

前 言

本刊一年四期收录Web of Science核心合集数据库有关体教融合、体医融合、后疫情体育、冬奥研究、兴奋剂研究相关主题的最新研究。

Web of Science核心合集包括Science Citation Index Expanded (SCIE)、社会科学引文索引(SSCI)、艺术和人文引文索引(AHCI)、Emerging Sources Citation Index (ESCI)、Conference Proceedings Citation Index (CPCI)、Book Citation Index (BKCI)等，是科学及学术研究的全球原创引证索引。其涵盖超过 250 个自然科学、社会科学、艺术和人文学科。

本刊旨在利用Web of Science核心合集平台为广大师生提供有关目前热点的最新研究内容。本期选录体教融合方面的文献12篇，体医融合方面的文献7篇，后疫情体育方面的文献12篇，冬奥研究方面的文献8篇，兴奋剂研究方面的文献5篇。

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(本期责任编辑：马赛迈)

体教融合

本期体教融合方面的研究共检索到英文相关文献12篇，研究热点：不同学校的体育教育个案研究、高中体育学习资源的数字工具、学校体育教学有效性研究、中学生对体育教育的认知、学校运动员的运动成绩与学业压力、心理健康，毕业学生-运动员过渡路径及再就业，体育教育与传统教学对学生赋权与自信的影响，少年儿童体育运动的参与与其抑郁症的相关性，以及对其认知和行动的影响。

Gouveia ÉR, Gouveia BR, Marques A, Lopes H, Rodrigues A, Quintal T, Pestana M, Peralta M, Kliegel M, Ihle A. Estimation of Engagement in Moderate-to-Vigorous Physical Activity from Direct Observation: A Proposal for School Physical Education. Children (Basel). 2021 Jan 21;8(2):67. doi: 10.3390/children8020067. PMID: 33494158; PMCID: PMC7909795.

ABSTRACT:

This study aimed to test an observational momentary time sampling tool to estimate in-class moderate-to-vigorous physical activity (MVPA), in terms of validity, reliability and agreement between observational momentary time sampling and accelerometry, and to develop a regression equation to estimate MVPA from observational momentary time sampling. The sample comprised 78 pupils (38 girls), mean age 14.0 ± 1.1 years. Measurements were taken in three similar Physical Education classes, on three different days. To monitor MVPA, we applied the observational momentary time sampling method. Students wore an ActiGraph GT3X+ accelerometer. Reliabilities were determined by the intraclass correlations, the agreement between methods was analyzed using the Bland-Altman method, and a multiple regression analysis was performed to estimate the equation. The observational momentary time sampling showed good reliability across time ($0.59 < r < 0.72$, $p < 0.001$). It was significantly correlated with accelerometry ($r = 0.51$, $p < 0.001$). The MVPA assessed via accelerometer could be predicted from the following equation: $Y = 44.3 + 0.47 \cdot (\text{MVPA observational momentary time sampling method}) + 8.0 \cdot (\text{sex; with } 0 = \text{girls and } 1 = \text{boys})$. This observational momentary time sampling method is a stable and reliable tool to estimate MVPA. A regression equation using the

score of observational momentary time sampling and sex can be used to better estimate the real MVPA.

Chen,CX, Zhou Q. Impact of Intelligence Methodologies on Education and Training Process[J]. Journal of Intelligent & Fuzzy Systems, vol. 40, no. 2, pp. 3433-3444, 2021

ABSTRACT:

The quality of Physical Education (PE) education in high schools is closely related to interactive educational efficiency in classrooms. Teachers and students can improve their interest in learning through classroom interaction. Teachers can adjust educational programs according to the existing shortcomings of physical education, stimulate students' interests in sports, and reduce student tensions and learning pressures. Students can increase their enthusiasm and creativity in sports, thereby enhancing students' sports skills. Therefore, in a practical teaching process, it's important to emphasize enhancing the effectiveness of interactive instruction in the classroom. This makes it possible to develop sports instruction. This paper analyzes how to effectively improve the effects of classroom interactions in a lower secondary school, and proposes a concrete teaching method for physical education. First, this paper explains the importance of improving the effectiveness of classroom education for junior high school students, and analyzes the present state of PE classroom education, and proposes an improvement strategy including physical education, and rationalizes students' physical and mental development to stimulate students' interest in sports. The classroom is innovative education and means that students improve their classroom enthusiasm.

Phillips, S R, Marttinen, R, Mercier, K. Middle School Students' Perceptions of Physical Education: A Qualitative Look. 2021 Jan 40(1) 30-38.

ABSTRACT:

Purpose: Existing research suggests that students' attitudes toward physical education are positive through Grade 5, but become less positive as grade levels increase; this research is, however, missing student voice. The purpose of this study was to further understand why

students' attitudes have been shown to decrease. Methods: Twenty-six focus group interviews (students N = 65) were conducted over 2 years to discover what was influencing attitudes from fifth to eighth grade. Results: Three themes emerged: (a) curriculum leads to decreases in student attitudes (subthemes repetitive and boring, an overemphasis on competition, and fitness testing activities—what's the purpose and why am I on display?), (b) social factors impact attitude: sweating and changing, and (c) physical education assumptions, the easy "A" (subthemes: perceptions of physical education teachers and the easy "A"). Conclusion: Allowing students to explain the reasons for decreases in attitudes contributes to improving the teaching and learning process.

Clark C M , Kosciw J G . Engaged or excluded: LGBTQ youth's participation in school sports and their relationship to psychological well-being[J]. *Psychology in the Schools*, 2021.

ABSTRACT:

Sports participation has been shown to positively affect youth well-being. However, research has also shown that sports environments can be unsafe for lesbian, gay, bisexual, transgender, and queer (LGBTQ) youth. Using data from a large study on school-related experiences of LGBTQ secondary students who reported on their extracurricular activities in school, (N = 15,813), this study examined LGBTQ youth's participation in school sports, the effects of participation on well-being and school belonging, and whether any such benefits of participation varied by transgender status and gender binary identity. Over a quarter of LGBTQ respondents in our study had participated in school sports, and being transgender and being nonbinary were related to a lower likelihood of sports participation. Transgender males and transgender nonbinary youth had the lowest likelihood of sports participation. In general, LGBTQ youth who participated in sports had increased well-being and greater school belonging. However, in regard to self-esteem, transgender nonbinary youth appeared to have greater benefit from participating in sports than did their transgender male and transgender female peers. Considering these results, schools have a responsibility to ensure that school sports are safe and welcoming for LGBTQ youth.

Post EG, Snedden TR, Snedaker K, Bouton J, Wang D. Differences in Sport-Related Concussion History, Reporting Behavior, and Return to Learn and Sport Timelines in Public versus Private High School Student Athletes. Brain Injury. 2021 Feb:1-8.

ABSTRACT:

Objective: To compare: 1) history of sport-related concussion (SRC), 2) Return to learn (RTL) timelines, 3) Return to play (RTP) timelines, and 4) SRC reporting behaviors in high-school student athletes based on school type (public vs. private).

Methods: A total of 2,998 athletes recruited from eleven private (n = 2121) and two public schools (n = 877) during the 2018-2019 school year completed an online questionnaire regarding sport participation and SRC history. The questionnaire examined self-reported history of SRC, reporting behavior, and RTL and RTP timelines.

Results: Private school athletes were approximately twice as likely to report a history of SRC compared to public school athletes (OR [95% CI]: 2.01 [1.61-2.50], p < .001). There were no significant differences in RTL or RTP timelines between public and private-school athletes (p > .05). For those who did not report their SRC (22.4%), the most common reasons were "a desire to keep playing" (53.7%) and "not believing it was serious enough to report" (52.1%).

Conclusions: Athletic trainers and healthcare professionals should be aware of the factors that may influence secondary student athletes' SRC reporting behavior, and associated RTL, and RTP timelines, so they can better target concussion education and overall management for student-athletes.

Vickers E , Morris R . Pathway Decisions During the Student-Athlete Transition out of University in the United Kingdom[J]. Journal of Applied Sport Psychology, 2021.

ABSTRACT:

The student-athlete transition out of university requires athletes to make important decisions regarding their future. However, there is no research that focuses on the pathways that athletes take when they leave university and the factors that underpin athletes' decisions. The current study explored the pathways athletes take when they leave university in the United Kingdom

(UK), and their reasons for taking these specific routes. Eleven elite UK former and current university student-athletes (M (age) = 21.4) from different sports were interviewed. Eight university stakeholders (e.g., head coaches, lifestyle advisor, performance sport manger) took part in a focus group. Data were thematically analyzed. Results suggest that athletes take four different pathways following university: (1) advancing onto a postgraduate education and elite sport pathway, (2) full-time sport pathway, (3) sport and work pathway, and (4) dropping out of sport and moving onto an alternative pathway. There were multiple factors that led athletes to taking each pathway. These included a desire to qualify for the next Olympic Games, having an education "safety net," goal of advancing onto a funded sport programme, and limited work-sport dual career opportunities. This article advances previous work in athlete transitions and athlete career pathways, focusing specifically on a key career transition point for UK athletes. Support providers could use the findings to help athletes critically reflect on their motivations and future goals and come to a decision around what their most suitable pathway should be.

Lay summary: We explored the experiences of UK student-athletes as they left university, including the factors that influence their decisions around what they do. Student-athletes were found to take four different routes and had different motives and reasons why they took the route that they did. Implications for Practice

Practitioners should support athletes to critically reflect on their motivations and future goals when they are about to complete university and come to a decision around what their most suitable pathway should be.

Risks of taking a make or break year as a full-time athlete after university without funding secured should be communicated to athletes.

National governing bodies (NGBs) should consider more carefully how they can incorporate dual career opportunities into their centralized programmes.

Universities are advised to offer postgraduate athlete support programmes.

Parents, NGBs, and university stakeholders should use a collaborative approach to support the athlete to critically examine their opportunities post-university.

R Jiang, Xie C , Shi J , et al. Comparison of physical fitness and mental health status among school-age children with different sport-specific training frequencies[J]. PeerJ Computer Science, 2021, 9(13):1-13.

ABSTRACT:

This cross-sectional study compared the physical fitness and mental health status of 140 school-age children who participated in sport-specific training with 180 age-matched peers. All the participants were grouped by sport-specific training frequencies in extracurricular time into the following: (i) high sports training frequency group (HFG): training three to five times per week (nD77, mean [SD] age: 9.60 [0.12] years); (ii) low sports training frequency group (LFG): training once per week (n D 63, mean [SD] age: 9.88 [0.14] years); and (iii) control group (CG): maintaining routine life (nD180, mean (SD) age: 9.77(0.09) years). Physical fitness status, including body composition (body mass index), endurance (vital capacity; 50 x 8 round trip), speed and agility (50 msprint), flexibility (sit-and-reach), coordination (1-min rope skipping), and core strength (1-min sit-ups) as well as mental health status was measured. Overall, the results showed that Grade 3 to 4 HFG students showed better total physical fitness scores than the LFG and CG students. Grade 2 and 5 participants in the three groups showed no significant difference in the total physical fitness score. Children in HFG performed better in several PF indicators (i.e., cardiopulmonary function, flexibility, core strength, and coordination) than those in LFG and CG, and children in LFG got a higher score than those in CG on a testing item of 1-min rope skipping. The mental health test results showed that HFG performed better than LFG and CG. The results indicated that participating in sport-specific training 3-5 times per week was beneficial for children's physical and mental health. Additionally, there was a weak and negative correlation between physical fitness and mental health in LFG and CG, while no correlation was found between physical fitness and mental health in HFG.

Lee S Y , Park J . Emotional Changes and Functional Progressions during Post-Operative Rehabilitation in Collegiate Student-Athletes: A Preliminary Study[J]. Healthcare, 2021, 9(2):184.

ABSTRACT:

An interrelationship between psychological and physical health is generally accepted in the field of sports medicine. This preliminary study explored the association between emotional changes and functional outcomes and aimed to describe how each aspect progresses during postoperative rehabilitation. Four collegiate student-athletes (1 female and 3 males) who underwent supervised postoperative rehabilitation due to a lower-extremity injury volunteered for participation in the study. Emotion was quantified using a visual analogue scale prior to and after each session while self-reported function using the Lower-extremity Functional Scale was assessed every eight sessions throughout rehabilitation. There was a moderate correlation between emotional changes and functional outcomes ($r = 0.58$, $p < 0.0001$). After the first emotional improvement, patients experienced six emotional deteriorations (28% of the entire rehabilitation period; $F_{49, F_{297}} = 2.25$, $p < 0.0001$), while their function consistently increased ($F_{49, F_{147}} = 17.39$, $p < 0.0001$). Clinicians should be aware of the relationship between emotional changes and functional progression as well as the occurrence of emotional fluctuations when supervising and consulting patients during postoperative rehabilitation. A larger study is warranted to generalize the results.

Pieiro-Cossio J , A Fernández-Martínez, Nuviala A , et al. Psychological Wellbeing in Physical Education and School Sports: A Systematic Review[J]. International Journal of Environmental Research and Public Health, 2021, 18(3):864.

ABSTRACT:

Mental health in children and adolescents has become an increasingly important topic in recent years. It is against this backdrop that physical education and school sports play an important role in promoting psychological wellbeing. The aim of this review was to analyse interventions for improving psychological wellbeing in this area. To this end, a literature review was conducted using four databases (WOS, SPORTDiscus, SCOPUS and ERIC) and the following keywords:

psychological wellbeing, physical education, and school sports. Twenty-one articles met the inclusion criteria. The results showed that interventions varied greatly in terms of duration and used a wide range of strategies (conventional and non-conventional sports, physical activity, games, etc.) for promoting psychological wellbeing, primarily among secondary school students. There was a lack of consensus as to the conceptualisation of the construct of psychological wellbeing, resulting in a variety of tools and methods for assessing it. Some studies also suggested a link between psychological wellbeing and other variables, such as basic psychological needs and self-determination. Finally, this study provides a definition of psychological wellbeing through physical activity based on our findings.

Matta P N , Baul T D , Loubeau K , et al. Low sports participation is associated with withdrawn and depressed symptoms in urban, school-age children[J]. Journal of Affective Disorders, 2021, 280:24-29.

ABSTRACT:

Background: The association between sports participation and mental health has not been studied in primary care samples of school-age children, nor in underrepresented minority children. We assessed the relationship between number of sports played and psychiatric symptoms in children ages 6-11 at well-child visits in an urban clinic.

Methods: Guardians of 206 children (85% Latinx) ages 6-11 completed Child Behavior Checklists (CBCL) in Spanish (66.5%) or English at well-child visits at an urban community health center. We performed linear regression between number of sports played and individual CBCL syndrome scores, and multiple logistic regression with normal (T-score <60) vs. elevated (T-score \geq 60) CBCL syndrome scale score as the outcome. We conducted bivariate, multiple logistic regression, and linear regression analyses between low (1 or fewer) vs. high (2 or more) sports participators and subscales of interest.

Results: Fewer sports played was associated with higher Withdrawn/Depressed CBCL syndrome scale T-scores ($p = 0.019$), but not with other CBCL syndrome scale scores nor number of syndrome scale elevations ($p = 0.638$). Low participators had higher odds of an elevated Withdrawn/Depressed T-score ($p = 0.033$) than high participators.

Limitations: Our dataset did not contain certain details about sports played, nor information about income and insurance, and our results may not generalize to other populations.

Conclusions: Playing fewer sports is associated with higher withdrawn/depressed symptoms in urban, predominantly Latinx, school-age children. Therefore, urban school-age children with low sports participation may be at risk for depression, and sports participation might protect against depressive symptoms in childhood.

Bessa C , Hastie P , Rosado A , et al. Sport Education and Traditional Teaching: Influence on Students' Empowerment and Self-Confidence in High School Physical Education Classes[J]. Sustainability, 2021, 13.

ABSTRACT:

Physical Education (PE) is recognized for its value in developing personal and social development. However, the instructional approach adopted by the teacher may affect the achievement of positive outcomes. This study aimed to examine the effects of two different teaching approaches, Traditional Teaching (TT) and the Sport Education (SE) model, on students' empowerment and self-confidence in high school PE classes. A total of 430 high-school students (66.7% male), aged 14-21 years ($M = 16.22$, $SD = 1.03$) enrolled in 10th, 11th and 12th grades, participated in this study. A pretest-posttest quasi-experimental design was used across 18 classes. Classes met two times a week during a period of 8 weeks for a total of 1080 min. The Psychological Empowerment Instrument was used to measure empowerment. Students' self-confidence was measured with the self-confidence sub-scale of the Competitive State Anxiety Inventory-2. The findings of the research revealed that only SE was effective in improving high school students' empowerment and self-confidence. In the TT group, no gains were found, even decreasing over time. These results reinforce the adequacy of SE in PE as a curricular model to be used by teachers, particularly for the development of students' empowerment and self-confidence.

O'Neil L , Amorose A J , Pierce S . Student-Athletes' Dual Commitment to School and Sport: Compatible or Conflicting?[J]. Psychology of Sport and Exercise, 2021, 52:101799.

ABSTRACT:

There is general agreement that for collegiate student-athletes to thrive in academics and athletics these individuals must develop and maintain quality commitments to both school and sport throughout college. Yet, limited research has investigated student-athletes' concurrent negotiation of their discrete commitments to school and sport, and its consequences for these individuals' academic, athletic, and general lives. The purpose of the present study was threefold: (a) identify distinct profiles representing collegiate students-athletes' dual commitment to school and sport, (b) detect whether these dual commitment profiles demonstrated compatibility versus conflict, and (c) examine the relationships between dual commitment profiles and student-athletes' academic, athletic, and general life outcomes. A sample of 248 NCAA Division I student-athletes (Mage = 19.87 years, SD = 1.33 years) completed measures of commitment, engagement, and burnout in school and sport, as well as global psychological well-being indices (i.e., life satisfaction and subjective vitality). Using latent profile analyses, results supported a four-profile solution comprising dual commitment profiles with unique configurations of enthusiastic (EC) and constrained (CC) commitment to school and sport: Weak CC-Dominant: School/Strong EC-Dominant: Sport (n = 43), Weak CC-Dominant: School/Strong CC-Dominant: Sport (n = 71), Moderate Commitment: School & Sport (n = 91), and Strong EC-Dominant: School & Sport (n = 43). Dual commitment profiles characterized by enthusiastic-dominant commitment patterns were associated with higher levels of school/sport engagement and global psychological well-being, as well as lower levels of school/sport burnout. Overall, our findings established that collegiate student-athletes are tied to school and sport for various reasons and speak to a potential need for enhanced support networks and services catered to student-athletes' academic role in the United States.

体医融合

本期体医融合方面的研究共检索到英文相关文献7篇，研究热点：体育促进农村妇女健康、奥运冠军寿命比普通人长、能量感知和自我信念对多发性硬化和慢性中风患者运动活动的影响、Drez和Miller的骨科运动医学第5版、体育和运动医学中被引用最多文章的文献计量学分析、选择最适合运动医学临床研究的患者报告结局测量第2条十系列等。

Barchi F, AbiNader MA, Winter SC, Obara LM, Mbogo D, Thomas BM, Ammerman B. "It Is Like Medicine": Using Sports to Promote Adult Women's Health in Rural Kenya. Int J Environ Res Public Health. 2021 Feb 27;18(5):2347. doi: 10.3390/ijerph18052347. PMID: 33673712; PMCID: PMC7967769.

ABSTRACT:

Despite the well-documented health benefits of recreational sports, few opportunities exist in lower- and middle-income countries for adult women to participate in recreational physical activities. An explanatory sequential mixed methods approach was used to explore associations between an innovative soccer program for adult women and self-reported health status. Cross-sectional survey data were collected in 2018-2019 from 702 women in the Nikumbuke Project, a health and literacy program in southeastern rural Kenya, followed by focus group discussions with 225 women who also participated in the Project's soccer program. Quantitative findings suggest that women who participated in soccer had 67% greater odds of reporting good or excellent health than their non-soccer playing peers. Thematic analysis of qualitative data indicated that women credited soccer with less pain, fatigue, and stress, as well as weight loss and reduced dependence on medicine for hypertension, pain, and sleep problems. Women equated health benefits with greater ease and efficiency in completing chores, reduced worries, youthful energy, male-like strength, and pleased husbands. Soccer programs for adult women may be particularly effective interventions in settings where access to health care is limited and where lack of opportunity to engage in physical aerobic activity increases women's risks for poor health outcomes.

J Schüler, Wolff W , Pfeifer J , et al. The Role of Perceived Energy and Self-Beliefs for Physical Activity and Sports Activity of Patients With Multiple Sclerosis and Chronic Stroke[J]. *Frontiers in Psychology*, 2021, 11:570221.

ABSTRACT:

Physical activity counteracts some of the negative consequences associated with chronic neurological diseases. Here, we describe the levels of physical activity (PA) and sports activity (Sport) in patients with multiple sclerosis (pMS, n = 59) and chronic stroke (pStroke, n = 67) and test compliance with the recommendation for health-promoting physical activity of the World-Health Organization (WHO). Secondly, we tested for differences between the groups of patients, and thirdly, we examined relationships between PA and Sport with psychological indicators of perceived energy (fatigue and vitality) and self-beliefs (self-efficacy and self-control). Psychological constructs were assessed with validated measures from different disciplines in Psychology. A statistical aim was to describe interpretations gained by (non-) parametric Bayesian and Null-Hypothesis-Significance Testing statistics (NHST) on the example of the conducted tests for differences and relationships. Descriptive analyses revealed that pMS and pStroke complied with recommendations of the WHO, but with large variance indicating that patient groups are not homogenous. Tests for differences showed that the PA difference between pMS and pStroke can be attributed to the higher proportion of women in the pMS sample as they engage more in household chores (important part of PA). Tests for relationships showed that for pStroke, vitality, self-control, and self-efficacy were positively related to the level of sports activity. Furthermore, pStroke who were sport active had lower fatigue and higher self-control and self-efficacy scores than sport inactive people. Although they address slightly different questions, the Bayesian and the NHST approach led to similar general conclusions

DeLee, Drez, and Miller's Orthopedic Sports Medicine: Principles and Practice—2 Volume Set, 5th Edition, Medicine & Science in Sports & Exercise: February 2021 - Volume 53 - Issue 2 - p 457 doi: 10.1249/01.mss.0000732892.21613.ab

Description

Indispensable for both surgeons and sports medicine physicians, DeLee, Drez, & Miller's Orthopaedic Sports Medicine: Principles and Practice, 5th Edition, remains your go-to reference for all surgical, medical, rehabilitation and injury prevention aspects related to athletic injuries and chronic conditions. Authored by Mark D. Miller, MD and Stephen R. Thompson, MD, this 2-volume core resource provides detailed, up-to-date coverage of medical disorders that routinely interfere with athletic performance and return to play, providing the clinically focused information you need when managing athletes at any level.

Rizzone K, LaBella CR. Come Together: Sports Medicine for Everybody—the 2021 American Medical Society for Sports Medicine issue. British Journal of Sports Medicine 2021;55:127.

Highlights in this issue

In 2019, AMSSM hosted the Youth Early Sports Specialization Summit. We are delighted to present a key product from that meeting, 'Defining a Research Agenda for Youth Sport Specialization: The AMSSM Youth Early Sport Specialization Summit' (see page 135) . This summary statement reviews the current literature, identifies key findings, limitations and knowledge gaps, and outlines the priorities for future research on youth sport specialisation. Dr Joseph Baker provides an additional perspective on this topic in his commentary, 'Is it too early to condemn early sports specialization?' (see page 179) .

AMSSM also presents an important position statement on 'Sexual Violence in Sport' (see page 132) . In addition, this issue features a compelling patient voices article discussing personal experiences of sexual violence and a call to action for the sports and exercise medicine community: 'Helping athletes affected by sexual violence: my challenge to the sports and exercise medicine community' (see page 177) .

We are living in a time of novel challenges related to the COVID-19 pandemic, but this also means we have a unique opportunity to advance the field of sports medicine to address this global event. Two of the articles, ‘Infectious disease outbreak management tool for endurance mass participation sporting events. An international effort to counteract the COVID-19 spread in the endurance sport setting’ (see page 181) from Dr Paolo Emilio Adami and colleagues, and ‘Team sport in a COVID-19 world: A catastrophe in waiting or an opportunity for community sport to evolve and further enhance population health?’ (see page 130) from Dr Steffan Griffin and colleagues describe how the pandemic has reshaped the way sports are played and how this change may ultimately have a positive impact on community health. The pandemic has also reshaped healthcare delivery in a positive way, with telemedicine services now being reimbursed for many types of sports medicine visits. A systematic review from Dr Jane Fonseca Dias and her colleagues examines the effectiveness of telerehabilitation exercises on individuals with physical disabilities (see page 155) .

This issue also includes original research that advances our knowledge of sport-related injuries in competitive athletes. The acute and chronic impacts of sports-related concussion on athletes’ cerebral cortices are presented by the NCAA-DOD CARE Consortium in its large prospective study of collegiate athletes (see page 169) . Dr David Kruse and his colleagues explore injury incidence in male artistic gymnasts, an infrequently studied population of athletes (see page 163) .

Lastly, two articles, ‘Fit for life? The burden of future disability associated with a low cardiorespiratory fitness in adolescence’ (see page 128) from Dr Pontus Henriksson and colleagues and ‘Effects of sedentary behaviour interventions on markers of cardiometabolic risk in adults: systematic review with meta-analyses’ (see page 144) from Dr Paddy Dempsey and colleagues, examine the negative health effects of sedentary behaviour and how establishing healthy behaviours during childhood and adolescence result in long-term benefits.

Piedade S R , Hutchinson M R , Ferreira D M , et al. Correction: Validation and Implementation of 4-domain Patient-reported Outcome Measures (PROMs) Tailored for Orthopedic Sports Medicine[J]. International Journal of Sports Medicine, 2021.

ABSTRACT:

The validation of a 4-domain PROM tailored to orthopedic sports medicine was performed through item generation, item scaling, validity and reliability testing, statistical analysis, as well as item reduction. Cronbach's alpha was used to verify item homogeneity, i. e. their accuracy or consistency. This PROM showed acceptable statistical accuracy and clinical applicability for a variety of surgical treatments, regardless of the anatomical injury sites. Moreover, this PROM considers the athletes' primary physical demands in a non-injured baseline condition, their motivation to continue sports practice and participation, and the influence of sports practice on their quality of life. This 4-domain PROM tailored for orthopedic sports medicine appears to be a valid tool to assess athletes and high-performing practitioners with sports injuries, recording their perception of injury, expectations of treatment; evaluation of postoperative care and treatment received, and perceived outcomes compared to their pre-injury status of physical demands in sports activity. The tool is unique, allowing direct comparisons between athletes' perception of pre-injury baseline, injury, treatment, and outcome. It will be a welcome adjunct to the sports medicine professional's tool box when assessing athlete's status and outcome after injury and intervention.

Yeung D A , Kelly N H . The Role of Collagen-Based Biomaterials in Chronic Wound Healing and Sports Medicine Applications. 2021.

ABSTRACT:

Advancements in tissue engineering have taken aim at treating tissue types that have difficulty healing naturally. In order to achieve improved healing conditions, the balance of exogenous matrix, cells, and different factors must be carefully controlled. This review seeks to explore the aspects of tissue engineering in specific tissue types treated in sports medicine and advanced wound management from the perspective of the matrix component. While the predominant material to be discussed is collagen I, it would be remiss not to mention its relation to the other

contributing factors to tissue engineered healing. The main categories of materials summarized here are (1) reconstituted collagen scaffolds, (2) decellularized matrix tissue, and (3) non-decellularized tissue. These three groups are ordered by their increase in additional components beyond simply collagen.

Khatra O, Shadgan A, Taunton J, Pakravan A, Shadgan B. A Bibliometric Analysis of the Top Cited Articles in Sports and Exercise Medicine. Orthop J Sports Med. 2021 Jan 22; 9(1):2325967120969902. doi: 10.1177/2325967120969902. PMID: 33553441; PMCID: PMC7841868.

ABSTRACT:

Background Although citation analysis is common in many areas of medicine, there is a lack of similar research in sports and exercise medicine. **Purpose** To identify and examine the characteristics of the 100 top cited articles in the field of sports and exercise medicine in an effort to determine what components make an article highly influential. **Study Design** Cross-sectional study. **Methods** The Web of Science, Scopus, and PubMed databases were used to determine the 100 top cited articles from 46 journals in the field of sports and exercise medicine. Each of the 100 articles was then analyzed by 2 independent reviewers, and results were compared. Basic information was collected, including journal title, country of origin, and study type. Different categories were compared using descriptive statistics of counts or percentages. **Results** The 100 top cited articles were published in 15 of the 46 identified sports and exercise medicine journals, with the most prolific being *Medicine and Science in Sports and Exercise* (n = 49), *American Journal of Sports Medicine* (n = 18), and *Sports Medicine* (n = 7). In terms of country of origin, the top 3 contributors were the United States (n = 65), Canada (n = 9), and Sweden (n = 8). The most commonly researched anatomic areas were the knee (n = 15) and the brain (n = 3). Narrative reviews were the most common study type (n = 38), and only a single study on the 100 top cited articles list used a randomized controlled trial design. The most prevalent fields of study were exercise science (55% of articles) and well-being (16% of articles). **Conclusion** Narrative reviews from the United States and published in English-language journals were the most likely to be highly cited. In addition, the knee was a common anatomic area of study on the top cited list of research in sports and exercise medicine.

后疫情体育

本期后疫情体育方面的研究共检索到英文相关文献12篇，研究热点：运动医学领导人与政府和公共卫生合作计划“return-to-sport” COVID-19大流行期间:英国的协作为精英体育五级模型、疫情时期精英体育的回归、疫情时代体育运动的开展、体育对新冠病毒的疗效、疫情对体育行为的影响等方面。

Nikolaidis P T , Knechtle B . Editorial: Is it time for Sports and Health in the era of Covid-19 pandemic?[J]. International Journal of Environmental Research and Public Health, 2021.

ABSTRACT:

When we took the initiative for this special issue, we were uncertain about its success. Would it get submissions? Would the submissions be of high quality? Hopefully, a large number of papers were published. These high-quality papers covered a wide range of topics in Sports and Health such as different ball games [1–6], training analyses [7,8], and health aspects such as vitamin D in adolescent athletes [9], treating obesity and the metabolic syndrome [10,11], infectious diseases such as HIV [12], exercise addiction [13], the level of mood and depression [14], tobacco use in elite athletes [15] and the aspect of Covid-19 pandemic [16,17]. We hope that these papers will contribute in the advancement of Sports and Health sciences offering practical applications for professionals in the field.

Liles J L , Danilkowicz R , Dugas J R , et al. In Response to COVID-19: Current Trends in Orthopaedic Surgery Sports Medicine Fellowships[J]. The Orthopaedic Journal of Sports Medicine, 2021, 9(2):232596712098700.

ABSTRACT:

Background The COVID-19 (SARS-COV-2) pandemic has brought unprecedented challenges to the health care system and education models. The reduction in case volume, transition to remote learning, lack of sports coverage opportunities, and decreased clinical interactions have had an immediate effect on orthopaedic sports medicine fellowship programs. Purpose/Hypothesis Our purpose was to gauge the response to the pandemic from a sports medicine fellowship education perspective. We hypothesized that (1) the COVID-19 pandemic has caused a significant change in training programs, (2) in-person surgical skills training and didactic learning would be substituted with virtual learning, and (3) hands-on surgical training and case numbers would decrease and the percentage of fellows graduating with skill levels commensurate with graduation would decrease. Study Design Cross-sectional study. Methods In May 2020, a survey was sent to the fellowship directors of all 90 orthopaedic sports medicine fellowships accredited by the Accreditation Council for Graduate Medical Education; it included questions on program characteristics, educational lectures, and surgical skills. A total of 37 completed surveys (41%) were returned, all of which were deidentified. Responses were compiled and saved on a closed, protected institutional server. Results In a majority of responding programs (89%), fellows continued to participate in the operating room. Fellows continued with in-person clinical visits in 65% of programs, while 51% had their fellows participate in telehealth visits. Fellows were “redeployed” to help triage and assist with off-service needs in 21% of programs compared with 65% of resident programs having residents rotate off service. Regarding virtual education, 78% of programs have used or are planning to use platforms offered by medical societies, and 49% have used or are planning to use third-party independent education platforms. Of the 37 programs, 30 reported no in-person lectures or meetings, and there was a sharp decline in the number of programs participating in cadaver laboratories (n = 10; 27%) and industry courses (n = 6; 16%). Conclusion Virtual didactic and surgical education and training as well as telehealth will play a larger role in the coming year than in the past. There are effects to fellows’ exposure

to sports coverage and employment opportunities. The biggest challenge will be how to maintain the element of human interaction and connect with patients and trainees at a time when social distancing is needed to curb the spread of COVID-19.

Kirby D J , Fried J W , Buchalter D B , et al. Patient and Physician Satisfaction with Telehealth During the COVID-19 Pandemic: Sports Medicine Perspective[J]. Telemedicine journal and e-health : the official journal of the American Telemedicine Association.

ABSTRACT:

Background: Owing to the COVID-19 pandemic, there has been a large shift in health care toward virtual platforms. This study analyzed patient and physician satisfaction with telehealth during the height of the pandemic within the division of sports medicine. **Methods:** All sports medicine patients who completed a telemedicine visit from March 30, 2020, through April 30, 2020, were sent a 14-question Likert scale (1-5/5) survey. Sports medicine physicians who used telemedicine were sent a separate 14-question Likert scale (1-5/5) survey at the end of the study period. Factors influencing patient satisfaction were determined using a multivariate linear regression model. **Results:** A total of 143 patients and 9 sports medicine attendings completed the surveys. Most patients were "satisfied" (4/5) or "very satisfied" (5/5) (88.8%). A multivariate linear regression determined that patients who believed they had a greater ability to adopt new technology and were more effective at communicating questions/concerns to their physicians had greater satisfaction ($p = 0.009$ and $p = 0.015$, respectively). Most physicians were either "satisfied" (4/5) or "very satisfied" (5/5) (75.0%). On average, physicians felt that physical examinations conducted through telemedicine were "moderately effective" ($2.75/5.00 \pm 1.3$), that they were "fairly confident" ($3.86/5.00 \pm 0.83$) in their diagnoses, and that most sports medicine attendings plan to use telemedicine in the future (87.5%). **Conclusion:** Telehealth emerged as a valuable tool for the delivery of health care to sports medicine patients during the COVID-19 pandemic. Patients and physicians reported high levels of satisfactions with its use, and this study further identifies areas that can improve the patient and physician experience.

Ji Y , Qiu G , Song D , et al. The effects of health-preserving sports on the treatment of COVID-19: A protocol for systematic review[J]. Medicine, 2021, 100(2):e24201.

ABSTRACT:

Background: From the end of 2019, COVID-19 has become a global epidemic, threatening the physical and mental health of everyone. How to effectively prevent and treat COVID-19 is concerned. Some studies have shown that Health-Preserving Sports plays an active role in the prognosis treatment of COVID-19. Therefore, this study aims to provide a method to assess the efficacy and safety of Health-Preserving Sports for the prognosis of COVID-19.

Methods: This protocol is guided by the Preferred Reporting Items for Systematic Reviews. The following electronic databases will be searched: PubMed, the Cochrane Central Register of Controlled Trials, Excerpta Medica Database, MEDLINE, Web of Science, China National Knowledge Infrastructure Database, Chinese Biomedical Literature Database, China Science and Technology Journal Database, and Wan-Fang Database. We will be screened for data extraction and analysis, to summarize the therapeutic effect of Health-Preserving Sports on the treatment of COVID-19.

Result: This study will provide a reliable evidence for the treatment of COVID-19 by Health-Preserving Sports.

Conclusion: To provide a method to assess the efficacy and safety of Health-Preserving Sports for the prognosis of COVID-19, and guide future researches.

Jin S , He Y , Yang K , et al. The Resumption of Sports Medicine During the COVID-19 Post-Epidemic Period: Experiences from Wuhan, People's Republic of China[J]. JBJS, 2021, 103.

ABSTRACT:

Coronavirus disease 2019 (COVID-19) is spreading worldwide, with its outlook not looking optimistic. Simultaneously, the epidemic is currently under control in many areas. The resumption of work and production in areas that have achieved control of outbreaks is a problem. Considering the extremely transmissible nature of COVID-19, and the presence of asymptomatic

infected people, avoiding nosocomial infection and protecting medical staff and patients during the post-epidemic period remain difficult problems that need to be solved. At present, few articles have examined relevant experiences in the field of sports medicine. Wuhan, the People's Republic of China, was the original epicenter of COVID-19, with physicians as the initial frontline workers. Wuhan is now gradually returning to a more normal state after a series of urgent, strict, and effective measures were utilized to combat the epidemic. During this time, we collected first-hand experiences of sports medicine work resumption in the initial 2-month period, including preparations before resuming work, outpatient management methods, online outpatient services, inpatient ward management, principles for determination of the examination results, and preparations for operations. The strict and feasible management strategies that we conducted were useful in avoiding hospital-based infections. We intend to share our own experiences and thoughts in this area. We hope that this will be helpful and inspiring to our sports medicine colleagues around the world.

Kemp S, Cowie CM, Gillett M, Higgins R, Hill J, Iqbal Z, Jackson P, Jaques R, Larkin J, Phillips G, Peirce N, Calder J. Sports medicine leaders working with government and public health to plan a 'return-to-sport' during the COVID-19 pandemic: the UK's collaborative five-stage model for elite sport. Br J Sports Med. 2021 Jan;55(1):4-5. doi: 10.1136/bjsports-2020-102834. Epub 2020 Jul 13. PMID: 32661129.

ABSTRACT:

The WHO declared COVID-19 a global pandemic on 11 March 2020.¹ On 20 and 23 March 2020, faced with a rising number of both COVID-19 cases and deaths, the UK government imposed a range of measures in an attempt to control the pandemic in the UK. Although individuals were allowed to run and cycle outdoors, these instructions effectively put sport on hold, resulting in widespread training disruption to the elite athlete population.

J Hammerschmidt, Durst S , Kraus S , et al. Professional football clubs and empirical evidence from the COVID-19 crisis: Time for sport entrepreneurship?[J]. Technological Forecasting and Social Change, 2021.

ABSTRACT:

The coronavirus disease (COVID-19) has spread worldwide in a short period and has developed into one of the biggest public health issues of the last decade. The actions initiated by governments to minimize person-to-person contact have also severely affected professional football clubs (PFCs) in the season 2019/20. Given the role of football in Europe, football clubs gained massive public and political attention during the COVID-19 crisis. Based on an exploratory multiple case study approach involving PFCs from five European football leagues, this study investigates the responses of these clubs to the COVID-19 pandemic. The findings show the relevance of solidarity with certain stakeholders during the pandemic, but also reveal the fragility of PFCs due to their financial structure and underdeveloped managerial and entrepreneurial strategies to cope with the crisis. This study contributes theoretically and empirically to the literature on the entrepreneurial behavior and crisis management of elite sport organizations and illustrates a holistic map of a dense, high solidary stakeholder network.

Ronkainen N J , Pesola A J , Tikkanen O , et al. Continuity and Discontinuity of Sport and Exercise Type During the COVID-19 Pandemic. An Exploratory Study of Effects on Mood[J]. Frontiers in Psychology, 2021, 12.

ABSTRACT:

Involvement in sport and exercise not only provides participants with health benefits but can be an important aspect of living a meaningful life. The COVID-19 pandemic and the temporary cessation of public life in March/April/May 2020 came with restrictions, which probably also made it difficult, if not impossible, to participate in certain types of sport or exercise. Following the philosophical position that different types of sport and exercise offer different ways of “relating to the world,” this study explored (dis)continuity in the type of sport and exercise people practiced during the pandemic-related lockdown, and possible effects on mood. Data

from a survey of 601 adult exercisers, collected shortly after the COVID-19 outbreak in Finland, were analyzed. Approximately one third (35%) of the participants changed their “worldmaking” and shifted to “I–Nature”-type activities. We observed worse mood during the pandemic in those who shifted from “I–Me,” compared to those who had preferred the “I–Nature” relation already before the pandemic and thus experienced continuity. The clouded mood of those experiencing discontinuity may be the result of a temporary loss of “feeling at home” in their new exercise life-world. However, further empirical investigation must follow, because the observed effect sizes were small.

Teare G , Taks M . Exploring the Impact of the COVID-19 Pandemic on Youth Sport and Physical Activity Participation Trends. 2021.

ABSTRACT:

The COVID-19 pandemic offers youth sport organizations the opportunity to anticipate consumer behaviour trends and proactively improve their program offerings for more satisfying experiences for consumers post-pandemic. This conceptual paper explores potential impacts of the COVID-19 pandemic on changing youth sport and physical activity preferences and trends to inform sport and physical activity providers. Drawing from social ecology theory, assumptions for future trends for youth sport and physical activity are presented. Three trends for youth sport and physical activity as a result of the COVID-19 pandemic are predicted: (1) youths’ preferences from organized to non-organized contexts become amplified; (2) reasons for participating in sport or any physical activity shift for youth as well as parents/guardians; (3) consumers reconceptualize value expectations from youth sport and physical activity organizations. The proposed assumptions need to be tested in future research. It is anticipated that sport organizations can respond to changing trends and preferences by innovating in three areas: (1) programming, (2) marketing, and (3) resource management.

Adami PE, Cianca J, McCloskey B, et al. Infectious Diseases Outbreak Management Tool for endurance mass participation sporting events: an international effort to counteract the COVID-19 spread in the endurance sport setting. British Journal of Sports Medicine 2021;55:181-182.

ABSTRACT:

The COVID-19 pandemic has caused considerable economic damage throughout the world in addition to a severe health crisis. Social distancing is the main preventative measure for person to person transmission of SARS CoV-2. This has essentially put a halt to all mass participation endurance sporting events, with road races, triathlons, cycling, Nordic skiing and rowing events being indefinitely postponed or cancelled. The benefits of endurance exercise have been widely demonstrated, therefore, the current halt has had significant health and social consequences worldwide. From a financial perspective, the economic impact on the endurance sport mass participation industry has also been catastrophic. Endurance events are estimated to generate over US\$3 billion/year in the USA alone. Taking the example of road running, 17.6 million people registered for road running events in the USA in 2019. Endurance sports, thanks to the competition format, allow elite and amateur athletes to compete together, attracting large crowds of participants (e.g. Henley Royal Regatta, Vasaloppet, Gran Fondos, International Triathlon Union World Championship Grand Final). Therefore, the cessation of endurance events represents a huge societal loss.

At some point, the pandemic will give way to isolated clusters of cases with no widespread community transmission and people will be able to return to mass participation sporting events. However, until there is a vaccine, a specific cure or wide- spread herd immunity, participation in endurance events will remain potentially unsafe and could be considered socially dangerous. COVID-19 has dramatically shifted the focus of medical directors to infectious threats, reflecting the concerns that endurance mass participation events can present specific public health challenges because of the gathering of large crowds for prolonged periods. Furthermore, such events often result in mixing of populations that travel to the competition destination from different parts of the world, thus are exposed to a different infectious risk (higher or lower) than the hosting local community.

To tackle these challenges the International Institute for Race Medicine and World Athletics have gathered representatives from International Sports Federations of endurance mass participation sporting events (i.e. International Cycling Union, International Skiing Federation, World Rowing and World Triathlon), to form a medical task force. The task force also included experts from the International Paralympic Committee and from WHO COVID-19 Mass Gatherings Expert Group. Representatives from the International Olympic Committee and WHO were present as observers to ensure consistency of preventive measures across different mass gathering sectors. Only sports that share a high aerobic demand, have mass starts or mass arrivals or which focus competition in a relatively small area over several days such as rowing regattas, were included in the medical task force to keep the group uniform. Finally, endurance events planners and stakeholders were added as an advisory working group, to provide perspective and support to the medical task force.

By adapting already existing tools developed by WHO to the characteristics of endurance mass participation sporting events, the medical task force created a web- based supporting tool for event's organisers. The Infectious Diseases Outbreak Management Tool ([https:// idom. worldathletics. org/](https://idom.worldathletics.org/)) aims to become an accompanying tool for endurance mass participation sporting events organisers and should help by:

- ▶ Assessing the risk level of the event in both quantitative and qualitative manner.
- ▶ Determining the public health and sport event's mitigation preparedness.
- ▶ Proposing the steps to take to further mitigate and reduce the risk.

The tool provides a macroscopic, multisport perspective taking into consideration local health and safety regulations, the individual event's characteristics and the local community needs. It strongly encourages partnership with local and regional health and safety agencies, by bringing together the specific expertise of the sports bodies with that of the local public health system.

Based on the principle that a certain level of risk will always be present, and on a simplified version of WHO Pandemic Phase Description, the task force introduced the concept of the pendulum of risk. The pendulum hypothesises the existence of three infectious diseases outbreak phases, active pandemic, postpeak/contained outbreak and seasonal outbreak, as part of a continuum. Therefore, the infectivity and transmissibility risk of any infectious disease will have to be assessed before the organisation of all future events.

It is our opinion that the management of endurance mass participation sporting events during outbreaks can be improved from the current situation, so that potential future outbreaks will not require the same scale of countermeasures. The continuous understanding of COVID-19 requires a flexible approach and the acknowledgement that all the currently available resources should be considered as 'living documents'. It is in the interest of the entire endurance event industry and of the communities in which these events take place, to develop innovative strategies to stage events in a way that allows the health, economic and social benefits to be achieved while reducing any outbreak- associated risks.

Pedersen L, Lindberg J, Lind RR, Rasmussen H. Reopening elite sport during the COVID-19 pandemic: Experiences from a controlled return to elite football in Denmark. Scand J Med Sci Sports. 2021 Apr;31(4):936-939. doi: 10.1111/sms.13915. Epub 2021 Jan 21. PMID: 33480037.

ABSTRACT:

As the SARS-CoV-2 infection rate decreased in spring 2020, phased reopening of Danish society began, including a reopening of elite football (soccer), adhering to a strict protocol. In this study, we report the consequences of resumption of competitive play in the two best football (soccer) leagues for men in Denmark measured by number of SARS-CoV-2 positive players. The players were tested weekly for SARS-CoV-2 for 11 consecutive weeks. The test protocol comprised 26 teams with 748 players. In total, 6511 tests were done with a positivity rate of 0.06%. The incidence rate of players testing positive for SARS-CoV-2 was 0.53% (4/748). There were no signs of a chain of infection. We found a low incidence rate of SARS-CoV-2, and based on this, a controlled reopening of professional football strictly following a detailed protocol appears safe for the players.

M Leyton-Román, Vega R , R Jiménez-Castuera. Motivation and Commitment to Sports Practice During the Lockdown Caused by Covid-19[J]. *Frontiers in Psychology*, 2021, 11.

ABSTRACT:

In Spain, the state of alarm declared on March 14, 2020 caused changes in the population in relation to the habits of physical activity and sports practice. This study analyzed what motivational variables predicted the self-efficacy and commitment to sports practice, as well as the differences according to gender, during lockdown and the progressive de-escalation caused by COVID-19, using the theory of self-determination as a theoretical framework. The study sample was conformed of 179 subjects (90 men and 89 women) between 18 and 65 years of age ($M = 28.64$; $SD = 10.28$). The Behavioral Regulation in Sport Questionnaire (BRSQ), the Psychological Need Satisfaction in Exercise Scale (PNSE), the Physical Activity Self-Efficacy scale, and the Sport Commitment scale were applied. The most relevant results have showed significant differences in favor of the male gender in terms of levels of controlled motivation and amotivation, as well as higher levels of self-efficacy and basic psychological need of autonomy. Furthermore, the regression analysis has revealed that self-efficacy and current commitment to sports practice were explained by a variance of 57 and 64%, respectively, due to autonomous motivation and the basic psychological need of competence. Therefore, the basic psychological need of competence should be fostered in order to increase the levels of self-determined motivation, self-efficacy, and commitment to sports practice of the population.

冬奥研究

本期冬奥体育方面的研究共检索到英文相关文献8篇，研究热点：平昌冬奥会和冬残奥会国际合作实验期间收集的雷达和地面降水测量数据分析、平昌冬季奥运会的韩国民族主义政治、冬季体育度假区与自然环境的互动关系、温度、压力和速度对冰滑度的影响、优秀运动员在雪上运动项目中受伤的发生率、部位及影响因素分析、以及雪场设计工程评估等方面。

Gehring, J., Ferrone, A., Billault-Roux, A.-C., Besic, N., Ahn, K. D., Lee, G., and Berne, A.: Radar and ground-level measurements of precipitation collected by the École Polytechnique Fédérale de Lausanne during the International Collaborative Experiments for PyeongChang 2018 Olympic and Paralympic winter games, *Earth Syst. Sci. Data*, 13, 417–433, <https://doi.org/10.5194/essd-13-417-2021>, 2021.

ABSTRACT:

This article describes a 4-month dataset of precipitation and cloud measurements collected during the International Collaborative Experiments for PyeongChang 2018 Olympic and Paralympic winter games (ICE-POP 2018). This paper aims to describe the data collected by the Environmental Remote Sensing Laboratory of the École Polytechnique Fédérale de Lausanne. The dataset includes observations from an X-band dual-polarisation Doppler radar, a W-band Doppler cloud profiler, a multi-angle snowflake camera and a two-dimensional video disdrometer (<https://doi.org/10.1594/PANGAEA.918315>, Gehring et al., 2020a). Classifications of hydrometeor types derived from dual-polarisation measurements and snowflake photographs are presented. The dataset covers the period from 15 November 2017 to 18 March 2018 and features nine precipitation events with a total accumulation of 195 mm of equivalent liquid precipitation. This represents 85 % of the climatological accumulation over this period. To illustrate the available data, measurements corresponding to the four precipitation events with the largest accumulation are presented. The synoptic situations of these events were contrasted and influenced the precipitation type and accumulation. The hydrometeor classifications reveal that aggregate snowflakes were dominant and that some events featured significant riming. The

combination of dual-polarisation variables and high-resolution Doppler spectra with ground-level snowflake images makes this dataset particularly suited to study snowfall microphysics in a region where such measurements were not available before.

Elik S , Zyazcolu M , Ahin R , et al. The destruction of Erzurum ski-jumping complex by a landslide: evaluation of an engineering design failure[J]. *Natural Hazards*, 2021(11).

ABSTRACT:

A number of new winter sports facilities were constructed in the city of Erzurum for 2011 FISU—Universiade Winter Games, some of which constituted the first examples in Turkey. One of those is the ski-jumping complex, which hosts 5 runways along with a cluster of structures in various sizes and annexes, complementing the runways. On the northern slope of Kiremitlik Hill, where the complex is situated, a landslide occurred on 15th July of 2014, leading into complete collapse of the runways and major damage to the entire facility. This study presents a technical summary and forensic analysis of the formation of this natural hazard to illuminate the causes that cumulatively led to this engineering failure that created a massive material loss. In this work, we investigate the issue from geological, geophysical and geotechnical perspectives to illuminate the true causes of this engineering failure. We also hope that this technical evaluation provides an example for engineers as well as public administrators not to overlook the critical ground conditions and well-established design principles of civil engineering.

Liefferink R W , Hsia F C , Weber B , et al. Friction on Ice: How Temperature, Pressure, and Speed Control the Slipperiness of Ice[J]. *Physical Review X*, 2021, 11(1):011025.

ABSTRACT:

We present sphere-on-ice friction experiments as a function of temperature, contact pressure, and speed. At temperatures well below the melting point, friction is strongly temperature dependent and follows an Arrhenius behavior, which we interpret as resulting from the thermally activated diffusive motion of surface ice molecules. We find that this motion is hindered when the contact pressure is increased; in this case, the friction increases exponentially, and the slipperiness of the

ice disappears. Close to the melting point, the ice surface is plastically deformed due to the pressure exerted by the slider, a process depending on the slider geometry and penetration hardness of the ice. The ice penetration hardness is shown to increase approximately linearly with decreasing temperature and sublinearly with indentation speed. We show that the latter results in a nonmonotonic dependence of the ploughing force on sliding speed. Our results thus clarify the complex dependence of ice friction on temperature, contact pressure, and speed.

Lee J W . Hegemony, domination and opposition: Fluctuating Korean nationalist politics at the 2018 Winter Olympic Games in PyeongChang[J]. Sport in Society, 2021(14):1-17.

ABSTRACT:

This article is concerned with the contested nature of nationalism expressed through sport. The 2018 Winter Olympic Games in PyeongChang offers some useful episodes where I can investigate a different type of Korean nationalism represented through sport. At this Winter Olympics, I observed four distinctive discourses on Korean identity being displayed via the winter sporting competition: 1) unified Korean ethnic nationalism, 2) South Korean state patriotic nationalism, 3) postcolonial anti-imperialist nationalism, and 4) cosmopolitan Korean identity. The four variants of nationalism were vying for the dominant position in the hierarchy of South Korean politics, and the Winter Olympics presented a platform on which each nationalist group asserts the legitimacy of their sense of nationhood. Therefore, I conclude that the 2018 Winter Olympics in PyeongChang was not simply a physical contest between athletes but more importantly, was a field of the hegemonic struggle between adherents of different nationalistic views.

Benum S D , Weel F , Meer A . In a Heartbeat: Prospective Control of Cardiac Responses for Upcoming Action Demands during Biathlon[J]. Ecological Psychology, 2021(3):1-14.

ABSTRACT:

Biathlon is an Olympic winter sport combining the endurance sport of cross-country skiing with precision rifle shooting. Here, the need to prepare the body for upcoming events is particularly evident. As a high heart rate can be detrimental to shooting performance, it might be beneficial for biathletes to decrease their heart rate when approaching the shooting range, whereas heart rate should ideally be increased at the start and when facing an uphill section to cater for physiological demands. Ten national-level, junior male biathletes skied 6–8 laps in a standardized 2 km biathlon course with competition intensity, where each lap was followed by 5 shots in the standing position. Electrocardiography was continuously measured, and changes in heart rate during the 30 s leading up to the start, the uphill section, and the shooting event were analyzed. Instantaneous heart rate (IHR) increased significantly before the start and before the beginning of the uphill, whereas IHR decreased significantly before arriving at the shooting range. These findings provide evidence that biathletes anticipate forthcoming events by prospectively adjusting their heart rate upwards and downwards depending on task demands. Being able to use perceptual predictive information to optimally prepare the body for challenges that lie ahead, may have implications for expert performance in several different sports, as well as in other fields where purposeful regulation of heart rate is important for success.

Timmer N , Veldhuis L . The Impact of Skinsuit Zigzag Tape Turbulators on Speed Skating Performance[J]. Applied Sciences, 2021, 11(3):988.

ABSTRACT:

At the 1998 Nagano Winter Olympic Games, zigzag tape was introduced on the race suit lower legs and cap of speed skaters. Application of these zigzag devices on live skaters and cylinders in the wind tunnel showed large improvements in the aerodynamic drag. These wind-tunnel results were unfortunately not widely published, and the impact of the zigzag strips in a real skating environment was never established. This paper aims to show the background of the application

of the zigzag tape and to establish the impact it may have had on speed-skating performance. From comparisons of 5000 m races just before, during and just after the Nagano Olympics and an analysis of historic world record data of the 1500 m men's speed skating, the impact of the zigzag tape turbulators on average lap times on 1500 and 5000 m races is calculated to be about 0.5 s.

Xu Y , Yang C , Yang Y , et al. A Narrative Review of Injury Incidence, Location, and Injury Factor of Elite Athletes in Snowsport Events[J]. *Frontiers in Physiology*, 2021, 11.

ABSTRACT:

Snowsport athletes face a high injury risk both during training and in competitions. Reducing injury incidence is crucial for athletes to achieve breakthroughs. This narrative review aimed to summarize and analyze injury data of elite athletes in snowsports and provide references for injury prevention and health security for these athletes and their coaches. A total of 39 studies that investigated snowsport injury were analyzed in the present study. On the basis of injury data of elite athletes in snowsports events, this narrative review focused on four aspects, namely, injury incidence, severity, location and causes. The findings of this review were as follows. (1) The highest injury incidence was recorded in freestyle skiing, followed by alpine skiing and snowboarding, the majority of which were moderate and severe injuries. (2) The proportion of injury in competitions and during training was similar. However, more injuries occurred in official training during the Winter Olympic Games; by contrast, injury proportion was higher in competitions during World Cup/World Championships. (3) The most commonly and severely injured body parts were the knees (29.9%), head and face (12.1%), shoulders and clavicle (10.5%), and lower back (8.9%). The most common injury types were joint and ligament injury (41.5%), fracture and bone stress (24.4%), concussion (11.1%), and muscle/tendon injury (10.7%). (4) The main causes of snowsport injury were collisions, falls, and non-contact injuries. Snowsport injury was also influenced by the skill level of the athletes, gender, course setup and equipment. Future studies should further explore the influence of event characteristics and intrinsic and extrinsic risk factors on snowsport injury. An injury or trauma reconstruction may be developed to predict athletic injuries and provide effective prevention strategies.

Enma M . Winter Sports Resorts and Natural Environment—Systematic Literature Review Presenting Interactions between Them[J]. Sustainability, 2021, 13.

ABSTRACT:

The systematic literature review method was adopted to analyze the content of papers published since 2001 that focused on interactions between winter sports resort operations and the natural environment. A total of 86 papers published in journals indexed in SCOPUS data base were analyzed. Three main groups of topics presented in analyzed papers were found: the environmental impact of winter sports resorts, the management of environmental impacts and sustainable development of winter sports resorts, and finally the impact of climate change on winter sports resort operations. The biggest number of publications were devoted to the latter topic, and interest in conducting research within this area has apparently grown during the last two decades. However, most conclusions reached by the authors of numerous studies are site-specific and difficult to extend to other resorts/destinations. Additionally, the conclusions presented in many papers are contrary to the results achieved in other publications. Several gaps in our contemporary scientific knowledge and directions of future research are suggested in addition to the abovementioned results of the analysis conducted in the presented paper as the final conclusion of the research.

兴奋剂研究

本期兴奋剂方面的研究共检索到英文相关文献5篇,研究热点:体育与道德、完美主义与运动员使用兴奋剂的态度、运动员生物护照管理单位(APMU)反兴奋剂组织、未接受兴奋剂测试的力量运动竞技运动员使用兴奋剂的网络记录与调查、国际举重比赛中的兴奋剂行为等方面。

**Petersen, T.S. Sport, Neuro-Doping and Ethics. Neuroethics (2021).
<https://doi.org/10.1007/s12152-021-09461-z>**

ABSTRACT:

Apart from a short clarification of what neuro-doping is, the aim of this article is twofold. First to give a few reasons in favour of having a special issue on neuro-doping. Second to present an overview of the articles in this issue. One reason for having this special issue, is that it needs to be established whether methods such as transcranial direct-current stimulation (tDCS) should be added to World Anti-Doping Agency's (WADA) prohibited list or not, as it is currently under discussion by WADA. Another reason for dealing with the ethics of neuro-doping is that ethical analysis of the use or possible use of neuro-doping in sport is a neglected subject. This issue covers a wide range of ethical analyses of the use of neuro-doping among athletes, chess players, e-gamers and even couch potatoes. For example, whether tDCS ought to be prohibited by WADA and/or the state; or whether its use ought to be promoted by the state; whether the use of neuro-doping is unfair; or whether it should be allowed for businesses to advertise high-sugar, high-caffeine beverages to youngsters.

Hardwick B , Madigan D J , Hill A P , et al. Perfectionism and Attitudes Towards Doping in Athletes: The Mediating Role of Achievement Goal Orientations[J]. International Journal of Sport and Exercise Psychology, 2021.

ABSTRACT:

Perfectionism predicts attitudes towards doping in athletes. It is currently unclear, however, why

this is the case. To help shed light on this particular issue, in the present study we provided a first examination of whether achievement goal orientations explain (mediate) the relationship between perfectionism and attitudes towards doping. A sample of 173 athletes (mean age 24.4 years) completed measures of perfectionistic strivings, perfectionistic concerns, ego-orientation, task-orientation, and attitudes towards doping. Based on bias-corrected bootstrapping of indirect effects, ego-orientation mediated the positive relationships between perfectionistic strivings and attitudes towards doping and perfectionistic concerns and attitudes towards doping. Task-orientation mediated the negative relationship between perfectionistic strivings and attitudes towards doping. In this regard, athletes high in either dimension of perfectionism have more favourable attitudes because of a tendency to define success as outperforming others. However, those athletes high in perfectionistic strivings may simultaneously hold less favourable attitudes because they also have a tendency to define success as improving their own performance.

C. Schobinger, C. Emery, C. Schweizer-Gründisch, Dr. T. Kuuranne. Support of a laboratory-hosted Athlete Biological Passport Management Unit (APMU) to the anti-doping organisations[J]. *Rechtsmedizin*, 2021:1-7.

ABSTRACT:

The athlete biological passport (ABP) is an established means for longitudinal monitoring of selected individual biomarkers of an athlete to obtain indirect but potentially long-term indications of the use of substances or methods prohibited in sport. Along the change from population-based reference values to individual profiling, the ABP aims at triggering follow-up investigations concerning the potential use of endogenous substances with doping potential, which might be difficult either to identify with the existing analytical methods or to interpret based only on the results of a single biological sample. The ABP program has been on-going within the World Anti-Doping Agency (WADA) management since 2009, when the hematological module was officially established to discover blood doping practices, such as administration of erythropoietin (EPO) or application of blood transfusion. Since 2014, the ABP has been complemented by the steroid module, with the aim of targeting the prohibited use of

testosterone and other endogenous anabolic androgenic steroids with performance enhancing or masking capability. Although the main objective is to guide and assist the anti-doping organizations in their test distribution plans, the ABP may also be used to proceed with a case to an anti-doping rule violation. Evaluation of biological markers, especially in distinguishing between doping from other confounding factors, requires high level and diversity of expertise, which is coordinated by the athlete biological passport management unit (APMU). Since 2019, the WADA accredited anti-doping laboratories are defined as the host organizations for the APMUs. The benefit of such a structure is to obtain a fully anonymous evaluation process for the passports and an additional level of expertise for the interpretation of analytical results as well as to have a fluent communication line with the analyzing laboratories when further details are needed for the analytical testing and documentation.

Jokipalo I , Khudayarov A . A Netnography and a Survey on Doping Use among Competitive Doping-untested Strength-sport Athletes[J]. International Journal of Sports Medicine, 2021.

ABSTRACT:

Doping-untested strength-sport athletes (powerlifters, strongmen, armlifters, etc.,) are infamous for their doping use, but their exact doping regimens are not known. The purpose of this study was to provide a reasonable portrait of doping history in this specific athlete group for medical practitioners. Seventy-five athletes were selected by netnography of the social media community around the Finnish doping-untested strength-sport federations on the basis of their activity in doping-related discussions, and the athletes were invited to answer a detailed doping-related anonymous survey. Fifty respondents completed the survey. 100% of the respondents reported use of anabolic androgenic steroids, 66% reported use of stimulants, and 80% use of non-steroidal anabolic substances. The doses of both testosterone products and human growth hormone were notably larger than reported in previous studies of gym users (mostly non-competitive athletes). The subjects reported simultaneous use of an average 5.66 illegal substances, and lifetime use of 16.78 illegal substances. The doses of illicit drugs, as well as polypharmacy, among competitive doping-untested strength-sport athletes are higher than

previously reported among recreational gym users, and side effects are likely in this specific population.

Kolliari-Turner A, Oliver B, Lima G, Mills JP, Wang G, Pitsiladis Y, Guppy FM. Doping practices in international weightlifting: analysis of sanctioned athletes/support personnel from 2008 to 2019 and retesting of samples from the 2008 and 2012 Olympic Games. Sports Med Open. 2021 Jan 7;7(1):4. doi: 10.1186/s40798-020-00293-4. PMID: 33415428; PMCID: PMC7790029.

ABSTRACT:

Background: The pervasiveness of doping and findings of anti-doping corruption threaten weightlifting's position at the 2024 Olympic Games. Analysing the practices of doping in weightlifters could identify patterns in doping that assist in future detection.

Methods: We analysed publicly available data on sanctioned athletes/support personnel from the International Weightlifting Federation between 2008 and 2019 and announced retrospective Anti-Doping Rule Violations (ADRVs) from the 2008 and 2012 Olympic Games.

Results: There were 565 sanctions between 2008 and 2019 of which 82% related to the detection of exogenous Anabolic Androgenic Steroid (AAS) metabolites and markers indicating endogenous AAS usage. The detection of exogenous AAS metabolites, markers of endogenous AAS usage and other substance metabolites varied by IWF Continental Federation ($p \leq 0.05$) with Europe (74%, 11%, 15%) and Asia (70%, 15%, 15%) showing a higher detection of exogenous AAS compared to Pan America (37%, 30%, 33%) and Africa (50%, 17%, 33%). When looking at the 10 most detected substances, the nations with the highest number of sanctions (range 17-35) all had at least one overrepresented substance that accounted for 38-60% of all detected substances. The targeted re-analysis of samples from the 2008 and 2012 Olympic Games due to the discovery of long-term metabolites for exogenous AAS resulted in 61 weightlifters producing retrospective ADRVs. This includes 34 original medallists (9 gold, 10 silver and 15 bronze), the highest of any sport identified by Olympic Games sample re-testing. The exogenous AAS dehydrochloromethyltestosterone and stanozolol accounted for 83% of detected substances and were present in 95% of these samples.

Conclusion: Based on these findings of regional differences in doping practices, weightlifting would benefit from the targeted testing of certain regions and continuing investment in long-term sample storage as the sensitivity and specificity of detection continues to improve.