



# Annual Report

## Research Activity 2021



Foto: Øystein Horgmo

**Division of Orthopaedic Surgery**  
University of Oslo, Diakonhjemmet Hospital  
and Oslo University Hospital





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## Introduction

### Oslo University Hospital and the University of Oslo

Oslo University Hospital (OUH) is Norway's largest hospital with over 24 000 employees and a budget of 23 billion NOK. The Hospital has a local function for parts of Oslo's population. It has a regional function for the inhabitants in the South-Eastern Norway Regional Health Authority, and it also has a large number of national functions. The Hospital is responsible for the majority of medical research and education of health personnel in Norway.

The University of Oslo (UiO) is Norway's largest research and educational institution with 28 000 students and 7000 employees. Professional breadth and internationally recognized research environments make UiO an important contributor to society. The Faculty of Medicine was established in 1814 and works for progressive education, research and dissemination for the patients' and society's best interests.

### Diakonhjemmet Hospital

The research activity of Department of Rheumatology at Diakonhjemmet Hospital is organizationally linked to Division of Orthopaedics.

Diakonhjemmet Hospital is a private, non-profit hospital with defined responsibilities for the health care system both in Oslo, in the health region as well as nationally. Department of Rheumatology has responsibility for people with rheumatic joint diseases living in the entire area of Oslo and a regional function for the inhabitants in the South-Eastern Norway Regional Health Authority. Two national highly specialized functions are located at the Hospital: The Norwegian National Unit for Rehabilitation for Rheumatic Patients with Special Needs and the Norwegian National Advisory Unit on Rehabilitation in Rheumatology.

The Department has since 2008 held the position as EULAR Center of Excellence and has in addition to patient care a strong focus on clinical and epidemiological research, education and information to patients and their relatives. Three professors; Espen A. Haavardsholm, Hilde Berner Hammer and Tillmann Uhlig, have combined positions in the Department of Rheumatology and University of Oslo.

### From Division Director Rolf Riise

Being the largest hospital in Norway, Oslo University Hospital provides highly specialized health care services to the citizens of Oslo and the South-East Health Region. In addition, the Hospital has a nationwide responsibility for a number of national and multi-regional assignments. The Division of Orthopaedics (OPK) is one of 16 medical divisions. It encompasses the fields of orthopaedic traumatology, hand surgery including retransplant surgery, prosthetic surgery, oncology surgery, spinal surgery, scoliosis surgery, pediatric surgery and arthroscopic surgery.





The proximity to patients and their medical issues are the cornerstones for the research conducted at our Division, which is aimed at improving patient care. High ethical standards ensure the confidentiality, and our goal is to continuously improve diagnostics, treatment and management for all our patients.

## Research activity

OPK's research activity is organized into 10 different research groups covering a broad range of basic and clinical research with an overall aim to improve patient care with emphasis on diagnostic, therapeutic and preventive measures. Most group leaders have a combined position at Oslo University Hospital and the University of Oslo. In total, the Division has 7 Professors, 4 Associate Professors, postdoctoral fellowships, several PhD students and administrative and technical staff.

The Division has an Advisory Research Board which in 2021 consisted of: Professor Lars Nordsletten, Professor Olav Røise, Professor Jan Erik Madsen, Professor Emeritus Lars Engebretsen, Professor Harald Steen, Professor Inger Holm, Professor Magne Røkkum, Professor May Arna Risberg, Associate Professor Joachim Horn, Associate Professor Thomas Kibsgård, Finance Manager Anne-Grethe Akselsen, Division Director Rolf Riise, Consultant Olga Zaikova, Research Nurse Ida M. Bredesen and Research Nurse and Assistant Administrative Manager Kari Anne Hakestad.

In 2021 OPK had a total of 67 registered peer reviewed publications and 9 PhD dissertations.

Diakonhjemmet's department of Rheumatology registered 66 publications and 3 PhD dissertations in the same period.

*Olav Røise*



Foto: Øystein Horgmo





## Osteoarthritis Research Group



### Group Leader

Lars Nordsletten, Prof, Division of Orthopaedics, UiO (lars.nordsletten@medisin.uio.no) /  
Head of R & D, Division of Orthopaedic Surgery, OUH (UXLANO@ous-hf.no)

### Group Members

- May Arna Risberg, Prof
- Tore K. Kvien, Prof em
- Till Uhlig, Prof
- Ida K. Haugen, Senior researcher
- Kristin Bølstad, Research coordinator
- Nina Østerås, Professor
- Karin Magnusson, Post doc
- Britt Elin Øyestad, Prof
- Nina J. Kise, Post Doc
- Sonia Rojewski, Phd fellow
- Bjørnar Berg, Phd
- Kristian Warholm, Phd fellow
- Inger Holm, Professor
- Tuva Moseng, post doc
- Pernille Steen Pettersen, post doc
- Alexander Mathiessen, post doc
- Marthe Gløersen, PhD candidate
- Elisabeth Mulrooney, PhD candidate
- Heidi Gammelsrud, research coordinator

### Research profile and aims

To study the etiology, treatment and prevention of osteoarthritis (OA). We are primarily studying knee, hip and hand OA.

### Ongoing projects

- Exercise therapy in knee OA: RCT between different modes of exercises
- Risk factors for OA in hip, knee and hand: HUNT-NLR-OUH study and Ullensaker study
- Development of hand OA
- Aktiva: implementation program including treatment and prevention and a quality registry of OA in primary care in Norway
- OMEX: RCT between exercises and surgery for degenerative meniscal tear 5 and 10 years follow-up





- ArtroVax: The immunological impact on OA development
- HIPARTI: Hip arthroscopy vs placebo surgery including postop rehabilitation program
- Nor-Hand: Observational study of persons with hand OA
- MERINO: RCT studying the efficacy and safety of methotrexate in erosive hand OA
- The development of EULAR classification criteria for hand OA
- Delaware-Oslo ACL Cohort – 5 and 10 years follow-up
- SHIELD study: Is good muscle function a protective factor for early features of knee osteoarthritis? A prospective cohort study
- Better before – Better after: Prehabilitation program for older patients awaiting total hip replacement. A randomized controlled trial

## Most important national and international collaborators

### National

- The Norwegian Arthroplasty Register
- The Norwegian Cruciate Ligament Register
- The Norwegian Hip Fracture Register
- NTNU, HUNT Research Center
- FHI
- Norwegian School Sport Sciences, Dept of Sports Medicine
- OsloMet
- Diakonhjemmet hospital

### International

- David T. Felson, Boston University, USA
- Martin Englund, Lund University, Sweden
- Lynn Snyder-Mackler, University of Delaware, USA
- Tuhina Neogi, Boston University, USA
- Ewa Roos, University of Southern Denmark
- Eva Ageberg, Lund University, Sweden

## Funding

- South-Eastern Norway Regional Health Authority
- Norwegian Extra Foundation for Health and Rehabilitation
- The Research Council of Norway
- Foundation of Sophies Minde
- Dr Trygve Gythfeldt and wife's Research Foundation
- Pahle's Foundation
- Simon Fougner Hartmann's Family Foundation
- Pfizer: Global Awards for Advancing Chronic Pain Research (ADVANCE)





## Scientific production of the research group in 2021

### Dissertations:

Øystein Maugesten, UiO; *"Fluorescence Optical Imaging in Hand Osteoarthritis"*

Pernille Steen Pettersen, UiO; *"Pain sensitization in hand osteoarthritis"*

Else Marit Holen Gravås; *"Occupational therapy and surgery in thumb carpometacarpal joint osteoarthritis"*

### Peer reviewed original research articles: 26

#### Selected publications:

Arden, N. K., T. A. Perry, R. R. Bannuru, O. Bruyere, C. Cooper, I. K. Haugen, M. C. Hochberg, T. E. McAlindon, A. Mobasheri, and J. Y. Reginster. 2021  
*"Non-surgical management of knee osteoarthritis: comparison of ESCEO and OARS1 2019 guidelines"*  
Nat Rev Rheumatol, 17: 59-66.

Berg, B., E. M. Roos, N. J. Kise, L. Engebretsen, I. Holm, and M. A. Risberg. 2021  
*"On a Trajectory for Success-9 in Every 10 People With a Degenerative Meniscus Tear Have Improved Knee Function Within 2 Years After Treatment: A Secondary Exploratory Analysis of a Randomized Controlled Trial"*  
J Orthop Sports Phys Ther, 51: 289-97.

Hermann-Eriksen, M., T. Nilsen, A. Hove, L. Eilertsen, I. K. Haugen, J. Sexton, and I. Kjekken. 2022  
*"Comparison of 2 Postoperative Therapy Regimens After Trapeziectomy Due to Osteoarthritis: A Randomized, Controlled Trial"*  
J Hand Surg Am, 47: 120-29 e4.





## Pediatric Orthopaedics



### Group Leader

Joachim Horn, Associate Professor, Section of Children's Orthopaedics and Reconstructive Surgery, UiO (joachhor@medisin.uio.no) /OUH (jhorn@ous-hf.no)

### Group Members

- Terje Terjesen, Professor emeritus, UiO
- Ivan Hvid, Professor emeritus, UiO
- Harald Steen, MD/PhD, OUH
- Ola Wiig, MD/PhD, OUH
- Stefan Huhnstock, MD/PhD, OUH
- Anders Wensaas, MD/PhD, OUH
- Anne Berg Breen, MD, PhD-candidate, OUH
- Anders Grønseth, MD, PhD-candidate, OUH
- Andreas Knaus, MD, OUH
- Vera Halvorsen, MD, OUH
- Patrick Bjørge, PT, MSc-cand, OUH
- Johan Brevik, PT
- Anne Marthe Svendsen Rysst-Heilmann, PT
- Lærke Lindskov, Certified prosthetist & orthotist (CPO), Clinical Gait Analyst
- Sanyalak Niratiarak, PhD, Head engineer, UiO

### Research profile and aims

The main intention of the group is to promote clinical and experimental research within the field of children's orthopaedics and reconstructive surgery. Core areas of research are: limb deformity (limb lengthening and growth modulation) and children's hip (Perthes, DDH and SCFE). Novel areas of research are: mixed reality/holographic technology within the field of orthopaedics and research concerning patient safety in children's orthopaedics.

### Ongoing projects

#### 1. Limb lengthening and reconstruction (Joachim Horn)

"Growth modulation in correction of leg length and axial deviations"; PhD project, Anne Berg Breen

- The timing of percutaneous epiphysiodesis for leg length discrepancy – an evaluation of four different prediction methods
- A comparison of 3 different methods for assessment of skeletal age when treating leg length discrepancies: An inter- and intra-observer study
- Comparison of Different Bone Age Methods and Chronological Age in Calculation of Remaining Growth Around the Knee







“Idiopathic increased femoral anteversion”; PhD project Anders Grønseth

- “Derotational osteotomy in the femur with either percutaneous osteotomy and intramedullary nailing or with an open approach and plating – a randomized controlled trial”
- “Three-dimensional gait analysis before and after derotational osteotomy in patients with idiopathic increased femoral anteversion”
- “Long-term follow-up of untreated patients with increased femoral anteversion”

## 2. Children’s hip

“A nationwide Perthes study – a long term follow-up with more than 20 years” (Stefan Huhnstock)

“Risk factors for hip displacement in cerebral palsy - a population-based study of 121 non-ambulatory children” (Terje Terjesen)

## 3. Mixed Reality, Holographic technology (Ola Wiig)

“OrthoNav-mixed reality/holographic technology in orthopaedic surgery”, PhD project Inger Gruenbeck, MSc, The Intervention Centre, OUH (Ola Wiig)

“gAlt” AI based treatment and diagnostic support for gait evaluation in children with cerebral palsy, Eirik Gromholdt Homlong, Institutt for Informatikk, Blindern” (Ola Wiig)

## 4. Children’s foot and ankle

“Idiopathic toewalkers: a clinical intervention study for children from 7-14 years” (Andreas Knaus)

## 5. Skeletal dysplasia

Establishment of a “Norwegian Skeletal Dysplasia Register” in collaboration with the Norwegian National Advisory Unit on Rare Diseases, Department of Medical Genetics and Pediatric Endocrinology. The register will be a base for broad interdisciplinary research within this field. (Joachim Horn)

“The use of gait analysis in skeletal dysplasia – a literature review”, in collaboration with ERN BOND (European Reference Network for Rare Bone Disorders) (Joachim Horn)

“Orthopaedic clinical decision making in skeletal dysplasia – a survey among ERN BOND and EPOS members” (Joachim Horn)





## Most important national and international collaborators

### National

- Lena Lande Wekre, MD, PhD, Norwegian National Advisory Unit on Rare Diseases
- Cecilie Rustad, MD, Dept. of Medical Genetics, OUH
- Cathrine Alsaker Heier, Div. of Pediatrics, Endocrinology
- The Intervention Centre, OUH
- Ida Rashida Khan Bukholm, MD, Professor, Norwegian University of Life Science, The Norwegian System of Patient Injury Compensation

### International

- Ralph Sakkars, MD, PhD; EPOS Study Group Genetics and Metabolic Diseases
- International Perthes Study Group
- European Reference Network for rare Bone Disorders (ERN BOND)
- Nordic Limb Lengthening and Reconstruction Society

## Scientific production of the research group in 2021

**Peer reviewed original research articles: 10**

### Selected publications:

Huhnstock S, Wiig O, Merckoll E, et al.

*"The modified Stulberg classification is a strong predictor of the radiological outcome 20 years after the diagnosis of Perthes' disease"*

The bone & joint journal 2021;103-B(12):1815-20

Terjesen, Terje & Horn, Joachim (2021)

*"The femoral head-shaft angle is not a predictor of hip displacement in children under 5 years with cerebral palsy: A population-based study of children at gmfcs levels III-V"*

Journal of Pediatric Orthopaedics. ISSN 0271-6798. 41(8), s. E659–E663

Horn J, Rasmussen H, Bukholm IRK, Røise O, Terjesen T.

*"Compensation claims in pediatric orthopedics in Norway between 2012 and 2018: a nationwide study of 487 patients"*

Acta Orthop. 2021 Jun 4;:1-6.





## Biomechanics Laboratory



### Group Leader

Harald Steen, MD/DMSci, Head of Laboratory/Orthopaedic Consultant, Orthopaedic Division, Department for Research and Development OUH, Rikshospitalet ([hsteen@ous.no](mailto:hsteen@ous.no)) / Professor emeritus, OsloMet (OMU)

### Group members

- Sanyalak Niratisairak, PhD, Lab's Head engineer, UiO
- Jan Egil Brattgjerd, MD/PhD, OUH
- Knut Strømsøe, MD/DMSci, prof em UiO/Alumni
- Jan Rune Nilssen, Eng, Norwegian Defence Research Institute (FFI)
- Ingrid Skaaret, CPO/MSc/PhD, Sophies Minde Ortopedi AS (SMO)/OMU
- Anne Berg Breen, MD/PhD-cand, OUH
- Bryan Wright, MD/PhD-cand, Ringerike Hospital

### Associate group members

- Joachim Horn, MD/PhD, OUH/UiO
- Are Hugo Pripp, MSc/PhD, OUH, prof OMU
- Ivan Hvid, MD/DMSci, OUH, prof em UiO
- Ragnhild Gunderson, MD, OUH
- Jette Schack, PT/MSc/PhD, OUH/SMO

## Research profile and aims

Biomechanics lab at the Department for Research and Development, Oslo University Hospital Orthopaedic Clinic, functions as a service-unit and contributes as a facilitator/catalysator for accomplishment of various research projects within the orthopaedic community in the Oslo region. The laboratory was established back in the 1960'ies as a joint venture between Sophies Minde National Orthopaedic Hospital and the University of Oslo with 1.5 full time employees: One orthopaedic surgeon (50%) employed by the Hospital, and one Engineer (100%) employed by the University of Oslo.

The laboratory previously organized the meetings of the 'Biomechanics Forum' 2-3 times a year during the periods 1996-2002 and 2013-2017, with a total of 31 meetings. 'Biomechanics Forum' was a multidisciplinary discussion group of professionals and students. The plan was to establish a new national forum called the 'Norwegian Biomechanics Society' (NBS) consistent with similar existing national societies in Denmark and Sweden, and with a future expectation of making a common Scandinavian Biomechanics Society. However, due to the Covid-19 pandemic the inauguration of the NSB has been postponed in 2020 and 2021.

The laboratory is furnished with technological equipment for mechanical and functional testing, and participates in planning, execution, analyses, and publishing of clinical and experimental studies.





Biomechanics lab was granted 1.37 mill NOK from the Hospital's Investment budget 2019 for upgrading of our mechanical testing machine (MTS, MiniBionix 858), located at the Institute for Surgical Research. The new equipment will be a high-speed digital image video camera with integrated 3D motion analysis for detailed documentation of the deformation process within the test object during mechanical testing. The procurement process started in September 2019, but was put on hold for an indefinite time in 2021 because of the ongoing pandemic.

In daily clinical activity the Biomechanics lab has been part of the Paediatric Orthopaedics and Reconstructive Surgery Section at Rikshospitalet, mainly contributing with preoperative assessment of patients with limb length discrepancy and other deformities, and monitoring of patients operated with distraction osteogenesis/callotasis by use of external fixators or operated with epiphysiodesis.

### Ongoing projects

- Comparison of various methods for bone age assessment (ABB/PhD Thesis in progress)
- Time planning and treatment of epiphysiodesis - Outcome of various methods (ABB/PhD Thesis in progress)
- Biomechanical studies of bone fixation (BW/PhD Thesis in progress)
- Fixation of trochanteric fractures with gliding screw and plate
- Reconstruction of anterior cruciate ligament with both tibial and femoral fixation
- Fixation of femoral derotation osteotomies with an intramedullary nail
- Testing of a new instrument for balancing medial collateral ligament in knee prosthetic surgery
- Radiostereometric (RSA) Growth-Analyses after (Hemi-)Epiphysiodeses
- Forces, Load-share and Strain in Ankle Arthrodiastasis
- Forces, Load-Share and Strain during the Callotasis Process
- The Birch Classification for Congenital Fibular Deficiency Can Predict Treatment Modality and Clinical Outcome in Young Adults Born With Lower-Limb Deficiencies
- The Influence of an Intact or Healed Osteotomized Fibula on the Measured Load-Share Value after a Tibial Lengthening Osteotomy - A Cadaver Pilot Study





## Most important national and international collaborators

### National

- Jan Rune Nilssen, Norwegian Defence Research Establishment, Kjeller: Mechanical testing projects
- Bryan Wright, MD, Ringerike Hospital: Mechanical properties and bone mineral parameters per-trochanteric femoral fractures

### International

- William MacKenzie, MD and Tariq Rahman, PhD, Neumors, Alfred I. duPont Hospital for Children, Wilmington, Delaware, USA: Experimental limb lengthening project
- Søren Kold, MD/PhD and Markus Winther Frost, Aalborg University Hospital, Denmark: Experimental limb lengthening project
- Stephen Grigg, PhD and Rhys Pullin, PhD, Cardiff School of Engineering, Cardiff University, UK
- Acoustic Emission Project

## Scientific production of the research group in 2021

### Doctoral PhD dissertation:

Jan Egil Brattgjerd MD: *"Biomechanics of locking plates in femoral neck fixation"*  
University of Oslo, Jan 20, 2021

Ingrid Skaaret CPO, MS: *"Children with Cerebral Palsy- the Impact of Ankle-Foot Orthoses on Gait Function after Lower Limb Surgery"*  
OsloMet University, Apr 23, 2021

### 3 Peer-Reviewed Publications (original research articles):

Bjørge PA, Tveter A-T, Steen H, Gunderson R, Horn J:  
*"Femoral lengthening might impair physical function and lead to structural changes in adjacent joints – 10 patients with 27 to 34 years' follow-up"*  
Acta Orthopaedica, published online Jan 7, 2021, doi:10.1080/17453674.2020/1866864

Brattgjerd JE, Niratisairak S, Steen H, Strømsøe K:  
*"Intermediate Dynamic Compression and Decreased Posterior Tilt with Interlocked Pins in Femoral Neck Fixation in Synthetic Bone"*  
J Biomech Eng, 143, 2021, 074502-1 - 074502-7, Transactions of the ASME

Skaaret I, Steen H, Niratisairak S, Swansson D, Holm I:  
*"Postoperative changes in vertical ground reaction forces, walking barefoot and with ankle-foot orthoses in children with Cerebral Palsy"*  
Clin Biomech (Bristol, Avon), 84 (2021), <https://doi.org/10.1016/j.clinbiomech.2021.105336>





## Center for Implant and Radiostereometric Research Oslo



### Group Leaders



Stephan M. Röhrli, MD, PhD, senior consultant surgeon (s.m.rohrl@medisin.uio.no)  
Division of Orthopaedic Surgery, OUH, Board member of the Norwegian arthroplasty Registry, (UXRHST@ous-hf.no)



Lars Nordsletten, Prof., Dept of Orthopaedics, UiO (lars.nordsletten@medisin.uio.no) /  
Head of the research and development unit of the Division of Orthopaedic Surgery, OUH  
(UXLANO@ous-hf.no)

### Group Members

#### Senior members:

- Finnur Snorrason, MD/PhD, OUH
- Vera Halvorsen, MD, OUH
- Marianne Westberg MDT/PhD, OUH
- Anselm Schultz, MD, PhD, OUH

#### Alumni (PhD):

- Wender Figwed, MD/PhD Bærum Hospital
- Berte Bøe, MD/PhD, OUH
- Einar Lindalen, MD/PhD Lovisenberg Hospital
- Jon Dahl, MD/PhD, OUH
- Thomas Kibsgård, MD/PhD, UiO and OUH
- Bernhard Flatøy, MD/PhD, Diakonhjemmet hospital
- Eirik Aunan, MD, Lillehammer hospital
- Justin van Leeuwen, MD, Helse Førde Lerdal hospital
- Gunnar Petursson, MD, Lovisenberg Hospital
- Ole-Christian Brun, MD, Lovisenberg Hospital
- Jan Egil Brattgjerd, MD, OUH

#### PhD candidates:

- Trygve Glad, MD, OUH, LIS
- Alexander Fraser, MD, Diakonhjemmet hospital
- Frank David Ørn, MD, Kristiansund Hospital
- Carl Erik Alm, MD, OUH, LIS
- Vinjar Hansen Myklevold, MD, Haukeland university hospital
- Peder Thoen, MD, Tønsberg hospital
- Yasser Rehman, MD, Lovisenberg hospital





## Group Members (continued)

### Single project candidate:

- Magnus Høgevold, MD, Diakonhjemmet Hospital
- Mathilde Kvamme, OUH

### Radiographers:

- Alexis Hinohosa, CT and MRI Radiographer, OUH
- Mona Risdal, CT Radiographer, Application Specialist CT, OUH

### Research coordinators:

- Marte Traae Magnusson, PT, Master, OUH

## Research profile and aims

The overall aim of CIRRO is to perform sophisticated basic and clinical research in the field of orthopaedic surgery, material science and bone turnover, establish a team of dedicated researchers and collaborate nationally and internationally. Our intention is:

- To use and develop precise measurement methods in musculoskeletal research
- To study new treatment options (implants, surgical techniques, biotechnology, rehabilitation interventions and pharmacological treatment) and to ensure safe treatment to patients
- To study disease development (cartilage wear, bone loss, changes in body composition) together with other methods, in order to gain insight into mechanisms for disease and eventual treatment.
- To further develop CIRRO as a main research centre delivering sophisticated services to researchers in South-Eastern Norway Regional Health Authority and adjoint hospitals nationally.

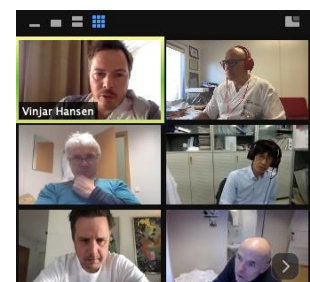
## 2021

### Planned projects:

- “Ultrasound guided microsurgery – the innovative and rational next step?” Torben Ianssen, Sandefjord ortopedi
- Custom positioning guides technique versus conventional technique in knee arthroplasty 5- års data skal analyseres av Sean Rivrud
- CTMA – Phantomstudy CT – based RSA in the knee

### Ongoing studies:

INTRAKS study on kyphoscoliosis in adults is ongoing. Around 50 patients are included so far. We have had zoom meetings with the group from Sweden, Japan and OUH. Comprehensive information about the study: [HOME | Intraks](#)  
CTMA on IS-joint is in focus with a pilot study.





Medacta uncemented TKR project started inclusion in September 2021 after delay due to the pandemic restrictions for planned surgery. So far we have 18 patient included. The team is working closely with new members of the team radiologist Anselm Schultz and PhD candidate Lars Engseth.

Frank D. Øhrn and Lars Engseth completed CTMA analysis course at SPECTRA/Sweden.



CIRRO arranged two intern digital meetings. One during spring for PhD-project updates and presentation of research infrastructure and one during the winter mainly to prepare for the digital congress in May 2021 and in October.

### The international RSA congress

CIRRO proudly hosted the international RSA meeting 2021. After intensive preparations we can say that we were very satisfied with the congress accomplishment. We thank all the keynote speakers.



Thanks to Oslo Science Park (Forskningsparken - Forskningsparken) and the team who hosted us Eli Aasen, Michael Tindeland, Magnus Karlsen (OUS). Thanks to BRIK <https://brik.no/> for help with registration and valuable technical and inspirational input.

Aside the highly appreciated scientific program, the RSA world moved together during the breaks with setting motion analysis in action.



The making of the congress is also presented at the CIRRO website (CIRRO.no).

All presentations are still available at the “science channel” at the congress homepage <https://meeting2021.radiostereometry.org/>





### Kleivstua 2021

Several members of the group presented their projects at the annual research seminar at Kleivstua in November arranged by Dept. of Orthopaedics, OUH and collaborating units.



During the summer 2021 CIRRO hosted 2 international students. Viktoria Obermeier from the Technical University in Munich, Germany, and Ines Elkeurti from the University of Marseille, France.

## Ongoing projects

### Hip projects

- RCT on the function of the Trochanteric Support Plate (TSP) in combination with the Dynamic Hip Screw (DHS)
- Solutions for patients at risk: dislocation (PhD program)

### Knee projects

- In vivo kinematics and performance of contemporary knee arthroplasty (PhD project OUH, in collaboration with HF Møre Romsdal)
- Kinematic RSA of three different kneedesigns (collaboration with Lovisenberg Hospital)

### Methodological projects

- Motionanalysis with CTMA and IMA in the forefoot and the IS joint (part of the PhD projects)
- Precision of CTMA in the knee

### Ankle and foot projects

- Investigating acute Lisfranc injuries in the foot and a new surgical procedure (PhD project OUH)
- Kinematics of the midfoot after Lisfranc injury (PhD project OUH)

### Shoulder project

- Stability of the glenoid implant in reversed shoulder arthroplasty (PhD project OUH)

### Hand project

- A prospective randomized trial comparing two different wrist arthroplasties (PhD project OUH)

### Spinal project

- INTRAKS study on spinal deformities (<https://www.intraks.org>)
- Surgical treatment of pelvic girdle pain



## Most important national and international collaborators

### National

- Norwegian Arthroplasty register (NAR)
- Diakonhjemmet Hospital
- Lovisenberg Diaconal Hospital
- Regional Health Authority Møre Romsdal
- Kristiansund hospital
- Haukeland University Hospital
- Arendal Hospital

### International

- Umeå University Hospital, Arthroplasty unit, Sweden
- UmRSA Biomedical, Sweden
- Leiden University, The Netherlands
- Kyoto University Orthopaedic Association, Japan
- Skåne University, Sweden
- SECTRA, Sweden

## Scientific production of the research group in 2021

### Dissertations:

Jan Erik Brattgjerd *"Biomechanics of locking plates in femoral neck fixation"*



Ole Christian Laahne Brun *"Post-operative findings and patient-reported outcomes in total hip arthroplasty following the introduction of the minimally invasive direct anterior approach"*



### Peer reviewed original research articles: 13

Multiple presentations at national and international conferences

### Selected publications:

Fraser AN, Bøe B, Fjalestad T, Madsen JE, Röhrli SM (2021)

*"Stable glenoid component of reverse total shoulder arthroplasty at 2 years as measured with model-based radiostereometric analysis (RSA)"*

Acta Orthop, 92 (6), 644-650 DOI 10.1080/17453674.2021.1943932, PubMed 34196600

Øhrn FD, Lian ØB, Tsukanaka M, Röhrli SM (2021)

*"Early migration of a medially stabilized total knee arthroplasty : a radiostereometric analysis study up to two years"*

Bone Jt Open, 2 (9), 737-744 DOI 10.1302/2633-1462.29.BJO-2021-0115.R1, PubMed 34493056

Leta TH, Gjertsen JE, Dale H, Hallan G, Lygre SHL, Fenstad AM, Dyrhovden GS, Westberg M, Wik TS, Jakobsen RB, Aamodt A, Röhrli SM, Gøthesen ØJ, Lindalen E, Heir S, Ludvigsen J, Bruun T, Hansen AK, Aune KEM, Warholm M, Skjetne JP, Badawy M, Høvdning P, Husby OS, Karlsen ØE et al. (2021)

*"Antibiotic-Loaded Bone Cement in Prevention of Periprosthetic Joint Infections in Primary Total Knee Arthroplasty: A Register-based Multicentre Randomised Controlled Noninferiority Trial (ALBA trial)"*

BMJ Open, 11 (1), e041096 DOI 10.1136/bmjopen-2020-041096, PubMed 33509845





## Funding

- South-Eastern Norway Regional Health Authority (PhD program)
- NTNU
- Møre Romsdal Health Authority (PhD program)
- Medacta International AG
- Sophies Minde Health Fund (PhD program)
- The Research Council of Norway
- University of Bergen





## Hand



### Group Leader

Magne Røkkum, Dept. of Orthopaedics, UiO (magne.rokkum@medisin.uio.no) /OUH  
(mrokkum@ous-hf.no)

### Group Members

- Hallgeir Brattberg, OUH
- Sondre Hassellund, Faculty of Medicine, UiO
- May Tove Hestmo, OUH
- Trygve Holm Glad, student, Faculty of Medicine, UiO
- Johanne Korslund, OUH
- Lars-Eldar Myrseth, OUH
- Børge Olsen, OUH
- Helle S Reiten, student, Faculty of Medicine, UiO
- Ole Reigstad, OUH
- Istvan Rigo
- Ida Neergård Sletten, OUH
- Rasmus Thorkildsen, OUH
- Frode Thu, student, Faculty of Medicine, UiO
- Tone Vaksvik, OUH
- Maria Vatne, OUH
- Kristin Wennesland Øren
- John H. Williksen, OUH
- Mona Winge, student, Faculty of Medicine, UiO

### Research profile and aims

Clinical and experimental research, related to hand, microsurgery and peripheral nerves.

### Ongoing projects

- Bratberg H: Prospective randomized trial between Percutan Needle Fasciotomy and Clostridium Histolyticum injection for Dupuytren's Contracture
- Williksen JH et al.: Complications and secondary surgeries after volar plating of distal radius fractures
- Williksen JH et al: Radiological results and clinical outcomes after operative treatment of distal radius fractures
- Hassellund S: Reduction and casting of distal radius fractures in elderly provided acceptable alignment in 41% of non-operatively treated patients
- Korslund J: Outcomes after finger replantation





- Korslund J: Monitoring of the vascularisation in replantated fingers
- Vatne M: Hand function in Hurler's disease
- Hestmo MT: Replantation in children
- Olsen B: Pins vs. VLP for A2, A3 and C1 wrist fractures
- Vaksvik T: Continued decrease in cold hypersensitivity after surgery for complex hand injuries: A prospective cohort study over eight years
- Thorkildsen R: Nerve transfer for proximal injuries of the ulnar nerve
- Thorkildsen R: Nerve complications after elbow fractures in children
- Thorkildsen R: Follow-up of 50 ARPE trapeziometacarpal arthroplasties
- Vaksvik T and Stavenes AB: Norwegian contribution to International validation of Children's Hand Use Questionnaire (CHEQ)
- Winge MI: Mirror hand – ulnar dimelia. Follow-up of 8 European centres
- Reigstad O: Follow-up of wrist prostheses
- Reigstad O: Intercarpal Arthrodes
- Reigstad O: Darrach's procedure versus arthroplasty for radioulnar osteoarthritis (The Nordurr study)

#### PhD:

- Sondre Hassellund: Unstable distal radius fractures in patients over 65 years. Conservative treatment vs operative treatment with volar locking plate. RCT
- Rasmus Thorkildsen: Total joint replacement or interpositional arthroplasty for the treatment of carpometacarpal thumb arthritis
- Mona Winge: Is calcium phosphate bone cement an alternative to bone graft?
- Trygve Holm Glad: Randomized controlled trial between two total wrist arthroplasties. A clinical, radiostereometric and DEXA study
- Frode Thu: Injuries of the plexus brachialis
- Helle S Reiten: Injuries of the plexus brachialis

### Most important national and international collaborators

#### National

- Prof. Jan Erik Madsen, MD, PhD
- Dept. of Otorhinolaryngology, Head and Neck Surgery, OUH

#### International

- Prof. Carina B Johansson, Dept. of Biomaterials, University of Gothenburg, Sweden





## Scientific production of the research group in 2021

Peer reviewed original research articles: 9

Other publications: 1

Invited lectures at international congresses: 1

### Selected publications:

Reigstad O, Holm-Glad T, Dovland P, Korlund J, Grimsgaard C, Thorkildsen RD, Røkkum M (2021)  
*"Progressing arthrosis and a high conversion rate 11 (4-19) years after four corner fusion"*  
J Plast Surg Hand Surg, 55 (6), 354-360 DOI 10.1080/2000656X.2021.1898970, PubMed 33733991

Sletten IN, Røkkum M, Winge MI (2021)  
*"Outcome After Pollicization for Congenital Thumb Deficiency: A Cohort Study of Cases in a Single Unit, 1987 to 2016"*  
J Hand Surg Am (in press) DOI 10.1016/j.jhsa.2021.05.023, PubMed 34274210

Winge MI, Røkkum M (2021)  
*"Satisfying Clinical and Functional Results in 12 Apert Children Treated With Soft Tissue Distractor"*  
J Pediatr Orthop, 41 (5), 312-318 DOI 10.1097/BPO.0000000000001785, PubMed 33710128

### Funding

- Sophies Minde Ortopedi AS





## Orthopaedic oncology



### Group Leader

Joachim Thorkildsen, Division of orthopaedics, Dept of orthopaedic oncology, OUH  
(jthork@ous-hf.no)

### Group Members

- Ole-Jacob Norum, MD, PhD, OUH
- Olga Zaikova, MD, PhD, OUH
- Simen Sellevold, MD, PhD, OUH
- Joachim Thorkildsen, MD, PhD, OUH
- Thale Marie Asp Strøm, MD, OUH
- Trygve Wessel-Aas, MD, OUH
- Merethe Lia Johansen, BSc, OUH

### Research profile and aims

Sarcoma is a rare cancer with multidisciplinary care. This is reflected in the need for extensive cooperation between research groups.

Our strategy is to contribute to national and international research projects as well as to work for strongly integrated clinical research in the everyday running of our department. We aim to take part in a wide spectrum of research projects from basic- and translational research to prospective clinical studies and retrospective quality control studies.

### Ongoing projects

- A study of epidemiology and outcome in chondrosarcoma, A post PhD study (Joachim Thorkildsen)
- Megaprosthesis for metastatic bone disease; a comparative analysis (Joachim Thorkildsen)
- SACRO Sacral Chordoma: a Randomized & Observational study on surgery versus definite radiation therapy in primary localized disease. A multinational clinical trial (Ole-Jacob Norum)
- A study of muscle strength, balance and gait function in patients with tumor in the knee joint - a pilot study (MAGUS) (Merethe Lia Johansen- Section for cancer rehabilitation, OUH)
- Functional outcome after surgery for tumor in pelvic bone (Simen Sellevold)
- Nordic Megaprosthesis Register (Olga Zaikova)
- National Register for Sarcoma (Olga Zaikova)





## Most important national and international collaborators

### National

- Norwegian National Advisory Unit for Sarcomas
- Dept of Oncology, OUH
- Dept of Tumor Biology, Institute for Cancer Research, OUH
- Norwegian school of Sports Sciences

### International

- Scandinavian Sarcoma Group (SSG)
- European Musculo-Skeletal Oncology Society (E.M.S.O.S)
- European Reference Network ERN EURACAN

## Scientific production of the research group in 2021

### Doctoral PhD dissertation:

Joachim Thorkildsen: *“Chondrosarcoma in Norway 1990-2013; risk stratification without histology”*  
University of Oslo, Nov 12, 2021

### Peer reviewed original research articles: 3

Thorkildsen J, Norum OJ, Myklebust TA, Zaikova O.

*“Chondrosarcoma local recurrence in the Cancer Registry of Norway cohort (1990-2013): Patterns and impact”*

J Surg Oncol. 2021 Feb;123(2):510-520. doi: 10.1002/jso.26308. Epub 2020 Dec 14. PMID: 33314135

van Atteveld JE, Mulder RL, van den Heuvel-Eibrink MM, Hudson MM, Kremer LCM, Skinner R, Wallace WH, Constine LS, Higham CE, Kaste SC, Niinimäki R, Mostoufi-Moab S, Alos N, Fintini D, Templeton KJ, Ward LM, Frey E, Franceschi R, Pavasovic V, Karol SE, Amin NL, Vrooman LM, Harila-Saari A, Demoor-Goldschmidt C, Murray RD, Bardi E, Lequin MH, Faienza MF, Zaikova O, Berger C, Mora S, Ness KK, Neggers SJCMM, Pluijm SMF, Simmons JH, Di Iorgi N

*“Bone mineral density surveillance for childhood, adolescent, and young adult cancer survivors: evidence-based recommendations from the International Late Effects of Childhood Cancer Guideline Harmonization Group”*

Lancet Diabetes Endocrinol. 2021 Sep;9(9):622-637. doi: 10.1016/S2213-8587(21)00173-X. Epub 2021 Jul 30. PMID: 34339631 Review

R.F. Bleckman, I. Acem, V.M. van Praag, D.M.J. Dorleijn, C. Verhoef, Y.M. Schrage, R.M.L. Haas, M.A.J. van de Sande, G. The Collaborative Persarc Research Group

*“Multimodality treatment of undifferentiated pleomorphic soft tissue sarcoma of the extremity (eUPS) in the elderly”*

Eur. J. Surg. Oncol. (2021)







## Orthopaedic traumatology



### Group Leader

Jan Erik Madsen, Professor, Dept. of Orthopaedics (j.e.madsen@medisin.uio.no)/  
Consultant, Orthopaedic Trauma, OUH (UXJMAD@ous-hf.no)

### Group Members

- Geir Andreassen, Consultant
- Tone Bere, Research Coordinator, PhD
- Jan Egil Brattgjerd, PhD
- John Clarke- Jenssen, Consultant PhD
- Sigbjørn Dimmen, Consultant, PhD
- Martine Enger, Consultant, PhD
- Wender Figved, Consultant, PhD
- Tore Fjalestad, Consultant, PhD
- Gunnar Flugsrud, Consultant, PhD
- Frede Frihagen, Consultant, PhD
- Johan Hellund, Consultant, PhD
- Elisabeth Ellingsen Husebye, Consultant, PhD
- Kjetil Hvaal, Consultant, PhD
- Lene Solberg, Consultant, PhD
- Endre Søreide, Consultant, PhD
- Jan Erik Madsen, Professor UiO / Consultant OUH
- Lars Nordsletten, Professor UiO / Consultant OUH
- Olav Røise, Professor UiO / Consultant OUH
- Harald Steen, Professor OsloMet

### Research profile and aims

The Orthopaedic Trauma Research Group aims to initiate and conduct clinical and experimental trials at a high international level related to Orthopaedic Trauma. 15–25 continuously ongoing PhD projects, mainly externally financed, provide the main scientific production. Local and national registries on pelvic fractures, hip fractures and polytrauma are major contributors to high quality clinical studies.

### Ongoing projects

- “Does the trochanteric stabilizing plate increase stability in trochanteric hip fractures?”  
Carl Erik Alm
- “Reversed arthroplasty in the treatment of proximal humerus fractures. Randomized controlled trial and evaluation of glenoid component migration by RSA”  
Alexander Fraser
- “Surgical treatment of the distal radius fracture”  
Ola-Lars Hammer





- “Conservative versus operative treatment of distal radius fractures”  
Sondre Hassellund
- “Complex fractures around the elbow”  
Kristin Jørgensen
- “Primary and secondary total hip arthroplasty following acetabular fractures”  
Ragnhild Kirkebø
- “Fracture- dislocations of the elbow”  
Kaare Midtgaard
- “Operative treatment of proximal humerus fractures with RTSA - long term results”  
Henrik Nagelhus
- “Treatment of Charcot neuropathy of the foot”  
Fredrik Nilsen
- “Advances in diagnosis and treatment of unstable, acute Lisfranc injury”  
Magnus Poulsen
- “Proximal hamstring avulsions – prognosis and treatment”  
Anne Mari Rosenlund
- “Non-operative versus operative treatment of suprasyndesmotic ankle fractures”  
Ola Saatvedt
- “Incidence, classification, and follow-up of acromioclavicular joint injuries”  
Stein Arve Skjaker
- “Biomechanics of the unstable ankle fracture”  
Ingrid Kvello Stake
- “Road traffic injuries at a large referral hospital in Malawi: elucidating strategies for prevention”  
Mads Sundet
- “Function and complications in hip fractures”  
Stian Svenøy
- “The effect of salmon bone meal on bone healing in rats”  
Ole Tomelthy
- “Surgical treatment and complications in fractures of the distal radius”  
John Williksen





## Most important national and international collaborators

### National

- Akerhus University Hospital (AHUS)
- Asker & Bærum Hospital
- Institute for Surgical Research, OUH
- Gjøvik Hospital
- Lovisenberg Diaconal Hospital
- Norwegian School of Sport Sciences
- Sunnaas Rehabilitation Hospital
- The Norwegian Arthroplasty Register
- Østfold Hospital Health Authority

### International

- University of Tampere, Finland
- Aarhus University Hospital, Denmark
- AO Trauma / Orthopaedic Trauma Association classification committee
- New Royal Adelaide Hospital, Australia
- Sahlgrenska University Hospital, Gothenburg, Sweden
- Steadman Philippon Research Institute, Colorado, USA
- Uppsala University Hospital, Sweden

## Scientific production of the research group in 2021

### PhD dissertation:

Jan Egil Brattgjerd:

*«Biomechanics of locking plates in femoral neck fixation»*

January 18 2021, video conference

Martine Enger:

*«The epidemiology of shoulder injuries in the general population. Clinical diagnosis of acute rotator cuff tears»*

April 27, 2021, video conference

Are Stødle:

"Acute Lisfranc Injuries: Epidemiology, diagnostic challenges and treatment"

August 31, 2021, video conference

Lise Benedikte Wendt Ræder:

*«Ankle fractures with associated syndesmotic injuries»*

September 30, 2021, video conference





**Peer reviewed original research articles: 31**

**Invited lectures at international congresses: Numerous**

**Selected publications:**

Fraser AN, Boe B, Fjalestad T, Madsen JE, Rohrl SM.

*“Stable glenoid component of reverse total shoulder arthroplasty at 2 years as measured with model-based radiostereometric analysis (RSA)”*

Acta Orthop. 2021;92(6):644-50.

<https://www.ncbi.nlm.nih.gov/pubmed/34196600>

Hassellund SS, Williksen JH, Laane MM, Pripp A, Rosales CP, Karlsen O, et al.

*“Cast immobilization is non-inferior to volar locking plates in relation to QuickDASH after one year in patients aged 65 years and older: a randomized controlled trial of displaced distal radius fractures”*

Bone Joint J. 2021;103-B(2):247-55.

<https://www.ncbi.nlm.nih.gov/pubmed/33517725>

Ingstad F, Solberg LB, Nordsletten L, Thorsby PM, Hestnes I, Frihagen F.

*“Vitamin D status and complications, readmissions, and mortality after hip fracture”*

Osteoporos Int. 2021;32(5):873-81.

<https://www.ncbi.nlm.nih.gov/pubmed/33201249>

### Funding

- South-Eastern Norway Regional Health Authority
- UiO
- OUH
- Endowment and funds





## Oslo Sports Trauma Research Center - OSTRC



### Group Leaders

Lars Engebretsen, Professor, UiO (lars.engebretsen@medisin.uio.no), MD/PhD



Roald Bahr (Co-chair) Professor, NIH (roald.bahr@nih.no), MD/PhD

### Group Members

- Ingar Holme, Professor, OSTRC/NIH
- Grethe Myklebust, PT/PhD, Professor, OSTRC/NIH
- Tron Krosshaug, MSc/PhD, Professor, OSTRC/NIH
- Thor Einar Andersen, MD/PhD, Professor, OSTRC
- Morten Wang Fagerland, PhD, Associate Professor
- Kathrin Steffen, MSc/PhD, Research Scientist, OSTRC
- Asbjørn Årøen, MD/PhD, Professor, Ahus
- Håvard Moksnes, PT/PhD, Research Scientist, OSTRC/Olympiatoppen
- Agnethe Nilstad, PT/PhD
- Ben Clarsen, PT/PhD, Research Scientist, OSTRC
- Sverre Løken, MD/PhD, OUH
- Robert LaPrade, MD/PhD, Twin Cities Orthopaedics, Edina-Eagan, Minnesota
- Truls Straume-Næsheim, MD/PhD, Ahus
- Rune B Jakobsen, MD/PhD, Ahus
- Aasne Fenne Hoksrud, MD/PhD, Olympiatoppen
- Hilde Moseby Berge, MD/PhD, Research Scientist OSTRC/Olympiatoppen
- Tonje Reier-Nilsen, MD/PhD, Olympiatoppen
- John Bjørneboe, MD/PhD, OUH
- Cathrine N Engen Eftang, MD/PhD, Ahus
- Håvard Visnes, MD/PhD, Sørlande sykehus
- Cathrine Aga, MD/PhD, Martina Hansens Hospital
- Christine Holm Moseid, MD/PhD, Research Scientist, OSTRC
- Stian Sandmo, MD/PhD, Vestre Viken Hospital Trust
- Gilbert Moatshe, MD/PhD, OUH
- Guri R Ekås, MD/PhD, Ahus
- Per-Henrik Randsborg MD/PhD
- Svend Ulstein MD/PhD, Ahus
- Sophie Steenstrup PT/PhD
- Arnlaug Wangensteen, PT/PhD
- Joar Harøy, PT/PhD
- Marc Jacob Strauss, MD/PhD fellow, OUH
- Christopher Skazalski, PT/PhD fellow, Aspetar
- Katherine Wang, Stud.med., UiO





### Group Members (continued)

- Stian Kjennevoll, MD/PhD fellow, Ahus
- Cecilie B Isnern, MD/PhD fellow, OUH, Ahus
- Torstein Dalen-Lorentsen, PhD fellow, OSTRC
- Hilde Fredriksen, PT/PhD fellow, OSTRC
- Nils F Holm Moseid, MD/PhD fellow, OSTRC
- Eirik Halvorsen Wik, PT/PhD fellow, Aspetar
- Markus Vagle, PhD fellow, Univ. Sørøst-Norge
- Anine Nordstrøm, MD/PhD fellow, Sykehuset Innlandet HF
- Dustin Nabhan, PhD fellow, OSTRC
- Roar Amundsen, PhD fellow, OSTRC
- Solveig Thorarinsdottir, PT/PhD fellow, OSTRC
- Lena Bache-Mathiesen, PhD fellow, OSTRC
- Hege Grindem, PT/PhD, Research Scientist, OSTRC
- Merete Møller, PT/PhD, Research Scientist, OSTRC
- Julie Stang, PhD, Research Scientist, NIH
- Trine Stensrud, PhD, Professor NIH
- Andreas Persson, MD/PhD, Martina Hansens Hospital
- Solveig Hausken, MSc, Research Scientist
- Lasse Mausehund, MSc/PT, PhD fellow
- Christian Moen, MSc/PT, Research assistant
- Emilie Scholten Sjølie, MSc/PT, Research assistant
- Caroline Kooy Tveiten, MD/PhD fellow

### Associated group members

- Tone Øritsland, MSc/Research coordinator, OSTRC
- Kaja Funnemark, PT/MSc, OSTRC
- Hege Heiestad, PT/MSc, OSTRC
- Emilie Bratt Jakhelln, MSc, OSTRC

### Research profile and aims

The Oslo Sports Trauma Research Center was established in May 2000 at the Norwegian School of Sport Sciences as a joint research venture between the Department of Orthopaedic Surgery (Oslo University Hospital), and the Department of Sports Medicine (Norwegian School of Sport Sciences). The aim is to prevent injuries and other health problems in sports through research on risk factors, injury mechanisms and prevention methods, with a particular emphasis on football, team handball and alpine skiing/snowboarding. In addition to primary injury prevention research, our cartilage and ligament research group is focused on secondary prevention, i.e. surgical and nonsurgical treatment options to prevent future osteoarthritis.

The goal of the center is to strengthen Norwegian health research by providing a catalyst for innovation among highly-ranked researchers and delivering superior research training and mentorship. The emphasis is not only on the production of new knowledge, but also the translation of research findings into improvements in the health of Norwegians and the Norwegian health care system.





## Ongoing projects

In 2021 the Oslo Sports Trauma Research Center has published 85 articles in international journals with peer review. 17 master's students have defended their master's degrees and 3 PhD students have defended their dissertation. By the end of 2021 the Center had 83 ongoing projects, 4 accepted and 14 submitted articles. In addition, 28 projects were in the planning stage and 7 projects were temporarily on hold. You can find a complete list of projects in the Center's annual rapport for 2021.

## Most important national and international collaborators

### National

- The Norwegian Olympic and paralympic committee and confederation of sports

### International

- Steadman Philippon Research Institute, Vail, US
- International Olympic Committee (IOC)
- International Ski Federation
- Federation Internationale de Football Association
- Federation Internationale de Volleyball
- Aspetar, Doha, Qatar

## Scientific production of the research group in 2021

**Peer reviewed original research articles: 85**

**Other publications: 15**

**Invited lectures at international congresses/webinar: 63**

### Doctoral thesis:

Dalen-Lorentsen, Torstein.

Training load and health problems in football: More complex than we first thought? Norges idrettshøgskole 2021 (ISBN 978-82-502-0597-0)

Fredriksen, Hilde.

Prevention of shoulder injuries in handball - the challenge of implementation of preventive measures. Norges idrettshøgskole 2021 (ISBN 978-82-502-0591-8)

Wik, Eirik Halvorsen.

Injuries in elite male youth football and athletics: Growth and maturation as potential risk factors. Norges Idrettshøgskole 2021 (ISBN 978-82-502-0592-5)





### Selected publications:

Berg, Bjørnar; Roos, Ewa M.; Kise, Nina Jullum; Engebretsen, Lars; Holm, Inger; Risberg, May Arna.  
*“Muscle strength and osteoarthritis progression after surgery or exercise for degenerative meniscal tears - secondary analyses of a randomized trial”*  
Arthritis care & research 2022; 74(1), 70-78. E-pub 2021

Martin, Richard Kyle; Ekås, Guri R.; Saltyte Benth, Jurate; Kennedy, Nicholas I.; Moatshe, Gilbert; Krych, Aaron J.; Engebretsen, Lars.  
*“Change in posterior tibial slope in skeletally immature patients with anterior cruciate ligament injury - a case series with a mean 9 years’ follow-up”*  
American Journal of Sports Medicine 2021; 49(5), 1244-1250

Martin, Richard Kyle; Wastvedt, Solvejg; Pareek, Ayoosh; Persson, Andreas; Visnes, Håvard; Fenstad, Anne Marie; Moatshe, Gilbert; Wolfson, Julian; Engebretsen, Lars.  
*“Predicting anterior cruciate ligament reconstruction revision - a machine learning analysis utilizing the Norwegian knee ligament register. Journal of bone and joint surgery”*  
American volume 2022; 104(2), 145-153. E-pub 2021

### Funding

- Norwegian Ministry of Culture
- The Research Council of Norway
- International Olympic Committee
- Norwegian Olympic and Paralympic Committee and Confederation of Sports
- International Ski Federation
- Norwegian School of Sport Sciences
- Smith & Nephew
- The Savings Bank Foundation DNB
- EU (Erasmus+ via University of Zagreb)
- Fysiofondet
- Various grants from other sources







## Research group SPINE



### Group Leader

Christian Hellum, MD/PhD, Dept of Orthopaedics (chrhel@ous-hf.no)

### Group Members

- Thomas Kibsgård, MD/PhD
- Jon Dahl, MD/PhD
- Kjetil Kivle, MD, PhD-cand
- Ellen Aksnes, MD
- Roger Trana, MD
- Ole Rasmus Robak, MD
- Mads Peder Rolfsen, MD, PhD-cand
- Torstein Schrøder-Aasen, MD/PhD
- Engelke Randers, MD, PhD-cand
- Filip Dolatowski, MD, PhD

### Associate Group Members

- Kjersti Storheim, Professor
- Jens Ivar Brox, Professor
- Kari Indrekvam, Professor
- Oliver Grundnes, MD/PhD
- Tore Solberg, MD/PhD
- Britt Stuge, Physical therapist, PhD
- Inger Holm, Professor
- Ragnhild Molland, PhD-cand
- Ivar Austevoll, MD, PhD-cand
- Håvard Furunes, MD, PhD-cand
- Erland Hermansen, MD, PhD-cand
- Frode Rekeland, MD, PhD-cand
- Stephan Röhrl MD/PhD
- Vinjar Myklevold MD
- Anvar Masoud MD/PhD
- Hasan Banitalebi MD
- Karianne Gammelsrud MD/PhD
- Sverre Mjønes MD

### Research profile and aims

The main intention of the group is to promote clinical spine research.





## Ongoing projects

### National multicentre studies and PhD:

- **NORDSTEN-study** – clinical trials comparing the efficacy of different surgical methods for spinal stenosis and degenerative spondylolisthesis and spinal stenosis. Most hospitals in Norway performing spine surgery participate, including orthopaedic and neurosurgical departments. Christian Hellum is the leader of the scientific committee. He has been the supervisor of Ivar Austevoll and co-supervisor for Frode Rekeland and Hasan Banitalebi.
- **Modic study** – started in May 2015 (financed by NFR, The Western Norway Regional Health Authority and Central Norway Regional Health Authority, and including 3 doctoral students ). This is a double-blind clinical trial evaluating the effectiveness of antibiotics in selected patients with back pain and altered endplate morphology. Main outcomes published in 2019. Furthermore a biopsy study on patients with Modic changes was planned in 2016, and started in 2018. Mads Peder Rolfsen is a PhD candidate in this project, supervised by Christian Hellum. AHUS, Stavanger University Hospital and Haukeland University Hospital participate in the biopsy study. This collaboration also include the department of Microbiology by Karianne Gammelsrud, Pathology and Medical Genetics at Oslo University Hospital.
- A study on patients with chronic low back pain is in planning comparing non surgical treatment with fusion surgery. Sverre Mjønes is the PhD candidate supervised by Christian Hellum and Philip Dolotowski. This is a multicenter study in collaboration with Haukeland University Hospital and AHUS.
- **SIFSO study** – (Sacrollilac Fusion vs Sham Operation) The inclusion was finalized in october 2021. This is a double blinded randomized controlled trial comparing sacroiliac joint fusion vs sham surgery. Engelke Randers is the PhD candidate and the project is supervised by Britt Stuge, Stephan Røhrl and Lars Nordsletten. This is a collaboration with prof. Gerdhem in Karolinska Hospital in Stockholm, Sweden.
- **Improving the diagnostic accuracy, reproducibility and clinical usefulness of MRI and X-ray in patients with lumbar spinal stenosis (Data from the NORDSTEN-study)**  
PhD student Hasan Banitalebi  
Supervisor: Anne Negård, Christian Hellum, Anvar Masoud  
Status: Protocol in planning

### Other studies and PhD:

- “Physical activity, motor function, lung function and quality of life in children with early onset scoliosis treated with non-fusion spine correction”  
PhD student: Ragnhild Molland, physical therapist  
Supervisors: Thomas Kibsgård, Jens Ivar Brox, Britt Stuge, Inger Holm  
Status: One article published and data collection finished. Second paper written but not submitted.
- “Sacroiliac joint fusion for treatment of sacroiliac pain”  
PhD student: Engelke Randers, resident  
Supervisors: Britt Stuge, Stephan Røhrl and Lars Nordsletten  
Status: Study started
- “The gluteal muscles in severe osteoarthritis of the hip”  
PhD student: Kjetil Kivle, consultant  
Supervisors: Lars Nordsletten, Svein Svenningsen  
Status: One article published, two articles about to be written





- “Scoliosis in patients with cerebral palasy”  
PhD student: Sven Vinje  
Supervisors: Thomas Johan Kibsgård, Terje Terjesen, Reidun Jahnsen  
Status: Study started
- “Indications and Treatment of Adult Kypho- Scoliosis” (INTRAKS Study)  
PhD student: Vinjar Myklevold  
Supervisors: Stephan Röhrh, Christian Hellum  
Status: study started

#### Manuscripts in preparation:

- “Health Related Quality of Life and Physical Activity after Early Onset Scoliosis Surgeries”  
R.S. Molland, B. Stuge, I. Holm, J.I. Brox, R. B. Riise, T.J. Kibsgard
- Further planning of a study on Stemcells and bony healing in patients operated on with fusion in collaboration with Valdemar Karlsson, Skien Hospital
- In planning of thoracolumbar fracture study, OUH, Orthopaedic department
- “Scoliosis in patients with cerebral palasy” T.J. Kibsgård, T. Terjesen, R. Jahnsen
- “Active Straight Leg Raise range test as a tool to diagnose Sacroiliac joint pain” D. Kools, E. Randers, T. J. Kibsgård
- “New insights in the prevalence of scoliosis and musculoskeletal asymmetries in adolescents with esophageal atresia” U.I. Møinichen, A. Mikkelsen, R. Gunderson, T.J. Kibsgård, L. Mørkrid, H. IJsselstjin, R. Emblem

### Most important national and international collaborators

#### National

- NORDSTEN and MODIC studies/Biopsy study of Modic changes, include most spine surgical departments and out patient clinic in phys med & rehab, and some spine out patient clinics (reuma in Norway). Further Radiological departments at OUH, AHUS and Haukeland University Hospital, Departments of Microbiology, Pathology and Medical Genetics, OUH
- Thomas Natvik, Haukeland University Hospital, derformity register
- Erik Aunan, Lillehammer
- SIMEG (Sacro iliac medical expert group); leader Thomas Kibsgård
- The Norwegian Registry for spine surgery

#### International

- Helena Brisby, Dept. of Orthopaedics, Sahlgrenska University Hospital, Sweden
- Bungo Otsuki, Kyoto Nakagyo Ward, Japan
- Paul Gerhem, Karolinska sjukhuset, Stockholm, Sweden
- Fredrik Stromqvist, Orthopaedic dept., Skåne University Hospital, Sweden





## Scientific production of the research group in 2021

Peer reviewed original research articles: 6

### Selected publications:

*“Decompression with or without Fusion in Degenerative Lumbar Spondylolisthesis”*

Austevoll IM, Hermansen E, Fagerland MW, Storheim K, Brox JI, Solberg T, Rekeland F, Franssen E, Weber C, Brisby H, Grundnes O, Algaard KRH, Böker T, Banitalebi H, Indrekvam K, Hellum C; NORDSTEN-DS Investigators. N Engl J Med. 2021 Aug 5;385(6):526-538. doi: 10.1056/NEJMoa2100990.PMID: 34347953 Clinical Trial.

*“Oedema on STIR modified the effect of amoxicillin as treatment for chronic low back pain with Modic changes-subgroup analysis of a randomized trial”*

Kristoffersen PM, Bråten LCH, Vetti N, Grøvle L, Hellum C, Storheim K, Zwart JA, Assmus J, Espeland A. Eur Radiol. 2021 Jun;31(6):4285-4297. doi: 10.1007/s00330-020-07542-w. Epub 2020 Nov 27.

*“Criteria for failure and worsening after surgery for lumbar spinal stenosis: a prospective national spine registry observational study”*

Alhaug OK, Dolatowski FC, Solberg TK, Lønne G. Spine J. 2021 Sep;21(9):1489-1496. doi: 10.1016/j.spinee.2021.04.008. Epub 2021 Apr 17.

### Funding

- South-Eastern Norway Regional Health Authority
- Western Norway Regional Health Authority
- Central Norway Regional Health Authority
- Sophies Minde Foundation





## Research in rheumatological diseases – Diakonhjemmet Hospital



### Group Leader

Espen A. Haavardsholm, Professor in Rheumatology, UiO, Head of Research and Innovation, Diakonhjemmet Hospital, and center director REMEDY (Center for treatment of Rheumatic and Musculoskeletal Diseases)  
(e.a.haavardsholm@medisin.uio.no)

### Group Members

- Hilde Berner Hammer, Professor/consultant, MD
- Till Uhlig, Professor/consultant, MD
- Tore Kvien, Professor emeritus/MD
- Siri Lillegraven, Senior researcher, Head of clinical research unit, MD
- Sella Provan, Professor/consultant, MD
- Anne Grete Semb, Senior researcher, MD (cardiologist)
- Ingvild Kjeklen, Professor/OT
- Hanne Dagfinnrud, Professor/PT
- Ida K Haugen, Senior researcher, MD
- Silje Syversen, Senior researcher/consultant, MD
- Guro Løvik Goll, Senior researcher/consultant, MD
- Marte Schrumf Heiberg, Senior researcher/consultant, MD
- Anna Birgitte Aga, Postdoctoral fellow/consultant, MD
- Nina Sundlisæter, Postdoctoral fellow/MD
- Eirik Klami Kristianslund, Postdoctoral fellow/MD
- Karen Fagerli, Postdoctoral fellow/MD
- Silvia Rollefstad, Postdoctoral fellow/MD
- Alexander Mathiessen, Postdoctoral fellow/MD
- Inger Jorid Berg, Postdoctoral fellow/MD
- Ulf Sundin, Postdoctoral fellow/MD
- Lena Nordberg, Postdoctoral fellow/MD
- Pernille Steen Pettersen, Postdoctoral fellow/MD
- Rikke Moe, Researcher/PT
- Numerous PhD fellows

### Research profile and aims

The research group's main interests are inflammatory joint disease and hand osteoarthritis. The focus is on development and evaluation of novel treatment and treatment strategies. In addition, the group aims to expand the knowledge of the disease and treatment associated outcomes.

The research aim is to improve the lives of people with rheumatic diseases through innovative, patient-centered research. The vision is to conduct patient-centered research to advance clinical practice. Through high-quality clinical trials, that evaluate the effect of personalized treatment strategies, novel





drugs, surgical procedures, intra-articular injections and non-pharmacological interventions, the research group looks to improve patient care and treatment outcomes.

## Ongoing projects

- NOR-DRUM study (Therapeutic drug monitoring RCT)
- NOR-DMARD study (longitudinal follow-up after drug intervention)
- ARCTIC-REWIND (Drug tapering in RA, RCT)
- The Norwegian part of NORD-STAR (first-line treatment of RA, RCT)
- NOR-GOUT (longitudinal study on gout patients)
- ATACC-RA (cardiovascular risk in RA)
- SURF-RA (cardiovascular risk in RA and related diseases)
- NORA
- NOKAR-project (Prevention of cardiovascular disease in RA)
- NOR-CACTUS (comparing treatment strategies for Carpal Tunnel Syndrome)
- MERINO (first-line treatment of Hand osteoarthritis)
- Nor-vaC
- RIMRA
- ARCTIC-FORWARD
- NOR-SPRINT
- ReMonit
- NOR-CACTUS
- Post-hoc analyses from many observational and RCT studies

## Most important national and international collaborators

### National

- All rheumatological departments

### International

- Prof. Daniel H. Solomon, Boston, USA
- Prof. Desiree van der Heijde, Leiden, Netherlands
- Prof. Johan Askling, Stockholm, Sweden
- Prof. Ronald F. van Vollenhoven, Amsterdam, Netherlands
- Prof. Merete Lund Hetland, Copenhagen, Denmark
- Prof. Mikkel Østergaard, Copenhagen, Denmark
- MD, PhD Lene Terslev, Copenhagen, Denmark
- Prof. Nicola Dalbeth, Auckland, New Zealand

## Funding

- Southern and Eastern Norway Regional Health Authority
- The Research Council of Norway
- KLINBEFORSK





## Scientific production of the research group in 2021

### Dissertations:

Ulf Sundin; " *Magnetic resonance imaging in early rheumatoid arthritis – Evaluation of treatment response and prediction of future disease course*"

Øystein Maugesten; " *Fluorescence Optical Imaging in Hand Osteoarthritis*"

Pernille Steen Pettersen; " *Pain sensitization in hand osteoarthritis*"

### Peer reviewed original research articles: 66

#### Selected publications:

Syversen SW, Goll GL, Jørgensen KK, Sandanger Ø, Sexton J, Olsen IC, Gehin JE, Warren DJ, Brun MK, Klaasen RA, Karlsen LN, Noraberg G, Zettel C, Ljoså MKA, Haugen AJ, Njålla RJ, Bruun TJ, Seeberg KA, Michelsen B, Strand EK, Skorpe S, Blomgren IM, Bragnes YH, Dotterud CK, Thune T, Ystrøm CM, Torp R, Mielnik P, Mørk C, Kvien TK, Jahnsen J, Bolstad N, **Haavardsholm EA.J**

" *Effect of Therapeutic Drug Monitoring vs Standard Therapy During Infliximab Induction on Disease Remission in Patients With Chronic Immune-Mediated Inflammatory Diseases: A Randomized Clinical Trial*"

JAMA. 2021 May 4;325(17):1744-1754. doi: 10.1001/jama.2021.4172.

Lillegraven S, Paulshus Sundlisæter N, Aga AB, Sexton J, Olsen IC, Fremstad H, Spada C, Madland TM, Høili CA, Bakland G, Lexberg Å, Hansen IJW, Hansen IM, Haukeland H, Ljoså MA, Moholt E, Uhlig T, Solomon DH, van der Heijde D, Kvien TK, **Haavardsholm EA.**

" *Effect of Half-Dose vs Stable-Dose Conventional Synthetic Disease-Modifying Antirheumatic Drugs on Disease Flares in Patients With Rheumatoid Arthritis in Remission: The ARCTIC REWIND Randomized Clinical Trial*"

JAMA. 2021 May 4;325(17):1755-1764. doi: 10.1001/jama.2021.4542.

Syversen SW, Jørgensen KK, Goll GL, Brun MK, Sandanger Ø, Bjørlykke KH, Sexton J, Olsen IC, Gehin JE, Warren DJ, Klaasen RA, Noraberg G, Bruun TJ, Dotterud CK, Ljoså MKA, Haugen AJ, Njålla RJ, Zettel C, Ystrøm CM, Bragnes YH, Skorpe S, Thune T, Seeberg KA, Michelsen B, Blomgren IM, Strand EK, Mielnik P, Torp R, Mørk C, Kvien TK, Jahnsen J, Bolstad N, **Haavardsholm EA.**

" *Effect of Therapeutic Drug Monitoring vs Standard Therapy During Maintenance Infliximab Therapy on Disease Control in Patients With Immune-Mediated Inflammatory Diseases: A Randomized Clinical Trial*"

JAMA. 2021 Dec 21;326(23):2375-2384. doi: 10.1001/jama.2021.21316.





## Publication list OPK research groups 2021

### (original articles or review articles)

Abdelrahman T, **Moatshe G**, Arendt E, Feller J, Getgood A (2021)

**Combined Medial Patellofemoral Ligament and Medial Patellotibial Ligament Reconstruction for Recurrent Lateral Patellar Dislocation in Flexion**

Arthrosc Tech, 10 (2), e385-e395

DOI [10.1016/j.eats.2020.10.017](https://doi.org/10.1016/j.eats.2020.10.017), PubMed [33680770](https://pubmed.ncbi.nlm.nih.gov/33680770/)

Alhaug OK, **Dolatowski FC**, Solberg TK, Lønne G (2021)

**Criteria for failure and worsening after surgery for lumbar spinal stenosis: a prospective national spine registry observational study**

Spine J, 21 (9), 1489-1496

DOI [10.1016/j.spinee.2021.04.008](https://doi.org/10.1016/j.spinee.2021.04.008), PubMed [33848690](https://pubmed.ncbi.nlm.nih.gov/33848690/)

Alizai H, **Engebretsen L**, Jarraya M, Roemer FW, Guermazi A (2021)

**Wrist injuries detected on magnetic resonance imaging in athletes participating in the Rio de Janeiro 2016 Summer Olympic Games**

Quant Imaging Med Surg, 11 (7), 3244-3251

DOI [10.21037/qims-20-1121](https://doi.org/10.21037/qims-20-1121), PubMed [34249650](https://pubmed.ncbi.nlm.nih.gov/34249650/)

**Alm CE**, Frihagen F, Dybvik E, Matre K, **Madsen JE**, Gjertsen JE (2021)

**Implants for trochanteric fractures in Norway: the role of the trochanteric stabilizing plate-a study on 20,902 fractures from the Norwegian hip fracture register 2011-2017**

J Orthop Surg Res, 16 (1), 26

DOI [10.1186/s13018-020-02163-x](https://doi.org/10.1186/s13018-020-02163-x), PubMed [33413527](https://pubmed.ncbi.nlm.nih.gov/33413527/)

**Alm CE**, Gjertsen JE, Basso T, Matre K, **Rörhl S**, **Madsen JE**, Frihagen F (2021)

**Trochanteric stabilizing plate in the treatment of trochanteric fractures: a scoping review**

Acta Orthop, 92 (6), 733-738

DOI [10.1080/17453674.2021.1954305](https://doi.org/10.1080/17453674.2021.1954305), PubMed [34296661](https://pubmed.ncbi.nlm.nih.gov/34296661/)

**Berg B**, Roos EM, Kise NJ, **Engebretsen L**, **Holm I**, **Risberg MA** (2021)

**On a Trajectory for Success-9 in Every 10 People With a Degenerative Meniscus Tear Have Improved Knee Function Within 2 Years After Treatment: A Secondary Exploratory Analysis of a Randomized Controlled Trial**

J Orthop Sports Phys Ther, 51 (6), 289-297

DOI [10.2519/jospt.2021.10025](https://doi.org/10.2519/jospt.2021.10025), PubMed [33971735](https://pubmed.ncbi.nlm.nih.gov/33971735/)

Bjørge PA, Tveter AT, **Steen H**, Gunderson R, **Horn J** (2021)

**Femoral lengthening might impair physical function and lead to structural changes in adjacent joints: 10 patients with 27 to 34 years' follow-up**

Acta Orthop, 92 (3), 329-334

DOI [10.1080/17453674.2020.1866864](https://doi.org/10.1080/17453674.2020.1866864), PubMed [33410356](https://pubmed.ncbi.nlm.nih.gov/33410356/)







**Brattgjerd JE, Niratisairak S, Steen H, Strømsøe K (2021)**  
**Intermediate Dynamic Compression and Decreased Posterior Tilt With Interlocked Pins in Femoral Neck Fixation in Synthetic Bone**

J Biomech Eng, 143 (7)

DOI [10.1115/1.4050282](https://doi.org/10.1115/1.4050282), PubMed [33625486](https://pubmed.ncbi.nlm.nih.gov/33625486/)

**Brattgjerd JE, Niratisairak S, Steen H, Strømsøe K (2021)**  
**Interlocked Pins Increase Strength by a Lateral Spread of Load in Femoral Neck Fixation: a Cadaver Study**

Acta Chir Orthop Traumatol Cech, 88 (2), 144-152

PubMed [33960928](https://pubmed.ncbi.nlm.nih.gov/33960928/)

Bredrup C, Cristea I, Safieh LA, Di Maria E, Gjertsen BT, Tveit KS, **Thu F**, Bull N, Edward DP, Hennekam RCM, Høvdning G, Haugen OH, Houge G, Rødahl E, Bruland O (2021)

**Temperature-dependent autoactivation associated with clinical variability of PDGFRB Asn666 substitutions**

Hum Mol Genet, 30 (1), 72-77

DOI [10.1093/hmg/ddab014](https://doi.org/10.1093/hmg/ddab014), PubMed [33450762](https://pubmed.ncbi.nlm.nih.gov/33450762/)

Brækken IH, **Stuge B**, Tveter AT, Bø K (2021)

**Reliability, validity and responsiveness of pelvic floor muscle surface electromyography and manometry**

Int Urogynecol J, 32 (12), 3267-3274

DOI [10.1007/s00192-021-04881-0](https://doi.org/10.1007/s00192-021-04881-0), PubMed [34142181](https://pubmed.ncbi.nlm.nih.gov/34142181/)

Cong H, Liu H, Sun Y, Gao J, Liu J, Ma L, **Stuge B**, Chen L (2021)

**Cross-cultural adaptation, reliability, and validity of a Chinese version of the pelvic girdle questionnaire**

BMC Pregnancy Childbirth, 21 (1), 470

DOI [10.1186/s12884-021-03962-8](https://doi.org/10.1186/s12884-021-03962-8), PubMed [34193061](https://pubmed.ncbi.nlm.nih.gov/34193061/)

Dakhil S, Thingstad P, **Frihagen F**, Johnsen LG, Lydersen S, Skovlund E, Wyller TB, Sletvold O, Saltvedt I, Watne LO (2021)

**Orthogeriatrics prevents functional decline in hip fracture patients: report from two randomized controlled trials**

BMC Geriatr, 21 (1), 208

DOI [10.1186/s12877-021-02152-7](https://doi.org/10.1186/s12877-021-02152-7), PubMed [33765935](https://pubmed.ncbi.nlm.nih.gov/33765935/)

DePhillipo NN, Dean RS, **Engebretsen L**, Larson CM, Monson J, LaPrade RF (2021)

**High incidence of acute self-reported sleep disturbances in patients following arthroscopic-assisted knee surgery**

J ISAKOS, 6 (5), 259-264

DOI [10.1136/jisakos-2020-000594](https://doi.org/10.1136/jisakos-2020-000594), PubMed [34272330](https://pubmed.ncbi.nlm.nih.gov/34272330/)





Eikrem M, Brannsten H, Bjørkøy D, Lian T, **Madsen JE**, Figved W (2021)

**Volar Locking Plate Versus Dorsal Locking Nail-Plate Fixation for Dorsally Displaced Unstable Extra-Articular Distal Radial Fractures: Functional and Radiographic Results from a Randomized Controlled Trial**

JB JS Open Access, 6 (4)

DOI [10.2106/JBJS.OA.21.00068](https://doi.org/10.2106/JBJS.OA.21.00068), PubMed [34651093](https://pubmed.ncbi.nlm.nih.gov/34651093/)

Ernst G, Watne LO, **Frihagen F**, Wyller TB, Dominik A, Rostrup M (2021)

**Low Heart Rate Variability Predicts Stroke and Other Complications in the First Six Postoperative Months After a Hip Fracture Operation**

Front Cardiovasc Med, 8, 640970

DOI [10.3389/fcvm.2021.640970](https://doi.org/10.3389/fcvm.2021.640970), PubMed [33829048](https://pubmed.ncbi.nlm.nih.gov/33829048/)

Finstad J, **Røise O**, Rosseland LA, Clausen T, Havnes IA (2021)

**Discharge from the trauma centre: exposure to opioids, unmet information needs and lack of follow up-a qualitative study among physical trauma survivors**

Scand J Trauma Resusc Emerg Med, 29 (1), 121

DOI [10.1186/s13049-021-00938-7](https://doi.org/10.1186/s13049-021-00938-7), PubMed [34419130](https://pubmed.ncbi.nlm.nih.gov/34419130/)

Fraser AN, **Bøe B**, Fjalestad T, Madsen JE, Röhrl SM (2021)

**Stable glenoid component of reverse total shoulder arthroplasty at 2 years as measured with model-based radiostereometric analysis (RSA)**

Acta Orthop, 92 (6), 644-650

DOI [10.1080/17453674.2021.1943932](https://doi.org/10.1080/17453674.2021.1943932), PubMed [34196600](https://pubmed.ncbi.nlm.nih.gov/34196600/)

Garratt AM, Furunes H, **Hellum C**, Solberg T, Brox JI, Storheim K, Johnsen LG (2021)

**Evaluation of the EQ-5D-3L and 5L versions in low back pain patients**

Health Qual Life Outcomes, 19 (1), 155

DOI [10.1186/s12955-021-01792-y](https://doi.org/10.1186/s12955-021-01792-y), PubMed [34049574](https://pubmed.ncbi.nlm.nih.gov/34049574/)

Golijanin P, Peebles L, Arner JW, Douglass B, Peebles A, Rider D, Ninkovic S, **Midtgaard K**, Provencher MT (2021)

**Advanced 3-Dimensional Characterization of Hill-Sachs Lesions in 100 Anterior Shoulder Instability Patients**

Arthroscopy, 37 (11), 3255-3261

DOI [10.1016/j.arthro.2021.05.015](https://doi.org/10.1016/j.arthro.2021.05.015), PubMed [34052369](https://pubmed.ncbi.nlm.nih.gov/34052369/)

Grasso M, O'Neill C, Constantinescu D, **Moatshe G**, Vap A (2021)

**Reconstruction of Chronic Proximal Hamstring Tear: Description of a Surgical Technique**

Arthrosc Tech, 10 (5), e1307-e1313

DOI [10.1016/j.eats.2021.01.028](https://doi.org/10.1016/j.eats.2021.01.028), PubMed [34141546](https://pubmed.ncbi.nlm.nih.gov/34141546/)

Halsey M, Dolan LA, Hostin RA, **Adobor RD**, Dayer R, Dema E, Letaif OB (2021)

**Scoliosis Research Society survey: brace management in adolescent idiopathic scoliosis**

Spine Deform, 9 (3), 697-702

DOI [10.1007/s43390-020-00265-4](https://doi.org/10.1007/s43390-020-00265-4), PubMed [33580371](https://pubmed.ncbi.nlm.nih.gov/33580371/)





**Hassellund S, Zolic-Karlsson Z, Williksen JH, Husby T, Madsen JE, Frihagen F (2021)**

**Surgical treatment is not cost-effective compared to nonoperative treatment for displaced distal radius fractures in patients 65 years and over**

Bone Jt Open, 2 (12), 1027-1034

DOI [10.1302/2633-1462.212.BJO-2021-0108.R1](https://doi.org/10.1302/2633-1462.212.BJO-2021-0108.R1), PubMed [34856811](https://pubmed.ncbi.nlm.nih.gov/34856811/)

**Hassellund SS, Williksen JH, Laane MM, Pripp A, Rosales CP, Karlsten Ø, Madsen JE, Frihagen F (2021)**  
**Cast immobilization is non-inferior to volar locking plates in relation to QuickDASH after one year in patients aged 65 years and older: a randomized controlled trial of displaced distal radius fractures**

Bone Joint J, 103-B (2), 247-255

DOI [10.1302/0301-620X.103B2.BJJ-2020-0192.R2](https://doi.org/10.1302/0301-620X.103B2.BJJ-2020-0192.R2), PubMed [33517725](https://pubmed.ncbi.nlm.nih.gov/33517725/)

**Henjum K, Godang K, Quist-Paulsen E, Idland AV, Neerland BE, Sandvig H, Brugård A, Raeder J, Frihagen F, Wyller TB, Hassel B, Bollerslev J, Watne LO (2021)**

**Cerebrospinal fluid catecholamines in delirium and dementia**

Brain Commun, 3 (3), fcab121

DOI [10.1093/braincomms/fcab121](https://doi.org/10.1093/braincomms/fcab121), PubMed [34423298](https://pubmed.ncbi.nlm.nih.gov/34423298/)

**Horn J, Rasmussen H, Bukholm IRK, Røise O, Terjesen T (2021)**

**Compensation claims in pediatric orthopedics in Norway between 2012 and 2018: a nationwide study of 487 patients**

Acta Orthop, 92 (5), 615-620

DOI [10.1080/17453674.2021.1932922](https://doi.org/10.1080/17453674.2021.1932922), PubMed [34082661](https://pubmed.ncbi.nlm.nih.gov/34082661/)

**Huhnstock S, Stromme H, Horn J (2021)**

**Monteggia fractures in children: a rapid review of injury mechanisms, diagnosis and treatment**

Minerva Orthop., 72 (1), 59-70

DOI [10.23736/S0394-3410.20.04054-0](https://doi.org/10.23736/S0394-3410.20.04054-0)

**Huhnstock S, Wiig O, Merckoll E, Svenningsen S, Terjesen T (2021)**

**The modified Stulberg classification is a strong predictor of the radiological outcome 20 years after the diagnosis of Perthes' disease**

Bone Joint J, 103-B (12), 1815-1820

DOI [10.1302/0301-620X.103B12.BJJ-2021-0515.R1](https://doi.org/10.1302/0301-620X.103B12.BJJ-2021-0515.R1), PubMed [34847712](https://pubmed.ncbi.nlm.nih.gov/34847712/)

**Jarraya M, Roemer FW, Engebretsen L, Kompel AJ, Small KM, Smith SE, Guermazi A (2021)**

**Association of markers of patellofemoral maltracking to cartilage damage and bone marrow lesions on MRI: Data from the 2016 Olympic Games of Rio De Janeiro**

Eur J Radiol Open, 8, 100381

DOI [10.1016/j.ejro.2021.100381](https://doi.org/10.1016/j.ejro.2021.100381), PubMed [34660850](https://pubmed.ncbi.nlm.nih.gov/34660850/)

**Kivle K, Lindland ES, Mjaaland KE, Svenningsen S, Nordsletten L (2021)**

**Gluteal atrophy and fatty infiltration in end-stage osteoarthritis of the hip: a case-control study**

Bone Jt Open, 2 (1), 40-47

DOI [10.1302/2633-1462.21.BJO-2020-0179.R1](https://doi.org/10.1302/2633-1462.21.BJO-2020-0179.R1), PubMed [33537675](https://pubmed.ncbi.nlm.nih.gov/33537675/)





Kompel A, Haran PH, Murakami AM, **Engebretsen L**, Jarraya M, Roemer F, Guermazi A (2021)  
**MRI-Detected Knee Ligament Sprains and Associated Internal Derangement in Athletes Competing at the Rio de Janeiro 2016 Summer Olympics**

Open Access J Sports Med, 12, 23-32

DOI [10.2147/OAJSM.S292763](https://doi.org/10.2147/OAJSM.S292763), PubMed [33727869](https://pubmed.ncbi.nlm.nih.gov/33727869/)

Larsen SM, Ramstad K, **Terjesen T** (2021)

**Hip pain in adolescents with cerebral palsy: a population-based longitudinal study**

Dev Med Child Neurol, 63 (5), 601-607

DOI [10.1111/dmcn.14782](https://doi.org/10.1111/dmcn.14782), PubMed [33393085](https://pubmed.ncbi.nlm.nih.gov/33393085/)

Larsen SM, **Terjesen T**, Jahnsen RB, Ramstad K (2021)

**Recurrent pain in adolescents with cerebral palsy: a longitudinal population-based study**

Dev Med Child Neurol, 64 (3), 357-363

DOI [10.1111/dmcn.15040](https://doi.org/10.1111/dmcn.15040), PubMed [34448501](https://pubmed.ncbi.nlm.nih.gov/34448501/)

Leta TH, Gjertsen JE, Dale H, Hallan G, Lygre SHL, Fenstad AM, Dyrhovden GS, **Westberg M**, Wik TS, Jakobsen RB, Aamodt A, **Röhrli SM**, Gøthesen ØJ, Lindalen E, Heir S, Ludvigsen J, Bruun T, Hansen AK, Aune KEM, Warholm M, Skjetne JP, Badawy M, Høvdning P, Husby OS, Karlsen ØE et al. (2021)

**Antibiotic-Loaded Bone Cement in Prevention of Periprosthetic Joint Infections in Primary Total Knee Arthroplasty: A Register-based Multicentre Randomised Controlled Non-inferiority Trial (ALBA trial)**

BMJ Open, 11 (1), e041096

DOI [10.1136/bmjopen-2020-041096](https://doi.org/10.1136/bmjopen-2020-041096), PubMed [33509845](https://pubmed.ncbi.nlm.nih.gov/33509845/)

Martin RK, Ekås GR, Benth J, Kennedy N, **Moatshe G**, Krych AJ, **Engebretsen L** (2021)

**Change in Posterior Tibial Slope in Skeletally Immature Patients With Anterior Cruciate Ligament Injury: A Case Series With a Mean 9 Years' Follow-up**

Am J Sports Med, 49 (5), 1244-1250

DOI [10.1177/0363546521997097](https://doi.org/10.1177/0363546521997097), PubMed [33683924](https://pubmed.ncbi.nlm.nih.gov/33683924/)

Martin RK, Persson A, **Moatshe G**, Fenstad AM, **Engebretsen L**, Drogset JO, Visnes H (2021)

**Low annual hospital volume of anterior cruciate ligament reconstruction is not associated with higher revision rates**

Knee Surg Sports Traumatol Arthrosc, 30 (5), 1575-1583

DOI [10.1007/s00167-021-06655-z](https://doi.org/10.1007/s00167-021-06655-z), PubMed [34236479](https://pubmed.ncbi.nlm.nih.gov/34236479/)

**Midtgaard KS**, Frihagen F, Dornan GJ, Coucheron M, Fossåen C, Grundel D, Gundersen C, Kristoffersen S, Sundqvist E, Wünsche L, **Madsen JE**, **Flugsrud GB** (2021)

**Predicting secondary surgery after operative fixation of olecranon fractures: a model using data from 800 patients**

JSES Int, 5 (5), 948-953

DOI [10.1016/j.jseint.2021.04.014](https://doi.org/10.1016/j.jseint.2021.04.014), PubMed [34505111](https://pubmed.ncbi.nlm.nih.gov/34505111/)

**Midtgaard KS**, Nolte PC, Miles JW, Tanghe KK, Douglass BW, Peebles LA, Provencher MT (2021)

**Pullout Strength of All-Suture and Metallic Anchors in Repair of Lateral Collateral Ligament Injuries of the Elbow**

Arthroscopy, 37 (9), 2800-2806

DOI [10.1016/j.arthro.2021.05.060](https://doi.org/10.1016/j.arthro.2021.05.060), PubMed [34126221](https://pubmed.ncbi.nlm.nih.gov/34126221/)





Moatshe G, Floyd ER, Martin RK, **Engebretsen L**, LaPrade RF (2021)

**Emerging Topics in ACL Graft Selection: Best Evidence for the Use of Quadriceps Tendon Graft**

Oper. Tech. Sports Med., 29 (2), 150835

DOI [10.1016/j.otsm.2021.150835](https://doi.org/10.1016/j.otsm.2021.150835)

Moksnes H, Ardern CL, Kvist J, **Engebretsen L**, **Risberg MA**, Myklebust G, Grindem H (2021)

**Assessing implementation, limited efficacy, and acceptability of the BEAST tool: A rehabilitation and return-to-sport decision tool for nonprofessional athletes with anterior cruciate ligament reconstruction**

Phys Ther Sport, 52, 147-154

DOI [10.1016/j.ptsp.2021.08.011](https://doi.org/10.1016/j.ptsp.2021.08.011), PubMed [34492443](https://pubmed.ncbi.nlm.nih.gov/34492443/)

Mouton C, Moksnes H, Janssen R, Fink C, Zaffagnini S, Monllau JC, Ekås G, **Engebretsen L**, Seil R (2021)

**Preliminary experience of an international orthopaedic registry: the ESSKA Paediatric Anterior Cruciate Ligament Initiative (PAMI) registry**

J Exp Orthop, 8 (1), 45

DOI [10.1186/s40634-021-00366-7](https://doi.org/10.1186/s40634-021-00366-7), PubMed [34173077](https://pubmed.ncbi.nlm.nih.gov/34173077/)

Nolte PC, Elrick BP, Arner JW, Ridley TJ, Woolson TE, Tross AK, **Midtgaard KS**, Millett PJ (2021)

**Total Shoulder Arthroplasty After Previous Arthroscopic Surgery for Glenohumeral Osteoarthritis: A Case-Control Matched Cohort Study**

Am J Sports Med, 49 (7), 1839-1846

DOI [10.1177/03635465211006479](https://doi.org/10.1177/03635465211006479), PubMed [33914650](https://pubmed.ncbi.nlm.nih.gov/33914650/)

Nolte PC, Ruzbarsky JJ, Elrick BP, Woolson T, **Midtgaard KS**, Millett PJ (2021)

**Mid-Term Outcomes of Arthroscopically-Assisted Anatomic Coracoclavicular Ligament Reconstruction Using Tendon Allograft for High-Grade Acromioclavicular Joint Dislocations**

Arthroscopy, 37 (10), 3025-3035

DOI [10.1016/j.arthro.2021.04.035](https://doi.org/10.1016/j.arthro.2021.04.035), PubMed [33940129](https://pubmed.ncbi.nlm.nih.gov/33940129/)

Nolte PC, Ruzbarsky JJ, **Midtgaard KS**, Tanghe KK, Elrick BP, Douglass BW, Brady AW, Millett PJ (2021)

**Quantitative and Qualitative Surgical Anatomy of the Acromioclavicular Joint Capsule and Ligament: A Cadaveric Study**

Am J Sports Med, 49 (5), 1183-1191

DOI [10.1177/0363546521995504](https://doi.org/10.1177/0363546521995504), PubMed [33667133](https://pubmed.ncbi.nlm.nih.gov/33667133/)

Pedersen M, Grindem H, **Berg B**, Gunderson R, **Engebretsen L**, Axe MJ, Snyder-Mackler L, **Risberg MA** (2021)

**Low Rates of Radiographic Knee Osteoarthritis 5 Years After ACL Reconstruction or Rehabilitation Alone: The Delaware-Oslo ACL Cohort Study**

Orthop J Sports Med, 9 (8), 23259671211027530

DOI [10.1177/23259671211027530](https://doi.org/10.1177/23259671211027530), PubMed [34423060](https://pubmed.ncbi.nlm.nih.gov/34423060/)

Pedersen M, Grindem H, Johnson JL, **Engebretsen L**, Axe MJ, Snyder-Mackler L, **Risberg MA** (2021)

**Clinical, Functional, and Physical Activity Outcomes 5 Years Following the Treatment Algorithm of the Delaware-Oslo ACL Cohort Study**

J Bone Joint Surg Am, 103 (16), 1473-1481

DOI [10.2106/JBJS.20.01731](https://doi.org/10.2106/JBJS.20.01731), PubMed [33999877](https://pubmed.ncbi.nlm.nih.gov/33999877/)





**Reigstad O, Holm-Glad T, Dovland P, Korslund J, Grimsgaard C, Thorkildsen RD, Røkkum M (2021)**  
**Progressing arthrosis and a high conversion rate 11 (4-19) years after four corner fusion**

J Plast Surg Hand Surg, 55 (6), 354-360

DOI [10.1080/2000656X.2021.1898970](https://doi.org/10.1080/2000656X.2021.1898970), PubMed [33733991](https://pubmed.ncbi.nlm.nih.gov/33733991/)

Rognsvåg T, Lindberg MF, Lerdal A, Stubberud J, Furnes O, **Holm I**, Indrekvam K, Lau B, Rudsengen D, Skou ST, Badawy M (2021)

**Development of an internet-delivered cognitive behavioral therapy program for use in combination with exercise therapy and education by patients at increased risk of chronic pain following total knee arthroplasty**

BMC Health Serv Res, 21 (1), 1151

DOI [10.1186/s12913-021-07177-7](https://doi.org/10.1186/s12913-021-07177-7), PubMed [34696785](https://pubmed.ncbi.nlm.nih.gov/34696785/)

Ræder BW, Andersen MR, **Madsen JE**, Jacobsen SB, Frihagen F, Figved W (2021)

**Prognostic value of the Haraguchi classification in posterior malleolar fractures in A0 44-C type ankle fractures**

Injury, 52 (10), 3150-3155

DOI [10.1016/j.injury.2021.07.038](https://doi.org/10.1016/j.injury.2021.07.038), PubMed [34362561](https://pubmed.ncbi.nlm.nih.gov/34362561/)

**Schmidt M, Enger M, Pripp AH, Nordsletten L, Moosmayer S, Melhuus K, Brox JI (2021)**

**Interrater reliability of physical examination tests in the acute phase of shoulder injuries**

BMC Musculoskelet Disord, 22 (1), 770

DOI [10.1186/s12891-021-04659-x](https://doi.org/10.1186/s12891-021-04659-x), PubMed [34503466](https://pubmed.ncbi.nlm.nih.gov/34503466/)

Skaaret I, **Steen H**, Niratisairak S, Swanson D, **Holm I** (2021)

**Postoperative changes in vertical ground reaction forces, walking barefoot and with ankle-foot orthoses in children with Cerebral Palsy**

Clin Biomech (Bristol, Avon), 84, 105336

DOI [10.1016/j.clinbiomech.2021.105336](https://doi.org/10.1016/j.clinbiomech.2021.105336), PubMed [33848706](https://pubmed.ncbi.nlm.nih.gov/33848706/)

**Sletten IN, Røkkum M, Winge MI (2021)**

**Outcome After Pollicization for Congenital Thumb Deficiency: A Cohort Study of Cases in a Single Unit, 1987 to 2016**

J Hand Surg Am, 47 (5), 479.e1-479.e9

DOI [10.1016/j.jhsa.2021.05.023](https://doi.org/10.1016/j.jhsa.2021.05.023), PubMed [34274210](https://pubmed.ncbi.nlm.nih.gov/34274210/)

Stensdotter AK, Håland A, Ytterhus B, Shrestha S, **Stuge B** (2021)

**Pregnant women's experiences with a pelvic floor muscle training program in Nepal**

Glob Health Action, 14 (1), 1940762

DOI [10.1080/16549716.2021.1940762](https://doi.org/10.1080/16549716.2021.1940762), PubMed [34382496](https://pubmed.ncbi.nlm.nih.gov/34382496/)

Stenseth OMR, Barli SF, Martin RK, **Engebretsen L** (2021)

**Injuries in elite women's ski jumping: a cohort study following three International Ski Federation (FIS) World Cup seasons from 2017-2018 to 2019-2020**

Br J Sports Med, 56 (1), 35-40

DOI [10.1136/bjsports-2021-104198](https://doi.org/10.1136/bjsports-2021-104198), PubMed [34893472](https://pubmed.ncbi.nlm.nih.gov/34893472/)





**Strauss M, Kennedy ML, Brady A, Moatshe G, Chahla J, LaPrade RF, Lind M, Engebretsen L (2021)**  
**Qualitative and Quantitative Anatomy of the Human Quadriceps Tendon in Young Cadaveric Specimens**

Orthop J Sports Med, 9 (9), 23259671211037305  
DOI [10.1177/23259671211037305](https://doi.org/10.1177/23259671211037305), PubMed [34541017](https://pubmed.ncbi.nlm.nih.gov/34541017/)

**Strauss MJ, Miles JW, Kennedy ML, Dornan GJ, Moatshe G, Lind M, Engebretsen L, LaPrade RF (2021)**  
**Full thickness quadriceps tendon grafts with bone had similar material properties to bone-patellar tendon-bone and a four-strand semitendinosus grafts: a biomechanical study**

Knee Surg Sports Traumatol Arthrosc, 30 (5), 1786-1794  
DOI [10.1007/s00167-021-06738-x](https://doi.org/10.1007/s00167-021-06738-x), PubMed [34591124](https://pubmed.ncbi.nlm.nih.gov/34591124/)

**Stødle AH, Hvaal KH, Brøgger H, Madsen JE, Husebye EE (2021)**  
**Outcome after nonoperative treatment of stable Lisfranc injuries. A prospective cohort study**

Foot Ankle Surg, 28 (2), 245-250  
DOI [10.1016/j.fas.2021.03.017](https://doi.org/10.1016/j.fas.2021.03.017), PubMed [33832813](https://pubmed.ncbi.nlm.nih.gov/33832813/)

**Sundet M, Mulima G, Kajombo C, Gjerde H, Christophersen AS, Madsen JE, Young S (2021)**  
**Geographical mapping of road traffic injuries in Lilongwe, Malawi**

Injury, 52 (4), 806-813  
DOI [10.1016/j.injury.2021.02.028](https://doi.org/10.1016/j.injury.2021.02.028), PubMed [33712299](https://pubmed.ncbi.nlm.nih.gov/33712299/)

**Tallay E, Lindberg SK, Lee-Ødegård S, Bjordal J, Fraser AN, Madsen JE, Fjalestad T (2021)**  
**External validity in a multicenter randomized clinical trial of proximal humeral fractures: the DelPhi trial**

Eur J Orthop Surg Traumatol, 32 (2), 317-323  
DOI [10.1007/s00590-021-02982-6](https://doi.org/10.1007/s00590-021-02982-6), PubMed [33880653](https://pubmed.ncbi.nlm.nih.gov/33880653/)

**Teatini A, Kumar RP, Elle OJ, Wiig O (2021)**  
**Mixed reality as a novel tool for diagnostic and surgical navigation in orthopaedics**

Int J Comput Assist Radiol Surg, 16 (3), 407-414  
DOI [10.1007/s11548-020-02302-z](https://doi.org/10.1007/s11548-020-02302-z), PubMed [33555563](https://pubmed.ncbi.nlm.nih.gov/33555563/)

**Terjesen T, Horn J (2021)**  
**The Femoral Head-Shaft Angle Is Not a Predictor of Hip Displacement in Children Under 5 Years With Cerebral Palsy: A Population-based Study of Children at GMFCS Levels III-V**

J Pediatr Orthop, 41 (8), e659-e663  
DOI [10.1097/BPO.0000000000001875](https://doi.org/10.1097/BPO.0000000000001875), PubMed [34101699](https://pubmed.ncbi.nlm.nih.gov/34101699/)

**van Atteveld JE, Mulder RL, van den Heuvel-Eibrink MM, Hudson MM, Kremer LCM, Skinner R, Wallace WH, Constine LS, Higham CE, Kaste SC, Niinimäki R, Mostoufi-Moab S, Alos N, Fintini D, Templeton KJ, Ward LM, Frey E, Franceschi R, Pavasovic V, Karol SE, Amin NL, Vrooman LM, Harila-Saari A, Demoor-Goldschmidt C, Murray RD et al. (2021)**

**Bone mineral density surveillance for childhood, adolescent, and young adult cancer survivors: evidence-based recommendations from the International Late Effects of Childhood Cancer Guideline Harmonization Group**

Lancet Diabetes Endocrinol, 9 (9), 622-637  
DOI [10.1016/S2213-8587\(21\)00173-X](https://doi.org/10.1016/S2213-8587(21)00173-X), PubMed [34339631](https://pubmed.ncbi.nlm.nih.gov/34339631/)





Vopat ML, Hermanns CA, **Midtgaard KS**, Baker J, Coda RG, Cheema SG, Tarakemeh A, Peebles L, Vopat BG, Provencher MT (2021)

**Imaging Modalities for the Glenoid Track in Recurrent Shoulder Instability: A Systematic Review**

Orthop J Sports Med, 9 (6), 23259671211006750

DOI [10.1177/23259671211006750](https://doi.org/10.1177/23259671211006750), PubMed [34159209](https://pubmed.ncbi.nlm.nih.gov/34159209/)

**Winge MI, Røkkum M** (2021)

**Satisfying Clinical and Functional Results in 12 Apert Children Treated With Soft Tissue Distractor**

J Pediatr Orthop, 41 (5), 312-318

DOI [10.1097/BPO.0000000000001785](https://doi.org/10.1097/BPO.0000000000001785), PubMed [33710128](https://pubmed.ncbi.nlm.nih.gov/33710128/)

Øhrn FD, Lian ØB, Tsukanaka M, **Röhrli SM** (2021)

**Early migration of a medially stabilized total knee arthroplasty : a radiostereometric analysis study up to two years**

Bone Jt Open, 2 (9), 737-744

DOI [10.1302/2633-1462.29.BJO-2021-0115.R1](https://doi.org/10.1302/2633-1462.29.BJO-2021-0115.R1), PubMed [34493056](https://pubmed.ncbi.nlm.nih.gov/34493056/)

Øiestad BE, Juhl CB, Culvenor AG, **Berg B**, Thorlund JB (2021)

**Knee extensor muscle weakness is a risk factor for the development of knee osteoarthritis: an updated systematic review and meta-analysis including 46 819 men and women**

Br J Sports Med, 56 (6), 349-355

DOI [10.1136/bjsports-2021-104861](https://doi.org/10.1136/bjsports-2021-104861), PubMed [34916210](https://pubmed.ncbi.nlm.nih.gov/34916210/)

Aaen J, Austevoll IM, **Hellum C**, Storheim K, Myklebust TÅ, Banitalebi H, Anvar M, Brox JI, Weber C, Solberg T, Grundnes O, Brisby H, Indrekvam K, Hermansen E (2021)

**Clinical and MRI findings in lumbar spinal stenosis: baseline data from the NORDSTEN study**

Eur Spine J

DOI [10.1007/s00586-021-07051-4](https://doi.org/10.1007/s00586-021-07051-4), PubMed [34797405](https://pubmed.ncbi.nlm.nih.gov/34797405/)







## Publication list Diakonhjemmet Hospital 2021

The cost savings of biosimilars can help increase patient access and lift the financial burden of health care systems.

**Kvien TK**, Patel K, Strand V. *Semin Arthritis Rheum.* 2022 Feb;52:151939. doi: 10.1016/j.semarthrit.2021.11.009. Epub 2021 Dec 30. PMID: 35027243 **Free article.** Review.

[Humoral and cellular immune responses to two and three doses of SARS-CoV-2 vaccines in rituximab-treated patients with rheumatoid arthritis: a prospective, cohort study.](#)

Jyssum I, Kared H, Tran TT, Tveter AT, Provan SA, Sexton J, Jørgensen KK, Jahnsen J, Kro GB, Warren DJ, Vaage EB, **Kvien TK**, Nissen-Meyer LH, Anderson AM, Grødeland G, **Haavardsholm EA**, Vaage JT, Mjaaland S, Syversen SW, Lund-Johansen F, Munthe LA, Goll GL. *Lancet Rheumatol.* 2022 Mar;4(3):e177-e187. doi: 10.1016/S2665-9913(21)00394-5. Epub 2021 Dec 23. PMID: 34977602 **Free PMC article.**

[Effect of Therapeutic Drug Monitoring vs Standard Therapy During Maintenance Infliximab Therapy on Disease Control in Patients With Immune-Mediated Inflammatory Diseases: A Randomized Clinical Trial.](#)

Syversen SW, Jørgensen KK, Goll GL, Brun MK, Sandanger Ø, Bjørlykke KH, Sexton J, Olsen IC, Gehin JE, Warren DJ, Klaasen RA, Noraberg G, Bruun TJ, Dotterud CK, Ljoså MKA, Haugen AJ, Njålla RJ, Zettel C, Ystrøm CM, Bragnes YH, Skorpe S, Thune T, Seeberg KA, Michelsen B, Blomgren IM, Strand EK, Mielnik P, Torp R, Mørk C, **Kvien TK**, Jahnsen J, Bolstad N, **Haavardsholm EA**. *JAMA.* 2021 Dec 21;326(23):2375-2384. doi: 10.1001/jama.2021.21316. PMID: 34932077 Clinical Trial.

[Neuropathic pain in the IMI-APPROACH knee osteoarthritis cohort: prevalence and phenotyping.](#)

van Helvoort EM, Welsing PMJ, Jansen MP, Gielis WP, Loef M, Kloppenburg M, Blanco F, **Haugen IK**, Berenbaum F, Bay-Jensen AC, Ladel C, Lalande A, Larkin J, Loughlin J, Mobasher A, Weinans H, Lafeber F, Eijkelkamp N, Mastbergen S. *RMD Open.* 2021 Dec;7(3):e002025. doi: 10.1136/rmdopen-2021-002025. PMID: 34911812 **Free PMC article.**

[Serum etanercept concentrations in relation to disease activity and treatment response assessed by ultrasound, biomarkers and clinical disease activity scores: results from a prospective observational study of patients with rheumatoid arthritis.](#)

Gehin JE, Syversen SW, Warren DJ, Goll GL, Sexton J, Bolstad N, **Hammer HB**. *RMD Open.* 2021 Dec;7(3):e001985. doi: 10.1136/rmdopen-2021-001985. PMID: 34911811 **Free PMC article.**

[EULAR points to consider for the use of imaging to guide interventional procedures in patients with rheumatic and musculoskeletal diseases \(RMDs\).](#)

Dejaco C, Machado PM, Carubbi F, Bosch P, Terslev L, Tamborrini G, Sconfienza LM, Scirè CA, Ruetten S, van Rompay J, Proft F, Pitzalis C, Obradov M, Moe RH, Mascarenhas VV, Malattia C, Klauser AS, Kent A, Jans L, Hartung W, **Hammer HB**, Duftner C, Balint PV, Alunno A, Baraliakos X. *Ann Rheum Dis.* 2022 Jun;81(6):760-767. doi: 10.1136/annrheumdis-2021-221261. Epub 2021 Dec 10. PMID: 34893469 **Free article.**





[Persistent pulmonary pathology after COVID-19 is associated with high viral load, weak antibody response, and high levels of matrix metalloproteinase-9.](#)

Lerum TV, Maltzahn NN, Aukrust P, Trøseid M, Henriksen KN, Kåsine T, Dyrhol-Riise AM, Stiksrud B, Haugli M, Blomberg B, Kittang BR, Johannessen A, Hannula R, Aballi S, Kildal AB, Eiken R, Dahl TB, Lund-Johansen F, Müller F, Rodriguez JR, Meltzer C, Einvik G, Ueland T, Olsen IC; NOR-SOLIDARITY Consortium, Barratt-Due A, Aaløkken TM, Skjønberg OH. *Sci Rep.* 2021 Dec 1;11(1):23205. doi: 10.1038/s41598-021-02547-x. PMID: 34853380 **Free PMC article.** Clinical Trial.

[Development and validation of a patient-reported outcome measure for systemic sclerosis: the EULAR Systemic Sclerosis Impact of Disease \(Scleroid\) questionnaire.](#)

Becker MO, Dobrota R, Garaiman A, Debelak R, Fligelstone K, Tyrrell Kennedy A, Roennow A, Allanore Y, Carreira PE, Czirják L, Denton CP, Hesselstrand R, Sandqvist G, Kowal-Bielecka O, Bruni C, Matucci-Cerinic M, Mihai C, Gheorghiu AM, Mueller-Ladner U, Sexton J, **Kvien TK**, Heiberg T, Distler O. *Ann Rheum Dis.* 2022 Apr;81(4):507-515. doi: 10.1136/annrheumdis-2021-220702. Epub 2021 Nov 25. PMID: 34824049

[Fatigue Is Not Associated With Objective Assessments of Inflammation During Tocilizumab Treatment of Patients With Rheumatoid Arthritis.](#)

**Hammer HB**, Agular B, Terslev L. *ACR Open Rheumatol.* 2022 Mar;4(3):202-208. doi: 10.1002/acr2.11379. Epub 2021 Nov 21. PMID: 34806341 **Free PMC article.**

[Blood chemokine levels are markers of disease activity but not predictors of remission in early rheumatoid arthritis.](#)

Aldridge J, Lundell AC, Andersson K, Mark L, Lund Hetland M, Østergaard M, **Uhlig T**, Schrupf Heiberg M, **Haavardsholm EA**, Nurmohamed M, Lampa J, Nordström D, Hørslev-Petersen K, Gudbjornsson B, Gröndal G, van Vollenhoven R, Rudin A. *Clin Exp Rheumatol.* 2021 Nov 3. doi: 10.55563/clinexprheumatol/idogmj. Online ahead of print. PMID: 34796837

[The EFSUMB Guidelines and Recommendations for Musculoskeletal Ultrasound - Part II: Joint Pathologies, Pediatric Applications, and Guided Procedures.](#)

Naredo E, Rodriguez-Garcia SC, Terslev L, Martinoli C, Klauser A, Hartung W, **Hammer HB**, Cantisani V, Zaottini F, Vlad V, Uson J, Todorov P, Tesch C, Sudoł-Szopińska I, Simoni P, Serban O, Sconfienza LM, Sala-Blanch X, Plagou A, Picasso R, Özçakar L, Najm A, Möller I, Micu M, Mendoza-Cembranos D, Mandl P, Malattia C, Lenghel M, Kessler J, Iohom G, de la Fuente J, D'Agostino MA, Collado P, Bueno A, Bong D, Alfageme F, Bilous D, Gutiu R, Marian A, Pelea M, Fodor D. *Ultraschall Med.* 2021 Nov 3. doi: 10.1055/a-1640-9183. Online ahead of print. PMID: 34734404 English.

[Comparison of 2 Postoperative Therapy Regimens After Trapeziectomy Due to Osteoarthritis: A Randomized, Controlled Trial.](#)

Hermann-Eriksen M, Nilsen T, Hove Å, Eilertsen L, **Haugen IK**, Sexton J, Kjekken I. *J Hand Surg Am.* 2022 Feb;47(2):120-129.e4. doi: 10.1016/j.jhsa.2021.08.015. Epub 2021 Oct 12. PMID: 34649742 Clinical Trial. PURPOSE: The main aim of the present study was to evaluate whether early mobilization after trapeziectomy in the first carpometacarpal joint is noninferior to a postoperative regimen comprising the use of a rigid orthosis and mobilization after 6 weeks, with regards ...





### Serious infections in patients with rheumatoid arthritis and psoriatic arthritis treated with tumour necrosis factor inhibitors: data from register linkage of the NOR-DMARD study.

Christensen IE, Lillegraven S, Mielnik P, Bakland G, Loli L, Sexton J, **Uhlig T, Kvien TK**, Provan SA. *Ann Rheum Dis.* 2022 Mar;81(3):398-401. doi: 10.1136/annrheumdis-2021-221007. Epub 2021 Oct 8. PMID: 34625404 **Free PMC article.**

The risk of SIs in patients with RA and PsA was compared using adjusted Cox-regression models. RESULTS: A total of 3169 TNFi treatment courses (RA/PsA: 1778/1391) were identified in 2359 patients. ...The crude IRs for SIs were 4.17 (95% CI 3.52 to 4.95) in patients with RA ...

### Associations between joint pathologies and central sensitization in persons with hand osteoarthritis: results from the Nor-Hand study.

Steen Pettersen P, Neogi T, Magnusson K, **Mathiessen A, Hammer HB, Uhlig T, Kvien TK, Haugen IK.** *Rheumatology (Oxford).* 2021 Sep 24;keab708. doi: 10.1093/rheumatology/keab708. Online ahead of print. PMID: 34559196

No associations were found for symptom duration. CONCLUSIONS: A person's overall amount of structural or inflammatory hand OA pathologies does not appear to drive central sensitization. ...

### Half-Dose vs Stable-Dose Conventional Synthetic Disease-Modifying Antirheumatic Drugs and Disease Flare in Patients With Rheumatoid Arthritis-Reply.

Lillegraven S, Paulshus Sundlisæter N, **Haavardsholm EA.** *JAMA.* 2021 Sep 7;326(9):873. doi: 10.1001/jama.2021.10651. PMID: 34547085 No abstract available.

### Therapeutic Drug Monitoring vs Standard Therapy During Infliximab Induction in Patients With Chronic Immune-Mediated Inflammatory Diseases-Reply.

Syversen SW, Bolstad N, **Haavardsholm EA.** *JAMA.* 2021 Sep 21;326(11):1069-1070. doi: 10.1001/jama.2021.11480. PMID: 34546304 No abstract available.

### Core outcome measurement instrument selection for physical function in hand osteoarthritis using the OMERACT Filter 2.1 process.

Kroon FPB, van der Heijde D, Maxwell LJ, Beaton DE, Abishek A, Berenbaum F, Blanco FJ, Conaghan PG, Dziedzic K, Hill CL, **Haugen IK**, Ishimori M, Ritschl V, Stamm TA, Wittoek R, Kloppenburg M. *Semin Arthritis Rheum.* 2021 Dec;51(6):1311-1319. doi: 10.1016/j.semarthrit.2021.08.014. Epub 2021 Sep 16. PMID: 34538514

While AUSCAN may have better metric properties than MHQ, it received provisional endorsement as a second measure of function due to important feasibility issues. A research agenda to merit full endorsement was set....

### The EFSUMB Guidelines and Recommendations for Musculoskeletal Ultrasound - Part I: Extraarticular Pathologies.

Fodor D, Rodriguez-Garcia SC, Cantisani V, **Hammer HB**, Hartung W, Klauser A, Martinoli C, Terslev L, Alfageme F, Bong D, Bueno A, Collado P, D'Agostino MA, de la Fuente J, Iohom G, Kessler J, Lenghel M, Malattia C, Mandl P, Mendoza-Cembranos D, Micu M, Möller I, Najm A, Özçakar L, Picasso R, Plagou A, Sala-Blanch X, Sconfienza LM, Serban O, Simoni P, Sudoł-Szopińska I, Tesch C, Todorov P, Uson J, Vlad V, Zaottini F, Bilous D, Gutiu R, Pelea M, Marian A, Naredo E. *Ultraschall Med.* 2022 Feb;43(1):34-57. doi: 10.1055/a-1562-1455. Epub 2021 Sep 3. PMID: 34479372 English.

After an extensive literature review, the recommendations have been developed according to the Oxford Centre for Evidence-based Medicine and GRADE criteria and the consensus level was established through a Delphi process. The document is intended to guide clinical users in ...





### [Incidence, sociodemographic factors and treatment penetration of rheumatoid arthritis and psoriatic arthritis in Norway.](#)

Kerola AM, Sexton J, Wibetoe G, Rollefstad S, Crowson CS, Mars N, Kazemi A, **Haavardsholm EA**, **Kvien TK**, Semb AG. *Semin Arthritis Rheum.* 2021 Oct;51(5):1081-1088. doi: 10.1016/j.semarthrit.2021.08.006. Epub 2021 Aug 20. PMID: 34450506

Age- and sex-standardized incidences of RA and PsA were lower among persons with higher education levels. Within a year from the index date, 82.4/57.4% of RA/PsA patients used synthetic DMARDs while 9.4/9.5% used biologic DMARDs. ...

### [Urbanization and Knee Cartilage Growth Among Children and Adolescents in Western Kenya.](#)

Holowka NB, Wallace IJ, **Mathiessen A**, Mang'eni Ojiambo R, Okutoyi P, Worthington S, Lieberman DE. *ACR Open Rheumatol.* 2021 Nov;3(11):765-770. doi: 10.1002/acr2.11323. Epub 2021 Aug 27. PMID: 34448545 **Free PMC article.**

METHODS: Ultrasonography was used to measure knee cartilage thickness in 168 children and adolescents (aged 8-17 years) from two groups in western Kenya: a rural, physically active group from a small-scale farming community and an urban, less physically active group ...

### [Baseline clinical characteristics of predicted structural and pain progressors in the IMI-APPROACH knee OA cohort.](#)

van Helvoort EM, Ladel C, Mastbergen S, Kloppenburg M, Blanco FJ, **Haugen IK**, Berenbaum F, Bacardit J, Widera P, Welsing PMJ, Lafeber F. *RMD Open.* 2021 Aug;7(3):e001759. doi: 10.1136/rmdopen-2021-001759. PMID: 34426541 **Free PMC article.**

CONCLUSIONS: The baseline minJSW of the IMI-APPROACH participants contradicts the idea that the (predicted) course of knee OA follows a pattern of inertia, where patients who have progressed previously are more likely to display further progression. In contrast, for pain p ...

### [Neutrophil count predicts clinical outcome in hospitalized COVID-19 patients: Results from the NOR-Solidarity trial.](#)

Kåsine T, Dyrhol-Riise AM, Barratt-Due A, Kildal AB, Olsen IC, Nezvalova-Henriksen K, Lund-Johansen F, Hoel H, Holten AR, Tveita A, **Mathiessen A**, Haugli M, Eiken R, Berg Å, Johannessen A, Heggelund L, Dahl TB, Halvorsen B, Mielnik P, Le LAK, Thoresen L, Ernst G, Hoff DAL, Skudal H, Kittang BR, Olsen RB, Tholin B, Ystrøm CM, Skei NV, Hannula R, Dalgard O, Finbråten AK, Tonby K, Aballi S, Müller F, Mohn KG, Trøseid M, Aukrust P, Ueland T; NOR-Solidarity Study Group. *J Intern Med.* 2022 Feb;291(2):241-243. doi: 10.1111/joim.13377. Epub 2021 Oct 3. PMID: 34411368 **Free PMC article.**

### [Very low prevalence of ultrasound-detected tenosynovial abnormalities in healthy subjects throughout the age range: OMERACT ultrasound minimal disease study.](#)

Trickey J, Sahbudin I, Ammitzbøll-Danielsen M, Azzolin I, Borst C, Bortoluzzi A, Bruyn GA, Carron P, Ciurtin C, Filippou G, Fliciniński J, Fodor D, Gouze H, Gutierrez M, **Hammer HB**, Hauge EM, Iagnocco A, Ikeda K, Karalilova R, Keen HI, Kortekaas M, La Paglia G, Leon G, Mandl P, Maruseac M, Milchert M, Mortada MA, Naredo E, Ohrndorf S, Pineda C, Rasch MNB, Reátegui-Sokolova C, Sakellariou G, Serban T, Sifuentes-Cantú CA, Stoenoiu MS, Suzuki T, Terslev L, Tinazzi I, Vreju FA, Wittoek R, D'Agostino MA, Filer A. *Ann Rheum Dis.* 2022 Feb;81(2):232-236. doi: 10.1136/annrheumdis-2021-219931. Epub 2021 Aug 18. PMID: 34407928 **Free PMC article.**

A comparison cohort of patients with rheumatoid arthritis (RA) was taken from the Birmingham Early Arthritis early arthritis inception cohort. ...The majority of HS (85%) had grade 0 for TSH, TPD and TEF in all DF and ECU tendons examined. There was a statistically ...





### Sports with a Bat or Racket are Not Associated with Thumb-base Osteoarthritis.

Driban JB, Lo GH, Roberts MB, Harkey MS, Schaefer L, **Haugen IK**, Smith SE, Duryea J, Lu B, Eaton CB, Hochberg MC, Jackson RD, Kwok CK, Nevitt MC, McAlindon TE. *J Athl Train.* 2021 Aug 17. doi: 10.4085/1062-6050-0208.21. Online ahead of print. PMID: 34404092

CONTEXT: Repetitive joint use is a risk factor for osteoarthritis, which is a leading cause of disability.

...CONCLUSIONS: Within a community-based cohort, a self-reported history of participation in racket or bat sports was not associated with an incr ...

### Fatigue in patients with early rheumatoid arthritis undergoing treat-to-target therapy: predictors and response to treatment.

Holten K, Paulshus Sundlisater N, Lillegraven S, Sexton J, Nordberg LB, Moholt E, **Hammer HB**, **Uhlig T**, **Kvien TK**, **Haavardsholm EA**, Aga AB. *Ann Rheum Dis.* 2022 Mar;81(3):344-350. doi: 10.1136/annrheumdis-2021-220750. Epub 2021 Aug 13. PMID: 34389605 **Free PMC article.**

OBJECTIVES: Fatigue is a frequent symptom in rheumatoid arthritis (RA) and has high impact on quality of life. ...METHODS: Data were obtained from the treat-to-target, tight control Aiming for Remission in Rheumatoid Arthritis: a Randomised Trial Examining the Benef ...

...CONCLUSIONS: Within a community-based cohort, a self-reported history of participation in racket or bat sports was not associated with an incr ...

### Metabolic Syndrome and Osteoarthritis Distribution in the Hand Joints: A Propensity Score Matching Analysis From the Osteoarthritis Initiative.

Mohajer B, Kwee RM, Guermazi A, Berenbaum F, Wan M, Zhen G, Cao X, **Haugen IK**, Demehri S.J *Rheumatol.* 2021 Oct;48(10):1608-1615. doi: 10.3899/jrheum.210189. Epub 2021 Jun 15. PMID: 34329188

The erosive HOA phenotype and joints' nodal involvement were more frequent with MetS (OR 1.40, 95% CI 1.01-1.97 and OR 1.28, 95% CI 1.02-1.60, respectively). CONCLUSION: MetS, a potentially modifiable risk factor, is associated with radiographic DIP and PIP OA and longitud ...

### Plasma interferon-alpha is associated with double-positivity for autoantibodies but is not a predictor of remission in early rheumatoid arthritis-a spin-off study of the NORD-STAR randomized clinical trial.

Stockfelt M, Lundell AC, Hetland ML, Østergaard M, **Uhlig T**, Heiberg MS, **Haavardsholm EA**, Nurmohamed MT, Lampa J, Nordström D, Petersen KH, Gudbjornsson B, Gröndal G, Aldridge J, Andersson K, Blennow K, Zetterberg H, van Vollenhoven R, Rudin A. *Arthritis Res Ther.* 2021 Jul 13;23(1):189. doi: 10.1186/s13075-021-02556-1. PMID: 34256800 **Free PMC article.** Clinical Trial.

BACKGROUND: The type I interferon (IFN) gene signature is present in a subgroup of patients with early rheumatoid arthritis (RA). Protein levels of IFNalpha have not been measured in RA and it is unknown whether they associate with clinical characteristics or treatment eff ...

### Evaluation of the Effects of Remdesivir and Hydroxychloroquine on Viral Clearance in COVID-19 : A Randomized Trial.

Barratt-Due A, Olsen IC, Nezvalova-Henriksen K, Kåsine T, Lund-Johansen F, Hoel H, Holten AR, Tveita A, **Mathiessen A**, Haugli M, Eiken R, Kildal AB, Berg Å, Johannessen A, Heggelund L, Dahl TB, Skåra KH, Mielnik P, Le LAK, Thoresen L, Ernst G, Hoff DAL, Skudal H, Kittang BR, Olsen RB, Tholin B, Ystrøm CM, Skei NV, Tran T, Dudman S, Andersen JT, Hannula R, Dalgard O, Finbråten AK, Tonby K, Blomberg B, Aballi S, Fladeby C, Steffensen A, Müller F, Dyrhol-Riise AM, Trøseid M, Aukrust P; NOR-Solidarity trial. *Ann Intern Med.* 2021 Sep;174(9):1261-1269. doi: 10.7326/M21-0653. Epub 2021 Jul 13. PMID: 34251903 **Free PMC article.** Clinical Trial.

PATIENTS: Eligible patients were adults hospitalized with confirmed SARS-CoV-2 infection.

INTERVENTION: Between 28 March and 4 October 2020, a total of 185 patients were randomly assigned and 181 were included in the full analysis set. ...RESULTS: No significant difference ...





[Cartilage Topography Assessment with Local Area Cartilage Segmentation \(LACS\) for Knee MRI.](#)

**Mathiessen A**, Ashbeck EL, Huang E, Bedrick EJ, Kwok CK, Duryea J. *Arthritis Care Res (Hoboken)*. 2021 Jul 5;10.1002/acr.24745. doi: 10.1002/acr.24745. Online ahead of print.PMID: 34219396

[Associations Between Safety of Certolizumab Pegol, Disease Activity, and Patient Characteristics, Including Corticosteroid Use and Body Mass Index.](#)

Bykerk VP, Blauvelt A, Curtis JR, Gaujoux-Viala C, **Kvien TK**, Winthrop K, Tilt N, Popova C, Mariette X, Haraoui B. *ACR Open Rheumatol*. 2021 Aug;3(8):501-511. doi: 10.1002/acr2.11259. Epub 2021 Jul 1.PMID: 34196507 **Free PMC article.**

RESULTS: Data were pooled from 8747 CZP-treated patients across indications. Cox models reported a 44% increase in SIE risk associated with a baseline BMI of 35 kg/m<sup>2</sup> or more versus a baseline BMI of 18.5 kg/m<sup>2</sup> to less than 25 kg/m<sup>2</sup> . ...

[Reliability and agreement of proton density-weighted vs. gadolinium-enhanced T1-weighted MRI in hand osteoarthritis. An OMERACT MRI special interest group reliability exercise.](#)

Maugesten Ø, Pedersen SJ, Stoeniu MS, Kroon F, Mathew AJ, Genant HK, Conaghan PG, Gandjbakhch F, Kloppenburg M, Peterfy C, Østergaard M, **Haugen IK**. *Semin Arthritis Rheum*. 2021 Aug;51(4):929-932. doi: 10.1016/j.semarthrit.2021.05.007. Epub 2021 May 21.PMID: 34140182

[Ultrasonography of Inflammatory and Structural Lesions in Hand Osteoarthritis: An OMERACT Agreement and Reliability Study.](#)

**Mathiessen A**, **Hammer HB**, Terslev L, Kortekaas MC, D'Agostino MA, **Haugen IK**, Bruyn GA, Filippou G, Filippucci E, Kloppenburg M, Mancarella L, Mandl P, Möller I, Mortada MA, Naredo E, Delle Sedie A, Sexton J, Wittoek R, Iagnocco A, Ellegaard K; OMERACT Ultrasound working Group. *Arthritis Care Res (Hoboken)*. 2021 Jun 16. doi: 10.1002/acr.24734. Online ahead of print.PMID: 34137211

[Rheumatoid arthritis patients with predominantly tender joints rarely achieve clinical remission despite being in ultrasound remission.](#)

**Hammer HB**, Jensen Hansen IM, Järvinen P, Leirisalo-Repo M, Ziegelsch M, Agular B, Terslev L. *Rheumatol Adv Pract*. 2021 May 14;5(2):rkab030. doi: 10.1093/rap/rkab030. eCollection 2021.PMID: 34131623 **Free PMC article.**

[Joint tenderness and ultrasound inflammation in DMARD-naïve patients with early rheumatoid arthritis.](#)

Paulshus Sundlisater N, Aga AB, Olsen IC, **Hammer HB**, **Uhlig T**, van der Heijde D, **Kvien**

**TK**, **Haavardsholm EA**, Lillegraven S. *Ann Rheum Dis*. 2021 Nov;80(11):1493-1494. doi: 10.1136/annrheumdis-2021-220265. Epub 2021 Jun 3.PMID: 34083205 No abstract available.

[Rheumatoid factor and falsely elevated results in commercial immunoassays: data from an early arthritis cohort.](#)

Gehin JE, Klaasen RA, Norli ES, Warren DJ, Syversen SW, Goll GL, Bjørø T, **Kvien TK**, Mjaavatten MD, Bolstad N. *Rheumatol Int*. 2021 Sep;41(9):1657-1665. doi: 10.1007/s00296-021-04865-9. Epub 2021 May 4.PMID: 33944985 **Free PMC article.**





### Effect of Therapeutic Drug Monitoring vs Standard Therapy During Infliximab Induction on Disease Remission in Patients With Chronic Immune-Mediated Inflammatory Diseases: A Randomized Clinical Trial.

Syversen SW, Goll GL, Jørgensen KK, Sandanger Ø, Sexton J, Olsen IC, Gehin JE, Warren DJ, Brun MK, Klaasen RA, Karlsen LN, Noraberg G, Zettel C, Ljoså MKA, Haugen AJ, Njålla RJ, Bruun TJ, Seeberg KA, Michelsen B, Strand EK, Skorpe S, Blomgren IM, Bragnes YH, Dotterud CK, Thune T, Ystrøm CM, Torp R, Mielnik P, Mørk C, **Kvien TK**, Jahnsen J, Bolstad N, **Haavardsholm EA**. *JAMA*. 2021 May 4;325(17):1744-1754. doi: 10.1001/jama.2021.4172.PMID: 33944876 **Free PMC article**. Clinical Trial.

### Effect of Half-Dose vs Stable-Dose Conventional Synthetic Disease-Modifying Antirheumatic Drugs on Disease Flares in Patients With Rheumatoid Arthritis in Remission: The ARCTIC REWIND Randomized Clinical Trial.

Lillegraven S, Paulshus Sundlisæter N, Aga AB, Sexton J, Olsen IC, Fremstad H, Spada C, Madland TM, Høili CA, Bakland G, Lexberg Å, Hansen IJW, Hansen IM, Haukeland H, Ljoså MA, Moholt E, **Uhlig T**, Solomon DH, van der Heijde D, **Kvien TK**, **Haavardsholm EA**. *JAMA*. 2021 May 4;325(17):1755-1764. doi: 10.1001/jama.2021.4542.PMID: 33944875 **Free PMC article**. Clinical Trial.

### MicroRNA Expression Differences in Blood-Derived CD19+ B Cells of Methotrexate Treated Rheumatoid Arthritis Patients.

Heinicke F, Zhong X, Flåm ST, Breidenbach J, Leithaug M, Mæhlen MT, Lillegraven S, Aga AB, Norli ES, Mjaavatten MD, **Haavardsholm EA**, Zucknick M, Rayner S, Lie BA. *Front Immunol*. 2021 Apr 9;12:663736. doi: 10.3389/fimmu.2021.663736. eCollection 2021.PMID: 33897713 **Free PMC article**.

### Viral respiratory infections in patients treated with hydroxychloroquine.

Provan SA, Sexton J, Christensen IE, Kristianslund EK, **Kvien TK**. *Clin Exp Rheumatol*. 2021 Sep-Oct;39(5):1146. Epub 2021 Apr 7.PMID: 33886463 **Free article**. No abstract available.

### Development and reliability of a novel ultrasonographic joint-specific scoring system for synovitis with reference atlas for patients with juvenile idiopathic arthritis.

Sande NK, Bøyesen P, Aga AB, **Hammer HB**, Flatø B, Roth J, Lilleby V. *RMD Open*. 2021 Apr;7(2):e001581. doi: 10.1136/rmdopen-2021-001581.PMID: 33883255 **Free PMC article**.

### Erosive Hand Osteoarthritis: Incidence and Predictive Characteristics Among Participants in the Osteoarthritis Initiative.

McAlindon TE, Driban JB, Roberts MB, Duryea J, **Haugen IK**, Schaefer LF, Smith SE, **Mathiessen A**, Eaton C. *Arthritis Rheumatol*. 2021 Nov;73(11):2015-2024. doi: 10.1002/art.41757. Epub 2021 Sep 28.PMID: 33844453

OBJECTIVE: To evaluate age, sex, race, osteoarthritis (OA) severity, metabolic factors, and bone health as risk factors for erosive hand OA at baseline and its incidence over a 48-month period. METHODS: This was a longitudinal cohort study that included participants ...

### Bone Erosions Detected by Ultrasound Are Prognostic for Clinical Arthritis Development in Patients With ACPA and Musculoskeletal Pain.

Ziegelasch M, Eloff E, **Hammer HB**, Cedergren J, Martinsson K, Reckner Å, Skogh T, Magnusson M, Kastbom A. *Front Med (Lausanne)*. 2021 Mar 23;8:653994. doi: 10.3389/fmed.2021.653994. eCollection 2021.PMID: 33834034 **Free PMC article**.

We also compared the ultrasound findings among the patients to a control group of 100 blood donors without musculoskeletal pain. Clinical arthritis developed in 39/82 patients (48%) after a median of 6 months (range, 1-71 months). One or more ultrasound erosions occ ...





[12-month results from the real-life observational treat-to-target and tight-control therapy NOR-Gout study: achievements of the urate target levels and predictors of obtaining this target.](#)

**Uhlig T**, Karoliussen LF, Sexton J, Borgen T, **Haavardsholm EA**, **Kvien TK**, **Hammer HB**. *RMD Open*. 2021 Mar;7(1):e001628. doi: 10.1136/rmdopen-2021-001628.PMID: 33782189 **Free PMC article**.

**OBJECTIVES:** Gout is often not adequately treated, and we aimed to apply urate lowering treatment (ULT) combined with individual information to achieve target serum urate (sUA) in clinical practice, and to identify predictors of achievement of this sUA target. **METHODS:** Patients wi ...

[Correction to: Validity and diagnostic performance of fluorescence optical imaging measuring synovitis in hand osteoarthritis: baseline results from the Nor-Hand cohort.](#)

Maugesten Ø, **Mathiessen A**, **Hammer HB**, Hestetun SV, **Kvien TK**, **Uhlig T**, Ohrndorf S, **Haugen IK**. *Arthritis Res Ther*. 2021 Mar 17;23(1):87. doi: 10.1186/s13075-021-02469-z.PMID: 33731167 **Free PMC article**. No abstract available.

[Comment on: Dual-energy computed tomography vs ultrasound, alone or combined, for the diagnosis of gout: a prospective study of accuracy.](#)

Christiansen SN, **Hammer HB**, Torp-Pedersen S, Terslev L. *Rheumatology (Oxford)*. 2021 Oct 2;60(10):e367-e368. doi: 10.1093/rheumatology/keab243.PMID: 33711101 No abstract available.

[Serum golimumab concentration and anti-drug antibodies are associated with treatment response and drug survival in patients with inflammatory joint diseases: data from the NOR-DMARD study.](#)

Gehin JE, Warren DJ, Syversen SW, Lie E, Sexton J, Loli L, Wierød A, Bjørø T, **Kvien TK**, Bolstad N, Goll GL. *Scand J Rheumatol*. 2021 Nov;50(6):445-454. doi: 10.1080/03009742.2021.1875040. Epub 2021 Mar 2.PMID: 33650469

The proportions of responders after 3 months among patients with golimumab concentration < 1.0, 1.0-3.9, and 4.0 mg/L were 19%, 49%, and 74%, respectively. A higher rate of treatment discontinuation was seen in patients with serum golimumab concentration < 1.0 compar

[Effectiveness of a Second Biologic After Failure of a Non-tumor Necrosis Factor Inhibitor As First Biologic in Rheumatoid Arthritis.](#)

Chatzidionysiou K, Hetland ML, Frisell T, Di Giuseppe D, Hellgren K, Glintborg B, Nordström D, Peltomaa R, Aaltonen K, Trokovic N, Kristianslund EK, **Kvien TK**, Provan SA, Gudbjornsson B, Grondal G, Dreyer L, Kristensen LE, Jørgensen TS, Jacobsson LTH, Askling J. *J Rheumatol*. 2021 Oct;48(10):1512-1518. doi: 10.3899/jrheum.201467. Epub 2021 Mar 1.PMID: 33649069

**METHODS:** We identified patients with RA from the 5 Nordic biologics registers who started treatment with a non-TNFi as first-ever bDMARD but switched to a second bDMARD. ...**CONCLUSION:** The drug survival and primary response of a second bDMARD in patients with ...

[Task shifting in the care for patients with hand osteoarthritis. Protocol for a randomized controlled non-inferiority trial.](#)

Kjeken I, Bergsmark K, **Haugen IK**, Hennig T, Hermann-Eriksen M, Hornburg VT, Hove Å, Prøven A, Sjøvold TA, Slatkowsky-Christensen B. *BMC Musculoskelet Disord*. 2021 Feb 16;22(1):194. doi: 10.1186/s12891-021-04019-9.PMID: 33593307 **Free PMC article**.

In this randomized controlled non-inferiority trial, we will test if a new model, where patients referred to consultation in specialist health care receive their first consultation by an occupational therapy (OT) specialist, is as safe and effective as the traditional mode ...







[Validity and reliability of the EULAR instrument RAID.7 as a tool to assess individual domains of impact of disease in rheumatoid arthritis: a cross-sectional study of 671 patients.](#)

Duarte C, Santos EJF, Ferreira RJO, **Kvien TK**, Dougados M, de Wit M, da Silva JAP, Gossec L. *RMD Open*. 2021 Feb;7(1):e001539. doi: 10.1136/rmdopen-2020-001539. PMID: 33547229 **Free PMC article.**

OBJECTIVE: The rheumatoid arthritis impact of disease (RAID) questionnaire comprises seven patient-important domains of disease impact (pain, function, fatigue, sleep disturbance, emotional well-being, physical well-being, coping). RAID was validated as a pooled-weighted s ...

[Value of MRI and ultrasound for prediction of therapeutic response and erosive progression in patients with early rheumatoid arthritis managed by an aggressive treat-to-target strategy.](#)

Sundin U, Sundlisater NP, Aga AB, Sexton J, Nordberg LB, **Hammer HB**, van der Heijde D, **Kvien TK**, **Haavardsholm EA**, Lillegraven S; the ARCTIC Study Group. *RMD Open*. 2021 Feb;7(1):e001525. doi: 10.1136/rmdopen-2020-001525. PMID: 33547228 **Free PMC article.**

OBJECTIVES: To investigate if inflammation detected by MRI or ultrasound at rheumatoid arthritis (RA) onset is predictive of erosive progression or poor response to methotrexate monotherapy, and to investigate if subclinical inflammation in remission is predictive of future treat ...

[EULAR recommendations for the reporting of ultrasound studies in rheumatic and musculoskeletal diseases \(RMDs\).](#)

Costantino F, Carmona L, Boers M, Backhaus M, Balint PV, Bruyn GA, Christensen R, Conaghan PG, Ferreira RJO, Garrido-Castro JL, Guillemin F, **Hammer HB**, van der Heijde D, Iagnocco A, Kortekaas MC, Landewé RB, Mandl P, Naredo E, Schmidt WA, Terslev L, Terwee CB, Thiele R, D'Agostino MA. *Ann Rheum Dis*. 2021 Jul;80(7):840-847. doi: 10.1136/annrheumdis-2020-219816. Epub 2021 Jan 22. PMID: 33483318

METHODS: Based on the literature reviews and expert opinion (through Delphi surveys), a taskforce of 23 members (12 experts in ultrasound in RMDs, 9 in methodology and biostatistics together with a patient research partner and a health professional in rheumat ...

[Consensus-based semi-quantitative ultrasound scoring system for gout lesions: Results of an OMERACT Delphi process and web-reliability exercise.](#)

Christiansen SN, Filippou G, Scirè CA, Balint PV, Bruyn GA, Dalbeth N, Dejaco C, Sedie AD, Filippucci E, **Hammer HB**, Iagnocco A, Keen HI, Kissin EY, Koski J, Mandl P, Martin J, Miguel E, Möller I, Naredo E, Pineda C, Schmidt WA, Stewart S, Antonietta D'Agostino M, Terslev L; on the behalf of the OMERACT Ultrasound working group. *Semin Arthritis Rheum*. 2021 Jun;51(3):644-649. doi: 10.1016/j.semarthrit.2020.11.011. Epub 2021 Jan 10. PMID: 33468347

OBJECTIVE: This study aimed to develop (1) a new ultrasound definition for aggregates and (2) a semi-quantitative ultrasound scoring system (0-3) for tophus, double contour and aggregates. ... A consensus-based semi-quantitative ultrasound scoring system for g ...

[Major reduction of ultrasound-detected synovitis during subcutaneous tocilizumab treatment: results from a multicentre 24 week study of patients with rheumatoid arthritis.](#)

**Hammer HB**, Hansen I, Järvinen P, Leirisalo-Repo M, Ziegelsch M, Agular B, Terslev L. *Scand J Rheumatol*. 2021 Jul;50(4):262-270. doi: 10.1080/03009742.2020.1845394. Epub 2021 Jan 19. PMID: 33464147

Ultrasound scores had no or low correlations with patient-reported outcomes. At 24 weeks, CDAS remission was achieved in 27.4-83.5% and a sum score Doppler of 0 was found in 53.3%. Conclusions: Clinical and ultrasound scores decreased rapidly. ...





### Real-World Six- and Twelve-Month Drug Retention, Remission, and Response Rates of Secukinumab in 2,017 Patients With Psoriatic Arthritis in Thirteen European Countries.

Michelsen B, Georgiadis S, Di Giuseppe D, Loft AG, Nissen MJ, Iannone F, Pombo-Suarez M, Mann H, Rotar Z, Eklund KK, **Kvien TK**, Santos MJ, Gudbjornsson B, Codreanu C, Yilmaz S, Wallman JK, Brahe CH, Möller B, Favalli EG, Sánchez-Piedra C, Nekvindova L, Tomsic M, Trokovic N, Kristianslund EK, Santos H, Löve TJ, Ionescu R, Pehlivan Y, Jones GT, van der Horst-Bruinsma I, Ørnberg LM, Østergaard M, Hetland ML. *Arthritis Care Res (Hoboken)*. 2021 Jan 18. doi: 10.1002/acr.24560. Online ahead of print. PMID: 33460531

OBJECTIVE: There is a lack of real-life studies on interleukin-17 (IL-17) inhibition in psoriatic arthritis (PsA). ...Data were pooled and analyzed with Kaplan-Meier plots, log rank tests, Cox regression, and multiple linear and logistic regression analyses. RESULTS: A ...

### Relationship between motion, using the GaitSmart™ system, and radiographic knee osteoarthritis: an explorative analysis in the IMI-APPROACH cohort.

van Helvoort EM, Hodgins D, Mastbergen SC, Marijnissen AK, Guehring H, Loef M, Kloppenburg M, Blanco F, **Haugen IK**, Berenbaum F, Lafeber FPJG, Welsing PMJ. *Rheumatology (Oxford)*. 2021 Aug 2;60(8):3588-3597. doi: 10.1093/rheumatology/keaa809. PMID: 33367896 **Free PMC article.**

### Non-surgical management of knee osteoarthritis: comparison of ESCEO and OARSI 2019 guidelines.

Arden NK, Perry TA, Bannuru RR, Bruyère O, Cooper C, **Haugen IK**, Hochberg MC, McAlindon TE, Mobasheri A, Reginster JY. *Nat Rev Rheumatol*. 2021 Jan;17(1):59-66. doi: 10.1038/s41584-020-00523-9. Epub 2020 Oct 28. PMID: 33116279 Review.

Knee osteoarthritis (OA) is a heterogeneous disease associated with substantial effects on quality of life, and its clinical management is difficult. ...Here, we examine the similarities and differences between these two guidelines and provide a narrative to help you ...

### Fatigue is cross-sectionally not associated with objective assessments of inflammation, but changes in fatigue are associated with changes of disease activity assessments during biologic treatment of patients with established rheumatoid arthritis.

**Hammer HB**, Michelsen B, Sexton J, **Uhlig T**, Provan SA. *Clin Rheumatol*. 2021 May;40(5):1739-1749. doi: 10.1007/s10067-020-05402-y. Epub 2020 Oct 11. PMID: 33040226 **Free PMC article.**

Statistics included one-way analysis of variance, Pearson's correlations, and multiple linear and logistic regression analysis. RESULTS: A total of 208 RA patients (mean (SD) age 53.2 (13.2) years, disease duration 9.8 (8.5) years) were included. ...

### Attainment of the Patient-acceptable Symptom State in 548 patients with rheumatoid arthritis: Influence of demographic factors.

Duarte C, Santos E, **Kvien TK**, Dougados M, de Wit M, Gossec L, da Silva JAP. *Joint Bone Spine*. 2021 Jan;88(1):105071. doi: 10.1016/j.jbspin.2020.09.003. Epub 2020 Sep 10. PMID: 32920168

OBJECTIVES: To explore the clinical and socio-demographic factors associated with Patient Acceptable Symptom Status (PASS) in Rheumatoid Arthritis (RA). METHODS: In a post-hoc analyses of a cross-sectional study, RA patients from 11 countries were included. ...RESUL ...





### [The impact of seropositivity on the effectiveness of biologic anti-rheumatic agents: results from a collaboration of 16 registries.](#)

Courvoisier DS, Chatzidionysiou K, Mongin D, Lauper K, Mariette X, Morel J, Gottenberg JE, Bergstra SA, Suarez MP, Codreanu C, **Kvien TK**, Santos MJ, Pavelka K, Hetland ML, Askling J, Turesson C, Kubo S, Tanaka Y, Iannone F, Choquette D, Nordström DC, Rotar Z, Lukina G, Gabay C, Van Vollenhoven R, Finckh A. *Rheumatology (Oxford)*. 2021 Feb 1;60(2):820-828. doi: 10.1093/rheumatology/keaa393.PMID: 32810263

This study compared the impact of seropositivity on drug discontinuation and effectiveness of bDMARDs in patients with RA, using head-to-head comparisons in a real-world setting. METHODS: We conducted a pooled analysis of 16 observational RA registries. ...Adjusted ...

### [Which factors predict discordance between a patient and physician on a gout flare?](#)

Jagpal A, Rahn EJ, Mudano AS, Dalbeth N, Taylor W, Saag KG, Singh JA, Cavagna L, **Uhlig T**, Perez-Ruiz F, McCarthy G, Gerritsen M, Stamp L, Vazquez Mellado J, Lin C, Vargas-Santos AB, Louthrenoo W, Neogi T, Chen YH, Castelar-Pinheiro GDR, Gaffo A. *Rheumatology (Oxford)*. 2021 Feb 1;60(2):773-779. doi: 10.1093/rheumatology/keaa413.PMID: 32793971

OBJECTIVE: To investigate the factors associated with discordance between patient and physician on the presence of a gout flare. METHODS: Patients' self-reports of current gout flares were assessed with the question, 'Are you having a gout flare today?' which was th ...

### [Get a Grip on Factors Related to Grip Strength in Persons With Hand Osteoarthritis: Results From an Observational Cohort Study.](#)

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