



Musculoskeletal Health Current Awareness Update

April 2024

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.

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Prevention of MSK conditions across the life course

A Study of 60 Patients with Low Back Pain to Compare Outcomes Following Magnetotherapy, Ultrasound, Laser, and Electrotherapy with and without Lumbosacral Kinesiotherapy

01 Apr 2024

BACKGROUND This study of 60 patients with low back pain (LBP) aimed to compare outcomes following magnetotherapy, ultrasound therapy, laser therapy, and electrotherapy, with and without lumbosacral kinesiotherapy, and used the Roland-Morris Disability Questionnaire (RMDQ) and the Oswestry Low Back Pain Disability Questionnaire (OLBPDQ)

Efficacy of Integrated Yoga and Naturopathy With Physiotherapy or Acupuncture for Low Back Pain: A Parallel, Two-Arm, Randomized Trial

01 Apr 2024

CONCLUSION: The present study findings revealed that both physiotherapy and acupuncture, as interventions along with integrated yoga and naturopathy may be considered an effective treatment strategy for chronic LBP.

Bone quality in zebrafish vertebrae improves after alendronate administration in a glucocorticoid-induced osteoporosis model

31 Mar 2024

Glucocorticoid-induced osteoporosis (GIOP) changes the microarchitecture of bones and often leads to the reduction of bone-mineral density (BMD) and increased fracture rates. Zebrafish has been used as an alternative model for GIOP, however, the interaction of GIOP, and its treatment, with zebrafish bone morphometrics and mechanical properties, remains a challenge

Combined musculoskeletal finite element modeling of femur stress during reactive balance training

31 Mar 2024

The purpose of this study was to determine the material stresses experienced in the femoral neck during the stepping phase of recovery from a forward loss of balance achieved both using release from a static forward lean and rapid treadmill accelerations in 8 older adults

Testing the mediatory role of kinesiophobia in the association between perceived greenspace and physical activity among individuals with chronic low back pain

29 Mar 2024

To test the mediatory role of kinesiophobia between greenspace and physical activity, we conducted a cross-sectional survey and recruited 801 participants with chronic low back pain. The level of greenspace was assessed using both perceived greenspace and the Normalized Difference Vegetation Index (NDVI)

Analysis of related factors for sarco-osteoporosis in middle-aged and elderly inpatients and development and validation of a nomogram

28 Mar 2024

CONCLUSIONS: Our research showed that the occurrence of sarco-osteoporosis was associated with age, regular exercise, albumin, height and lean mass index, and we have developed a nomogram that can be effectively used in the preliminary and in-depth risk prediction of sarco-osteoporosis in middle-aged and elderly hospitalized patients.

Healthcare resource utilisation and economic burden attributable to back pain in primary care: A matched case-control study in the United Kingdom

28 Mar 2024

CONCLUSION: Our findings confirm the substantial healthcare costs attributed to back pain, even with primary care costs only. The data also revealed significant cost variations across socio-demographic and clinical factors.

NADA Ear Acupuncture and Medical Acupuncture for Pain- and Health-Related Quality of Life among Older Patients with Chronic Nonspecific Low Back Pain: A Prospective Clinical Trial

28 Mar 2024

CONCLUSION: The outcomes of this study suggest that both MA and NADA ear acupuncture could be a valuable and personalized component of a comprehensive approach to managing chronic nonspecific LBP in older patients

Musculoskeletal Pain, Physical Activity, Muscle Mass, and Mortality in Older Adults: Results from the Korean Longitudinal Study on Health and Aging (KLoSHA)

28 Mar 2024

Background and objectives: Musculoskeletal (MSK) pain significantly impacts physical activity and quality of life in older adults, potentially influencing mortality. This study explored the relationship between MSK pain, physical activity, muscle mass, and mortality among older adults

Effect of Whole-Body Vibration Exercise on Pain, Disability, Balance, Proprioception, Functional Performance and Quality of Life in People with Non-Specific Chronic Low Back Pain: A Systematic Review and Meta-Analysis

28 Mar 2024

Background: Non-specific chronic low back pain (NSCLBP) presents significant treatment challenges due to its multifactorial nature. Whole-body vibration exercise (WBVE) has emerged as a potential therapeutic modality, offering benefits across various domains, including pain reduction, improved balance, and enhanced quality of life (QoL)

A Scoping Review: Reducing Musculoskeletal Injury Risk Factors for Adaptive Sport Athletes through Prevention Programs

28 Mar 2024

The purpose of this scoping review was to identify existing strategies to reduce modifiable risk factors for musculoskeletal injury in adaptive athletes. Medline, Embase, Web of Science, and CINAHL were searched

Feasibility of using low-cost markerless motion capture for assessing functional outcomes after lower extremity musculoskeletal cancer surgery

28 Mar 2024

BACKGROUND: Physical limitations are frequent and debilitating after sarcoma treatment. Markerless motion capture (MMC) could measure these limitations. Historically expensive cumbersome systems have posed barriers to clinical translation.

Medical and exercise consultation use for low back and knee pain among cardiovascular mass screening population: A cross-sectional study

27 Mar 2024

Low back and knee pain, as major symptoms and early signs of osteoarthritis, have restricted healthy life expectancy, and numerous guidelines have recommended therapeutic exercise as the first-line treatment for chronic pain. Proportions of medical and exercise consultation use for those pain have been unclear, and these may change in the future

Korean red ginseng extract prevents bone loss in an oral model of glucocorticoid induced osteoporosis in mice

27 Mar 2024

The gut microbiota and barrier function play important roles in bone health. We previously demonstrated that chronic glucocorticoid (GC)-induced bone loss in mice is associated with significant shifts in gut microbiota composition and impaired gut barrier function

Musculoskeletal Morphology and Joint Flexibility-Associated Functional Characteristics across Three Time Points during the Menstrual Cycle in Female Contemporary Dancers

27 Mar 2024

Findings are inconsistent with regards to whether menstrual cycle phase-associated changes in physical functioning exist. It is possible that such discrepancies are due to varying rigour in experimental approaches

Electronic Health Records for Predicting Outcomes to Work-Related Musculoskeletal Disorders: A Scoping Review

27 Mar 2024

CONCLUSION: The review outlines the limited research on using EHRs to predict outcomes of WMSDs. It highlights the need for EHR design to address data quality issues and develop a standardised data set in occupational healthcare that includes known factors that potentially predict outcomes to help regulators, research efforts, and practitioners make better informed clinical decisions.

Lower-limb exoskeletons appeal to both clinicians and older adults, especially for fall prevention and joint pain reduction

27 Mar 2024

Exoskeletons are a burgeoning technology with many possible applications to improve human life; focusing the effort of exoskeleton research and development on the most important features is essential for facilitating adoption and maximizing positive societal impact

The impact of musculoskeletal ill health on quality of life and function after critical care: a multicentre prospective cohort study

27 Mar 2024

Physical disability is a common component of post-intensive care syndrome, but the importance of musculoskeletal health in this population is currently unknown. We aimed to determine the musculoskeletal health state of intensive care unit survivors and assess its relationship with health-related quality of life; employment; and psychological and physical function

Genicular artery embolization for the treatment of knee pain secondary to mild to severe knee osteoarthritis: One year clinical outcomes

27 Mar 2024

CONCLUSION: GAE is a well-tolerated and effective treatment that significantly improves pain symptoms and function in patients with mild-to-severe knee osteoarthritis.

Group-based exercise training programs for military members presenting musculoskeletal disorders - A pragmatic randomized controlled trial

26 Mar 2024

OBJECTIVE: To compare the effects of personalized supervised group-based programs (group physical therapy programs) to usual one-on-one physical therapy care (usual physical therapy care) on disability for military personnel suffering from low back pain, rotator cuff-related shoulder pain, patellofemoral pain syndrome or lateral ankle sprain

Daily Pain Severity but Not Vertebral Fractures Is Associated With Lower Physical Activity in Postmenopausal Women With Back Pain

25 Mar 2024

Back pain lifetime incidence is 60%-70%, while 12%-20% of older women have vertebral fractures (VFs), often with back pain. We aimed to provide objective evidence, currently lacking, regarding whether back pain and VFs affect physical activity (PA). We recruited 69 women with recent back pain (age 74.5 ± 5.4 years). Low- ($0.5 < g < 1.0$), medium- ($1.0 \leq g < 1.5$), and high-impact ($g \geq 1$)

Swimming for low back pain: A scoping review

24 Mar 2024

CONCLUSION: Most available literature investigating swimming and low back pain is cross-sectional in design. We did not identify any clear pattern of association between swimming and low back pain, based on the available literature.

The effectiveness of virtual reality exercise games on balance functions and fear of falling in women with osteoporosis

23 Mar 2024

To investigate and compare the effectiveness of Nintendo Wii games and home exercises on balance functions in patients with osteoporosis, an important disease adversely affecting balance functions. The patients included in the study were randomized into two groups the Wii exercise group ($n = 30$) and the home exercise group ($n = 30$)

Correction: 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

23 Mar 2024

No abstract

Nationwide prevalence of glucocorticoid prescriptions over 17 years and osteoporosis prevention among long-term users

22 Mar 2024

CONCLUSION: The use of glucocorticoid steroids has increased during the last 2 decades despite improvements in treatment for inflammatory disorders. The prevalence of long-term users has remained stable. Meanwhile, the use of parallel active bone-protective therapy among long-term users of glucocorticoid steroids is declining

The burden of low back pain in adolescents and young adults

22 Mar 2024

CONCLUSION: LBP in AYAs is a major global public problem with a high burden. There are large differences in incidence, prevalence and DALYs across SDIs, regions and countries. there is still a need to focus on LBP in AYAs and tailor interventions to reduce the future burden of this condition.

Potential causal association between leisure sedentary behaviors and osteoporosis: A two-sample Mendelian randomization analysis

22 Mar 2024

Previous observational studies have observed a correlation between sedentary behavior and osteoporosis. However, conclusions from these studies have been contradictory. To explore the potential causal relationship between sedentary behavior and osteoporosis, we conducted a Mendelian randomization analysis

The immediate effect of thoracolumbar fascia taping on biomechanical properties, low back pain and balance in individuals with transfemoral amputation

22 Mar 2024

CONCLUSION: KT can be used as an effective method to support standing balance and reduce LBP in individuals with TFA.

Repetitive transcranial magnetic stimulation combined with sling exercise modulates the motor cortex in patients with chronic low back pain

22 Mar 2024

The study aims to explore the effects of combining repetitive transcranial magnetic stimulation (rTMS) with sling exercise (SE) intervention in patients with chronic low back pain (CLBP). This approach aims to directly stimulate brain circuits and indirectly activate trunk muscles to influence motor cortex plasticity

Prevalence of musculoskeletal pain and dysfunction in electrical utility workers: Practical considerations for prevention and rehabilitation in the workplace

21 Mar 2024

CONCLUSIONS: Understanding the prevalence of MSDs is critical to implementing practical prevention and rehabilitation strategies in the workplace. This anonymous survey highlighted that a large proportion of electrical utility workers reported that musculoskeletal symptoms had impacted their ability to perform their job, housework and/or hobbies in the preceding 12 months

Inter-Establishment Complex Musculoskeletal Care Pathways in Montreal: Timeline of a Collaboration Involving a Research Team Within a Continuous Quality Improvement Initiative

21 Mar 2024

Children and adolescents with complex musculoskeletal conditions may receive health care that requires at least 1 transfer between 4 specialized pediatric establishments in the Montreal region (Québec, Canada). This may result in challenges in navigating the system

Acute low back pain: Epidemiology, etiology, and prevention: WFNS spine committee recommendations

21 Mar 2024

OBJECTIVE: Acute low back pain is a highly prevalent condition that poses significant challenges to healthcare systems worldwide. In this manuscript, we present the most current, evidence-based guidelines from the World Federation of Neurosurgical Societies (WFNS) Spine Committee on the epidemiology, etiology, and prevention of acute low back pain (LBP) lasting ≤ 4 weeks.

Comparative analysis of anti-osteoporosis medications in preventing vertebral body fractures after balloon kyphoplasty

21 Mar 2024

CONCLUSION: The anabolic agents were found to be more effective at reducing the incidence of SVBF (especially distant vertebral fractures) than alendronate. These agents decreased the rate of repeat BKP even after the occurrence of a fracture

Health coaching intervention with or without the support of an exercise buddy to increase physical activity of people with chronic low back pain compared to usual care: a feasibility and pilot randomised controlled trial

21 Mar 2024

CONCLUSION: The data collection and follow-up approaches were not successful and need amending before a large-scale RCT. Nonetheless, the buddy-assisted intervention was well-accepted. A future RCT will focus on differences in clinical outcomes.

Exercise therapy for treatment of acute non-specific low back pain: a Cochrane systematic review and meta-analysis of randomised controlled trials

21 Mar 2024

CONCLUSION: Exercise therapy compared to sham/placebo and no treatment may have no clinically relevant effect on pain or functional status in the short term in people with acute non-specific LBP, but the evidence is very uncertain. Owing to insufficient reporting of adverse events, we were unable to reach any conclusions on the safety or harms related to exercise therapy.

The Relation Between Osteoporosis and Bone Fractures and Health-Related Quality of Life in Post-menopausal Saudi Women in the Jazan Region: A Cross-Sectional Study

20 Mar 2024

CONCLUSION: Osteoporosis and resultant fragility fractures, especially in vertebral and hand bones, led to substantial impairments in physical, social, psychological, and environmental HRQoL in Saudi women. Modifiable risk factors like physical inactivity and long-term hormone use also affected HRQoL

Ultrasound-Guided Radiofrequency Ablation for Chronic Osteoarthritis Knee Pain in the Elderly: A Randomized Controlled Trial

20 Mar 2024

CONCLUSIONS: Ultrasound-guided RFA applied to knee nerves can significantly reduce KOA pain, improve knee joint function, improve patient satisfaction, and provide a feasible, safe, and effective minimally invasive procedure for moderate to severe KOA in elderly patients.

Demographics and PainDETECT as Predictors of 24-Month Outcomes for 10 kHz SCS in Nonsurgical Refractory Back Pain

20 Mar 2024

CONCLUSIONS: There may be an opportunity to increase pain relief and functional improvement if additional patient screening accompanies the temporary lead trial. The presence of neuropathic pain, female gender, age, and depression had some predictive value, but this analysis demonstrates the treatment efficacy of 10 kHz SCS across a wide range of patients with NSRBP.

Maternal prednisone exposure during pregnancy elevates susceptibility to osteoporosis in female offspring: The role of mitophagy/FNDC5 alteration in skeletal muscle

20 Mar 2024

Maternal exposure to glucocorticoids has been associated with adverse outcomes in offspring. However, the consequences and mechanisms of gestational exposure to prednisone on susceptibility to osteoporosis in the offspring remain unclear. Here, we found that gestational prednisone exposure enhanced susceptibility to osteoporosis in adult mouse offspring

Talking in primary care (TIP): protocol for a cluster-randomised controlled trial in UK primary care to assess clinical and cost-effectiveness of communication skills e-learning for practitioners on patients' musculoskeletal pain and enablement

20 Mar 2024

INTRODUCTION: Effective communication can help optimise healthcare interactions and patient outcomes. However, few interventions have been tested clinically, subjected to cost-effectiveness analysis or are sufficiently brief and well-described for implementation in primary care

Artificial intelligence insights into osteoporosis: assessing ChatGPT's information quality and readability

19 Mar 2024

CONCLUSIONS: Although ChatGPT is easily accessible for patients to obtain information about osteoporosis, its current quality and readability fall short of meeting comprehensive healthcare standards.

The yield of routine laboratory examination in osteoporosis evaluation in primary care

18 Mar 2024

CONCLUSIONS: We identified a low prevalence of laboratory abnormalities in a primary care population of older women and the majority of these findings had no medical consequences.

The Musculoskeletal Tumor Society Scoring system is a valid subjective and objective tool to evaluate outcomes of surgical treatment of patients affected by upper and lower extremity tumors

15 Mar 2024

CONCLUSIONS: The Italian version of the MSTs is a valid tool to evaluate outcomes of surgical treatment of patients affected by extremities tumors and it can be used as a subjective tool for both lower and upper extremity.

Effects of physical exercise on muscle function of the knee, pain and quality of life in postmenopausal women with knee osteoarthritis: A systematic review with meta-analysis

15 Mar 2024

Objective of this study was to investigate the effects of physical exercise on muscle function of the knee, pain and quality of life in postmenopausal women with knee osteoarthritis (OA). An electronic search was conducted of the PubMed, Embase, Web of Science, Cochrane Library, LILACS and PEDro databases for relevant articles published up to September 2023

Exercise and Musculoskeletal Health in Men With Low Bone Mineral Density: A Systematic Review

14 Mar 2024

CONCLUSIONS: Exercise, especially resistance training, slowed down the natural progression of osteoporosis and sarcopenia in men. These benefits are reflected in enhancements to function, such as improved mobility and balance. Other exercise modalities, such as whole body vibration and traditional Chinese exercises, generated minimal improvements to bone health, strength, and balance.

Testing Biological and Psychological Pathways of Emotion Regulation as a Primary Mechanism of Action in Yoga Interventions for Chronic Low Back Pain: Protocol for a Randomized Controlled Trial

14 Mar 2024

CONCLUSIONS: The study will provide important data for evaluating whether improvements in ER are responsible for reduced pain perception and pain sensitivity as well as increased quality of life in the context of chronic pain

Prevention and Co-Management of Breast Cancer-Related Osteoporosis Using Resveratrol

13 Mar 2024

Breast cancer (BC) is currently one of the most common cancers in women worldwide with a rising tendency. Epigenetics, generally inherited variations in gene expression that occur independently of changes in DNA sequence, and their disruption could be one of the main causes of BC due to inflammatory processes often associated with different lifestyle habits

Sedentary behavior does not predict low BMD nor fracture - population-based Canadian Multicentre Osteoporosis Study (CaMos)

13 Mar 2024

Sedentary behavior (SB) or sitting is associated with multiple unfavorable health outcomes. Bone tissue responds to imposed gravitational and muscular strain with there being some evidence suggesting a causal link between SB and poor bone health. However, there are no population-based data on the longitudinal relationship between SB, bone change and incidence of fragility fractures

Effects of Lifestyle Interventions on the Improvement of Chronic Non-Specific Low Back Pain: A Systematic Review and Network Meta-Analysis

12 Mar 2024

Chronic non-specific low back pain (CNSLBP) is a highly prevalent musculoskeletal condition that has a great socioeconomic impact on health systems. Instead of focusing on mechanical causes and direct workload in the development of CNSLBP, genetics, psychosocial environment, lifestyle and quality of life are coming to the forefront in its approach

Validity and Reliability of the Greek Version of Pittsburgh Sleep Quality Index in Chronic Non-Specific Low Back Pain Patients

12 Mar 2024

The purpose of this study was to investigate psychometric properties of the Greek translation of Pittsburgh Sleep Quality Index (GR-PSQI) in a Greek chronic non-specific low back pain (CNSLBP) sample, thus, providing insight on its clarity and acceptability as a widely used sleep assessment tool in clinical practice

Barriers and enablers to engagement in exercise and physical activity in non-English speaking South Asian people with chronic musculoskeletal disease

11 Mar 2024

CONCLUSIONS: This is the first qualitative study to explore the barriers and enablers to engagement in EPA in non-English speaking South Asian people with chronic musculoskeletal disease. Modifiable factors such as addressing the level of knowledge on the benefits of EPA in the management of chronic joint and muscle pain; aiding the development of the skills required to exercise safely and

Effectiveness of Mobile Health Platform-Based Continuity of Care in Osteoporosis Prevention and Treatment

11 Mar 2024

CONCLUSION: Mobile health platform-based continuity of care effectively enhances post-discharge compliance and knowledge of osteoporosis in patients with osteoporosis, thereby improving post-discharge quality of life and satisfaction with care. Multi-center studies involving diverse healthcare settings and patient populations would provide more robust evidence

The effects of virtual reality neuroscience-based therapy on clinical and neuroimaging outcomes in patients with chronic back pain: a randomized clinical trial

11 Mar 2024

Chronic pain remains poorly managed. The integration of immersive technologies (ie, virtual reality [VR]) with neuroscience-based principles may provide effective pain treatment by targeting cognitive and affective neural processes that maintain pain and therefore potentially changing neurobiological circuits associated with pain chronification and amplification

Effect of Osteoporosis on Clinical and Radiological Outcomes Following One-Level Anterior Cervical Discectomy and Fusion

08 Mar 2024

CONCLUSIONS: Osteoporosis did not significantly affect the rate of cage subsidence or plate migration after cervical fusion. After ACDF, increased cage subsidence and implant migration rates had no significant effect on clinical outcomes.

Obstetric-related lower back pain: the effect of number of pregnancy on development of chronic lower back pain, worsening of lumbar disc degeneration and alteration of lumbar sagittal balance

08 Mar 2024

CONCLUSION: Chronic lower back pain is significantly worse and associated with more disability in patients with more than five previous pregnancies. MRI degenerative changes are also significantly higher in these grand multipara groups.

Musculoskeletal injuries during trail sports: Sex- and age-specific analyses over 20 years from a national injury database

08 Mar 2024

CONCLUSIONS: MSK injuries during trail sports have increased since 2002. Males endured more injuries until 2009, after which females endured more. Significant sex and age differences were found regarding injury diagnosis and body parts. Further studies are needed to confirm these trends and their causes.

Individual Versus Group Physical Therapy for Patients with Low Back Pain: Outcomes and Process (Therapeutic Factors)

07 Mar 2024

Low back pain (LBP) is a common health problem usually treated individually, and requires costly physical therapy. Group treatment, besides being cost-effective, provides psychological support to the recovery of people who struggle with a physically disabling condition

Sex differences in the impact of musculoskeletal disorders on health-related quality of life: a population-based study, Campinas, SP - ISACamp 2014/15

07 Mar 2024

This article aims to estimate the prevalence of musculoskeletal disorders (MD) on the adult population of Campinas, São Paulo, Brazil, verifying associated demographic and socioeconomic factors, and to analyze their impact on Health-Related Quality of Life (HRQoL) according to sex. A population-based study was conducted with 2,166 individuals using data from the ISACamp 2014/15

Automated entry of paper-based patient-reported outcomes: Applying deep learning to the Japanese orthopaedic association back pain evaluation questionnaire

07 Mar 2024

CONCLUSION: Our DL model demonstrated remarkable accuracy and correlation coefficients when automatic reading paper-based HR-PROs during external validation.

Musculoskeletal symptoms and their impact on health-related quality of life in chronic nonbacterial osteomyelitis patients

06 Mar 2024

CONCLUSION: MSK manifestations have a negative impact on HRQoL in CNO patients. So, early identification and treatment are highly recommended.

Does the intensity of pain and disability affect health-related quality of life of older adults with back pain? Multilevel analysis between Brazil and Netherlands: a cross-sectional study of the BACE consortium

05 Mar 2024

CONCLUSION: Socioeconomic and cultural aspects of different countries can affect the perception of the elderly about their HRQoL in the presence of BP. Pain and disability in Brazilian and Dutch older adults ones are experienced differently in relation to their HRQoL.

Efficacy of Core Muscle Exercise Combined with Interferential Therapy in Alleviating Chronic Low Back Pain in High-Performance Fighter Pilots: A Randomized Controlled Trial

05 Mar 2024

CONCLUSION: Among participants with chronic LBP, three intervention therapies appear effective in reducing pain, diminishing disability, and enhancing quality of life. Also, combined therapy significantly improved pain and disability compared to the other two monotherapies; moreover, combined therapy and core muscle exercise provided similar benefits in terms of core muscle function after 12

Could BIA-derived phase angle predict health-related musculoskeletal fitness? A cross-sectional study in young adults

05 Mar 2024

CONCLUSIONS: The present study provided consistent information on the relationships between body composition and health-related fitness in young adults. Phase angle emerged as a significant predictor of all health-related fitness measures and might be useful for a more consistent assessment of musculoskeletal fitness.

Integration analysis of lncRNA and mRNA expression data identifies DOCK4 as a potential biomarker for elderly osteoporosis

05 Mar 2024

CONCLUSION: DOCK4 is a potential biomarker for elderly osteoporosis diagnostic. It is identified to be regulated by two lncRNAs and four miRNAs.

Can yoga effectively treat chronic back pain?

04 Mar 2024

No abstract

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Living well with MSK conditions

Evaluation of an mHealth App on Self-Management of Osteoporosis: Prospective Survey Study

01 Apr 2024

CONCLUSIONS: Danish patients with osteoporosis are both motivated and capable of using digital health services. The app's usability was acceptable, and it has the potential to

reduce visits to general practitioner clinics, enhance health outcomes, and serve as a valuable addition to regular health or social care services.

The biopsychosocial factors associated with development of chronic musculoskeletal pain. An umbrella review and meta-analysis of observational systematic reviews

01 Apr 2024

CONCLUSIONS AND RELEVANCE: There is moderate certainty evidence that smoking, fear avoidance, poorer support networks, lower socioeconomic status, and high levels of pain are associated with development of chronic musculoskeletal pain. High risk of bias was evident in most included reviews; this highlights the need for higher quality systematic reviews.

Modeling Risk for Lower Extremity Musculoskeletal Injury in U.S. Military Academy Cadet Basic Training

30 Mar 2024

CONCLUSIONS: In addition to variables typically collected in this tactical setting (Injury History, BMI, and aerobic fitness), the inclusion of kinematic testing appears to enhance the precision of the risk identification model and will likely continue to be included in screening cadets at greater risk.

Ultrasound-guided dry needling for chronic low back pain: A case report targeting the quadratus lumborum muscle

29 Mar 2024

No abstract

Demographic and clinical characteristics associated with failure of physical therapy in chronic low back pain: a secondary analysis from a randomized controlled trial

29 Mar 2024

CONCLUSIONS: Compared with younger ones, older patients with cLBP had a higher risk of treatment failure after physical therapy and gained a stronger benefit of long-term pain alleviation from therapeutic aquatic exercise.

The key determinants of low back pain among lifestyle behaviors in adolescents: A cross-sectional study from Saudi Arabia

29 Mar 2024

Establishing preventive measures and treatment strategies for adolescents with low back pain (LBP) may be greatly enhanced by fully grasping the complex interaction between LBP and lifestyle behaviors. The key objective of this study was to explore the possible associations between lifestyle behaviors and LBP among adolescents in Saudi Arabia

Teleyoga for Patients With Alzheimer's Disease and Chronic Musculoskeletal Pain and Their Caregivers: A Feasibility Study

28 Mar 2024

CONCLUSION: Results show that teleyoga is a feasible treatment for patients with comorbid mild AD and chronic musculoskeletal pain. Results also provide preliminary evidence of health benefits of teleyoga for both AD patients and their caregivers.

Paraspinal Muscle Changes in Individuals with and without Chronic Low Back Pain over a 4-Month Period: A Longitudinal MRI Study

28 Mar 2024

Background and Objectives: Previous research has shown associations between atrophy and fatty infiltration of the lumbar paraspinal musculature and low back pain (LBP). However, few studies have examined longitudinal changes in healthy controls and individuals with LBP without intervention

Focal to bilateral tonic-clonic seizure induced by high-frequency repetitive transcranial magnetic stimulation over the primary motor cortex in a woman with chronic low back pain: A case report

28 Mar 2024

No abstract

Visual scoring of osteoporosis on low-dose CT in lung cancer screening population

28 Mar 2024

CONCLUSIONS: Our study shows that a simple approach of applying specific window width and level settings to already reconstructed sagittal images obtained in the context of low-dose CT screening for lung cancer is highly feasible and useful in identifying osteoporosis.

Efficacy and safety of traditional Chinese manual therapy (Tuina) in patients with non-specific chronic low back pain: a study protocol for a randomised controlled trial

26 Mar 2024

INTRODUCTION: Non-pharmacological interventions play a crucial role in the management of non-specific chronic low back pain (NSCLBP). One prime example is Tuina, a traditional Chinese manual therapy that incorporates pressing, kneading and rubbing techniques to alleviate physical discomfort and enhance overall well-being

Osteoporosis management in patients with chronic kidney disease (ERCOS Study): A challenge in nephrological care

26 Mar 2024

Fracture risk assessment in patients with chronic kidney disease (CKD) has been included in the CKD-MBD ("Chronic Kidney Disease-Mineral and Bone Disorders") complex in international and national nephrology guidelines, suggesting for the first time the assessment of bone mineral density (BMD) if the results can influence therapeutic decision-making

Correction to: Prevalence of osteoporosis, sarcopenia, and high falls risk in healthy community-dwelling Thai older adults: a nationwide cross-sectional study

25 Mar 2024

[This corrects the article DOI: 10.1093/jbmrpl/ziad020.].

The short- and long-term effect of osteopathic manipulative treatment on pain, and psychosocial factors in adults with chronic low back pain

24 Mar 2024

CONCLUSIONS: OMT has been demonstrated to significantly reduce pain and psychosocial factors related to CLBP in both the short and long term.

Research on the multidimensional brain remodeling mechanisms at the level of brain regions, circuits, and networks in patients with chronic lower back pain caused by lumbar disk herniation

22 Mar 2024

INTRODUCTION: Chronic lower back pain (cLBP), frequently attributed to lumbar disk herniation (LDH), imposes substantial limitations on daily activities. Despite its prevalence, the neural mechanisms underlying lower back pain remain incompletely elucidated

Identification of Drug Targets and Agents Associated with Ferroptosis-related Osteoporosis Through Integrated Network Pharmacology and Molecular Docking Technology

21 Mar 2024

CONCLUSION: We examined the relationship between ferroptosis and osteoporosis based on bioinformatics and network pharmacology, presenting a promising direction to the pursuit of the exact molecular mechanism of osteoporosis so that a new target can be discovered for the treatment of osteoporosis.

Dry Needling with the Use of FRSc Technique in Addition to Standard Rehabilitation Program for Chronic Low Back Pain: A Randomized Controlled Trial Using Both PROMs and Measurement Tools

21 Mar 2024

CONCLUSION: DN based on the FRSc appears promising as an effective adjunct to standard rehabilitation for LBP, showing improvements in functional performance and pain reduction.

Prevalence and risk factors of work-related musculoskeletal disorders among shopkeepers in Ethiopia: Evidence from a workplace cross-sectional study

21 Mar 2024

CONCLUSION: This study revealed that shopkeepers face an alarmingly high prevalence of work-related musculoskeletal disorders. Female, older, overweight, stressed and shopkeepers who sit in the same position for long periods of time were identified as particularly vulnerable groups

Development of a Multimodal, Personalized Intervention of Virtual Reality Integrated Within Physiotherapy for Patients With Complex Chronic Low-Back Pain

20 Mar 2024

CONCLUSION: Using the MRC framework in cocreation with the end users, a personalized VR intervention integrated within a physiotherapy treatment for patients with CLBP was developed. This intervention was found to be feasible and will subsequently be evaluated for (cost-)effectiveness in a cluster randomized controlled trial.

The Clinical Efficacy of Platelet-Rich Plasma Injection Therapy versus Different Control Groups for Chronic Low Back Pain: A Network Meta-Analysis of Randomized Controlled Trials

20 Mar 2024

CONCLUSION: This study demonstrated better short-term improvement of chronic low back pain with CS after 4 weeks. PRP and RF improvement effects matched, but follow-up of at least 6 months showed that PRP seemed to be more advantageous in improvement in disability indices

Prevalence of osteoporosis, sarcopenia, and high falls risk in healthy community-dwelling Thai older adults: a nationwide cross-sectional study

20 Mar 2024

Thailand has transitioned from an aging society to an aged society, which implies that the prevalence of age-related disorders will increase; however, epidemiological data specific to the prevalence of age-related degenerative musculoskeletal disorders among Thai older adults remain limited

Development of an opportunistic diagnostic prediction algorithm for osteoporosis and fragility fracture risk estimates from forearm radiographs (The OFFER1 Study)

20 Mar 2024

Osteoporosis and associated fractures are an increasingly prevalent concern with an ageing population. This study reports testing of IBEX Bone Health (IBEX BH) software, applied following acquisition of forearm radiographs. IBEX Bone Health analyses the radiograph to measure areal bone mineral density (aBMD) at the examination site

Musculoskeletal pain affects the age of retirement and the risk of work cessation among older people

20 Mar 2024

CONCLUSIONS: Frequent musculoskeletal pain may increase the risk of earlier work exit and earlier retirement. Further research should establish the mechanisms and decision making involved in leaving the workforce in people with frequent musculoskeletal pain.

Musculoskeletal crosstalk in chronic obstructive pulmonary disease and comorbidities: Emerging roles and therapeutic potentials

20 Mar 2024

Chronic Obstructive Pulmonary Disease (COPD) is a multifaceted respiratory disorder characterized by progressive airflow limitation and systemic implications. It has become increasingly apparent that COPD exerts its influence far beyond the respiratory system, extending its impact to various organ systems

Homeopathy for Chronic Non-specific Low Back Pain: Study Protocol for a Randomized, Double-Blind, Crossover, Placebo-Controlled Clinical Trial Investigating the Efficacy of the Biotherapeutic Lumbar Vertebra (The BIOVERT Trial)

20 Mar 2024

BACKGROUND: Chronic non-specific low back pain (CNSLBP) lacks identifiable anatomical pathology and effective pharmacological treatment. Alternative approaches in homeopathy, specifically clinical homeopathy, utilize ultra-diluted (potentized) biological products

Identifying Risk Factors for Preexisting or Developing Low Back Pain in Youth, High School, and Collegiate Lacrosse Players Using 3-Dimensional Motion Analysis

18 Mar 2024

CONCLUSION: Preexisting LBP was associated with significantly restricted motion of the pelvis, trunk, and shoulders during a lacrosse shot. Excessive pelvic acceleration may be related to the development of LBP in lacrosse players.

Neuromuscular control and resistance training for people with chronic low back pain: a randomized controlled trial

18 Mar 2024

OBJECTIVE: To determine if adding lumbar neuromuscular control retraining exercises to a 12-week program of strengthening exercises has greater effect for improving disability than 12 weeks of strengthening exercises alone in people with chronic low back pain (LBP).

DESIGN: Single centre, participant and assessor-blinded, comparative effectiveness randomized controlled trial

Significance of non-motor symptoms and development of a screening tool for osteoporosis in Parkinson's disease

16 Mar 2024

CONCLUSION: PD patients with autonomic dysfunction had greater odds of having femoral neck osteoporosis compared to those with no/minimal dysfunction. The screening tool may lay a foundation for developing screening models with higher accuracy to identify which PD patients may require a BMD test.

Fatigue and Depressive Mood in Chronic Low Back Pain

16 Mar 2024

CONCLUSIONS: The findings suggest that fatigue is associated with greater depressive mood, pain severity, and pain interference in adults with chronic low back pain.

Hybrid transformer convolutional neural network-based radiomics models for osteoporosis screening in routine CT

15 Mar 2024

CONCLUSIONS: This retrospective study demonstrated the superiority of the HTCNN-based vertebrae radiomics model for osteoporosis discrimination in routine CT.

Perceptions of stigma associated with chronic knee pain: voices of selected women in Thailand and Malaysia

14 Mar 2024

CONCLUSION: Improved socio-cultural competency and consideration for an individuals' intersectional identity and interpersonal relationships are key to designing rehabilitation and conservative management solutions. Co-creating alternative pathways for rehabilitation for individuals that are more distant from health facilities may help reduce socio-cultural barriers at a community level.

Prevalence and risk factors of musculoskeletal injuries in modern and contemporary dancers: a systematic review and meta-analysis

14 Mar 2024

CONCLUSION: Based on the results of this article, BMI and injury history may be risk factors for injury in contemporary and modern dancers. Modern and contemporary dancers have a high prevalence of musculoskeletal injuries. Lower extremity injuries are the most common in the whole body, with injuries to the foot and ankle being more frequent

Five-Year Longitudinal Follow-up of Restorative Neurostimulation Shows Durability of Effectiveness in Patients With Refractory Chronic Low Back Pain Associated With Multifidus Muscle Dysfunction

14 Mar 2024

CONCLUSION: Over a five-year period, restorative neurostimulation provided clinically substantial and durable benefits with a favorable safety profile in patients with refractory chronic low back pain associated with multifidus muscle dysfunction.

Genome-wide association study of osteoporosis identifies genetic risk and interactions with DASH diet and sugar sweetened beverages in a Hispanic cohort of older adults

14 Mar 2024

CONCLUSION: This study identifies new genetic markers related to osteoporosis and BMD in older Hispanic adults. Additionally, we uncovered unique genetic markers that interact with dietary quality, specifically sugar-sweetened beverages, in relation to bone health. These findings may be useful to guide early detection and preventative care.

Poor lumbar spine coordination in acute low back pain predicts persistent long-term pain and disability

14 Mar 2024

CONCLUSION: These longitudinal data revealed that individuals with compromised contribution of the lumbar spine to the balance during unstable sitting during acute LBP are less likely to recover.

Preliminary characterization of age and chronic low back pain effects on multimodal pain sensitivity: a comparison study in older adults with and without chronic low back pain

14 Mar 2024

Though pain sensitivity impairments contribute to chronic pain in younger adults, it is unclear if pain hypersensitivity manifests with aging and is heightened in the geriatric chronic low back pain (CLBP) population

The Canal Bone Ratio: A Novel Indicator for Opportunistic Osteoporosis Screening in Adult Spinal Deformity Patients through Radiographs

13 Mar 2024

CONCLUSION: The utilization of CBR from full-spine X-rays is a simple and effective osteoporosis screening indicator for ASD patients, facilitating bone density assessments by spine surgeons for all attending patients.

Exploring the burden, prevalence and associated factors of chronic musculoskeletal pain in migrants from North Africa and Middle East living in Europe: a scoping review

13 Mar 2024

CONCLUSION: Several gaps in the literature were identified. Research is limited in terms of quantity and quality, does not reflect actual immigration trends, and does not account for immigration factors. Prospective cohort studies with long follow-ups would aid in improving prevention and management of chronic pain in populations with a migration background

Ergonomic risks and problems of the musculoskeletal system for physiotherapists: comparison of employees in the fields of pediatric and adult care

13 Mar 2024

Objectives. The aim of this study is to compare the ergonomic risk levels, musculoskeletal complaints and quality of life of physiotherapists (PTs) according to their field of work. **Methods.** A total of 107 volunteer PTs participated in the study, whose information was

recorded. Ergonomic risk levels were determined using rapid entire body assessment (REBA)

Comparison of self-management and spa therapy for upper-extremity musculoskeletal disorders: A randomized controlled trial

13 Mar 2024

CONCLUSIONS: This study provided no evidence in favor of a short-course, personalized self-management, intensive spa therapy intervention over self-management alone for the management of upper-extremity MSDs.

Entering Functional Restoration Programs for Chronic Low Back Pain is Delayed when Patients do not Receive Support at Work: a study of 185 patients in France

13 Mar 2024

No abstract

EFFECTs of Exposure and Cognitive behavioral Therapy for chronic BACK pain ("EFFECT-BACK"): study protocol for a randomized controlled trial

12 Mar 2024

CONCLUSION: This study will be the first RCT to compare CBT and EXP in chronic back pain in a large sample, including patients from different care structures due to psychological and medical recruitment centers

Chronic ankle instability affects the association between knee joint angle and loading: musculoskeletal simulation study

12 Mar 2024

The purpose of this study was to calculate and compare (1) knee loads, (2) muscle-specific contributions to knee loads, and (3) effects of knee flexion angle on knee loads and muscle-specific load contributions during a forward jump-landing task in people with and without chronic ankle instability (CAI). Eight CAI patients and seven healthy controls performed a forward jump-landing task

Trunk Muscle Activity and Ratio of Local Muscle to Global Muscle Activity during Supine Bridge Exercises under Unstable Conditions in Young Participants with and without Chronic Low Back Pain

12 Mar 2024

Core exercises on an unstable surface increase trunk muscle activity, especially for local muscle groups. Therefore, there is a possibility that exercises on an unstable surface would be effective in the rehabilitation of non-specific chronic low back pain (NSCLBP). The present study assessed trunk muscle activities during bridge exercise on the floor and two kinds of unstable surfaces, i.e

Psychometric properties of the Turkish version of Central Sensitization Inventory-9 in patients with chronic musculoskeletal pain

12 Mar 2024

The aim of the study was to assess the psychometric properties of the Turkish version of Central Sensitization Inventory-9 (CSI-9) in patients with chronic musculoskeletal pain. The methodological study included 92 patients with chronic musculoskeletal pain. The original version of the CSI-9 was translated and culturally adapted into Turkish

Workplace psychosocial factors, work organization, and physical exertion as risk factors for low back pain among U.S. workers: Data from the 2015 National Health Interview Survey

12 Mar 2024

CONCLUSIONS: LBP prevalence was associated with select workplace psychosocial and organization risk factors. Stratification by physical exertion modified multiple associations.

In-person physiotherapy versus video conferencing for chronic knee pain

10 Mar 2024

No abstract

Telerehabilitation consultations with a physiotherapist for chronic knee pain versus in-person consultations in Australia: the PEAK non-inferiority randomised controlled trial

10 Mar 2024

BACKGROUND: Telerehabilitation whether perceived as less effective than in-person care for musculoskeletal problems. We aimed to determine if physiotherapy video conferencing consultations were non-inferior to in-person consultations for chronic knee pain.

Ultrasound-guided erector spinae plane block in patients with chronic lumbar facet joint pain: A prospective case-controlled study

09 Mar 2024

CONCLUSION: US-guided ESP block might be considered a successful, safe, and technically simple alternative treatment in patients with chronic LBP to control pain and reduce the cost of physical therapy and lost workdays.

Application of restorative neurostimulation for chronic mechanical low back pain in an older population with 2-year follow up

09 Mar 2024

CONCLUSIONS: This aggregate analysis of three independent studies provides insight into the performance of restorative neurostimulation in an older population. Patients derived significant and clinically meaningful benefit in disability, pain and HRQoL. When compared with a similarly indicated cohort of younger patients, there were no statistically or clinically significant differences.

The changes of blood-based inflammatory biomarkers after non-pharmacologic interventions for chronic low back pain: a systematic review

08 Mar 2024

CONCLUSION: Results suggest a moderation of inflammatory biomarkers due to different non-pharmacologic interventions for CLBP, generally resulting in decreased pro-inflammatory markers such as TNF- α and IL-6 as well as increased anti-inflammatory markers such as IL-4, thus revealing the inhibition of inflammatory processes by different non-pharmacologic interventions

Enhancing 3D DNA Walker-Induced CRISPR/Cas12a Technology for Highly Sensitive Detection of ExomicrRNA Associated with Osteoporosis

07 Mar 2024

Exosomal microRNAs (exomiRNAs) have emerged as promising biomarkers for the early clinical diagnosis of osteoporosis. However, their limited abundance and short length in peripheral blood present significant challenges for the accurate detection of exomiRNAs

Improving general practice management of patients with chronic musculoskeletal pain: Interdisciplinarity, coherence, and concerns

07 Mar 2024

CONCLUSIONS: The complexity and diagnostic uncertainty of patients with CMP warrants a revision of the current setup. Establishing an interdisciplinary unit using a biopsychosocial approach was recommended as an option to improve the current management for patients with CMP.

The Emotion Regulation of Acupuncture in Chronic Low Back Pain: A Clinical Neuroimaging Protocol

06 Mar 2024

INTRODUCTION: Acupuncture is effective for patients with chronic low back pain (CLBP), which can relieve pain intensity and regulate negative emotional states such as pain-related anxiety and depression. Previous studies mainly discuss the analgesic mechanism of acupuncture treatment of CLBP, but there are multiple dimensions to pain, including sensation, emotion and cognition

Bone mineral density in lower thoracic vertebra for osteoporosis diagnosis in older adults during CT lung cancer screening

06 Mar 2024

CONCLUSION: Calculating the threshold of TBMD or normalizing TBMD to LBMD are both useful in identifying osteoporosis in older adults during CT lung cancer screening.

Green space, genetic susceptibility, and risk of osteoporosis: a cohort study from the UK Biobank

05 Mar 2024

CONCLUSIONS: This study found that public greenness and natural environments could reduce the risk of incident osteoporosis regardless of genetic predisposition. Developing sustainable and publicly accessible natural environments might benefit populations' bone health.

Using machine learning techniques to predict the risk of osteoporosis based on nationwide chronic disease data

04 Mar 2024

Osteoporosis is a major public health concern that significantly increases the risk of fractures. The aim of this study was to develop a Machine Learning based predictive model to screen individuals at high risk of osteoporosis based on chronic disease data, thus facilitating early detection and personalized management

Uncovering emotional and network dynamics in the speech of patients with chronic low back pain

02 Mar 2024

CONCLUSION: The SA showed that participants reported their feeling when describing the moment of the diagnosis using sentences with negative discourse. We did not find a

statistically significant correlation between pain intensity, disability levels, SA, and network analysis. Education level presented positive correlation with WC and LSC.

Early-life tobacco smoke elevating later-life osteoporosis risk: Mediated by telomere length and interplayed with genetic predisposition

02 Mar 2024

CONCLUSIONS: Our findings implicate that early-life tobacco smoke exposure elevates the later-life OP risk, mediated by telomere length and interplayed with genetic predisposition. These findings highlight the importance of early-life intervention against tobacco smoke exposure and ageing status for precise OP prevention, especially in individuals with a high genetic risk.

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MSK in child and adolescent health

Needs Assessment of Musculoskeletal Ultrasound Training in North American Pediatric Rheumatology Fellowship Programs

01 Apr 2024

CONCLUSION: This study demonstrates that North American pediatric rheumatology fellows have a strong interest in learning MSUS, but they face significant challenges in accessing MSUS training (lack of MSUS-trained faculty, time and access to hands-on training). MSUS should be incorporated into fellowship curriculum, however implementation remains a challenge.

Visual aid for pediatric virtual musculoskeletal exams: A Barbie girl in a telehealth world

28 Mar 2024

CONCLUSION: Visual aid use improved virtual musculoskeletal exam maneuver ease and efficiency in a pediatric population.

Evaluation of childhood malignancies presenting with musculoskeletal manifestations from two different divisions: a multicenter study

25 Mar 2024

CONCLUSIONS: Malignancies may present with only MSK system complaints in childhood. Therefore, malignancies should be included in the differential diagnosis of patients presenting with MSK complaints.

Academic performance and musculoskeletal pain in adolescents with uncorrected vision problems

22 Mar 2024

CONCLUSIONS: The results of this study showed that even small refractive errors may impact educational outcomes and musculoskeletal pain in adolescents. Most of the participating children had low myopia, easily corrected with glasses

Pediatric and adult osteoporosis: a contrasting mirror

10 Mar 2024

Pediatric osteoporosis (PO) is a condition that is currently gaining recognition. Due to the lack of official definitions over the past few decades, the exact incidence of PO is unknown. The research does not provide a specific prevalence of PO in different world regions

[Are bisphosphonates effective in treating osteoporosis in children and adults with cystic fibrosis?-A Cochrane review summary with commentary](#)

07 Mar 2024

No abstract

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MSK and multi-morbidity

[The association between night shift work and osteoporosis risk in adults: A cross-sectional analysis using NHANES](#)

01 Apr 2024

CONCLUSION: Night shift work correlates with a higher risk of osteoporosis in the population of the US adults, with the combined effect of age, gender, and harmful lifestyle.

[Graph modeling of relational structures among functioning variables with low back pain: an exploratory analysis based on international classification of functioning, disability and health](#)

29 Mar 2024

CONCLUSIONS: d430 and b126 significantly impact the physical and mental well-being of LBP patients. To improve d430, maintaining exercise habits, reducing working hours, enhancing lumbar stability, and overcoming fear-related emotions are recommended. Similarly, improving b126 can be achieved through enhancing interpersonal relationships.

[Impact of sitting at work on musculoskeletal complaints of German workers - results from the study on mental health at work \(S-MGA\)](#)

28 Mar 2024

INTRODUCTION: Sedentary behavior (including prolonged sitting) is a form of physical inactivity that has a negative impact on health, possibly including musculoskeletal complaints (MSCs). The purpose of this study was to determine the extent to which time spent sitting at work is associated with the one-year prevalence of MSCs in the neck, shoulder, upper back/thoracic spine, and lower back among

[Work Disability and Musculoskeletal Disorders Among Teleworkers: A Scoping Review](#)

28 Mar 2024

CONCLUSION: This paper provides an overview of the literature on work disability and MSDs among teleworkers. It identifies literature gaps, underlining the need for ergonomic improvements, long-term impact studies, a better conceptualization of presenteeism in the context of telework, and tailored interventions to enhance the telework experience.

Passion and performance anxiety: How it affects the incidence of musculoskeletal disorders in dancers

28 Mar 2024

CONCLUSIONS: Findings of this study support the role of obsessive passion in the development of MDEs in dancers.

Osteoporosis Is Associated with an Increased Risk of Colorectal Neoplasms Regardless of Sex: Nationwide Population-Based Cohort Study

27 Mar 2024

Vitamin D may have anticancer effects against colorectal cancer (CRC). Bone mineral density (BMD) reflects the long-term vitamin D status. This study investigated the association between osteoporosis and colorectal neoplasms (CRN)

An investigation into the frequency and risk factors of low back pain following surgical treatment of isolated calcaneal fractures

25 Mar 2024

CONCLUSION: Low back pain may occur after unilateral calcaneal fractures treated by ORIF. This may be caused by decreased angles of ankle dorsi and plantar flexion, foot inversion, hip abduction, and internal and external rotation

Association of depressive symptoms with risk of incidence low back pain in middle-aged and older Chinese adults

24 Mar 2024

CONCLUSIONS: In middle-aged and older Chinese adults, 5 specific DS (difficulty concentrating, effortfulness, hopelessness, restless sleep, and loneliness) and distinct patterns of DS indicate varied risks of developing LBP.

The association between obesity, knee pain, and gait during stair descent in older adults with knee osteoarthritis

22 Mar 2024

BACKGROUND: Obesity and knee osteoarthritis adversely affect activities of daily living in older adults. Together, the complexities of their interaction on mobility, including stair negotiation, are unresolved. The purpose of this study was to determine the relationship between obesity, pain, and stair negotiation in older adults with knee osteoarthritis.

Potential of Gut Microbial Metabolites in Treating Osteoporosis and Obesity: A Network Pharmacology and Bioinformatics Approach

21 Mar 2024

BACKGROUND The gut microbial metabolites demonstrate significant activity against metabolic diseases including osteoporosis (OP) and obesity, but active compounds, targets, and mechanisms have not been fully identified. Hence, the current investigation explored the mechanisms of active metabolites and targets against OP and obesity by using network pharmacology approaches

Association between Fat Mass and Obesity-Related Transcript Polymorphisms and Osteoporosis Phenotypes

14 Mar 2024

CONCLUSIONS: Common variations in the FTO gene are associated with a hip fracture risk in women, and the association is not mediated through BMD or bone loss.

Comparing risk assessment methods for work-related musculoskeletal disorders with in vivo joint loads during manual materials handling

13 Mar 2024

The validity of observational methods in ergonomics is still challenging research. Criterion validity in terms of concurrent validity is the most commonly studied. However, studies comparing observational methods with biomechanical values are rare

Frailty phenotype as mediator between systemic inflammation and osteoporosis and fracture risks: A prospective study

12 Mar 2024

CONCLUSIONS: Systemic inflammation and frailty phenotype are independently linked to increased risks of OP and fracture. The frailty phenotype partially mediates the association between systemic inflammation and osteoporotic traits. These results highlight the significance of interventions targeting systemic inflammation and frailty in OP and fracture prevention and management.

Elaboration and validation of a novelty nomogram for the prognostication of anxiety susceptibility in individuals suffering from low back pain

10 Mar 2024

Low back pain (LBP) constitutes a distressing emotional ordeal and serves as a potent catalyst for adverse emotional states, notably anxiety. We dedicated to discerning methodologies for identifying patients who are predisposed to heightened levels of anxiety and pain. A self-assessment questionnaire was administered to patients afflicted with LBP

Allied health professionals' experiences and views towards improving musculoskeletal services in the UK for patients with musculoskeletal and co-existing mental health conditions: a qualitative study

08 Mar 2024

CONCLUSION: Many challenges to achieving optimal integration of physical and mental health care exist within MSK services. These challenges go beyond the need for additional training and knowledge acquisition and include departmental readiness such as funding, diary management, and supervision by senior colleagues/or psychologists

Bone loss over time and risk of osteoporosis in advanced pancreatic cancer

07 Mar 2024

CONCLUSIONS: Osteoporosis and osteoporotic fractures were highly prevalent in patients with advanced pancreatic cancer. This study highlights the importance of screening for osteoporosis in such patients.

Low back pain knowledge and associated disability among nursing staff in Oman

06 Mar 2024

CONCLUSION: Low back pain is prevalent among nurses in Oman, and it is associated with disability. Preventive strategies need to be implemented.

Effects of physical interventions on pain and disability in chronic low back pain with pronated feet: a systematic review and meta-analysis

04 Mar 2024

CONCLUSIONS: This systematic review and meta-analysis of four RCTs elucidates that PI, specifically targeting PF, significantly alleviate pain and reduce disability in patients having CLBP with PF. These findings advocate for integrating foot-based PI within the treatment protocols for patients suffering from CLBP accompanied by PF.

Cross-cultural adaptation and psychometric properties of the Thai version of the patient-reported outcomes measurement information system short form- depression 8a in individuals with chronic low back pain

04 Mar 2024

CONCLUSIONS: The T-PROMIS-D-8a was successfully translated and culturally adapted. The findings indicated that the scale is reliable and valid for assessing depression in Thai individuals with CLBP.

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MSK health and inequalities

The effect of age on musculoskeletal injury compensation costs in South Australian professional urban firefighters: A cohort study

29 Mar 2024

CONCLUSIONS: Older firefighters miss more workdays when injured and are associated with increased claims costs, particularly those in the 60-70-year group. With an aging workforce, Fire Service organisations must implement appropriate management and prevention strategies to reduce the potential risks associated with an aging workforce.

Network pharmacology analysis and experimental validation to explore the mechanism of kaempferol in the treatment of osteoporosis

26 Mar 2024

Osteoporosis (OP) is a prevalent global disease characterized by bone mass loss and microstructural destruction, resulting in increased bone fragility and fracture susceptibility. Our study aims to investigate the potential of kaempferol in preventing and treating OP through a combination of network pharmacology and molecular experiments

Knowledge and Awareness of Osteoporosis: A Survey of Physical Therapy Providers in Saudi Arabia

26 Mar 2024

CONCLUSION: Physical therapy providers in Saudi Arabia have a good knowledge of osteoporosis. The overall OP preventive measure knowledge questions were poor. It is crucial for physical therapy providers to act appropriately to prevent falls and mitigate any potential risks.

Management of Vertebral Fragility Fracture in Older People: Recommendations from a Spanish Consensus of Experts

25 Mar 2024

Vertebral fragility fractures (VFF) pose a challenge for appropriate care. The aim of this study was to develop consensus recommendations for the management of VFF in older people from a multidisciplinary approach. Specialists in osteoporosis belonging to different scientific societies reviewed the main clinical practice guidelines published in Spain in 2014

An exploration of low back pain beliefs held by health care professionals in Northern America

23 Mar 2024

CONCLUSIONS: These findings align with prior research studies on general population beliefs, demonstrating a preference for biological causes of LBP. Further updates are needed for clinical education, while future studies should seek to assess the translation of clinician beliefs into clinical practice and health system constraints.

Development and Validation of India-specific Hindi Version of Osteoporosis Knowledge Assessment Tool

20 Mar 2024

CONCLUSION: A new shorter version of the tool may be developed since six items showed low consistency. The use of such an instrument in local language would help spread awareness about the disease as well as help the population in adopting osteoprotective strategies and also to seek help and advice regarding treatment.

Age-dependent FRAX-based assessment and intervention thresholds for therapeutic decision making in osteoporosis in the Malaysian population

20 Mar 2024

CONCLUSION: Less than half of the study population (44.8%) required BMD for osteoporosis management when age-specific assessment thresholds were applied. Therefore, in more than half, therapeutic decisions can be made without BMD based on these assessment thresholds.

Psychological Disorders Linked to Osteoporosis Diagnoses in a Population-Based Cohort Study of Middle and Older Age United States Adults

19 Mar 2024

BACKGROUND AND OBJECTIVES: Although it is well-established that psychological disorders and osteoporosis risk are linked, how the relationship manifests is not. This study examines depressive symptoms and a history of psychological problems as potential risk factors for osteoporosis diagnosis, adjudicating between four theoretical models rarely tested together

Swiss chiropractic cohort (Swiss ChiCo) pilot study: feasibility for a musculoskeletal cohort study conducted within a nationwide practice-based research network

14 Mar 2024

CONCLUSION: The Swiss ChiCo pilot study exceeded its prespecified feasibility objectives. Nationwide longitudinal data capture was highly feasible. Similar to other practice-based cohorts, participant retention remains a challenge. Trial registration Swiss chiropractic cohort (Swiss ChiCo) pilot study (ClinicalTrials.gov identifier: NCT05116020).

Multi-modal molecular determinants of clinically relevant osteoporosis subtypes

13 Mar 2024

Due to a rapidly aging global population, osteoporosis and the associated risk of bone fractures have become a wide-spread public health problem. However, osteoporosis is very heterogeneous, and the existing standard diagnostic measure is not sufficient to accurately identify all patients at risk of osteoporotic fractures and to guide therapy

Correction to "Adaptation to full weight-bearing following disuse in rats: The impact of biological sex on musculoskeletal recovery"

11 Mar 2024

No abstract

Full-length radiograph based automatic musculoskeletal modeling using convolutional neural network

11 Mar 2024

Full-length radiographs contain information from which many anatomical parameters of the pelvis, femur, and tibia may be derived, but only a few anatomical parameters are used for musculoskeletal modeling

Fragility Fracture Network-Japan: The challenge of establishment of a national hip fracture database and successful achievement of nationwide health system change for hip fracture care in Japan

09 Mar 2024

CONCLUSION: Within five years of establishment of the JNHFD, FFN-Japan in collaboration with visionary leaders from the Japanese government have successfully achieved a major reform of the Japanese health system's reimbursement of hip fracture care

The best exercise modality and dose for reducing pain in adults with low back pain: A systematic review with model-based Bayesian network meta-analysis

08 Mar 2024

OBJECTIVE: To quantify the dose-response relationship between overall and specific exercise modalities and pain, in patients with non-specific chronic low back pain (LBP). DESIGN: Systematic Review with Bayesian Network Meta-Analysis (NMA). LITERATURE SEARCH: We searched the Medline, Embase, Web of Science, Cochrane Library, Scopus, and SPORTDiscus databases from inception to June 2023

Interprofessional education interventions in undergraduate students of musculoskeletal healthcare professions: a scoping review protocol

08 Mar 2024

INTRODUCTION: Enhancing interprofessional education (IPE) fosters collaborative efforts among healthcare professionals specializing in musculoskeletal (MSK) care. This approach presents a valuable opportunity to address the pressing MSK disease burden in developing countries, with high prevalence rates and limited resources

Assessing Osteoporosis Knowledge and Beliefs Among Adults Living in Saudi Arabia: A Cross-Sectional Study

05 Mar 2024

CONCLUSION: Although there is a relative increase in the knowledge of our sample, the belief toward osteoporosis is evidently lower. Therefore, implementing educational programs

that tackle belief perception and other preventive measures such as healthy eating habits, physical activities, and educational materials are needed in the future.

The enhanced connectivity between the frontoparietal, somatomotor network and thalamus as the most significant network changes of chronic low back pain

04 Mar 2024

The prolonged duration of chronic low back pain (cLBP) inevitably leads to changes in the cognitive, attentional, sensory and emotional processing brain regions. Currently, it remains unclear how these alterations are manifested in the interplay between brain functional and structural networks

Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand (DASH) and the Shortened Version of the DASH (QuickDASH) in People with Musculoskeletal Disorders: A Systematic Review and Meta-Analysis

04 Mar 2024

CONCLUSION: Reasonable MCID ranges of 12 to 14 DASH points and 12 to 15 QuickDASH points were established. The lower boundaries represent the first available measure above the pooled MDC90, and the upper limits represent the upper 95% CI of the pooled MCID.

The association of the STarT Back Screening Tool and type of leg pain with low back pain disability trajectories: a prospective cohort study

04 Mar 2024

CONCLUSION: The SBST is associated with the LBP recovery trajectory. The SBST might be a useful tool to predict the disability trajectory in a heterogeneous group of people with low back pain in primary care and might, therefore, be recommended in future clinical practice guidelines. The type of leg pain was not associated with the recovery trajectory of LBP

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MSK health and nutrition

Opposing Effects of Nutritional Supply on Bone Health at Different Ages: Based on the National Health and Nutrition Examination Survey Database

28 Mar 2024

(1) Background: Nutrients play an essential role in bone health, whether in achieving peak bone mineral density (BMD) or maintaining bone health. This study explores the relationship between nutrient supply and femoral bone health at different ages

Genistein Supplementation and Bone Health in Breast Cancer in Rats

28 Mar 2024

The aim of our study was to analyse the effect of supplementation with various forms of genistein (nano-, micro-, and macro-) on the mineral status of rat femurs in conditions of DMBA-induced mammary gland neoplasia. Thirty-two 30-day-old Sprague Dawley rats were used in the study

Serum 25-Hydroxyvitamin D Status and Vitamin D Supplements Use Are Not Associated with Low Back Pain in the Large UK Biobank Cohort

28 Mar 2024

Longitudinal studies assessing the association of vitamin D deficiency, defined by serum 25-hydroxyvitamin D levels < 30 nmol/L, and vitamin D supplement (VDS) use with low back pain (LBP) are sparse. This investigation assessed the cross-sectional and longitudinal association of vitamin D status and VDS use with LBP among 135,934 participants from the UK Biobank cohort. Approximately 21

Correction to: Determination of the combined effects of asian herbal medicine with calcium and/or vitamin D supplements on bone mineral density in primary osteoporosis: A systematic review and meta-analysis

21 Mar 2024

No abstract

Study on Vitamin D Levels in 30 to 40-Year-Old Females With Low Back Pain

18 Mar 2024

CONCLUSIONS: Although a higher frequency of Vitamin D deficiency was found in cases compared to controls, the mean value of Vitamin D levels was not found to be statistically different amongst cases and controls. A significant Odds ratio establishes a positive association between LBP and Vitamin D deficiency

Deficiency of protein C or protein S as a possible cause of osteoporosis

14 Mar 2024

Proteins C and S are vitamin K-dependent anticoagulative factors that also exert a significant influence on bone quality. Clinical studies have linked the deficiency of proteins C and S to lower bone mineral density and the onset of femoral head osteonecrosis in children

Forgetting the Frail: National Trends in Vitamin D Prescription After Fragility Fracture-A Large Insurance Claims Database Study

14 Mar 2024

INTRODUCTION: Vitamin D plays a critical role in bone health, affecting bone mineral density and fracture healing. Insufficient serum vitamin D levels are associated with increased fracture rates. Despite guidelines advocating vitamin D supplementation, little is known about the prescription rates after fragility fractures

Determination of the Combined Effects of Asian Herbal Medicine with Calcium and/or Vitamin D Supplements on Bone Mineral Density in Primary Osteoporosis: A Systematic Review and Meta-Analysis

13 Mar 2024

CONCLUSION: Our data suggest that combining of HM and supplements tends to be more effective in improving BMD in primary OP than supplements alone. However, caution is needed in interpretation due to the reporting bias and high heterogeneity among studies, and well-designed RCTs are required in the future.

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Relationship Between Location of Pregnancy-Related and Postpartum-Related Back Pain and Limitations of Daily Activities and Work Participation

26 Mar 2024

CONCLUSION: The results suggest that the location of pregnancy-related back pain is associated with interference in daily activities, an increase in absence from work, and the persistence of postpartum pain. For this cohort, back pain did not always resolve after delivery, and those experiencing pregnancy-related combined pain continued to experience symptoms postpartum.

Work-related musculoskeletal disorders affecting diagnostic radiologists and prophylactic physical therapy regimen

21 Mar 2024

The shift from film to PACS in reading rooms, coupled with escalating case volumes, exposes radiologists to the issues of the modern computer workstation including computer work posture and work-related musculoskeletal disorders (WMSD)

Work-related musculoskeletal disorders in oral health professionals: an umbrella review protocol

20 Mar 2024

OBJECTIVE: The objective of this review is to synthesize the evidence on the prevalence, incidence, risk factors, and preventive and management interventions for work-related musculoskeletal disorders (MSD) in oral health professionals.

Kinematic changes of the trunk and lower limbs during voluntary lateral sway postural control in adults with low back pain

13 Mar 2024

Introduction: Voluntary lateral weight shifting is essential for gait initiation. However, kinematic changes during voluntary lateral weight shifting remain unknown in people with low back pain (LBP). This study aims to explore the differences in kinematics and muscle activation when performing a voluntary lateral weight shifting task between patients with LBP and asymptomatic controls without

Prevalence, characteristics and clinical impact of work-related musculoskeletal pain in echocardiography

05 Mar 2024

CONCLUSION: WRMSD is very common amongst echocardiographers, with a fifth having a related musculoskeletal injury. WRMSD has considerable impact on personal, social and work-related activities. Strategies to reduce the burden of WRMSD are urgently required to ensure sustainability of the workforce and patient access to imaging.

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MSK health communication

Retention, Adherence, and Acceptability Testing of a Digital Health Intervention in a 3-group Randomized Controlled Trial for Chronic Musculoskeletal Pain

04 Mar 2024

CONCLUSIONS: Our digital health intervention was found to be acceptable and sustainable; participants adhered to and were satisfied with the intervention providing support for a larger RCT.

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MSK health data and surveillance

Remote Therapeutic Monitoring in Rheumatic and Musculoskeletal Diseases: Opportunities and Implementation

29 Mar 2024

Therapeutic Monitoring (RTM) is a new program in the United States that began in 2022 allowing electronic patient-reported outcomes (ePRO) and other patient-generated data to be reviewed by clinical staff between visits so that patients can receive clinical attention as needed

A nomogram prediction model for hungry bone syndrome in dialysis patients with secondary hyperparathyroidism after total parathyroidectomy

29 Mar 2024

CONCLUSIONS: Preoperative iPTH and preoperative ALP are the risk factors for postoperative HBS, which can be used to guide the early clinical intervention.

Deep learning model for classifying shoulder pain rehabilitation exercises using IMU sensor

28 Mar 2024

CONCLUSION: The study demonstrates that IMU sensor data can effectively classify shoulder pain rehabilitation exercises, providing more appropriate feedback for patients. The model can be utilized to establish a system for remotely monitoring patients' exercise performance

Recombinant Human Peptide Growth Factors, Bone Morphogenetic Protein-7 (rhBMP7), and Platelet-Derived Growth Factor-BB (rhPDGF-BB) for Osteoporosis Treatment in an Oophorectomized Rat Model

28 Mar 2024

Bone morphogenetic protein (BMP) and platelet-derived growth factor (PDGF) are known to regulate/stimulate osteogenesis, playing vital roles in bone homeostasis, rendering them strong candidates for osteoporosis treatment. We evaluated the effects of recombinant human BMP-7 (rhBMP7) and PDGF-BB (rhPDGF-BB) in an oophorectomy-induced osteoporosis rat model

Regulation of STAT1 and STAT4 Expression by Growth Factor and Interferon Supplementation in Sjogren's Syndrome Cell Culture Models

28 Mar 2024

Our goal was to investigate the effects of epidermal growth factor (EGF) and interferons (IFNs) on signal transducer and activator of transcription STAT1 and STAT4 mRNA and active phosphorylated protein expression in Sjögren's syndrome cell culture models

In Vitro Modelling of Osteogenesis Imperfecta with Patient-Derived Induced Mesenchymal Stem Cells

28 Mar 2024

(1) Mesenchymal stem cells (MSCs) are a valuable cell model to study the bone pathology of Osteogenesis Imperfecta (OI), a rare genetic collagen-related disorder characterized by bone fragility and skeletal dysplasia. We aimed to generate a novel OI induced mesenchymal stem cell (iMSC) model from induced pluripotent stem cells (iPSCs) derived from human dermal fibroblasts

Mitochondrial Transplantation Therapy Ameliorates Muscular Dystrophy in mdx Mouse Model

28 Mar 2024

Duchenne muscular dystrophy is caused by loss of the dystrophin protein. This pathology is accompanied by mitochondrial dysfunction contributing to muscle fiber instability. It is known that mitochondria-targeted in vivo therapy mitigates pathology and improves the quality of life of model animals

Changes in the Serum Metabolome in an Inflammatory Model of Osteoarthritis in Rats

28 Mar 2024

Osteoarthritis (OA) is a pathology of great impact worldwide. Its physiopathology is not completely known, and it is usually diagnosed by imaging techniques performed at advanced stages of the disease. The aim of this study was to evaluate early serum metabolome changes and identify the main metabolites involved in an inflammatory OA animal model. This study was performed on thirty rats

Evaluating the Anti-Osteoarthritis Potential of Standardized Boswellia serrata Gum Resin Extract in Alleviating Knee Joint Pathology and Inflammation in Osteoarthritis-Induced Models

28 Mar 2024

Osteoarthritis is a widespread chronic degenerative disease marked by the deterioration of articular cartilage, modifications in subchondral bone, and a spectrum of symptoms, including pain, stiffness, and disability. Ultimately, this condition impairs the patient's quality of life

Hindfoot motion according to subtalar compensation and ankle osteoarthritis stage analyzed by a multi-segment foot model

27 Mar 2024

CONCLUSIONS: The spatiotemporal parameters were not affected by the hindfoot alignment resulting from subtalar compensation. The sagittal range of hindfoot motion decreased in patients with advanced ankle OA. Once disrupted, the coronal movement of

the subtalar joint in ankle OA did not change regardless of ankle OA stage or hindfoot compensation state.

Vibration Rather than Microgravity Affects Bone Metabolism in Adult Zebrafish Scale Model

27 Mar 2024

Gravity and mechanical forces cause important alterations in the human skeletal system, as demonstrated by space flights. Innovative animal models like zebrafish embryos and medaka have been introduced to study bone response in ground-based microgravity simulators

Netrin-1 Role in Nociceptive Neuron Sprouting through Activation of DCC Signaling in a Rat Model of Bone Cancer Pain

27 Mar 2024

CONCLUSIONS: Netrin-1 may contribute to the activation of the BCP by inducing nociceptive nerve innervation and improving pain behaviors.

Extracorporeal photopheresis reduces inflammation and joint damage in a rheumatoid arthritis murine model

26 Mar 2024

CONCLUSION: Our study demonstrates that ECP exhibits a therapeutic effect comparable to conventional therapy in CIA mice, and the protective mechanisms of ECP against RA involve Th17/Treg cells ratio, which result in decreased IL-6 and IL-17A

Congenital Malformations in the Moroccan Surveillance System: Contribution to Prevalence Estimation

26 Mar 2024

CONCLUSIONS: This study reveals that the national prevalence of CMs is high and may be underestimated, as most of the CMS reported is unspecified. The use of a CM registry with detailed reporting of all CMs and the promotion of preventive measures are urgently recommended.

LanDet: an efficient physics-informed deep learning approach for automatic detection of anatomical landmarks and measurement of spinopelvic alignment

26 Mar 2024

CONCLUSION: The LanDet model exhibits competitive performance compared to existing literature. The effectiveness of the physics-informed constraint method, utilized in our landmark detection as object algorithm, is highlighted

Rheumatic diseases in migrant patients resident in Tuscany: epidemiological data analysis and single-center experience

25 Mar 2024

CONCLUSIONS: This study provides a picture of the rheumatic diseases affecting foreign patients residing in Tuscany that are in agreement with the epidemiological data previously provided.

Prognostic factors and real-life applicability of prognostic models for patients with bone metastases of carcinoma

25 Mar 2024

CONCLUSION: Our report showed that all prognostic models were clinically applicable, but their performances varied. Among them, the SORG predictive model had the best performance scores overall and is the model the authors suggested for survival prediction among patients with carcinoma bone metastases.

Construction and validation of a machine learning model for the diagnosis of juvenile idiopathic arthritis based on fecal microbiota

25 Mar 2024

CONCLUSION: A JIA diagnosis model based on XGB algorithm was constructed with excellent performance, which may assist physicians in early detection of JIA patients and improve the prognosis of JIA patients.

Increasing Burden of Osteoarthritis in China: Trends and Projections from the Global Burden of Disease Study 2019

25 Mar 2024

BACKGROUND This study aimed to evaluate the epidemiology of osteoarthritis in China in a comprehensive and reliable way, to project its future epidemiological patterns, and to mitigate its health hazards. **MATERIAL AND METHODS** Data were extracted and analyzed from the Global Burden of Diseases Study 2019. Trends in osteoarthritis epidemiology were explored using joinpoint regression analysis

Impact of professional, recreational and nonsinging on temporomandibular disorders - a comparative study based on a self-assessment questionnaire

22 Mar 2024

CONCLUSIONS: Singing might have an enhancing effect on the appearance of TMDs. In particular, professional singers suffered more from self-reported TMDs than recreational singers and nonsingers. In addition to the high level of physical workload if participating in professional singing, the psychosocial impact should be investigated more in further studies

MCU-independent Ca²⁺ uptake mediates mitochondrial Ca²⁺ overload and necrotic cell death in a mouse model of Duchenne muscular dystrophy

22 Mar 2024

Mitochondrial Ca²⁺ overload can mediate mitochondria-dependent cell death, a major contributor to several human diseases. Indeed, Duchenne muscular dystrophy (MD) is driven by dysfunctional Ca²⁺ influx across the sarcolemma that causes mitochondrial Ca²⁺ overload, organelle rupture, and muscle necrosis

Influencing factors of traumatic arthritis after ankle fracture surgery and construction of risk prediction model

22 Mar 2024

CONCLUSION: Age, BMI, fracture type, operation time, physical labor above grade II, osteoporosis and poor reduction are all risk factors for post-operative traumatic arthritis in patients with ankle fracture. The prediction model based on the above risk factors could effectively evaluate risk of post-operative traumatic arthritis in patients with ankle fracture.

CHRONIC CRITICAL ILLNESS-INDUCED MUSCLE ATROPHY: INSIGHTS FROM A TRAUMA MOUSE MODEL AND POTENTIAL MECHANISM MEDIATED VIA SERUM AMYLOID A

22 Mar 2024

Background: Chronic critical illness (CCI), which was characterized by persistent inflammation, immunosuppression, and catabolism syndrome (PICS), often leads to muscle atrophy. Serum amyloid A (SAA), a protein upregulated in critical illness myopathy, may play a crucial role in these processes. However, the effects of SAA on muscle atrophy in PICS require further investigation

Unsupervised local center of mass based scoliosis spinal segmentation and Cobb angle measurement

21 Mar 2024

Scoliosis is a medical condition in which a person's spine has an abnormal curvature and Cobb angle is a measurement used to evaluate the severity of a spinal curvature. Presently, automatic Existing Cobb angle measurement techniques require huge dataset, time-consuming, and needs significant effort

Photobiomodulation effects on synovial morphology, iNOS gene, and protein expression in a model of acute inflammation

21 Mar 2024

CONCLUSIONS: Photobiomodulation decreased inflammation in PBM animals, upregulated iNOS gene expression, however down regulated protein expression compared to sham.

The development, feasibility and credibility of intra-abdominal pressure measurement techniques: A scoping review

21 Mar 2024

CONCLUSIONS: Clinical data assessing the validation of new IAP measurement techniques or the reliability of established measurement techniques remain lacking. Considering the cost and invasiveness, direct measurement is not recommended as a routine method for IAP measurement and should be preserved for critically ill patients where standard techniques are contraindicated or could be inaccurate

iMSC-mediated delivery of ACVR2B-Fc fusion protein reduces heterotopic ossification in a mouse model of fibrodysplasia ossificans progressiva

19 Mar 2024

CONCLUSIONS: These results offer a new perspective for treating FOP through stem cell therapy.

The Impact of Pregnancy in Patients with Thoracic Aortic Disease: Epidemiology, Risk Assessment, and Management Considerations

18 Mar 2024

Thoracic aortic disease (TAD) poses substantial risks during pregnancy, particularly for women with genetic conditions such as Marfan syndrome, Loeys-Dietz syndrome, and vascular Ehlers-Danlos syndrome. This review examines the epidemiology, risk assessment, and management of TAD in pregnancy

Predictive Measurement for Windlass Change in Length and Selected Treatment Outcomes in Chronic Plantar Fasciitis

18 Mar 2024

Approximately 10% of patients with plantar fasciitis experience persistent and often severe symptoms, though little is known about its etiology. The goal of this study was to employ an objective, simple, and economical approach to measure the change in length of the

windlass and assess the efficiency of a specified therapy protocol applied in this study over a one-month period

Perioperative nutrition management in patients with spinal tuberculosis taking ERAS measures

18 Mar 2024

CONCLUSIONS: Nutrition management under the concept of ERAS is helpful to reduce intraoperative bleeding, promote postoperative flatus and defecation, and improve nutritional status in patients with spinal tuberculosis, which may further improve their clinical outcome and prognosis.

Construction of a predictive model for bone metastasis from first primary lung adenocarcinoma within 3 cm based on machine learning algorithm: a retrospective study

18 Mar 2024

CONCLUSION: XGBoost proves to be an effective algorithm for predicting the occurrence of bone metastasis in patients with solitary, primary lung adenocarcinoma featuring pulmonary nodules below 3 cm in size. Moreover, its robust clinical applicability enhances its potential utility.

Relationship between increased knee joint line obliquity after medial open-wedge high tibial osteotomy and patient-reported outcome measures

16 Mar 2024

CONCLUSIONS: Increased knee joint line obliquity after medial open-wedge high tibial osteotomy is associated with inferior clinical outcomes. Care should be given to the center of the rotational angulation in around-knee osteotomy to avoid postoperative increased knee joint line obliquity.

Machine learning-based algorithms applied to drug prescriptions and other healthcare services in the Sicilian claims database to identify acromegaly as a model for the earlier diagnosis of rare diseases

15 Mar 2024

Acromegaly is a rare disease characterized by a diagnostic delay ranging from 5 to 10 years from the symptoms' onset. The aim of this study was to develop and internally validate machine-learning algorithms to identify a combination of variables for the early diagnosis of acromegaly

Measurement of the Neutrophils Count and Oxidative Burst in Neutrophils of Patients with Sanjad Sakati Syndrome

15 Mar 2024

Sanjad Sakati Syndrome (SSS) is categorized as a neuroendocrine-related disease due to disorders of the nervous and hormonal systems. Since hormonal changes in these patients may affect the nature and function of the immune system. Thus, in this study, cell count and phagocytotic function of neutrophils were evaluated which may be influenced by changes in the hormonal rate and growth factors

Exploring temporal trends and burden of traumatic shoulder dislocation: a global perspective

15 Mar 2024

CONCLUSION: The disease burden of traumatic shoulder dislocation has not significantly decreased from 1990 to 2019. The incidence and YLD rates are associated with age,

gender, and SDI. A thorough examination of the disease burden contributes to the efficient allocation and utilization of resources, as well as the development of targeted and effective intervention strategies.

A novel measurement approach to dynamic change of limb length discrepancy using deep learning and wearable sensors

15 Mar 2024

The accurate identification of dynamic change of limb length discrepancy (LLD) in non-clinical settings is of great significance for monitoring gait function change in people's everyday lives. How to search for advanced techniques to measure LLD changes in non-clinical settings has always been a challenging endeavor in recent related research

Generation of three myotonic dystrophy type 1 patient iPSC lines (CBRCULi018-A, CBRCULi019-A, CBRCULi020-A) derived from lymphoblastoid cell lines for disease modelling and therapeutic research

15 Mar 2024

Myotonic dystrophy type 1 (DM1) is the most prevalent adult-onset muscular dystrophy affecting 1 in 8,000 individuals. It is characterized by multisystemic symptoms, primarily myopathy. The root cause of DM1 is a heterozygous CTG triplet expansion beyond the normal size threshold in the non-coding region of the DM1 protein kinase gene (DMPK)

Early changes of bone metabolites and lymphocyte subsets may participate in osteoporosis onset: a preliminary study of a postmenopausal osteoporosis mouse model

14 Mar 2024

CONCLUSION: Lipid metabolism was significant at the early stage of the osteoporosis. Bone metabolites may influence bone formation by interfering with bone marrow lymphocyte subsets.

The gout epidemic in French Polynesia: a modelling study of data from the Ma'i u'u epidemiological survey

14 Mar 2024

BACKGROUND: Gout is the most common cause of inflammatory arthritis worldwide, particularly in Pacific regions. We aimed to establish the prevalence of gout and hyperuricaemia in French Polynesia, their associations with dietary habits, their comorbidities, the prevalence of the HLA-B*58:01 allele, and current management of the disease.

Eicosapentaenoic Acid Modulates Transient Receptor Potential V1 Expression in Specific Brain Areas in a Mouse Fibromyalgia Pain Model

13 Mar 2024

Pain is an unpleasant sensory and emotional experience accompanied by tissue injury. Often, an individual's experience can be influenced by different physiological, psychological, and social factors. Fibromyalgia, one of the most difficult-to-treat types of pain, is characterized by general muscle pain accompanied by obesity, fatigue, sleep, and memory and psychological concerns

Immunity in the Progeroid Model of Cockayne Syndrome: Biomarkers of Pathological Aging

13 Mar 2024

Cockayne syndrome (CS) is a rare autosomal recessive disorder that affects the DNA repair process. It is a progeroid syndrome predisposing patients to accelerated aging and to increased susceptibility to respiratory infections. Here, we studied the immune status of CS patients to determine potential biomarkers associated with pathological aging

High Initial Dose of Monitored Vitamin D Supplementation in Preterm Infants (HIDVID Trial): Study Protocol for a Randomized Controlled Study

13 Mar 2024

Vitamin D deficiency can escalate prematurity bone disease in preterm infants and negatively influence their immature immunology system. Infants born at 24 + 0/7 weeks to 32 + 6/7 weeks of gestation will be considered for inclusion. Cord or vein blood samples will be obtained within 48 h after birth for 25-hydroxyvitamin D level measurements

Population-based surveillance for birth defects potentially related to Zika virus infection including 3-year mortality and developmental outcomes, and Early Intervention Program service use-New York City, 2016 birth cohort

13 Mar 2024

BACKGROUND: In response to the 2015-2017 Zika virus outbreak, New York City (NYC) identified and monitored infants with birth defects potentially related to congenital Zika virus.

External validation of a deep learning model for predicting bone mineral density on chest radiographs

13 Mar 2024

CONCLUSION: Our model, which was externally validated using data obtained at facilities other than the development environment, predicted BMD of femoral neck on chest radiographs. The model performed well and showed potential for clinical use.

Quercetin in the Prevention of Induced Periodontal Disease in Animal Models: A Systematic Review and Meta-Analysis

13 Mar 2024

CONCLUSIONS: Quercetin diminishes periodontal bone loss and prevents disease progression in animal models of experimental periodontal disease. Quercetin might facilitate periodontal tissue hemostasis by reducing senescent cells, decreasing oxidative stress via SIRT1-induced autophagy, limiting inflammation, and fostering an oral bacterial microenvironment of symbiotic microbiota associated with

Preliminary study on reliability and validity of the Chinese version of the Asher-McDade aesthetic index

13 Mar 2024

CONCLUSIONS: The Chinese version of the Asher-McDade aesthetic index has good reliability and validity and is applicable to the professional evaluation of the effect of postoperative photographs in Chinese patients with cleft lip.

Trilobatin contributes to the improvement of myopathy in a mouse model of Duchenne muscular dystrophy

13 Mar 2024

Duchenne muscular dystrophy (DMD) occurs due to genetic mutations that lead to a deficiency in dystrophin production and consequent progressive degeneration of skeletal

muscle fibres, through oxidative stress and an exacerbated inflammatory process. The flavonoid trilobatin (TLB) demonstrates antioxidant and anti-inflammatory potential

A cascading learning method with SegFormer for radiographic measurement of periodontal bone loss

12 Mar 2024

CONCLUSIONS: The method for predicting RBL using DL and PCA produced promising results, offering rapid and reliable auxiliary information for future periodontal disease diagnosis.

Intraoperative Neurophysiological Monitoring in Corrective Surgery of Scoliosis - Experience at a Tertiary Care Hospital

11 Mar 2024

CONCLUSION: Multimodal IONM reduces the incidence of postoperative neurological deficit in corrective surgery of scoliosis by effectively detecting neurologic injury during surgery. Monitoring events alert surgical team to exercise immediate corrective measures which likely results in recovery of lost signals and predict the favorable outcome.

In vivo phenotypic vascular dysfunction extends beyond the aorta in a mouse model for fibrillin-1 (Fbn1) mutation

09 Mar 2024

In individuals with Marfan Syndrome (MFS), fibrillin-1 gene (FBN1) mutations can lead to vascular wall weakening and dysfunction. The experimental mouse model of MFS (Fbn1^(C1041G/+)) has been advantageous in investigating MFS-associated life-threatening aortic aneurysms

The posterior tibial slope affects the measurement reliability regarding the radiographic parameter of the knee

08 Mar 2024

CONCLUSION: The larger the PTS, the lower the measurement reliability regarding the radiographic parameters of the knee that includes the joint line, such as MPTA and JLCA. Given the occasional challenge in accurately identifying the knee joint line in patients with a relatively large PTS, careful measurement of radiographic parameters is crucial and utilizing repetitive measurements for

Modeling skeletal dysplasia in Hurler syndrome using patient-derived bone marrow osteoprogenitor cells

08 Mar 2024

Dysostosis multiplex is a major cause of morbidity in Hurler syndrome (mucopolysaccharidosis type IH [MPS IH], OMIM #607014) because currently available therapies have limited success in its prevention and reversion

The burden of skin and soft tissue, bone and joint infections in an Australian cohort of people who inject drugs

08 Mar 2024

CONCLUSION: Skin and soft tissue and joint infections are a major cause of morbidity for PWID. Admission to hospital provides opportunistic involvement of addiction specialty services.

Efficacy and immune-inflammatory mechanism of acupuncture-related therapy in animal models of knee osteoarthritis: a preclinical systematic review and network meta-analysis

08 Mar 2024

CONCLUSIONS: Acupuncture-related therapy can be a possible treatment for KOA. The mechanism involves many immune-inflammatory pathways, which may be mediated by DAMPs/TLR/NF- κ B/MAPK, PI3K/Akt/NF- κ B pathway, or IFN- γ /JAK-STAT pathway. It needs to be further confirmed by more high-quality animal experiments or meta-analysis.

Management of severe ME/CFS in children and young people in the UK: a British Paediatric Surveillance Unit study

07 Mar 2024

CONCLUSION: Full investigation is frequently incomplete in CYP with suspected severe ME/CFS and recommendations for referral and management are poorly implemented, in particular the needs of CYP who are unable to leave their home might be poorly met.

Community-embedded follow-up management intervention for geriatric primary care: a mixed-methods study of an integrated health services model

06 Mar 2024

CONCLUSIONS: Community-embedded follow-up management meets the need for elderly patients with osteoporosis living alone. It helps to improve health perception, promote physical and mental health, and optimize the quality of life in this population. Personalized services and professional support are two major contributing factors to effective embedded follow-up management in the community.

Zebrafish as a model to investigate a biallelic gain-of-function variant in MSGN1, associated with a novel skeletal dysplasia syndrome

06 Mar 2024

CONCLUSION: In contrast to loss-of-function effects described in animal knockdown models, gain-of-function of MSGN1 explains the only mildly affected axial skeleton of the proband and rather normal vertebrae. In this context we observed notochord bending and potentially disruption of pectoral fin buds/upper extremity after overexpression of msgn1 in zebrafish embryos

Measurement of event-related potentials from electroencephalography to evaluate emotional processing in Fibromyalgia Syndrome: A systematic review and meta-analysis

06 Mar 2024

OBJECTIVE: The present systematic review and meta-analysis intended to: 1) determine the extent of abnormalities in emotional processing linked to emotional event-related potentials (ERPs) in Fibromyalgia Syndrome (FMS) and 2) integrate data from similar emotional tasks into a meta-analysis to clearly demonstrate the scientific and clinical value of measuring emotional ERPs by

Promising Dual Anticancer and Antimetastatic Action by a Cu(II) Complex Derived from Acylhydrazone on Human Osteosarcoma Models

05 Mar 2024

Osteosarcoma cancers are becoming more common in children and young adults, and existing treatments have low efficacy and a very high mortality rate, making it pressing to

search for new chemotherapies with high efficacy and high selectivity index. Copper complexes have shown promise in the treatment of osteosarcoma

Collaborative research in myositis-related disorders: MIHRA, a global shared community model

04 Mar 2024

Myositis International Health and Research Collaborative Alliance (MIHRA) is a newly formed purpose-built non-profit charitable research organization dedicated to accelerating international clinical trial readiness, global professional and lay education, career development and rare disease advocacy in IIM-related disorders

Establishment and validation of a nomogram clinical prediction model for osteoporosis in senile patients with type 2 diabetes mellitus

04 Mar 2024

This study aimed to develop a predictive nomogram model to estimate the odds of osteoporosis (OP) in elderly patients with type 2 diabetes mellitus (T2DM) and validate its prediction efficiency. The hospitalized elderly patients with T2DM from the Affiliated Hospital of North Sichuan Medical University between July 2022 and March 2023 were included in this study

An iPSC model for POLR3A-associated spastic ataxia: Generation of three unrelated patient cell lines

04 Mar 2024

Spastic Ataxias (SA) are a group of neurodegenerative disorders with combined pyramidal and cerebellar system affection, leading to an overlap phenotype between Hereditary Spastic Paraplegias (HSP) and Cerebellar Ataxias (CA)

Reliability of ultrasonography to measure cervical multifidus, semispinalis cervicis and longus colli muscles dimensions in patients with unilateral cervical disc herniation: An observational cross-sectional test-retest study

03 Mar 2024

CONCLUSIONS: US was demonstrated to have high within-day inter and intra-rater and between-day intra-rater reliability to measure muscles dimensions in patients with unilateral CDH. It can be used to assess deep cervical muscles or to monitor the effects of interventions.

Do key measurement parameters derived from specific cervical vertebral segments differ between lordotic and non-lordotic cervical spine alignments? A study of asymptomatic young adults

03 Mar 2024

CONCLUSIONS: Long term prospective investigations are required to determine whether possible biomarkers (alignment parameters/radiological measurements) for spinal degenerative changes can be identified so that early interventions can be put in place to try and reduce the impact of neck pain on society.

Effects of Leukocyte-rich platelet-rich plasma and Leukocyte-poor platelet-rich plasma on cartilage in a rabbit osteoarthritis model

02 Mar 2024

Osteoarthritis is a prevalent chronic disease. One of its primary pathological processes involves the degeneration of articular cartilage. Platelet-rich plasma (PRP) contains cytokines and growth factors that can stimulate the repair and regeneration of articular cartilage tissues. PRP may also slow the progression of osteoarthritis

fh12b mediates extraocular muscle protection in zebrafish models of muscular dystrophies and its ectopic expression ameliorates affected body muscles

02 Mar 2024

In muscular dystrophies, muscle fibers lose integrity and die, causing significant suffering and premature death. Strikingly, the extraocular muscles (EOMs) are spared, functioning well despite the disease progression. Although EOMs have been shown to differ from body musculature, the mechanisms underlying this inherent resistance to muscle dystrophies remain unknown

Lower limb squat biomechanics and select clinical measures in chronic ankle instability

02 Mar 2024

BACKGROUND: Individuals with chronic ankle instability often present with clinical and biomechanical abnormalities, however squat biomechanics have not been investigated. The purpose of this study was to compare select clinical assessments and squat biomechanics between individuals with and without chronic ankle instability.

Clinical study of constructing nomogram model based on multi-dimensional clinical indicators to predict prognosis of knee osteoarthritis

01 Mar 2024

CONCLUSION: The prognostic model of patients with knee osteoarthritis constructed based on multi-dimensional clinical data has both theoretical and practical significance, and can provide a reference for taking targeted measures to improve the prognosis of patients.

Validity of an ultrasonographic joint-specific scoring system in juvenile idiopathic arthritis: a cross-sectional study comparing ultrasound findings of synovitis with whole-body magnetic resonance imaging and clinical assessment

01 Mar 2024

CONCLUSION: Our findings suggest that ultrasound is a valid instrument to detect synovitis, and that ultrasound synovitis sum scores can reflect disease activity and may be an outcome measure in JIA.

Thalamocortical organoids enable in vitro modeling of 22q11.2 microdeletion associated with neuropsychiatric disorders

21 Feb 2024

Thalamic dysfunction has been implicated in multiple psychiatric disorders. We sought to study the mechanisms by which abnormalities emerge in the context of the 22q11.2 microdeletion, which confers significant genetic risk for psychiatric disorders. We investigated early stages of human thalamus development using human pluripotent stem cell-derived organoids and show that the 22q11

IMU-Based Kinematics Estimation Accuracy Affects Gait Retraining Using Vibrotactile Cues

12 Feb 2024

Wearable sensing using inertial measurement units (IMUs) is enabling portable and customized gait retraining for knee osteoarthritis. However, the vibrotactile feedback that

users receive directly depends on the accuracy of IMU-based kinematics. This study investigated how kinematic errors impact an individual's ability to learn a therapeutic gait using vibrotactile cues

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