



## Musculoskeletal Health Current Awareness Update

February 2024

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**We need your views:** The software KLS currently use to produce our Current Awareness products is being decommissioned shortly and we need to upgrade to a more expensive system to provide continuation of service. To ensure that our current awareness products are meeting your needs, we are taking this opportunity to review their use. **Please take a few moments to complete our survey.**

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Welcome to the monthly Musculoskeletal Health Current Awareness Update (MSKH-CAU), produced by UKHSA Knowledge and Library Services. The purpose of this update is to provide the latest research to inform future practice to support the prevention of Musculoskeletal (MSK) conditions.

UKHSA, jointly with NHS England, Versus Arthritis and partners, published the Musculoskeletal Health: 5 Year Prevention Strategic Framework, setting out a clear statement of commitments to promote good MSK health to prevent MSK conditions across the life course. The MSKH CAU resource will provide evidence and knowledge to support the decisions made by health and social care professionals, the wider public health workforce and employers.

Please note that not all the articles and resources referred to in this alert are freely available. Some articles may require an Athens username and password. For further information on Athens accounts please visit [here](#). If you are not eligible to access our library services, then you may want to approach your local health library service.

*We do not accept responsibility for the availability or reliability of the items of content included in this alert and their inclusion is not an endorsement of any views that may be expressed.*

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## Prevention of MSK conditions across the life course

### Exercise prescription variables predict reductions in pain intensity in adults with chronic low back pain: secondary analysis of a randomised controlled trial

10 Jan 2024

**CONCLUSION:** During 6 months of general strength and conditioning, lower pain intensity was associated with higher participant-reported training intensity, greater volume and shorter session duration. To ensure positive outcomes to exercise training, these variables should be monitored on a short-term basis.

### Health-related quality of life in osteoporosis: a systematic review of measurement properties of the QUALEFFO-41

09 Jan 2024

The 41-item Quality of Life Questionnaire of the European Foundation for Osteoporosis (QUALEFFO-41) is a widely used and freely available patient-reported outcome measure (PROM). However, data on its reliability, validity, and responsiveness remain unclear. Therefore, this study aimed to systematically review the measurement properties of the QUALEFFO-41

### Musculoskeletal Pain, Mood, and Sports Injury in Wheelchair Power Soccer Players

09 Jan 2024

**CONCLUSION:** The presence of musculoskeletal pain was common in WPS players, but it was not related to mood. As no traumatic injuries were observed during the championship, this modality seems to be safe for people with physical disabilities in general.

### Physiotherapists' experiences of implementation of the BetterBack model of care for low back pain in primary care - a focus group interview study

08 Jan 2024

**CONCLUSIONS:** Several barriers and facilitators influence the implementation of a best practice physiotherapy MoC for LBP in primary care, which need to be considered in future implementation and sustainability processes.

### Required competencies for French physiotherapists for direct access to primary care for patients with musculoskeletal disorders: consensus statement based on a Delphi survey

08 Jan 2024

**CONCLUSION:** A consensus-based, contemporary set of competencies required for direct access practice with patients with musculoskeletal disorders has been identified that may contribute to the update of entry-level and lifelong learning curricula for French physiotherapists.

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### Effects of stretching in a pilates program on musculoskeletal fitness: a randomized clinical trial

08 Jan 2024

CONCLUSION: Our findings demonstrated that stretching exercises performed at the beginning of sessions in a Pilates program did not impair or enhance the development of strength, vertical jump height and muscular endurance in young women

### Paravertebral Muscular Neurophysiological Function as an Independent Outcome Predictor of Recurring Herniation/Low Back Pain after Radiofrequency Ablation: A Prospective Follow-Up and Case-Control Study Based on Surface Electromyography

06 Jan 2024

CONCLUSIONS: Lumbar disc herniation patients' baseline FRR(LM) and FRR(ES) are independent outcome predictors of recurring LDH/LBP after ECRF. For every unit increase in baseline FRR(LM) , the risk of recurring LDH/LBP is decreased by 87.7%, and for every unit increase in baseline FRR(ES) , the risk of recurring LDH/LBP is decreased by 88.5%.

### Does Preoperative Back Pain Impact Patient-reported Outcomes in Patients Undergoing Minimally Invasive Transforaminal Lumbar Interbody Fusion for Isthmic Spondylolisthesis?

05 Jan 2024

CONCLUSION: Patients undergoing MIS-TLIF for IS demonstrated significant postoperative improvement in PF, mental function, pain, and disability outcomes independent of preoperative severity of BP. Patients with lower preoperative BP demonstrated superior outcomes in PF, mental function, pain, and disability

### H-Wave® Device Stimulation for Chronic Low Back Pain: A Patient-Reported Outcome Measures (PROMs) Study

05 Jan 2024

CONCLUSION: Treatment outcomes directly reported by cLBP HWDS patients demonstrated profound positive effects on function and ADL, robust improvement in pain perception, and additional benefits like decreased medication use, better sleep, and improved work performance, representing compelling new evidence of treatment efficacy.

### A Cluster Analysis of Initial Primary Care Orders for Patients with Acute Low Back Pain

05 Jan 2024

CONCLUSION: Guideline discordant orders such as steroids and NSAIDS are often combined with guideline recommended orders such as physical therapy. Further defining patient, clinician, and health care setting characteristics associated with discordant care would inform targeted efforts for deimplementation initiatives.

### Musculoskeletal injury or Sports-Related Concussion (SRC) in a season of rugby union does not affect performance on concussion battery testing in university-aged student-athletes

05 Jan 2024

CONCLUSION: Participation in rugby union was not associated with deleterious effects on brain function. Previous concussive events and in-season factors, possibly related to learning effects, may explain improvement in cognitive function across the season.

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## Chemical Shift-Encoded MRI of the Lumbar Vertebral Bone Marrow for Detecting Osteoporosis With Low Trabecular Bone Quality in Patients With Breast Cancer Receiving Aromatase Inhibitors

04 Jan 2024

**BACKGROUND:** Osteoporosis with low trabecular bone quality (OLB) in patients with breast cancer receiving aromatase inhibitor (AI) therapy is associated with an increased risk of vertebral fractures. The capability of chemical shift-encoded MRI (CSE-MRI) in detecting OLB needs to be investigated.

## Contexts, behavioural mechanisms and outcomes to optimise therapeutic exercise prescription for persistent low back pain: a realist review

04 Jan 2024

**CONCLUSIONS:** Engagement in and adherence to therapeutic exercises for LBP, as well as clinical outcomes, may be optimised using mechanisms of trust, motivation and confidence. These CMO configurations provide a deeper understanding of ways to optimise exercise prescription for patients with LBP.

## Multidimensional characteristics of musculoskeletal pain and risk of hip fractures among elderly adults: the first longitudinal evidence from CHARLS

03 Jan 2024

**CONCLUSION:** In the Chinese population, the risk of hip fracture was found to be associated with both the location and extent of musculoskeletal pain, as well as with other factors such as age and demographic characteristics

## Understanding the Biering-Sørensen test: Contributors to extensor endurance in young adults with and without a history of low back pain

03 Jan 2024

The Biering-Sørensen test is commonly used to assess paraspinal muscle endurance. Research using a single repetition of the test has provided conflicting evidence for the contribution of impaired paraspinal muscle endurance to low back pain (LBP)

## Daily supplement of sesame oil prevents postmenopausal osteoporosis via maintaining serum estrogen and aromatase levels in rats

03 Jan 2024

Estrogen deficiency is one of the main causes of postmenopausal osteoporosis in elderly women. Hormone replacement therapy has been employed to manage postmenopausal osteoporosis; however, it has raised concerns related to heart attacks and breast cancer. Sesame oil has been reported to affect sex hormone status

## Nutritional strategies to optimise musculoskeletal health for fall and fracture prevention: Looking beyond calcium, vitamin D and protein

01 Jan 2024

Falls and osteoporotic fractures are a major public health problem, particularly among older adults. A third of individuals aged 65 years and over fall at least once each year, with up to 20 % of these resulting in serious injury, including fracture

## The Effect of Group Training or Spinal Orthosis on Quality of Life and Potential Plasma Markers of Pain in Older Women With Osteoporosis. A Randomized Controlled Trial

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01 Jan 2024

CONCLUSION: The interventions showed none or negative effect on QoL, which was unexpected. The modest effect size may prompt a cautious interpretation. We found a lowering of IL-6 levels in the spinal orthosis group, but more studies are needed.

**Effects of an eight-week physical exercise program on low back pain and function in fruit workers: A randomized controlled trial**

31 Dec 2023

CONCLUSIONS: The exercise program was not superior to using the educational booklet. However, both interventions showed substantial decreases in pain and disability levels.

**Effect of an online posture exercise program during the COVID-19 pandemic on students' musculoskeletal pain and quality of life**

31 Dec 2023

CONCLUSION: The online posture exercise program led to notable reductions in musculoskeletal pain and improvements in QoL among university students. Examining the effectiveness of online exercise programs in different age groups is important for health benefits during quarantines.

**Effects of transcranial direct current stimulation combined with Pilates-based exercises in the treatment of chronic low back pain in outpatient rehabilitation service in Brazil: double-blind randomised controlled trial protocol**

30 Dec 2023

INTRODUCTION: Chronic low back pain may be associated with pathoanatomical, neurophysiological, physical, psychological and social factors; thus, treatments to reduce symptoms are important to improve the quality of life of this population

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Living well with MSK conditions

**The effects of osteopathic manipulative treatment on pain and disability in patients with chronic low back pain: a single-blinded randomized controlled trial**

10 Jan 2024

CONCLUSIONS: OMT intervention is safe and effective in reducing pain along with improving sleep and anxiety profiles in patients with chronic LBP.

**Interactions between work-related factors, perceived fatigue and musculoskeletal disorders among handicraft artisans: structural equation model analysis**

09 Jan 2024

The cross-sectional study aimed to investigate the relationship between work-related factors, perceived work fatigue (PWF) and musculoskeletal disorders (MSDs) among handicraft artisans. 364 artisans participated in a questionnaire survey, and a structural equation model (SEM) was developed to explore the direct and indirect relationships between these factors using partial least squares analysis

## Development of a diverse osteoporosis screening tool for older US adults from the health and retirement study

09 Jan 2024

Existing osteoporosis screening tools have limitations, including using race as a predictor, and development on homogeneous samples. This biases risk assessment of osteoporosis in diverse populations and increases health inequities. We develop a tool that relies on variables easily learned during point-of-care, known by individuals, and with negligible racial bias

## Sex differences of NF- $\kappa$ B-targeted therapy for mitigating osteoporosis associated with chronic inflammation of bone

09 Jan 2024

CONCLUSION: We demonstrated that NF- $\kappa$ B decoy ODN increased osteogenesis in male mice and decreased bone resorption activity in both sexes in preclinical models of chronic inflammation. NF- $\kappa$ B signalling could be a therapeutic target for chronic inflammatory diseases involving bone, especially in males.

## Chronic di(2-ethylhexyl) phthalate exposure at environmental-relevant doses induces osteoporosis by disturbing the differentiation of bone marrow mesenchymal stem cells

08 Jan 2024

Di(2-ethylhexyl) phthalate (DEHP) is a widely used plastic additive with persistent characteristics in the environment. This study was designed to investigate the detrimental effects of chronic DEHP exposure at environmental-relevant doses on bone metabolism and the underlying mechanisms

## Establishment of a risk prediction model for residual low back pain in thoracolumbar osteoporotic vertebral compression fractures after percutaneous kyphoplasty

06 Jan 2024

CONCLUSIONS: We have created a novel numerical model capable of accurately predicting the potential risk factors associated with the occurrence of residual LBP following PKP in thoracolumbar OVCFs patients. This model serves as a valuable tool for guiding specific clinical decisions for patients with OVCFs.

## Denosumab use reduces risk of rheumatoid arthritis in patients with osteoporosis

05 Jan 2024

CONCLUSIONS: Denosumab use reduces the risk of RA in patients with osteoporosis. Receptor activator of nuclear factor kappa B ligand (RANKL) mediated osteoclast joint damage may be involved in the pathogenesis of RA during the preclinical stage.

## Evaluation of deep learning-based quantitative computed tomography for opportunistic osteoporosis screening

05 Jan 2024

To evaluate diagnostic efficacy of deep learning (DL)-based automated bone mineral density (BMD) measurement for opportunistic screening of osteoporosis with routine computed tomography (CT) scans. A DL-based automated quantitative computed tomography (DL-QCT) solution was evaluated with 112 routine clinical CT scans from 84 patients who underwent either chest (N:39), lumbar spine (N:34), or

## Acceptability, values, and preferences of older people for chronic low back pain management; a qualitative evidence synthesis

05 Jan 2024

**CONCLUSIONS:** These findings provide critical context to the implementation of clinical guidelines into practice, particularly related to how care providers interact with older people and how components of care are delivered, their location and their cost. Further research is needed focusing on low- and middle-income settings, vulnerable populations, and caregivers.

## The effect of visual feedback-based clinical monitoring application in patients with chronic low back pain: a randomized controlled trial

05 Jan 2024

**CONCLUSION:** The results confirmed the additional contribution of telerehabilitation's graphics-based visual feedback in pain, pain catastrophizing, disability, quality of life, and exercise participation. Since the importance of continuity in long-term rehabilitation in patients with CLBP is comprehended, feedback to increase patient motivation can be added to telerehabilitation applications.

## Efficacy and safety of thermobalancing therapy with Dr Allen's Device for chronic low back pain: A randomised controlled trial

04 Jan 2024

**CONCLUSION:** The out-of-hospital use of Thermobalancing therapy with Dr Allen's Device for Low Back Treatment relieves chronic low back pain significantly and without adverse effects, improves the level of activity and HRQoL among patients with LDH and NSLBP

## Using Risk Scores to Estimate Lower Extremity Fragility Fracture Risk among Individuals with Chronic Spinal Cord Injury: A Preliminary Model

04 Jan 2024

**CONCLUSION:** We identified a simple preliminary model for clinicians to estimate 5-year fracture risk among patients with cSCI based on their total score.

## Prevalence, incidence of and risk factors for vertebral fracture in the community: the Vietnam Osteoporosis Study

03 Jan 2024

The epidemiology of vertebral fractures (VF) in underrepresented populations is not well-documented. This cohort study was part of a longitudinal osteoporosis research project with the aim of determining the prevalence, incidence, and risk factors for VF. 401 individuals (155 men) aged 50 years and older without a clinical diagnosis of VF were taken radiographs at baseline and 2 years later

## Identifying Clinical Phenotypes in People Who Are Hispanic/Latino With Chronic Low Back Pain: Use of Sensor-Based Measures of Posture and Movement, Pain, and Psychological Factors

03 Jan 2024

**CONCLUSIONS:** Two distinct clinical phenotypes of Hispanic/Latino people with CLBP were identified. One group was distinguished by greater height and weight and more sedentary posture and movement behavior; the second group had more women, longer duration of LBP, higher lumbar spine movement frequency, and longer duration of standing postures.

## Prevalence and risk factors of work-related musculoskeletal disorders among physical therapists in Ho Chi Minh City, Vietnam

03 Jan 2024

**CONCLUSIONS:** This study indicates potential risk factors associated with WMSDs, affecting the neck and lower back among PTs in Vietnam. These risk factors should be addressed to improve overall PTs health, retain skilled workers, and encourage them to continue working.

## Prevalence of Low Back Pain and Its Related Risk Factors and Disability Following Lumbar Discectomy: A Single-Center Study

01 Jan 2024

Background Lumbar disc herniation is considered the most common cause of sciatica, which is a contributing factor to disability. Surgical management of lumbar disc herniation in the form of discectomy is superior to conservative management in terms of better recovery and pain relief. However, recurrence, residual back pain, and disability are common expected complications following surgery

## Correlational study of ergonomic knowledge and level of MSK discomfort during online classes of 1st-4th year UST-CRS physical therapy students: a cross-sectional study

30 Dec 2023

**INTRODUCTION:** The abrupt transition of the mode of learning due to the COVID-19 pandemic resulted in an increase in complaints of musculoskeletal (MSK) discomfort among students in Higher Education Institutions (HEI). Inadequate physical space and equipment are one major cause of these complaints. Among HEIs, physical therapy (PT) students have sufficient background in managing MSK discomforts

## Examining the Relationship between Individual Patient Factors and Substantial Clinical Benefit from Telerehabilitation among Patients with Chronic Low Back Pain

29 Dec 2023

**CONCLUSION:** Patients with lower psychosocial risk and higher pain-self efficacy experienced substantial clinical benefit from telerehabilitation for chronic low back pain more often than other patients in our cohort. Therapeutic alliance was higher among patients who experienced a substantial clinical benefit compared to those who did not.

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## MSK in child and adolescent health

### Pediatrics severe low back pain by disc herniation: an uncommon entity

03 Jan 2024

**CONCLUSION:** Paediatric common low back pain caused by a disc herniation with a hyperalgetic or disabling character posed a therapeutic problem which were solved by the invasive approaches that must be given priority nowadays with children.

### Musculoskeletal health in children and adolescents



01 Jan 2024

The purpose of this narrative review was to investigate the key determinants of musculoskeletal health in childhood and adolescence, with particular attention to the role of physical activity. First, we examined the importance of bone modeling and remodeling in maintaining the bone health and the integrity and mechanical characteristic of the skeleton

### [Pediatric musculoskeletal ultrasound](#)

30 Dec 2023

Musculoskeletal (MSK) ultrasound is an exciting area of growth for pediatric radiology. It is very well suited for pediatrics as it has no radiation, needs no intravenous contrast or sedation, is painless, and parents are present during the exam for comfort. Many diagnoses that are traditionally made with CT and MRI can be confidently made with ultrasound

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## MSK and multi-morbidity

### [A Real-World Study on Safety and Efficacy of TAF Treatment in HBV Patients with High Risk of Osteoporosis or Osteopenia in China](#)

31 Jan 2024

**CONCLUSION:** Attention should be paid to osteoporosis risk during long-term nucleot(s)ide analogue treatment. One minute test of osteoporosis risk could rapidly identify most CHB patients at risk of osteoporosis. Given its convenience, we recommend using this test for early screening in CHB patients prior to initiating antiviral treatment

### [Corrigendum: Evaluation of the correlation between depression and physical activity among older persons with osteoporosis: a cross-sectional study](#)

30 Jan 2024

[This corrects the article DOI: 10.3389/fpsy.2023.1193072.].

### [Prevalence of low back pain and disability among secondary school teacher in the eastern province of the Kingdom of Saudi Arabia: a cross-sectional analytical study](#)

29 Jan 2024

**CONCLUSION:** This study adds to the epidemiological evidence that reveals a high prevalence of low back pain and disability among teachers. Identified risk factors in this study may also reinforce the importance of setting different interventions and preventive measures to reduce lower back pain risk.

### [The Effects of Abdominal Obesity and Sagittal Imbalance on Sacroiliac Joint Pain After Lumbar Fusion](#)

29 Jan 2024

**CONCLUSIONS:** The significant predictors of SIJP were abdominal obesity and sagittal imbalance. Patients with abdominal obesity showed higher levels of inflammatory markers and pain intensity. More attention should be paid to body shape and the angle of correction of lumbar lordosis before lumbar surgery.

### Muscle parameters in fragility fracture risk prediction in older adults: A scoping review

29 Jan 2024

Half of osteoporotic fractures occur in patients with normal/osteopenic bone density or at intermediate or low estimated risk. Muscle measures have been shown to contribute to fracture risk independently of bone mineral density

### Emotional distress and multimorbidity patterns in Chinese Han patients with osteoporosis: a network analysis

26 Jan 2024

With the aging of the population, the prevalence of osteoporosis and multimorbidity is increasing. Patients with osteoporosis often experience varying levels of emotional distress, including anxiety and depression. However, few studies have explored the patterns of multiple conditions and their impact on patients' emotional distress

### Physiotherapists' barriers and facilitators to the implementation of a behaviour change-informed exercise intervention to promote the adoption of regular exercise practice in patients at risk of recurrence of low back pain: a qualitative study

26 Jan 2024

CONCLUSIONS: This study identified modifiable barriers and facilitators to physiotherapists' implementation of a behaviour change-informed exercise intervention for patients at risk of recurrence of LBP in primary healthcare

### Integrative data analysis to identify persistent post-concussion deficits and subsequent musculoskeletal injury risk: project structure and methods

25 Jan 2024

Concussions are a serious public health problem, with significant healthcare costs and risks. One of the most serious complications of concussions is an increased risk of subsequent musculoskeletal injuries (MSKI). However, there is currently no reliable way to identify which individuals are at highest risk for post-concussion MSKIs

### Obesity and overweight as risk factors for low back pain in children and adolescents: a meta-analysis

25 Jan 2024

CONCLUSION: Overweight and obesity may be risk factors for LBP in children and adolescents. The association between LBP and obesity appears to be stronger than with overweight. However, the analysis revealed considerable heterogeneity and risk of bias across studies.

### Serum 14-3-3 $\eta$ levels are increased and associated with a higher risk of osteoporosis in patients with rheumatoid arthritis: A meta-analysis

24 Jan 2024

14-3-3 $\eta$  can regulate the cell cycle, immunity, inflammation and the secretion of matrix metalloproteinases, while it may also be involved in the development of rheumatoid arthritis (RA) and promote bone injury. Therefore, the present meta-analysis focused on the dysregulated serum levels of 14-3-3 $\eta$  and its association with osteoporosis in patients with RA

### Circulating Hsa-miR499a-5p as markers in dysmobility syndrome patients: a new index for diagnosing dysmobility syndrome based on osteoporosis and predicting fracture risk

24 Jan 2024

CONCLUSION: hsa-miR-499a-5p is a potential serum biomarker for assessing muscle function and predicting fall or fracture risk in the ODS population.

### Does the Keele STarT MSK tool predict the risk of poor outcome in non-specific shoulder complaints in primary care in a Dutch population?

24 Jan 2024

CONCLUSIONS: The Keele STarT MSK tool is able to predict the risk of poor outcome in patients with non-specific shoulder complaints in primary care physiotherapy clinics. Further research is needed to establish whether stratified care (subgrouping and targeted treatment) is more efficient. CONTRIBUTION OF PAPER.

### Persistence of Low Back Pain and Predictive Ability of Pain Intensity and Disability in Daily Life among Nursery School Workers in Japan: A Five-Year Panel Study

23 Jan 2024

Nursery school workers are known for having a high prevalence of low back pain (LBP). The natural history of LBP and the determinants of persistent LBP remain unclear. We examined the prevalence of persistent LBP and whether pain intensity and disability in daily life due to LBP affected the persistence of LBP among these workers

### Efficacy of Core-Strengthening and Intensive Dynamic Back Exercises on Pain, Core Muscle Endurance, and Functional Disability in Patients with Chronic Non-Specific Low Back Pain: A Randomized Comparative Study

23 Jan 2024

CONCLUSIONS: The experimental group CSE was found to be more effective than IDBE on improving functional disability, cores' flexors, and side bridges' endurance tests than IDBE. The magnitude of this improvement exceeded the minimal clinically important difference (MCID), suggesting a clinically relevant enhancement in functional disability, core flexors, and side bridge endurance for

### Occupational Risk Factors for Musculoskeletal Disorders among Workers in Dairy Diversification

23 Jan 2024

CONCLUSIONS: As dairy farming evolves from artisanal to semi-industrial, our study emphasizes the importance of ergonomic adaptations to protect farmers' health and prevent musculoskeletal disorders during diversification.

### Hip-focused physical therapy versus spine-focused physical therapy for older adults with chronic low back pain at risk for mobility decline (MASH): a multicentre, single-masked, randomised controlled trial

23 Jan 2024

BACKGROUND: Previously, we identified a population of older adults with chronic low back pain, hip pain, and hip muscle weakness who had worse 12-month low back pain and functional outcomes than age-matched adults with only low back pain, indicating an increased risk for future mobility decline

### Work-related musculoskeletal complaints and ergonomic risk factors among Egyptian anesthesiologists: a cross-sectional study

23 Jan 2024

CONCLUSIONS: The study highlights a high prevalence of WMSDs among Egyptian anesthesiologists, linked to advancing age, lack of regular exercise, insufficient rest between procedures, and frequent awkward postures

### Letter to the editor: "Effects of exercise therapy on disability, mobility, and quality of life in the elderly with chronic low back pain-a systematic review and meta-analysis of randomized controlled trials"

20 Jan 2024

No abstract

### Economic evaluation of videoconference group Acceptance and Commitment Therapy and Behavioral Activation Therapy for Depression versus usual care among adults with chronic low back pain plus comorbid depressive symptoms

19 Jan 2024

Chronic pain and depression are frequently comorbid conditions associated with significant healthcare and social costs. This study examined the cost-utility and cost-effectiveness of videoconference-based group forms of Acceptance and Commitment Therapy (ACT) and Behavioral Activation Therapy for Depression (BATD), as a complement to treatment-as-usual (TAU), for patients with chronic low back

### Risk factors for low back pain after Iliac Vein Stenting for NIVLs

18 Jan 2024

CONCLUSION: Overall, the vast majority of pain scores were low. Factors that were associated with lower pain scores were older age, male gender, procedures on the right side, and IV sedation, in particular with the use of Propofol. These data may help us better target patients anticipated to have high pain scores and suggest the preferential use of Propofol and Toradol.

### Osteoporosis in psoriatic arthritis: Risk factors, insufficiency fractures and its association with the disease activity

17 Jan 2024

CONCLUSIONS: In patients with PsA, OP is more frequent in women and patients over 50 years old. A sedentary lifestyle and early menopause may add extra risk for OP. Type, duration disease, and treatments are not associated with OP or insufficiency fractures.

### The assessment of musculoskeletal disorders, quality of life, and comorbidities in older people in Bangladesh

15 Jan 2024

Musculoskeletal disorders are debilitating conditions that significantly impact the state of health, especially in older people. The study, which employed a cross-sectional design and practical sampling, included 206 participants among them 124 (62.2%) were men and 82 (39.8%) were women, from all over Bangladesh with musculoskeletal issues of varying severity and impact

## Artificial Intelligence-enabled Chest X-ray Classifies Osteoporosis and Identifies Mortality Risk

13 Jan 2024

A deep learning model was developed to identify osteoporosis from chest X-ray (CXR) features with high accuracy in internal and external validation. It has significant prognostic implications, identifying individuals at higher risk of all-cause mortality. This Artificial Intelligence (AI)-enabled CXR strategy may function as an early detection screening tool for osteoporosis

## A path analysis investigation into menopausal osteoporosis, sarcopenia risk, and their impact on sleep quality, depressive symptoms and quality of life

13 Jan 2024

CONCLUSION: Individuals who employed more active coping strategies exhibited fewer depressive symptoms, better sleep quality, and superior physical and mental QOL. Further, individuals with osteoporosis had lower pain levels, less sarcopenia risk, and higher engaged in exercise presentation improved physical and mental QOL

## Psychological, Pain, and Disability Factors Influencing the Perception of Improvement/Recovery from Physiotherapy in Patients with Chronic Musculoskeletal Pain: A Cross-Sectional Study

11 Jan 2024

CONCLUSIONS: Treatment beliefs, therapeutic alliance, degree of self-efficacy, and pain intensity have been shown to be predictors of a subjective perception of improvement in patients with CMP. In turn, multimodal treatments had the greatest positive impact on the subjective perception of improvement.

## Work-Related Musculoskeletal Disorders Risk Assessment during Manual Lymphatic Drainage with Compressive Bands among Physiotherapists

11 Jan 2024

CONCLUSIONS: These results highlighted that the two complete decongestive therapy phases could be described as a combination of GP. Ergonomic assessment showed that compression bandaging as well as drainage phases expose physiotherapists to moderate musculoskeletal disorder risks that require "further investigation and change soon".

## Sexual Disability in Low Back Pain: Diagnostic and Therapeutic Framework for Physical Therapists

11 Jan 2024

CONCLUSIONS: The proposed framework can help clinicians properly manage patients with LBP-related sexual disability.

## Effect of Adding Diaphragmatic Breathing Exercises to Core Stabilization Exercises on Pain, Muscle Activity, Disability, and Sleep Quality in Patients With Chronic Low Back Pain: A Randomized Control Trial

11 Jan 2024

CONCLUSION: The combination of DBE and CSE interventions compared to CSE alone showed improvement in the measured parameters for patients with CLBP. Incorporating DBE with CSE also improved muscle activation and chest expansion.

### Self-Reported Work-Related Musculoskeletal Problems and Associated Risk Factors Among Three-Wheel Car Drivers in Ethiopia: A Cross-Sectional Community-Based Study

10 Jan 2024

**CONCLUSION:** In this study, the overall 12-month prevalence of musculoskeletal problems among three-wheel car drivers was high. Periodic health checkups for drivers, lifestyle changes, delivering training, and creating awareness are important to address this high-burden occupation-related problem.

### Duration of osteoporosis treatment to reduce the risk of subsequent osteoporotic fracture and all-cause mortality in elderly hip fracture patients in a Korean real-world study

10 Jan 2024

**CONCLUSION:** These findings underscore the importance of early and continuous osteoporosis treatment for elderly patients with hip fracture to improve health outcomes. The benefits of long-term osteoporosis treatment should be discussed in clinical practice to improve overall health outcomes.

### Impact of Musculoskeletal Pain on Functioning and Disability in Children with Juvenile Idiopathic Arthritis in Iceland

05 Jan 2024

**CONCLUSION:** The findings provide important information about the impacts of pain on daily life in children with JIA and about their intervention needs.

### The prevalence and associated risk factors of osteoporosis in HIV positive postmenopausal women on combined antiretroviral therapy

05 Jan 2024

No abstract

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## MSK health and inequalities

### Is the use of diagnostic imaging and the self-reported clinical management of low back pain patients influenced by the attitudes and beliefs of chiropractors? A survey of chiropractors in the Netherlands and Belgium

08 Jan 2024

**CONCLUSION:** The high biomedical class demonstrated better overall adherence to the practice guidelines for the management of LBP and diagnostic imaging than the other classes. Due to the small numbers for the high and low biomedical classes, these results should be interpreted with caution.

### Editorial: Community series - reducing the burden of age-related disease in relation to osteoporosis, sarcopenia and osteosarcopenia, volume II

04 Jan 2024

No abstract

## Identification and characterization of extrachromosomal circular DNA in age-related osteoporosis

30 Dec 2023

Extrachromosomal circular DNA (eccDNA) was once thought to mainly exist in tumour cells, although it was later shown to be ubiquitous in healthy tissues as well. However, the characteristics and properties of eccDNA in healthy tissue or non-cancer tissue are not well understood

## Comparative efficacy of acupuncture-related therapy for postmenopausal osteoporosis: protocol for Bayesian network meta-analysis

30 Dec 2023

INTRODUCTION: The review aims to conduct the first network meta-analysis to comprehensively evaluate the application of multiple acupuncture techniques in patients with postmenopausal osteoporosis, ranking the best acupuncture treatment and providing a reference for clinical treatment extensively.

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## MSK health and nutrition

### The mediation effect of vitamin A and vitamin D supplement in the association between serum vitamin K levels and musculoskeletal disorders in preschool children

08 Jan 2024

CONCLUSIONS: A low serum vitamin K1 level is connected with an increased risk of MSD among children, highlighting that vitamin A and D supplementation is a helpful intervention to prevent MSD in children with vitamin K deficiency.

### Development and validation of an eight-item calcium screener to assess daily calcium intake of patients with osteoporosis in clinical practice

29 Dec 2023

CONCLUSION: The calcium screener shows good convergent validity, reliability and feasibility to estimate daily calcium intake of patients with osteoporosis in routine clinical practice.

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## MSK health data and surveillance

### Osteosarcoma neutrophil extracellular trap network-associated gene recurrence and metastasis model

29 Jan 2024

Osteosarcoma (OS) is the most common malignancy in children and adolescents and has a high probability of recurrence and metastasis. A growing number of studies have shown that neutrophil extracellular traps (NETs) are strongly associated with cancer metastasis, but in osteosarcoma, genes associated with NETs that promote osteosarcoma recurrence and metastasis remain to be explored

### Tuina Intervention in Sodium Monoiodoacetate Injection-Induced Rat Model of Knee Osteoarthritis

29 Jan 2024

Knee osteoarthritis (KOA), a common degenerative joint disorder, is characterized by chronic pain and disability, which can progress to irreparable structural damage of the joint. Investigations into the link between articular cartilage, muscles, synovium, and other tissues surrounding the knee joint in KOA are of great importance

### A new mathematical model for evaluating surface changes in the mid-abdominal sagittal plane after two-level pedicle reduction osteotomy in patients with ankylosing spondylitis

28 Jan 2024

CONCLUSIONS: The novel mathematical model was reliable in predicting the ac-AMSP in AS patients undergoing two-level PSO.

### iPSC-derived models of PACS1 syndrome reveal transcriptional and functional deficits in neuron activity

27 Jan 2024

PACS1 syndrome is a neurodevelopmental disorder characterized by intellectual disability and distinct craniofacial abnormalities resulting from a de novo p.R203W variant in phosphofurin acidic cluster sorting protein 1 (PACS1). PACS1 is known to have functions in the endosomal pathway and nucleus, but how the p.R203W variant affects developing neurons is not fully understood

### National population-based estimates for major birth defects, 2016-2020

26 Jan 2024

CONCLUSION: This study provides updated national estimates of selected major birth defects in the United States. These data can be used for continued temporal monitoring of birth defects prevalence. Increases and decreases in prevalence since 1999 observed in this study warrant further investigation.

### Outcome measures for young people with adolescent idiopathic scoliosis: A qualitative exploration of healthcare professionals' perceptions and practices

26 Jan 2024

CONCLUSIONS: Although HCPs perceived the value of using outcome measures, current practice indicates limited use for individuals with AIS. The findings revealed different barriers and facilitators to implement PROMs in practice

### Human Xenograft Model

25 Jan 2024

Human-SCID grafting is a commonly used technique for the long-term investigation of rheumatoid arthritis (RA) explants. To establish a chimeric immunological system in



NOD/SCID mice, RA patient-derived pannus tissue from the synovial membrane, articular cartilage, and bone can be transplanted subcutaneously

### Denervation-Induced Sarcopenia Model

25 Jan 2024

Rheumatoid arthritis (RA) is an important risk factor for sarcopenia. Physical inactivity, systemic inflammatory factors, and medication directly or indirectly induce skeletal muscle loss in RA patients. The sarcopenia-induced systemic or local proinflammatory microenvironment also contributes to the onset and progression of autoimmune disease

### Clinical Scoring of Disease Activity in Animal Models

25 Jan 2024

Disease severity in murine arthritis models, such as collagen-induced arthritis (CIA), is commonly assessed by clinical scoring of paw swelling and histological examination of joints. Clinical scoring using a qualitative scoring system of paw inflammation (paw thickness, width, or volume) over time is the standard method used for subjective quantification of arthritis activity

### Animal Models of Vasculitis

25 Jan 2024

The diagnosis of vasculitis in rheumatoid arthritis (RV) is associated with considerable mortality; therefore, understanding the basic mechanisms underlying the pathogenesis of vasculitis is very important. Animal models of vasculitis have contributed to elucidating such mechanisms

### Collagen-Induced Arthritis Models

25 Jan 2024

Due to the limitations of using patient-derived samples for systemic kinetic studies in rheumatoid arthritis (RA) research, animal models are helpful for further understanding the pathophysiology of RA and seeking potential therapeutic targets or strategies. The collagen-induced arthritis (CIA) model is one of the standard RA models used in preclinical research

### Histological Analyses of Arthritic Joints in Collagen-Induced Arthritis Model Mice

25 Jan 2024

Histological analysis is a morphological technique and an effective method for understanding the pathology of rheumatoid arthritis (RA). RA is an inflammatory disease characterized by increased synovial tissue and osteoclasts, angiogenesis, infiltration of inflammatory cells, and pannus formation

### Large-scale computational modelling of the M1 and M2 synovial macrophages in rheumatoid arthritis

25 Jan 2024

Macrophages play an essential role in rheumatoid arthritis. Depending on their phenotype (M1 or M2), they can play a role in the initiation or resolution of inflammation. The M1/M2 ratio in rheumatoid arthritis is higher than in healthy controls. Despite this, no treatment targeting specifically macrophages is currently used in clinics

### Effective evaluation of HGcnMLP method for markerless 3D pose estimation of musculoskeletal diseases patients based on smartphone monocular video

24 Jan 2024

Markerless pose estimation based on computer vision provides a simpler and cheaper alternative to human motion capture, with great potential for clinical diagnosis and remote rehabilitation assessment

### **A Custom-Tailored Multichannel Pressure Monitoring System Designed for Experimental Surgical Model of Abdominal Compartment Syndrome**

23 Jan 2024

In experimental medicine, a wide variety of sensory measurements are used. One of these is real-time precision pressure measurement. For comparative studies of the complex pathophysiology and surgical management of abdominal compartment syndrome, a multichannel pressure measurement system is essential

### **Cross-Cultural Adaptation and Measurement of Psychometric Properties of the Lithuanian Version of the Western Ontario Shoulder Instability Index (WOSI)**

23 Jan 2024

Background and Objectives: The Western Ontario Shoulder Instability Index (WOSI) is a disease-specific self-administered questionnaire which is designed to measure health-related quality of life for patients with shoulder instability

### **Network Pharmacology and Molecular Modeling Techniques in Unraveling the Underlying Mechanism of Citri Reticulatae Pericarpium against Type 2 Diabetic Osteoporosis**

23 Jan 2024

Type 2 diabetic osteoporosis (T2DOP) is a common complication in diabetic patients that seriously affects their health and quality of life. The pathogenesis of T2DOP is complex, and there are no targeted governance means in modern medicine. Citri Reticulatae Pericarpium (CRP) is a traditional Chinese medicine that has a long history and has been used in the treatment of osteoporosis diseases

### **Gender inequality and burden of orofacial clefts in the Eastern Mediterranean region: findings from global burden of disease study 1990-2019**

23 Jan 2024

CONCLUSIONS: Despite a declining prevalence, the burden of OFCs remained notably significant in the EMR. Gender inequality is associated with the burden of OFCs in the Eastern Mediterranean region. Countries in the region should establish comprehensive public policies to mitigate gender inequalities in healthcare services available for OFCs.

### **Epidemiology of multimorbidity associated with atherosclerotic cardiovascular disease in the United States, 1999-2018**

23 Jan 2024

CONCLUSIONS: During the 20-year survey period, there was a significant decrease in the overall prevalence of ASCVD. However, this reduction was primarily observed in individuals without dyslipidemia, DM, hypertension, asthma, COPD, and arthritis. Among populations with any of the evaluated chronic conditions, the prevalence of ASCVD remained unchanged

### **The global burden of osteoarthritis: past and future perspectives**

22 Jan 2024

No abstract

### Three-dimensional, in-vitro approaches for modelling soft-tissue joint diseases

22 Jan 2024

Diseases affecting the soft tissues of the joint represent a considerable global health burden, causing pain and disability and increasing the likelihood of developing metabolic comorbidities. Current approaches to investigating the cellular basis of joint diseases, including osteoarthritis, rheumatoid arthritis, tendinopathy, and arthrofibrosis, involve well phenotyped human tissues, animal

### Pain in clinical trials for knee osteoarthritis: estimation of regression to the mean

22 Jan 2024

No abstract

### Lumbar Disc Degeneration Is Linked to Dorsal Subcutaneous Fat Thickness at the L1-L2 Intervertebral Disc Level Measured by MRI

22 Jan 2024

CONCLUSIONS: Younger females with thicker DSFT at the L1-L2 level are more likely to develop DDD. This suggests that increased DSFT may be a contributing factor to DDD.

### Burden of rheumatoid arthritis and forecasted prevalence to 2050

22 Jan 2024

No abstract

### Impact of homeostatic body hydration status, evaluated by hemodynamic measures, on different pain sensitization paths to a chronic pain syndrome

22 Jan 2024

Contrasting findings on the mechanisms of chronic pain and hypertension development render the current conventional evidence of a negative relationship between blood pressure (BP) and pain severity insufficient for developing personalized treatments

### An abattoir study of the prevalence of foot lesions and claw measurements in water buffalo in Egypt

20 Jan 2024

CONCLUSIONS: The study found a high prevalence of claw lesions in buffalo in Egypt, the clinical significance of which requires further elucidation. Recommended measurements will help guide claw trimming in buffalo to minimise lesions.

### Epidemiology of osteoarthritis: literature update 2022-2023

19 Jan 2024

PURPOSE OF REVIEW: This review highlights recently published studies on osteoarthritis (OA) epidemiology, including topics related to understudied populations and joints, imaging, and advancements in artificial intelligence (AI) methods.

### Helping adolescents cope with the burden of scoliosis

19 Jan 2024

No abstract

### Establishment and analysis of a novel diagnostic model for systemic juvenile idiopathic arthritis based on machine learning

19 Jan 2024

CONCLUSIONS: We successfully developed a new SJIA diagnostic model that can be used for a novel aid in the identification of SJIA. In addition, the identification of 4 key genes that may serve as potential biomarkers for SJIA provides new insights to further understand the mechanisms of SJIA.

### SpasticSim: a synthetic data generation method for upper limb spasticity modelling in neurorehabilitation

18 Jan 2024

In neurorehabilitation, assessment of functional problems is essential to define optimal rehabilitation treatments. Usually, this assessment process requires distinguishing between impaired and non-impaired behavior of limbs. One of the common muscle motor disorders affecting limbs is spasticity, which is complicated to quantify objectively due to the complex nature of motor control

### Repeated cold stress, an animal model for fibromyalgia, elicits proprioceptor-induced chronic pain with microglial activation in mice

18 Jan 2024

CONCLUSION: Proprioceptor hyperactivation leads to local microglial activation along the reflex arc; this prolonged microglial activation may be responsible for chronic pain in the present model. Proprioceptor-induced microglial activation might be the common cause of chronic pain in both the fibromyalgia and myalgic encephalomyelitis models, although the experimental models are different.

### Letter to the Editor Regarding "Patient-Tailored 3D-Printing Models in the Subspecialty Training of Spinal Tumors: A Comparative Study and Questionnaire Survey"

17 Jan 2024

No abstract

### The effectiveness of allied health and nurse practitioner models-of-care in managing musculoskeletal conditions in the emergency department: a systematic review and meta-analysis

17 Jan 2024

CONCLUSION: There is limited research to judge the effectiveness of allied health and nursing models of care for the management of musculoskeletal conditions in ED. Currently, it is unclear as to whether allied health and nurse practitioners are more effective than ED physicians at managing musculoskeletal conditions in ED

### Association of vitamins with bone mineral density and osteoporosis measured by dual-energy x-ray absorptiometry: a cross-sectional study

17 Jan 2024

CONCLUSIONS: Our findings provide evidence that vitamins intake is linked with decreased prevalence of osteoporosis, including vitamin A, C, D. Further large-scale prospective cohort studies are needed to verify our findings.

### "Determining the efficacy of a machine learning model for measuring periodontal bone loss"

17 Jan 2024

**CONCLUSIONS:** We propose a Machine Learning model that automates the diagnosis of Periodontal Bone Loss in panoramic radiographs with acceptable performance.

### **Locomotor activity as an effective measure of the severity of inflammatory arthritis in a mouse model**

17 Jan 2024

**CONCLUSION:** The measurement of locomotor activity provided a more detailed evaluation of the impact of inflammatory arthritis on animal well-being and mobility than that provided by measuring clinical index and ankle thickness, and could be a valuable tool in preclinical studies of inflammatory arthritis.

### **Establishment and pathophysiological evaluation of a novel model of acute compartment syndrome in rats**

17 Jan 2024

**CONCLUSION:** We successfully established a new preclinical ACS-like rat model, by the compression of the lower leg of rats with 300 mmHg pressure for 6 h and blunt trauma by 1.0 kg weight falling.

### **Musculoskeletal health: an ecological study assessing disease burden and research funding**

16 Jan 2024

**BACKGROUND:** Exacerbated by an aging population, musculoskeletal diseases are a chronic and growing problem in the United States that impose significant health and economic burdens. The objective of this study was to analyze the correlation between the burden of diseases and the federal funds assigned to health-related research through the National Institutes of Health (NIH).

### **Modeling of antibody responses to COVID-19 vaccination in patients with rheumatoid arthritis**

16 Jan 2024

To construct a model of the antibody response to COVID-19 vaccination in patients with rheumatoid arthritis (RA), and to identify clinical factors affecting the antibody response. A total of 779 serum samples were obtained from 550 COVID-19-naïve RA patients who were vaccinated against COVID-19. Antibody titers for the receptor binding domain (anti-RBD) and nucleocapsid (anti-N) were measured

### **Transcriptional dysregulation of autophagy in the muscle of a mouse model of Duchenne muscular dystrophy**

16 Jan 2024

It has been reported that autophagic activity is disturbed in the skeletal muscles of dystrophin-deficient mdx mice and patients with Duchenne muscular dystrophy (DMD). Transcriptional regulations of autophagy by FoxO transcription factors (FoxOs) and transcription factor EB (TFEB) play critical roles in adaptation to cellular stress conditions

### **Risk Factors Analysis and Nomogram Model Establishment of Hidden Blood Loss in Overweight and Obese Elderly Patients After Total Hip Arthroplasty**

15 Jan 2024

**CONCLUSION:** HBL was an important component of total blood loss (TBL) after THA in overweight and obese patients. Necrosis of the femoral head, absence of hypertension, longer operative time, higher preoperative erythrocytes, and higher preoperative D-dimer levels were independent risk factors for postoperative HBL in these patients

### **A CIC-related-epigenetic factors-based model associated with prediction, the tumor microenvironment and drug sensitivity in osteosarcoma**

15 Jan 2024

Osteosarcoma is generally considered a cold tumor and is characterized by epigenetic alterations. Although tumor cells are surrounded by many immune cells such as macrophages, T cells may be suppressed, be inactivated, or not be presented due to various mechanisms, which usually results in poor prognosis and insensitivity to immunotherapy

### **National burden of rheumatoid arthritis in Canada, 1990-2019: findings from the Global Burden of Disease Study 2019 - a GBD collaborator-led study**

12 Jan 2024

**CONCLUSION:** Trends in RA burden indicators over time and differences by age and sex have important implications for Canadian policy-makers, researchers and care providers. Early identification and management of RA in women may help reduce the overall burden of RA in Canada.

### **Co-development and testing of an extended community pharmacy model of service delivery for managing osteoarthritis: protocol for a sequential, multi-methods study (PharmOA)**

12 Jan 2024

**BACKGROUND:** Osteoarthritis is a common, painful and disabling long-term condition. Delivery of high-quality guideline-informed osteoarthritis care that successfully promotes and maintains supported self-management is imperative. However, osteoarthritis care remains inconsistent, including under use of core non-pharmacological approaches of education, exercise and weight loss

### **Characterization of a Preclinical In Vitro Model Derived from a SMARCA4-Mutated Sinonasal Teratocarcinoma**

11 Jan 2024

Sinonasal teratocarcinoma (TCS) is a rare tumor that displays a variable histology with admixtures of epithelial, mesenchymal, neuroendocrine and germ cell elements. Facing a very poor prognosis, patients with TCS are in need of new options for treatment. Recently identified recurrent mutations in SMARCA4 may serve as target for modern therapies with EZH1/2 and CDK4/6 inhibitors

### **Computational 3D Modeling-Based Identification of Inhibitors Targeting Cysteine Covalent Bond Catalysts for JAK3 and CYP3A4 Enzymes in the Treatment of Rheumatoid Arthritis**

11 Jan 2024

This work aimed to find new inhibitors of the CYP3A4 and JAK3 enzymes, which are significant players in autoimmune diseases such as rheumatoid arthritis. Advanced computer-aided drug design techniques, such as pharmacophore and 3D-QSAR modeling, were used

## Integrated Analysis of DNA Methylation and Gene Expression Profiles in a Rat Model of Osteoarthritis

11 Jan 2024

Osteoarthritis (OA) is common and affected by several factors, such as age, weight, sex, and genetics. The pathogenesis of OA remains unclear. Therefore, using a rat model of monosodium iodoacetate (MIA)-induced OA, we examined genomic-wide DNA methylation using methyl-seq and characterized the transcriptome using RNA-seq in the articular cartilage tissue from a negative control (NC) and

## Integrating Abnormal Gait Detection with Activities of Daily Living Monitoring in Ambient Assisted Living: A 3D Vision Approach

11 Jan 2024

Gait analysis plays a crucial role in detecting and monitoring various neurological and musculoskeletal disorders early. This paper presents a comprehensive study of the automatic detection of abnormal gait using 3D vision, with a focus on non-invasive and practical data acquisition methods suitable for everyday environments

## IoT-Based Solution for Detecting and Monitoring Upper Crossed Syndrome

11 Jan 2024

A sedentary lifestyle has caused adults to spend more than 6 h seated, which has led to inactivity and spinal issues. This context underscores the growing sedentary behavior, exemplified by extended sitting hours among adults and university students

## Development and initial validation of the Psoriatic Arthritis Screening Questionnaire: a cross-sectional study in Chinese population

11 Jan 2024

No abstract

## Relationship between DXA measured systemic bone mineral density and subchondral bone cysts in postmenopausal female patients with knee osteoarthritis: a cross-sectional study : Osteoarthritis cysts and bone mineral density

11 Jan 2024

CONCLUSIONS: Development of TF OA high-grade SBCs may be linked to systemic bone mass as represented by trabecular bone-rich lumbar vertebrae. The relationship might point to the importance of bone stiffness as an acting factor in knee OA possibly with mechanical energy transfer to the joint.

## PK/PD model of Chuanxiong gel plaster in treatment of rheumatoid arthritis

11 Jan 2024

In this experiment, the PK/PD fitting model of Chuanxiong(Chuanxiong Rhizoma) in the treatment of rheumatoid arthritis was established in the form of acupoint combined with external application gel paste. Firstly, the rheumatoid arthritis model was induced by ovalbumin, and the articular fluid of rabbits was extracted by microdialysis

## Cell membrane-anchored and tumor-targeted IL-12 T-cell therapy destroys cancer-associated fibroblasts and disrupts extracellular matrix in heterogenous osteosarcoma xenograft models

10 Jan 2024

**CONCLUSIONS:** This study unveiled a novel therapy-attIL12-T cells-for targeting CAFs/ECM. These findings are highly relevant to humans because CAFs are abundant in human osteosarcoma.

**Multimorbidity measured with Charlson Comorbidity Index is not associated with clinically relevant risk of revision after primary total hip arthroplasty: a population-based cohort study on 98,647 patients from the Danish Hip Arthroplasty Register**

09 Jan 2024

**CONCLUSION:** Multimorbidity is associated with a minor but not clinically relevant increased risk of revision up to 10 years after primary THA.

**Predictive model for a second hip fracture occurrence using natural language processing and machine learning on electronic health records**

04 Jan 2024

Hip fractures (HFx) are associated with a higher morbidity and mortality rates, leading to a significant reduction in life quality and in limitation of patient's mobility. The present study aimed to obtain real-world evidence on the clinical characteristics of patients with an initial and a second hip fracture (HFx) and develop a predictive model for second HFx using artificial intelligence

**Evaluation of the relationship between occupational-specific task performance and measures of physical fitness, cardiovascular and musculoskeletal health in firefighters**

03 Jan 2024

**CONCLUSION:** Firefighters that were taller, leaner, stronger and fitter with a more favourable CVH profile, higher HRV and less musculoskeletal discomfort performed best on all occupational-specific tasks.

**Translation, transcultural adaptation into Brazilian Portuguese and concurrent validity of the rheumatoid arthritis assessment scale (RAKAS-13/Brazil)**

03 Jan 2024

**CONCLUSION:** The Brazilian Portuguese version of the RAKAS (RAKAS-13/BRASIL) proved to be a questionnaire that was easy and quick to administer to assess patient knowledge about Rheumatoid Arthritis, despite its low correlation with the PKQ in the present study.

**Multi-pose-based convolutional neural network model for diagnosis of patients with central lumbar spinal stenosis**

03 Jan 2024

Although the role of plain radiographs in diagnosing lumbar spinal stenosis (LSS) has declined in importance since the advent of magnetic resonance imaging (MRI), diagnostic ability of plain radiographs has improved dramatically when combined with deep learning. Previously, we developed a convolutional neural network (CNN) model using a radiograph for diagnosing LSS

**Screening of the key response component groups and mechanism verification of Huangqi-Guizhi-Wuwu-Decoction in treating rheumatoid arthritis based on a novel computational pharmacological model**

03 Jan 2024



**CONCLUSIONS:** We have introduced a novel model that aims to optimize and analyze the mechanisms behind herbal formulas. The model revealed the KRCG of HGWD for the treatment of RA and proposed that KRCG inhibits the inflammatory response by synergistically targeting cAMP, PI3K-Akt, and HIF-1 $\alpha$  pathways

### Dynamic monitoring of UBA1 somatic mutations in patients with relapsing polychondritis

03 Jan 2024

**CONCLUSION:** We report UBA1 variants in patients with RP in the Chinese population for the first time. Multiple ddPCR detections from samples collected at different time points can enhance sensitivity and should be considered for patients with initial negative ddPCR results.

### Inhibitory effects of *Acanthopanax sessiliflorus* Harms extract on the etiology of rheumatoid arthritis in a collagen-induced arthritis mouse model

03 Jan 2024

**CONCLUSIONS:** To the best of our knowledge, this is the first study to conduct extensive research on the efficacy of ASH extract in inhibiting the pathogenesis of RA. However, additional animal models and clinical studies are required to validate this hypothesis.

### The estimated prevalence of osteoporosis in Bahrain: a multi-centered-based study

03 Jan 2024

**CONCLUSIONS:** We reported high prevalence of osteopenia and osteoporosis in Bahrain. Low BMD was more common in females, especially in postmenopausal women. Highest prevalence of osteopenia happened at young age. Therefore, we advocate screening at younger age than previously recommended.

### Optimized Allogenic Decellularized Meniscal Scaffold Modified by Collagen Affinity Stromal Cell-Derived Factor SDF1 $\alpha$ for Meniscal Regeneration: A 6- and 12-Week Animal Study in a Rabbit Model

02 Jan 2024

**CONCLUSION:** The new meniscal graft (DMS-CBD) accelerated extracellular matrix deposition and meniscal regeneration and protected articular cartilage from degeneration.

### Verapamil mitigates chloride and calcium bi-channelopathy in a myotonic dystrophy mouse model

02 Jan 2024

Myotonic dystrophy type 1 (DM1) involves misregulated alternative splicing for specific genes. We used exon or nucleotide deletion to mimic altered splicing of genes central to muscle excitation-contraction coupling in mice. Mice with forced skipping of exon 29 in the CaV1

### Reduced expression of semaphorin 3A in osteoclasts causes lymphatic expansion in a Gorham-Stout disease (GSD) mouse model

01 Jan 2024

Gorham-Stout disease (GSD) is a sporadic chronic disease characterized by progressive bone dissolution, absorption, and disappearance along with lymphatic vessel infiltration in bone-marrow cavities. Although the osteolytic mechanism of GSD has been widely studied, the cause of lymphatic hyperplasia in GSD is rarely investigated

## Synergistic VSV Virotherapy and Carbon Nanotube Photothermal Therapy for Osteosarcoma in Murine Models

30 Dec 2023

CONCLUSION: Combining virotherapy with VSV and CNTs photothermal therapy is useful for local treatment of osteosarcoma in murine models, possibly allowing for smaller tumor resection margins.

## Comprehensive modeling of annulus fibrosus: From biphasic refined characterization to damage accumulation under viscous loading

09 Dec 2023

The annulus fibrosus (AF), a permeable, hydrated, and fiber-reinforced soft tissue, exhibits complex responses influenced by fluid pressure, osmotic pressure, and structural mechanics. Existing models struggle to comprehensively represent these intricate interactions and the heterogeneous solid responses within the AF

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