim, Norway.
- On 20 and 21 August 2010, **Karen Søgard** was opponent at Harri Piitulainen's oral defense of his PhD entitled 'Functional adaptation of sarcolemma to physical stress'. Harri has been studying at the University of Jyväskylä, Finland.
- On 31 August, **Hans Lund** was second opponent at Christian Couppé's oral defense of his PhD entitled 'Human Tendon Response to Loading, Unloading and Aging'. Christian has been studying at the University of Copenhagen, Denmark.
- On 7 October, **Hans Lund** was first opponent at Hilde Stendal Robinson's oral defense of her PhD entitled 'Pelvic girdle pain and disability during and after pregnancy. A cohort study'. Hilde has been studying at the University of Oslo, Norway.

Master research projects

Karen Søgard was the main supervisor for the following Master student:

- Jakob Vinther (MSS), University of Southern Denmark. Title: 'The moment arm of the patellar tendon in the knee'. Defended his Master thesis in September 2010.

Hans Lund was the main supervisor for the following Master students:

- Line Rokkedahl Nielsen (MR), University of Southern Denmark. Title: 'Can physical function predict discharge destination for the elderly who are admitted to geriatric rehabilitation?' Defended her Master thesis in August 2010.
- Peter Larsen (MR), University of Southern Denmark. Title: 'Anterior knee pain and limitations in activity and participation after intramedullary nailing of tibial shaft fracture'. Defended his Master thesis in August 2010.
- Lisbeth Fog (MR) University of Southern Denmark. Title: 'Is the implementation of new mono-disciplinary approaches a particular challenge in an interdisciplinary practice?' Defended her Master thesis in August 2010.

- Morten Nielsen (MFT), University of Southern Denmark. Title: ‘Biomechanical changes in hip and ankle joints in people with knee arthritis’. Defended his Master thesis in August 2010.

Birgit Juul-Kristensen was the main supervisor for the following Master students:

- Brian Clausen (Cand.Scient.San.) University of Southern Denmark. Title: Do patients with whiplash associated disorders have reduced balance and neuromuscular control? Defended his Master thesis in October.
- Heidi Tegner, (Cand.Scient.San.) University of Copenhagen. Title: ‘Gait analysis - is there a difference in gait between adults with and without Generalised Joint Hypermobility?’ Defended her Master thesis in August 2010.
- Pia Damgaard (MR), University of Southern Denmark. Title: ‘Evidence for physiotherapy for patients with chronic neck pain – a systematic review’. Defended her Master thesis in August 2010.

In addition, Birgit, Karen and Hans also assisted in the supervision of a number of Bachelor research projects.

Research collaborations

International collaborations

FoF has consolidated and extended its international reach during the year. International collaborations include:

- The University of Melbourne, Australia: Ewa Roos became an Honorary Professorial Fellow at the University of Melbourne and spent a three-month sabbatical at the University from October 2010. She is the only international clinical investigator in the NHMRC-funded (AUD 700,000) application entitled “Neuromuscular exercise: a novel treatment to reduce symptoms and joint load in medial knee osteoarthritis”. The main applicant is Professor Kim Bennell, Director of the Centre for Health, Exercise and Sports Medicine, School of Physiotherapy, University of Melbourne, Australia. During her sabbatical, Ewa was also affiliated with the Department of Mechanical Engineering where she collaborated with Kay Crossley and Natalie Collins on Patient-Reported Outcomes for use in the knee and the patello-femoral joint.
- The Department of Nursing Science and Health, Oslo University: FoF is one of the collaborators in a Norwegian grant application (NOK 32 million) on “Musculoskeletal disorders and physiotherapy in primary health care, connecting knowledge from clinical practice, epidemiology and experimental research”. The main applicant is Professor Nina Vøllestad, University of Oslo, Norway.
- The Norwegian Centre for Active Rehabilitation, Oslo University, Norway: Ewa Roos and Associate Professor and Chairman of Research, May Arna Risberg are co-supervising a PhD student enrolled at SDU in Denmark but collecting her data in Oslo, Norway.
- The European group who are preparing European Guidelines for Osteoarthritis in the context of the European League Against Rheumatism (EULAR)
- Collaboration with research groups, in addition to those above, in Australia, Belgium, Canada, Holland, Norway, Sweden, Switzerland, UK and the USA has resulted in collaborative publications (see peer-reviewed publications) and joint grant applications:
 - Prince Of Wales Medical Research Centre, Sydney, Australia: Senior Research Fellows, Simon Gandevia, MD and Janet LTaylor MD.
 - Department of Rehabilitation Sciences and Physiotherapy, Faculty of Health Sciences and Medicine, Ghent University, Belgium: Associate Professor Ann Cools.
 - Department of Clinical Epidemiology & Biostatistics, McMaster University, Hamilton, Ontario, Canada: Professor Gordon Guyatt.

- Roessingh Research and Development, Enschede and the University of Twente, Enschede, The Netherlands: Professor Miriam Vollenbroek Hytten and Professor Hermie Hermens.
- Institute of Nursing and Health Sciences, Faculty of Medicine, University of Oslo, Norway: Professor Kåre Birger Hagan.
- Karolinska Institute, Sweden: Eva Broström PT, PhD, Director of Gait Lab at Astrid Lindgrens Children's Hospital; Mimmi Örtqvist PhD student
- Lund University, Sweden: Associate Professor Eva Ageberg.
- Division of Occupational Therapy, Department of Community Medicine and Rehabilitation Umeå University, Sweden: Professor Anne G. Fisher, ScD, OTR; Eva Wæhrens PhD student.
- Center for Ageing, University of Zurich, Switzerland: Professor Heike Bischoff-Ferrari MD; Omega Huber PhD-student.
- Department of Orthopaedic Surgery & Rehabilitation Medicine, Leiden University Medical Centre, Leiden, The Netherlands: Jurriaan H. de Groot
- University of Applied Sciences, Amsterdam School of Health Professions, Amsterdam Zuid-Ooost, The Netherlands: Raoul H.H.Engelbert.
- Academic Rheumatology, Medical & Surgical Sciences, City Hospital, Nottingham, UK: Associate Professor Weiya Zhang.
- Harvard Medical School, Massachusetts General Hospital, Boston, USA: Associate Professor Henrik Malchau MD, Co-director The Harris Orthopaedic Biomechanics and Biomaterials Laboratory; Donna Scarborough PhD student.

National collaborations

FoF further developed existing relationships, and established new relationships, with a variety of Danish research organisations.

Research organisation	Collaborators
SDU (University of Southern Denmark)	Professor Per Aagaard, Professor Jan Hartvigsen, Professor Gisela Sjøgaard, Associate Professor Kirsten Kaya Roessler, Associate Professor Per Kjær, Professor Niels Wedderkopp
OUH (Odense University Hospital)	Professor Søren Overgaard, Assistant Professor Anders Holsgaard Larsen, Lars Henrik Frich
The Spine Centre of Southern Denmark	Professor Claus Manniche, Bente Thommesen, Alice Kongsted
The Parker Institute, Frederiksberg	Henning Bliddal, Bente Danneskiold-Samsøe, Karen Ellegaard, Marius Henriksen and Else Marie Bartels
Rigshospitalet, Copenhagen University Hospital	Lars Remvig, Jens Halkjær Kristensen, Søren Jacobsen
University of Copenhagen	Nicolas C Petersen, Mogens Teisen, Erik B.Simonsen, Tine Alkjær, Peter K. Larsen, Bente R.Jensen, Per Hölmich
University of Aalborg	Professor Deborah Falla, Professor Pascal Madeleine
University of Aarhus	Kristian Overgaard, Poul Videbech
NRCWE National Research Centre for the Working Environment	Andreas Holtermann, Lars L. Andersen
Nordic Institute of Clinical Chiropractic	Alice Kongsted

Local collaborations

The core staff members engaged undergraduate students from the local university colleges in a number of their research projects to broaden the learning experiences of these students while strengthening the bridge between undergraduate and post-graduate education and to promote the goals of FoF.

Visiting scientists

In addition to Professor Maura Iversen and Professor Stefan Lohmander, who kept in regular contact with FoF during the year, a number of international scientists participated in FoF's research projects, presentations, seminars, and mentoring activities:

- Senior Research Fellow Janet Taylor, PhD. Neuro Research Australia and University of New South Wales, Sydney, Australia
- Associate Professor Poul Jarle Mork, PhD. Movement and Sports Sciences Institute, Norwegian Science and Technology University, Trondheim, Norway.
- PhD student Krzysztof Fiok. Faculty of Transport, Warsaw University of Technology, Poland.
- Professor Nina Vøllestad, PhD. Professor and Head of Department of Institute of Nursing and Health Sciences, University of Oslo, Norway.
- Ulrik Røijezon, Dr. Med.Sc., Ph.D. Centre for Musculoskeletal Research (CBF), University of Gävle, Sweden.
- Research Fellow Divya Srinivasan, PhD. Department of Industrial Engineering, University of Michigan, Ann Arbor, Michigan, USA and Visiting Research Scientist, Center for Musculoskeletal Research, University of Gävle, Sweden.
- Associate Professor Urik Roizon, University of Gävle, Sweden.
- Eva-Maj Malmstrøm, Division Of Physiotherapy, Department of Health Sciences, Lund University, Sweden

Research institutions visited by FoF faculty

- Professor Kim Bennell, Director of the Centre for Health, Exercise and Sports Medicine, School of Physiotherapy, University of Melbourne, Australia.
- Associate Professor Jurriaan.de Groot, Department of Orthopaedic Surgery & Rehabilitation Medicine, Leiden University, Leiden, The Netherlands.
- Associate Professor Raoul Engelbert, University of Applied Sciences, Amsterdam School of Health Professions, Amsterdam Zuid-Oost, The Netherlands.

RESEARCH GRANTS

FoF academic staff attracted DKK 2,212,000 in external funding during 2010. These grants are listed below:

FoF as main applicant

1. Region of Southern Denmark's Research Pool: Physical and cognitive behavioural graded activity as treatment for patients with chronic neck pain – a randomised controlled trial with one year follow-up' (Kronex) Main applicant: **Birgit Juul-Kristensen** (DKK 1,000,000).
2. Region of Southern Denmark's Research Pool: Neuromuscular exercise and pharmacotherapy as treatments of mild and moderate knee osteoarthritis. Main applicant: **Ewa Roos** (DKK 500.000)

3. Region of Southern Denmark's PhD Pool: Neuromuscular exercise and pharmacotherapy as treatments for mild and moderate knee osteoarthritis. A randomized controlled trial with a focus on knee joint load and knee pain. Main applicant: **Ewa Roos** (DKK 500,000)
4. Rheumatism Association, Denmark: Neuromuscular function in patients at high risk of knee osteoarthritis, a follow-up study. Main applicant: **Jonas Bloch Thorlund** (DKK 75,000)
5. Rheumatism Association, Denmark: Muscle function and exercise in knee injury and knee osteoarthritis prevention. Main applicant: **Ewa M. Roos** (DKK 57,000)
6. Rheumatism Association, Denmark: Physical and cognitive behavioural graded activity as treatment for patients with chronic neck pain – a randomised controlled trial with one year follow up' (Kronex) Main applicant: **Birgit Juul-Kristensen** (DKK 50,000).
7. Danish Society of Polio and Accident Victims (PTU): Physical and cognitive behavioural graded activity as treatment for patients with chronic neck pain – a randomised controlled trial with one year follow up' (Kronex) Main applicant: **Birgit Juul-Kristensen** (DKK 30,000).

As co-applicants, FoF staff helped to attract additional external funding:

FoF as co-applicant

8. National Health and Medical Research Council, Australia: Neuromuscular exercise: a novel treatment to reduce symptoms and joint load in medial knee osteoarthritis. Co-applicant: **Ewa Roos** (Main applicant: Kim Bennell) (AUD 700,000/DKK 3,875,000)
9. Work Environment Research Foundation. Physical work demands and fitness – Implications for cardiovascular disease. Co-applicant: **Karen Søgaard** (Main applicant: Andreas Holtermann) (DKK 3,800,000)
10. Sophies Minde Ortopedi AS: The effect of arthroscopic partial meniscectomy or exercise therapy as treatment for degenerative meniscus tears in middle-aged patients. A randomized, controlled trial. Co-applicant: **Ewa Roos** (Main applicant: **Silje Stensrud**) (NOK 391 240/DKK 372,000).
11. The Obelske Family Foundation: Treatment of moderate to severe knee OA. An RCT on total joint replacement vs. non-surgical. Co-applicant: **Ewa Roos** (Main applicant: Sten Rasmussen) (DKK 189,700)
12. Rheumatism Association, Denmark: Treatment of moderate to severe knee OA. An RCT on total joint replacement vs. non-surgical treatment Co-applicant: **Ewa Roos** (Main applicant: Ole H. Simonsen) (DKK 150,000)
13. Rheumatism Association, Denmark: Early treatment of children and adolescents with anterior knee pain. Co-applicant: **Ewa Roos** (Main applicant: Michael Skovdal Rathleff) (DKK 125,000)

PEER-REVIEWED PUBLICATIONS

The FoF faculty sustained its high level of productivity during 2010 with 31 manuscripts published, 6 E-pub ahead of print, 2 reviews and a further 2 accepted for publication:

Published manuscripts

1. Afshin Samani, Andreas Holtermann, **Karen Søgaard**, Pascal Madeleine. Advanced biofeedback from surface electromyography signals using fuzzy system. *Medical and Biological Engineering & Computing*. 2010 Jun; 48(9):865-87. (doi: 10.1007/s11517-010-0651-9)
2. Afshin Samani, Andreas Holtermann, **Karen Søgaard**, Pascal Madeleine. Active biofeedback changes the spatial distribution of upper trapezius muscle activity during computer work. *Eur J Appl Physiol*. 2010 Sep;110(2):415-23.

3. Ageberg E, Bennell KL, Hunt MA, Simic M, **Roos EM**, Creaby M. Validity and inter-rater reliability of an observational clinical test of assessing medio-lateral knee motion during a single-limb mini squat. *BMC Musculoskeletal Disorders* 2010, 11:265.
4. Ageberg E, Herbertsson P, Forssblad M, **Roos EM**. Sex Differences in Patient-Reported Outcomes after ACL Reconstruction – Data from the Swedish Knee Ligament Register. *Am J Sports Med.* 2010 Jul;38(7):1334-42. Epub 2010 Apr 21.
5. Ageberg E, Link A, **Roos EM**. Feasibility of neuromuscular training in patients with severe hip or knee OA: The individualized goal-based NEMEX-TJR training program. *BMC Musculoskeletal Disorders* 2010, 11:126
6. Andersen LL, Blangsted AK, Nielsen PK, Hansen L, Vedsted P, Sjøgaard G, **Søgaard K**. Effect of leg-bicycling on oxygenation of relaxed neck/shoulder muscles. *Eur J Appl Physiol.* 2010 Sep;110(2):389-94.
7. Bartels EM, Bliddal H, Schøndorff PK, Altman RD, Zhang W, **Christensen R**. Symptomatic efficacy and safety of diacerein in the treatment of osteoarthritis: a meta-analysis of randomized placebo-controlled trials. *Osteoarthritis Cartilage.* 2010 Mar;18(3):289-96. PubMed PMID: 19857509.
8. **Christensen R**, Bliddal H. Is Phytalgi(R) a goldmine for osteoarthritis patients or is there something fishy about this nutraceutical? A summary of findings and risk-of-bias assessment. *Arthritis Res Ther.* 2010;12(1):105. PubMed PMID: 20156334; PubMed Central PMCID: PMC2875636.
9. Duval A, Maillefert JF, Gossec L, Laroche D, Tavernier C, **Roos EM**, Guillemin F, Ornetti P. Cross cultural adaptation and validation of the French version of the Rheumatoid and Arthritis Outcome Score (RAOS). *Clinical and Experimental Rheumatology* 2010, *Clin Exp Rheumatol.* 2010 Nov-Dec;28(6):806-12. Epub 2011 Jan 3.
10. Frobell R B, **Roos EM**, Roos HP, Ranstam J, Lohmander LS. A Randomized Trial of Treatment for Acute Anterior Cruciate Ligament Tear. *N Engl J Med.* 2010 Jul 22;363(4):331-42.
11. Gram B, **Christensen R**, Christiansen C, Gram J. Effects of nordic walking and exercise in type 2 diabetes mellitus: a randomized controlled trial. *Clin J Sport Med.* 2010 Sep;20(5):355-61. PubMed PMID: 20818193.
12. Hansen Å.M., Blangsted A.K., Hansen E.A., **Søgaard K**, Sjøgaard G. Physical activity, job demand-control, perceived stress-energy, and salivary cortisol in white-collar workers. *Int Arch Occup Environ Health* 2010 Feb;83(2):143-53.
13. Holtermann A, Hansen JV, Burr H, **Søgaard K**. Prognostic factors for long term sickness absence among employees with neck-shoulder and low-back pain. *Scand J Work Environ Health.* 2010 Jan;36(1):34-41.
14. Holtermann A, Jørgensen MB, Gram B, Christensen CR, Faber A, Overgaard K, Ektor-Andersen J, Mortensen OS, Sjøgaard G, **Søgaard K**. Worksite interventions for preventing physical deterioration among employees in job-groups with high physical work demands: Background, design and conceptual model of FINALE. *BMC Musculoskeletal Health. BMC Public Health* 2010 10:120. (doi:10.1186/1471-2458-10-120)
15. Holtermann A, Mork PJ, Andersen LL, Olsen HB, **Søgaard K**. The use of EMG biofeedback for learning of selective activation of intramuscular parts within the serratus anterior muscle. A novel approach for rehabilitation of scapular muscle imbalance. *J Electromyogr Kinesiol.* 2010 20(2):359-365.
16. Holtermann A, Mortensen O.S., Burr H., **Søgaard K**., Gyntelberg F., Suadicani P. Long work hours and physical fitness – 30-year risk of ischemic heart disease and all-cause mortality among middle-aged Caucasian men. *Heart.* 2010 Oct; 96(20):1638-44.

17. Holtermann A, Mortensen OS, Burr H, **Søgaard K**, Gyntelberg F, Suadicani P. Physical work demands, hypertension status, and risk of ischaemic heart disease and all-cause mortality in the Copenhagen Male Study. *Scand J Work Environ Health*. 2010 Nov;36(6):466-72.
18. Holtermann A, Mortensen OS, Burr H, **Søgaard K**, Gyntelberg F, Suadicani P. Physical fitness, physical activity at work and leisure, and risk of ischaemic heart disease and all-cause mortality among men with pre-existing cardiovascular disease. *Scand J Work Environ*. 2010 36(5):366–372.
19. Holtermann A, Mortensen O.S., Burr H., **Søgaard K.**, Gyntelberg F., Suadicani P. Physical demands at work, physical fitness, and risk of ischemic heart disease mortality. *Scand J Work Environ*. 2010 36(5):357-365.
20. Jørgensen MB, Andersen LL, Kirk N, Pedersen MT, **Søgaard K**, Holtermann A. Muscle activity during functional coordination training: Implications for strength gain and rehabilitation *J Strength Cond Res*. 2010 Jul;24(7):1732-9.
21. Jørgensen MB, Rasmussen CDN, Ekner D, **Søgaard K**. Successful Reach and Adoption of a workplace health promotion RCT targeting a group of high-risk workers. *BMC Med Res Methodol*. 2010 Jun 14;10(1):56
22. Lauridsen MB, Bliddal H, **Christensen R**, Danneskiold-Samsøe B, Bennett R, Keun H, Lindon JC, Nicholson JK, Dorff MH, Jaroszewski JW, Hansen SH, Cornett C. 1H NMR spectroscopy-based interventional metabolic phenotyping: a cohort study of rheumatoid arthritis patients. *J Proteome Res*. 2010 Sep 3;9(9):4545-53. PubMed PMID: 20701312.
23. Nielsen PK, Andersen LL, Olsen HB, Rosendal L, Sjøgaard G, **Søgaard K**. Effect of Physical Training on Pain Sensitivity and Trapezius Muscle Morphology *Muscle & Nerve*. 2010 Jun 41(6): 836-844. (doi: 10.1002/mus.21577)
24. Ornetti P, Parratte S, Gossec L, Tevernier C, Argenson JN, **Roos EM**, Guillemin F, Maillefert JF. Cross-cultural adaptation and validation of the French version of the Hip dysfunction and Osteoarthritis Outcome Score (HOOS) in hip osteoarthritis patients. *Osteoarthritis Cartilage*. 2010 Apr;18(4):522-9. Epub 2009 Dec 29.
25. Remvig L, Duhn PH, Ullman S, Arokoski J, Jurvelin J, Safi,A, Jensen F, Farholt S, Hove H, **Juul-Kristensen B**. ‘Skin signs in Ehlers-Danlos Syndrome; clinical tests and para-clinical methods’ *Scand J Rheum*. 2010 Nov 39(6):511-517.
26. Sell L, Bültmann U, Rugulies R, Villadsen E, Faber A, **Søgaard K** Predicting long-term sickness absence and early retirement pension from self-reported Work Ability. *International Archives of Occupational and Environmental Health*. 2009 Oct; 82(9):1133-1138.
27. Sjøgaard G, Rosendal L, Kristiansen J, Blangsted A K, Skotte J, Larsson B, Gerdle B, Saltin B, **Søgaard K**. Muscle oxygenation and glycolysis in females with trapezius myalgia during stress and repetitive work using microdialysis and NIRS, *Eur J Appl Physiol*. 2010 108:657–669.
28. **Stensrud S**, Myklebust G, Kristianslund E, Bahr R, Krosshaug T. Correlation between two-dimensional video analysis and subjective assessment in evaluating knee control among elite female team handball players. *Br J Sports Med* doi: 10.1136/bjsm.2010.078287.
29. Thorborg K, **Roos EM**, Bartels EM, Petersen J, Hölmich P. Validity, Reliability And Responsiveness Of Patient-Reported Outcome Questionnaires When Assessing Hip And Groin Disability: A Systematic Review. *Br J Sports Med*. 2010 Dec;44(16):1186-96. Epub 2009 Aug 6.
30. **Thorlund JB**, Aagaard P, **Roos EM**. Thigh muscle strength, functional capacity and self-reported function in patients at high risk of knee osteoarthritis compared with controls. *Arthritis Care Res* 2010, 62(9):1244-1251.
31. Trulsson A, **Roos EM**, Ageberg E, Garwicz M. Relationships between postural orientation, self reported function, hop performance and muscle power in subjects with Anterior Cruciate Ligament injury. *BMC Musculoskeletal Disorders* 2010, 11:143.

E-pub ahead of print

32. Ellegaard K, **Christensen R**, Torp-Pedersen S, Terslev L, Holm CC, Kønig MJ, Jensen PS, Danneskiold-Samsøe B, Bliddal H. Ultrasound Doppler measurements predict success of treatment with anti-TNF- α drug in patients with rheumatoid arthritis: a prospective cohort study. *Rheumatology (Oxford)*. 2010 Nov 11. [Epub ahead of print] PubMed PMID: 21071479.
33. Gossec L, Paternotte S, Maillefert JF, Combescure C, Conaghan PG, Davis AM, Gunther KP, Hawker G, Hochberg M, Katz JN, Kloppenburg M, Lim K, Lohmander LS, Mahomed NN, March L, Pavelka K, Punzi L, **Roos EM**, Sanchez-Riera L, Singh JA, Suarez-Almazor ME, Dougados M, For the OARSI-OMERACT task force 'Total articular replacement as outcome measure in OA'. The role of pain and functional impairment in the decision to recommend total joint replacement in hip and knee osteoarthritis: an international cross-sectional study of 1909 patients. Report of the OARSI-OMERACT Task Force on total joint replacement. *Osteoarthritis Cartilage*. 2010 Oct 31. [Epub ahead of print]
34. Kristensen L, Jakobsen A, Bartels E, Geborek P, Bliddal H, Saxne T, Danneskiold-Samsøe B, **Christensen R**. The number needed to treat for second-generation biologics when treating established rheumatoid arthritis: a systematic quantitative review of randomized controlled trials. *Scand J Rheumatol*. 2010 Oct 15. [Epub ahead of print] PubMed PMID: 20950126.
35. **Thorlund JB**, **Roos EM**, Aagaard P. Neuromuscular function during stair descent in meniscectomized patients and controls. *Med Sci Sports Exerc*. 2010 Mar 19. [Epub ahead of print].
36. **Thorlund JB**, Jakobsen O, Madsen T, Christensen PA, Nedergaard A, Andersen JL, Suetta C, Aagaard P. Changes in muscle strength and morphology after muscle unloading in Special Forces missions. *Scand J Med Sci Sports*. 2010 Mar 16. [Epub ahead of print].
37. Vedsted P, **Søgaard K**, Blangsted A K, Madeleine P, and Sjøgaard G. Biofeedback effectiveness to reduce upper limb muscle activity during computer work is muscle specific and time pressure dependent. *J Electromyogr Kinesiol* [Epub ahead of print]

Accepted for publication

38. Jørgensen MB, Rasmussen CD, Carneiro IG, Flyvholm MA, Olesen K, Ekner D, **Søgaard K**, Holtermann A. Health disparities between immigrant and Danish cleaners. *Int Arch Occup Environ Health*. (Accepted)
39. **Juul-Kristensen B**, Hilt K, Enoch F, Remvig L, Sjøgaard G. 'Scapular dyskinesis in trapezius myalgia and intra-examiner reproducibility of clinical tests' *Phys Ther in Theory and Practice* (accepted).

Published reviews

40. **Roos EM**, Herzog W, Block J, Bennell K. Role of muscle weakness, afferent sensory dysfunction and exercise in knee OA. *Nat Rev Rheumatol*. 2010 Nov 30 [Epub ahead of print]
41. **Roos EM**, Engelhart L, Ranstam J, Anderson AF, Irrgang JJ, Marx R, Tegner Y, Davis AM. ICRS Recommendation Document: Patient-reported outcome instruments for use in patients with articular cartilage defects. *Cartilage* 2010, in press.

Publication impact factor

Ewa Roos' papers have been cited over 1750 times with 23 papers cited more than 25 times, H index of 23 (ISI Web of Science November 2010) placing her among the top physiotherapy researchers based on this parameter. Ewa is first or last author on 44/89 (49%) of her publications.

Karen Søgaard's papers have been cited over 1200 times with 30 papers cited more than 15 times. She has an H factor of 21 (ISI Web of Science December 2010). Karen is first or last author on 35/85 (41%) of her publications.

Reports

Hans Lund, Jens Ole Rasmussen, Anne-Mette Momsen, Claus Vinther Nielsen, Maura Daly Iversen. *Multidisciplinary teams in rehabilitation - an overview based on a literature study*. University of Southern Denmark and the Danish Interior and Health Ministries. 2010

Books, book chapters, letters to the editor

1. Frobell RF, **Roos EM**, Lohmander LS. Treatment for acute anterior cruciate ligament tear. Reply. *New Engl J Med* 2010; 363;19:1872.
2. **Lund, H.** Basisbog i Fysioterapi. Munksgaard, Denmark, 2010.
3. **Lund, H.** Træning - i forebyggelse, behandling og rehabilitering. 2nd Edition, Munksgaard, Denmark, 2010.

CONFERENCE PRESENTATIONS

During 2011, FoF's academic staff presented their research at conferences and seminars both internationally and within Denmark.

Invited lectures

International

Christensen R. *Author paid open access publishing and e-publication bias*. Cochrane Colloquium, Singapore, 18-22 October, 2010.

Christensen R. *Who wants to be a meta-analyst?* Fourth Edition Cochrane Colloquium, Singapore, 18-22 October, 2010.

Juul-Kristensen B. *Functional limitations in children and adults with Generalized joint hypermobility*. Nordic Hypermobility meeting, Helsingfors, Finland, August 2010.

Lund H. *Aquatic exercise for patients with knee or hip osteoarthritis*. EULAR, Rome, Italy. June 2010.

Roos EM. *So my knee is stable - what next? Knee injuries, surgery and osteoarthritis*. FC Better Lecture, (<http://www.opsmc.com.au/seminars-forums/fc-better-lecture/fc-better-lecture-history.html>) Olympic Park Sports Medicine Clinic, Melbourne, Australia, 17 November 2010

Roos EM. *Evidence for exercise therapy for patients with knee osteoarthritis*. European Society of Sports Traumatology, Knee Surgery and Arthroscopy (ESSKA), Oslo, Norway, June 2010.

Roos EM. *Non-operative treatment of the patient with hip and knee osteoarthritis*. NOF Congress (Nordic Society of Orthopedics), Århus May 2010.

Roos EM. *Physical therapy and Sports Medicine Research in the Nordic Countries*. Scandinavian Congress of Sports Medicine, Copenhagen, January 2010.

Søgaard K. *Functional and biofeedback guided selective activation pattern of subparts of trapezius muscle in patients with shoulder pain compared to controls*. World Biomechanics, Singapore 2010.

Søgaard K, Jørgensen MB, Gram B, Christensen JR, Faber A, Overgaard K, Ektor-Andersen J, Mortensen OS, Sjøgaard G, Holtermann A. *Interventions aiming at preserved work ability among employees in job groups with high physical demands, FINALE*. Premus, Angers, France, 2010

Søgaard K. *Physical activity intervention as prevention of work-related musculoskeletal disorders. Presentation of current RCT studies based on the concept of Intelligent Physical Activity; If physical activity is so healthy, why bother about ergonomics?; Interventions with biofeedback for prevention and treatment of work-related musculoskeletal neck and shoulder disorders.* Physiotherapists in Stavanger, Norway, 2 December 2010.

Søgaard K. *Interventions with biofeedback for prevention and treatment of work-related musculoskeletal neck shoulder disorders.* ISEK, Aalborg. 2010.

National

Juul-Kristensen B. *The latest knowledge on hypermobility, prevalence, diagnosis, consequences and training principles.* Members meeting of the Hypermobility Association, Silkeborg. (www.hypermobile.dk), March 2010.

Juul-Kristensen B. *Functional limitations in children and adults with generalized hypermobility and treatment options.* Ehlers Danlos Association Nordic Conference on Ehlers-Danlos syndrome, The Black Diamond, Copenhagen. September 2010.

Juul-Kristensen B. *Physical activity limitations in children and adults with generalized hypermobility and possible treatment approaches.* 10th anniversary meeting of the Hypermobility Association, Silkeborg. November 2010.

Lund H. *Should we treat the pain with laser, heat, cold, ultrasound, what is the evidence?* Arthritis Society Research Seminar, Aarhus University Hospital, Aarhus. March 2010.

Lund H. *Evidence-based practice - definition and approach.* Joint meeting of occupational therapists and physiotherapists in Southern Denmark, Kolding. March 2010.

Lund H. *Introduction to the concept of Rehabilitation.* Joint meeting of occupational therapists and physiotherapists in Southern Denmark, Kolding. March 2010

Lund H. *Introduction to the concept of Rehabilitation.* Langeland Municipality, Rudkøbing. March 2010.

Lund H. *Changes in understanding of the professional's tasks: promotion and physiotherapy as an example.* Conference on the professionalisation of allied health groups, Roskilde University, Roskilde. May 2010.

Lund H. *Rehabilitation and osteoarthritis (arthrosis): Interventions with evidence, scientific basis and important groups.* Arthritis Society's half-day meeting on the rehabilitation of people with arthritis, Copenhagen. May 2010.

Lund H. *Graduates in physiotherapy - our new partners.* Annual Meeting of the Danish Society of Chiropractic and Clinical Biomechanics, Horsens. November 2010.

Lund H. *The available evidence for exercise in the treatment of the chronically ill – what do we know?* Technological Institute, Taastrup. November 2010.

Abstracts and posters presented at conferences

International

1. Ageberg E, Bennell KL, Hunt MA, Simic M, **Roos EM**, Creaby M. Validity of a clinical test of assessing dynamic knee alignment during a single-limb mini squat. Osteoarthritis Research Society Internal (OARSI), Bruxelles, Belgium, September 2010.
2. Ageberg E, Engström G, Gerhardsson de Verdier M, Roloff J, **Roos EM**, Lohmander LS. Effect of leisure time physical activity and physical work load on severe knee or hip osteoarthritis: a population-based prospective cohort study. Osteoarthritis Research Society Internal (OARSI), Bruxelles, Belgium, September 2010.

3. Ageberg E, Herbertsson P, Forssblad M, **Roos EM**. Gender differences in patient-reported outcomes after ACL reconstruction - data from the Swedish knee ligament register" ESSKA 2010, Oslo, Norway, June 2010.
4. Ageberg A, Link A, **Roos EM**. Feasibility of neuromuscular training in patients with severe hip or knee OA: the individualized goal-based NEMEX-TJR training program. ESSKA 2010, Oslo, Norway, June 2010.
5. Binderup AT, Holtermann A, Arendt-Nielsen L, **Søgaard K**, Madeleine P. Spatial differences in pressure pain threshold from the trapezius muscle in cleaners and controls. ISEK, Aalborg, Denmark, 2010.
6. Bültmann U, Amick BC, Sell L, Holtermann A, **Søgaard K**. Measuring work limitations among workers in a manufacturing company in Denmark. Premus, Angers, France, 2010.
7. Burr H, Holtermann A, Krause N, **Søgaard K**, Mortensen OS. Does low decision authority explain why occupational physical activity is associated with all-cause mortality? ICOH, Amsterdam, The Netherlands, 2010.
8. Christensen JR Overgaard K. Holtermann A. **Søgaard K**. Physical activity as part of a combined worksite-based lifestyle intervention among health care workers. Nordic Conference 2010, Participation and effects of sports and exercise. Odense, Denmark, 28-30 October 2010.
9. Christensen JR, Overgaard K. Holtermann A, **Søgaard K**. Physical activity, diet and cognitive behavioral training as a combined worksite-based lifestyle intervention to reduce weight and musculoskeletal disorders in health care workers. Premus, Angers, France, 2010.
10. Enoch F, Kjaer P, Elkjaer A, Remvig L, **Juul-Kristensen B**. Reproducibility of tests for lumbopelvic neuro-motor control. FIMM Academy Congress, Amsterdam, The Netherlands, June 2010.
11. Enoch, F, Kjær, P, Elkjær, A, Remvig, L, Juul-Kristensen, B, 2010. 'Reproducibility of tests for lumbar motor control.' Dansk Idrætsmedicinsk Selskabs kongres 2011, Odense.
12. Faber A, Sell L, Hansen, JV, Burr H, Lund T, Holtermann A, **Søgaard K**. Does Muscle Strength Predict Future Musculoskeletal Symptoms and Sick Leave? Nordic Conference 2010, Participation and effects of sports and exercise. Odense, Denmark, 28-30 October 2010.
13. Gram B, Bachmann RH, Holtermann A, **Søgaard K**, Sjøgaard G. Effects of health check based work site physical exercise intervention among employees with physically heavy work on general and musculoskeletal health. A randomized controlled intervention study. Premus, Angers, France, 2010.
14. Gram B, Holtermann A, **Søgaard K**, Sjøgaard G. Self reported physical activity among construction workers. Nordic Conference 2010, Participation and effects of sports and exercise. Odense, Denmark, 28-30 October 2010.
15. Hoff M, Andersen L, **Juul-Kristensen B**, Wekre LL. I'm hypermobile and it hurts! – a study of hypermobility and pain in adults. Nordisk Hypermobility Conference, Helsingfors, Finland, August 2010.
16. Holtermann A, Jespersen T, Jørgensen MB, **Søgaard K**. Text messaging for measuring physical activity. Nordic Conference 2010, Participation and effects of sports and exercise. Odense, Denmark, 28-30 October 2010.
17. Holtermann A, Mortensen OS, Burr H, **Søgaard K**, Gyntelberg F, Suadicani P. Long work hours and physical fitness – 30-year risk of ischemic heart disease and all-cause mortality. ICOH, Amsterdam, The Netherlands, 2010.
18. Jensen, BR, Thorup, AS, Pedersen, MT, Halkjær Kristensen, J, Remvig, L, Simonsen, EB, **Juul-Kristensen, B**. Effects of Generalised Joint Hypermobility on knee function and motor control. ISEK, International Society of Electromyography and Kinesiology, Ålborg, Denmark, June 2010.

19. Jespersen E, Junge T, Wedderkopp N, **Juul-Kristensen B**. Inter-examiner and inter-method reproducibility of tests and criteria for Generalized Joint Hypermobility in Primary School children. Nordisk Hypermobility Conference, Helsingfors, Finland, August 2010.
20. Jespersen E, Junge T, **Juul-Kristensen B**, Franz C, Christiansen C, Klakk H, Wedderkopp N 'Generalised joint hypermobility and its relation to sports and leisure-time related injuries in school children 6-12 years: the Svendborg Project'. Danish Sports Medicine Association Congress 2010, Odense (abstract-poster).
21. **Juhl C, Lund H**, Guyatt GH, Zhang W, **Roos EM**, Christensen R. A hierarchy of patient-reported outcome measures for meta-analysis of knee osteoarthritis trials: empirical evidence from a survey of high impact journals. Osteoarthritis Research Society International (OARSI), Bruxelles, Belgium, September 2010
22. **Juul-Kristensen B**, Hansen, H, Simonsen, EB, Alkjær, T, Halkjær Kristensen, J, Jensen, BR, Remvig, L. Isokinetic knee muscle strength in 10-year-old children with Generalised Joint Hypermobility. ISEK, International Society of Electromyography and Kinesiology, Ålborg, Denmark, 16-19. June, p35, 2010 (abstract-poster).
23. **Juul-Kristensen B**, Hilt K, Enoch F, Remvig L, Sjøgaard G. Scapular dyskinesia in subjects with trapezius myalgia – the effect of physical training – a pilot study. Nordic Conference, Odense, Denmark, October 2010.
24. **Juul- Kristensen B**, Larsen, CM, Olsen, HB, Jensen, NL, Holtermann, A, **Søgaard, K**. Activity pattern of upper and lower trapezius during a functional task in patients with shoulder impingement and healthy controls. ISEK, International Society of Electromyography and Kinesiology, Ålborg, Denmark, June 2010.
25. **Juul- Kristensen B**, Larsen CM, Olsen HB, Jensen NL, Holtermann A, **Søgaard K**. Activation pattern of upper and lower trapezius during a functional task in patients with shoulder impingement compared to healthy control. ISEK, Aalborg, Denmark, 2010.
26. **Juul-Kristensen,B**, Simonsen,E.B., Alkjær,T., Larsen, PK, Jensen,B.R., Halkjær Kristensen,J, Remvig,L, 2010. 'Impaired knee strength balance and function in adults with Generalized Joint Hypermobility ' Osteoarthritis Research Society International Congress, (OARSI), Bruxelles, Belgium, September 22-25, 2010, p301 (abstract-poster).
27. Jørgensen MB, Faber A, Hansen K, Jespersen T, Ektor-Andersen J, Holtermann A, **Søgaard K**. Implementation and effect of physical coordination training and pain coping on musculoskeletal symptoms among cleaners: a randomised controlled trial. Nordic Conference 2010, Participation and effects of sports and exercise. Odense, Denmark, 28-30 October 2010.
28. Jørgensen MB, Skotte JH, Holtermann A, **Søgaard K**. Neck pain and postural stability among workers with high postural demands. Premus, Angers, France, 2010.
29. Lamm CJ, Rosdahl L, Ståhl E, Roloff J, Gerhardsson de Verdier M, **Roos E**, Lohmander LS, Engström G, Mellström C. Comparison of instruments for measuring health-related quality of life - a population-based study of chronic knee pain and knee osteoarthritis. Osteoarthritis Research Society International (OARSI), Bruxelles, Belgium, September 2010
30. Larsen CM, Holtermann A, Olsen HB, **Juul- Kristensen B**, **Søgaard K**. Neuromuscular function of the scapular stabilizing muscle with and without electromyographical biofeedback. OARSI, Brussels, Belgium, 2010.
31. Larsen CM, **Søgaard K**, Olsen HB, Jensen PB, Holtermann A, **Juul- Kristensen B**. Selective activation of neuromuscular compartments within the human trapezius muscle in patients with shoulder pain compared to a group of controls. ISEK, Aalborg, Denmark, 2010.
32. **Lund,H, Juul-Kristensen,B**. 'Muscle strength and proprioception in patients with knee OA – are they related/correlated?' Osteoarthritis Research Society International Congress, (OARSI), Brussels, Belgium, September 22-25, p295, 2010

33. Mellström C, Rosdahl L, Engström G, Rollof J, Gerhardsson de Verdier M, Lamm CJ, **Roos EM**, Lohmander LS. The costs associated with chronic knee pain and knee osteoarthritis - a population-based study from Sweden. Osteoarthritis Research Society International (OARSI), Bruxelles, Belgium, September 2010
34. Nikolajsen H, Larsen PK, Simonsen EB, Alkjær T, Kristensen JH, Jensen BR, Remvig L, **Juul-Kristensen B**. Gait pattern in 10-year-old children with Generalized Joint Hypermobility. ISEK, International Society of Electromyography and Kinesiology, Ålborg, Denmark, June 2010
35. Nikolajsen H, Larsen PK, Simonsen EB, Alkjær T, Kristensen JH, Jensen BR, Remvig L, **Juul-Kristensen B**. 'Altered knee and hip moments in children with generalised joint hypermobility during normal gait'. WCPT-congress 2010, Amsterdam (abstract-poster).
36. Nissen U, Roos E, **Juul Kristensen B**. 'Physio-Pilates in patients with chronic neck pain after whiplash – a pilot study.' Nordic Conference. October 2010, Odense (abstract-poster).
37. Paulsen A, Overgaard S, Pedersen A, **Roos EM**. Feasibility of four patient-reported outcome measures in the Danish Hip Arthroplasty Registry. A cross-sectional study of 6000 patients. European Hip Society, Athens, Greece, September 2010
38. Paulsen A, Pedersen A, Overgaard S, **Roos EM**. Feasibility of four patient-reported outcome measures in the Danish Hip Arthroplasty Registry. A cross-sectional study of 6000 patients. Nordic Orthopaedic Federation 55th Congress 2010, Aarhus, Denmark, May 2010
39. Rosdahl L, Lamm CJ, Engström G, Mellström C, Rollof J, Gerhardsson de Verdier M, Ståhl E, **Roos EM**, Lohmander LS. Generic and disease-specific health-related quality of life -a Swedish population-based study on chronic knee pain and knee osteoarthritis. Osteoarthritis Research Society International (OARSI), Bruxelles, Belgium, September 2010
40. Samani A., Holtermann A, **Søgaard K**, Madeleine P. Fuzzy inference based biofeedback changes EMG activity in Trapezius during standardized computer work. ISEK, Aalborg, Denmark, 2010.
41. Stensrud S, **Roos EM**, Risberg MA. The feasibility of a progressive twelve-week neuromuscular and strength training program in middle-aged patients with degenerative meniscus tears. Osteoarthritis Research Society International (OARSI), Bruxelles, Belgium, September 2010
42. **Søgaard K**. Functional and biofeedback guided selective activation pattern of subparts of trapezius muscle in patients with shoulder pain compared to controls. World Biomechanics, Singapore 2010.
43. **Søgaard K**. Interventions with biofeedback for prevention and treatment of work-related musculoskeletal neck shoulder disorders. ISEK, Aalborg, Denmark, 2010.
44. **Søgaard K**, Jørgensen MB, Gram B, Christensen JR, Faber A, Overgaard K, Ektor-Andersen J, Mortensen OS, Sjøgaard G, Holtermann A. Interventions aiming at preserved work ability among employees in job groups with high physical demands, FINALE. Premus, Angers, France, 2010.
45. **Søgaard K**, Larsen CM, Olsen HB, Jensen PB, Jensen NL, Holtermann A, **Juul-Kristensen B**. 'Functional and biofeedback guided selective activation pattern of subparts of trapezius muscle in patients with shoulder pain compared to controls'. World Biomechanics, Cape Town, South Africa, September, 2010 (abstract-poster).
46. Tegner H, Simonsen EB, Larsen PK, Alkjær T, Jensen BR, Halkjær Kristensen J, Remvig L, **Juul-Kristensen B**. 'Differences in gait pattern between adults with and without Generalised Joint Hypermobility?' Danish Sports Medicine Association Conference, 2010, Odense (abstract-poster).
47. **Thorlund JB**, **Roos EM**, Aagaard P. Neuromuscular function and peak ground reaction force are altered in the meniscectomized leg of patients at high risk of knee osteoarthritis. OARSI Conference, Brussels. Osteoarthritis and Cartilage 2010;18(2): 71-2
48. **Villadsen A**, **Roos EM**, Overgaard S, Holsgaard-Larsen A. Test-retest reliability of maximal leg muscle power and functional performance measures in patients with severe osteoarthritis (OA). Osteoarthritis Research Society International (OARSI), Bruxelles, Belgium, September 2010.

National

49. Burr H, Holtermann A, Mortensen OS, **Søgaard K**, Gyntelberg F, Suadicani P. Long work hours and physical fitness: 30-year risk of ischaemic heart disease and all-cause mortality. 7th Danish Stress Research Conference, Copenhagen, Denmark, November 2010.
50. Damgaard P, **Christensen R**, Bartels E, **Juul-Kristensen B**. 'Effect of physiotherapy in patients with chronic neck pain: a systematic review of randomised placebo or active-treatment controlled trials' Danish Sports Medicine Association Conference 2010, Odense (abstract-poster).
51. Hansen H, Simonsen EB, Alkjær T, Larsen PK, Halkjær Kristensen J, Jensen BR, Remvig, L, **Juul-Kristensen B**. 'Jumping height is larger in children with Generalised Joint Hypermobility'. Danish Sports Medicine Association Conference 2010, Odense (abstract-poster).
52. Holtermann A, **Søgaard K**. If physical activity is so healthy, why bother about ergonomics? Work Environment Conference, Nyborg, Denmark, November 2010.
53. **Juul-Kristensen B**, Larsen CM, Chreiteh SS, Holtermann A, **Søgaard K**. Activation pattern of trapezius and serratus anterior during functional tasks in patients. Danish Sports Medicine Association Conference, Odense, Denmark, 2010.*
54. Paulsen A, Pedersen A, Overgaard S, **Roos EM**. Feasibility and validity of four patient reported outcome measures in the Danish Hip Arthroplasty Registry. A cross-sectional study of 6000 patients. Danish Orthopaedic Society Annual Meeting, Copenhagen, Denmark, October 2010
55. **Villadsen A**, **Roos ER**, Overgaard S, Holsgaard-Larsen A. Outcome measurement of maximal leg muscle power and functional performance in patients with severe osteoarthritis (OA). Danish Orthopedics Society (DOS), Copenhagen, Denmark, October 2010

Lectures/ Courses

Søgaard, K. *Neck/shoulder pain. A tightrope between training and treatment?* Arthritis Day, Paarup, 12 October 2010.

Søgaard K. *If physical activity is so healthy, why bother about ergonomics?* Plenary session, Work Environment Conference, Nyborg, 9 November 2010.

Søgaard K. *Exercise as treatment for shoulder and neck pain.* Annual meeting, Danish Society for Musculoskeletal Medicine, Kolding, 12 November 2010.

Søgaard K. *If physical activity is so healthy, why bother about ergonomics?* Institute forum, Institute of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, 25 November 2010.

Lund H. and Albert H. *Writing a case report.* Danish Physiotherapy Association and the University of Southern Denmark, 13-14 January and 9 September, Odense, 2010.

Lund H. *Non-operative treatment for hip and knee arthritis.* Specialist Training in Orthopaedic Surgery, Main Training Course, Odense University Hospital, Odense, 18 January 2010.

Lund H. *Introduction to evidence-based practice.* Aarhus University Hospital, Aarhus, 18-19 March, 2010.

Lund H. *The purpose and target groups for rehabilitation.* The graduate program in healthcare, Aarhus University, Aarhus, 15 April, 2010.

Lund H. *Sprout Group / future PhD students.* Faculty of Health Sciences, University of Southern Denmark, Odense, 18 and 27 May, 2010.

Lund H. *Course in evidence-based practice.* North Jutland Region, Aalborg. 12-13 August and 13-14 September, 2010.

Lund H. *Introduction to rehabilitation and interdisciplinary collaboration.* Grindsted Hospital,

Region of Southern Denmark, Grindsted, 2 and 7 September, 2010.

Lund, H. *Introduction to ICF*. National Research Center for Cancer Rehabilitation, University of Southern Denmark, Grindsted, 17 November 2010.

Danish magazine

Andreas Holtermann, Ole Steen Mortensen, Hermann Burr, **Karen Søgaard**, Finn Gyntelberg, Poul Suadicani. People with high physical work demands or long hours per week - the benefits of being physically active during leisure time by having a high level of fitness. *Miljø og Sundhed* 2010

Awards

Article of the Month September 2010, Lund Medical Faculty Monthly. RB Frobell, **EM Roos**, HP Roos, J Ranstam, and LS. Lohmander. A Randomized Trial of Treatment for Acute Anterior Cruciate Ligament Tears. *The New England Journal of Medicine*, 363:331-42, 2010

EM Roos - Nominated for the 2010 Association of Rheumatology Health Professionals Distinguished Scholar Award.

INITIATIVES TO ENHANCE AND DISSEMINATE PHYSIOTHERAPY RESEARCH IN DENMARK

Conferences, symposiums and seminars

- Organizer of the Ergonomic Track, consisting of 5 sessions, World Biomechanics 2010, Singapore (KS)
- chair and co-organiser of Biofeedback Workshop ISEK 2010, Aalborg, Denmark (KS)
- reviewer and co-organiser of Ergonomic session, ISEK 2010, Aalborg, Denmark (KS)
- chair, reviewer and organiser of ISB-ISEK joint session 1 and 2, ISEK 2010, Aalborg, Denmark (KS)
- Chair and organizer Workplace as arena for health promotion. Symposium at PREMUS conference 2010, Angers, France. (KS)
- Organiser of the Nordic Conference 2010, Participation and effects of sports and exercise. 28-30 October 2010, Odense, Denmark (KS)
- Conference organiser (member of the program committee): 9th European Regional Conference on Rehabilitation / 3rd Danish Conference on Rehabilitation, Hotel Scandic, Copenhagen, 9-10 November, 2010 (HL)
- Co-Convenor: *Who wants to be a meta-analyst? Fourth Edition* Cochrane Colloquium, Singapore, 18-22 October, 2010 (RC)

Collaboration with physiotherapy educators in Denmark

- Four Physiotherapy students from the University College Lillebælt have undertaken their Bachelor projects under the supervision of FoF staff, and some have worked as student assistants in ongoing FoF research projects.

RAISING THE FOF PROFILE

The research staff members have played an active role in their respective professions, both within the academic environment and the broader health sector, and in doing so, have helped to raise the profile of FoF.

Ewa Roos

- is a member of the international OARSI-OMERACT Task Force on states of disease in osteoarthritis

- is a member of the international OARSI-OMERACT Task Force on total joint replacement
- is a member of the Evaluation Committee appointed by the Norwegian Knowledge Department for the Evaluation of Musculoskeletal Research in Norway
- is Clinical Advisor to The Foundation for Informed Medical Decision Making (FIMDM), Boston USA (www.informedmedicaldecisions.org/)
- has been appointed an expert by the Swedish National Board for Welfare 2007-2010 to establish guidelines for the treatment of musculoskeletal disorders (osteoarthritis).
- is a member of the Scientific Advisory Board for the Swedish Rheumatism Association
- is a member of the Scientific Advisory Board for the Association of Danish Physiotherapists.
- is a member of the Scientific Advisory Board for the Danish Rheumatism Association.
- is a member of the Scientific Advisory Board for the Veterinary Outcome Measures Program (OMP), University of California at Davis USA
- is Associate Editor of the journal Osteoarthritis and Cartilage
- was an external reviewer for Helse Sør-Øst Artrosegruppe, Oslo, Norway, Gardemoen Sept 2-3.

Karen Søgaard

- is a member of editorial board for Electromyography and Kinesiology.
- Is a member of the editorial board for International journal of Industrial Ergonomics
- is a member of 'Censorkorpset i Idræt, Danmark'
- is a member of the Council of the Danish Society of Biomechanics
- is a member of the Council for International Society of Electromyography and Kinesiology
- is a member of the advisory board for University of Gävle, Sweden
- is a scientific consultant and expert for the Danish National Campaign against work-related musculoskeletal disorders entitled 'Job og Krop'

Hans Lund

- is co-author with the Association of Danish Physiotherapists of national guidelines for knee osteoarthritis
- is instigator for establishing at SDU the Network for Researchers dealing with rehabilitation (NETFORE) www.sdu.dk/netfore
- is co-editor of a national work to prepare a White Book on rehabilitation entitled "From Concept to Practice"
- is a member of the Education Committee for the University Colleges of Zealand, Lillebaelt and Southern Denmark
- is a consultant to Munksgaard Denmark to provide advice on the publication of textbooks for physiotherapists.

Birgit Juul-Kristensen

- is a member of the Editorial Board for the journal International Musculoskeletal Medicine.

Robin Christensen

- is statistical editor in the Cochrane Musculoskeletal Group, and the Cochrane Public Health Group.
- is a member of the Editorial Board for Arthritis Care & Research.
- is a member of the editorial board for Arthritis Research and Therapy
- is a member of the Editorial Board for Journal of Drug Assessment
- is a methodology consultant for RADS (Rådet for Anvendelse af Dyr Sygehusmedicin) part of AMGROS