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dansk idræts medicinsk selskab

DANSK SELSKAB FOR SPORTSFYSIOTERAPI

DANSK SPORTSMEDICIN

MULTIPROFESSIONEL MUSKULOSKELETAL FORSKNING PÅ SYDDANSK UNIVERSITET

DSSF søger skribenter til at udarbejde litteraturstudier til Fagligt Katalog

Emne: Muskelskader i UE

DSSF søger 1 skribent til at beskrive evidensniveau for klinisk diagnosticering, behandling, og forebyggelse inden for muskelskader i UE. Afgrænsning af emnet fastsættes i samarbejde med vejlederne på projektet. Det forventes af kommende skribent, at han/ hun har uddannelse på minimum kandidatniveau, og dermed har erfaring med litteratursøgning og kritisk gennemgang af litteratur. Skribenten støttes og får evaluering af metodevejleder samt faglig vejleder.

Emne: Skulder Dislokation

DSSF søger 1 skribent til at beskrive evidensniveau for klinisk diagnosticering, behandling, og forebyggelse inden for emnet skulder dislokation. Afgrænsning af emnet fastsættes i samarbejde med vejlederne på projektet. Det forventes af kommende skribent, at han/hun har uddannelse på minimum kandidatniveau, og dermed har erfaring med litteratursøgning og kritisk gennemgang af litteratur. Skribenten støttes og får evaluering af metodevejleder samt faglig vejleder.

Tidsforbrug og økonomi:
Projektet starter med indledende møde, der fastsættes mellem skribent, vejledere samt formand for styregruppen.
Tidsmæssigt er der afsat 60 timer i alt til hver af skribenterne til udarbejdelsen af litteraturstudiet. Det forventes at opgaven fuldføres indenfor den angivne tidsramme på 16 uger. Timehonoreringen sker efter DSSFs takster med en honorering på 22.500 kr. for et katalog.

Skribenters opgaver:
o At afgrænse diagnosen/ lidelsen, der undersøges gennem litteraturstudiet i samarbejde med vejlederne.
o Benytte drejebogen til at udarbejde litteraturstudiet
o Benytte tjeklister til kritisk gennemgang af den fundne litteratur.

Mødedatoer:
Der er som udgangspunkt to faste møder: Et indledende møde og et slutevalueringsmøde med tutorerne. Projektet forventes at starte medio februar.

Publicering:
DSSF varetager publicering i Dansk Sports Medicin og på DSSF hjemmesiden
http://www.sportsfysioterapi.dk/Fagligt-katalog/

Ansøgningsfrist:
Den 1.2.2017 Ansøgning sendes til kk@idraetsfysioterapi.dk

Redaktionelt

Ansvarshavende redaktør, PT, PhD Heidi Klakk

Lige inden jul kunne man på SDUs hjemmeside, i pressen og på de sociale medier læse: "Institut for idræt og biomekanik (IOB) på Syddansk Universitet (SDU) er i den absolutte verdenselite". Instituttet ligger nr. 7 ud af 400 Universiteter i verden indenfor idrætsmedicinsk forskning målt på publikationer og citationer. En meget flot placering!

Denne udgave af Dansk Sportsmedicin bringer bidrag fra tre forskningsenheder på IOB; Forskningsenheden for Klinisk Biomekanik ledet af professor, kiropraktor, ph.d. Jan Hartvigsen, Forskningsenheden for Fysisk aktivitet og Sundhed i arbejdslivet ledet af professor, cand.scient. ph.d. Karen Søgaard, og Forskningsenheden for Muskuloskeletal Funktion og Fysioterapi (FOF) ledet af fysioterapeut , ph.d. og professor Ewa Roos.

Selv om de ansvarlige for indholdet af dette blad nok ikke kan tage hele æren for IOB og SDUs flotte placering på verdensranglisten, så er der god grund til at tro, at de har bidraget betragteligt. De tre professorer og forskningsledere er nemlig alle placeret på top 60 på en anden verdensrangliste over eksperter i muskuloskeletal smerte. Rangeringen er baseret på publikationer de sidste 10 år. På listen, hvor Jan Hartvigsen ligger nr. 1 i verden og Ewa Roos nr. 11, er der yderligere 3 danske forskere blandt de 10 bedste.

Det er vi i Dansk Sportsmedicin både glade og stolte over. Vi er hermed bl.a. talerør for den absolutte verdenselite inden for idrætsforskning.

At dansk idrætsmedicinsk forskning høster stor og stadigt stigende anerkendelse internationalt har vi bl.a. kunnet mærke på henvendelser på vores publikationer fra British Journal of Sports Medicine samt ved den stadigt stigende interesse for deltagelse i DSSF/DIMS årskongres fra både oplægsholdere, forskere og praktikere fra ind- og udland.

Som det fremgår af omfanget og indholdet af dette nummer er der tale om teamwork, hvor rigtigt mange fra de tre enheder har bidraget. Emnerne spænder vidt, og du kan bl.a. læse om det slidte knæ - træning eller kirurgi, skulderdiagnostik samt hypermobilitet og knæskader hos børn. Du kan også få mere at vide om, hvad GLA:D og KNEEMO egentlig står for og hvornår patienter egentlig tilfredse og hvordan vi bedst måler det?

Siden 2015 har Cochrane Musculoskeletal Review Group haft en nordisk satellit, som er placeret ved FOF. Her arbejdes der på at sammenfatte evidens for undersøgelse og behandling inden for bevægeapparats problematikker. Senest er der udgivet et systematisk review om effekten af øvelser i vand til folk med artrose og et nyt er på vej om evidens for effekten af vægttab ved knæ- og hofteartrose. De tre forskningsledere fortæller i artiklen "Collaboration is the future: Center for Muscle and Joint Health at SDU", hvordan tværprofessionelt forskningssamarbejde er både ønskeligt og givtigt.

Mit samarbejde omkring bladet har primært været gennem forskningsleder og professor Ewa Roos, som har lavet lederen til udgivelsen. Her gør hun på fineste vis rede for sit og forskningsenhedens virke de sidste 10 år samt bladets indhold - og inviterer oven i købet os alle til fødselsdag den 19. maj 2017.

God læselyst og tak til alle folkene i enhederne for jeres bidrag.

Se verdensranglisten, hvor IOB er placeret som nr. 7 her: *http://www.shanghairanking.com/Special-Focus-Institution-Ranking/Sport-Science-Schools-and-Departments-2016.html*

Se verdensranglisten indenfor "musculoskeletal and pain" her: *http://www.expertscape.com/ex/musculoskeletal+pain*

Deadlines for kommende numre:

Nummer	Artikelstof	Annoncer	Udkommer
2/2017	15. april	1. maj	i maj
3/2017	15. juli	1. august	i august
4/2017	15. oktober	1. november	i november
1/2018	15. januar	1. februar	i februar

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FORMÅL
DANSK SPORTSMEDICIN er et tidsskrift for Dansk Idrætsmedicinsk Selskab og Dansk Selskab for Sportsfysioterapi. Indholdet er tværfagligt klinisk domineret. Tidsskriftet skal kunne stimulere debat og diskussion af faglige og organisationsmæssige forhold. Dermed kan tidsskriftet være med til at påvirke udviklingen af idrætsmedicinen i Danmark.

TILGANG
Tidsskriftet udkommer online 4 gange årligt i månederne januar, maj, august og november. Målgruppen er medlemmer af Dansk Idrætsmedicinsk Selskab og Dansk Selskab for Sportsfysioterapi samt andre idrætsmedicinsk interesserede. Tilgangen er åben for alle.

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Dansk Sportsmedicin forholder sig retten til at arkivere og udgive al stof i tidsskriftet i elektronisk form.
Artikler i tidsskriftet repræsenterer ikke nødvendigvis redaktionens holdninger.

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Oplyses ved henvendelse til bladets adresse.

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Dansk
Idrætsmedicinsk
Selskab

v/ Tommy F. Øhlenschlæger, formand

Visioner

DIMS som organisation bygger på frivillig arbejdskraft. Mange i bestyrelsen, uddannelsesudvalg, webmaster m.fl. er engagerede men også travle folk.

DIMS-arbejdet er ulønnet og vil derfor oftest stå lavere rangeret end "levebrødsopgaver". DIMS kan derfor i perioder opleve at man "blot" holder hjulene i gang på de opgaver, som DIMS har (kongres, uddannelse, kurser, samarbejdspartnere, projekter m.m.). Dette "hverdagsarbejde" kører ganske glimrende og udvikler sig hen ad vejen.

Verden ændrer sig, og kravene til DIMS som organisation lige så. Ressourcerne til at løfte opgaverne er ikke uendelige, og det kan derfor ind imellem svare sig at bremse op og overveje, hvad det er man vil med DIMS som organisation fremadrettet.

Hvordan vil vi fordele de ressourcer, man har, på de fokuspunkter DIMS og dens medlemmer finder der skal have højeste prioritet?

DIMS´ bestyrelse valgte derfor i september 2016 at holde et visionsmøde over tre dage.

Her valgte vi nogle hovedområder og fokuspunkter som bestyrelsen fandt/finder vigtige og relevante for DIMS´ videre overlevelse. Da områderne var fundet og prioriteret, udvalgtes ansvarlige for opgaverne og der blev lagt nogle "milestones" for, hvornår delopgaver skulle være løst. Tidshorisonten for at have opnået målene er typisk mellem ét og fem år.

De fem hovedområder bestyrelsen valgte var: **Vidensformidling**, **Uddannelse**, **Bestyrelse**, **Eksterne relationer**, **Politik** og **Rekruttering**.

Under hvert område har vi så valgt mellem ét til fem fokuspunkter.

Hovedområder og fokuspunkter vil blive taget op på generalforsamlingen, så medlemmerne kan komme med deres besyv til bestyrelsens forslag.

Jeg vil kort præsentere nogle af områderne:

Vidensformidling (Dansk Sportsmedicin): Bladet som vi driver i samarbejde med DSSF, har allerede undergået store forandringer i 2016. Redaktørstrukturen er ændret og vi er gået fra papirform til elektronisk form. Vi vil først evaluere hvordan ændringerne er blevet modtaget. Her efter vil vi vurdere, om man kan udnytte det elektroniske medie endnu bedre. F.eks. gøre teksten mere interaktiv med links, videoer m.m. Vi vil også vurdere om hjemmesiden www.dansksportsmedicin.dk kan gøres mere levende, blive bedre integreret i DSSF´ og DIMS´ hjemmesider mm.

Bestyrelse: Bestyrelsen vil forsøge at optimere arbejdskraften i bestyrelsen. Herunder uddelegering af ansvarsområder og ikke mindst feedback på ansvarsområderne. Interne arbejdsgange vil løbende blive evalueret og reguleret/optimeret.

Eksterne relationer: DIMS har rigtigt mange samarbejdspartnere.

Som i alle andre forhold kan man ikke tage tingene for givet. Organisationer ændrer sig, tiden ændrer sig, opgaverne ændrer sig, personsammensætninger ændrer sig osv.

Forandringerne kræver også tilretning af samarbejdet med vores venner. Det er rigtig glædeligt at så mange organisationer og mennesker har den samme interesse omkring Idrætsmedicin, som vi har. Det gælder så om at finde de fælles interesseområder, som DIMS og vores samarbejdspartnere har, samt finde løsninger der være vil til gavn for alle involverede.

For eksempel er SAKS en utrolig vigtig samarbejdspartner for DIMS. Tidligere har der været sammenfald mellem bestyrelsen i SAKS og DIMS, hvorfor kommunikation og samarbejde har været "selvkørende". Bestyrelsessammenfald er der ikke længere, og derfor kræver det en anden tilgang til samarbejde, som DIMS måske ikke har haft nok opmærksomhed på de senere år. Vi er naturligvis rigtigt kede af, hvis organisationer som SAKS og DIMS, der har så meget til fælles, ikke har en fremtid sammen.

Vi vil i DIMS arbejde for at genskabe et tæt samarbejde med SAKS, så vi også i fremtiden vil kunne løfte fællesopgaver. DIMS´ udfordring med kommunikationen til SAKS har været en af årsagerne til, at vi har valgt en decideret strategi for vores eksterne relationer. Der er i 2016 lavet flere tiltag til genetablering af fællesopgaver med SAKS, disse vil blive fuldt effektueret i 2017, blandt andet med formandsskifte.

Rekruttering: DIMS er afhængig af medlemmer. Så vi er nødt til at have en pamflet af produkter, der er attraktive for medlemmerne. Der er et stigende antal lægestuderende og yngre læger, og det skulle gerne afspejle sig i stigende medlemstal over de næste år. Det vil kræve at vi får fat i de unge og gerne allerede i studietiden, hvorfor nogle af tiltagene vil gå på at supportere studenterorganisationerne på universiteterne.

Idrætsmedicinsk Årskongres 2017 nærmer sig. Kongressen har de senere år været en stor succes, og ud fra programmet ser det bestemt ud til kun at blive en endnu succesfuld kongres.

Derfor en stor tak til kongresudvalget og velkommen til alle medlemmerne.

Kongressen afholdes 2.-4.februar 2017 i København.

Tak for denne gang!

Tommy (2μ) Frisgaard Øhlenschlæger
Afgående formand DIMS

Dansk Selskab for Sportsfysioterapi

v/ Karen Kotila, formand

Godt Nytår til jer alle!

Nyt år betyder nye udfordringer – men det betyder også, at vi tager et godt granskende, kritisk blik på de opgaver vi har haft fokus på i 2016. Bestyrelsen arbejder efter fire hovedpunkter: økonomisk ansvarlighed, synlighed af sportsfysioterapi, medlemsvilkår og uddannelse. Under hvert punkt lægger bestyrelsen en toårig strategi og en opgavefordeling. Hvor et udvalg nedsættes vil et bestyrelsesmedlem være tovholder og involvere eksterne ressourcepersoner. Disse strategier og opgaver kan I læse mere om i årsberetningen 2016 eller høre mere om på generalforsamlingen torsdag d. 2. februar på SAS Radisson, Amager. Her vil jeg dog fremhæve tre tiltag, som vi i bestyrelsen har planlagt og søsat.

Det ene udsprang fra sidste års generalforsamling, hvor forsamlingen udtrykte ønske om at gøre Faglige Kataloger mere "spiselige". Faglige Kataloger er et litteraturstudie som sammenfatter evidensen for diagnosticering, forebyggelse og behandling/ træning af en diagnose eller tilstand. Emnet er altid sportsfysioterapeutisk relevant, men der kan selvfølgelig opstå spørgsmål som: er det relevant for MIN praksis, hvordan skal jeg FORSTÅ og ANVENDE denne test.

Derfor har bestyrelsen oprettet fyraftensmøder, som bliver lanceret i 2017 rundt om i landet. Herudover har vi oprettet "Introduktion til Sportsfysioterapi " til professionsskolerne. Med udgangspunkt i en case tager underviserne de studerende med på rejsen fra skaden opstår til tilbagevenden til sport, herunder hvilke kompetencer en sportsfysioterapeut benytter sig af. Underviserne vil introducere hvorledes disse kompetencer opnås gennem uddannelsesforløbet fra studerende til International anerkendt sportsfysioterapeut. Slutteligt vil vi berøre de dilemmaer en studerende kan befinde sig i, når de ansættes i en klub. Det sidste tiltag jeg vil fremhæve er, at bestyrelsen har besluttet at gøre medlemsskabet af DSSF gratis for studerende. Studerende vil fortsat kunne starte med at tage kurser efter bestået klinisk eksamen og vil overgå til almindelig betalende medlemmer efter endt uddannelse til fysioterapeut.

DSSF er en god og stærk organisation – men efter devisen "sammen står vi stærkest" søger vi ofte samarbejdspartnere når en temadag skal lanceres, et kursus skal oprettes eller kongressen skal planlægges. Med det gode stykke arbejde Dansk Selskab for Fysioterapi (DSF) forestår, kan vi mærke, at selskaberne er blevet hinandens eksistens og virke mere bevidst og ofte søger samarbejdet. Tværfagligt nyder vi også godt af vores tætte samarbejde med DIMS. Et stort tak skal lyde til Tommy Øhlenschlæger som afgående formand, for hans store engagement i vore fælles tiltag – og tak for hans inddragelse af DSSF, hvor vi ikke lige stod på invitationslisten. Tak for gode diskussioner til fællesmøder og løbende på mailkorrespondancer. Tommy ønskes god vind fremover og I ønskes alle et **godt, lærerigt og indholdsrigt 2017**.

From FIF to FOF

10 years of multi-professional research with relevance for physiotherapy at University of Southern Denmark

Ewa Roos, Professor and Head of Research Unit for Musculoskeletal Function and Physiotherapy

Ten years ago, in 2007, I left my long-term collaborators and friends at Department of Orthopedics in Lund, Sweden to work abroad. I took on the role to, as the first professor in physiotherapy in Denmark, establish research with relevance for physiotherapy at the university level. At this time, less than twenty PhDs in Denmark had a background in physiotherapy. Long-term goals for the Research initiative in Physiotherapy (FIF) were to become a permanent research unit at University of Southern Denmark and to start a Master of Physiotherapy program. We had five years to prove ourselves. Five mio DKK were given in initial support by the Danish Physiotherapy Association and the Danish Rheumatism Association which were used to hire staff and students. All projects have been externally funded. To make a long story short, we became a permanent research unit, FOF, in 2010 (Figure 1) and started the Master of Physiotherapy program in 2011. Today, ten years later, we are more than twenty PhD-students and staff. Many have a background in physiotherapy, but we favor diversity and over the years we have had members with backgrounds in medicine, sports science and alike.

Figure 1. *From FIF to FOF. Forskningsinitiativet i Fysioterapi (FIF) was established in 2007. In 2010, the Research Unit for Musculoskeletal Function and Physiotherapy (FOF) became a permanent research unit at University of Southern Denmark.*

We have during the last ten years graduated ten PhD-students in FOF, and staff from FOF has co-supervised another fifteen PhD-students who have graduated from other institutions. We publish about 50 scientific papers annually, with about 25% of these published in the top 10th percentile of most cited publications worldwide. I think it is fair to say that we have surpassed our initial goals and that physiotherapy is at the university level and at University of Southern Denmark to stay. We have also contributed substantially to raising societal awareness about the burden of muscle and joint disease, and to the understanding of how joint pain and functional limitations effectively can be treated with safe and low-cost interventions. Establishing

Research Unit for Musculoskeltal Function and Physiotherapy 2016

a new research area, and communicating research findings questioning the long-standing treatment paradigm in musculoskeletal care, has however been far from friction-free. It is disappointing that I as a direct result of our success have collected material enough to write a book about these downsides of academia, and the inherent resistance to change and uptake of evidence-based treatments embedded within the health care sector.

In this issue of 'Dansk Sportsmedicin' you will meet many current and former members of our research group, and some of our international visitors. The articles are short in format and many are 'easy-reads'. I have asked the authors to provide pictures of them when they do their favorite sport or activity. Some may be predictable but I think you are also up for some surprises. We hope that together the twenty short articles, spanning from results of clinical studies and development of new evaluation methods to management of knee, hip, shoulder and neck problems, will provide you with insights about our research activities in Odense and help make sure your clinical work stays evidence-based. To stay tuned in the future, like us on Facebook and Twitter.

I wish you a good read and also would like to invite you to join our research group's 10-year birthday celebration at University of Southern Denmark on Friday May 19, 2017. Mark your calendar already now, more information to come!

Collaboration is the future: Center for Muscle and Joint Health at SDU

Jan Hartvigsen, Professor; Ewa Roos, Professor; Karen Søgaard, Professor

Time to pay attention to musculoskeletal health

Musculoskeletal disease and pain are leading causes of disability and loss of quality of life in all regions of the world (1). In Denmark, 20% of the adult population have chronic pain in muscles and joints, and they are leading causes of care seeking. Twenty percent of all sick days in Denmark are caused by back pain alone, 16% by neck pain and 12% by osteoarthritis while treatment costs for these three together amount to a staggering 5.172.000.000 Danish kroners (2). Importantly, disability caused by muscle and joint disease has increased 40% since 1990 and is projected to increase even more with an aging and sedentary population (1). The challenge for health care is to change and truly contribute to decreasing the burden of muscle and joint disease (3;4). It is time to make evidence-based prevention and treatment of disease and disability in muscles and joints a national priority.

Center for Muscle and Joint Health – a multi-professional collaborative center

At the Center for Muscle and Joint Health at the University of Southern Denmark 50+ researchers with diverse backgrounds, but most commonly in exercise physiology, physiotherapy and chiropractic, are collaborating to produce high-quality clinical research that adds to the growing body of knowledge about how best to prevent and manage muscle and joint disease in the population over the life course. The research focuses on a range of muscle and joint diseases and their associated pain and disability studied in the population, in schools, workplaces, primary care clinics, and hospitals. Over the past 10 years researchers from the center have published over 1000 papers in international peer-reviewed journals. While researchers from the center individually have received both national and international funding from many sources the available funding for musculoskeletal disease is still minute compared to other chronic diseases such as cardiovascular disease, diabetes and cancer for which the societal costs actually are smaller than for musculoskeletal diseases.

No single professional group has the magic bullet to overcome the societal burden of muscle and joint disease, therefore the core principle in the Center for Muscle and Joint health is collaboration across professions and disciplines in order to find creative solutions and come forward with evidence that will ultimately result in better lives for millions. One such ongoing initiative is adapting the successful Good Life with Osteoarthritis in Denmark (GLA:D) project for knee and hip pain patients for use in patients with back pain.

Communicating research and putting research to use

Communication of research findings in printed and electronic media as well as on social media is a priority for the center (5). Researchers are leading figures both nationally and internationally in multidisciplinary conferences, guideline development groups, and consensus groups. More importantly, to help evidence-base clinical care, 10 of the centers researchers have been active in implementation of evidence by leading and participating in development of national clinical guidelines for muscle and joint diseases including the shoulder, neck, back, hip and knee.

In summary, projects aiming at putting evidence to use are prioritized. Important areas of activity are a strong collaboration with primary care clinics, where most people with muscle and joint diseases are managed; with municipalities and workplaces, where most people are during their everyday life; and to engage in both data collection and interventional studies as well as implementing already existing research findings into the real world.

Karen Søgaard, Jan Hartvigsen, Ewa Roos

***Jan Hartvigsen** has a clinical background as a chiropractor and a PhD in epidemiology from the University of Southern Denmark. He is research leader for the Research Unit for Clinical Biomechanics, and he is also leading the Graduate Program for Physical Activity and Musculoskeletal Health that currently has 59 PhD students. He has published 140+ scientific papers and is very active in national and international multidisciplinary working groups. He is co-leader of the Lancet Low Back Pain Series Working Group, and in 2016 he was rated as the #1 expert in musculoskeletal pain worldwide by Expertscape. Jan Hartvigsen is a passionate road bike cycklist.*

***Ewa Roos** has a clinical background and PhD in physiotherapy. She is research leader for the Research Unit for Musculoskeletal Function and Physiotherapy. She has focus on patient-reported outcomes and the role of exercise therapy as treatment of knee problems. She has published 190+ scientific papers including three unique clinical trials published in The New England Journal of Medicine and The British Medical Journal. In 2013 she started Good Life with osteoArthritis in Denmark (GLA:D) together with Søren Skou. IN four years, more than 800 physios have taken the course and thereafter treated more than 18.000+ patients with knee and hip pain across Denmark according to clinical guidelines for osteoarthritis. Ewa Roos likes to spend weekends in the deep forests finding her way in unknown terrain with the help of a map and a compass.*

***Karen Søgaard** has a background and a PhD in occupational health. She is research leader for the Research Unit for Physical Activity and Health in Working Life. Main focus is on physical training for health promotion, prevention and rehabilitation and how to design and implement beneficial exercise and rehabilitation including use of new technology. A new aspect is tailored exercise programs to specific patients groups as a supplement and support to the primary treatment. She has published 180+ scientific papers and was recently selected as the forthcoming president of International Society of Electrophysiology and Kinesiology. From 2016 she also serves as member of the executive council of the Danish Society of Rheumatism. She is leading the Danish part of the EU Horizon 2020 project SelfBack.*

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The way forward is evidence-based

Julie Bolvig, MSc Physiotherapy, Carsten Juhl, ass. professor and Hans Lund, ass. professor

Cochrane Musculoskeletal Nordic Satellite logo

To ensure high quality in examination and treatment of patients in sports physiotherapy evidence based practice is crucial, and the key to evidence based practice is to summarize the available evidence in systematic reviews.

Cochrane is an international independent not-for-profit organization, dedicated to making up-to-date, accurate information about the effects of healthcare readily available worldwide. This is done by the production and dissemination of high quality systematic reviews of healthcare interventions, which Cochrane has done since 1993.

More than fifty Cochrane groups focus on evidence based health science. Those who prepare the reviews are mostly healthcare professionals who voluntarily work in one (or more) of these Cochrane Review Groups. One of the groups producing and disseminating evidence based medicine is the Cochrane Musculoskeletal Review Group (CMSG).

In October 2015 CMSG established a Nordic editorial satellite (CMSG Nordic) located at the University of Southern Denmark. Our role is to gather, evaluate, and distribute reviews on the effects of intervention and preventions strategies for people with musculoskeletal diseases, especially osteoarthritis.

The Editorial Team behind the satellite includes Hans Lund (University of Southern Denmark[SDU] and Bergen University College), Carsten Juhl (SDU and Gentofte Hospital), and Robin Christensen (The Parker Institute). Activities in the group are co-ordinated by Julie Bolvig (SDU), who is in charge of the daily function of the office as managing editor. The group behind the satellite has been active with publishing systematic reviews, teaching evidence-based health care and how to prepare systematic reviews for the last 20 years.

CMSG Nordic just finished updating a Cochrane Review on the effects of aquatic exercise for osteoarthritis (1) and is now working on a manuscript for a Cochrane Review determining the benefits and harms associated with weight loss in overweight individuals with knee or hip OA in terms of pain, physical function, quality of life, and safety.

CMSG Nordic is far from the only group preparing sports medicine related Cochrane reviews. Cochrane Bone, Joint and Muscle Trauma Group just published a Cochrane Review looking into surgical versus conservative interventions for treating anterior cruciate ligament injury (2) and the Cochrane Back and Neck Group just published a review about paracetamol for low back pain (3). Cochrane UK has started a subgroup called 'Cochrane Evidence for athletes' where they summarize Cochrane evidence to help support athletes seeking to win a gold medal and for everyone else who is inspired to get physically active! They recently discussed whether cryotherapy works and if it safe to practice (4).

As FoF and University of Southern Denmark now houses a global Cochrane satellite, we look forward to receive first-hand inspiration and input from you on subjects for future Cochrane Reviews. We are also always open for discussions about evidence-based practice in general and research collaboration in particular. We look forward to hearing back from you!

Julie Bolvig *(middle) is thrilled about winter sports especially ice skating and skiing. She graduated as a as a Master of Science in Physiotherapy from University of Southern Denmark in 2014 and have since worked primarily with methodology in osteoarthritis research. Julie Bolvig is the managing editor of the newly established Cochrane Nordic editorial satellite and takes active part in producing and editing Cochrane Review as well as systematic reviews.*

Carsten Juhl *(right) has for the last 20 years been engaged in teaching in evidence based physiotherapy practice for health care personal and now also for master students in physiotherapy and rehabilitation at SDU.*

Hans Lund *(left) enjoys using the fitness facilities just below his office at the Department for Sports Science and Clinical Biomechanics (IOB) at SDU. Since the 1990s Hans Lund has been engaged in promoting evidence based physiotherapy practice and is the Director of Studies for Master of Science in Physiotherapy and Master in Rehabilitation at SDU.*

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From Melbourne, Australia to FOF and return

Biomechanical research across continents

Michelle Hall, PhD, Post-doctoral Research Fellow, Centre for Health, Exercise and Sports Medicine, Department of Physiotherapy, School of Health Sciences, Melbourne, The University of Melbourne, VIC Australia

Maria Thorning, MSc in Physiotherapy, Research assistant, Orthopaedic research Unit, Department of Orthopaedic Surgery, Odense University Hospital.

From Melbourne to FOF

During Michelle Hall's PhD candidature at the University of Melbourne, she was awarded a Travel Grant from the International Society of Biomechanics and an Overseas Research Experience Scholarship from the University of Melbourne to spent 4-months at the University of Southern Denmark (March-June, 2014). Although she worked on several research projects during this visit, the primary project involved three-dimensional data acquisition in the newly opened state-of-the-art human motion laboratory Michelle worked alongside Maria Thorning, a master of physiotherapy student, on a study evaluating the immediate effects of a knee brace on knee joint loading in people following arthroscopic partial meniscectomy. Data was captured as participants performed several tasks including walking, sit-to-stand and a forward lunge with and without wearing the Ossur knee brace. We evaluated the effects of the brace on knee joint loading (1), as there is some

Fig 1: *Example of marker placement.*

Fig 2: *The Rebound® Cartilage knee brace (from Össur, Reykjavik, Iceland). Adapted with permission (2).*

evidence to suggest that increased knee joint loading is undesirable for patients following arthroscopic partial meniscectomy.

Michelle found this a fantastic experience to work with members from FOF, an industry partner, acquire biomechanics data in another laboratory and supervise a very-capable masters student, Maria. From Denmark to Australia, the collaboration and learning continued when Maria travelled to Melbourne, Australia to conduct the data processing and analysis in January 2015 under Michelle's supervision.

From FOF to Melbourne

For Maria it was a great honor to get the opportunity to travel to Melbourne, Australia as a part of her master program and acquire knowledge about data processing. Furthermore she was welcomed by an extremely exciting and skilled research group who offered a lot of knowledge and guidance in the area of biomechanical research. It was sensational to experience the differences between FOF and another research group, and both for her and the project the two groups complemented each other extremely well.

From student to research author

As a master student the world of research was new to Maria, and the biomechanical project in FOF with Jonas Thorlund as a supervisor, was far from what she had previously tried. However, to be able to work on this project from the very beginning and all the way to the end was very educational and gave her the opportunity to learn about all the aspects of performing biomechanical research. Furthermore, Maria got the chance to publish the study after writing up the manuscript in collaboration with Michelle, Jonas and other prominent researchers from both FOF and the research group in Melbourne, Australia. This gave her the full insight into what biomechanical research has to offer, and a hope for a future in research in health care.

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Maria Thorning (left) and Michelle Hall (right) in the human movement laboratory at University of Southern Denmark.

***Michelle Hall** completed a BSc in Sports Science and Health (Hons) at Dublin City University. Upon completion of MSc in Kinesiology at Iowa State University she relocated to Melbourne, Australia to pursue a PhD at the University of Melbourne. With a family history of several knee replacements, Michelle is a keen musculoskeletal scientist aiming to understand the effectiveness of non-surgical treatments for people with knee osteoarthritis.*

***Maria Thorning**'s interest in health care is founded in a background in competition swimming. Following her BSc in physiotherapy in 2003 she worked 10 years in clinical practice before returning to school to follow a dream of a career in research. In 2015 she completed her MSc in Physiotherapy at the University of Southern Denmark. At present she is preparing to pursue a PhD with focus on people with hip impingement.*

Biomechanical factors in knee OA – being in a EU project

Joyce van Tunen, PhD-student, MSc Human Movement Science, BSc Physiotherapy

Alessio Bricca, PhD-student, MSc Health and Physical Activity, BSc Sport Science

Everyone smiles in the same language

There is a great international focus within our research unit. We have students and professors from abroad visiting us, we visit international conferences and courses and we have international group members. Although the majority of the FOF members are Danish, all our meetings are held in English. The Danes explain their customs and traditions, such as "julefrokost" and "hygge". Speaking about the Danish working culture, we highly appreciate the provision of cake at every single meeting. Other positive points are a flat hierarchy and a high degree of responsibility for PhD-students and other employees.

Our PhD projects are part of an EU project entitled KNEEMO Initial Training Network.

Within this network 11 PhD students and 4 postdocs perform research on biomechanical factors in knee osteoarthritis in six different countries. We all have different nationalities, have moved to new countries to join this network and have different backgrounds (spanning from engineering to sports science and physical therapy). At least twice a year we meet for common courses and congresses regarding biomechanics and knee osteoarthritis. In addition to this, we visit each other's institution. During those visits, we collaborate with people working in the same area, we expand our understanding of other specialty areas and

The KNEEMO Initial Training Network.

we experience private sector environments. The KNEEMO network gives us the opportunity to work with highly skilled researchers and clinicians from all over the world.

Biomechanical factors and knee osteoarthritis

Osteoarthritis is a whole–joint disease where biomechanical factors such as knee joint loading, knee malalignment and muscle strength play a crucial role in the development of the disease [1]. Consequently, when one of these factors is altered the joint might be in danger of developing knee osteoarthritis. It is important to combine the existing evidence regarding the different risk factors, because this will help to identify persons at high risk of developing knee osteoarthritis.

Exercise is the most effective first line treatment recommended for knee osteoarthritis. Exercise decreases pain and improves physical function and quality of life [2]. Likewise, it can modify biomechanical factors, resulting in an altered joint loading. However, less is known about the impact of biomechanical factors in relation to exercise therapy as treatment for knee osteoarthritis. Increasing knowledge will help to answer questions patients often have like "Don't I wear my joint down if I exercise?"

Our job is therefore to summarize the existing evidence about the impact of biomechanical factors both in terms of development and treatment in patients with knee osteoarthritis. In addition to this we will provide evidence–based recommendations for the optimal dose of therapeutic exercise, in relation to biomechanical factors in people with knee pain or knee osteoarthritis.

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Joyce van Tunen *had been playing handball in the Netherlands for years, when an injury forced her to stop. The physical therapy treatment that followed motivated her to become a physical therapist and to complete her master in Human Movement Science. After working as a physical therapist and researcher, she moved to Denmark in 2015 to become part of the KNEEMO network. Her PhD project concerns knee osteoarthritis and biomechanical factors.*

Alessio Bricca *has been playing football in Italy since he was six years old. His passion for sports and exercise has grown during his football career, first as a player and later as a physical trainer. In April 2015, he moved to Denmark as part of the KNEEMO network to investigate the effect of exercise on knee joint health, within a PhD project at the University of Southern Denmark.*

Surgical and non-surgical treatment of knee osteoarthritis

– a balance between evidence of benefits and harms, and patient needs and preferences

Søren T. Skou, assistant professor and head of research, PhD [a,b], Ewa Roos, professor and head of research [a]

[a] Research Unit for Musculoskeletal Function and Physiotherapy, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark
[b] Department of Physiotherapy and Occupational Therapy, Næstved-Slagelse-Ringsted Hospitals, Region Zealand

The studies presented here were the results of a multiprofessional collaboration between three orthopedic surgeons (Sten Rasmussen, Ole Simonsen and Mogens Berg Laursen), one pain researcher (Lars Arendt-Nielsen) and three physiotherapists (Ewa M. Roos, Michael S. Rathleff and Søren T. Skou). The studies were performed at the Department of Orthopedics at Aalborg University Hospital.

National (1) and international clinical guidelines (2) recommend a multimodal, individualized non-surgical first line treatment of supervised exercise, education and weight control for patients with knee osteoarthritis (OA). If needed, biomechanical and pharmacological treatments can be added to the first line treatment, and in a small proportion of patients surgery, typically total knee replacement (TKR), is indicated (1, 2). Even though TKR is considered an effective treatment of end-stage knee OA (3), until recently no studies had investigated the effects in a high-quality study. Furthermore, no studies had investigated the combined effects from the recommended non-surgical treatments delivered in an individualized fashion to the patients. These were the purposes of the two parallel MEDIC-trials (4, 5) of patients found eligible (4) and not eligible (5) for TKR by an orthopedic surgeon.

Patients eligible for TKR (n= 100) were randomized to undergo a 12-week individualized, non-surgical treatment program consisting of neuromuscular exercise, education, diet, insoles and pain medication (the MEDIC-treatment) or TKR followed by the MEDIC-treatment. The study found that TKR followed by non-surgical treatment was twice as efficacious in improving pain (73% vs. 33% on the subscale pain from the Knee injury and Osteoarthritis Outcome Score (KOOS)) and function (60% vs. 33% on the subscale ADL from KOOS) but also associated with more serious adverse events than the non-surgical treatment alone (7 vs. 1 related to the knee). Examples of serious adverse events included one deep infection and three deep venous thromboses. Notably, 69% of patients randomized to non-surgical treatment alone had clinically relevant improvements in pain and 3 out of 4 did not undergo TKR within one year (Figure 1) (4). The study was recently identified as one of 12 studies published in 2015 that will have the biggest influence on future medicine (http://cdn.nejm.org/pdf/NEJMNotable2015.pdf).

Patients not eligible for TKR (n=100) were randomized to the MEDIC-treatment or written information on the disease, how to treat it, and where to seek treatment. The study found, that patients randomized to written information did not improve to a level considered clinically relevant while the group having the MEDIC-treatment improved about 36% in pain (subscale pain from KOOS) and 37% in function (subscale ADL from KOOS). Compared to those randomized to written information, the group having the MEDIC-treatment improved more in pain and function (Figure 1) (5). The results show that giving oral and written advice only is not effective and that the improvements from non-surgical treatment in the group not eligible for surgery and the group found eligible

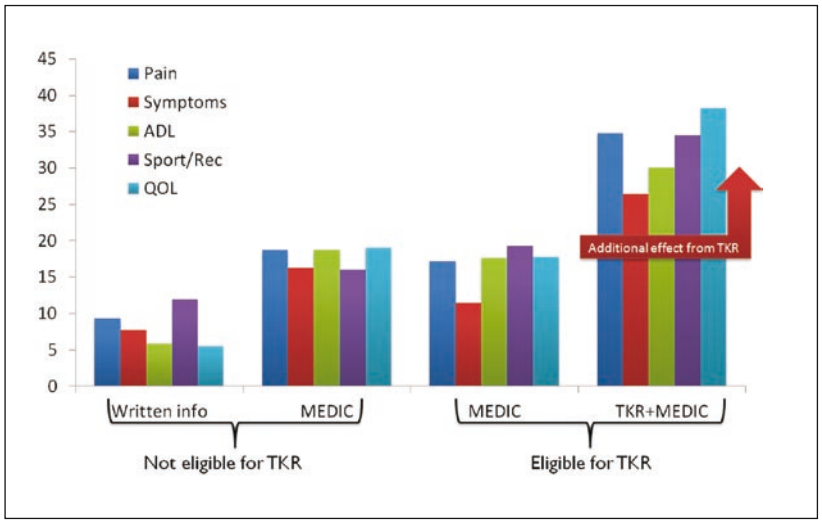

Figure 1. *Improvements in the individual subscale scores of the Knee injury and Osteoarthritis Outcome Score after 12 months in patients not eligible and eligible for total knee replacement (TKR). All groups held 50 participants each. MEDIC = A 12-week individualized non-surgical treatment program consisting of: exercise, education, dietary advice, use of insoles, and pain medication. ADL = Function, daily living. Sport/Rec = Function, sports and recreational activities. QOL = Quality of life. Data from reference 4 and 5.*

for surgery were similar. Thus, similar effects from non-surgical treatment can be expected regardless of radiographic severity and if the patient is eligible for surgery or not.

Interestingly, a recent study combining the two cohorts found that while radiographic severity and functional limitations were confirmed as drivers of the decision of whether or not the patient was found eligible for TKR, pain and previous participation in non-surgical treatment of sufficient dose and length were not (6). This underlines the complexity of eligibility for TKR, not only affected by disease severity but also by other factors including patient preferences. As highlighted in the editorial (7) accompanying the trial in patients eligible for TKR (4) shared-decision making is crucial for clinicians discussing the different treatment options with their patients with knee osteoarthritis. The results from the two MEDIC-trials will serve as a relevant and important component of this discussion and help facilitate a decision balancing the evidence of benefits and harms and the individual patient needs and preferences.

Søren T. Skou *had low back pain as a youth football player which started his interest in exercise and physical therapy as treatments of musculoskeletal pain. He has been the principal investigator of two high-quality randomized controlled trials on the treatment of knee osteoarthritis and is project leader for the successful implementation initiative Good Life with osteoArthritis in Denmark. Furthermore, he is a recipient of a postdoc grant and a Sapere Aude Research Talent Award from the Danish Council for Independent Research.*

Ewa Roos *(right) competed on Swedish national team in orienteering when her career stopped because of an overuse injury. This experience sparked her interest in sports medicine and she became a physical therapist. After 15 years working with sports medicine patients she started her research career at the Department of Orthopedics at Lund University in Sweden with a focus on patient-reported outcomes and osteoarthritis development after knee injury. Since 2007 she is a professor at University of Southern Denmark.*

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Good Life with osteoArthritis in Denmark, GLA:D

The first treatent option, also for those with post-traumatic osteoarthritis

Ewa Roos, professor and head of research [a], Søren T. Skou, assistant professor and head of research, PhD [a,b]

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[b] Department of Physiotherapy and Occupational Therapy, Næstved-Slagelse-Ringsted Hospitals, Region Zealand

Prevalence of prior joint injury and joint surgery in GLA:D

Prior joint injury, typically to the anterior cruciate ligament or menisci of the knee, and prior joint surgery such as meniscectomy, increases the risk of future osteoarthritis with up to some 700% (1). While anterior cruciate ligament injuries are less common on a population level, clinically diagnosed soft tissue knee injuries are about ten times more common with an annual incidence of 766 per 100.000 persons/year (2). It is unknown to what extent clinically diagnosed soft tissue knee injury is a risk factor for osteoarthritis. In the U.S., it has been estimated that at least 12% of the overall prevalence of symptomatic osteoarthritis is due to a prior knee injury, corresponding to 0.15% of the total U.S. health care direct cost outlay (3). Since prior injury and surgery seem to severely impact both osteoarthritis prevalence and societal burden from osteoarthritis, we were interested in determining the prevalence of prior joint injury and joint surgery in Danes having patient education and supervised exercise as treatment for joint pain and osteoarthritis.

Data from close to 10.000 patients were available from the GLA:D registry . While the average GLA:D participant is 64 years old, the youngest participant in the annual report 2015 was 15 and the oldest 94. The age distribution for GLA:D participants thus overlap with patients treated surgically for knee pain with arthroscopic partial meniscectomy (mean age 47) and total knee replacement (mean age 68), Figure 1.

We found that more than every other (56%) knee patient reported a prior knee injury severe enough to see a doctor and one-third (32%) had had prior knee surgery. For comparison, the corresponding numbers for hip patients were 34% and 4%, respectively, Figure 2.

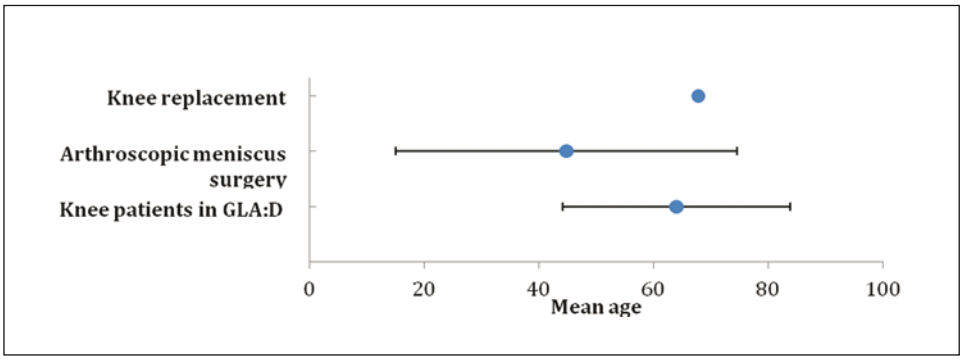

Figure 1. *Age distribution of the 9 827 knee and hip patients included in the GLA:D® registry up to 2015. The filled circles represent the mean age and the error bars represent 2 standard deviations. In the GLA:D registry, the mean age was 64 years. The youngest participant was 15 years and the oldest 94 years. As a comparison, the mean age for arthroscopic partial meniscectomy in Denmark is 47 years and for total knee replacement 69 years.*

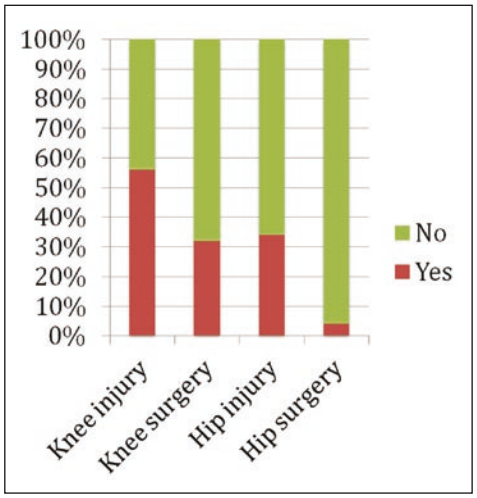

Figure 2. *Prevalence of GLA:D-participants reporting to have a prior injury to the joint severe enough to see a doctor and prevalence of prior joint surgery.*

In the future we would like to see a continued decrease of symptom duration and mean age in the GLA:D registry as a sign of treatment starting already when the first symptoms appear. Prior injury and surgery are more common in knees than in hips in the GLA:D cohort, and future evaluations will show how prior injury and surgery impact on GLA:D treatment results and societal costs in Denmark.

What is the GLA:D?

Every year, more than 2.500.000 visits are paid to general practitioners in Denmark due to osteoarthritis (4). This makes osteoarthritis the second most common reason to visit a general practitioner in Denmark (4). Tools readily available for general practitioners in Denmark to treat patients with painful joints include prescription of painkillers, referral to imaging and referral to an orthopedic surgeon. National and international clinical guidelines however recommend patient education, supervised exercise and weight control, if needed, as the first treatment step. Good Life with osteoarthritis in Denmark (GLA:D) is an addition to the general practitioner's tool box to facilitate easy prescription of, and patient access to, evidence-based standardized core treatment for osteoarthritis.

GLA:D consists of 2-3 sessions of group-based patient education and 12 sessions of group-based physiotherapist-supervised neuromuscular exercise. Since its inception in 2013 more than 800 physiotherapists from across Denmark have attended a 2-day course held at University of Southern Denmark to learn about osteoarthritis, treatment options, patient education, neuromuscular exercise and electronic data collection. Currently more than 17.000 patients have been treated nationwide. Results show that sick leave and intake of painkillers go down. Pain diminishes and physical function improves, just as quality of life. Results persist at one year following the 8-week treatment. It should be noted that results are based on the GLA:D-registry and there is no untreated control group. Although results are consistently positive it cannot be ruled out that societal and other changes may well impact on results such as sick leave.

To adopt early treatment of patients with painful joints is in line with how patients with cardiovascular problems and diabetes have been treated for ages to prevent more severe disease and death. Employing such a treatment strategy for people with painful joints will benefit physical function, promote healthy aging and possibly prevent the joint from "dying" and being replaced.

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Ewa Roos and Søren T. Skou started the Good Life with Osteoarthritis in Denmark (GLA:D) project in 2013.

The Good Life with osteoArthritis in Denmark Initiative: Patients' perspective

Angela Ching, PhD Student, University of Nottingham, United Kingdom

I am a PhD student from The University of Nottingham, United Kingdom, and was a visiting student at FOF from September – December 2015 on an Osteoarthritis Research Society International Collaborative Scholarship and an Arthritis Research UK Centre for Sport, Exercise, and Osteoarthritis Fellowship. Everyone at FOF was so welcoming and I feel really privileged to have had the opportunity to work with such a close-knit group of researchers who are so passionate about musculoskeletal health.

During my time at FOF, I worked closely with Professor Ewa Roos and Dr Søren Skou on exploring patients' experiences with The Good Life with osteoArthritis in Denmark Initiative (GLA:D). The questions of this study were: **1)** What was the GLA:D programme like? **2)** How do you feel about continuing with the programme yourself in the long-term?

After conducting five semi-structured interviews, four major themes from the interviews were apparent, these included: what life is like after the GLA:D programme; the importance of follow-up sessions; long-term adherence; and payment. The Figure gives a graphic indication of the 100 most common words used in the interviews.

100 most common used words from the interviews. The bigger the word, the more times it was referred to.

What life is like after the GLA:D programme

The first major theme was 'what life is like after the GLA:D programme', where participants reflected on activities of daily life becoming easier.

"Everything has become easier, doing work in the garden, or in the house, and my cycling, and walking, everything." – Rikke

"I suddenly realise that after a few weeks there was an improvement. I mean, I could

walk from the training room, and I could just walk over to the bus without even taking a break." - Caroline

However, Pernille also voiced her concerns about feeling left alone after the programme was completed.

"It's not very good being left alone after a year…and then you should do it on your own. I know the exercises from when I left the clinic, because I have to do them every time, but I think it's very important that you do the exercises correctly. Because you can damage things…And I think sometimes you need to have one saying 'it's very good, no I have to correct you, because you're not doing it well.'" – Pernille

The importance of follow-up sessions after the GLA:D programme

The previous theme links to the second major theme of 'the importance of follow-up sessions after the GLA:D programme'. Participants felt it would be ideal to have some form of follow-up sessions after the 6-week programme as a motivation to adhere to the programme at home and for a physiotherapist to check they are still doing the exercises in the correct ways.

"When you have, for instance, half a year or something like that, I can feel I need something to come in. I need someone who tells me, 'could you come and we can see how you're practising now.' I think it would be motivated, the motivation for me." – Pernille

"Let's say, perhaps, he could have said, 'well, once a month, you come down here, we will do training together, and then you train yourself in the interim'. So, perhaps that would have helped with the monthly follow-up training." – Mikkel

Long-term adherence to the GLA:D programme

Not having follow-up sessions post programme could affect the long-term adherence to the programme, which was the third major theme. Here, participants discussed that they were aware of the importance of continuing with the programme in the long-term.

"I'm sure I must [continue] until I die. I think they're very important." – Anne

But those with less motivation were unable to adhere to the exercises post-programme.

"I'm disappointed with myself that I haven't just continued this programme." – Mikkel

"I'm not very good at getting my training done at home." – Caroline

Payment for the GLA:D programme

Fourth major theme was 'payment for the GLA:D programme'. Participants discussed that the programme was expensive, especially for pensioners.

"Very often it's people at my age, that, we suffer from arthrosis and many of them have stop working and for many it would probably be not easy to pay for the course. And that irritates me a little." – Rikke

"The programme is expensive…As a retired person or a pensioner you just don't have that kind of money." - Caroline

Participants reflected on wanting support from insurance companies, municipality, or the health service.

"I think that the Danish healthcare ought to support the exercise bit more than they do, because it does save a lot of money at the other end. So, yeah, cost is prohibitive." – Anne

"I mean, the public health insurance should go into this and, pay at least the half of it, because it's the National Health Insurance that pay for all the knees." - Rikke

Finally, participants spoke about how these payments would influence their adherence to the programme, as they still wanted to continue going to the classes after the programme ceased.

"So if it could be done more cheaply I do think I probably would have continued." - Caroline

"Well, that's clear, if there was still an on-going course like the classes were still continuing then I would still be following the programme." – Mikkel

"But I feel, if the GLA:D project is a positive thing and should be continued, I think it's necessary to make some courses, but I can see something in it, and it's because it's not free." – Pernille

There are strong links between the major themes. Participants saw a positive difference in their lives after the programme and the importance of long-term adherence. However, they felt it would be beneficial to have follow-up sessions after the programme ceased for continued motivation and reassurance. But, to continue with the programme on a long-term basis, patients would need to pay for more sessions, which was deemed less affordable.

***Angela Ching**'s research interest is in exploring patients' beliefs in successfully managing their osteoarthritis and beliefs in exercising as a form of treatment. This is a picture of Angela taking some cycling lessons at Sherwood Forest, Nottingham, two weeks before flying out to Denmark. She has come back from Denmark as a much more confident cyclist!*

Why knee arthroscopy is no better than placebo surgery for degenerative meniscal tears – deconstructing a popular myth

Jonas Bloch Thorlund, Associate Professor

Myths in medicine

As eloquently described in an editorial published in Acta Orthopeadica by Per Aspenberg there are still many myths in modern medicine (1). Myths are good stories that are easy to remember and often, when followed by a mechanical explanation or reasoning, intuitively makes sense. Such myths catch on and can live for a long time. One such story is that meniscal tears cause pain, which can be relieved by removal of the damaged meniscal tissue (1). This myth has been 'busted' by trials showing no effect of knee arthroscopy for degenerative meniscal tears in middle-aged and older patients over that of placebo surgery (2, 3). But why does knee arthroscopy not provide any more pain relieve than placebo surgery?

Deconstructing a myth

The rationale for cutting away damaged meniscal tissue is based on the premise that the injured or damaged meniscus is the primary cause of the pain and discomfort experienced by the patient. However, studies have shown that meniscal tears are common in knees in the general middle-aged and older population with and without radiographic osteoarthritis and that such tears are not related to symptoms (4, 5). More likely pain is explained by the presence of degenerative changes in the knee joint or established knee osteoarthritis and not because of a direct link between pain and meniscal damage (6). Similarly, in patients with knee trauma, it has been shown that meniscal tears are just as common in the uninjured contralateral leg as in the injured leg (7). Such studies seriously question the simple explanation of meniscal tears being the cause of pain and the simple 'car repair' logic of cutting the tissue away.

Meniscal tears often co-exist with other knee joint pathology. It is plausible that other factors than the meniscal tear *per se* may cause the patient-perceived symptoms or that only some meniscal tears are symptomatic. Theoretically, only tears in the outer one-third of the menisci should be able to cause pain, as histological studies have shown that only the peripheral vascularized zone is innervated by nerve fibers (8). This is supported by one study reporting pain sensation to be markedly higher in the outer than the inner rim of the menisci examined in the non-anaesthetized human knee by instrumented arthroscopic palpation (9). To examine this further, we recently conducted a study investigating if specific meniscal tear pathology (i.e. tear type, size, placement, etc.) or other knee joint pathology found at arthroscopy was associated with the patient-perceived symptoms prior to meniscal surgery.

Symptoms are not related to meniscal tear type or other knee pathology

The study included 443 patients from Knee Arthroscopy Cohort Southern Denmark (KACS) (10), which is a cohort established in collaboration with the orthopedic departments at Lillebælt Hospital (Kolding and Vejle) and Odense University Hospital (Odense and Svendborg) and prospectively following patients undergoing surgery for meniscal tears. This particular study was lead by medical and pre-graduate student Simon Maretti Tornbjerg. He investigated if specific meniscal pathology, assessed by the surgeon at

arthroscopy, such as tear type (i.e. bucket handle, horizontal, flap, etc.), tear location (medial/lateral), meniscal tissue quality (degenerative/non-degenerative), placement of tear (peripheral vascularized zone or not) was related to patient-reported pain and functional limitations prior to meniscal surgery. Similarly, he also investigated if other pathology like grade of cartilage damage, synovitis, anterior cruciate ligament status found at arthroscopy was related to the patient-reported pain and function. Increasing age, female sex and higher BMI were, as expected, modestly related to worse symptoms but disappointingly, no important relationships were found between any meniscal or other structural pathology with patient-reported symptoms prior to surgery (11).

In parallel, 'mechanical symptoms' (i.e. the sensation of catching or locking of the knee) is thought to origin from trapped damaged meniscal tissue that can be relieved by removing the damaged meniscus. Such 'mechanical symptoms' is an important indication for meniscal surgery for middle-aged and older patients. However, in a secondary analysis of a randomized trial, arthroscopic partial meniscectomy was no better in relieving mechanical symptoms than placebo surgery (12). In fact, the same authors showed in an observational cohort that, if anything, patients with mechanical symptoms were less satisfied with their knee after surgery and experienced less improvement than patients with without 'mechanical symptoms' (13).

Wrapping it all up

Mechanical myths contribute to the belief that meniscal surgery is necessary to relieve symptoms. However, research evidence seriously challenge the typical inferences made about relationships between structural pathology and patient-perceived symptoms and offer explanation to why we should not be surprised when placebo surgery offer the same treatment effect as real surgery for meniscal tears for middle-aged and older individuals. More likely such symptoms are caused by widespread degenerative changes of the entire knee joint (i.e. osteoarthritis). We need to abandon the 'car repair' logic and stop treating our patients like an Audi.

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Large Increase and Regional Differences in the Utilization of Meniscal Surgery in Denmark

Kristoffer B. Hare, MD, PhD

Large increase in number of meniscal procedures

The number of meniscal procedures in middle-aged and older patients doubled in Denmark between 2000 and 2011, in total from 8 750 to 17 368 procedures (1). The increase occurred both in the public and private sector but the proportion of procedures performed in the private sector increased from 1% to 32% over the 12-year period. The largest increase was seen in The Capital Region in which the *incidence* rose from 165 to 366 per 100 000 inhabitants resulting in a three times higher incidence in The Capital Region compared to Region Zealand in 2011 (2).

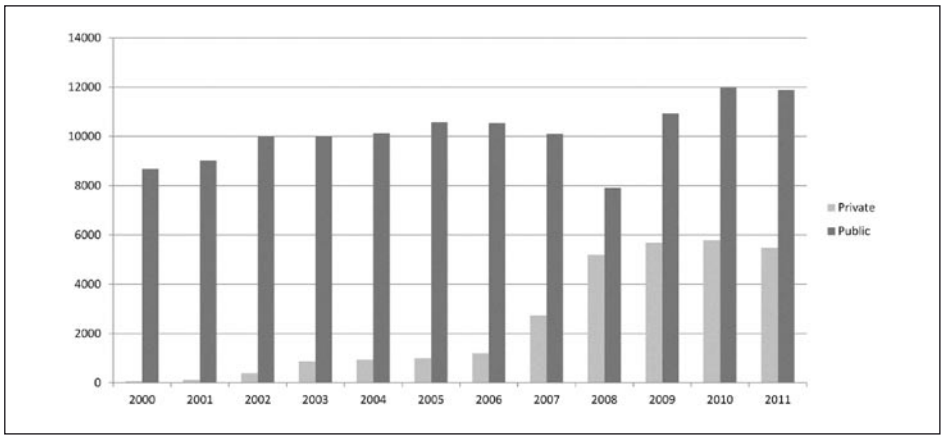

Figure 1: *Total number of meniscal procedures divided on public and private hospitals/clinics from 2000-2011 in Denmark.*

Conflicting with existing evidence

The increasing utilization of meniscal procedures in middle-aged and older patients contrast a mounting evidence of no added patient-centered benefits from these procedures. In total, ten randomized studies have evaluated the outcome after surgery compared to non-surgical treatments, and one study even compared meniscal surgery to a placebo (fake) surgery procedure. In this study, improvements were seen in both groups, but with no difference in improvement between groups. When the results from available studies were summarized, a 3-5 mm greater pain relief (on a 0-100 mm scale) was seen

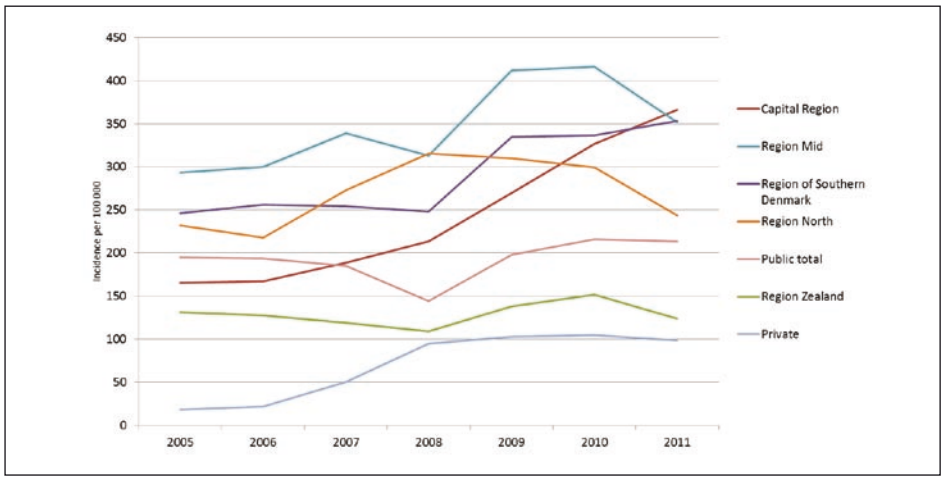

Figure 2: *Incidence of meniscal procedures divided on each region since these were established in 2005 to 2011.*

in favor of surgery at 3 and 6 months but with no difference at 12 months. Indeed, such a small difference is inconsequential (minimal clinically relevant difference is about 15-20 mm) and speculated to be the result of the greater placebo effect associated with surgery (3). These findings have led to a new national clinical guideline in which non-surgical treatment is recommended for patients with meniscal pathology without locking or catching symptoms (4).

Why the increase in surgical rate?

Several factors may have contributed to the increase such as the DRG rate, which since 2000 have given both private and public hospitals a financial incentive to perform surgery. The introduction of the 'treatment guarantee' in 2002 and an increased proportion of the Danish population having a private health insurance provide quick access to treatment, which most often is considered beneficial, but in the case of joint surgery may not be since symptoms in a degenerative knee could remit without surgery. Furthermore, the use of MRI of the knee has increased five-fold, potentially detecting more inconsequential meniscal tears since the correlation of MR-findings and pain is poor and asymptomatic meniscal tears are common in the middle-aged population (5, 6).

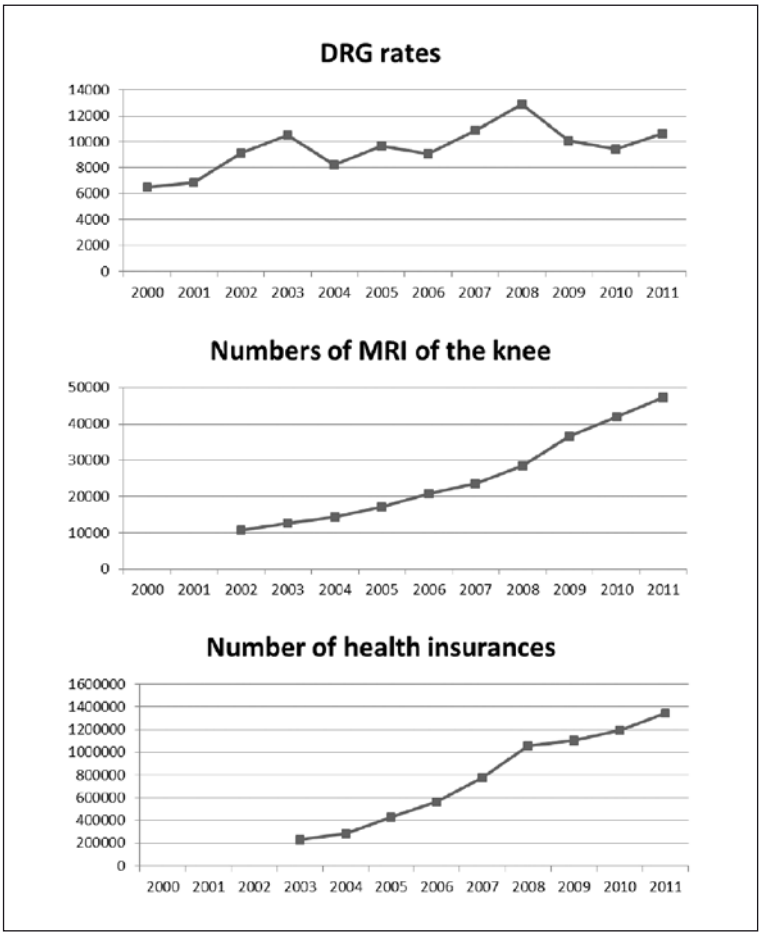

Figure 3: *DRG rates and data on number of MRI's of the knee retrieved from Statens Serum Institut. Private health insurance data was retrieved from the branch organization for insurance and pension.*

In 2014, there was a 10% decline in number of meniscal procedures compared to the previous year, suggesting the number of meniscal surgeries in Denmark may have peaked. It will be interesting to follow the development, especially the potential impact of the new clinical guideline for meniscal pathology suggesting non-surgical management for the majority of these patients.

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Kristoffer Hare *have participated in different sports, including tennis, soccer (football), running, gymnastic, skiing and mountain climbing. Still an active tennis player KH finished his PhD on arthroscopic meniscal surgery in 2016 before starting his career as an orthopedic resident.*

Young people with old knees

Adam G. Culvenor, Physiotherapist and Post-doctoral Research Fellow
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Paracelsus Medical University, Salzburg, Austria

No matter how young or old you are, most of us inevitably look forward to the years after we retire. Grandkids, golf, caravans, no more traffic chaos on the daily commute – they're not called the golden years for nothing, right? As true as that may be, it's also the stage of life when your muscles get weaker, your bones more frail, and your joints start to move with more "snap, crackle and pop" than your bowl of rice bubbles. Just like you, your joints are retiring too.

But what if your joints, your knees for example, decide to retire much earlier, maybe even 40 years earlier, and become old before their time? Well, unfortunately this is not a "what if" scenario. All too often, kids, adolescents and young adults who suffer a knee injury, such as an anterior cruciate ligament (ACL) rupture, are at high risk of having a worn out, painful knee of a 70 year old by the time they reach just 40. And this occurs irrespective of surgical (i.e., ACL reconstruction) or modern (non-surgical rehabilitation) management. Now, some readers who have had this injury may be getting a little nervous, but you're not alone – over 4,000 young Scandinavians injure their ACL every year (1). My research in Australia, in collaboration with researchers at the Department of Sports Science and Clinical Biomechanics at SDU in Odense, investigates how and why one knee injury can occur in an instant but then causes knees to develop osteoarthritis so much faster than normal.

Post-traumatic knee osteoarthritis in a 35 year old patient, 10 years after anterior cruciate ligament reconstruction.

Up until recently, all of this damage after acute knee injury was thought only to occur to the tibiofemoral joint within the knee, with osteoarthritis rates of up to 50-90% within the first decade after ACL injury frequently reported (2). Although the patellofemoral joint has been termed the forgotten joint in knee osteoarthritis (3), patellofemoral osteoarthritis occurs at similar rates as tibiofemoral osteoarthritis post-ACL injury (4). Indeed, with high-resolution MRI, we observed tibiofemoral and patellofemoral osteoarthritis in up to one-third of young adults as early as one-year after ACL reconstruction (5).

Early onset osteoarthritis in young adults poses a range of challenges not typically associated with an older osteoarthritis population, including work and parental responsibilities and competitive sporting careers. Yet, early knee osteoarthritis onset associated with a distinct event (i.e., traumatic injury) also presents unique opportunities for early intervention, as potential therapies, such as load management, are thought to be more effective prior to the development of advanced disease (6). Unfortunately, typical ACL rehabilitation programs currently fail to include approaches to prevent future development of knee osteoarthritis (7). Such approaches should include aggressive quadriceps strengthening, as well as strategies for optimal loading of the vulnerable knee joint such as dynamic stability, advice about type and level of sport and occupational activities, weight control, patient information and individualised education – and don't overlook the patellofemoral joint! Patellofemoral pain is a common and

burdensome complaint after ACL injury and there is emerging evidence of its link to longer-term patellofemoral osteoarthritis (8).

Despite being from 'Down Under' on the opposite side of the globe (Melbourne, Australia), I have been very fortunate to collaborate with fantastic researchers and clinicians within the Department of Sports Science and Clinical Biomechanics at SDU, and have visited the department on several occasions over its 10 year existence. Being based in Salzburg, Austria, as part of the EU funded KNEEMO initial training network over the past two years, and with SDU being a leading partner institute within this network, we are creating new frontiers in the fight to stop early-onset knee osteoarthritis after traumatic injury. With these strong links and global expertise, we can be optimistic about soon being able to stop young people developing old knees that retire before their time.

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Are you better?
Improvement following ACL reconstruction

Lina Holm Ingelsrud, MSc Physiotherapy, PhD-student

Using patient reported outcome measures to evaluate treatment effect

During the past decades, the outcome assessment of patients undergoing an anterior cruciate ligament reconstruction (ACLR) has shifted from focusing on clinician-rated outcomes, such as joint laxity, to measures capturing the treatment outcome from a patient-centered view. The patients themselves are indisputably the experts in evaluating whether the treatment has worked or not. Hence, patient reported outcome measures (PROMs) have been developed and are now considered the most important primary outcome measure in clinical studies on ACLR (1). The Knee injury and Osteoarthritis Outcome Score (KOOS)is a well-established knee-specific questionnaire that is frequently used and recommended to measure outcomes after ACLR (2–6). The KOOS is collected in several national and international registries and used in both daily clinical practice and in research. The KOOS consist of five domains: Pain, Symptoms, Activities in Daily Living (ADL), Sport and Recreational Activities (Sport/Rec) and knee-related Quality Of Life (QOL). Each subscale is scored from 0, reflecting extreme knee problems, to 100, reflecting no knee problems.

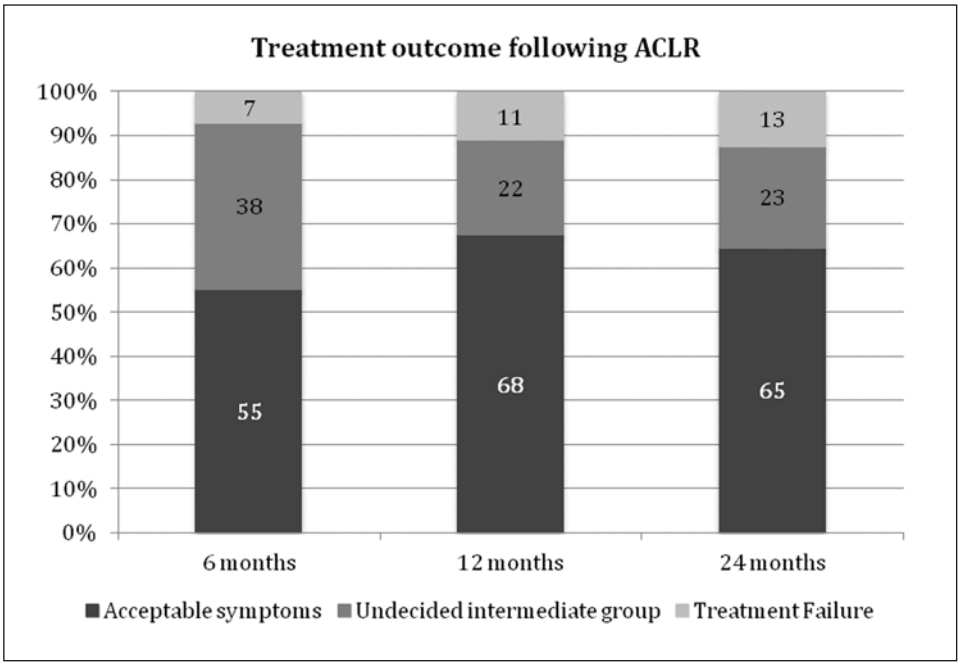
Are you better?

Most patients show improvements in KOOS scores after ACLR. According to Scandinavian registries, patients improve on average around 20-30 points in the subscales QOL and Sport/Rec at one to two years after surgery (7). How to interpret this rate of improvement is, however, not straightforward. Is a 10, 20 or 30-point increase in quality of life an important improvement for the individual patient? And what about for a group? I am working on establishing what is the smallest change in score that would constitute an important change for the five KOOS subscales following ACL reconstruction. Determining such a 'minimally important change' (MIC) value is crucial to evaluate treatment effect in clinical studies and for individual patients in daily clinical practice. The MIC concept is however much discussed in the scientific literature. There is poor consensus on how to define the concept, and a multitude of analyses methods exists to determine the MIC.

Are you doing well?

So what is a "good" post-operative KOOS score? A way to establish what score is considered a "good", but not necessarily excellent or desired, score, is to investigate what score is associated with having acceptable symptoms following ACL reconstruction. This concept is termed 'patient acceptable symptom state' (PASS) and involves a patient self-evaluation of the symptom state at a given follow-up time-point (8). In a recent cohort study (9), KOOS scores associated with having acceptable symptoms after ACLR were determined. At six months after an ACLR, only half of the patients considered their symptoms to be acceptable. At one and two years after surgery, two-thirds reported having acceptable symptoms. The patients who had acceptable symptoms reported mean KOOS subscale scores corresponding to none to mild symptoms. On the contrary, 7% of the patients at six months and 12% at one and two years after surgery, found their symptoms to be so unsatisfactory that they considered the surgery to have failed. These patients had mean KOOS subscale scores reflecting moderate to severe problems. These findings indicate that there is room for improvement of outcome following ACLR (9).

The study was published in the American Journal of Sports Medicine in 2015, co-authored by Lars-Petter Granan, Caroline B. Terwee, Lars Engebretsen and Ewa M. Roos (9).



The percentages of patients with acceptable symptoms, perceiving their treatment to have failed, or belonging to the undecided intermediate group at 6-24 months following ACLR (from: Ingelsrud et al. 2015).

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Lina Holm Ingelsrud *became a physiotherapist in 2008. During the four following years, while working in clinical practice, she became interested in musculoskeletal research.*
She is currently a PhD-student at the University of Southern Denmark and employed at the orthopaedic research department at Copenhagen University Hospital Hvidovre. Her PhD project aims at improving the interpretability of PROMs commonly used in knee-surgery.

Knee Injury and Generalised Joint Hypermobility

Tina Junge, Ph.D., Birgit Juul-Kristensen, Associate professor

What is hypermobility?

Generalised Joint Hypermobility (GJH) is defined as an increase in mean joint range of motion, implying decreased passive joint stabilisation, as illustrated by the photo of a hypermobile knee joint (Figure 1). GJH is typically classified by the Beighton Test, assessing hypermobility of the first and fifth fingers, the elbows, the knees and forward flexion of the trunk (Figure 2) (1). One point is allocated for each positive test, bilaterally for test 1 to 4, with a total score ranging from 0 to 9. The suggested cut point for classification of Generalised Joint Hypermobility is ≥4/9 in adults (2). The prevalence of GJH in the general children population varies from 7% to 29%, and in the adult population from 2% to 57% (2). The large variation is likely due to heterogeneity of the studied population regarding age, sex, ethnicity and/or a variation in test procedures, interpretation of results, and criteria used.

High risk of knee injuries in athletes with hypermobility

In a population of school children with GJH (8-15 years), no associations were found between GJH and the amount or type of knee injuries, whether traumatic or overuse injuries, nor when stratifying GJH for knee hypermobility (3).

These findings are in opposition to sporting populations, as seen in a systematic review of athletes with GJH (9-39 years), having five times higher risk of traumatic knee injuries, such as Anterior Cruciate Ligament ruptures,

Figure 1. *Adolescent ballet dancer with Generalised Joint Hypermobility including knee joint hypermobility*

during contact sport activities in high school, college and at all levels of sport (4, 5).

The difference between populations may be explained by the higher risk of knee injuries as children and adolescent with GJH mature, specialize and spend more time in sport, thereby being more exposed to situations requiring a high level of knee joint stabilisation, such as jumping, landing and pivoting (5).

Altered neuromuscular control in children with hypermobility

Interestingly, in an EMG study, children with GJH activated m. Semitendinosus significantly less (33%) than controls, before landing from a single leg hop for distance, even though there was no difference in hop length or maximum muscle strength between groups (6). Contrary, M. Gastrocnemius Medialis was activated significantly more (32%) before landing from the hop for children with GJH. After landing, children with GJH activated m. Semitendinosus significantly less (36%) than controls, with no increased activity of other knee joint muscles measured (6). These findings may indicate a compensatory strategy for the reduced passive knee joint stabilisation in individuals with GJH.

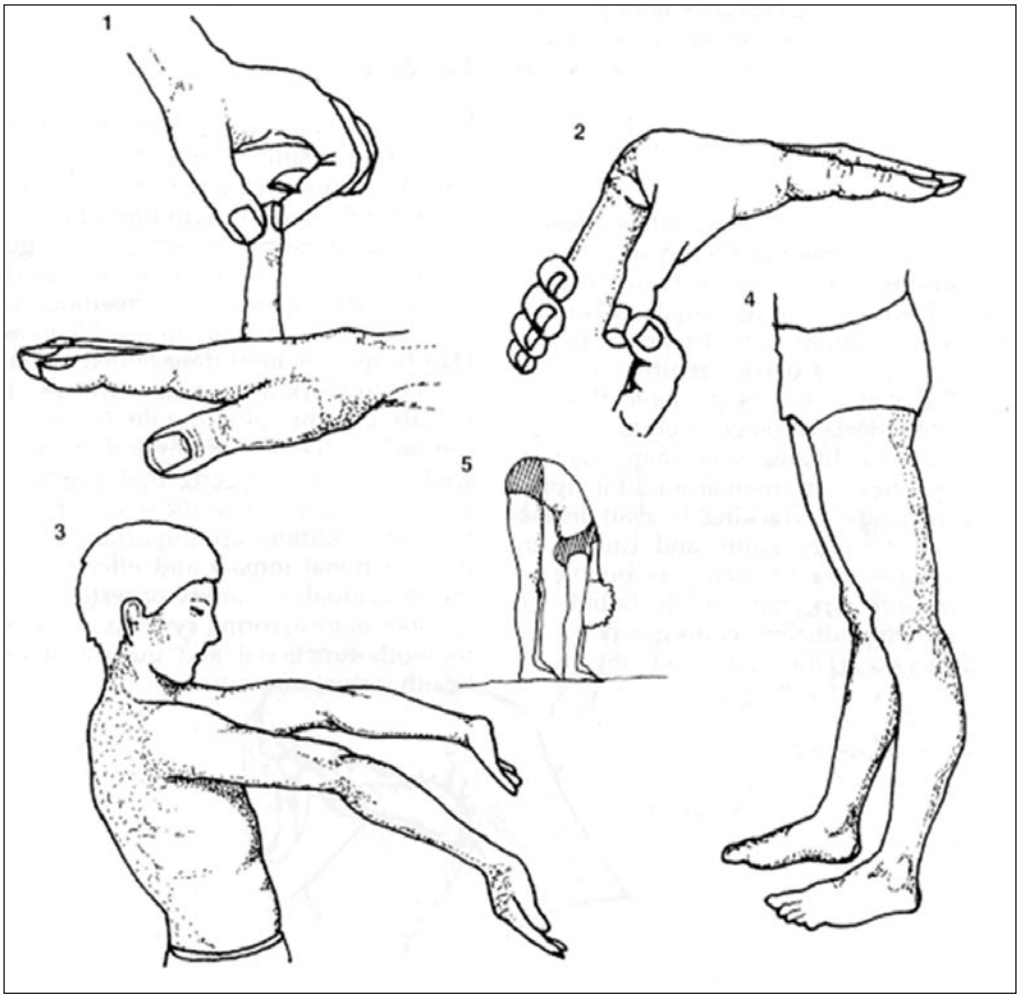

Figure 2. *Beighton Tests for hypermobility. One point is allocated for each positive test, bilaterally for test 1 to 4, with a total score ranging from 0 to 9. The suggested cut point for classification of Generalised Joint Hypermobility is ≥4/9 in adults.*

The altered knee joint muscle activity in children with GJH is similar to findings of decreased hamstrings activity (7) and decreased calf muscle activity (8) during isometric submaximal knee flexion and static balance tasks in children and adults with GJH.

Underlying mechanism for traumatic knee injuries?

For individuals with GJH and/or knee hypermobility, altered knee joint neuromuscular control may affect the load characteristics of the knee joint negatively during landing, which could be a plausible underlying mechanism for the different traumatic knee injuries seen in several sport-specific studies of adolescents and adults with GJH (4, 5).

Further supporting the theory of altered knee joint neuromuscular control as a risk factor for sports injuries in individuals with GJH, may be the increased sway area, as found during static balance tasks in children with GJH (8), since increased sway area is a risk factor for traumatic ankle injuries in children (9) and adults.

Clinical implications

Based on current evidence, no specific advice, recommendations or cautions with respect to knee injuries can be specified for school children with GJH, but recommendations may differ for older adolescents with GJH participating in specific sports.

The findings of altered neuromuscular control in maturing children and adolescents with GJH and knee hypermobility support the need for future research regarding GJH, especially in high-risk sporting populations.

This article is mainly based on the Ph.D. thesis by Tina Junge

´Risk factors for knee injuries in children – the impact of Generalised Joint Hypermobility. The CHAMPS Study-DK´

from the Faculty of Health Sciences, Institute of Regional Health Research, University of Southern Denmark. Supervisors were clinical Professor, MD, Ph.D. Niels Wedderkopp, Institute of Regional Health Research, University of Southern Denmark and Associate Professor, Ph.D. Birgit Juul-Kristensen, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark.

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***Birgit Juul-Kristensen** has been an active tennis player for many years, which has contributed to her interest in research in the shoulder and neck. Her research area is covering clinical screening instruments and non-operative treatment strategies for work and sports related musculoskeletal diseases in the shoulder and neck. A further research area includes children and adults with symptomatic Generalised Joint Hypermobility, covering estimation of the extent, injury risk and potential pathophysiological mechanisms, as basis for optimising treatment and prevention of symptom progression. Since 2009 she has been associate professor at University of Southern Denmark, and since 2013 professor at*

Femoroacetabular impingement syndrome: "Hip and trendy" in ortopedics and sports medicine

Erik Poulsen, postdoc

Not too many years ago, the most common sources of hip and groin pain in the younger and active population involved diagnoses such as muscle sprain, sports hernia and pelvic related pain (1). But due to increased use of new imaging modalities, improved understanding of biomechanics, and improved use of physical examination, femoroacetabular impingement (FAI) syndrome has during the last 10 years evolved into one of the hottest and trendiest topic in orthopedics and sports medicine (2).

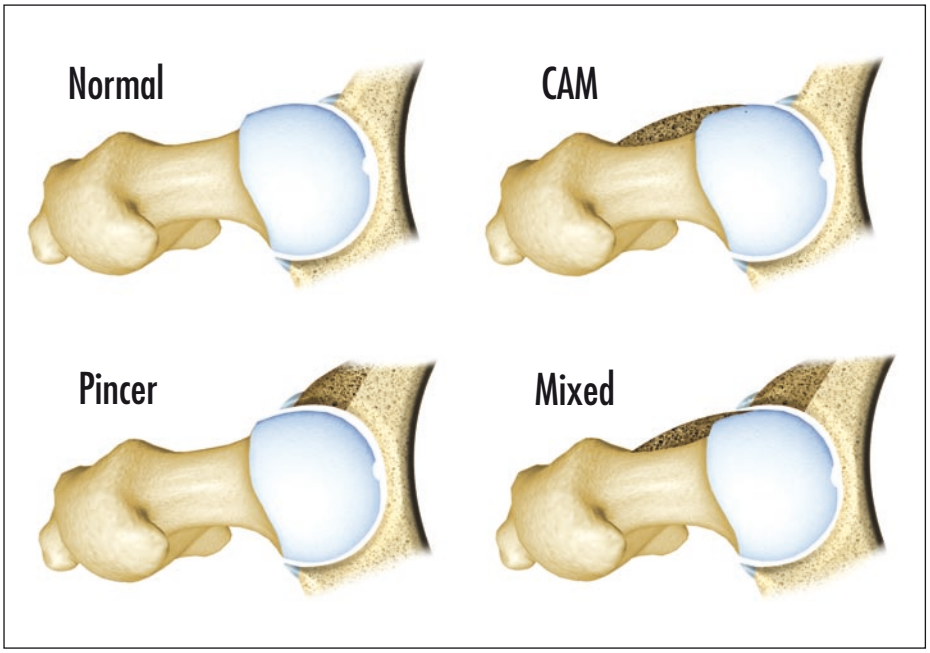
Clinical aspects

FAI is a clinical diagnosis represented by activity related pain most commonly located to the groin and lateral thigh, and initiated by a sudden or traumatic onset (3). Commonly, the symptoms are worsened by activities stressing flexion, adduction and/or internal rotation provoking impingement between the acetabular rim (including the labrum) and the anterior-lateral part of the femoral neck and head junction. Besides pain, physical activity and quality of life are reduced and clinical findings include reduced muscle strength of the hip abductors and flexors and reduced hip range of motion particularly in flexion and internal rotation (4).

The most common clinical procedure used to test for FAI is the FADDIR (Flexion, Adduction and Internal Rotation) or the Flexion-IR (Internal Rotation) test but, both tests have a very high sensitivity and low specificity meaning the tests create a high number of false positives compared to imaging. Therefore, the clinical tests have great value as initial screening tests and if the tests do not replicate the patient's pain, FAI syndrome can be ruled out (5).

Morphology and imaging

The impingement occurs with activity but a range of morphological changes/variations of the hip predispose to the impingement and are visualized by imaging (radiographs, MRI, CT and ultrasound) (6). The strength of MR arthrography is the visualization of the labrum and cartilage revealing associated labral tears and chondral damage.



Cam and pincer morphology

The morphological variations are commonly differentiated into three main categories: cam, pincer and a combination of the two (Figure) (7). Subgroups of pincer type morphology are retroverted acetabulum and pelvic inclination. Cam is a bone-development affecting the neck and/or head of the femur and are thought to occurs prior to the closure of the epiphyseal growth plate. Pincer type morphology creates an increased coverage of the femoral head by the acetabulum increasing the risk of impingement (8). Although cam and pincer types of FAI can be found in both women and men, cam has been found to have a higher prevalence in men and pincer being more common in women (9).

Cam and pincer morphology without clinical relevance

Findings of cam and pincer on imaging are not necessarily related to experiencing symptoms or having impact on physical activity. The prevalence of cam and pincer morphology **without** associated symptoms has in a recent systematic review been reported as 23% for cam and 57% for pincer and 9% in the mixed type (10). In a group of 547 senior athletes with a mean age of 67, eighty-three percent (83%) demonstrated radiographic findings of cam and/or pincer but no differences in activity or self-reported symptoms were found between seniors with or without cam and pincer changes (11).

Current management of FAI and evidence levels

Current treatment is dominated by arthroscopic surgery involving labral reattachment or debridement, removal of the cam defect or trimming the rim of the acetabulum (12). Non-surgical interventions are less common and focuses on rehabilitation including patient education, activity moderation and, neuromuscular and strengthening exercises to improve hip joint and lower leg biomechanics (12). Due to the limited time FAI has been recognized, no high quality randomized clinical trials with long term follow-up have examined the effects of any of the current interventions used so evidence are limited to predominantly large case studies, the majority of them being retrospective (evidence level IV) (12).

Prognosis

Cam is documented as a risk factor for OA whereas no association has been found between pincer and later development of hip osteoarthritis (13).

The future

The future looks bright. Several RCTs examining the effect of arthroscopic surgery vs. non-surgical therapies for FAI syndrome are currently including recruiting patients and one study examines the effect of arthroscopic surgery vs. sham surgery. Further, the long-term natural history of FAI syndrome needs to be studied prospectively (12).

Clinical note

Although FAI syndrome is important and trendy in orthopedics and sports medicine, the clinician should still consider muscular sprain, hernia and pelvic related pain as important differential diagnoses.

***Erik Poulsen**'s research interests focus predominantly on hip conditions with an emphasis on diagnosis and management of FAI syndrome and hip osteoarthritis. He combines his research position with clinical practice focused on patients with hip disorders.*
Erik has been playing football from an early age and as a youngster he competed at regional and national levels in tennis and table tennis. His later interests include golf and he is still playing indoor football.

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Nye bøger

I to nye bøger sættes der fokus på træning af ryggen og nakken. I samarbejde med flere eksperter gennemgår forfatterne de hyppigste årsager til ryg- og nakkesmerter og kommer med bud på enkle øvelser, der i langt de fleste tilfælde kan blive permanente løsninger og sørge for øget muskelstyrke, bedre evne til afspænding og smertelindring.

Træningsøvelserne – både med og uden redskaber – er vist i billeder og forklaret med enkle ord, og der er også gode forklaringer på, hvad smerte er, og hvor den kommer fra.

Forfatterne Anders Aasen Berget og Lennart Krohn-Hansen er begge fysioteraputer og har i mange år været optaget af effektive løsninger på ryg- og nakkeproblemer.
Ud over 'Sund nakke' og 'Sund ryg' har de også skrevet en bog om 'Slyngetræning', som endnu ikke er udkommet på dansk.

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The shoulder is the 'new knee'!

Birgit Juul-Kristensen, Associate professor

Increased focus on the shoulder

Even though more than twice as much has been written about treatment of knee problems compared to shoulder problems, (source: PubMed 81.492 hits on 'knee' vs. 36.789 hits on 'shoulder'), there are clear tendencies showing an increasing focus on the shoulder. The Ministry of Health and Authority launched a public priority of healthy shoulders in 2011 and 2013, by establishing two expert committee groups for development of visitation and clinical guidelines for selected shoulder disorders. At the Danish Sports Medicine Congress 2016, sessions covering shoulder aspects were the priority in at least 50% of all sessions. Similarly, the annual Science in Action Day at University of Southern Denmark 2016, which covered diagnostics and treatment of neck and shoulder injuries, attracted more than 130 interested clinicians and researchers. Immediately following this introductory article, a number of articles will follow focussing on aspects of shoulder and neck problems covered at the Science in Action Day at University of Southern Denmark in December2016.

Why is a healthy shoulder important?

Shoulder and neck pain are common and have severe impact on society and the individual. The reason may include that work life requirements during the recent century have changed from walking/standing and heavy lifting to more sedentary tasks with an increasing upper limb exposure, thereby increasing demands for a healthy shoulder. Furthermore, focus on sports with high demands on the upper extremities has increased, why prevention of upper extremity injuries has become more important. Not only the able-bodied, but also disabled individuals, including wheelchair users (both athletes and non-athletes), are largely dependant on a healthy shoulder, since 'their shoulders are their legs'!

Altogether, requirements of a healthy arm, shoulder and hand function have increased, and knowledge about how to keep this function intact is therefore utmost required!

PhD-theses in FOF of shoulder and neck problems

The most frequent shoulder disorder is Subacromial impingement Syndrome (SIS). Underlying mechanisms relate to scapula dyskinesia (abnormal scapular function), rotator cuff tendinopathy and rupture, or glenohumeral instability (traumatic or non-traumatic). Consequently, different treatment strategies seem to be indicated for these conditions, which have been the focus for several Randomised Controlled Trials performed in our research unit during the latest seven years. Until now, three PhD-theses within this area have been completed.

Chronic neck pain is another area with high prevalence in both the general population, and in those with traumatic debut of their symptoms (e.g. whiplash). Chronic musculoskeletal pain and disability can hinder a normal daily living, and have impact on quality of life, in addition to health care costs. Since exercise has been part of the treatment of patients with chronic neck pain, without being evidence based however, a PhD-thesis in FoF including a Randomised Controlled Trial on patients with chronic neck pain has been undertaken and defended.

Four more PhDs/postdocs are ongoing, covering postoperative treatment of rotator cuff ruptures, treatment of the hypermobile shoulder, characteristics of wheelchair users with shoulder problems, and imaging characteristics for tissue diagnostics of the painful shoulder.

Future clinical perspectives

The new knowledge from these studies will be used in support for updating and developing National and International Clinical guidelines for clinical practice in the treatment of shoulder and neck injuries.

Completed PhD-theses in our research unit with a focus on the shoulder and neck, from left to right: ***Camilla Larsen****: 'Neuromuscular function in patients with Subacromial Impingement Syndrome and clinical assessment of Scapular kinematics' (1),* ***Kim Ingwersen****: 'Diagnostic evaluation of Rotator Cuff Tendinopathy and the effect of three months of progressive high load exercise treatment' (2),* ***Inge Ris Hansen****: 'Management of chronic neck pain patients, characteristics, clinical tests and active interventions' (4),* ***Henrik Eshøj****: 'Non-operative treatment, outcome measurements and characteristics of patients with traumatic anterior shoulder dislocation' (3).*

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Birgit Juul-Kristensen *has been an active tennis player for many years, which has contributed to her interest in research in the shoulder and neck. Her research area is covering clinical screening instruments and non-operative treatment strategies for work and sports related musculoskeletal diseases in the shoulder and neck. A further research area includes children and adults with symptomatic Generalised Joint Hypermobility, covering estimation of the extent, injury risk and potential pathophysiological mechanisms, as basis for optimising treatment and prevention of symptom progression. Since 2009 she has been associate professor at University of Southern Denmark, and since 2013 professor at University College Bergen, Norway.*

Clinical guidelines on shoulder problems and neck pain, how can they be used?

Strengths and limitations

Birgit Juul-Kristensen, Ph.D., Associate professor and Inge Ris Hansen, Ph.D., Postdoc

Shoulder problem guideline

National clinical guidelines for the shoulder were developed in 2013 (1). The history behind the guideline was a 23% increase in number of shoulder surgeries in Denmark from 2001-2007, with a regional variation of 4-73% increase. There were no decrease in the waiting time, no reduced sickness absence or no reduced medicine consumption as effect of this increasing surgical activity (2). Further, a preliminary search showed that the effect of shoulder surgery was not better than for non-surgical treatment (including exercise). This was based on three studies comparing arthroscopic surgery and non-surgical treatments (3-7). One of the three studies compared 3 groups (arthroscopic surgery vs. placebo laser vs. supervised exercises) at 3, 6 and 30 months follow-ups (3, 4). The other two studies compared 2 groups, arthroscopic surgery vs. physiotherapy including passive and active treatment of shoulder muscles and soft tissue, with 3, 6 and 12 months follow ups (5, 6), and arthroscopic surgery plus exercises vs. exercise only, with a 24 months follow-up (7). Furthermore, surgery was found to be more expensive (3, 4, 7), and patients had more days with sickness absence following surgery (5, 6).

Based on a previous MTV (2) the Ministry of Health and Authority established interdisciplinary committees in 2011 to develop professional visitation guidelines (8), and in 2013 to develop clinical guidelines (1) shoulder impingement syndrome (SIS) and traumatic rotator cuff rupture (TRCR).

The evidence for surgery and exercise was graded through systematic reviews of available literature in 2013 (1), and also studies of the accuracy of diagnostic tests were evaluated. Based on the evidence for surgical and non-surgical treatments it was stated that for SIS surgery is indicated if the response to 3-6 months of non-operative treatment is unsatisfactory, defined as persistent shoulder pain and reduced function. For acute TRCR in young individuals, surgery is recommended within 3 months, to avoid degeneration and retraction of the supraspinatus tissue and tendon. In elderly individuals, the criteria for surgery are similar to the recommendation for SIS.

Generally the studies were few and of moderate quality. It was not unambiguous which specific training programme should be recommended. Training could include a variety of ingredients, such as specific supervised training, scapula stabilizing and dynamic humerus-centring exercises. There were, unfortunately, no studies comparing different treatment lengths. Further, there was no evidence for shockwave, laser, acupuncture, ultrasound or placebo. However, since 2013 new studies on effects of mobilization, stretching, scapular motor control, and heavy eccentric training and rotator cuff training have been published.

In summary, the clinical guideline for shoulder surgery can be used as minimum criteria for treatment of SIS and TRCR. Due to new studies a revision of this guideline is urgently needed.

Neck pain guideline

A guideline for neck pain patients with short-term cervical radiculopathy (CR) is published (9) in 2015 and another guideline for treatment of acute/subacute neck pain patients is to be published in December 2016.

In the working group, CR was defined as nerve root pain caused by mechanical compression or inflammation of the nerve root, initiated by disc herniation or degeneration (10). The diagnosis of CR is based on clinical signs and symptoms in most cases and rarely needs to be confirmed by CT-scans or MRI (11). Non-surgical interventions are generally recommended as first line treatment of degenerative spinal nerve root affection, and surgery is considered after 6-12 weeks with inadequate pain relief (9). Exceptions are progressive neurologic deficits, signs of myelopathy, fractures and severe cervical lesions(11).

The mandate for the guidelines committee was to make recommendations

concerning a maximum of ten selected questions concerning interventions. The included population is adults with recent onset of signs of CR. The reason for selecting the analysed interventions was that the intervention was frequently used, or uncertainties about effectiveness of the intervention alone, or as supplement to usual care.

A major limitation of this guideline is that recommendations are based mainly on consensus between the committee members as there was lack of evidence for the effectiveness of the selected interventions: information and guidance, medication, mechanical diagnosis and therapy, massage, acupuncture, neuromuscular stabilization exercises, joint mobilization and manipulation, and cervical traction.

Strengths of this national clinical guideline include the commissioning and chairmanship by the Danish Health and Medicines Authority. Furthermore, the guideline working-group was composed of selected clinicians and academics with different professional backgrounds, assisted by experts (research librarian, methodologist from the Nordic Cochrane Centre), and was peer-reviewed by two international experts.

The guideline working-group strongly recommends that research efforts in all aspects of the management of cervical radiculopathy are intensified.

In summary, this guideline is mainly based upon expert consensus and should be weighted as such when considering the recommendations for management of patients with CR.

Co-operators in working out both guidelines are committee members nominated by the Ministry of Health and Authority.

Co-operators in working out the guideline on the neck guideline from the Institute of Sports Science and Clinical Biomechanics are Associate Professor, Ph.D. Per Kjær, University of Southern Denmark, Associate Professor, Ph.D. Alice Kongsted, and Professor Jan Hartvigsen.

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Birgit Juul-Kristensen *has been an active tennis player for many years, which has contributed to her interest in research in the shoulder and neck. Her research area is covering clinical screening instruments and non-operative treatment strategies for work and sports related musculoskeletal diseases in the shoulder and neck. A further research area includes children and adults with symptomatic Generalised Joint Hypermobility, covering estimation of the extent, injury risk and potential pathophysiological mechanisms, as basis for optimising treatment and prevention of symptom progression. Since 2009 she has been associate professor at University of Southern Denmark, and since 2013 professor at University College Bergen, Norway.*

Inge Ris Hansen *is physiotherapist and PhD at the University of Southern Denmark. Her research area is clinical research, mainly on patients with chronic neck pain, both traumatic and non-traumatic. Actual research area includes further development of an evidence-based approach for treatment of low back pain patients. In addition to her research, she is working as a clinician with patients with chronic complex pain problems and as a teacher in different educational environments.*

Reliability and validity of clinical cervical tests in persons with chronic neck pain and asymptomatic controls

Inge Ris Hansen, PT, PhD; René Jørgensen, PT, Msc

Neck pain has an increasing incidence and severe impact on the individual as well as on society, ranking as the second highest on Years Lived with Disability according to the Global Burden of Disease 2010 in Denmark (1). In 2014, in Denmark, 50% of the adult population indicated moderate to severe shoulder-neck pain within the previous 2 weeks (2). Non-specific neck pain results in significant use of health care (3). Of all patients referred to physiotherapy primary care in Denmark, 21% present themselves with neck pain (4). In clinical practice, management of chronic neck pain patients, including physical assessment and treatment, is still an area with numerous unknown factors.

Clinical tests

Patients with chronic neck pain present with a number of clinical findings including changes in the deep cervical flexor and extensor muscles, reduced range of cervical motion, cervical joint position deficits, oculomotor disturbances, and general sensitisation of the central nervous system. Several assessment methods for testing these deficits have been described (5-8). However, the reliability of such tests has not been adequately evaluated. There are lacking reliable tests that are low cost and easy to perform in a clinical setting.

Clinimetrics of the tests

We investigated the reliability of several cervical clinical tests in chronic neck pain patients and asymptomatic controls. Furthermore, we examined the error of measurement of the tests, between-groups discriminative validity and construct validity of the tests with the Neck Disability Index (NDI), Numeric Rating Scale (NRS), and the physical and mental component score of the SF36 (SF36-PCS, SF36-MCS).

The cervical tests included were Cranio-cervical Flexion Test (CCFT), Range of Movement (ROM), Joint Position Error (JPE), Gaze Stability (GS), Smooth Pursuit Neck Torsion Test (SPNTT), and test for Deep Cervical Extensors (DCE), and Pressure Pain Threshold measured bilaterally on locations in the cervical spine, infraspinatus and tibial anterior (PPT). A total of 42 subjects (40 females, 2 males) were included, 21 with and 21 without chronic neck pain. For the reliability study two independent examiners examined subjects at day one and again at a second test occasion (1-7 days apart).

The majority of the clinical tests were reliable and showed satisfactory construct validity, except for the JPE. High errors of measurements were found, indicating a relatively high degree of inherent variability. All tests, except for the JPE, correlated with the NRS, NDI and some tests with the SF36 (-PCS or -MCS). None of the measures were able to differentiate significantly between groups within the measurement errors.

Clinical implications

The clinical tests ROM, GS, SPNTT and PPT can be justified as part of the clinical assessment in physiotherapy based upon satisfactory reliability. However, most tests showed a large measurement error, and therefore the clinical interpretation of these tests has to be based on a substantial change in test results. The majority of tests correlate with self-reported outcomes of neck function, pain and quality of life (9), indicating that they may be useful in the management of chronic neck pain patients.

This article is mainly based upon the Ph.D. thesis by Inge Ris Hansen: ***Management of chronic neck pain patients: characteristics, clinical tests and active intervention*** *and the Master thesis by Rene Jørgensen:* ***Inter-examiner and intra-examiner reliability of six clinical cervical tests and test retest reliability of two performance tests in subjects with chronic neck pain and asymptomatic controls.***

Both authors are from the Faculty of Health Sciences, Institute of Sports Science and Clinical Biomechanics, University of Southern Denmark. Main supervisor was Associate Professor, Ph.D. Birgit Juul-Kristensen, and Professor Karen Søgaard was co-supervisor, both from the Department of Sports Science and Clinical Biomechanics, University of Southern Denmark.
Deborah Falla was co-authoring the publication related to this study.

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Rene Jørgensen *is a physiotherapist and MsC from University of Southern Denmark, Institute of Sports Science and Clinical Biomechanics. Rene Jørgensen is currently employed as a teacher at UCsyd, department of physiotherapy. His research area is focused on clinical tests, mainly on patients with neck pain.*

The Measurable Shoulder

Henrik Eshøj, PT, MSc, PhD fellow and Camilla Marie Larsen, MSc, PT, PhD

Common shoulder conditions

Shoulder pain and dysfunction are common and may start early in life due to athletic injuries or later on as a consequence of degenerative conditions (1, 2). In general, shoulder disorders constitute an excessive socioeconomic burden that is constantly increasing (3). Thus, to optimize shoulder rehabilitation clinical reasoning algorithms based on clinical tests have been proposed as screening tools (4-6). However, such tools are only valid when based upon reliable and proper clinical tests. Therefore, an essential area of research for us has been to develop, examine and sum up the evidence of clinical shoulder examination tests.

Subjects with shoulder pain and dysfunctions are usually active athletes and overhead workers, but shoulder disorders are also prevalent in the general population. The most common shoulder disorders refer to Subacromial Impingement Syndrome (SIS) and Shoulder Instability (SI). SIS is characterized by shoulder pain exacerbated with arm elevation or overhead activities due to compression of subacromial structures, suggested to be due to factors such as rotator cuff pathology, bone deformation and scapular dyskinesis (7). SI is characterized by discomfort and pain in addition to repeated glenohumeral subluxations or dislocations, caused by high impact injuries or non-traumatic repetitive overhead activities and/or Generalised Joint Hypermobility (8, 9).

Diagnostic tools and treatment effect measures

Clinical tests for diagnosing SIS include a group of pain provocation tests (Jobe's, Neer's, Hawkins' and Apprehension tests)(4, 5), whereas SI is diagnosed with a group of pain and instability provoking or relieving tests (Apprehension, Relocation and Surprise tests) together with laxity tests (Load-and-shift, Sulcus sign and Gagey tests) (Table 1) (4, 10). For self-assessment of shoulder instability the Western Ontario Shoulder Instability Index (WOSI) is frequently used, and has been translated to Danish (15).

When diagnosing SIS or SI, an integral component of the clinical examination is evaluation of scapular position and function (scapular dyskinesis) (7, 11, 12). It is however not clear whether scapular dyskinesis directly cause, contribute to, or is the result of shoulder dysfunction (11). Scapular position and function may be examined with the use of visual evaluation and clinically objective measurements (13).

Results

We have studied the measurement properties of these tests, and found almost perfect reliability for the four SIS tests (14). In our study, Neer's test was the most often used test to determine SIS. The tests to diagnose SI showed moderate to substantial reliability except for the Relocation test with only fair reliability (16). For assessing scapular dyskinesis, three tests, a visual evaluation system besides the Scapular Dyskinesis Test (SDT), and the Scapular upward rotation tests present with acceptable reliability and validity (13). Finally, the Danish version of WOSI is found highly reliable and valid (15).

Perspectives

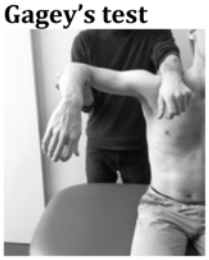
On the basis of the current evidence we suggest that shoulder pain and dysfunction can be adequately measured in a clinical setting if performed according to standardized procedures.

However, our studies have raised further questions, for example in relation to a causal relationship between shoulder pathology, pain and dysfunctions. This finding resembles what is seen for other joints like the knee and hip. Consequently, aspects of validity, diagnostic accuracy, and responsiveness of these clinical tests, as well as responsiveness for the WOSI questionnaire, requires further elaboration (15).

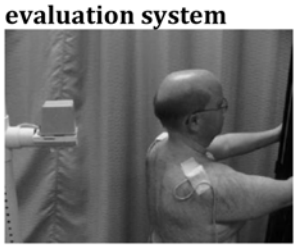
This article is mainly based on the Ph.D. thesis by Camilla Marie Larsen (2014):
Neuromuscular function in patients with Subacromial Impingement Syndrome and clinical assessment of scapular kinematics
from the Faculty of Health Sciences, Institute of Sports science and Clinical Biomechanics, University of Southern Denmark. Main supervisor was Professor Karen Søgaard, and co-supervisor was Associate Professor, Ph.D. Birgit Juul-Kristensen, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark.

And the PhD-thesis by Henrik Eshøj (2016):
Non-operative Treatment, Outcome Measurements and Characteristics of Patients with Traumatic Anterior Shoulder Dislocation
from the Faculty of Health Sciences, Department of Sports science and Clinical Biomechanics, University of Southern Denmark. Main supervisor was Associate Professor, Ph.D. Birgit Juul-Kristensen, and co-supervisor Professor Karen Søgaard, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark.

Table 1. Recommended clinical tests.

Disorder	Test	Evaluation
Shoulder instability (SI)	**Apprehension test** 	Subjective or objective presence of apprehension and/or pain (Yes/no)
SI	**Surprise test** 	Subjective or objective presence of apprehension and/or pain (Yes/no)
SI	**Load-and-shift** ***Anterior test***  ***Posterior test*** 	Humeral head movement evaluated by the use of a four-level laxity scale 0 = little to almost no movement 1 = humeral head moves up onto the glenoid 2 = humeral head moves beyond the glenoid, but relocates spontaneously once pressure is released 3 = humeral head moves beyond the glenoid and remains dislocated Rated as positive when scored 2 or 3
SI	**Gagey's test** 	Rated as positive with abduction exceeding 105 degrees
Subacromial impingement syndrome (SIS)	**Neer's test** 	Subjective presence of pain? (Yes/no) If pain – is it in the front of the shoulder or in the back?

>>>

SIS	**Jobe's test** 	Subjective presence of pain (Yes/no)
SIS	**Hawkins' test** 	Subjective presence of pain (Yes/no)
SIS	**Apprehension test** 	Subjective presence of pain (Yes/no) If pain – is it the front of the shoulder or in the back?
Scapular dyskinesis (SD)	**Scapular upward rotation test** 	Digital inclinometer measurements, at rest and 60°, 90°, and 120" of humeral elevation in the scapular plane (degree)
SD	**Scapular Dyskinesis Test (SDT)** 	Subjective ratings of either normal motion, subtle dyskinesis, or obvious dyskinesis
SD	**Modified qualitative evaluation system** 	Observations of an abnormal dyskinesis pattern (yes/no)

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Henrik Eshøj *is a physical therapist with a special interest in musculoskeletal shoulder disorders and rehabilitation. Thus, much of his research has focused on improving the evidence of shoulder treatment effect measures (patient-reported questionnaires, clinical tests and objective measures). Furthermore, he is currently in charge of a randomized controlled clinical trial comparing a standardized, physical therapist-supervised neuromuscular shoulder exercise program with standard care (self-managed shoulder exercise program) in patients with traumatic anterior shoulder dislocations.*

Camilla Marie Larsen *has a special interest in neuromuscular shoulder function, and her current research focus on shoulder pain among persons with spinal cord injury. She further works with clinimetric testing of questionnaires, and systematic searches of the literature in relation to treatment and prevention of shoulder pain among spinal cord injured. Camilla enjoys being physically active, which in her younger day included rowing, but now a day running has become her favorite sport.*

Ultrasound of the shoulder should follow standardized protocols

Kim Gordon Ingwersen, PhD, Birgitte Hougs Kjær, PhD student

Shoulder discomfort – a major musculoskeletal challenge

Shoulder pain and dysfunction is often persistent and recurrent with 54% of patients in the western world reporting persistent symptoms and dysfunctions after 3 years (1), most frequently presented as subacromial impingement syndrome (SIS) (2). Prevalence of SIS is especially high among throwing athletes (3). Anamnesis and clinical shoulder examination tests are often used when diagnosing SIS, but these tests often lack high specificity and sensitivity, making diagnosis uncertain (4), and thereby precise and targeted treatment is challenged. Ultrasound (US) is recommended as a supplemental method for disclosing more specifically the subacromial pathology (thickening of tendons/bursas, altered echogenicity, calcification, partial/complete tendon tears) for strengthening of the SIS diagnosis (5), and has the potential as a method for evaluating effects of treatment.

Ultrasound - a diagnostic or evaluation tool?

To rigorously standardize measurements is one way of increasing reliability and validity of US assessments in the clinic. We have in iterative processes developed strict ultrasound protocols for detection of structural changes considered related to SIS, aiming at minimizing intra and inter rater bias (6, 7).

Ingwersen et al. showed a high inter rater reliability for grading structural changes, such as neovascularity and presence of calcifications, whereas grading hypo echoic areas, suggesting fibrillar disruption, was more challenging when two raters graded these changes individually. Therefore, as previously shown in studies comparing MRI and ultrasound for detecting partial ruptures, ultrasound should be used and interpreted carefully when evaluating presence of subtle changes in the tendon, such as partial ruptures or areas with hypo echogenicity (8). In contrast, standardized measurements of tendon thickness (figure 1) are possible to perform with high reliability in participants with and without SIS. In repeated measurements of tendon thickness, changes larger then 10%, could be interpreted as actual change (6, 7). Changes in tendon thickness may be considered a mediator for changes in tendon health – however, this needs further investigation.

Measurements of acromiohumeral distance (AHD) (figure 2) and dynamic impingement (DI) are additional methods for assessing SIS, which showed high intra- and inter rater reliability using ultrasound (7). Our findings on the AHD reliability are in line with previous studies (9). AHD is considered a relevant measure due to the variation in size following different pathological conditions, such as e.g. full-thickness rotator cuff tear or SIS (10). Reliability of DI has not previously been reported, even though this dynamic examination is frequently used in the clinic as a rele-

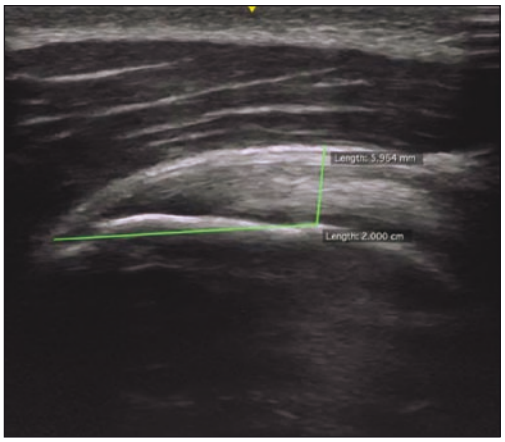

Figure 1. *Measurement of tendon thickness of supraspinatus tendon*

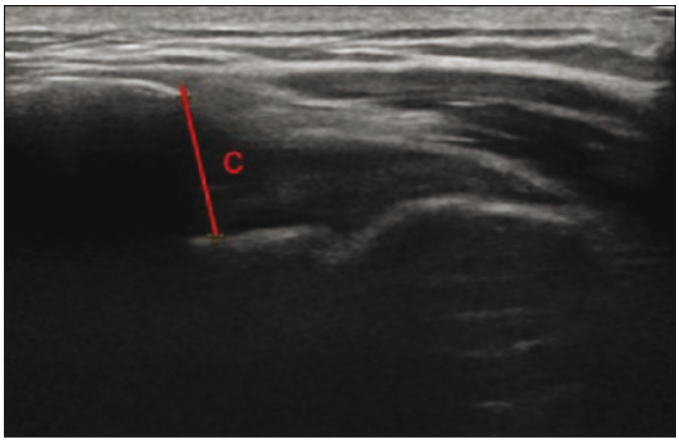

Figure 2. *Measurement of acromiohumeral distance*

vant functional test of the subacromial structures seen during arm elevation.

Clinical implications

For the benefit of the patient, clinicians should take precaution and use well standardized ultrasound protocols when applying US as supplement in shoulder diagnosis. In research, applying standardized US procedures could be a relevant supplement for measuring treatment effects and subgrouping patients with shoulder dysfunction.

This article is mainly based on elements from the Ph.D. thesis by Kim Gordon Ingwersen
Title: Diagnostic evaluation of Rotator Cuff Tendinopathy and the effect of three months of progressive high load exercise treatment
from the Faculty of Health Sciences, Institute of Sports science and Clinical Biomechanics, University of Southern Denmark. Main supervisor was Associate Professor, Ph.D. Birgit Juul-Kristensen, and co-supervisor was Professor Karen Søgaard, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark. Study co-operators were orthopaedic surgeon Lilli Sørensen, Jette Vobbe, Steen Lund Jensen, Sten Rasmussen, Hans RI Jørgensen from the shoulder Units at Hospital Lillebaelt, Aalborg University Hospital and Odense University hospital, and radiologist John Hjarbæk, radiological department, Odense University Hospital.

And the M.Sc. thesis by Birgitte Hougs Kjær
Title: Intra-rater and inter-rater reliability of standardized ultrasound protocol for assessing subacromial structures
from the Faculty of Health Sciences, Institute of Sports science and Clinical Biomechanics, University of Southern Denmark. Main supervisor was Associate Professor, Ph.D. Birgit Juul-Kristensen, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark. Study co-operators were Senior researcher, Ph.D, PT Karen Ellegaard, The Parker Institute, Senior researcher, Ph.D, PT Susan Warming, Bispebjerg Hospital and PT Ina Wieland, Bispebjerg Hospital

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Kim Gordon Ingwersen *has a background in elite sprint kayaking, stopping competition due to among other reasons a shoulder overuse injury, and several high impact injuries to his neck after snowboard accidents. He has mainly worked within the area of rotator cuff tendinopathy and rehabilitation of shoulder injuries. Kim is an early career researcher, attaining his PhD degree in June 2016, and now working as research physiotherapist at Lillebaelt Hospital – Vejle Hospital.*

Birgitte Hougs Kjær *is an active runner and tennis player with a profound interest in sports medicine and orthopedics. After working as a physical therapist within those specialties for 15 years, she started her research career at the Department of Sportsmedicine and Ortopedics at Bispebjerg Hospital focusing on shoulder pathology, injuries and treatment. Currently she is a PhD student at the Institute of Sports Science and Clinical Biomechanics, University of Southern Denmark.*

Elastography – how hard can it be?

Karen Brage, PhD-student and Kim Gordon Ingwersen, PhD

Background

Would you like to be able to predict tendon injuries before clinical symptoms appear?

It sounds challenging, but may be possible with Sonoelastography (SEL). SEL measures the physical properties of soft tissue and estimates tissue stiffness, which can lead to early detection of pathological tissue changes, increased diagnostic accuracy and better guidance and evaluation of treatment (1).

SEL has this far primarily been applied for differentiation of malignant and benign lesions of the breast, thyroid, prostate, and lymph node. However, lately SEL has been applied to musculoskeletal conditions as well, and it has been shown that healthy tendons are harder and less elastic than pathological tendons (figure 1) (2).

This article introduces two types of elastography and outlines the methodological problems to be overcome before elastography can be confidently used for assessment of tendons and hopefully prediction of tendon injuries.

Shearwave elastography

In Shearwave elastography, one of the elastography types available, a horizontal acoustic impulse (acoustic radiation force) is produced by the ultrasound transducer. The disturbance created by this impulse travels through the tissue as a shear wave, which propagates in the tissue at different speeds dependent on the tissue stiffness. By measuring how fast the wave gets to different lateral positions, the software calculates the stiffness and displays it in kilopascal or m/s (3).

This method is thought to be operator independent, reproducible and quantitative. However, pilot testing has shown, that this technique, does not yet work well on musculoskeletal anatomy.

Strain elastography

Strain elastography, another of the elastography types available, is based on manual compression. The tissue deformation is obtained on the basis of uniformly mechanically induced compressions (strain) of structures under the UL transducer, during the conventional B-mode US-scan. Through manual compression, the soft tissue displays different deformation depending on the stiffness. The degree of deformation can be interpreted as an estimate of the tissue stiffness (4, 5).

The pressure used to compress the tissue is an unknown variable, which of course affects the reliability. A way to handle this is to measure both the area of interest and a reference area and present the result as a ratio of these, assuming that both areas have experienced the same amount of pressure. This has been shown to work well on detecting breast cancer, as you have a large amount of healthy tissue next

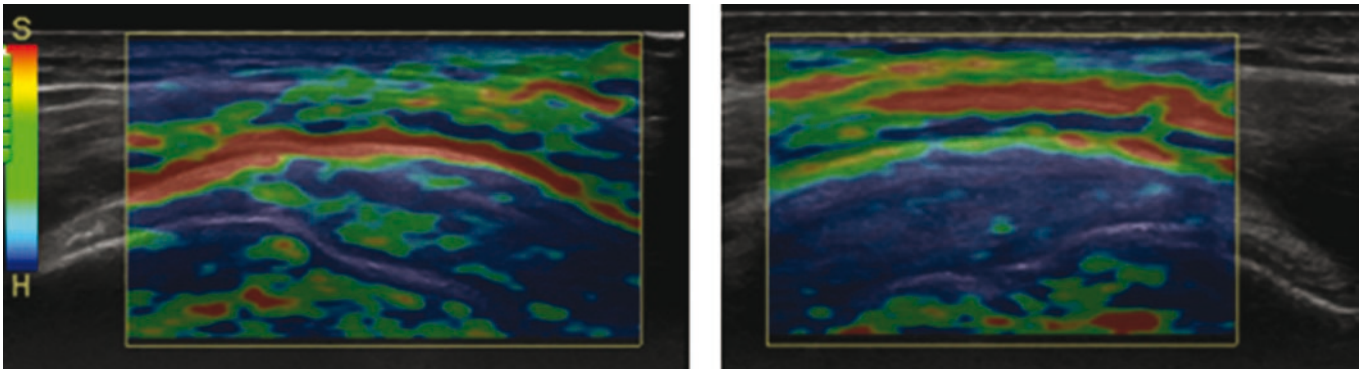

Figure 1. *Colours range from blue for the hardest tissue through green/yellow and finally red which is for the softest tissue. Here you see an asymptomatic (blue) supraspinatus tendon in the right picture, and a symptomatic and more heterogeneous tendon with green and yellow areas in the left picture (same patient). The symptomatic tendon (left picture) is 45% softer than the asymptomatic tendon.*

to the tumour. Tendons however, are not surrounded by a large amount of healthy tissue, and therefore bone, fat, muscle or a gel pad may be used as reference tissues.

In areas with known fat deposits these may be used as a reference, as for an example the Kagers fatpad in the Achilles tendon. Muscle is another possible reference tissue, but as muscle hardens when used, it is a poor reference tissue for evaluating exercise effects on the tendon. Bone should not be used as a reference tissue, as ultrasound cannot produce images from inside bone tissue (perceived images are artefacts).

Lastly, a gel pad placed on top of the transducer seems like the most viable solution. However, ideally, a reference area is at the same depth as the area of interest, and as the gel pad is much closer to the probe than the tendon, the two areas will not be subjected to the same pressure, which may affect reliability.

So how hard can it be? Even though results are promising, there is general inconsistency with regards to nomenclature, pressure application and image display (6). Therefore, further methodological studies are needed before we can estimate the exact benefit of sonoelastography in management and prevention of tendinopathy. This is the subject of Karen Brage's PhD-project.

This article is based on the Ph.D. project by Karen Brage:
Clinimetrics of Sonoelastography – a new method for detection of abnormalities in the Supraspinatus tendon and evaluation of its reliability, diagnostic value and responsiveness.
from the Faculty of Health Sciences, Institute of Regional Health Research, University of Southern Denmark. Main supervisor is Associate Professor, Ph.D. Birgit Juul-Kristensen, co-supervisor is Associate professor, Ph.D. Per Kjær, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, and co-operator is Radiologist John Hjarbæk, Department of Radiology, Odense University hospital, Odense.

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Karen Brage *became a radiographer because she was interested in technical imaging, but still wanted the patient relationship. During her clinical career she experienced a lack of evidence based radiography and decided to pursue this. Currently she is a PhD student in sonoelastography of the shoulder. Favourite sport is dog agility, but any activity involving animals will do.*

Kim Gordon Ingwersen *has a background in elite sprint kayaking, stopping competition due to among other reasons a shoulder overuse injury, and several high impact injuries to his neck after snowboard accidents. He has mainly worked within the area of rotator cuff tendinopathy and rehabilitation of shoulder injuries. Kim is an early career researcher, attaining his PhD degree in June 2016, and now working as research physiotherapist at Lillebaelt Hospital – Vejle Hospital.*

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26th International Conference on Sports Rehabilitation and Traumatology: The Future of Football Medicine, Barcelona.
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30. maj - 3. juni 2017, USA
ACSM's 64th Annual Meeting, Denver.
Info: www.acsmannualmeeting.org

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- La Santa, 29. sep.-6. okt.
- København, 6.-7. november

Idræt og rygproblemer
- Horsens, 6.-7. marts
- La Santa, 29. sep.-6. okt.
- København, 27.-28. oktober

(introduktionskursus skal være gennemført)

Supervision af praksis
- København, 30.-31. oktober

Specialekurser:

Undersøgelse og rehabilitering af muskel-/seneskader
- SDU, efteråret

Eksamen:

Eksamen, praktisk/klinisk del
- Hillerød, 25. november

Eksamen, afsluttende del
- København, 2. december

Find aktuelle kursusoplysninger på:

www.sportsfysioterapi.dk

Vi ses forhåbentligt til kongressen!

Vær opmærksom på, at der ikke produceres trykt program til kongressen i år. Programmet er i stedet tilgængeligt via kongressens app: *"Sports Medicine Congress"*, der kan downloades til iOS og Android fra links på forsiden af kongressens hjemmeside: *www.sportskongres.dk*

På de næste sider finder du en oversigt over det faglige program.
Der tages forbehold for ændringer.

Mange hilsener og på gensyn
Arrangørgruppen for Idrætsmedicinsk Årskongres 2017

Generalforsamlinger 2017

Dansk Idrætsmedicinsk Selskab og Dansk Selskab for Sportsfysioterapi afholder ordinære generalforsamlinger under Idrætsmedicinsk Årskongres 2017

De afholdes på Radisson Blu Scandinavia Hotel Copenhagen
torsdag, den 2. februar 2017 kl. 18:00 - 19:30

Det er ikke nødvendigt at være tilmeldt kongressen for at møde op til generalforsamlingerne

Alle medlemmer er velkomne

THURSDAY, FEBRUARY 2nd 2017

	Norway	Sweden	Denmark	Iceland - Workshops
8.30-10.00	**Check-in**			
10.00-10.15	**Opening of Congress**			
10.15-11.15	**Keynote lecture:** The systematic development of a cost-effective sports injury prevention programme. Prof. Willem van Mechelen Chair: Prof. Niels Wedderkopp			
11.15-11.45	**Break**			
11.45-12.45	**Lecture:** Cam impingement of the hip – the natural history and how can we move forward Prof. Siôn Glyn-Jones Chairs: Prof. Per Hölmich Dr. Olufemi Ayeni	Simple Statistics and non-Causal mindsets: a Problem for Sports Injury Prevention? Dr. Rasmus Ø. Nielsen PT, MSc Michael Bertelsen Prof. Erik Parner Chair: Dr. Rasmus Ø. Nielsen	**Symposium:** Repair of meniscus and hyaline cartilage – is that at all possible? Prof. Michael Krogsgaard Post.doc. Katja Heinemeier Prof. Martin Lind MS Christoffer Mølgaard-Madsen Prof. Michael Krogsgaard Chair: Prof. Michael Krogsgaard	**Workshop:** How to return athletes to sport after ACL-injury Dr. Clare Ardern Dr. Håvard Moksnes PT Mathilde Lundgaard-Nielsen Chairs: As. Prof. Mette Zebis Dr. Jesper Bencke
12.45-13.30	**Lunch**			
13.30-14.55	**Symposium:** Moving Beyond Exercises for Managing Patellofemoral Pain, Patella Tendinopathy and Iliotibial Band Syndrome Dr. Michael Skovdal Rathleff PT, MSc Simon Lack PT, MSc Bradley Neal Chair: Dr. Michael Skovdal Rathleff	**Symposium:** The anterolateral ligament. Does it matter and should it be reconstructed? Prof. Martin Lind Dr. Eivind Inderhaug Dr. Kristian Samuelsson Chair: Dr. Kristoffer W. Barfod	**Symposium:** Return to sports after acute muscle injuries Dr. Arnlaug Wangensteen PT Nick van der Horst PT Seth O'Neill PT Andreas Serner Chair: PT Andreas Serner	**Workshop:** The orthopaedic shoulder – diagnosis and treatment. A hands-on workshop for G.P.s PT Peter Rheinlænder Prof. Michael Krogsgaard Chair: Prof. Michael Krogsgaard
15.00-16.00	**Lecture:** The training—injury prevention paradox: should athletes be training smarter and harder? Dr. Tim Gabbett Chairs: Dr. Michael Skovdal Rathleff Prof. Per Hölmich	**Symposium:** Diurnal regulation of tissue – when to train and perform during the day in order to get best performance and avoid injuries? Prof. Roland Brandstaetter Prof. Karl Kadler Chair: Prof. Michael Kjær	**Lecture:** Supplements, injections, vitamins and other sorts of gasoline for the athletic knee – an update Prof. Henning Bliddal Chair: Prof. Michael Krogsgaard	**Workshop:** How can clinicians aid runners in choosing running shoes: Running shoe selection and it´s relation to injury treatment, injury prevention and performance PT Michael Bertelsen Dr. Rasmus Ø. Nielsen Chair: Dr. Rasmus Ø. Nielsen
16.00-16.30	**Coffee break**			
16.30-17.55	**Symposium:** Blood flow restricted exercise in rehabilitation As. Prof. Jeremy Loenneke Prof. Per Aagaard Dr. Hans Christian Heitkamp Chairs: As. Prof. Thomas Bandholm Prof. Per Aagaard	**IOC Symposium:** Exercise related pulmonary problems – how to avoid? Prof. Vibeke Backer Prof. James Hull As. Prof. Morten Hostrup Chair: Prof. Vibeke Backer	**Symposium:** The apophysis – an important risk factor for sports injuries in children and adolescents PT Olivier Materne MD Matthieu Sailly Prof. Per Hölmich Chair: Prof. Per Hölmich Dr. Olufemi Ayeni	**Workshop:** Exercise apps – usefulness, research and future perspective MSc Morten Zacho Chair: As. Prof. Mette Hansen
18.00-19.30		**General assembly DIMS**	**General assembly FFI**	
19.30 -	**Get together party**			

FRIDAY, FEBRUARY 3rd 2017

	Norway	Sweden	Denmark	Iceland - Workshops
8.00-9.25	**Symposium:** Back to sports after ACL-rupture. The influence of graft choice on rehabilitation. Dr. Kristian Samuelsson As. Prof. Mette Zebis Dr. Markus Waldén Dr. Håvard Moksnes Chair: Dr. Kristoffer W. Barfod	**Symposium:** Injury prevention in athletics (track & field) Dr. Pascal Edouard Dr. Jenny Jacobsson Dr. Jean-Benoit Morin Chair: Dr. Pascal Edouard Dr. Anders Vinther	**Symposium:** Physical activity in School – effect on health, academic performance and wellbeing Prof. Bente K. Pedersen As. Prof Glen Nielsen Chair: As. Prof. Mette Hansen	**Workshop:** Optimising landing strategies in cutting sports; a practical hands on approach Dr. Sinead Holden Dr. Anne Benjaminse Chair: Prof. Greg Myer Dr. Michael Skovdal Rathleff
9.30-10.30	**Lecture:** Current concepts on return to play after ACL-injury Dr. Clare Ardern Chair: Dr. Mette Zebis	**Symposium:** Rowing – injuries, lightweight rowing and athlete perspective Dr. Anders Vinther Dr. Anna Melin Olympic lightweight rower Mads Rasmussen Chair: Dr. Anders Vinther	**Symposium:** The Danish strategy for diagnosis and surgical treatment of the painful hip joint. Prof. Michael Krogsgaard Prof. Per Hölmich Dr. Christian Dippmann Dr. Otto Kraemer Dr. Jens Stürup Chairs: Prof. Michael Krogsgaard Dr. Olufemi Ayeni	**Workshop:** How to do blood-flow restricted exercise? As. Prof. Jeremy Loenneke Chairs: Prof. Per Aagaard As. Prof. Thomas Bandholm
10.30-11.00	**Coffee break**			
11.00-12.30	**Oral presentations** Chair: TBA	**Oral presentations** Chair: TBA	**Oral presentations** Chair: TBA	**Oral presentations** Chair: TBA
12.30-13.30	**Lunch**			
13.30-14.55	**Symposium:** Treatment of patellar dislocation based on the underlying pathology. Dr. Kristoffer W. Barfod Dr. Joanna M Stephen PT Dorte Nielsen MD Lars Blønd Chair: Dr. Kristoffer W. Barfod	**Symposium:** Optimizing landing Strategies in Cutting Sports Prof. Greg Myer Dr. Sinead Holden Dr. Anne Benjaminse Chair: Dr. Michael Skovdal Rathleff	**Symposium:** Exercise as medicine – in lifestyle related diseases like diabetes Prof. Henning Langberg Mr. Chris MacDonald Ms. Laura Staun Valentiner Chair: Prof. Henning Langberg	**Workshop:** Future of tendon imaging in sports medicine: Novel imaging modalities for tendinopathy in athletes MD Lorenzo Masci PT, MSc Jarrod Antflick Chair: As. Prof. Kristian Thorborg
15.00-16.00	**Symposium:** The influence of globalization and social media on research within sports medicine – The editors take. Editor in Chief AJSM Bruce Reider Editor in Chief BJSM Karim Khan Editor in Chief KSSTA Jon Karlsson Chair: Dr. Kristoffer W. Barfod	**Anti-doping Denmark Symposium**: Fitness Doping and Doping for performance among recreational athletes Ms Malene Radmer Johannison As. Prof. David Hoff Dr. Jon Bjarke Rasmussen Prof. Werner Pitsch Chair: As. Prof. Mette Hansen	**Symposium:** Running-related injuries etiology and prevention Dr. Rasmus Ø. Nielsen MSc René Korsgaard, PT, MSc Camma Damsted, PT Daniel Ramskov Chair: Dr. Rasmus Ø. Nielsen	**Workshop:** The orthopaedic knee– diagnosis and treatment. A hands-on workshop for G.P.s PT Peter Rheinlænder Prof. Michael Krogsgaard Chair: PT Peter Rheinlænder
16.00-16.30	**Coffee break**			
16.30-17.30	**Oral presentations – Competition** Judging panel: Editor in Chief AJSM Bruce Reider Editor in Chief BJSM Karim Khan Editor in Chief KSSTA Jon Karlsson Chairs: As. Prof. Thomas Bandholm As. Prof. Kristian Thorborg			
17:30-18:00	**Lindhard prize lecture**			
19.30-20.00	**Posters – walk, talk and wine**			
20.00 -	**Galla dinner and party**			

SATURDAY, FEBRUARY 4TH 2017

	Norway	Sweden	Denmark	Iceland - Workshops
9.00-10.30	**The National Guidelines for treatment of meniscal pathologies:** background and practical consequences Prof. Michael Krogsgaard PT Jonas Samsø Larsen Dr. Mikael Boesen Dr. Marianne Backer Chair: Prof. Michael Krogsgaard	**Symposium:** Fat as fuel – Train and eat smart to enhance fat oxidative capacity and health Prof. Jørn Helge Dr. Mads Rosenkilde Dr. James Morton Chair: As. Prof. Mette Hansen	**Symposium:** Exercise related heart problems in athletes – how to avoid? Dr. Hanne Rasmusen Prof. Sanjay Sharma Prof. Mats Börjesson Chair: Dr. Hanne Rasmusen	Future of tendon imaging in sports medicine: Novel imaging modalities for tendinopathy in athletes MD Lorenzo Masci PT, MSc Jarrod Antflick Chair: As. Prof. Kristian Thorborg
10.30-11.00	**Coffee break**			
11.00-12.30	**Symposium:** How do we decide when an athlete is ready to return to sport? Clinical, biomechanical and neuromuscular approach to return to sports criteria after ACL-injury Dr. Markus Waldén Dr. Greg Myer Dr. Mette Zebis Chair: Dr. Jesper Bencke			

om DIMS kurser

Info: Idrætsmedicinsk Uddannelsesudvalg, c/o kursussekretær Christel Larsen.
E-mail: dimskursus@gmail.com

Generelt om DIMS kurser

DIMS afholder faste årlige trin 1 kurser i Østdanmark i uge 9 og i Vestdanmark i uge 35. Trin 2 kursus bliver afholdt i lige år på Bispebjerg Hospital, Institut for Idrætsmedicin. Der afholdes eksamen hvert andet år mhp. opnåelse af status som diplomlæge i idrætsmedicin (forudsat godkendelse af trin 1 + 2 kursus).

DIMS TRIN 1 KURSUS:

Formål og indhold: Basalt kursus i idrætsmedicin med hovedvægt lagt på diagnostik af hyppigste idrætsskader, herunder grundig gennemgang af akutte- og overbelastningsskader i knæ, skulder, hofte/lyske og ankel/underben. Patientdemonstrationer med instruktion og indøvelse af klinisk undersøgelsesteknik. Planlægning og tilrettelæggelse af udredning, behandling og genoptræning af skadede idrætsudøvere.
Kurset udgør første del af planlagt postgraduat diplomuddannelse i idrætsmedicin; 40 CME point i DIMS regi.
Målgruppe: Fortrinsvis praktiserende og yngre læger, der har interesse for idrætsmedicin og som ønsker basal indføring i emnet.

DIMS TRIN 2 KURSUS:

Formål og indhold: Kursisten skal indføres i nyeste viden indenfor idræt og medicinske problemstillinger herunder hjerte/karsygdomme, fedme, endokrinologi, lungesygdomme, osteoporose, artritis og arthrose. Derudover vil der være en gennemgang af træning og børn/ældre. Ydermere vil kursisten præsenteres for idræstfysiologiske test/screeningsmetoder. Der vil være patientdemonstrationer samt undervisning i mere avanceret idrætstraumatologi. Varighed er 40 timer over 5 dage.
Målgruppe: Kurset er et videregående kursus, der henvender sig til læger med en vis klinisk erfaring (mindst ret til selvstændigt virke), samt gennemført trin 1 kursus eller fået dispensation herfor ved skriftlig begrundet ansøgning til DIMS uddannelsesudvalg.

Krav til vedligeholdelse af Diplomklassifikation (CME)

1. Medlemsskab af DIMS. Medlemsskab af DIMS forudsætter at lægen følger de etiske regler for selskabet.
2. Indhentning af minimum 50 CME-point per 5 år.
3. Dokumentation for aktiviteterne skal vedlægges:
- For kurser og kongresser vedlægges deltagerbevis og indholdsbeskrivelse (kursusplan).
- Kursusledelse eller undervisning dokumenteres af aktivitetsudbyderen.
- Anden idrætsmedicinsk relevant aktivitet dokumenteres af den ansvarlige for aktiviteten.
- Klublæge/teamlæge erfaring eller lignende dokumenteres af klubben/teamet eller lignende.

Opdateret december 2013.
Opdaterede **Krav til opnåelse af Diplomklassifikation** kan findes på www.sportsmedicin.dk

AKTIVITET	CERTIFICERINGSPOINT
Deltagelse i Idrætsmedicinsk Årskongres	10 point per kongres
Publicerede videnskabelige artikler inden for idrætsmedicin	10 point per artikel
Arrangør af eller undervisning på idrætsmedicinske kurser eller kongresser	10 point per aktivitet
Deltagelse i internationale idrætsmedicinske kongresser	10 point per kongres
Deltagelse i godkendte idrætsmedicinske kurser eller symposier	5 - 30 point per aktivitet
Anden idrætsmedicinsk relevant aktivitet	5 point per aktivitet
Praktisk erfaring som klublæge, forbundslæge, Team Danmark-læge eller tilknytning til idrætsklinik (minimum 1 time per uge og gyldig dokumentation fra klub/forbund/klinik)	10 point i alt

Idrætsmedicinske arrangementer pointangives af Dansk Idrætsmedicinsk Selskabs Uddannelsesudvalg før kursusafholdelse.

NAVN: _____ **KANDIDAT FRA ÅR:** _____ **DIPLOMANERKENDELSE ÅR:** _____

Sendes med bilag til DIMS diplomudvalg v/ Jan Rømer, Karensmindevej 11, 8260 Viby J, eller pr. e-mail til jromer@dadlnet.dk

om DSSF kurser

Info: Kursusadministrator Vibeke Bechtold, Kærlandsvænget 10, 5260 Odense S.
Tlf. 2028 4093 • vbe@idraetsfysioterapi.dk
Kursustilmelding foregår bedst og lettest via DSSF's hjemmeside: www.sportsfysioterapi.dk

DANSK SELSKAB FOR SPORTSFYSIOTERAPI

Uddannelses- og kursusstruktur

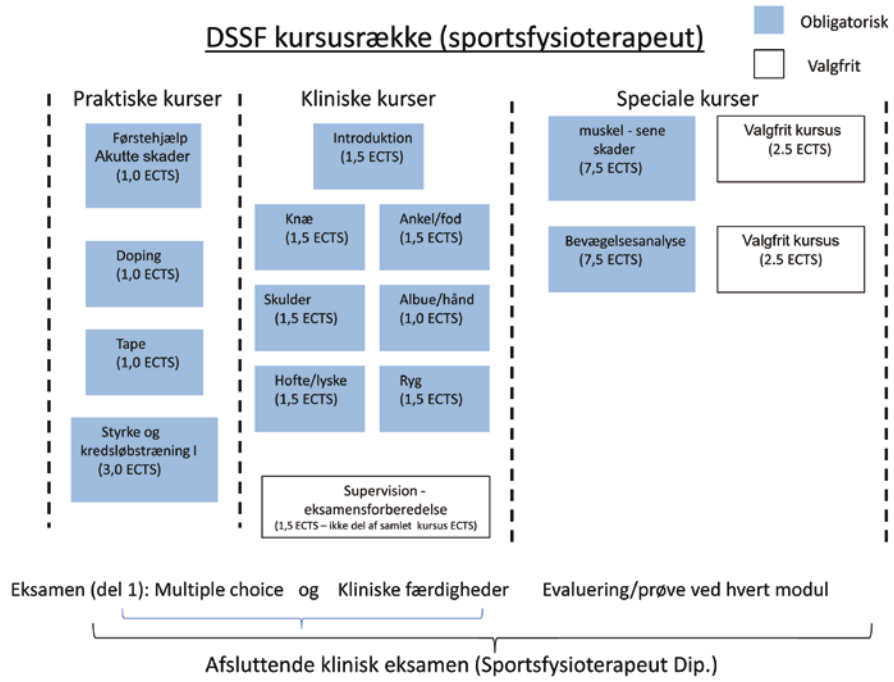
Fremtidssikring

Dansk Selskab for Sportsfysioterapi (DSSF) har ændret uddannelses- og kursusstrukturen med det formål at fremtidssikre den såvel nationalt som internationalt. Ved de ændringer, der er planlagt, kan DSSF sikre at medlemmerne kan dokumentere den kontinuerlige kompetenceudvikling, der skal være til stede for at kunne kvalificere sig til at gå til specialisteksamen, som beskrevet af Danske Fysioterapeuter/Dansk Selskab for Fysioterapi og dermed bære titlen: Specialist i Idrætsfysioterapi. Derudover hjælpes medlemmerne til at få et redskab til brug ved karriereudvikling, f.eks. karriereplanlægning, lønforhandling og anden form for markedsføring af kompetencer.

Mål

Vores mål med den samlede uddannelses- og kursusaktivitet er at ligge væsentligt over grunduddannelsesniveauet ved at skabe klinisk kompetence hos vores medlemmer på et højt niveau i forhold til de sportsfysioterapeutiske kerneområder og med evidensbaseret baggrund, hvor der tages afsæt i videnskabelig viden kombineret med omfattende kliniske færdigheder og praktisk erfaring.

Tabel 1: Skematisk oversigt over uddannelses- og kursusstrukturen



Samlet uddannelsesforløb

Vi har tilstræbt at skabe et samlet uddannelsesforløb med deleksamener undervejs, så man kan vælge at tage kurserne enten enkeltstående eller som dele af et samlet forløb.

Uddannelsen er opdelt som beskrevet i **tabel 1 og 2**: Praktiske kurser, Kliniske kurser og Speciale kurser. Det samlede udannelsesforløb inkl. eksaminerne er beregnet til 45 ECTS.

Praktiske og kliniske kurser

De praktiske kurser indeholder: Akutte skader og førstehjælp, Antidoping og kost, Styrke- og kredsløbskursus, Tapekursus.

De kliniske kurser består af Introduktionskursus, Rygkursus, Hoftekursus, Knækursus, Fod/ankel-kursus, Skulderkursus, Albue/hånd-kursus.

Har man gennemgået kurser før 2002, kræves det at man tager introduktionskursus for at kunne deltage på de kliniske kurser/regionskurserne. Har man gennemgået kurser mellem 2002 og 2015 godkendes disse i den nye struktur fra 2015.

For at gå til eksamen skal man dog supplere med de kurser, man mangler i forhold til den nye struktur (2015). Fx. Akutte skader/Førstehjælp, Antidoping/Kost, Styrke/Kredsløb, Tape og Ryg.

Fysioterapeutstuderende kan deltage i uddannelsesforløbet efter bestået Modul 12.

Specialekurser

DSSF har indledt et samarbejde med SDU om specialekurser. Dette foregår via valgmoduler på Kandidatuddannelsen i Fysioterapi, og modulerne: "Muskel-/seneskader - i relation til sportsskader", og "Analyse af bevægelse og muskelfunktion - i relation til sportsskader" er i gang og man kan søge via SDU 'tom plads-ordning'. DSSF vil bestræbe sig på at udvikle flere moduler af denne art.

De valgfrie kurser i den specialiserede del kan f.eks. være kurser fra andre

DSSF Kursusrække – Sportsfysioterapi ECTS

Tabel 2: Oversigt over ECTS point for uddannelses- og kursusrække for Sportsfysioterapeuter i DSSF.

Praktiske kurser	Kliniske kurser	Speciale kurser	Samlet (ECTS)
Akut førstehjælp **(1 ECTS)**	Introduktion **(1.5 ECTS)**	Muskel-seneskader **(7.5 ECTS)**	
Doping **(1 ECTS)**	Knæ **(1.5 ECTS)**	Analyse af bevægelse og muskelfunktion **(7.5 ECTS)**	
Tape **(1 ECTS)**	Ankel/Fod **(1.5 ECTS)**	Valgfrit kursus **(2.5 ECTS)**	
Styrke- og kredsløbstræning **(3 ECTS)**	Skulder **(1.5 ECTS)**	Valgfrit kursus **(2.5 ECTS)**	
	Hofte/lyske **(1.5 ECTS)**		
	Ryg **(1.5 ECTS)**		
	Albue/hånd **(1 ECTS)**		
Eksamen Multiple choice **(1.5 ECTS)**	Eksamen Kliniske færdigheder **(2.5 ECTS)**	Eksamen Inkluderet i individuelle speciale kurser	
I alt: 7.5 ECTS	**I alt: 12.5 ECTS**	**I alt: 20 ECTS**	**I alt: 40 ECTS**
Afsluttende klinisk eksamen i sportsfysioterapi: **Sportsfysioterapeut, DSSF regi (5 ECTS)**			**I alt: 45 ECTS**

selskaber og universiteter nationalt og internationalt, for hvilke medlemmerne kan søge merit hos DSSF.

Eksamen

Den planlagte, afsluttende kliniske idrætsfysioterapi-eksamen skal bestås, for at man kan kalde sig Sportsfysioterapi i DSSF regi.

DSSF´s samlede uddannelsesforløb vurderes til 45 ECTS. Dette er fremtidssikret i forhold til den endnu ikke godkendte specialistordning i Danske Fysioterapeuters regi.

Supervision

Uddannelsesudvalget (UKU) er i gang med at beskrive supervisionsforløb, som kan matche det angivne krav til supervision for at blive specialist i idrætsfysioterapi (i regi af Dansk selskab for Fysioterapi/Danske Fysioterapeuter). Det ser ud til at kravet vil blive 100 timers supervision, og en stor del af dette vil være en del af de praktiske og kliniske kurser. Derudover planlægges specielle supervisionskurser og endelig skal den enkelte sørge for de sidste supervisionstimer selv. De nærmere beskrivelser vil foreligge, når den nye specialistordning er endeligt godkendt.

Løbende info på www

Uddannelsen og kurserne vil løbende blive uddybende beskrevet på DSSF's hjemmeside, og kvalificeret med ECTS. ECTS på tabel 1 og 2 skal således tages med forbehold for ændringer.

Du vil løbende kunne finde opdatering og informationer på *www.sportsfysioterapi.dk*

Vibeke Bechtold/Bente Andersen

Dansk SPORTSMEDICIN

Adresse:

Produktionsansvarlig
Gorm Helleberg Rasmussen
Terp Skovvej 82
8270 Højbjerg
info@dansksportsmedicin.dk
www.dansksportsmedicin.dk

Redaktionsmedlemmer for DIMS:

Læge David Assjodi
davidassjodi@gmail.com

Læge Rasmus Sørensen
rasmussoerensen@msn.com

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Fysioterapeut Merete N. Madsen
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dansk idræts medicinsk selskab

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www.sportsmedicin.dk

Formand Tommy F. Øhlenschlæger
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DANSK SELSKAB FOR SPORTSFYSIOTERAPI

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muh@idraetsfysioterapi.dk
www.sportsfysioterapi.dk

Formand Karen Kotila
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3082 0047 (P) kk@sportsfysioterapi.dk

Kasserer Martin Uhd Hansen
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6015 8698 (P) muh@sportsfysioterapi.dk

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Suppleant Peder Berg
Abels Allé 58, 5250 Odense SV
5098 5838 (P) pbe@sportsfysioterapi.dk

www.dansksportsmedicin.dk

Find fakta og gamle guldkorn

På hjemmesiden kan du finde de forskellige faktuelle oplysninger af interesse i forbindelse med Dansk Sportsmedicin.

Du kan finde det nyeste blad. Du kan bladre og printe. Du kan også finde eller genfinde guldkorn i artiklerne i de gamle blade. Alle blade kan læses og downloades fra "bladarkiv".
Du kan også søge i alle bladenes indholdsfortegnelser for at få hurtig adgang til det, du er interesseret i at finde.

Adresser. Referencelister. Oplysninger, aktuelle som historiske. Det er alt sammen noget, du kan "hitte" på hjemmesiden, og savner du noget, må du gerne sige til.

IDRÆTSKLINIKKER

Der overvejes en ny strategi for oversigten over landets idrætsklinikker.
Derfor er listen fjernet indtil videre.


dansk
idræts
medicinsk
selskab


DANSK SELSKAB FOR
SPORTSFYSIOTERAPI