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DANSK SPORTSMEDICIN

IDRÆTSMEDICINSK FORSKNING I AARHUS

Redaktionelt

Ansvarshavende redaktør, PT, PhD Heidi Klakk

Fagre nye tider!

Kære læser

Du "sidder" lige nu med et ganske særligt eksemplar af Dansk Sportsmedicin! Ikke blot fordi det er en aktiv og interessant gruppe af forskere fra Aarhus, der har leveret artiklerne denne gang, men også fordi at det er det sidste af sin art!

Foreningerne bag Dansk Sportsmedicin, DIMS og DSSF, har besluttet at Dansk Sportsmedicin fremover (fra årsskiftet) skal udkomme i blog-form - en blog som, ligesom bladet, henvender sig til idrætsmedicinsk interesserede sundhedsfaglige og ikke-sundhedsfaglige (fx trænere). Det er ikke en blog rettet til borgere/patienter. Beslutningen er taget på baggrund af et ønske om at være en mere dynamisk og tidssvarende formidlingsplatform.

Foreningerne og redaktionen bag Dansk Sportsmedicin vil stå for opstart og indhold fra januar til marts i det nye år, men derefter håber vi på at kunne fortsætte det gode samarbejde med de fire store forskningscentre/byer i Danmark: Aarhus, Odense, Aalborg og København, som vi alle har nydt godt af de sidste par år.

I forbindelse med overgangen til blog vil du som medlem af de to foreninger, eller modtager af Dansk Sportsmedicins nyhedsbrev, automatisk få besked om blog-opstarten. Andre kan finde oplysningerne på de to foreningers hjemmesider www.sportsmedicin.dk og www.sportsfysioterapi.dk hen mod slutningen af december.

Bloggen vil, som bladet har været det de sidste to år, naturligvis være frit tilgængelig for alle læsere uanset medlemskab af diverse foreninger.

Den nye organisering af formidling af Dansk Sportsmedicin afføder nye funktioner. Vi får brug for 1 assisterende redaktør samt 2 blog-administratorer, så hvis du har interesse i kommunikation og formidling, så hold øje foreningernes hjemmesider. Her vil de nye funktioner blive slået op som ledige og kan søges.

Vi glæder os til at gå i luften, men allerførst glæder vi os her og nu til at læse om forskning i løb, løbesko, løbeskader, cross fit skader og injektionsbehandling ved tendinopatier. Tag godt imod denne sidste blad-udgave af Dansk Sportsmedicin – med indhold fra forskere omkring Aarhus Universitet – og orkestreret af post.doc. Rasmus Søndergaard Nielsen, RUNSAFE gruppen.

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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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Indhold

Dansk
Idrætsmedicinsk
Selskab

v/ Kristoffer W. Barfod, formand

Blad ændres til blog

En lang varm sommer er slut og efteråret er over os med blæst, regn og det smukkeste løvfald i mange år. Som året går på hæld, gør Dansk Sportsmedicin, som vi kender det, også. Som det står at læse i den redaktionelle leder, har DIMS og DSSF besluttet at ændre formatet af Dansk Sportsmedicin til en blog. Vi glæder os meget til at udforske mulighederne i det nye format og bringe mere relevant faglig viden ud til vores medlemmer på en mere tilgængelig måde. Vi håber i vil tage godt imod bloggen og bruge den aktivt, så den med forårets komme kan vokse sig stærk.

Farvel til nøgleperson

Med bladets omlægning stopper Gorm H. Rasmussen med at have med Dansk Sportsmedicin at gøre. Gorm har gennem 23 år været bladets rygrad. Han var med til planlægningen af bladet i 1995, publicering af første nummer i 1997 og har gennem de 21 år siden været produktionsansvarlig og arbejdet som redaktionssekretær, DTP'er, webmaster og administrator for bladet. Gennem de sidste år har Gorm argumenteret for en modernisering af bladets struktur, således at det bliver mere tidssvarende og bedre trænger igennem til målgruppen i dagens mediebillede. Gorm har gennem alle årene været en bærende kraft bag Dansk Sportsmedicin. Stor tak til Gorm for hans centrale rolle og beundringsværdige flid i forbindelse med at skabe og formidle dansk idrætsmedicinsk historie!

Scandinavian Sports Medicine Congress

SportsKongressen har ændret navn fra Dansk Idrætsmedicinsk Kongres til Scandinavian Sports Medicine Congress. De skandinaviske selskaber har valgt at lade den skandinaviske kongres fortsætte under ledelse af DSSF og DIMS og har givet tilsagn om at bidrage til og støtte kongressen fremadrettet. Det giver unikke muligheder, men med navneskiftet følger og en forpligtigelse til at varetage de andre skandinaviske landes interesser.

SportsKongressens faglige program i 2019 er fremragende. Jeg vil varmt anbefale alle at kigge programmet og kongressens nye hjemmeside igennem: www.sportskongres.dk.

SportsKongressen er styrket organisatorisk og er udvidet med et femte spor således at programmet i 2019 består af fem parallelle sessioner: tre spor med videnskabelige symposier, et spor der indeholder 'applied science', og et spor der indeholder regelrette 'hands on'-workshops med et begrænset deltagerantal. Målet med udvidelsen er at gøre kongressen mere relevant for klinikeren ved at lave to spor der omhandler direkte klinisk applicerbar viden. 'Applied science' leverer den teoretiske viden, mens workshop-sporet leverer den praktiske kunnen.

Kongressen 2019 har overgået kongressen i 2018 ift. antal af indsendte abstracts, hvilket lover godt for kvaliteten af de frie foredrag. I 2019 vil abstracts blive bedømt af en komité bestående af redaktører fra de syv store sportsmedicinske tidsskrifter, som også vil også fungere som dommere ved foredragskonkurrencen. En submission til sportskongressen betyder altså, at ens forskning bliver præsenteret direkte for den videnskabelige verdens mest magtfulde kvinder og mænd, hvilket måske gør, at en senere indsendelse af manuskriptet får genkendelsens glæde frem hos dem.

Info på hjemmesiderne

Afslutningen på Dansk Sportsmedicin i bladformat betyder også afslutningen på formændenes lederartikler, da vi har besluttet, at Dansk Sportsmedicin som blog skal være en rent faglig platform. Fremtidig kommunikation af politiske budskaber og oplysninger til medlemmerne vil ske via nyhedsbrev, hjemmeside og Facebook.

Hold øje med hjemmeside og nyhedsbrev. 2019 bliver begyndelsen for Dansk Sportsmedicin som BLOG.

Generalforsamling

Der indkaldes hermed til DIMS generalforsamling torsdag, den 31. januar 2019 kl. 18:15 - 19:30 på Radisson Blu Scandinavia Hotel, København.

Dagsorden ifølge vedtægterne (se www.sportsmedicin.dk).

Dansk Selskab for Sportsfysioterapi

v/ Karen Kotila, formand

Peter Rheinlænder

"Livet er som en bog og vi lever livet kapitel for kapitel, indtil sidste side er blevet vendt". Peter Rheinlænders bog er skrevet og bogens sidste side læst og vendt. Det er med stor sorg, at vi har måtte sige farvel til en "fremragende fysioterapeut", og "gudsbenådet underviser", for at låne et par af de beskrivelser, der i disse dage er strømmet ind på Facebook. Hundredvis af patienter, fysioterapeuter og samarbejdspartnere har tilkendegivet deres store respekt for Peter, har æret Peters minde og sendt varme tanker til hans familie. De mange hilsner vidner om det store aftryk Peter efterlader, som underviser, som fysioterapeut og som menneske. Vi vil i DSSF savne Peter: hans gode gemyt, hans skarpe vid og hans enestående humor. Æret være hans minde.

Evidensbaseret medicin

I efteråret har man kunne følge en debat på fysio.dk, hvor formand for Danske Fysioterapeuter efterlyste en lille revolution imod den naturvidenskabelige evidensbaserede retning. *"Vores fag er igennem årtier gået i en stærkt naturvidenskabeligt evidensbaseret retning. Jeg tror, at der er brug for et oprør eller en lille revolution i vores fag imod den tendens. Vi skal turde gribe vores fag an på nye måder, dog uden at smide noget ud med badevandet, og der skal naturligvis fortsat være naturvidenskabelige forskere."* (Fysioterapeuten nr. 4, 2018).

Nej, der ikke brug for en minirevolution, som blot fører os tilbage i tiden. Der er brug for at forskning og klinik føres tættere sammen allerede fra den spæde begyndelse. Evidens og systematik frarøver ikke fysioterapeuten evnen til at foretage kvalificerede valg i mødet med patienten. Tværtimod skærper evidens og systematik fysioterapeutens kritiske stillingtagen til de behandlingsvalg han/hun står overfor. Essensen er kontekst og mål. Hvem er patienten og hvad er vigtigt for den patient, du står overfor? Hvorfor kommer patienten til dig? Patienten kommer med en henvisning til "fysioterapi" og er sjældent afklaret med, hvad han/hun hermed kan forvente - derfor er det umådelig vigtigt, at fysioterapeuten og patienten forventningsafstemmer med kontekst og mål for øje. Med det ene ben godt forankret i den medicinske evidens informerer fysioterapeuten og inddrager samtidig patientens kontekstuelle faktorer. Ofte møder fysioterapeuten google-patienten, som selv har søgt svarene i den medicinske evidens, hvor fysioterapeuten må søge forventningsafstemme ved at spørge ind til de kontekstuelle faktorer.

Vi må endelig ikke frarøve fysioterapeuten det vigtige ståsted, der hedder evidensbaseret medicin. Vi skal lære kommende fysioterapeuter, hvordan vi kan tage afsæt i evidensbaseret medicin og klæde fysioterapeuter til afvige fra evidensbaseret medicin, når de kontekstuelle faktorer er til stede herfor.

BJSM

DSSF har i november-nummeret af Br J Sports Med gjort lederen "Make it REAL: four simple points to increase clinical relevance in sport and exercise medicine research" af Thomas Bandholm og kollegaer til "Editors choice" og dermed frit tilgængelig for download. Det har vi gjort, fordi lederen er et meget fint og konkret indspark til debatten om en ønsket "revolution". Lederen understreger fint, hvordan klinisk fysioterapeutisk/idrætsfysioterapeutisk praksis og forskning bliver vedrørende, hvis klinisk praksis informerer forskning og omvendt. Det kan fx ske i form af fælles udvikling af forskningsspørgsmål, som omtalt i lederen. Artiklen kan downloades her og hele bladet kan tilgås via sportsfysioterapi.dk.

#Sportskongres 2019

I DSSF udgaven af Br J Sports Med har vi også valgt at fremhæve nogle af de forskere, som vi har den store ære af at præsentere på #Sportskongres 2019. Vi glæder os endnu en gang til at byde jer alle velkommen til 3 forrygende dage fyldt med foredrag, workshops, netværksdannelse og selvfølgelig – årets fest!

Generalforsamling

Der indkaldes hermed til DSSF generalforsamling torsdag, den 31. januar 2019 kl. 18:15 - 19:30 på Radisson Blu Scandinavia Hotel, København.

Dagsorden ifølge vedtægterne (se www.sportsfysioterapi.dk).

Guest editorial

Rasmus Østergaard Nielsen

Kære venner og kollegaer i den idrætsmedicinske verden

I dette nummer af Dansk Sportsmedicin kommer vi bredt rundt i det idrætsmedicinske fagområde, da indholdet i bladet er fokuseret på skader i CrossFit, HVIG-injektioner til tendinopatier samt løbeskader.

I første artikel af Christian Larsen og Mogens Pfeiffer Jensen belyses skader indenfor CrossFit baseret på en spørgeskemaundersøgelse lavet blandt næsten 1000 medlemmer af et lokalt CrossFit center i Aarhus. I næste artikel, som udspringer fra Martin Linds gruppe på Aarhus Universitets Hospital, undersøges betydningen af HVIG-injektioner på kronisk achillessene og patellasene tendinopati.

RUNSAFE-gruppen ved Sektion for Idræt på Aarhus Universitet repræsenteret med tre artikler om løb og løbeskader, som vi håber læsere af Dansk Sportsmedicin finder interessante. I første artikel omhandler løbernes holdning til løbesko. Skovalg afgøres ofte ud fra fodstillingen, men det spændende spørgsmål der rejses i artiklen er, om der, med nyeste kausalitetsteoretiske viden i bagagen, ikke skal gøres mere ud af at diskutere hvor meget løbetræning man kan udføre, når man anvender forskellige typer af løbesko. I næste artikel af Laura Lambæk Knudsen et al., som baserer sig på det danske forsøg RUNCLEVER, sættes fokus på præstationstest og løbeskader. I sidste artikel af Katrin Debes-Kristensen et al. dykker vi ned i forskningsmetodologi og undersøger, om skadesraterne for løbeskade blandt nybegynderløbere er den samme efter 8-ugers opfølgning på tværs af to kohorter: Den danske DANORUN-kohorte og den hollandske Groningen kohorte.

I disse Twitter-tider kan open-access udgivelser spredes hurtigt. Derfor er næsten alle artiklerne skrevet på engelsk, da vi håber, at ikke-dansktalende sportsudøvere, trænere, klinikere og forskere også finder vej til indholdet.

Vi er utrolig glade for de bidrag, som forfatterne har leveret til bladet. I skal alle have stor tak for Jeres indsats! Vi håber, at bladets læsere finder indholdet spændende, inspirerende og tankevækkende.

Rigtig god læselyst!

Fakta om Guest Editor

Rasmus Østergaard Nielsen er Post Doc på Aarhus Universitet og forskningsgruppekoordinator i RUNSAFE, som er en landsdækkende forskningsgruppe inden for løb og løbeskader. Se mere her: http://runsafe.au.dk/

Skadesopgørelse i et dansk CrossFit center

Christian Larsen og Mogens Pfeiffer Jensen, Reumatologisk afdeling U, Aarhus Universitetshospital

Introduktion

Motion og sport er sundt for krop og sjæl (1-4), men samtidig medfører det en risiko for skader og gener, som er forbundet med samfundsmæssige omkostninger (5, 6). CrossFit er en relativ ny og meget populær træningsform, der har ry for mange skader.

I 2. nummer af Dansk Sportsmedicin 2017 blev artiklen "CrossFit – en farlig sport?" bragt (7). Her blev litteraturen omkring CrossFit og særligt skader i forbindelse hermed gennemgået. Skadesprævalensen angives til at ligge på mellem 20% og helt op til knap 74% (8-12). Incidensen angives i et prospektivt studie til 2,1 skade per 1000 træningstimer (13). Flere af studierne angiver skuldre og lænd som hyppigste skadessteder (8, 9, 12, 13), og det tyder på, at skaderne oftest sker i forbindelse med vægtløftning og gymnastiske øvelser (11, 13). Ligeledes ser det ud som om, at en mindre grad af træner-involvering øger risikoen for at pådrage sig en skade i forbindelse med CrossFit (12). Træner involvering blev inddelt i: involvering hele tiden, det meste af tiden, lidt af tiden og ingen. Flere af artiklerne sammenligner med andre sportsgrene og beskriver at CrossFit har relativt lav skadesprævalens, på niveau med f.eks. sportsgrene som vægtløftning og gymnastik, mens der findes højere skadesprævalenser i sportsgrene som eksempelvis løb eller kontaktsport som rugby og fodbold.

Aktuelle artikel beskriver vores opgørelse af skader indenfor CrossFit baseret på en spørgeskemaundersøgelse lavet blandt næsten 1000 medlemmer af et lokalt CrossFit center i Aarhus (14). Formålet med studiet var at undersøge prævalens af skader blandt danske CrossFit udøvere samt undersøge associationer mellem demografiske, antropometriske samt trænings relaterede karakteristika ved CrossFit relaterede skader.

For yderligere information om Cross Fit eller de øvrige studier på området henvises til ovennævnte artikel fra 2017 (7).

Metoder

Spørgeskemaundersøgelsen baserede sig på spørgeskemaer og spørgsmål fra Oslo Sports Trauma Research Center (OSTRC) (15-17). Det blev udviklet og kritisk revideret i samarbejde med fysioterapeuter, læger og sundhedsforskere. Der blev gennemført pilottest af spørgeskemaet forud for distribution. Spørgsmålene omhandlede bl.a. demografiske data som køn, alder, højde og vægt. Derudover træningsvaner omfattende intensitet, mængde og varighed. De mere skadesrelaterede spørgsmål indebar spørgsmål om hvorvidt udøverne aktuelt var skadet eller havde været skadet indenfor det sidste år i forbindelse med CrossFit. Der blev spurgt til karakteristika af eventuelle skader, om det havde afholdt dem fra træning eller arbejde samt om de havde haft behov for lægehjælp (herunder medicin og operation) eller anden hjælp i form af massage, fysioterapi osv.

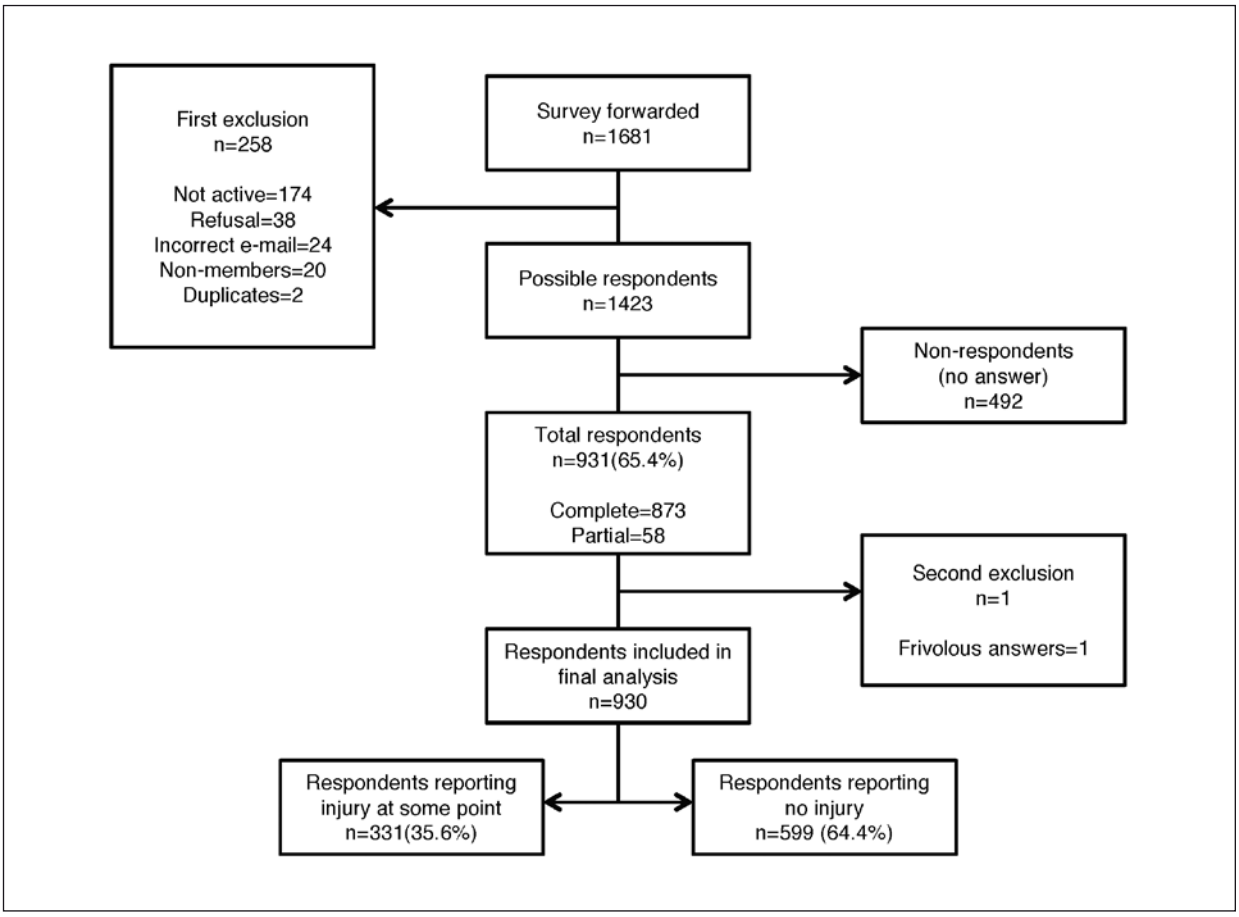
En CrossFit relateret skade blev defineret som en fysisk klage, smerte eller tilstand opstået i forbindelse med CrossFit uanset, om der var behov for lægehjælp eller træningspause.

Spørgeskemaet blev i 2015 udsendt elektronisk til 1422 medlemmer af et lokalt CrossFit center i Aarhus.

Resultater

I alt 930 CrossFit udøvere udfyldte spørgeskemaet svarende til en besvarelsesprocent på 65%. Kønsfordelingen var 71% mænd og 29% kvinder. Se figur 1 for flowchart over inklusion.

Vores undersøgelse viste, at i alt 331 udøvere havde en aktuel skade eller havde haft en skade i løbet af det seneste år. Når man opdelte denne gruppe viste det sig, at 216 udøvere havde haft mindst én skade i løbet af det seneste år, svarende til en 1-års prævalens på 24%. 115 udøvere havde aktuelt en



Figur 1: *Flowchart over spørgeskemaundersøgelsens selektionsproces, årsager til eksklusion og frafald samt antal inkluderede deltagere i et observationelt retrospektivt kohorte studie.*

skade svarende til en prævalens på 13%. Totalt set blev der rapporteret 645 CrossFit relaterede skader i løbet af det seneste år.

Skuldre, knæ og lænd blev angivet som de mest skadede anatomiske områder med henholdsvis 26%, 13% og 13%. I alt 151 af de skadede udøvere tog kontakt til deres læge, 55 tog medicin, 126 fik anden behandling i form af fysioterapi eller massage, mens 192 ikke modtog nogen form for behandling. 12 udøvere gennemgik en eller anden form for kirurgi. 116 udøvere mente, at deres rapporterede skade havde relation til en tidligere skade.

Gennemsnitstiden for tilbagevenden til CrossFit efter en skade blev beregnet til 32 dage (95% CI: 27 til 38 dage), mens gennemsnitstiden for afholdelse fra at arbejde var 2 dage (95% CI: 1 til 3 dage).

Ved sammenligning mellem udøverne med skader og dem uden skader viste det sig, at udøverne med skader havde deltaget i CrossFit i længere tid samt haft større ugentlige og årlige træningsmængder end udøverne uden skader. Derudover havde de skadede udøvere også højere alder og højere BMI.

Diskussion

Som nævnt i artiklen her i bladet fra 2017 (7), er der lavet en del retrospektive studier med spørgeskemaundersøgelser omkring CrossFit, som til dels kan sammenlignes med vores undersøgelse. De tidligere retrospektive studier rapporterer prævalenser på mellem 19% og 74% (8-12). Rapporteringsperioden ligger ved de fleste på 6 måneder (9, 11, 12), dog med et par studier, der benytter hele udøverens CrossFit karriere (8) samt et enkelt studie, der ikke angiver en periode for rapportering (10). Vi fandt 1-års prævalens på 24%, som er på niveau med hvad, der er rapporteret i de øvrige studier. Vi fandt, at skader i skuldre, knæ og lænd er de hyppigste på linje med, hvad der er rapporteret i tidligere studier (8, 9, 12, 13). Dog er der adskillige begrænsninger ved at sammenligne prævalenser pga. forskellige definitioner af skader, metodevalg samt forskelle i spørgeskemaer. Optimalt set er der behov for flere prospektive undersøgelser til en mere præcis opsamling af data og deraf opgørelse af skader samt beregning af skadesincidens til sammenligning også på tværs af sportsgrene.

Se i øvrigt tabel 1 for et overblik over de eksisterende spørgeskemaundersøgelser af skader i CrossFit.

Hvad angår risikofaktorer for skade ved CrossFit er der i tidligere studier nævnt mandligt køn (12, 13), mindre grad af trænerinvolvering (12), højde og vægt (9) samt tidligere skader (13) som risikofaktorer for skade. Derudover nævnes længden af deltagelse i CrossFit (9, 10) samt store mængder ugentlige træningsdage og timer (9). Flere af disse faktorer er i ganske god overensstemmelse med, hvad der er set i vores studier og sandsynliggør dem yderligere.

Studie	Antal deltagere	Tidsperiode	Prævalens
Weisenthal et al. (2014)	386	6 måneder	19%
Hak et al. (2013)	132	19 måneder	74%
Montalvo et al. (2017)	191	6 måneder	26%
Summitt et al. (2016)	187	6 måneder	24%
Sprey et al. (2016)	566	n/a	31%
Larsen et al.	930	12 måneder	24%
		Aktuelt	13%

Tabel 1: *Retrospektive studier om CrossFit relaterede skader med deltagere, tidsperiode og estimeret prævalens.*

Der er en del begrænsninger ved denne type af undersøgelse. Der er en vis mængde udøvere, som ikke har svaret på spørgeskemaet, dem ved vi desværre ikke noget om. Derfor kan vores resultater være såvel underestimerede som overestimerede. Fejlestimering kan dog begrænses ved en høj svarprocent. Ved brug af en retrospektiv spørgeskemaundersøgelse er det kun muligt at få et billede af skaderne her og nu samt tidligere skader. Vi ved derfor ikke noget om skadesudviklingen over tid, som vil kræve en prospektiv undersøgelse før en incidens af skaderne kan beregnes. På denne måde vil det også kunne lade sig gøre at sammenligne skaderne ved CrossFit med skader i andre sportsgrene.

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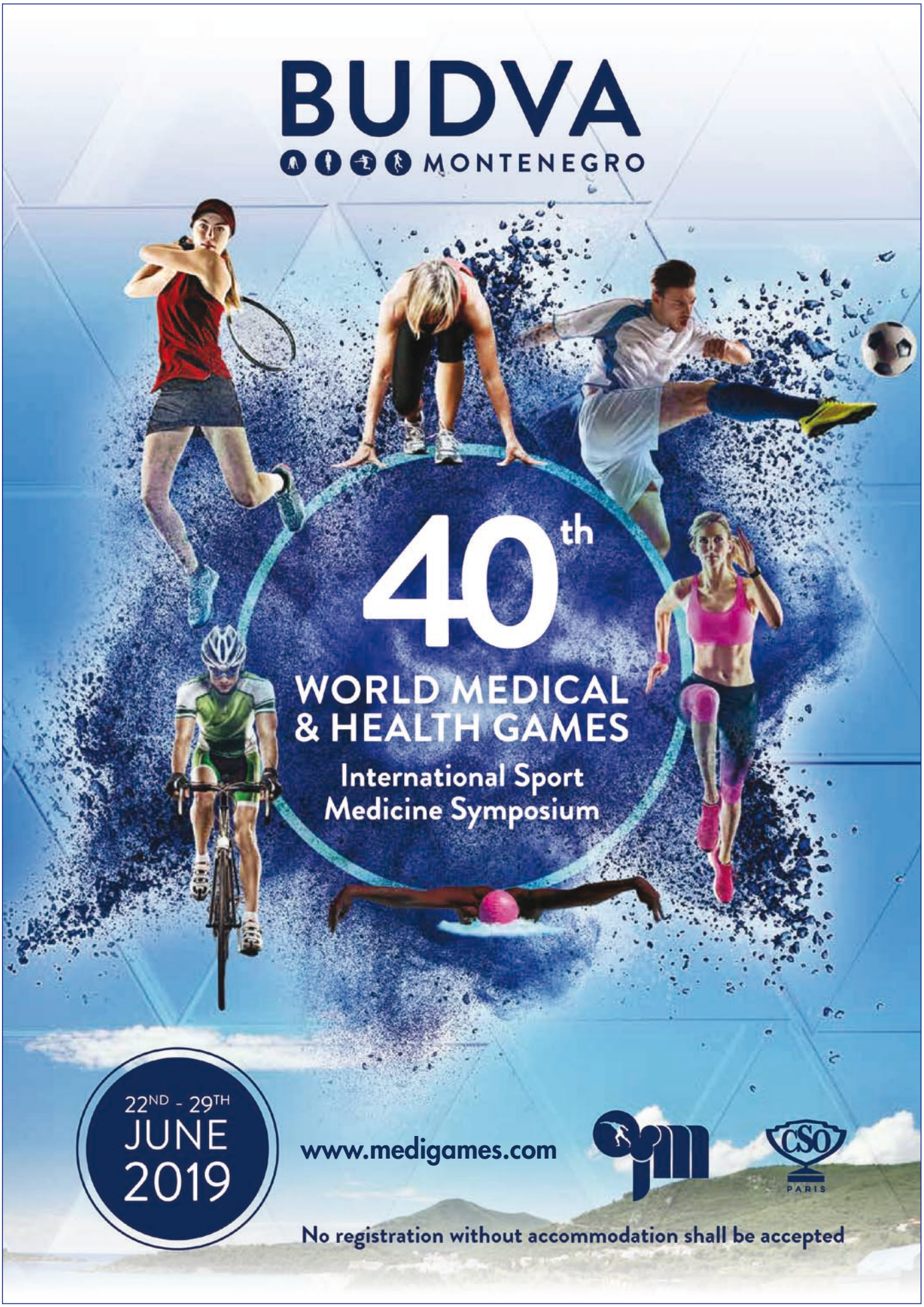
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The effect of high volume image-guided injection (HVIGI) in the chronic Achilles and Patella Tendinopathy

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Summary

Background: This present study evaluates the long-term effect of high volume image-guided injection (HVIGI) for chronic Achilles (AT) and patella Tendinopathy (PT).
Purpose/Aim of Study: Does HVIGI-treatment for chronic n AT and PT improve function and reduce pain at a long-term follow-up?
Materials and Methods: 57 Patients with resistant non-insertional AT and 76 PT patients who failed to improve with a 3-month eccentric loading program were included in the study. Maximal tendon thickness and neovascularisation was assessed by ultrasound. All the tendinopathic achilles and patella tendons were injected, ultrasound guided, with 10 mL of 0.5% Marcaine, 0.5 mL Triamcinolonacetonid (40mg/mL) and 40 mL of 0.9% NaCl saline solution. All outcome measures were recorded at baseline and after one-year follow-up. A standardized eccentric loading rehabilitation protocol was prescribed after HVIGI-treatment. Clinical outcome was assessed with the (VISA-A) and (VISA-P) questionnaire.
Findings/Results: We found a significant (p=0,001) increase in the VISA-A score from 48,5 to 64,9 by 1 year. Likewise, the VISA-P score increased from 39,9 to 63,1 by 1 year (p=0,0006). Twenty-eight % of the patients with AT and 31,8% of the patients with PT did not respond to a single HVIGI-treatment. There was no significant change in the diameter of the Achilles or patella tendon when comparing baseline and 1-year follow-up.
Conclusions: The study demonstrated significant improvement in subjective and functional outcome after HVIGI for both AT and PT after one year. However, 28 % of the patients with AT and 31,8% of the patients with PT did not respond to a single HVIGI-treatment. Likewise did HVIGI treatment not reduce tendon thickness.

Introduction

Non-insertional Achilles tendinopathy is characterised by a degenerative condition in the Achilles tendon, which manifest by pain on activity [1]. The degenerative condition is characterised by a neovascularisation of the Achilles tendon, and the area of degeneration occurs proximal of the tendons insertion into the calcaneus in the mid-portion of the tendon [2]. The vascular-neural ingrowth is mainly located to the ventral part of the Achilles tendon [2]. The neovascularisation and accompanying nerve-ingrowth is found in patients with painful Achilles tendinopathy, but not in normal tendons [2, 3].

For now, the most effective treatment for non-insertional Achilles tendinopathy is eccentric strengthening of the tendon. These exercises should be performed twice a day for 12 weeks [1].

Neovascularisation is also found in patients with chronic patella tendinopathy [4]. Patella tendinopathy is an overuse condition, which often presents itself as pain at the lower patella pole [5]. Like Achilles tendinopathy the primary treatment is strengthening of the tendon by eccentric exercises [5].

Not all patients improve after this type of treatment, which is why new

	Pre	7/14 days	1 month	3 months	1 year
Mean ± SD	48,5 ± 14,2	60 ± 12,8	65,7 ± 16,7	75,4 ± 18,3	64,9 ± 21,4
Range	15-73	28-77	23-92	26-94	31-100
Patients	37	19	27	17	20

Table 1. *VISA-A score before HVIGI-treatment and at follow-up.*

	Pre	3 months	1 year
Mean ± SD	0,87 ± 0,22	0,63 ± 0,14	0,87 ± 0,36
Range	0,51-1,59	0,43-0,92	0,46-1,81
Patients	35	14	18

Table 2. *Achilles tendon diameter (measured in mm).*

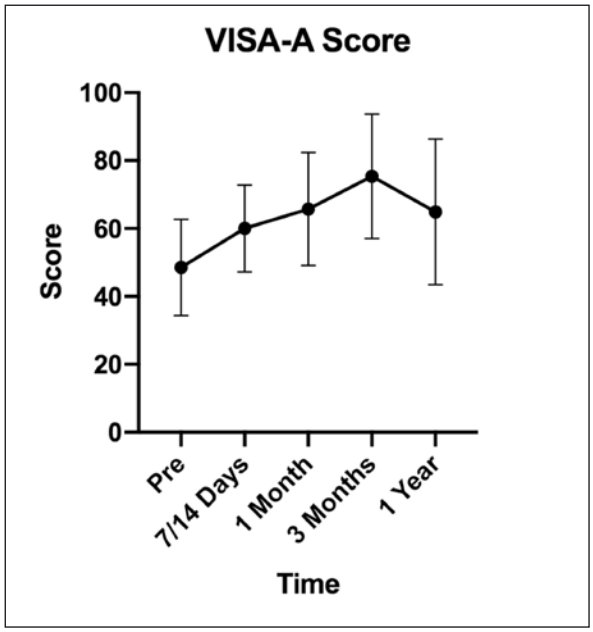

Figure 1. *VISA-A score from pre treament to 1 year follow-up.*

treatment such as high volume image-guided injection (HVIGI) for chronic patella and Achilles tendinopathies has been introduced. The mechanism behind the effect of HVIGI-treatment is believed to be mechanical stretching, breaking or occluding the neo-vessels and the accompanying nerve-ingrowth [6]. This is believed to reduce the pain of the tendinopathy. Previous studies have shown that HVIGI-treatment can decrease the amount of pain perceived by patients and improve their functional activities [4, 6-8].

The aim of this study is to evaluate the long-term effect of high volume image-guided injection-treatment for chronic Patella and non-insertional Achilles tendinopathy.

It was hypothesised that HVIGI would improve symptoms and function for chronic Patella and non-insertional Achilles tendinopathy.

Methods

Patients with chronic patella tendinopathy or chronic non-insertional Achilles tendinopathy were included in the study. To be included in the study the patients had to have failed previous treatment for their diagnosis. The patients with chronic Patella tendinopathy had failed to improve with a 3-month heavy slow resistance program and the patients with chronic non-insertional Achilles tendinopathy had failed to improve with a 3-month eccentric loading program.

All the tendinopathic Achilles and patella tendons were injected, ultrasound guided, with 10 mL of 0.5% Marcaine, 0.5 mL Triamcinolonacetonid (40mg/mL) and 40 mL of 0.9% NaCl saline solution under real time ultrasound guidance. All outcome measures were recorded at baseline and after one-year follow-up. Maximal tendon thickness and neovascularization was assessed with ultrasound and power Doppler. Clinical outcome was assessed with the Victorian Institute of Sports Assessment-Achilles tendon/-Patella tendon (VISA-A and VISA-P) questionnaire. In addition, the questionnaire was sent to the included patients following week 2, 1 month and 3 months after the procedure.

A standardized eccentric loading rehabilitation protocol was prescribed after HVIGI-treatment for patients with Achilles tendinopathy and a standardized heavy slow resistance protocol was prescribed after HVIGI-treatment for patients with patella tendinopathy.

The clinical outcome was measured by the Victorian Institute of Sports Assessment questionnaire, which is a reliable tool for assessing the severity of Achilles and patella tendinopathies [9, 10]. The questionnaire is translated to Danish, and is considered a valid and compatible to the original version [9]. The VISA-score range from 0 to 100, where 100 is an expression for a healthy and pain-free tendon.

Descriptive statistics were calculated, and all data were analysed using GraphPad Prism 8. Kolmogorov-Smirnov tests determined that the data from the VISA-A and VISA-P questionnaires were normally distributed. Student's t-test were used to compare the

	Pre	7/14 days	1 month	3 months	1 year
Mean ± SD	39,9 ± 18,3	48,2 ± 19,7	64,2 ± 15,7	58 ± 23	63,1 ± 24,1
Range	15-76	8-87	37-94	24-100	17-94
Patients	27	22	22	21	19

Table 3. *VISA-P score before HVIGI-treatment and at follow-up.*

	Pre	3 months	1 year
Mean ± SD	0.69 ± 0.14	0.47 ± 0.13	0.64 ± 0.25
Range	0.45-1.00	0.32-0.72	0.30-0.95
Patients	24	9	9

Table 4. *Patella tendon diameter (measured in mm).*

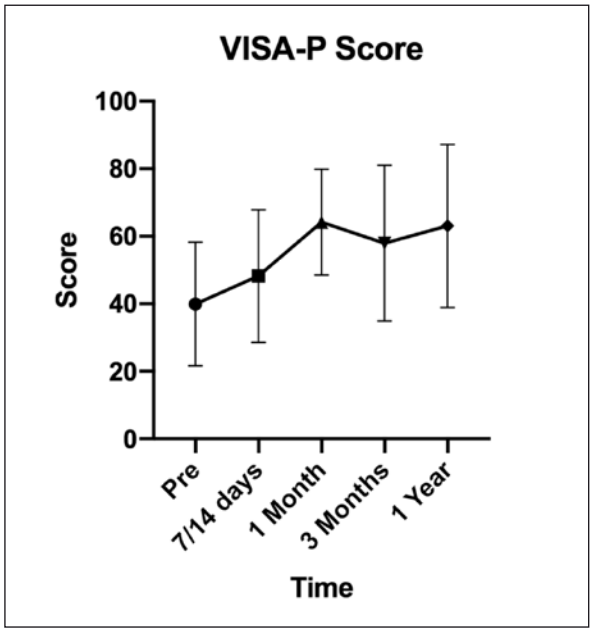

Figure 2. *VISA-P score from pre treatment to 1 year follow-up.*

VISA-scores before HVIGI-treatment and 1-year post HVIGI-treatment. Only data from patients, which had received only one HVIGI-treatment and completed the VISA-questionnaire for baseline were included in the statistics.

Results

Patients were included in the period of 2013-2018. In that period of time 57 patients with chronic non-insertional Achilles Tendinopathy with a total of 76 HVIGI procedures performed, and 44 patients with chronic Patella tendinopathy with a total of 57 HVIGI procedure performed were included in the study.

Achilles tendon HVI GI treatment outcome:

The mean age of the patients were 45,5 ± 10,4 years (range 16-65).The mean duration of symptoms before HVIGI was 3,08 ± 3,25 years (range 0,5-15).

16 patients (16/57= 28%) didn't respond to only one HVIGI-treatment and were referred to surgery (2 patients – one of the patients also received extra HVIGI-treatment) or additional HVIGI-treatment (15 patients/19 procedures). The baseline VISA-A score of 48,5 ± 14,2 (range 15-73) improved to 64,9 ± 21,4 (range 31-100) by 1 year (p=0,001). As seen in table 1 and figure 1, the VISA-A score tops at 3 months at 75,4 ± 18,3.

There is no significant difference (p=0,88) in the tendon diameter at baseline 0,87 ± 0,21 and after 1 year 0,87 ± 0,22.

Patella tendon HVI GI treatment outcome:

The mean age of the patients were 31,6 ± 8,5 years (range 18-52). The mean duration of symptoms before HVIGI was 3,05 ± 2,18 years (range 0,5-9). The baseline VISA-P score of 39,9 ± 18,3 improved to 63,1 ± 24,1 by 1 year (p=0,0006).

14 patients (14/44=31,8%) didn't respond to only one HVIGI-treatment and were referred to surgery (7 patients), intraarticular blockade (2 patients) or additional HVIGI-treatment (7 patients/11 procedures, where 2 patients also underwent surgery).

There is no significant difference (p=0.4680) in the tendon diameter at baseline 0.69 ± 0.14 and after 1 year 0.64 ± 0.25.

Conclusion

The study showed a significant (p=0.001) increase in the VISA-A score from 48.5 to 64.9 by 1 year. Likewise, the VISA-P score increased from 39.9 to 63.1 by 1 year (p=0.0006).

However, 28 % of the patients with chronic non-insertional Achilles tendinopathy and 31.8% of the patients with chronic patella tendinopathy did not respond to a single HVIGI-treatment.

There was reported no significant change in the diameter of the Achilles or patella tendon when comparing baseline and follow-up after 1 year.

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Conviction among marathon runners: Are type of running shoe important?

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Abstract

Background: Running shoes have been suggested to play a role in injury development in runners. According to causal theory, runners should be able to run to a greater or lesser degree in any running shoe before being at high risk of injury. Viewed through an injury preventive lens, it could then be argued that it *"does not matter"*, which shoe runners choose as long as they adapt their amount of running accordingly. However, it remains uncertain if Danish marathon runners share the conviction that running shoes do not matter. Therefore, the purpose of this study was to identify the proportion of marathoners who report *"it does not matter"* when they are asked, which type of shoes they find most appropriate for running.

Methods: A survey-based study including runners participating in H.C. Andersen Marathon, Odense, Denmark in 2011. The main outcome measure was self-evaluated shoe type appropriateness categorized into supportive shoes, neutral shoes, other shoes, does not matter, and do not know.

Results: A total of 654 online-based questionnaires were completed from an estimated 1500 eligible runners. The proportion of runners who reported *"does not matter"* when asked which of shoe type was most appropriate for them was 3.4%. A total of 50.8% found supportive shoes to be most appropriate, 38.8% neutral shoes, 1.4% other shoes and finally 5.6% 'did not know'. Gender, running experience, marathon experience, BMI, membership of a running club, running technique, and previous running injury was not associated with self-reported shoe type appropriateness (p>0.05). Runners seeking advice in a shoe store, were more likely to identify an importance of shoe type than runners not seeking advice (RR: 1.90 [95% CI: 1.20 to 3.00], p=0.0001).

Conclusions: A minority of 3.4% of marathon runners reported *"does not matter"* when they are asked, which shoe type they find most appropriate for running. As runners are able to run more or less in a certain shoe before sustaining a running-related injury, it must be emphasized that more work is needed to shed light on the amount of running that runners are able to tolerate when using different types of running shoes.

Introduction

Running injury occurs when the applied load during running exceed the injury threshold for a certain structure (1). Consequently and in accordance with recent causal theory (2), runners should be able to run more or less in a certain running shoe before being at high risk of injury. Viewed through an injury preventive lens, it could then be argued that it *"does not matter"*, which running shoe runners choose as long as they adapt their amount of running accordingly. For example, runners with pronated (or neutral) feet should be able to run (more or less) in motion control shoes, neutral shoes and minimalistic shoes as long as their level of running is adjusted.

Interestingly, choice of running shoes based on the foot morphology

(e.g. foot pronation) has been used as a major intervention to prevent injuries (3). Among runners with pronated feet, supportive shoes have been commonly recommended, while neutral- and cushioned shoes were recommended to persons with neutral- and supinated feet (4). This approach has been accepted by a majority of adolescent runners, as 73.1% identify foot type compatibility with shoe design as the most important factor in choosing a running shoe (5). In support of this conviction, a randomized trial found runners with pronated feet at increased rate (Hazard rate ratio = 1.80; 95% CI 1.01 to 3.22) of running-related injury when running in a neutral shoe compared to runners with neutral feet running in a neutral shoe (6). Consequently, the authors of that trial recommended that runners with pronated feet should use motion control shoes while running. In contrast, the efficacy and safety of prescribing a specific shoe type, solely based on the arch height (7-9) or foot posture (4,6,10) to prevent injuries has been questioned. From a theoretical perspective, injuries can not occur solely because of the chosen running shoe. If that were the case, a runner would be able to sustain an injury while sitting in a couch equipped with a pair of running shoes without practicing running. Instead, injuries occur because runners expose themselves to too much running (in a certain shoe) that exceed the body´s ability for adaptive tissue repair (2). Accordingly, the conviction of the runner with regard to their choice of shoe is interesting. Possibly, the runners share the viewpoint that runners are able to run, to a greater or lesser degree, in all types of running shoes, then they are likely to reporting *"it does not matter"*, when asked about shoe type appropriateness in an injury etiology perspective. In this case, they might adapt their running distance when running in certain shoe types. However, if the runners report that specific shoes (e.g. motion control shoes) are most appropriate for them more effort is needed to highlight to the runners that they should be able to run in all shoe types, but that they need to adapt the amount of running dependent on the shoe they chose to run in. At this time, to the author´s knowledge, there are no published studies that specifically address the proportion of Danish marathon runners who report *"it does not matter"*, which asked about shoe type appropriateness in an injury etiology perspective. Therefore, the purpose of the present study was to identify the proportion of marathoners who report *"it does not matter"* when they are asked, which running shoe they find most appropriate for running.

Methods

The study was designed as a questionnaire-based study. According to Danish law, ethical committee waived the request for ethics approval because the study design was observational. The study was approved by the Danish data protection agency. All runners signed informed consent prior to enrollment. Runners above the age of 18 years participating in the H. C. Andersen Marathon, Odense, Denmark, 18th of September 2011 and able to read and write Danish, were eligible for inclusion. Data was collected through a post-race online questionnaire available for the marathon participants immediately upon race completion. Distribution of flyers containing a description of the study and how to complete the questionnaire were distributed among runners in the finish line area. Nine days after the race, all runners received an e-mail containing a description of the study and a link to the study website. Reminder mails were sent 19 days after the marathon. After a 37-day period after the marathon, the opportunity to complete the online questionnaire was stopped. All completed questionnaires were received electronically. To be able to submit the questionnaire, all relevant questions had to be answered. The submitted questionnaires were screened and excluded for the following reasons: Doublets, significant errors in the responses and age below 18. The questionnaire was developed by the investigators and pilot tested on marathon participants at three different Danish marathons prior to conducting the present study. The questionnaire contained questions regarding shoe selection criteria and appropriateness, demographic characteristics, training characteristics and marathon experience.

Outcome

Self-reported shoe type appropriateness was defined as the shoe type the participant found most appropriate to use while running. Participants were able to choose between the following five categories: Supportive (Motion control- and stability shoes), neutral (neutral- and cushioned shoes), other (minimalistic shoes and other shoe types), does not matter (no preference of supportive, neutral or other shoes) or do not know.

Statistical analyses

Count and frequencies were presented for each category of the outcome. All data management and analyses were performed using STATA version SE 12.1 (Dallas, Texas, USA).

Results

A total of 702 questionnaires were received. Of these, 48 questionnaires were excluded due to doublets (n=35), significant errors in the response (n=11) and age below 18 (n=2). Finally, 654 (93%) eligible responses were included in the analysis. The mean age of the responders was 41.5 years [95% CI: 40.7 to 42.3] and the mean BMI was 23.0 kg/height^2 [95% CI: 22.8 to 23.2]. One-hundred and one runners (15%) had less than two years of running experience, while 345 (53%) had two to ten years of experience and 208 (32%) more than 10 years of experience. Two-hundred and sixty-three runners (40%) were members of a running club and 46 (7%) were using running technique (Pose method of running, Chi Running or similar). A total of 296 (45%) runners had injuries prior to the H.C. Andersen Marathon or sustained an injury during or immediately after the marathon race.

The main result revealed proportion of 3.4% that chose the option *"does not matter (no preference of supportive, neutral or other shoes)"*, when responding to the question regarding shoe-type appropriateness. In addition, 50.8% found supportive shoes to be most appropriate, 38.8% neutral shoes, 1.4% other shoes (i.e. minimalistic shoes) and finally 5.6% 'did not know'. Results on self-evaluated shoe type appropriateness according to current shoe use, test in a shoe store, and shoe recommendations are presented in Table 1. The 595 (91%)

	Self-evaluated shoe type appropriateness n = 654				
	Supportive	Neutral	Other shoe	Does not matter	Do not know
	n = 332	n = 254	n = 9	n = 22	n = 37
Current shoe use					
Supportive	315	4	2	4	12
Neutral	3	227	2	1	7
Supportive and neutral	14	20	0	7	4
Other shoe	0	1	5	2	0
Do not know	0	2	0	8	14
Chi^2: P* < 0.0001					
Advice from shoe store					
Yes	305	205	4	10	24
No	27	49	5	12	13
Chi^2: P < 0.0001					
If advised in store: recommendation?					
Supportive	296	19	2	7	12
Neutral	4	182	2	0	5
Other shoe	0	1	0	1	0
Do not know	2	1	0	3	8
Chi^2: P < 0.0001					

Table 1: *Self-evaluated shoe type appropriateness and current shoe use, advice on shoe type from shoe store and recommendations from shoe store. * P = denotes if there is a significant difference in the observed number in each cell versus the expected number in each cell.*

runners who found a supportive-, neutral- or other shoes appropriate had a 90% [95% CI: 20% to 200%], (p = 0.0001) increased probability of seeking advice about shoe type appropriateness in a shoe store than the 22 (3.4%) runners who rejected the importance of shoe type. Among the 545 who reported having received an advice in a shoe store, only two were recommended other shoes (i.e. minimalistic shoes) than supportive or neutral shoes.

Discussion

In the present study, a majority of marathon runners (91%) identified shoe type as important when choosing a running shoe. This result support the findings by Enke et al. (5), who found 73.1% of all high-school cross country runners, identified foot type compatibility with shoe design as the most important factor in choosing a running shoe.

A reason for this conviction remains, however, unknown. Still, runners preferring supportive-, neutral- or other shoes were found to have a 90% [95% CI: 20% to 200%], p = 0.0001 increased probability of having sought advice about shoe type in a shoe store than runners who rejected the importance of shoe type. This association may, most importantly, be influenced by reversed causation as the direction of the association could be interpreted differently: One interpretation might be that runners sought advice about running shoes in shoe stores because they had a conviction about shoe appropriateness. Another interpretation could be: that runners may obtain a specific conviction about shoe appropriateness because they had received advice in a shoe store. Alternatively, runners sought advice because they had problems running without pain or injury.

In the present study, only two run-

ners had been advised to select other shoes than the traditional supportive or neutral running shoe. Based on this, it seems that the advice given in shoe stores rarely involves minimalistic shoes. This finding is in contrast to the growing interest in minimalistic running shoes; Rothschild (11) found 75 % of all runners to indicate an interest of minimalistic shoes, whereas above 30 % has tried that shoe type. Fear of possible injury was the most prevalent perceived barrier in transitioning to minimalistic shoe running amongst American runners who had participated in a road race in Orlando, Florida (11). It must be stressed, however, that no strong evidence exists with regard to differences in injury risk across runners wearing minimalist- and traditional conventional running shoes. In addition, it must be stressed that runners, theoretically, are able to run to a greater or lesser degree in all types of shoes (2).

For the past 30 years, choice of running shoes has become increasingly dependent on the motion control (12). Often running shoe stores use a subjectively assigned support hierarchy: cushion, neutral, stability and motion control. In the present study, motion control shoes and stability shoes were categorized into the same group named supportive shoes. Importantly, there is a difference between motion control shoes and stability shoes as motion control shoes are recommended to runners with severe overpronating foot types and stability shoes are recommended to runners with mild overpronation. Because the stability shoes were merged with the motion control shoes, no conclusion about differences or similarities in self-reported shoe type appropriateness between these shoe types can be made. Still, the choice of supportive shoes may not be as important as proposed previously (3,13). Recently, the relevance (7-9) and safety (4) of prescribing in-shoe pronation control systems on the basis of foot type to prevent injuries has been questioned. If it is true that injury risk is not decreased by choosing a shoe type on the basis of foot type, the conviction about self-reported shoe type appropriateness may change in the future if runners are re-informed that they should be able to run (to a greater or lesser degree) in all shoe types.

The generalizability of the findings in the present study can be questioned. The runners included in the present study were marathoners. Possibly, other criteria for shoe selection than those reported exits among novice and recreational runners. More studies are needed including these runners. Furthermore, only Danish runners were included. The approaches used in shoe stores to advice runners about running shoes may vary considerably between countries. Finally, the study was conducted in 2011. Convictions may change over time as new scientific articles surface. From 2011 to 2018, a range of articles have been published in the literature (6,10,14-16). Therefore, the findings about seeking advice in shoe stores and the recommendation from the shoe stores should be interpreted with caution. Despite these limitations, the present study highlights the conviction of runners: selecting a specific type of running shoe is important. A reason for this conviction remains, however, unknown. The conviction may be caused because the runners experience a reduced risk of injury if the shoe type is appropriate. Another explanation might be that runners are influenced by the commercial interests who stress the importance of shoe type to reduce the risk of injury. Still, it is equally important to stress that no evidence exists addressing the amount of running that is acceptable and how much running is too much when using a new running shoe.

Conclusion

The primary purpose was to identify the proportion of marathoners who report *"it does not matter"* when they are asked, which they find most appropriate for running. A minority of 3.4% of marathon runners reported *"does not matter"*.

Perspectives

Recent causal frameworks suggest, that the running shoes is unable to produce injury by itself.(2) As injury occur as a consequence of too much running in a certain running shoe, more work is needed to shed light on the amount of running that runners are able to tolerate when using different types of running shoes. Such knowledge would be highly valuable for e.g. salesmen / saleswomen in running shoe stores as they would be able to guide runners to run more or less dependent on the shoes they buy.

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Injury risk difference the first two weeks after a physical performance test: A randomized trial comparing progression in running volume and running intensity in recreational runners

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Abstract

Background/aim: The present study investigated if there is a difference in injury risk for recreational runners the first two weeks after a physical performance test (PPT), when comparing a running schedule focusing on running volume (Sch-V) and a running schedule focusing on running intensity (Sch-I). It was hypothesized that twenty percent-point more runners randomized for the volume-based training schedule compared with runners randomized for the intensity-based training schedule would sustain a running-related injury. In addition, it was hypothesized that the association between running schedule and running-related injury would be 15 percent-points greater for the subgroup performing the 1500 meter running test than that of the subgroup performing the 5 km running test.

Methods: 630 recreational runners were included and randomly allocated to Sch-I (n=305) or Sch-V (n=325). A 24-week follow-up was assigned consisting of an 8-week preconditioning period followed by a 16-week specific training period. In preconditioning participants followed the same running schedule and entered subsequently a specific training period with focus on either progression in intensity or volume. A PPT was made in an 8-week interval starting from baseline, where the participants chose either a 1500m test, a 5 km test or a cooper test. A global positioning system collected all data on running. The primary outcome was running-related injury (RRI) defined as *"An injury sustained on muscles, joints, tendons and/or bones during or after running and attributed to running. The injury must have caused a training reduction (reduced distance, intensity, frequency etc.) for at least 7 days"*.

Results: The total number of RRIs after the first three PPTs were: $N_{inj\text{-}PPT1}$=19 (3,02%); $N_{inj\text{-}PPT2}$=7 (1,77%); $N_{inj\text{-}PPT3}$=4 (1,53%). The risk difference (RD) with 95% CI between the two schedules were RD_{PPT1}= -0.5% (-3.1%; 2.2%); RD_{PPT2}= 1.4% (-1.1%; 4.0%); RD_{PPT3}= -1.6% (-4.5%; 4.9%) with Sch-I as reference group. Results after PPT 3 divided into strata by type of PPT were not shown as the statistical analysis were questionable owing the low number of events after PPT 3.

Conclusion: The results did not support the presented hypotheses. Owing to sparse-data bias it is concluded that further exploration is necessary to finally invalidate the presented hypotheses.

Introduction

Running has become the primary type of exercise for most adults in the modern society [3,4]. Due to the low financial costs and the easy accessibility, running has gained popularity both locally and globally over the last decades [3]. A report from the Danish Institute of Sport Studies estimates that 29% of active Danish adults practice running [4]. It is well known that running have positive impact on physiological parameters, such as cardio respiratory function, life expectancy and weight loss [1]. To prevent a current trend where the incidence of lifestyle diseases is increasing, it should be a goal for society to keep the share of adults that exercise as high as possible.

Running-related injuries (RRI) limits recreational runners' participation in running and running-related activities. According to a study by Bueno et al. 19% of recreational runners sustain an injury within a 12-month period [2]. The incidence of RRIs and the possible limitations of an active lifestyle is an economic burden for society [18,19]. The consequences for both the individual runner and society should motivate for further investigation on prevention of RRIs. Bertelsen et al. have developed a scientifically based framework, which describes the etiology of a RRI [5]. This framework presents that a RRI will occur when the structure-specific load capacity is exceeded. To prevent RRIs the current literature needs to be supplemented with more knowledge about training variables and how these affect the structure-specific cumulative load per running session for different subgroups of recreational runners [20]. The role of training variables in the aetiology of a RRI is challenging because of their complex interaction but should be investigated to provide coaches, clinicians and runners with enough information to prevent a RRI when scheduling modifiable risk factors as intensity and volume [6,21].

Sudden changes in training load needs to be considered when estimating the structure-specific cumulative load capacity during running. Magnusson et al. [22] have concluded that the body will adapt to the type of load it is exposed to and therefore sudden changes in training load should be a subject for further investigation, when trying to estimate how much is too much [17]. Training characteristics such as volume, frequency or intensity is modifiable risk factors when coaches, clinicians and runners organize a running schedule. How the training characteristics relate to or possibly cause a RRI is highly important to create a proper prevention strategy [6]. What if a sudden change in any of the named training characteristics occur? How will this affect the risk of sustaining a RRI? A sudden change in either volume, frequency or intensity may not be a part of an ideal training schedule but nonetheless runners expose them self to sudden changes from time to time due to commands from the outside world or non-compliance to a deliberate running schedule. Furthermore, it seems likely that a deliberate running schedule would still contain sudden changes. Testing, as part of a deliberate running schedule could occur as a sudden change to the runners usual training. The characteristics of sudden changes like these may modify the association between running schedule and RRI. At least it is a subject which needs further investigation to gather more information on how/if this association is modified by sudden changes.

Therefore, the aim of the present study was to investigate the association between running schedule (volume-based versus intensity-based) and running-related injury in the two weeks following a self-administered physical performance test (PPT) and to explore if this association was modified by type of PPT. The following hypotheses, which were based on empirical knowledge, are tested:

1): Twenty percent-point more runners randomized for the volume-based training schedule compared with runners randomized for the intensity-based training schedule sustain a running-related injury the first 2 weeks after a self-administered physical performance test.

2): The association between following either a volume-based or an intensity-based training schedule and a running-related injury will be 15 percent-points greater for the subgroup performing the 1500 meter running test than that of the subgroup performing the 5 km running test.

Methods

The research group behind the Run Clever trial [7,8] collected and provided the data for the present study. The Run Clever trial was conducted from April 2015 to March 2016. The study design, procedures and informed consent of the Run Clever trial were approved by the Danish Data Protection Agency and the Ethics Committee Northern Denmark Region (N-20140069). All included participants provided verbal and written consent prior to inclusion. The methods of the Run Clever trial and the present study primarily differed in the management of data and the subsequently statistical analysis. Data on PPTs were only used for adjustments of individual running intensity in the Run Clever Trial. The reporting of the present study complies with the 2010 Consolidated Standards of Reporting Trials statement (except item 17b) [23].

Trial Design

The trial is designed as a randomized parallel-group trial with a 24-week follow-up. This follow-up was divided into an 8-week preconditioning period and a 16-week specific training period. The purpose of the preconditioning period was to prepare the runners physically and aim for a more comparable baseline status prior to the 16-week specific training period. Therefore, all included runners received a similar running schedule during the preconditioning period. During the specific training period the runners were randomized to receive one of the two running schedule interventions: (i) schedule intensity (Sch-I) with a focus on progression in running intensity or (ii) schedule volume (Sch-V) with a focus on progression in running volume.

Participants

Eligible participants were recreational runners between 18 and 65 years of age, who owned an iOS-based or an Android-based phone. To be categorized as a recreational runner the present study defined, that the participants had to have a track record presenting a weekly running frequency of 1-3 sessions during the last six months. If the runners were eligible for inclusion due to the described criteria, were assessed based on a completed questionnaire prior to baseline. Reasons for exclusion

assessed via the submitted questionnaire were: injured within the past six months, pregnant or vigorous physical activity contraindicated. When included, all participants were instructed to follow the received running schedule strictly.

Interventions

During the 8-week preconditioning period the two running schedules were identical. Both running schedules were structured in 4-week cycles with a running frequency of three times per week throughout the 24-week follow up. The first week of a cycle contained af 23% progression of weekly running volume and the last week a 10% regression. Week 2 and 3 were adaptation weeks and had 0% progression. In the preconditioning period, all running kilometers were performed at an easy or moderate intensity. Within the 16 weeks of intervention training the two running schedules differed in the following way:

The runners assigned to Sch-I increased the weekly volume of running at an intensity (minutes per kilometer) equal to or above a VO2max of 88% every 4th week as a new cycle began (see blue dotted line in Figure 1). The progression was structured the same way as during the preconditioning period. For the runners assigned to the Sch-I only kilometer at a pace equal to or above a VO2max of 88% was increased. The total volume (kilometers) of running was fixed during the intervention training for this group (see blue non-dotted line in Figure 1).

The runners assigned to Sch-V increased the total running volume equal to or below a VO2max of 80% structured after the same progression pattern as for those assigned to Sch-I. All scheduled running was performed at a pace equal to or below a VO2max of 80% (see grey dotted line in Figure 1), and the progression for this group only concerned the total weekly volume (kilometers) of running (see grey non-dotted line in Figure 1).

The intensity level (% of VO2max) was estimated individually for each participant by estimating VO2max through a self-administered physical performance test (PPT). The VO2max was then estimated by a method developed by Jack Daniels [9]. The PPT was done as the first session in the preconditioning period as a baseline measurement. The participants could choose between 3 types of running tests: a 1500 m running test, a Coopers 12 min running test or a 5 km running test. All tests were instructed to be performed as all-out-tests. The PPT defined the individual levels of intensity and thereby running pace for each runner. The chosen type of PPT was performed on an 8-week interval during the follow up and after each PPT the individual runner's intensity levels and running pace were adjusted if necessary.

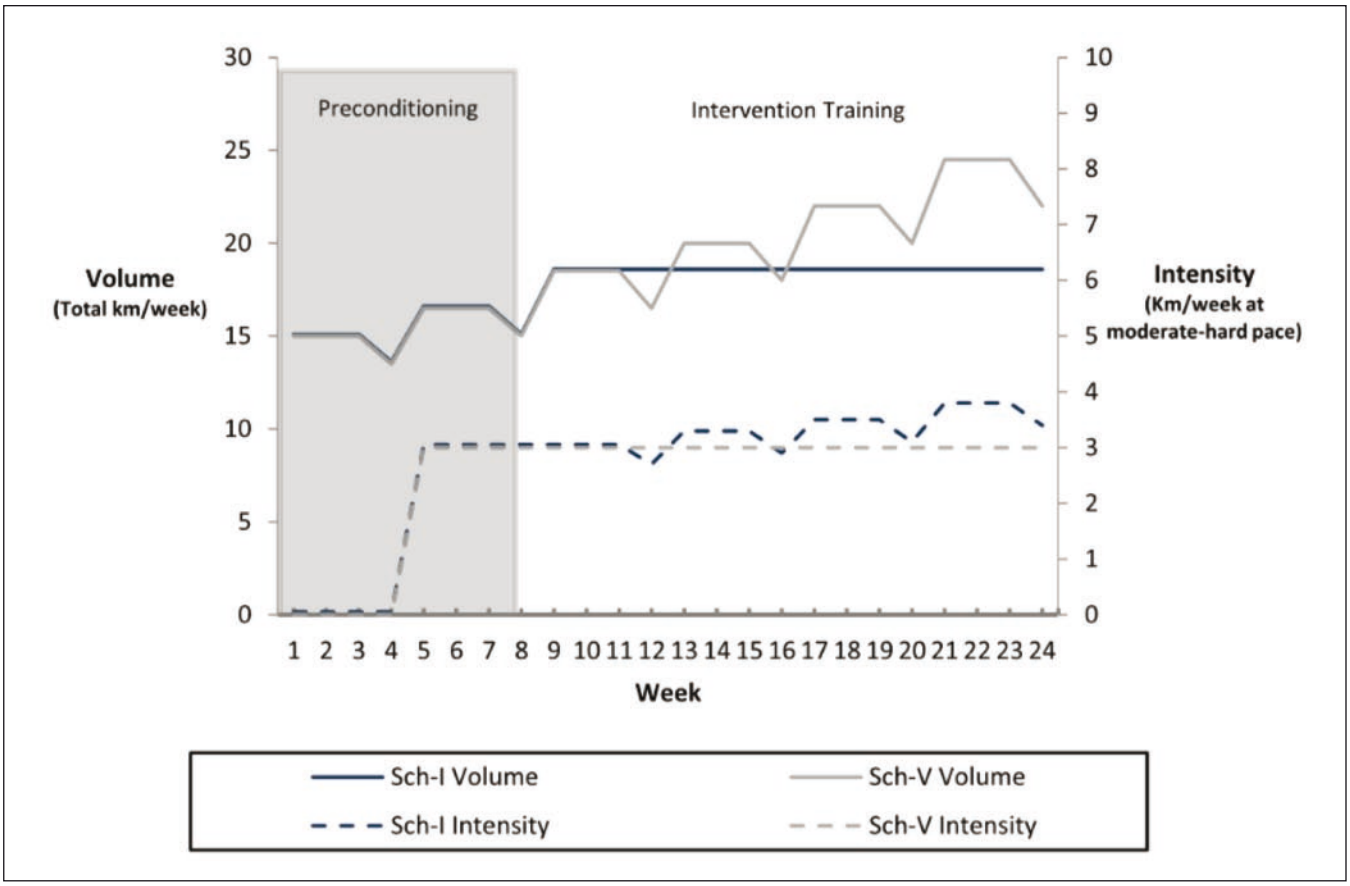

Figure 1: *The outline of the two interventions (Sch-V and Sch-I) during the 24-week follow-up period. Intensity (blue) was designed to progress the weekly number of kilometers run at a pace higher than 88% of VO2max. Volume (grey) was designed to progress the weekly amount of total running kilometers. Progression was made every 4th week during the intervention training.*
The figure is from the study protocol of the Run Clever trial [8].

During the 24-week follow-up data on exposure (running performed) were collected by global positioning system (GPS) using the Help2Run smartphone application (Help2Run, Denmark) or a commercially available Garmin GPS watch (Garmin International, Olathe, Kansas, USA). When a training session was completed the specific GPS data were automatically uploaded to an internet-based training diary, where the participants could get an overview of training data. The researchers had access to all uploaded data from all included participants, whereas the participants only could access personal training data. The internet-based training diary also allowed the participants to manually upload training data in case there was a lack of GPS data during training. In an attempt to improve compliance to the interventions, the mobile application from Help2Run provided real-time, individualized feedback on the covered and remaining distance. The same applied to the running intensity (minutes per kilometer), where an audioalarm told the participant to slow down or speed up if he/she didn't run according to the scheduled pace.

Type of PPT as effect-measure modifier
The participants performed a PPT four times during the 24-week follow-up. PPT 1 was performed in week 0, PPT 2 after 8 weeks, PPT 3 after 16 weeks and PPT 4 at the end of follow-up after 24 weeks. PPT 4 is not included in the analysis in the present study, as no training period follows this test. It is worth a consideration if the type of PPT could affect the association between exposure (training schedule) and outcome (RRI) because the participants had the choice between 3 types of PPT's (1500 m, 5000 m or Cooper). The 3 types of tests vary in length and time, which should also make the intensity and running speed of the PPT training session vary as the test is performed as an all-out-test. The increased running speed during a PPT will increase the magnitude of the load per stride. If this sudden change in the magnitude of the load per stride overwhelms the ability for the adaptive tissue repair, it will affect the incidents of RRI [5]. Therefore, the type of PPT will be assessed as effect-measure modifier, as the type of PPT is hypothesized to create a different type of change in magnitude of load per stride. The assessment of type of PPT as effect-measure modifier will be made with risk difference as the measurement of association.

Outcome
The primary outcome of interest was Running Related Injury (RRI). In the present study RRI was defined as in the Run Clever trial [7]: *"An injury sustained on muscles, joints, tendons and/or bones during or after running and attributed to running. The injury must have caused a training reduction (reduced distance, intensity, frequency etc.) for at least 7 days [10, 11]"*

Data on outcome (RRI) were collected through a questionnaire on injury status, which was distributed automatically via email on a weekly basis. If a participant reports an injury, an appointment for a physical examination was made and a diagnostic team of certified physiotherapists performed a clinical examination. The respective physiotherapist reported data on diagnosis to the research group after the examination. Only RRIs which occurred during the two weeks following a PPT were included in the analysis.

Power
A power calculation was made prior to inclusion and the required number of participants were included. However, the power calculation was targeted the purpose of the Run Clever trial [7] and not the present study, which therefore only can be considered as explorative.

Randomization
Participants were allocated to either Sch-I or Sch-V using block randomization. In blocks of 10 the random sequence allocation was applied by a secure back-end system. The algorithm applied to allocate the participants ensured equal group size. When an investigator registered a participant as included, the back-end system would allocate the participant for one of the two running schedules. The allocation was concealed for the investigators until after the inclusion of a participant. The participants received no information about their individual allocation but could get an overview of their scheduled training via the Help2Run smartphone application or the internet-based training diary. The diagnostic team of physiotherapists assessing outcome were blinded to the allocation throughout the trial.

Data management
All downloaded data from the 24-week follow-up have been saved on an internal server hosted by Aarhus University. Only members of the research group have been granted access to the back-end system. To withdraw data on time and type of PPT for each participant from the back-end system, all data on performed running were sorted manually. Sorting through all performed training sessions manually showed if the PPT's were performed when they were assigned to be or if non-compliance to the assigned intervention were a problem to consider. The data concerning the present study were exported to Excel to use for further analysis in STATA /SE version 13.

Statistical methods
All analyzed data was derived from the first two weeks after a PPT were performed (week 0-2, week 8-10 and week 16-18). These periods were specifically chosen in order to make the PPT a main factor in case a RRI occurred during the analyzed period, and to explore if the risk of getting a RRI after a PPT were different depending on allocation. Due to the trial design only PPT 3 were performed after a training period specific to the allocation but data from the subsequent period of all 3 PPT's were brought into the analysis. The association between exposure (allocation) and outcome (RRI) in the first 2 weeks after a PPT was investigated through an analysis of crude data using risk difference as measure of association. The risk difference was found as the difference between the cumulative incidence proportion for the participants randomized for Sch-I and the participants randomized for Sch-V.

To assess if type of PPT was an effect-measure modifier a stratified analysis was made, where data was divided into strata by type of PPT. The measurement of association was risk difference in the stratified analysis as well. All calculations in both the crude and the stratified analysis were made with the Sch-I as the reference group [12]. The statistical analysis was conducted in STATA /SE version 13 with help from Rasmus Østergaard Nielsen.

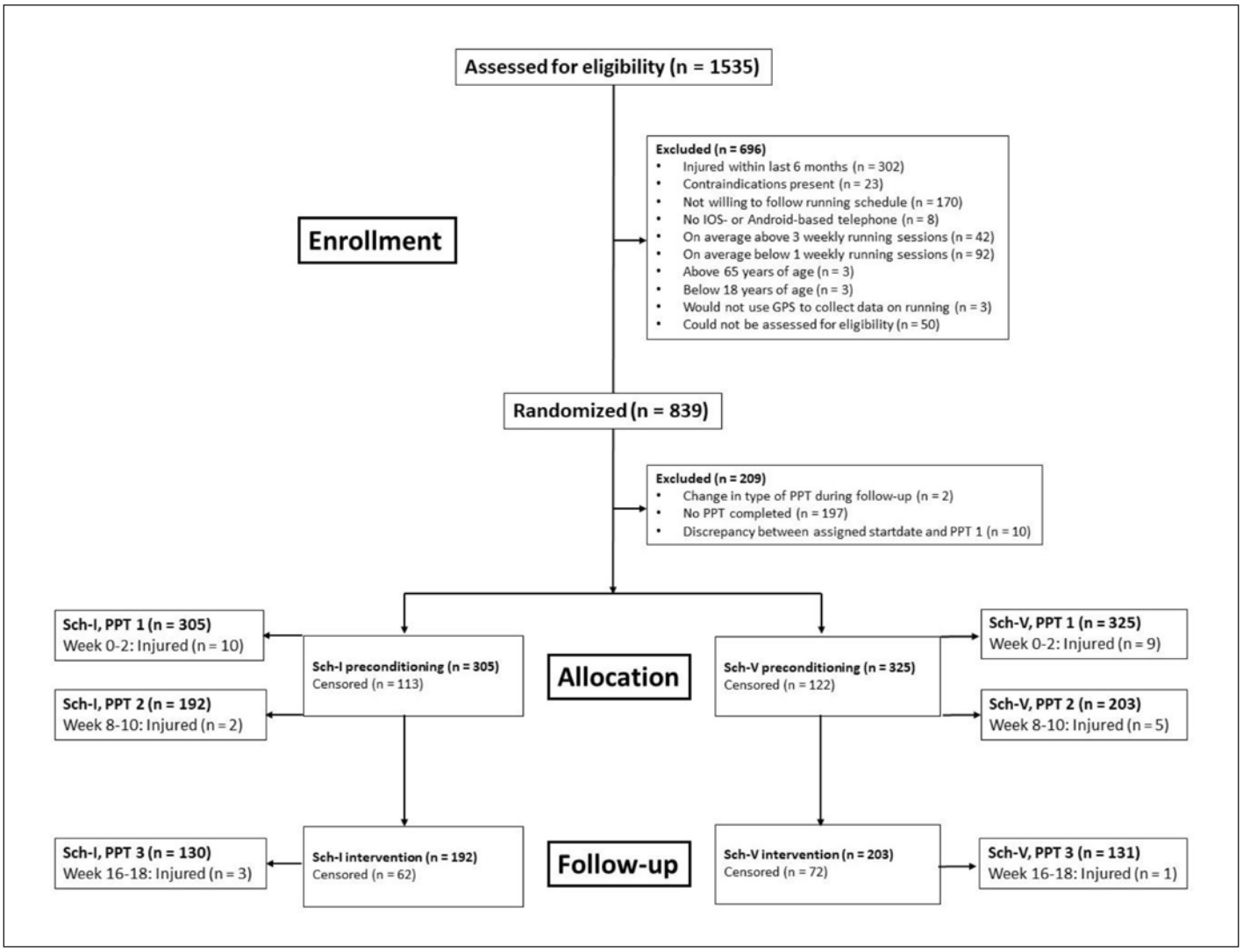

Figure 2: *Participant flow from recruitment to end of follow-up.*

Results

After public announcement of the Run Clever trial, 1535 volunteers answered the online eligibility questionnaire. Overall eligibility assessments excluded 696 (45%) volunteers from inclusion. 173 (25%) of the 696 were assessed eligible for inclusion but refrained from participating after verbal information was provided about the rigidity of the running schedule and the requirement of collecting data on running by using GPS. In total, 839 volunteers were randomized for one of the two running schedules in the Run Clever trial and 630 of them were included in the present study. A group of 209 runners were excluded after randomization due to non-compliance concerning PPTs or simply no completed PPTs at all. Of the 305 participants randomized for Sch-I 130 (43%) completed PPT 3. For the group randomized for Sch-V, 131 (40%) of the 325 participating runners completed PPT 3.

The baseline characteristics for the two groups are presented in Table 1. There was no notable difference in the 2 randomized groups prior to preconditioning training.

Crude results

The primary association to be investigated was the association between assigned running schedule and RRI in the first 2 weeks after a PPT. The overall number of occurred events (RRI) independent from randomization were distributed as follows: 19 (3,02%) of the 630 participants who completed PPT 1 sustained a RRI in the first 2 weeks after, 7 (1,77%) out of 395 participants sustained a RRI after PPT 2 and 4 (1,53%) out of 261 were diagnosed with a RRI after PPT 3.

Presented in Table 2 are the crude results for the association between assigned training schedule (Sch-V or Sch-I) and RRI in the 2 weeks following a PPT.

Stratified results

The association between assigned running schedule and RRI in the first 2 weeks after a PPT is presented in Table 3 as stratified results, where the results is divided into strata by type of PPT.

Discussion

It was hypothesized that twenty percent-point more runners randomized for the volume-based training schedule would sustain a RRI compared with runners randomized for the intensity-based training schedule within the first 2 weeks of a PPT. The results did not

Baseline characteristics		
Participant information	**Sch-I (n = 305)**	**Sch-V (n = 325)**
Gender		
Female (n)	188 (62%)	203 (62%)
Male (n)	117 (38%)	122 (38%)
Age (years)	38,6 (±10.4)	39 (±9.7)
BMI (kg/m^2)	24,1 (±3.0)	24,4 (±3.2)

Table 1: *Descriptive results are shown as total number (percentage), mean (±SD). BMI, Body mass index; Sch-I, Intensity-based training schedule; Sch-V, Volume-based training schedule.*

Time-point	Allocation	N	N-inj	RD	P>|z|	95% CI
PPT 1 /week 0	Sch-I	305	10	0 (ref)		
	Sch-V	325	9	-0.5%	0.71	-3.1%; 2.2%
PPT 2 / week 8	Sch-I	192	2	0 (ref)		
	Sch-V	203	5	1.4%	0.28	-1.1%; 4.0%
PPT 3 / week 16	Sch-I	130	3	0 (ref)		
	Sch-V	131	1	-1.6%	0.30	-4.5%; 4.9%

Table 2: *Crude results / measurement of association shown as risk difference (RD) with Sch-I as the reference group. RD, Risk difference; CI, confidence interval; Ref, reference group; Sch-I, Intensity-based training schedule; Sch-V, Volume-based training schedule; PPT, self-administered physical performance test; N, total number; N-inj, number of injuries.*

Time-point	Allocation	N	N-inj	RD	P>|z|	95% CI
COOPER TEST						
PPT 1 /week 0	Sch-I	114	4	0 (ref)		
	Sch-V	117	6	1.6%	0.54	-3.6%; 6.8%
PPT 2 / week 8	Sch-I	86	1	0 (ref)		
	Sch-V	87	1	0.01%	0.99	-3.2%; 3.2%
PPT 3 / week 16	Sch-I	55	2	0 (ref)		
	Sch-V	50	0	NA		
1500 METER TEST						
PPT 1 /week 0	Sch-I	57	4	0 (ref)		
	Sch-V	67	1	-5.5%	0.14	-12.8%; 1.7%
PPT 2 / week 8	Sch-I	40	0	0 (ref)		
	Sch-V	52	2	NA		
PPT 3 / week 16	Sch-I	29	0	0 (ref)		
	Sch-V	35	1	NA		
5000 METER TEST						
PPT 1 /week 0	Sch-I	92	2	0 (ref)		
	Sch-V	93	2	0.02%	0.99	-4.2%; 4.1%
PPT 2 / week 8	Sch-I	67	1	0 (ref)		
	Sch-V	66	2	1.5%	0.55	-3.5%; 6.6%
PPT 3 / week 16	Sch-I	46	1	0 (ref)		
	Sch-V	47	0	NA		

Table 3: *Results divided into strata by type of PPT. RD, Risk difference; CI, confidence interval; Ref, reference group; Sch-I, Intensity-based training schedule; Sch-V, Volume-based training schedule; NA, Not available; PPT, self-administered physical performance test; N, total number; N-inj, number of injuries.*

support hypothesis 1 (H1). The risk was 0.5% lower for Sch-V compared to Sch-I after PPT 1 and 1.4% higher for the same group after PPT 2. PPT 1 and PPT 2 were both performed during the preconditioning period where all runners were assigned to follow the same training schedule. Therefore, it was not expected to see any difference in risk difference in this period. The results from PPT 3 were the main results to evaluate the hypothesized association between allocation and RRI 2 weeks after a PPT, as PPT 3 were performed after 8 weeks of specific training. The crude results from PPT 3 show a 1.6% higher injury risk for Sch-V, but the number of events after PPT 3 is so low that these results should be interpreted with great caution owing to sparse-data bias if interpreted at all. Overall, the crude results show no significant higher risk of sustaining a RRI for the participants randomized for the volume-based training schedule compared to the participants randomized for the intensity-based training schedule. This indicates that runners basing their training schedule on running volume, won't be at a higher risk of sustaining a RRI after a high intensity session unfamiliar to their training routine, than runners already basing their training schedule on high intensity training. Though it should be noted that this interpretation is based on very few events and should therefore be explored further to justifying advising coaches, clinicians and runners on the association between training schedule and injury risk after a sudden change in training.

The stratified results were supposed to evaluate hypothesis 2 (H2). The main results to evaluate this hypothesis, were the results from the subgroup performing the 5 km test and the subgroup performing the 1500 m test at week 16 (PPT 3). These number of events were inadequate to calculate the risk difference between the subgroups as no events occurred for either Sch-I or Sch-V in the two subgroups [14]. Without being able to calculate the difference between the risk difference, it is undoable to assess if type of PPT is an effect-measure modifier to the association between training schedule and RRI the first 2 weeks after a PPT.

Sudden changes

The present study investigated the association between following either a volume-based or an intensity-based training schedule and RRI the first 2 weeks after a PPT. The PPT represented a sudden change in training by being performed as an all-out-test and therefore at a higher intensity than what was usual for the participants and was assessed as an effect-measure modifier. The hypotheses H1 and H2 presented in the introduction were not supported by the results. Should we approve that a sudden change in scheduled running doesn't affect the injury risk even though the association between sudden changes and RRI seems recognized? [15]. When a runner increases the running speed a change in running technique will often follow as the contact time with ground in each stride has to be shorter. The pressure between foot and ground will move to be more anterior, than when running at a slower pace. This changes the load distribution for the posterior part of the lower leg (achilles, gastrocnemius and underneath the foot) [13]. This chain of reaction triggered by an increase in running pace, will increase and change the magnitude of the load per stride. Bertelsen et al. have conducted a framework for the etiology of running-related injuries that leads to the following assumption: *"For instance, increasing running speed will increase the magnitude of the load per stride, and if the increase in speed is excessive and unfamiliar to the runner, an injury might occur"* [5]. This leads us to believe that a sudden change in intensity and running pace, represented by a PPT in the present study, could increase the risk of sustaining a RRI and even more if the pace in unfamiliar to the runners, which should be the case for the Sch-V group. If we chose to believe the presented theory another reason should be found to explain why the results did not support the hypotheses.

The absence of the hypothesized twenty percent-point risk difference between the two allocated groups and RRIs the first 2 weeks after a PPT could simply be explained by the lack of events. The results may have differed if the cohort had been larger and the number of events higher. It could also be, that the PPT does not represent the sudden change in training that we assume. The PPTs were used to individualize the level of intensity. As a PPT were performed at an 8-week interval it could be argued, that the intensity assigned to the training schedule were no longer corresponding to the individual's fitness at the end of the 8 weeks. If the participants in the Sch-I group improved their fitness, they may not have performed their training sessions at the intensity they were supposed to. This could mean that the PPT will appear as a sudden change more equally for the two groups than expected. A similar problem rises as the PPT is only an indirect test of VO2max, which makes it more possible that the individual's intensity level may be mismatched [16].

Strength and limitations

The present study included a cohort of 630 runners over a 24-week follow-up. Though a great percentage were lost to follow-up, this setup still makes the present study one of the bigger cohort studies on running-related injuries. The long follow-up makes it possible that the assigned PPT can appear as a sudden change several times throughout the follow-up, as they are divided by 8 weeks of scheduled training. This enhances the possibility that a PPT represents a sudden change to the participants' other assigned training.

All data presented in the present study is derived from the Run Clever Trial [7] which includes limitations to the present study in relation to design, interventions and data management. To investigate the association between training schedule and RRI 2 weeks after a PPT the trial design only delivers 1 PPT (PPT 3) from which this association could be explored. Furthermore, the first week after a PPT a 23% progression in either total running volume or number of kilometers run at a hard intensity was made. This progression makes it more complex to association a potential RRI with the performed PPT. The presented examples clarify why data collected with a different purpose becomes a limitation to the aim of the present study. The present study can therefore only be categorized as explorative as many factors are targeted the Run Clever trial.

Even though the trial design only makes it possible to use data from PPT

3 to investigate the association between allocation and RRI, the design should still be considered a strength overall. The randomized trial design limits a systematic distribution of known as well as unknown confounders in the two groups. The 8 weeks of preconditioning training prior to the specific training should also be considered a strength in terms of homogeneity to running performance. The results from PPT 1 and PPT 2 show no difference between the 2 allocated groups, which leads us to believe that the effort made towards homogeneity in the 2 groups have been successful.

The analysis made in the present study does not take into consideration the level of non-compliance to the interventions, which may be of great importance to the outcome. The participants were excluded if they didn't perform a PPT as assigned, but non-compliance to the rest of the assigned training were not incorporated in the analysis, which is a considerable limitation to the present study. The role of training variables in the aetiology of RRI is challenging because of their complex interaction but of great importance to the prevention of RRI. For future considerations information about the different training variables should be gathered and considered, when analyzing exposures associated with RRI.

The present study had its focus on the self-administered physical performance tests, which leaves the execution of the PPT to be handled by the participant. The choice made for these performance tests to be self-administered should be taken up for future consideration. The research group will be challenged to affect the intensity of the test if it seems that the participants do not perform an all-out-test, which is important to secure that the PPT represents a sudden change. The PPT were also used to determine the intensity of the individually assigned training schedule. This is problematized as the indirect VO2max measurement holds uncertainties, whereas a direct VO-2max measurement should be considered for further investigation of training schedules with intensity as a main variable [16].

Future considerations

That the results didn't show any association between assigned training schedule (volume-based or intensity-based) and RRI the first 2 weeks after a PPT should not be confused with possibility that a PPT could facilitate a period for participants of both groups, where the risk of sustaining a RRI is higher compared to a period with no sudden changes in training. To conclude if the period after a sudden change (a PPT) is particularly risky for the runners a hazard rate analysis could be considered for further exploration on the subject. This survival analysis include time as a dimension, which would make the analysis more nuanced compared to the already presented analysis.

To expand the knowledge about the outcome (RRI) of the present study, it could also be considered to investigate the type of injuries the participants suffer in the weeks following a PPT. Nielsen et al. [13] have investigated the association between specific injuries and the type of training made prior to the injuries, to present a classification of injuries to be either volume-based or intensity-based. As the outcome of the present study is hypothesized to be derived from the intensity-based PPT sessions it could be sought to retrieve the injuries classified as intensity-based within the outcome of the present study.

Conclusion

The results did not support the presented hypotheses 1 and 2, and no more runners allocated for a volume-based training schedule sustained a RRI within the first 2 weeks after a PPT compared to runners allocated for an intensity-based training schedule. As the number of events (RRIs) were lower than expected the main result from PPT 3 were only to be interpreted with great caution and the stratified analysis were not available in lack of events. This leaves us to asses if the hypotheses still can be justified. In relation to biomechanical explanations and current presented literature on the subject it is concluded that further exploration is necessary to finally invalidate the presented hypotheses.

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Is comparison of injury rates across two longitudinal studies including novice runners possible?

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Abstract

Background: Substantial differences in injury rates exist across studies including novice runners. It has been hypothesized that a major explanation for these differences may be the length of follow-up. However, no study has compared injury rates from different studies including novice runners at the same time-point during follow-up.
Objectives: The purpose of the present study was to compare the injury rate in a Danish study (Danish Novice Running Project – DANO-RUN) with the injury rate in a Dutch study (The Groningen study), at the same time-point (8 weeks) during follow-up.
Methods: The injury incidence rate from two studies, the DANO-RUN and the Groningen study, was compared after 8 weeks' follow-up using relative difference in injury incidence rates as measure of association. Type of runner, recruitment methods, and injury definition were almost similar across the two studies.
Results: After 8 weeks' follow-up the Groningen study reported an injury incidence rate of 30.1 injuries per 1000 hours (95% CI: 25.4; 34.7), whereas the injury incidence rate in the DANO-RUN study was computed to be 21.4 injuries per 1000 hours (95% CI: 17.6; 26.1). Comparing these estimates using an incidence rate ratio (IRR) revealed a significantly 41% (IRR: 1.41, 95% CI: 1.10; 1.82 per 1000 hours) higher injury incidence rate in the Groningen study than in the DANO-RUN study.
Conclusion: Findings suggest that difference in follow-up is not the only explanation for the differences in injury rates reported across studies when comparing studies including novice runners.

Introduction

Novice runners seem to face a significantly greater injury rate compared with their non-novice peers (1) since the rates per 1000 hours of running amongst novice runners are greater than those amongst recreational runners in general. But in a recent review the injury incidence rates per 1000 hours of running for novice runners ranged considerably between 8.9 to 33.0 injuries (1). Such discrepancy in the injury incidence rates amongst novice runners might be explained by differences in definition of injury and/or definition of novice runners (1,2). However, these definitions did not vary considerably across studies included in the review. Therefore, it was hypothesized by Videbæk et al. that the difference in injury incidence rates was due to the difference in follow-up time (1). A longer follow-up time allows the non-injured runners to accumulate more exposure time, which, ultimately, may result in a lower injury rate as the injury rate is expected to be highest just after initiating running. Still, the assumption that differences in injury incidence rates across studies on novice runners is due to difference in follow-up time remains speculative. Therefore, the purpose of the present study was to compare the injury rate in a Danish study with the injury rate in a Dutch study (3), at the same time-point (8

weeks) during follow-up. It was hypothesized that, by comparing these two studies at the same time-point during follow-up, no significant difference in injury rates would exist.

Methods

Participants

The present comparison required data from two samples of novice runners: (i) the DAnish NOvice RUNning project (DANO-RUN) and (ii) the Groningen prospective cohort study (the Groningen study). From the first study, DANO-RUN, 929 novice runners were included of the original 933 participants. Two were excluded because they were injured prior to enrollment in the study, and two were excluded because of missing data (4). In the latter study, the Groningen study, Buist et al. included 629 participants (3). Both studies recruited participants through newspapers and posters.

Injury definitions

In both studies, time-loss injury definitions were used. In the DANO-RUN study, a running-related injury was defined as *"any musculoskeletal complaint of the lower extremity or back caused by running, resulting in a restriction of running for at least one week"* (5), which is a modified version of the running-related injury definition used in the Groningen study, where the musculoskeletal complaint was defined as a running-related injury if it resulted in a restriction of running for only one day (3).

Definition of novice runner

The DANO-RUN study included uninjured novices between the age of 18 and 65. Novice was defined as persons: *"who have not have been running more than a total of 10 km in the previous 12 months"*. Uninjured was defined as: *"could not have experienced injuries in the lower extremities in the 3 months prior to signing up for the study"*. A more detailed description of the inclusion and exclusion criteria are presented in Nielsen et al. (5,6).

In the Groningen study (3), participants were asked in a questionnaire to place themselves in one of the three categories: (i) novice, (ii) runner with previous experience who had taken up running again, or (iii) runner already engaged in regular running. Participants could not be younger than 18 years old.

Assessment of Hours at Risk

Training time in the DANO-RUN study was measured in minutes using a global-positioning-system (GPS) watch (Forerunner 110M; Garmin International Inc, Olathe, Kansas, USA). Participants uploaded training data to an internet-based training diary developed by the research group (http://www.vilober.dk/). As participants were novices, walking in-between running intervals was included in the total running time. In the Groningen study, participants registered information on exposure time in a personal running diary. The use of a watch to monitor running was not required.

Statistical Analysis

The total hours of running and the total number of injuries that had occurred in the 8 weeks were calculated for the DANO-RUN study, enabling the calculation of the injury incidence rate per 1000 hours of running. This injury incidence rate was then compared, using incidence rate ratio (IRR) as measure of association, with the reported injury incidence rate per 1000 hours of running in the Groningen study, which had an 8-week follow-up. Incidence rates and incidence rate ratios were estimated using the Poisson model.

Differences were considered statistically significant at $P<0.05$, and estimates are presented with 95% confidence intervals. All analyses in this study were made using STATA/IC 14.0 (StataCorp LP, College Station, TX).

Results

After 8 weeks the 929 participants in the DANO-RUN study had registered a total of 4664.93 hours of running and 100 injuries, equivalent of an injury incidence rate per 1000 hours of running of 21.4 (95% CI: 17.6 to 26.1 injuries per 1000 hours) (Table 1). In the Groningen study (3) an injury incidence rate of 30.1 injuries per 1000 hours (95% CI: 25.4 to 34.7 injuries per 1000 hours) was reported. Comparing these estimates using an incidence rate ratio (IRR) revealed a 41% significantly higher (IRR: 1.41, 95% CI: 1.10; 1.82 per 1000 hours) injury incidence rate in the Groningen study than in the DANO-RUN study.

Discussion

The injury incidence rate in the Groningen study was significantly higher than the injury incidence rate in the DANO-RUN study even after accounting for follow-up time. Therefore, other factors than difference in follow-up may explain the discrepancy in injury incidence rates. These factors may include differences in (i) running exposures, (ii) injury definition or (iii) methodological approach. Concerning *(i) running exposure*, it is worth noting that participants in the DANO-RUN study followed a self-structured running programme, while a pre-structured running programme was recommended in the Groningen study, targeting a 4-mile event at the end of the 8 weeks. The participants' desire to complete or even do well in this 4-mile event may explain the greater occurrence of injuries compared to the DANO-RUN study, as the exposure time was greater in the Gro-

	Sample size	Injuries/1000h	95%CI	
Nielsen et al. (2011) (DANO-RUN study)	929	21.4	17.6	26.1
Buist et al. (2010)(The Groningen study)	629	30.1	25.4	34.7
IRR = 1.41 (95% CI: 1.10; 1.82)				
P-value = 0.0074 (difference between groups)				

Table 1: *Analysis performed on the incidence rate of running-related injuries per 1000 hours in the Groningen study and the DANO-RUN study. P-value represents significance level corresponding to the test for difference between incidence rates per 1000 hours (h) in the two studies. IRR = The incidence rate ratio between the two studies (DANO-RUN is the reference). 95% CI: 95% confidence intervals.*

ningen study than in the DANO-RUN study (8.6 hours vs. 5.0 hours after 8 weeks) (3). Concerning *(ii) the injury definition*, the where slight differences in the way a running-related injury was defined. In the Groningen study, where the musculoskeletal complaint was defined as a running-related injury if it resulted in a restriction of running for only one day, whereas the DANO-RUN injury definition was based on a 7-day time-loss. Based on this, it seems plausible to assume that the injury incidence rate in the Groningen study would have been lower if an injury definition similar to the one used in the DANO-RUN study had been used. In terms of clinical examinations or lack thereof, in the DANO-RUN study, participants claiming to have an injury had to attend a clinical examination (6), whereas in the Groningen study, the participants registered injury in a personal running diary (3). The fact that participants had to come in for a clinical examination may have led some injured participants to continue running while injured, rather than attending a clinical examination. The reported injury incidence rate from the DANO-RUN study might therefore be underestimated. On the other hand, however, self-diagnosis as in the Groningen study might lead to a greater injury incidence rate than there ought to be, as participants may have reported for instance muscle soreness or blisters as injuries. Concerning *(iii) the methodological approach*, there were differences between the two studies. For example, shoes used by participants were prescribed in the DANO-RUN study (4,6) and free of choice in the Groningen study (3). In addition, the time-spent running, which was used in the calculation of the incidence rate, was quantified objectively with GPS-watches in the DANO-RUN study, while subjective self-reporting was used in the Groningen study.

In the review by Videbæk et al. (3), injury incidence rates from three Dutch studies on novice runners were presented, the Groningen study and Gronorun trial 1+2. In these studies, the injury incidence rates were greater than in the DANO-RUN study. The Gronorun trials used a similar definition of running-related injury as the DANO-RUN study. If the differences in injury definition between DANO-RUN and the Groningen study were the only explanation for the discrepancy in injury incidence rates between the two, it would be expected that the two aforementioned trials, with similar injury definition as the DANO-RUN study, had injury incidence rates similar to that found in DANO-RUN. But the Gronorun trials 1+2 had injury incidence rates similar to that of the Groningen study (1). Therefore, it does not seem reasonable to posit that the difference in injury definitions is the only reason for the significant difference found between injury incidence rates in the DANO-RUN study and the Groningen study. Based on this, it might be appropriate to compare injury incidence rates in the DANO-RUN study to the two trials with similar injury definitions, yet much higher injury incidence rates, from the review by Videbæk et al. at the same follow-up time. Unfortunately, this was impossible in the present analysis, since participants in these trials had different follow-up times within the study (1,7,8), and access would be needed for the raw data of these trials, to properly compare the injury incidence rates at a specific time.

Conclusion

Findings suggest that difference in follow-up is not the only explanatory factor for the discrepancy found in injury incidence rates across studies including novice runners. Factors such as running exposure, injury definition and/or methodological approach may also influence injury incidence rates. Further research and comparison of studies with similar injury definitions and study methodology may reveal exposures that are causally related to running injuries.

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Ny viden ...
Korte resuméer af nye publikationer

Merete N. Madsen og Rasmus Reinholdt Sørensen, medlemmer af Dansk Sportsmedicins redaktion

ATHLETIC PUBALGIA SECONDARY TO RECTUS ABDOMINIS–ADDUCTOR LONGUS APONEUROTIC PLATE INJURY. DIAGNOSIS, MANAGEMENT, AND OPERATIVE TREATMENT OF 100 COMPETITIVE ATHLETES

Athletic pubalgia har i mange år været et mysterium og et område der kunne give forvirring. En manglende konsensus om hvad begrebet omfatter, ikke mindst anatomisk, og hvordan man skal behandle det, har gjort det til et lettere forvirrende sted at navigere.

Skader der kan klassificeres under denne term, opstår typisk i sparkende og pivoterende sportsgrene.

I denne artikel præsenteres resultater efter 85 operativt behandlede sportsfolk med aponeuroseskader med en teknik, hvor der laves en adductor-to-rectus abdominis turn-up flap for at forstærke aponeurosen.

Resultaterne viser tilfredsstillede styrke ved test og funktion. Der er i gennemsnit 4,5 måneder før tilbagevenden til sport.

Tidligere inguinalhernie eller skader i området disponerede for mindre tilfredsstillende forløb, ligesom det også var tilfældet for kvindeligt køn.

Reference:

Emblom BA et al.
Athletic Pubalgia Secondary to Rectus Abdominis–Adductor Longus Aponeurotic Plate Injury. Diagnosis, Management, and Operative Treatment of 100 Competitive Athletes.
The Orthopaedic Journal of Sports Medicine, 6(9), 2325967118798333.

SPORTS HERNIA/ATHLETIC PUBALGIA AMONG WOMEN

Kun 5-15% af tilfælde med athletic pubalgia er hos kvinder. Dette studie præsenterer cases med 18 kvinder der fik foretaget kirurgisk intervention. Det mest interessante i studiet er deres præsentation af protokollen for at udrede disse kvinder. At deres resultater også er tilfredsstillende, og på højde med det man ser hos den mandlige befolkning, er kun godt. Der er dog tale om et meget lille studie med lav evidens.

Reference:

Zoland MP et al.
Sports Hernia/Athletic Pubalgia Among Women
The Orthopaedic Journal of Sports Medicine, 6(9), 2325967118796494.

ATHLETIC PUBALGIA: RETURN TO PLAY AFTER TARGETED SURGERY

Forfatterne beskriver her, hvad de kalder for 'a la carte kirurgi' for athletic pubalgia. Her forstås tydelig afgrænsning af problemet, og lokalisation af skaden, som forsørges kirurgisk.

Man holder dette op med procedurer, hvor man fx har lavet bilateral adduktor-tenotomi.

Studiet er lille med sine 27 patienter, og der findes gennemsnitlig RTP på 112 dage. Såfremt man kun havde skade på rectus abdominis, var RTP 91,1 dage og ved isoleret skade svt adduktorsenen var RTP 101,7 dage. Kombinerede skader havde RTP på 132,5 dage.

RTP er på længde med hvad man ser ved andre operative indgreb, og alle patienter i dette studie returnerede til samme niveau som tidligere.

Reference:

Kajetanek C et al.
Athletic pubalgia: return to play after targeted surgery.
Orthopaedics & Traumatology: Surgery & Research 104 (2018) 469–472.

ANTERIOR CRUCIATE LIGAMENT INJURY— WHO SUCCEEDS WITHOUT RECONSTRUCTIVE SURGERY?

Et interessant studie, der sigter mod at identificere prædiktorer for et succesfuldt outcome for de patienter som vælger konservativ behandling af ACL-læsion.

Der er inkluderet 118 patienter, som har valgt konservativ behandling af deres ACL-læsion, og man tager status på dem 2 år efter skaden. Succesfuldt outcome er defineret som International Knee Documentation Committee (IKDC)-score i øverste 15-percentil.

53,6% af patienterne scorer til et succesfuldt outcome i dette studie.

Forfatterne identificerer højere alder, kvindeligt køn samt god patient-rapporteret knæfunktion efter skaden som vigtige prædiktive faktorer der forudsiger et godt resultat 2 år efter skaden.

Studiet er ganske fint, men rent klinisk skal man nok stadig være en smule mere dybdegående med patientanamnesen, og ikke stirre sig blind på score og prædiktive faktorer. Det er vigtigt at afdække hvilke krav patien-

ten har til sit knæ, og herudfra lave en plan for behandlingen.

Reference:

Grindem H et al.
Anterior Cruciate Ligament Injury— Who Succeeds Without Reconstructive Surgery? The Orthopaedic Journal of Sports Medicine, 6(5), 2325967118774255 DOI: 10.1177/2325967118774255

SAMMENHÆNG MELLEM ALMINDELIGT FOREKOMMENDE LØBESKADER OG BEVÆGEMØNSTER UNDER LØB

I et amerikansk kontrolleret laboratoriestudie har man undersøgt løbemønsteret hos 108 løbere. 72 af disse (28 mænd og 44 kvinder) havde været skadet i mindst 3 måneder mens de øvrige 36 (15 mænd og 21 kvinder) var raske og ikke havde haft en skade de foregående 18 måneder. Grupperne var matchet på alder, højde og vægt. De skadede løbere havde enten patellofemorale smerter, tractus iliotibialis syndrom, medial tibial stress syndrom eller achilles tendinopati (18 med hver diagnose). Såvel raske som skadede løbere fik foretaget en tre-dimensionel vurdering af deres bevægemønster under løb. Efterfølgende blev løbemønsteret hos de skadede løbere sammenlignet med de raskes.

Resultaterne viste at de skadede løbere i højere grad "tabte" bækkenet på modsatte side (contralateral pelvic drop), havde kroppen lænet mere fremover i midtstandsfasen samt øget knæekstension og dorsalfleksion af ankelen ved fodisæt. Dette var generelt gældende for den samlede gruppe af løbere men også i hver skadesgruppe for sig. Der var ikke forskel på grupperne ift. fodisæt (bagfods- eller forfodslandere). Tab af bækkenet på modsatte side var den væsentligste prædiktive faktor ift. at skelne skadede fra raske løbere. For hver øget grad af bækkentab øgedes odds tilsvarende med 80 % for at atleten var klassificeret som skadet.

Forfatterne konkluderer, at studiet identificerede nogle bevægemønstre, der generelt bidrager til almindelige løberelaterede skader. Dette kan bidrage med nyttig viden til de klinikere, der undersøger atleter for biomekaniske faktorer, der kan have indflydelse på løberens problematik. En væsentlig begrænsning i fortolkning af studiets resultater er dog, at det ikke er muligt at konkludere, om de påviste løbemønstre er årsag til skaden eller i stedet kan være opstået som følge af skaden.

Reference:

Bramah C, Preece SJ, Gill N, Herrington L.
Is there a pathological gait associated with common soft tissue running injuries? Am J Sports Med. 2018 Oct; 46(12):3023-3031

ØGET RISIKO FOR MUSKULOSKELETALE SKADER EFTER HJERNERYSTELSE

En amerikansk forfattergruppe har gennemført et systematisk review med meta-analyse med det formål at undersøge odds for at atleter, der har haft en hjernerystelse, pådrager sig en muskuloskeletal skade.

Der blev gennemført en systematisk søgning i PubMed og Google Scholar og studier fra perioden januar 2000- november 2017 blev inkluderet, såfremt de var publiceret på engelsk. Udvælgelse, kvalitetsvurdering og ekstrahering af data blev foretaget af to reviewere uafhængigt af hinanden.

8 studier blev inkluderet i analysen. Resultaterne indikerer, at atleter, der har haft en hjernerystelse, har to gange højere odds (OR 2,11) for at få en muskuloskeletal skade sammenlignet med atleter, der ikke har haft en hjernerystelse. Den øgede skadesrisiko gjorde sig gældende for både mandlige og kvindelige atleter.

På baggrund af dette, konkluderer forfatterne, at klinisk undersøgelse af atleter, der har haft en hjernerystelse, ikke blot skal indeholde fysiske symptomer og kognitiv funktion men også neuromuskulære risikofaktorer associeret med øget risiko for at pådrage sig en muskuloskeletal skade.

Reference:

McPherson AL, Nagai T, Webster KE, Hewett TE.
Musculoskeletal injury risk after sports-related concussion: A systematic review and meta-analysis.
Am J Sports Med. 2018 Aug 3:363546518785901. Doi: 10.1177/0363546518785901. [Epub ahead of print]

BEHANDLING AF TRAUMATISK SKULDERLUKSATION

En finsk gruppe har publiceret et systematisk review og metaanalyse vedrørende behandling af patienter med traumatisk forårsaget skulderluksation. De to kliniske spørgsmål, der blev fokuseret på, var a) hvilken behandling efter primær skulderluksation er bedst til at minimere risikoen for kronisk skulderinstabilitet? og b) hvilken behandling er bedst til patienter med kronisk post-traumatisk skulderinstabilitet?

22 randomiserede studier blev inkluderet, hvoraf 10 omhandlede behandling efter primær luksation. Her viste evidens af moderat kvalitet, at kirurgisk behandling (mhp. reparation af labrum) medførte færre reluksationer efter 2 år sammenlignet med ikke-kirurgisk behandling men også at 47 % af de patienter, der blev behandlet ikke-kirurgisk, ikke oplevede en reluksation inden for 2 år.

12 studier fokuserede på behandling af kronisk post-traumatisk skulderinstabilitet. Der blev ikke fundet randomiserede studier, der sammenlignede kirurgi med ikke-kirurgi, men i forhold til reparation af labrum blev der fundet evidens af lav kvalitet for, at åben kirurgi var bedre til at forebygge reluksation end artroskopisk kirurgi.

Reference:

Kavaja L, Lähdeoja T, Malmivaara A, Paavola M.
Treatment after traumatic shoulder dislocation: a systematic review with a network meta-analysis.
Br J Sports Med Epub Ahead of print: [first published online 23.06.18]. doi:10.1136/bjsports-2017-098539

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#SPORTSKONGRES 2019
JAN 31 - FEB 2 | COPENHAGEN

SCANDINAVIAN SPORTS MEDICINE CONGRESS

Så kaldes der til Idrætsmedicinsk årskongres, nærmere bestemt torsdag d. 31. januar til lørdag d. 2. februar 2019, på Radisson BLU Scandinavia Hotel Copenhagen. Det nu er muligt, at tilmelde sig til early-bird priser frem til 7. december 2019 på www.sportskongres.dk, hvor det nyest opdaterede program også altid kan forefindes. Der omdeles heller ikke i år printede programmer, men det opdaterede program er tilgængeligt på hjemmesiden og via kongressen's app '#sportskongres' der kan findes i din app store. Der tages forbehold for løbende ændringer i programmet.

Torsdag d. 31. januar kl. 18.15-19.30 under kongressen, er der indkaldt til generalforsamling for DIMS i 'Sweden' og for DSSF i 'Denmark', her er alle velkomne også selvom de ikke deltager i selve kongressen.

Igen i år afholdes "Scandinavian Congress of Medicine & Science in Sports" i København, hvilket betyder, at vores videnskabelige udvalg har stærke skandinaviske bidrag til programmet. Programmet er sammensat af en masse topnavne indenfor sportsmedicinsk forskning, både nationale og internationale. Vi forventer et rekordstort antal abstracts og har derfor i år dobbelt så mange orale præsentationer og et dommerpanel i international topklasse med Editors fra blandt andet British Journal of Sports Medicine (BJSM), American Journal of Sports Medicine (AJSM), Knee Surgery Sports Traumatology Arthroscopy (KSSTA), Journal of Orthopedic Sports Physical Therapy (JOSPT) og International Journal of Sports Physical Therapy (IJSPT).

Endelig er der de sociale aktiviteter som Get-Together og Kongresmiddag, hvor det i år bliver 'Båndsalat' der indtager scenen efter middagen og spiller op til dans, så der er igen i år lagt op til et fyrværkeri af en kongres, hvor vi håber at se rigtig mange kendte ansigter og forhåbentligt også har fået lokket nye ansigter til.

Mange hilsner og på gensyn
Arrangørgruppen for Sportsmedicinsk Årskongres

THURSDAY January 31th of 2019

	Norway	Sweden	Denmark	Iceland	Workshops
08.30-09.45	Check-in				
09.45-10.00	Opening of congress				
10.00-11.00	**Key-note lecture:** Managing common tendinopathies with injection, exercise, education, or waiting it out: what works? **Speaker:** Bill Vicenzino, Professor, Australia **Chair:** Michael Rathleff, Associate Professor, Denmark				
11.00-11.30	Break				
11.30-12.30	**Main talk #1:** Reducing the burden of concussion in youth sport: Moving upstream towards primary prevention **Speaker:** Carolyn Emery, Professor, Canada **Chair:** Merete Møller, Assistant Professor, Denmark	**Small symposium #1:** The frozen shoulder: An enigma **Titles and speakers:** Etiology and surgical approach Michael Krogsgaard, Professor, Denmark Physical therapy for frozen shoulder Ann Cools, Professor, Belgium **Chair:** Peter Magnusson, Denmark	**Small symposium #2:** Athletes and exercise in pregnancy **Titles and speakers:** Exercise and pregnancy in recreational and elite athletes: 2016/2017 evidence summary from the IOC expert group meeting. Kari Bø,PhD, Norway Training characteristics during pregnancy and postpartum in the world's most successfull cross country skier Guro Strøm Solli **Chair:** Kirsti Krohn Garnæs, PhD, Norway	**Applied Science #1:** Individualized treatment of the Achilles based on genetics, inflamatory markes and imaging **Titles and speakers:** Prediction of outcome of treatment in achillestendinopathy and rupture based on genetics and inflammatory markers. Paul Ackermann, Associate professor, Sweeden The use of ultrasonography to guide treatment of tendinopathies Morten Boesen, PhD, Denmark The use of ultrasonography to individualize treatment in patients with acute Achilles tendon rupture Kristoffer W Barfod, Associate professor, Denmark **Chair:** Kristoffer W Barfod, PhD, Denmark	**Workshop #1** Sideline Trauma - what to do High velocity trauma – skiing and motor sports Matt Gammons, MD, USA Soccer injuries Jesper Petersen, PhD, DK **Chair:** Jesper Petersen, PhD, DK
12.30-13.15	Lunch				
13.15-14.45	**Larger symposium #1:** ACL injuries in children **Titles and speakers:** The long term outcomes and the role of pediatric ACL reconstruction (including surgical techniques) Guri Ekås, PhD Student, Norway Active rehabilitation in ACL injured children Håvard Moksnes, PhD, Norway Return to sport and how to avoid return to treatment Hege Grindem, PhD, Norway ACL injury prevention in children Holly Silvers-Granelli, PhD, USA **Chair:** Hege Grindem, PhD, Norway	**Larger symposium #2:** Training load and sports injury: Problems and potential solutions **Titles and speakers:** How do we monitor and manage training load? Ben Clarsen, PhD, Norway Overlooked problems: can we trust the available evidence on training load and injury risk? Rasmus Ø Nielsen, Post Doc, Denmark What is training load and how does it differ from structure specific load? Michael Bertelsen, PhD Student, Denmark **Chair:** Rasmus Ø Nielsen, Post Doc. Denmark	**Larger symposium #3:** Orthobiologics in Achilles tendon disorders **Titles and speakers:** What is Orthobiologics and why should we bother? Mike Carmont, PhD, UK Is it possible to stimulate tendon healing and regeneration with use of biological substances? Paul Ackermann, Associate professor, Sweden The use of PRP in Achilles tendinopathy and rupture treatment Anders Boesen, PhD, Denmark Stem cells and pericytes – is it the biological break through? Chris Murawski, PhD, USA **Chair:** Jon Karlsson, Professor, Sweden	**Applied Science #2:** Clinical assessment of hip and groin pain- what does the evidence say? Does the evidence support the use of orthopedic tests for intra-articular hip injuries? Erik Poulsen, Post Doc, Denmark What is FAI and how is the diagnosis made? Damien Griffin, Professor, UK Intra-and extra-articular hip pain – what to look for in your examination? Julie Jacobsen, PhD-student, Denmark How relevant is range of motion and muscle strength examination in patients with intraarticular hip injuries? Signe Kierkegaard, PhD-student, Denmark **Chair:** Kristian Thorborg, Assistant professor, Denmark	**Workshop #2** Ultrasound - Know your way around the ankle **Titles and speakers:** Introduction to ultrasound of the ankle Simon Doessing, MD, PhD, Denmark Hands on tutoring Michael Court-Payen. Professor, Denmark Jens Olesen, Professor, Denmark Philip Hansen, PhD, Denmark Simon Doessing, MD, PhD, Denmark **Chair:** Simon Doessing, MD, PhD, Denmark
14.45-15.15	Coffee break				
15.15-16.15	**Oral communications:** **Abstracts:** 1-6 **Chairs:** To be announced	**Oral communications:** **Abstracts:** 7-12 **Chairs:** To be announced	**Oral communications:** **Abstracts:** 13-18 **Chairs:** To be announced	**Oral communications:** **Abstracts:** 19-24 **Chairs:** To be announced	
16.15-16.45	Coffee break				
16.45-18.15	**Larger symposium #4:** Injury prevention works - how do we put it into action? **Titles and speakers:** Sports injury prevention in a complex constructed setting Sheree Bekker, PhD, England Engage the knowledge-users to optimize injury prevention, Evert Verhagen, Professor, Netherlands Putting the exercises into a more dynamic context of sport, Alli Gokeler, Netherlands Panel discussion with player, coach, parent, leader, researchers. Where do we go from here? **Chair:** Merete Møller, Assistant Professor, Denmark	**Larger symposium #5:** Diet and skeletal muscle adaptations to exercise **Titles and speakers:** Diet and Exercise adaptation Eva Blomstrand, Professor, Sweden The role of leucine in regulating skeletal muscle protein synthesis William Apro, PhD, Sweden The role of metabolic stress and lactate on skeletal muscle adaptation to training Marcus Moberg, PhD, Sweden **Chair:** Eva Andersson, PhD, Sweden	**Larger symposium #6:** Dance and ballet injuries **Titles and speakers:** Ballet technique – an example of extreme physiological stress Anne Peyk, Ballet instructor, DK Building up strength and stability in a dancer Charlotte Anker-Petersen, PT, MSC, DK Ankle and foot problems in the ballet dancer with focus on posterior impingement Niek van Dijk, Professor, Holland Hip problems in the ballet dancer Damian Griffin, Professor, UK **Chair:** Henrik Aagaard, PhD, Denmark Charlotte Anker-Petersen, PT, Denmark	**Applied Science #3:** Groin injury management in Team Sports Managing groin pain in football Joar Harøy, PhD student, Norway Screening for groin pain as part of secondary prevention strategy. Kristian Thorborg, Assistant professor, Denmark. Managing of groin pain in Icehockey Tobias Worner, PhD Student, Germany. **Chair:** Kristian Thorborg, Assistant Professor, Denmark	**Work-shop #3** Ultrasound - Know your way around the hip **Titles and speakers:** Introduction to ultrasound of the hip Simon Doessing, MD, PhD, Denmark Hands on tutoring Michael Court-Payen. Professor, Denmark Jens Olesen, Professor, Denmark Philip Hansen, MD, PhD, Denmark Simon Doessing, MD, PhD, Denmark **Chair:** Simon Doessing, MD, PhD, Denmark
18.15 - 19.30		General assembly DIMS	General assembly FFI		
19.30 -	Get together party and poster walk/competition				

FRIDAY February 1st of 2019

	Norway	Sweden	Denmark	Iceland	Workshops
8.00-9.15	**Larger symposium #7:** Current evidence for treatment of the shoulder, knee and hip in middle-aged recreational athletes **Speaker:** Current evidence for treatment of the shoulder in the midle-aged recreational athlete David J Beard, PT, PhD, UK Current evidence for treatment of the knee in the middle-aged recreational athlete Ewa M Roos, Professor, Sweden/Denmark Current evidence for treatment of the hip in the middle-aged recreational athlete Damien R Griffin, Professor, UK **Chair:** Per Hølmich, Professor, Denmark	**Larger symposium #8:** Tendon adaptation to mechanical stress in health and disease **Titles and speakers:** Tendon structure and function for the clinical practice Rene B Svensson, Post Doc, Denmark Role of mechanical forces in tendon injury and repair Jess Snedeker, Professor, Switzerland Sport Specific adaptation of tendons to loading Olivier Seynnes, Professor, Norway **Chair:** Monika L Bayer /Peter S. Magnusson	**Larger symposium #9:** Running-related injuries: etiology, prevention and treatment **Titles and speakers:** I think I am injured; differing injury spectrum across various runners. Evert Verhagen, Professor, Netherlands Running-related injuries viewed from a causal lens: How to prevent them. Rasmus Ø Nielsen, Post Doc, Denmark Surgical treatment of running related injuries Niek van Dijk, Professor Netherlands **Chair:** Rasmus Ø. Nielsen, Post Doc, Denmark	**Applied Science #4:** How to prescribe exercise for common musculoskeletal pain? **Speaker:** Exercise prescription: Optimizing prescription to improve adaptation and outcomes Sinead Holden, Post Doc, UK How does pain fit into the exercise prescription? Ben Smith, Dr., UK **Chair:** Michael Rathleff, Associate professor, Denmark	**Work-shop #4:** Novel approaches in ankle injury prevention Daniel Fong Daniel Fong, Professor, UK Filip Lysdal, MSc, Denmark **Chair:** Kristian Thorborg, Assitant professor, Denmark
9.15-9.30	Break				
9.30-10.30	**Oral communications:** **Abstracts:** 25-30 **Chair:** To be announced	**Oral communications:** **Abstracts:** 31-36 **Chair:** To be announced	**Oral communications:** **Abstracts:** 37-42 **Chair:** To be announced	**Oral communications:** **Abstracts:** 43-48 **Chair:** To be announced	
10.30-11.00	Break				
11.00-12.30	**Larger symposium #10:** Structural changes in the shoulder – does it matter? **Titles and speakers:** Are image detected shoulder structures related to self-reported pain and function? Birgit Juul-Kristensen, Professor, Denmark Short-time effect of fatigue loading on supraspinatus tendon thickness in patients with rotator cuff tendinopathy: implications for exercise therapy? Karen McCreesh, Associate professor, Ireland Longitudinal effect of exercise modalities on supraspinatus tendon thickness in patients with rotator cuff tendinopathy – relations to pain and function? Kim Ingwersen, PhD, Denmark **Chair:** Birgit Juul- Kristensen, Professor, Denmark & Kim Ingwersen, PhD, Denmark	**Larger symposium #11:** Not just an injury in the muscle: The complexity of muscle strain injuries. **Titles and speakers:** Structure and function of tissues affected by strain injuries Peter S. Magnusson, Professor, Denmark Acute and chronic tissues changes after strain injuries. Monika L Bayer, Post Doc, Denmark Cellular responses to inflammation and trauma Jess Snedeker, Professor, Switzerland. **Chair:** Monika L Bayer, Post doc, Denmark.	**Larger symposium #12:** Treatment of non-degenerative meniscus tears. To be or not to be? **Titles and speakers:** Surgical treatment of non-degenerative meniscal lesions. Rainer Siebold, PhD, Germany Patient reported outcomes in young patients undergoing meniscal surgery Jonas Thorlund, Associate professor, Denmark Diagnosis and treatment of meniscal ramp and root lessions Kristian Samuelsson, PhD, Sweden **Chair:** Jonas Thorlund, Associate professor, Denmark og Anders Stålmann, Sweden.	**Applied Science #5:** Psychology of sport injury- prevention, return to sport and behaviour change. **Titles and speakers:** Psychological factors in the prevention of sport injury Ulrika Tranaeus, PhD, Sweden Psychological factors in the return to sport after a sport injury. Urban Johnson, Professor, Sweden Psychological factors in the return to performance after a sport injury Clare Ardern, PhD, Australia. Psychological factors in health enhancing behaviour change. Sofia Bunke, PhD, Sweden **Chair:** Eva Ageberg, Associate professor, Sweden.	**Work-shop #5:** Practical management of lateral hip pain (GTPS) Bill Vicenzino, professor Australia **Chair:** Michael Rathleff, Associate professor, Denmark.
12.30-13.15	Lunch				
13.15-14.45	**Larger symposium #13:** Physical activity in youth; how much is enough and can we balance the risks? **Titles and speakers:** The lifelong benefits of keeping kids active Colin Boreham, Professor, Ireland Too much of a good thing: the risks associated with highly active youth Niels Wedderkopp, Professor, Denmark Offsetting risk in the highly active: the balance of training load, sleep and recovery Tim Meyer, Professor Germany **Chair:** Michael Skovdahl Rathleff, Associate Professor, Denmark & Sinead Holden. Post Doc, Ireland	**Larger symposium #14:** Athletic hamstring health and performance **Titles and speakers:** Rate of torque development: How is it related to injury and performance Per Aagaard, Professor, Denmark Hamstring muscle strength and architecture: how is related to injury and repair of hamstring muscle Kristian Thorborg, Associate professor, Denmark Can neuromuscular activity and function be influenced by specific exercises Mette Zebis, Docent, Denmark Which hamstring exercises may improve sprinting performance- and how? Lasse Ishøj, MSc. Denmark **Chair:** Kristian Thorborg, Associate professor, Denmark	**Larger symposium #15:** Timing and graft choice in ACL surgery. **Speakers:** Timing of ACL reconstruction in the sports active patient. Kristian Samuelsson, The shape of the native ACL footprint and its implication for graft choice and reconstruction method. Rainer Siebold, PhD, Germany Timing of rehabilitation and implication of graft choice on rehabilitation Håvard Moksnes, PT, PHD, Norway **Chair:** Kristoffer Barfod, Associate professor, PhD, Denmark	**Applied Science #6:** Ethics, funding and impact: How to overcome problems in research? **Titles and speakers:** The dark side of research – fraud and unethical conduct. Ingrid Eitzen, PhD, Norway Secrets from a national scientific director – funder's tip Karim Khan, Professor, Canada How to create impact with high-quality research Clare Ardern, PhD, Sweden How can social media benefit clinical practice. Ingrid Eitzen, PhD, Norway Ethics and equity – considering power and privilege in sports medicine research Sheree Bekker, PhD, UK **Chair:** Hege Grindem, PhD, Norway	**Work-shop #6** The throwing shoulder – hands on diagnostics and treatment Klaus Bak, MD, Denmark Knut Beitzel, PhD, Germany Ann Cools, PhD, Belgium **Chair:** Klaus Bak, MD, Denmark
14.45-15.15	Coffee break				
15.15-16.15	**Main talk #2:** The troublesome ankle sprain – how to treat late problems **Speaker:** Niek van Dijk, Professor, Netherlands **Chair:** Per Hölmich, Professor, Denmark	**Smaller symposium #3:** Should Exercises be painful in the management of musculoskeletal disorders? **Titles and speakers:** What is the evidence of painful vs non-painful exercises? Ben Smith. Dr., UK What could be the reason for a potential positive or negative effect of pain during exercises? Henrik Bjarke Vægter, Post Doc, Denmark **Chair:** Michael Rathleff, Associate professor, Denmark	**Smaller symposium #4:** Training adaptations : do the female sex hormones play a role? **Titles and speakers:** Strength training adaptation – influence of the female hormones Mette Hansen, Associate Professor, Denmark Endurance training adaptation – influence of the female sex hormones Ylva Helstenn, Professor, Denmark **Chair:** Mette Hansen, Associate Professor, Denmark	**Applied Science #7:** To be announced	**Work-shop #7** Hands on: groin injury management Managing groin pain in football Joar Harøy, PhD student, Norway Managing of groin pain in Icehockey Tobias Worner, PhD Student, Germany. **Chair:** Kristian Thorborg, Assistant Professor, Denmark
16.15-16.45	Coffee break				
16.45-18.00	**Oral presentations – Competition:** What´s cutting edge in sports medicine? **Abstracts:** 49-54 **Judging panel:** **Chairs:** Prof. Thomas Bandholm, Denmark As. Prof. Kristian Thorborg, Denmark				
18.00-18.30	Bøje prize and lecture				
19.30	Wine reception				
20.00	Galla dinner and party				

SATURDAY February 2nd of 2019

	Norway	Sweden	Denmark	Iceland	Workshops
9:00.-10.00	**Smaller symposium #5:** **Ankle sprains in sports:** Current and novel Prophylactic Approaches Understanding ankle sprains mechanisms and the implication for prevention Uwe Kersting, Professor, Germany Novel approaches in ankle sprain injury prevention, Daniel Fong, Professor, UK. **Chair:** Kristian Thorborg, Assistant professor, Denmark	**Smaller symposium #6:** Tennis and Golf Elbow –Sports injury or not? **Titles and speakers:** EMG-studies and surgical treatment Simon Frostick, Professor, UK. Non-surgical treatment Bill Vicenzino, Professor, Australia **Chair:** Jens L Olesen, Phd, Denmark	**Smaller symposium #7:** To be announced	**Applied Science #8:** ACL injury prevention and rehabilitation **Titles and speakers:** Prevention Holly Silvers-Granelli, PhD, USA **Rehabilitation:** Håvard Moksnes, PhD, Norway **Chair:** Hege Grindem, PhD, Norway	**Work-shop #8** Sideline Trauma - what to do High velocity trauma – skiing and motor sports Matt Gammons, MD, USA Soccer injuries Jesper Petersen, PhD, DK **Chair:** Jesper Petersen, PhD, DK
10.00-10.15	Break				
10.15-11.15	**Main talk #3:** How to successfully rehabilitate Achilles injury in athletes **Speaker:** Karin Silbernagel, Professor, Sweden/USA **Chair:** Kristian Thorborg, Assistant professor, Denmark	**Smaller symposium #8:** Optimized exercise to promote development in children and youth **Titles and speakers:** Growth related adaptation or sports related overuse injury in children Eva Zeisig, PhD, Sweden Strength training for children and youth Michael Tonkonogi, Professor, Sweden **Chair:** Eva Zeisig, PhD, Sweden	**Smaller symposium #9:** Controversies in acromioclavicular disorders in the athlete **Titles and speakers:** Biomechanics, diagnostics and anatomic considerations in the treatment of AC joint instability Knut Beitzel, PhD, Germany Treatment options for acute and chronic ac joint disorders Klaus Bak, MD, Denmark Case-based discussion of treatment options for AC disorders Knut Beitzel, PhD, Germany Klaus Bak, MD, Denmark **Chair:** Klaus Bak, MD, Denmark	**Applied Science #9** Inaugural Professor Lectures Per Kjær Charlotte Suetta Jens Olesen **Chair:** Michael Kjær, Professor, Denmark	**Work-shop #9** Practical management of lateral hip pain (GTPS) Bill Vicenzino, professor Australia **Chair:** Michael Rathleff, Associate professor, Denmark
11-15-11.30	Break				
11.30-13.00	**Larger symposium #16:** Subacromial impingement syndrome in the overhead athlete **Titles and speakers:** Biomechanics and scapular kinematics in the fatigued throwing shoulder Jesper Bencke Postural alterations in patients with subacromial impingement syndrome Simon Frostick, Prof, UK When is surgery indicated in the overhead athlete with subacromial impingement syndrome? Knut Beitzel, PhD, Germany **Chair:** Anne Kathrine Belling Sørensen, MD, DK	**Larger symposium #17:** Concurrent training – do opposite distract or attract? **Titles and speakers:** Concurrent training – do opposite distract or attract? Per Aagaard, Professor, Denmark Concurrent endurance and strength training- is there an interference effect? Tommy Lundberg, PhD, Sweden Concurrent training: the effect of endurance training on power and strength progression. Niklas Psilander, PhD, Sweden **Chair:** Eva Andersson, PhD, Sweden	**Larger symposium #18:** Growth related knee pain, Osgood Schlatter: current evidence and translation to the clinic **Titles and speakers:** The pathology of Osgood Schlatter and clinical examination Jens Lykkegaard or Simon Døssing, Denmark What's the prognosis of kids with Osgood Schlatter and when are they expected to be back playing sport? Sinead Holden, Post Doc, Denmark Management of Osgood Schlatter: rest and immobilization versus keeping active. To be announced **Chair:** Michael Rathleff, Associate professor, Denmark	**Larger symposium #19** Bridging complexity into sports injury prevention research: How to ask the right question and choose the right methods **Speaker:** Sheree Bekker, PhD, UK **Chair:** Merete Møller, Associate professor, Denmark	**Work-shop #10** Novel approaches in ankle injury prevention Daniel Fong Daniel Fong, Professor, UK Filip Lysdal, MSc, Denmark **Chair:** Kristian Thorborg, Assitant professor, Denmark

Det aktuelle program med mere detaljerede beskrivelser af foredrag fra de enkelte talere, vil altid være tilgængelig på **www.sportskongres.dk** og på app'en **'#sportskongres'**.

I app'en giver adgang til videoer af udvalgte sessioner, mulighed for at downloade præsentationer af de fleste foredrag, samt at komme i kontakte med andre deltagere og foredragsholdere. Samtidig kan den personaliseres ved at sammensætte et personligt program, give overblik over udstillingen, interviews med udvalgte foredragsholdere og gemme noter relateret til de enkelte sessioner.

Følg @sportskongres på twitter, hvis du vil have løbende updates omkring kongressen.

Kongresser • Kurser • Møder

INTERNATIONALT

12. - 17. april 2019, USA
American Medical Society for Sports Medicine Annual Meeting 2019 (AMSSM 2019), Houston.
Info: www.amssm.org

14. - 16. maj 2019, USA
State-of-the-Art Approaches to optimize the Diagnosis, Treatment, Rehabilitation and Prevention of Sports Injuries, Boston.
Info: www.sportsmedicine.hmscme.com

28. maj - 1. juni 2019, USA
American College of Sports Medicine 66th annual Meeting 2019 (ACSM 2019), Orlando.
Info: www.acmannualmeeting.org

3. - 6. juli 2019, Tjekkiet
European College of Sports Science 24rd Annual Congress, Prag.
Info: www.ecss-congress.eu/2019

12. - 14. marts 2020, Monaco
IOC World Conference on Prevention of Injury & Illness in Sports.
Info: www.ioc-preventionconference.org

4. - 7. juli 2020, Spanien
European College of Sports Science 25rd Annual Congress, Sevilla.

7. - 10. juli 2021, Skotland
European College of Sports Science 26rd Annual Congress, Glasgow.

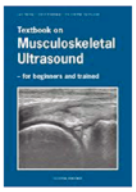
Flere sportsmedicinske kongresser?
Du kan altid orientere dig om flere relevante kongresser på denne hjemmeside:
www.medical.theconferencewebsite.com/conferences/sports-medicine

ANDRE KURSER

22. Kursus i Muskuloskeletal Ultralyd

Kurset er i samarbejde med DUDS (Dansk Ultralyddiagnostisk Selskab) og giver 12 CME point.

Tid:	28.-29. januar 2019
Sted:	Skejby Sygehus, Auditorium A
Målgruppe:	Radiologer, reumatologer, ortopædkirurger, praktiserende læger og eventuelt andre med interesse for muskuloskeletale lidelser. Der kræves ingen forhåndsviden inden for muskuloskeletal ultralyd.
Indhold:	Almen basal viden om muskuloskeletal ultralyd, herunder anatomi, fysik, teknik etc. Muskuloskeletale skader (overbelastningsskader/idrætsskader), reumatologi, bløddelstumorer, ultralydvejledt intervention og Doppler. Demonstration af undersøgelsesteknikker (inkl. "Hands on") og interventionsmetoder (ultralydvejledte aspirationer/injektioner).
Undervisere og kursusledere:	Overlæge Lars Bolvig, Røntgenafdelingen, Århus, Overlæge Ulrich Fredberg, Diagnostisk Center, Silkeborg. Overlæge Ole Schifter Rasmussen, Røntgenafdelingen, Randers.
Pris:	kr. 3.700. Prisen omfatter kaffe og fortæring under mødet. Deltagerne sørger selv for overnatning.
Kursusbog:	**Textbook on Musculoskeletal Ultrasonography – for beginners and trained**, der er skrevet af de 3 kursusarrangører fungerer som kursusbog (vejl. pris kr. 385), men er ikke en forudsætning for deltagelse i kurset. Kursisterne får et E-learning program tilsendt ca. 1 måned før kurset. Det skal læses inden kursusstart, og det tager ca. 8 timer at gennemgå.
Tilmelding:	Skriftligt pr. e-mail: heidi.bjerre@santax.com Program om emner og forelæsere kan rekvireres ved kursussekretæren.
Tilmeldingsfrist:	2. januar 2019 - Begrænset deltagerantal. Ved afmeldinger senere end 10. januar 2019 betales fuldt tilmeldingsgebyr



om DIMS kurser

Find aktuelle kursusoplysninger og kursuskalender på: http://www.sportsmedicin.dk

Info: Idrætsmedicinsk Uddannelsesudvalg, c/o kursussekretær Trine Stefanski. *Mail: info@sportsmedicin.dk*

Generelt om DIMS kurser

DIMS afholder faste årlige trin 1 kurser i hhv. Øst- og Vestdanmark. Typisk et kursus i foråret og et i efteråret.
Trin 2 afholdes hvert andet år før sommerferien på Bispebjerg Hospital v/ Institut for Idrætsmedicin. Samme år som dder afholdes trin 2 afholdes sent efterår eksamen hvert andet år mhp. opnåelse af status som diplomlæge i idrætsmedicin.

DIMS TRIN 1 KURSUS:

Formål og indhold: Basalt kursus i idrætsmedicin med hovedvægt lagt på diagnostik og undersøgelsesteknik 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. Varighed 40 timer over 5 dage.
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, fx 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: Læger med interesse i idrætsmedicin, der ønsker at dygtiggøre sig yderligere udover trin 1-kurset, samt læger der til daglig har at gøre med idrætsmedicinske problemstillinger. Derudover selvfølgelig læger, der ønsker at tage eksamen som diplomlæge i idrætsmedicin.

EKSAMEN:

Hvert 2. år afholdes eksamen. For at kunne deltage i eksamen kræves, at man har deltaget både på DIMS trin 1 og trin 2. Derudover kræves 5 dages fokuseret ophold på idrætsmedicinsk klinik samt udfyldelse af logbog. Eksamen vil bestå af en skriftlig multiple choise del, en praktisk del med figurant/patient, hvor man skal demonstrere at man kan indhente relevant anamnese, undersøge samt lægge plan for videre udredning og genoptræning.

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.

dansk idræts medicinsk selskab

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

Find aktuelle kursusoplysninger og kursuskalender på: www.sportsfysioterapi.dk

Info:
Kursusadministrator Bente Andersen
Tlf. 2068 8316
Mail: bnan@sportsfysioterapi.dk

Kursustilmelding foregår bedst og lettest via DSSF's hjemmeside: www.sportsfysioterapi.dk

DANSK SELSKAB FOR SPORTSFYSIOTERAPI

Uddannelses- og kursusstruktur

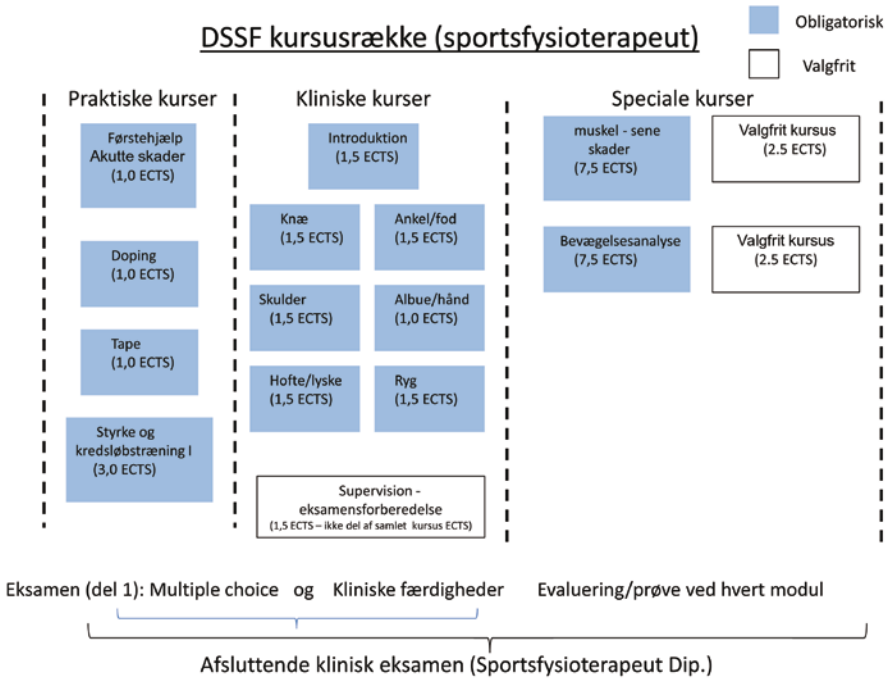
Fremtidssikring

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 Rasmus Reinholdt Sørensen
rasmussoerensen@msn.com

Redaktionsmedlemmer for DSSF:

Fysioterapeut, PhD Heidi Klakk
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hklakk@health.sdu.dk

Fysioterapeut Merete N. Madsen
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Fysioterapeut, cand.scient.san, PhD
Merete Møller
memoller@health.sdu.dk

dansk idræts medicinsk selskab

Adresse:

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2400 København NV
mail@sportsmedicin.dk
www.sportsmedicin.dk

Formand Kristoffer W. Barfod
Artroskopisk Center, Hvidovre Hospital
Kettegårds Allé, 2650 Hvidovre
kbarfod@dadlnet.dk

Næstformand Jesper Petersen
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3500 Værløse
jesper.petersen@dadlnet.dk

Kasserer Niels Christian Kaldau
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2700 Brønshøj
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DANSK SELSKAB FOR SPORTSFYSIOTERAPI

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Formand Karen Kotila
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Jeppe Lykke Ekman

Suppleant Susanne Damgaard

Suppleant Mads Hyldgaard

www.dansksportsmedicin.dk

Find fakta og gamle guldkorn

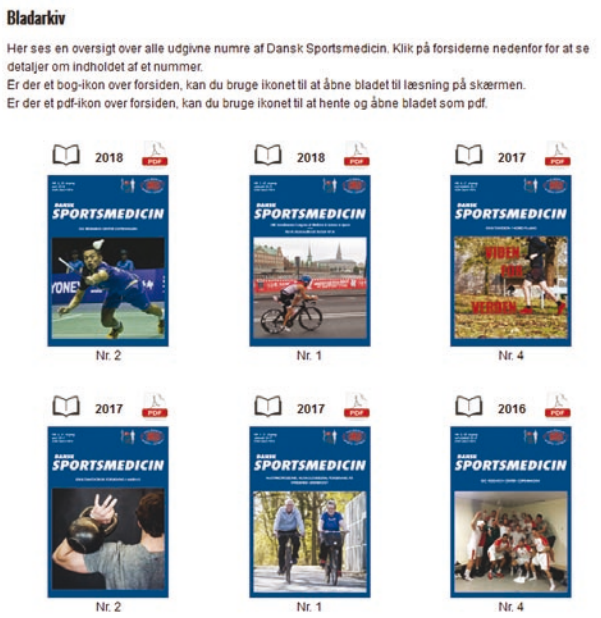
På hjemmesiden kan du finde de forskellige faktuelle oplysninger af interesse i forbindelse med Dansk Sportsmedicin.

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

Se DIMS hjemmeside: www.sportsmedicin.dk



Slutord

Dansk Sportsmedicin stopper med denne udgivelse i sin nuværende udformning som blad og overgår til blogform. Transformeringen til en mere moderne formidlingsform har banket på et stykke tid.

Som blad blev det til et prøvenummer og 85 'rigtige' numre. 22 årgange. I starten som trykt udgave, senere som både trykt og elektronisk udgave og i de sidste år som ren online-udgave.

Mange har støttet op om bladet undervejs og alle skal have stor tak. Ingen nævnt, ingen glemt.

Med udfasningen af bladformen er det tiden til, at jeg takker af som produktions- og administrativt ansvarlig for bladet. Held og lykke med Dansk Sportsmedicin som BLOG.

Gorm Helleberg Rasmussen


dansk
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medicinsk
selskab


DANSK SELSKAB FOR
SPORTSFYSIOTERAPI