

# 前 言

本刊主要收录 Web of Science 核心合集数据库有关体育教育、奥林匹克教育、体育人工智能、体医融合、文化与新闻传播、冰雪运动等领域的最新研究成果。

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。检索导出的数据采用书目共现分析系统 (Bicomb V2021) 对文献信息进行提取, 包括期刊、关键词、标题、发文年份等, 相同含义的字段去重且批量合并, 同时去除没有实质意义的字段, 对所提取的字段进行频次统计, 形成高频矩阵, 并使用社会网络分析软件 Ucinet 绘制成知识图谱, 进行共词聚类分析。

本期选录体育教育方面的文献 12 篇, 奥林匹克教育方面的文献 10 篇, 体育人工智能方面的文献 13 篇, 体医融合方面的文献 14 篇, 文化与新闻传播的文献 12 篇, 冰雪运动方面的文献 11 篇。

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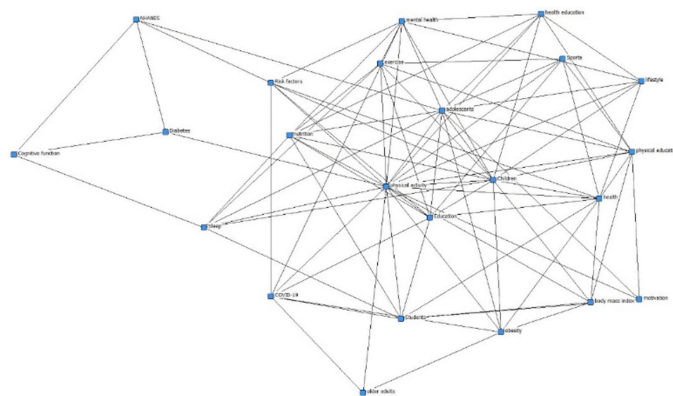
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## 体育教育

本期体育教育学术研究共检索到英文相关文献 474 篇，研究热点主要集中在体育教育教学法、体育健康教育的模式及影响、体育教学法实践研究、体育课程教学法、中学生锻炼水平影响因素、课间休息促进体育活动等方面。检索结果：1) 关键词共词分析。提取关键词 1844 个，经过数据清洗后关键词有 1634 个，词频为 4 及以上的关键词有 42 个，累计百分比为 19.39%，高频关键词有体育活动、青少年、儿童、体育教育、锻炼、教育、睡眠、COVID-19、肥胖、糖尿病等，生成可视化知识图谱（见下图）。2) 来源期刊分析。涉及期刊 276 种，其中载文 5 篇及以上的期刊有 14 种，累计百分比为 28.06%，刊载体育教育相关内容前三位的期刊分别为：PLOS ONE (JCR 学科分区 Q1)，FRONTIERS IN PUBLIC HEALTH (JCR 学科分区 Q1)，BMC PUBLIC HEALTH (JCR 学科分区 Q1)。3) 交叉学科分析。引用文献总计 25495 篇，最多的频次为 20 次，排名前三位的文献分别为 *World Health Organization 2020 Guidelines on Physical Activity and Sedentary Behavior*、*Global recommendations on physical activity for health*、*Statistical power analysis for the behavioral sciences*。4) 学术关注度分析。文献级别用量最多的是 36 次，排名前三位的文献分别为 *The effectiveness of physical activity interventions in improving higher education students' mental health: A systematic review*、*Bridging the relationship between physical exercise and mental health in adolescents based on network analysis*、*'Weak' physical education teacher education practice: co-constructing features of meaningful physical education with pre-service teachers*。



**Brunsdon, JJ. "Know Your Kids, Understand Yourself, and Find a Way": One Elementary School Physical Education Teacher's Efforts at Employing Character Education [J]. JOURNAL OF TEACHING IN PHYSICAL EDUCATION, May 2024.**

**ABSTRACT**

Background: Research concerning the philosophy of character education has been largely inadequate and anticlimactic. Purpose: Informed by a combination of emergent, novel, and nontraditional techniques, the purpose of this study is to describe one elementary school physical education teacher's efforts at employing character education. Method: The participant was Paris, a White, abled-bodied female with 41 years' experience. Utilizing an exploratory case study design, data were collected with eight interpretive techniques and analyzed using thematic methods. Findings: Paris employed a "content-based approach" to teaching character education and taught the moral content of human flourishing, virtue, and practical wisdom via jump rope, rock climbing, and parachute-based physical education content. Her character pedagogies of affect were explicit and implicit in nature and shaped around the skills themes, multiskill, and multiactivity pedagogical models. The factors influencing Paris' efforts were identified. Conclusion: This study contributes to the affective literature from a theoretical, methodological, and practical perspective.

**Dai ST, Qiu Q, ZhangYC, et al. An Experimental Study on the Influence of Healthy Physical Education Curriculum Model on Sports Ability of Chinese Senior High School Students [J]. PLOS ONE, May 14 2024, vol.19, issue5.**

**ABSTRACT**

In recent years, the growing incidence of health issues among Chinese students, including obesity, diabetes, and other chronic diseases, has been attributed to a sedentary lifestyle, lack of physical activity, and unhealthy eating habits. Physical education (PE) classes play a crucial role in promoting physical activity and fostering healthy lifestyles among Chinese students. The purpose of this study was to investigate the influence of the healthy PE curriculum model on the sports ability



of senior high school students in China. The trial adopted a quasi-experimental design with equivalent groups. The experimental group followed the healthy PE curriculum model in their PE classes, while the control group received traditional technical instruction. During the 12-week intervention, 149 senior high school students completed the sports ability test as both the pre-test and post-test measurements for this experimental study. The results indicated that the experimental group showed significant improvements in sports ability compared to the control group, highlighting the positive effects of the healthy PE curriculum model. The structural characteristics of the healthy PE curriculum model provided essential support for students' learning and proved to be an effective way to promote physical literacy among senior high school students in China.

**Fernández-Bustos JG, Cuesta-Valera P, Zamorano-García D, et al. Health-Based Physical Education in An Elementary School: Effects on Physical Self-Concept, Motivation, Fitness and Physical Activity [J]. PHYSICAL EDUCATION AND SPORT PEDAGOGY, Apr 2024.**

**ABSTRACT**

Background: Promoting and developing health in Physical Education should not be limited to seeking to meet recommendations for physical activity and to increase motor competence or physical fitness, but should provide students with the motivation, confidence and knowledge required for them to be active for life. The Health-based Physical Education model (HbPE) is one of the most interesting models for health development. It takes a holistic perspective of health that is compatible with the salutogenic approach, where promoting and appreciating an active life is a core element (Haerens et al. 2011). Purpose: The aim of this study was to examine the effects of a Health-based Physical Education programme on health-related factors (physical fitness and moderate-to-vigorous physical activity), emotional well-being (self-esteem and physical self-concept), and motivational factors (intention to be physically active and the degree of self-determination during practice). Methods: A quasi-experimental design with pre- and post-test measures was applied to a sample composed of 131 schoolchildren aged 10 to 12 years (M =

10.87 +/- 0.69) belonging to six randomly assigned class groups: three to the experimental group (n = 67) and three to the control group (n = 64). The experimental group participated in an intervention programme based on the HbPE model linked to a set of strategies to promote commitment, motivation and participation, while the control group completed a traditional programme for physical fitness improvement. As measures, we used Polar (R) HR monitors, the ALPHA-Fitness battery, the Motivation in Physical Education Questionnaire in Primary Education, the Intention to Be Physically Active Scale and the Pictorial Scale of Physical Self-Concept for Younger Children. Findings: The experimental group showed higher levels of moderate-to-vigorous physical activity and a significant increase in physical fitness, including a reduction in BMI. Moreover, this group presented improvements in socio-emotional self-esteem, intrinsic motivation and the intention to be physically active. Nevertheless, against our hypothesis, quantitative analyses indicated no differences in physical self-concept. Conclusion: These results support the use of HbPE as a model for designing and implementing health-promoting programmes that are compatible with a salutogenic approach. Apart from increasing physical activity and improving physical fitness, such programmes would provide knowledge and attitudes to foster practice beyond school.

**Meklin E, Laukkanen A, Niemistö D, et al. Early Childhood Physical Activity Parenting and Sport Club Participation as Predictors of Perceived Motor Competence - A Three-Year Longitudinal Study [J]. PHYSICAL EDUCATION AND SPORT PEDAGOGY, May 2024.**

**ABSTRACT**

Background & purpose Enhancing perceived motor competence (PMC) is an important factor in increasing the physical activity and motor competence of children. Longitudinal research is needed to identify the factors that support children's positive and realistic PMC development. To address this research gap, we examined physical activity parenting (PAP) and sports club participation (SCP) as predictors of children's PMC. Methods We assessed PMC using a modified pictorial

scale of perceived movement skill competence (PMSC) for young children at the following two time points: in early childhood education and care (ECEC) (T1; N = 259; Mage = 6.27 +/- .67; 50.2% boys) and approximately three years later in primary school (T2; N = 259; Mage = 9.45 +/- .79 years). PAP and SCP (the type and number of sports) were examined using a parental questionnaire (N = 259; Mage = 36.2 +/- 5.64). The children's actual motor competence (AMC) was assessed using the Test of Gross Motor Development - Third Edition (TGMD-3). Linear regression analyses were performed to examine how the number of sports in which a child participates (SCPsum) predicted PMC. Then, we analysed how participation in a specific type of sport (locomotor and ball sports) predicted PMC in terms of locomotor skills, ball skills and total skills. The analyses were adjusted for the T2-T1 time difference and AMC. Results PAP was a significant predictor of PMC three years later for ECEC-aged girls but not for boys. Moreover, participation in a ball sport at T1 predicted higher scores for girls' PMC at T2. In addition, the girls who participated in more than one ball sport exhibited lower PMC at T2. For boys, higher AMC, higher BMI and less access to electronic devices at T1 predicted higher PMC at T2. Conclusion The results suggest that PAP in ECEC age is important for girls' PMC development over time. The role of SCP was ambiguous in girls. Participation especially in ball sports may have different influences on PMC in girls depending on the frequency of participation. Therefore, parents, sport instructors and coaches should adapt their child rearing and pedagogical practices by considering child PMC development in addition to promoting physical activity and skills.

**Ge LN, Li ML, Ning CF. Modern Software and Physical Education: Can Online Training Enhance Gym Training? [J]. BMC MEDICAL EDUCATION, Apr 18 2024, vol.24, issue1.**

#### **ABSTRACT**

**Background** This study discusses the effectiveness of a 12-week intervention aimed at improving squat jump and sprint performance among second-year sports students. **Methods** The students were randomly divided into experimental (n = 89) and control (n = 92) groups. In addition to gym training, students of the experimental group also

underwent online PE training. The students' performance in Squat Jumps, 30 m sprint, and Progressive Aerobic Cardiovascular Endurance Run (PACER), as well as their situational motivation, were assessed before and after the intervention. Furthermore, the students assessed their physical activity weekly using self-reports. Results The implementation of online training has positively impacted intrinsic and identified motivation, as well as external regulation; however, it was less effective in reducing amotivation compared to traditional gym-based training. Conclusions The findings of the study contribute to the data synthesis on the expediency of using modern software in physical education.

**Towson C, Cumming S, Donnan K. The Effect of Maturation on Children's Experience of Physical Education: Lessons Learned from Academy Sport [J]. EUROPEAN PHYSICAL EDUCATION REVIEW, Jun 2024.**

#### **ABSTRACT**

Students' experiences of physical education (PE) are considered important for lifelong attitudes towards physical activity. Sex-related differences and the individualised tempo in anthropometric growth because of biological maturation lead to secondary school students within chronological age-ordered classes possessing vast differences in anthropometric and physical characteristics, which may negatively impact the PE experience for late- or early-maturing children. Therefore, the purpose of this review was to (i) critically discuss the influence of maturation on developmental factors related to PE and (ii) provide key stakeholders with guidance on how to manage this period of development more effectively and propose solutions to alleviate the confounding influence of biological maturity currently being implemented within sporting contexts. Secondary school children of different maturation status are often categorised using arbitrary, chronological age-ordered bandings, resulting in groups of children exhibiting large within-group variations in physical, behavioural, emotional, and educational development. This heterogeneity may lead to sub-optimal learning environments, which are confounded by complex and often negative developmental consequences for children who are at either extreme (late- or early-maturing) of the maturation continuum. This is

particularly important within PE, where engagement, enjoyment, and resultant lifelong physical activity attitudes are influenced by perceived competence and relatedness, and where these needs may be thwarted because of considerable maturity-related variations. This paper posits that it is time for key stakeholders within child education to explore new ways to supplement current teaching practices and consider occasionally grouping children by maturation status (i.e. bio-banding) within secondary school PE to enhance students' experiences.

**Howley D, Dyson B, Baek S. All the Better for It: Exploring One Teacher-Researcher's Evolving Efforts to Promote Meaningful Physical Education [J]. EUROPEAN PHYSICAL EDUCATION REVIEW, Apr 2024.**

**ABSTRACT**

Drawing on social constructivist learning theory and a conceptual framework for meaningful physical education (MPE), the purpose of this self-study was to present and explore how one teacher-researcher (TR) evolved their approach to implementing pedagogy promoting MPE in an alternative secondary/high school education setting. Utilizing self-study, data were collected before, during, and after twenty 75-minute lessons over 15 weeks. One critical friend interview, 20 post-teaching reflections, 18 observations, and 22 journal entries were conducted. A deductive and inductive approach utilizing the Miles, Huberman and Saldana Framework for Qualitative Data Analysis (2014) was implemented, with thematic analysis then applied. The following themes were constructed: bringing the fun; steering between sparkling and sensitive social interactions; co-creating and reconsidering challenge; monitoring movements toward motor competence; and pursuing personal relevance in physical activity. Findings demonstrate the TR's explicit and intentional efforts to better implement the concept of MPE within their planning and pedagogy to develop a better understanding of what this looked like in practice and the role each feature played in teaching and learning. Utilizing and promoting democratic and reflective practices led the TR to consider and apply these features more frequently and readily to better teach knowledge, attitudes, and skills to their students through the conceptual lens of MPE. The experiences presented and

discussed demonstrate the benefit of doing so not just for the TR's evolving approach to teaching and learning in physical education, but indeed for the learning of their students, researchers, and other practitioners too.

**Breed R, Kay A, Spittle M, et al. The Effect of Pedagogical Approach on Physical Activity of Girls During Physical Education [J]. RESEARCH QUARTERLY FOR EXERCISE AND SPORT, May 2024.**

**ABSTRACT**

Purpose: Technical approaches (TAs) such as Direct Instruction are commonly utilized when teaching games in Physical Education (PE) classes, but game-based approaches (GBAs) such as Game Sense (GS) have gained greater interest over the past 30 years. However, little is known about which approach promotes more physical activity (PA). The aim of this study was to compare the PA of girls during single-gender PE classes in an invasion games unit utilizing either a GS approach or a TA. Methods: Two upper primary school PE classes were taught invasion games using a GS approach and two classes were taught using a TA. During each of the 7 lessons students wore a wearable GPS sensor (SPT2, Sport Performance Tracking, Australia) which measured total distance, distance in each speed zone, top speed and 3D load. Results: The GS group traveled a greater distance than the TA group (+203 m,  $p < .001$ ). This result was explained mostly by a greater distance covered in zone 2 speeds (0.6-1.7 m/s). The 3D load was also significantly higher in the GS group, but there were no group differences in top speed. Conclusions: Findings suggested that a GS thematic invasion unit was more effective in promoting PA levels in all-girl primary PE classes than a traditional sport-based invasion unit.

**Ma HJ, Li XF, Ma CL, et al. What Are the Important Factors Influencing the Physical Activity Level of Junior High School Students: A Cross-Sectional Survey [J]. FRONTIERS IN PUBLIC HEALTH, May16 2024.**

**ABSTRACT**

Background Engaging in regular physical activity has been consistently linked to improved physical health and academic performance. Despite its known benefits,

there is a concerning trend of decreased physical activity among children globally. The study primarily aims to investigate the level of physical activity among junior high school students in Taiyuan and analyse the main affecting factors from a socio-ecological perspective. Methods A cross-sectional study was conducted, involving 650 junior high school students from 7 schools in Taiyuan, and 648 valid questionnaires were ultimately collected. The data on students' physical activity levels were collected through the Children's Leisure Activities Study Survey Questionnaire, and the data on factors affecting students' physical activity were collected through the Student Perceived Factors Affecting Physical Activity Questionnaire. Results In this study, students from the 7th, 8th, and 9th grades participated in physical activities, averaging 214.500 min per week in moderate-intensity and 25.000 min in high-intensity activities, cumulatively averaging 280.000 min weekly. Notably, a significant disparity ( $p = 0.012$ ) was observed in the combined duration of moderate and high-intensity activities, with male students engaging more time compared to their female counterparts (307.500 vs. 255.000 min). This variance extended across different grades, particularly evident in 8th graders who recorded the highest weekly high-intensity activity duration (31.000 min) and overall physical activity time (320.500 min), surpassing the 7th graders ( $p = 0.007$  for high-intensity activities). Furthermore, an exploratory factor analysis of a 32-item questionnaire, designed to identify determinants of physical activity, revealed six principal components. These components were found to positively correlate with both moderate and high-intensity physical activities. Conclusion Results emphasize that educational institutions and community programs should collaborate to offer engaging weekend physical activity programs. Schools should develop and implement tailored physical education curricula addressing gender and grade differences. Furthermore, schools and local governments should invest in high-quality sports equipment and facilities.

**Teutmacher B, Sudeck G, Hapke J. Pedagogical Approaches to Health-Related Physical Education (PE) in the Context of Digitalisation - A Scoping Review [J]. PHYSICAL EDUCATION AND SPORT PEDAGOGY, May 2024.**

#### **ABSTRACT**

Introduction There are varied consequences of digital transformation processes within the fitness and health-related living environments of adolescents (e.g. increased physical activity through wearables, body dissatisfaction through social media) which could potentially provide fruitful health-related learning experiences within different pedagogical approaches to health in PE (e.g. biomedical vs. alternative, Mong and Standal, 2019, "Didactics of Health in Physical Education - a Review of Literature." *Physical Education and Sport Pedagogy* 24 (5): 506-518. <https://doi.org/10.1080/17408989.2019.1631270>). However, concerns have been raised that the integration of digital media into health-related PE could reinforce biomedical approaches to health and lead, for example, to a focus on increasing fitness through technology. This one-sided focus would not be in line with the demands for a comprehensive health education. This paper aims to map the current trend of pedagogical approaches to health-related PE in the context of digitalisation and to identify typical learning goals against this background. Methods We conducted a scoping review based on the framework of Tricco et al. (2018, "PRISMA Extension for Scoping Reviews: Checklist and Explanation." *Annals of Internal Medicine* 169 (7): 467-473. <https://doi.org/10.7326/M18-0850>). We searched nine databases using a search term covering three topic areas: digitalisation, health, and physical education. Considering the publication years from 2013 to 2023, we selected papers in a three-step process (title-, abstract-, and full-text-screening). In total, we included 103 empirical and theoretical papers in the analysis using qualitative content analysis (Kuckartz, 2019, "Qualitative Text Analysis: A Systematic Approach." In *Compendium for Early Career Researchers in Mathematics Education*, edited by G. Kaiser and N. Presmeg, 181-197. Cham: Springer). To map the pedagogical approach to health, we applied the following main deductive categories: conceptualisation of health, paradigmatic approach to



health and envisaged learning goals. To analyse learning goals with regard to digitalisation, we used the distinction between learning with and about digital media as a focus of analysis. ResultsThe scoping review shows that most of the papers discussed a broad conceptualisation of health for PE by addressing biopsychosocial aspects of health. Many of the implications for health- and digitalisation-associated learning goals related to pre-reflective and functional-reflective learning goals in the area of learning with digital media. They mainly focused, from a pathogenic viewpoint, on how digital media can increase health-enhancing physical activity, affective determinants of health behaviour and health-related knowledge. Parts of these learning goals have already been empirically investigated. Only a few papers proposed critical-reflective learning goals in the area of learning about digital media, aiming at a socio-emancipatory engagement with digital media, health and society. No empirical study within the scoping review investigated the effectiveness of such critical health- and digitalisation-related PE. Discussion and conclusionIn light of the results, it is important that future genuine pedagogical research about health- and digitalisation-related PE increasingly focuses on the development and empirical evaluation of theoretically sound concepts for PE that are in line with the educational demands of comprehensive - thus also critical and salutogenic - health and digital education.

**Littlefair D, Jopling M, Kelly N. Pupil Voice in Physical Education and the Desire for (in) Visibility [J]. SPORT EDUCATION AND SOCIETY, May 2024.**

**ABSTRACT**

The importance of children is a universally accepted concept in schools. However, do we actually listen to what children have to say? Rudduck and Fielding [2002. The transformative potential of student voice: Confronting the power issues. Paper presented at BERA Annual Conference, University of Exeter, p. 2] argue that the voices of pupils are 'silent' or 'silenced'. The aim of this study was to listen to the voice of pupils, concerning their experiences in Physical Education (PE) in schools, with the direction of the study being driven (although not co-designed) by pupils and thereafter following the issues that they raised. It involved 154, 14-16-year-old

pupils across the two schools, one an independent school and the other a state academy. A focus group in each school (6 pupils per study) drove the direction of the study which then sort breadth through a questionnaire to the whole year group in both schools (154 respondents) and finally depth through 12 individual interviews. A theoretical framework (Social Field Theory) was selected post findings to ensure that it best represented the emergent data. Through this Pupil voice method, five themes emerged, those being Participation, Choice, Pressure, Ability and Development, and Health. These indicated that pupils have vastly different experiences in the PE lesson, in particular, if they are at either end of the ability spectrum. For some it is that of humiliation and censure, and for others it is about success and achievement. The uniqueness of the lesson with regard to physique and the exposure of both skill and body can affect this duality, negatively and positively. This can lead to the desire for, or coerced, (in)visibility for many pupils. Solutions from pupils, at both ends of the ability spectrum, to counter issues in PE involved giving choice of activity and having ability setting for classes.

**Bailey RP, Payne R, Demidoff AR, et al. Active Recess: School Break Time as A Setting for Physical Activity Promotion in European Primary Schools [J]. HEALTH EDUCATION JOURNAL, May 2024.**

**ABSTRACT**

Objective: This study investigated active recess as an innovative approach to improving physical activity levels in European primary schools, addressing the need to counteract sedentary behaviour and enhance health in students. Method and Design: Using rapid reviewing, the article summarises empirical evidence from a variety of sources, including cross-sectional and intervention studies. Different approaches are investigated to determine their impact on physical activity during recess. Results: Different playground settings have distinct effects on physical activity, with grassland and designated zones in particular promoting moderate-to-vigorous physical activity. Gender inequalities in physical activity patterns suggest the need for gender-sensitive interventions. Playground marking and scheduled activities temporarily increase physical activity, whereas recess of

more than 60 minutes dramatically enhances physically active participation. Conclusions: This study demonstrates the impact of active recess in facilitating children to engage in higher levels of physical activity. The findings have implications for school health policy decisions.

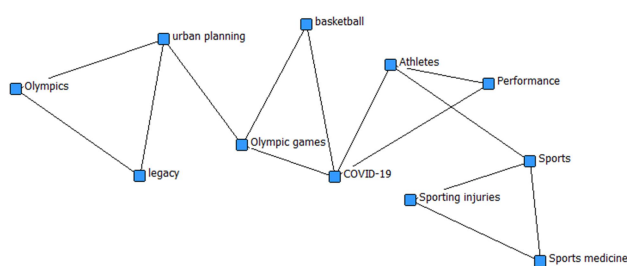
**Martinez-Merino N, Rico-González M. Effects of Physical Education on Preschool Children's Physical Activity Levels and Motor, Cognitive, and Social Competences: A Systematic Review [J]. JOURNAL OF TEACHING IN PHYSICAL EDUCATION, May 2024.**

**ABSTRACT**

The aim of this review was to systematically summarize the literature about physical education (PE) programs and their effects on preschool children's physical activity levels and motor, cognitive, and social competences. A systematic search of relevant articles was carried out using four electronic databases up until February 16, 2022. The main findings were that the inclusion of PE in early childhood is a suitable alternative for improving development in three main areas. For motor competence, specific fundamental motor skill programs are a key opportunity to improve preschool children's ability. Physical activity levels may be improved considering structured and regular PE programs (two to three classes per week). Regarding cognitive competence, PE classes are effective for improving creativity, attention, and mental abilities, and also, for reducing the symptoms of attentiondeficit/hyperactivity disorder. Finally, group-based activities are the most suitable alternative for boosting social competence in preschool children with or without motor disabilities. Improving these competences and physical activity levels in preschool is necessary for the children's health and holistic development; the educators' daily decisions have key importance.

## 奥林匹克教育

本期奥林匹克教育学术研究共检索到英文相关文献 132 篇，研究热点主要集中在奥运会、优秀运动员、城市管理、奥运遗产等方面。检索结果如下：1) 关键词共词分析。提取关键词 559 个，经过数据清洗后关键词有 487 个，词频为 3 及以上的关键词有 14 个，累计百分比为 9.6%，高频关键词有城市规划、运动表现、策略、奥运遗传等，生成可视化知识图谱（见下图）。2) 来源期刊分析。涉及期刊 86 种，其中载文 3 篇及以上的期刊有 7 种，累计百分比为 31.8%，刊载奥林匹克教育相关内容前三位的期刊分别为：INTERNATIONAL JOURNAL OF THE HISTORY OF SPORT (JCR 学科分区 Q1、Q4)、PLANNING PERSPECTIVES(JCR 学科分区 Q1、Q2)、BRITISH JOURNAL OF SPORTS MEDICINE (JCR 学科分区 Q1)。3) 交叉学科分析。引用文献总计 6047 篇，最多的频次为 7 次，频次排名前三的文献分别为 *International Olympic Committee consensus statement: methods for recording and reporting of epidemiological data on injury and illness in sport 2020 (including STROBE Extension for Sport Injury and Illness Surveillance (STROBE-SIIS))*、*Urban development through hosting international events: a history of the Olympic Games*、*Sports injury and illness incidence in the Rio de Janeiro 2016 Olympic Summer Games: A prospective study of 11274 athletes from 207 countries*。4) 学术关注度分析。文献级别用量最多的是 5 次，排名前三位的文献分别 *The perspective of current and retired world class, elite and national athletes on the inclusion and eligibility of transgender athletes in elite sport*、*The achievement of sustainability and legacies by the host cities of the Summer Olympiads, 2012-2024*、*Development of sports medicine in the International Olympic*。



**Strohmayr, U. The Aftermath of Failure. Paris, 1992-2012: the Urban Economy of a Host Olympic City [J].PLANNING PERSPECTIVES, May3 2024.**

**ABSTRAC**

This paper considers the urban consequences of failing to host Olympic Games. Using the example of Paris and its unsuccessful bids to hosts the Olympic Games of 1992, 2008 and 2012, the paper analyses the pre- and post-bid status of key projected 'Olympic' sites within the context of urban plans and aspirations of the city of Paris. The French capital attracts special attention because of the rapid succession of submissions that proved to be outbid by those presented to the IOC by the cities of Barcelona (1992), Beijing (2008) and London (2012). The paper will briefly outline the reasons for failing to attract the Games but will devote most of its space for an analysis of the siting of the planned Olympic Villages, which often form the most lasting of legacies of Olympic Games in host cities.

**Blanco, DV. The Institutional Development of the Philippine Olympic Movement and the Current Rise of Its Olympic Athletes [J]. INTERNATIONAL JOURNAL OF THE HISTORY OF SPORT, Feb19 2024.**

**ABSTRACT**

The paper describes the institutional development of the Olympic movement in the Philippines from the American period to the contemporary era as it operates within the values of 'Excellence, Respect and Friendship' of Olympism. Using Bowen's document analysis as a qualitative tool, the paper highlights the institutional changes and policy reforms in the Philippine sports governance in the development of the Olympic movement with emphasis on the promotion of athlete welfare in the Philippines. As an added dimension, the paper offers a passing review of the recent Olympic athletes' protest in the Philippines and analyses the underlying assumptions of Filipino athletes' passivity on social issues. Furthermore, the paper examines the

significance of the Philippines Olympic Committee (POC) Athletes' Commission in addressing the athletes' rights and welfare as it interrelates and aligns itself with the goals and objectives of the International Olympic Committee Athletes' Commission. More importantly, the paper proposes an Input-Process-Output-Outcome/Result (IPOOR) Model to measure the success of the POC Athletes' Commission qualitatively in terms of the three levels of analysis espoused by the IOC Athlete's Commission namely, input, output, and results, as ways forward in the promotion and development of the strategies, programmes, and projects of the Philippine Olympic movement.

**da Silva CF, de Borba BL, Vicenzi, LN, et al. From Coubertin's Olympism to Neoliberal Sports Spectacle: Narratives of Brazilian Olympic Athletes[J]. SPORT EDUCATION AND SOCIETY, Jun 2024.**

**ABSTRACT**

This study aimed to examine how Brazilian athletes, who participated in the 2016 Olympic Games in Rio de Janeiro, perceive Olympism and its values within the context of their sports training, particularly considering the prevalent neoliberal elements in their high-performance sports environment. Semi-structured interviews were conducted with eight athletes from a region with a strong emphasis on competitive sports. The analysis revealed that athletes primarily associate Olympism with their personal experiences in sports. Their representations align with an Olympic and neoliberal framework, emphasizing performance and professionalism, while also recognizing them as moral exemplars. Athletes develop their understanding of sports values within the discourse of high-performance sports and daily routines. These findings highlight the integration of Olympism into athletes' perceptions, shaped by the demands of neoliberal ideologies that prioritize competitiveness and commercialization within the sports domain. The study provides a critical perspective on the influence of neoliberalism on the formation of

Olympic athletes' subjectivity.

**Fitt RA. Festive Federalism: Race, Nation, and Neoliberal Aesthetics at the 1984 Los Angeles Olympic Games [J]. LOCAL ECONOMY, Feb 19 2024.**

**ABSTRACT**

The 1984 Los Angeles Olympic Games, often misunderstood as a reflection of the nationalist hyper-patriotism of the Reagan Era, were in fact a crucial moment in building a neoliberal, global Los Angeles. Tracing the development of LA'84's Olympic look 'festive federalism', this article considers the ways in which organizers in fact made strenuous efforts not to associate the Games with the nation state. It argues that festive federalism - the name given to the colour scheme and iconography of LA'84 design - was more than just an Olympic look. Rather, it was a neoliberal aesthetic, a philosophy for confronting economic challenges posed by local racial contexts. Festive federalism celebrated diversity and colourblindness simultaneously and extolled the neoliberal virtues of individualism, competition, and self-reliance. In doing so, it nullified the risk posed to the Games' profitability by race-based demands in communities of colour nearby to Olympic venues. In place of race, festive federalism called for a new type of individualistic, post-racial citizen-consumer. Analyzing the application of festive federalism to the 1984 Olympic Arts Festival, this article demonstrates how culture redefined race, national identity, and history for a new, neoliberal age.

**Essex S, Sanchez RLD. The Achievement of Sustainability and Legacies by the Host Cities of the Summer Olympiads, 2012-2024 [J]. PLANNING PERSPECTIVES, May3 2024.**

**ABSTRACT**

Since the emergence of the concept of sustainable development, the Olympic Games have become a vehicle to demonstrate and promote the principles and practices of

sustainability. The aim of this paper is to explain and evaluate how the application of sustainable development in the context of the Summer Olympic Games has evolved. Two processes have been influential in this change: first, the institutional expectations of the International Olympic Committee have encouraged greater responsibility towards the creation of legacies by potential host cities through the IOC Charter, the Olympic Agenda 2020, and the Olympic Agenda 2020+5; and second, the context and inventiveness of host cities has created new perspectives on sustainability to secure the event and raise its global profile. This paper will focus on the sustainability benchmarks established in London 2012 and evaluate whether these have been continued or extended in the subsequent editions of the Summer Games in Rio de Janeiro (2016), Tokyo (2021) and Paris (2024). The changing discourses reveal the tensions between the IOC's agendas for the event, the motivations of the host cities and the realities of delivery in changing socio-economic and political circumstances.

**Sharples B. A Comparative Analysis of the Environmental Sustainability of London 2012 and Rio 2016: A Capability Approach to Inter-national Inequality at the Olympic Games[J]. INTERNATIONAL REVIEW FOR THE SOCIOLOGY OF SPORT, May 2024.**

**ABSTRACT**

Major sporting events can act either as drivers of environmental degradation or catalysts for environmental sustainability, often dictated by the developmental level of the host nation. This article applies a Capability Approach, alongside World-Systems Theory, in its analysis of the environmental sustainability of the London 2012 and Rio 2016 Summer Olympic Games. The article suggests that it is the possessed capabilities of the event host, rather than resources or utilities, which defines sustainable Olympic delivery. It asserts that the 'non-core' Rio possessed national capabilities less valuable in hosting an environmentally sustainable MSE



than the 'core' London. In doing so, the article establishes four key inequalities between the environmental sustainability of the two cases: environmental starting positions; prevalence of expert local organisations; structural and regulatory conditions; and economic stability. It argues that these inter-national inequalities were unaccounted for in event planning and delivery - and were exacerbated by the 'core' hegemony of the Olympic Games. The paper suggests that the identification, acknowledgement, and attempted remediation of this inter-national inequality of capability may encourage a more equitable Olympic Games.

**Doustaly C, Zembri-Mary G. Is Urban Planning Returning to the Past in Search of a Sustainable Future? Exploring the Six Paris and London Olympic Games (1900-2024) [J]. PLANNING PERSPECTIVES, May 3 2024.**

**ABSTRACT**

Mega events are facing a disruption, despite their adaptative nature, in their continued 120-year growth in a context of environmental and energy crisis doubled by increased ethical and social expectations. We put forward the hypothesis, in the middle term, of a gradual disconnection between (1) mega events such as the Olympic Games and (2) a catalyst effect on urban regeneration and attractiveness pursued by host cities; and over the long term, we explore a return to the past characterized by more modest and 'sustainable' Games. We first unveil how urban planning was implemented through the Olympic Games over the last 30 years to understand how Olympic urban mega projects have been increasingly questioned as risky and unsustainable and how IOC frameworks gradually adapted to articulate sustainability and legacy. Is it a return to the comparatively modest 1900, 1908, and 1924 and 1948 Olympics exemplified by the new quarters built after the failed 1992, 2008 and 2012 Paris bids? How do historiography and narratives compare Paris and London? Last, we analyse Paris 2024 as an example of disconnection between the Olympics and mega urban project, as included in an existing 30-year metropolitan

project focusing limited new infrastructure on local needs.

**Chappelet JL. The Century-Long Struggle for the Leadership of World Sport [J]. INTERNATIONAL JOURNAL OF THE HISTORY OF SPORT, Apr 2024.**

**ABSTRACT**

In less than a century, sport has evolved from a hobby for a few European gentlemen into a global phenomenon involving people from all walks of life and of all ages. Media coverage of large sport events, especially the modern Olympic Games, has contributed greatly to increasing and widening sport's appeal and turning it into an activity enjoyed by countless millions of people of both sexes, whether grassroots participants, spectators or elite athletes. Three types of organizations have sought to lead world sport: (1) The International Olympic Committee, which awards Olympic Games to host cities; (2) international sport federations, each of which establishes universal rules for its sport and recognizes national federations; and (3) certain governments and intergovernmental organizations. The century-long geopolitical struggle for the leadership of world sport can be divided into five periods. Although the International Olympic Committee currently holds the upper hand, the emergence of new actors may threaten its dominant position.

**Galily, Y , Spaaij R , McGannon KR,et al. Beyond the Rings: Exploring the Cultural and Behavioral Impact of the 2024 Paris Olympics [J]. AMERICAN BEHAVIORAL SCIENTIST, Jun 2024.**

**ABSTRACT**

The Olympic Games stand as a pinnacle of human achievement, captivating global attention for over a century. Beyond the remarkable athletic displays, they serve as a rich tapestry for studying the intricate interplay of psychology, sociology, politics, and behavior. The forthcoming 2024 Paris Olympics offer a unique lens to probe deeper into these phenomena, serving as a catalyst for cutting-edge research across

disciplines. This special issue of American Behavioral Scientist aims to illuminate the multifaceted dimensions of the Games, exploring their profound implications on human behavior, performance, identity, media, culture, and statecraft.

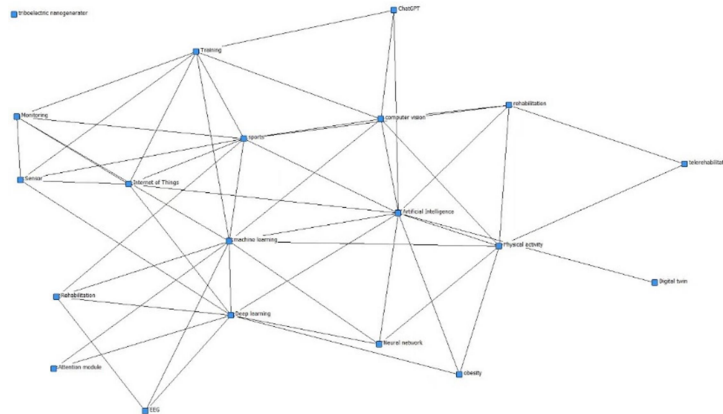
**Shaw AL, Williams AG , Stebbings GK et al. The Perspective of Current and Retired World Class, Elite and National Athletes on the Inclusion and Eligibility of Transgender Athletes in Elite Sport [J]. JOURNAL OF SPORTS SCIENCES, March3 2024.**

**ABSTRACT**

There has been limited empirical study allowing athletes to voice their opinions on transgender participation in elite sport. This study surveyed 175 national, elite and world class athletes eligible to compete in the female category regarding transgender inclusion and eligibility. The study compared current Olympic versus current Olympic Recognised sports, elite versus world class, and current versus retired Olympic sport athletes. Most athletes favoured biological sex categorisation (58%) and considered it unfair for trans women to compete in the female category, except for precision sports. This view was held most strongly by world class athletes regarding their own sport (77% unfair, 15% fair). For trans men inclusion in the male category, most athletes considered it fair, except for Olympic sport athletes regarding contact sports (49% unfair, 27% fair) and sports heavily reliant on physical capacity (53% unfair, 29% fair). Notwithstanding those views, athletes (81%) believed sporting bodies should improve inclusivity for transgender athletes. Opinion varied somewhat according to career stage, competitive level and sport type. Nevertheless, athletes in the present study favoured categorisation by biological sex and did not support trans women eligibility for the female category in sports reliant on performance-related biological factors that differ between sexes.

# 体育人工智能

本期体育工程学术研究共检索到英文相关文献 213 篇，研究热点主要集中在数字化管理和智能技术在体育教育的作用、虚拟现实技术为运动训练提供绩效反馈、智能穿戴系统在体育和健康领域的应用、机器学习与运动成绩预测、人工智能与运动员康复、数字人与体育科学的智能化等。检索结果：1) 关键词共词分析。提取关键词 1223 个，经过数据清洗后关键词有 938 个，词频为 2 及以上的关键词有 60 个，累计百分比为 20.83%，高频关键词有人工智能、体育活动、机器学习、深度学习、运动、传感器、体育、训练、肥胖、神经网络、康复等，生成可视化知识图谱（见下图）。2) 来源期刊分析。涉及期刊 160 种，其中载文 3 篇及以上的期刊有 9 种，所载文献累计百分比为 19.71%，刊载体育人工智能前三位的期刊分别为：SENSORS（JCR 学科分区 Q2），WIRELESS PERSONAL COMMUNICATIONS（JCR 学科分区 Q3），HELIYON（JCR 学科分区 Q1）。3) 学科交叉分析。引用文献总计 13360 篇，最多的频次为 7 次，排名前三位的分别为 *Deep Residual Learning for Image Recognition*、*The PRISMA 2020 statement: an updated guideline for reporting systematic reviews*、*Wearable Sensors for Real-Time Kinematics Analysis in Sports: A Review*。4) 学术关注度分析。文献级别用量最高的是 141 次，排名前三位的分别为 *Size-Dependent Catalysis in Fenton-like Chemistry: From Nanoparticles to Single Atoms*、*Full-colour 3D holographic augmented-reality displays with metasurface waveguides*、*Full-colour 3D holographic augmented-reality displays with metasurface waveguides*。



**Tan XW, Abbas J, Al-Sulaiti K, et al. The Role of Digital Management and Smart Technologies for Sports Education in a Dynamic Environment: Employment, Green Growth, and Tourism [J]. JOURNAL OF URBAN TECHNOLOGY, May 2024.**

**ABSTRACT**

Digitalization management, sports education, tourism and smart urban technologies are crucial for urban energy systems and environmental sustainability. Environmental sustainability is a critical global challenge, and countries emphasize combating the rising environmental issues. Undoubtedly, the globe has proposed several initiatives to address rising ecological matters, but the problem remains intact. This study shows a new pattern, including problems and vital solutions with fresh insights. Despite countries launching initiatives to combat environmental degradation (ED), ecological concerns continue to persist. Empirical research has considered income, urbanization, digitization, sports employment, tourism, and green energy as core sustainability determinants in selected European economies (2010-2021). Applying a series of estimators, we determined that income, urbanization, sports, and tourism are the leading causes of ED, while digitization and green energy contribute significantly to sustainable development. Additionally, digitization plays a significant mediating role in sustaining urban energy systems. The study offers helpful implications for achieving desired sustainability levels.

**Shi L, Xu CX. Virtual Reality Technologies to Provide Performance Feedback for Motor and Imagery Training [J]. EDUCATION AND INFORMATION TECHNOLOGIES, May 2024.**

**ABSTRACT**

The key research objective is to explore the key functions of virtual reality technology used by educators to improve motor and imagery training in athletes. The sample was 160 students from Shandong Sport University. The main tools used by the scholars were the Athlete Introductory Movement Screen (AIMS) and The Sport Imagery Ability Questionnaire (SIAQ). Assessing the motor skills of the control and intervention groups, the research revealed significant improvements in

the four physical activity subscales of the AIMS. The intervention group that used VR technology received better results: an increase of 5.25 in overhead squats exercises, 8.85 in lunges, 6.80 in chest stretches with hands and 5.40 in push-ups compared to a lower increase in the control group by 2.70, 5.80, 4.30 and 2.85, respectively, in the same exercises. Similarly, for imagery skills assessed using the SIAQ subscales, the intervention group had significantly higher results than the control group. While the control group showed a significant increase in only two subscales. The intervention group achieved a significant increase in all five subscales. These trends were identified and supported by intergroup comparisons. The intervention group demonstrated higher scores on all parameters for imagery and motor skills. The analysis of the motor and imagination skills in training athletes using virtual reality allows the research to discuss the virtual reality benefits as a mobile training tool. These results create new possibilities for virtual reality in sports training and physical therapy, demonstrating its broad area of application and benefits.

**Yang LY, Amin O, Shihada B. Intelligent Wearable Systems: Opportunities and Challenges in Health and Sports [J]. ACM COMPUTING SURVEYS, Jul 2024, vol.56, issue7.**

**ABSTRACT**

Wearable devices, or wearables, designed to be attached to the human body, can gather personalized real-time data and continuously monitor an individual's health status and physiological disposition in a non-invasive manner. Intelligent wearables integrate advanced machine learning algorithms to process complex data patterns and provide accurate insights. As a result, intelligent wearables have emerged as a ground-breaking innovation in the fields of sports and health, introducing a new paradigm in kinematic analysis and patient data evaluation. For example, virtual coaches offer feedback on athletes' performance, whereas virtual physicians assist in customizing medication for patients. This article provides an overview of various types of intelligent wearables and their applications in health and sports, categorizes machine learning algorithms, and introduces the wireless body area sensor network

(WBASN) used for communication in wearable sensors. Additionally, we discuss potential challenges and development directions that could shape the future of intelligent wearables and propose effective solutions for their continued enhancement. This article offers valuable insights into the exciting potential of intelligent wearables to transform healthcare and sports.

**Wang GL, Ren TP. Design of Sports Achievement Prediction System Based on U-net Convolutional Neural Network in the Context of Machine Learning [J]. HELIYON, May 30 2024, vol.10, issue 10.**

#### **ABSTRACT**

Sports plays a pivotal role in national development. To accurately predict college students' sports performance and motivate them to improve their physical fitness, this study constructs a sports achievement prediction system by using a U -Net Convolutional Neural Network (CNN) in machine learning. Firstly, the current state of physical education teachers' instructional proficiency is investigated and analyzed to identify existing problems. Secondly, an improved U -Net -based sports achievement prediction system is proposed. This method enhances the utilization and propagation of network features by incorporating dense connections, thus addressing gradient disappearance issues. Simultaneously, an improved mixed loss function is introduced to alleviate class imbalance. Finally, the effectiveness of the proposed system is validated through testing, demonstrating that the improved U -Net CNN algorithm yields superior results. Specifically, the prediction accuracy of the improved network for sports performance surpasses that of the original U -Net by 4.22 % and exceeds that of DUNet by 5.22 %. Compared with other existing prediction networks, the improved U -Net CNN model exhibits a superior achievement prediction ability. Consequently, the proposed system enhances teaching and learning efficiency and offers insights into applying artificial intelligence technology to smart classroom development.

**Zhu X, Peng XB. Strategic Assessment Model of Smart Stadiums Based on Genetic Algorithms and Literature Visualization Analysis: A case Study from Chengdu, China [J]. HELIYON, Jun 15 2024, vol.10, issue 11.**

**ABSTRACT**

This paper leverages Citespace and VOSviewer software to perform a comprehensive bibliometric analysis on a corpus of 384 references related to smart sports venues, spanning from 1998 to 2022. The analysis encompasses various facets, including author network analysis, institutional network analysis, temporal mapping, keyword clustering, and co-citation network analysis. Moreover, this paper constructs a smart stadiums strategic assessment model (SSSAM) to compensate for confusion and aimlessness by genetic algorithms (GA). Our findings indicate an exponential growth in publications on smart sports venues year over year. Arizona State University emerges as the institution with the highest number of collaborative publications, Energy and Buildings becomes the publication with the most documents. While, Wang X stands out as the scholar with the most substantial contribution to the field. In scrutinizing the betweenness centrality indicators, a paradigm shift in research hotspots becomes evident-from intelligent software to the domains of the Internet of Things (IoT), intelligent services, and artificial intelligence (AI). The SSSAM model based on artificial neural networks (ANN) and GA algorithms also reached similar conclusions through a case study of the International University Sports Federation (FISU), building Information Modeling (BIM), cloud computing and artificial intelligence Internet of Things (AIoT) are expected to develop in the future. Three key themes developed over time. Finally, a comprehensive knowledge system with common references and future hot spots is proposed.



**Espitia-Mora LA, Vélez-Guerrero MA, Callejas-Cuervo M. Development of a Low-Cost Markerless Optical Motion Capture System for Gait Analysis and Anthropometric Parameter Quantification [J]. SENSORS, Jun 2024, vol.24, issue 11.**

**ABSTRACT**

Technological advancements have expanded the range of methods for capturing human body motion, including solutions involving inertial sensors (IMUs) and optical alternatives. However, the rising complexity and costs associated with commercial solutions have prompted the exploration of more cost-effective alternatives. This paper presents a markerless optical motion capture system using a RealSense depth camera and intelligent computer vision algorithms. It facilitates precise posture assessment, the real-time calculation of joint angles, and acquisition of subject-specific anthropometric data for gait analysis. The proposed system stands out for its simplicity and affordability in comparison to complex commercial solutions. The gathered data are stored in comma-separated value (CSV) files, simplifying subsequent analysis and data mining. Preliminary tests, conducted in controlled laboratory environments and employing a commercial MEMS-IMU system as a reference, revealed a maximum relative error of 7.6% in anthropometric measurements, with a maximum absolute error of 4.67 cm at average height. Stride length measurements showed a maximum relative error of 11.2%. Static joint angle tests had a maximum average error of 10.2%, while dynamic joint angle tests showed a maximum average error of 9.06%. The proposed optical system offers sufficient accuracy for potential application in areas such as rehabilitation, sports analysis, and entertainment.

**Li CF, Cao Y, Lv J. Design and Implementation of a Physical Education Teaching and Training Mode Management System [J]. ENTERTAINMENT COMPUTING, May 2024, vol.50.**

**ABSTRACT**

With the advent of the smart age, all industries are undergoing revolutionary changes, and more reliable, faster, and unmanned data analysis and mining have become a

prominent feature of today's industry. With basketball as an iconic sport, better data processing models will drive sports games to be played more efficiently. As an essential sport in China, basketball has more than 100 years of history. With the leap development of basketball, data analysis technology has also been widely used. The data seen in basketball games is a set of systematic data formed by professional workers through division of labor and close cooperation, classification and aggregation, and statistical analysis. In addition, based on the information on the court, spectators get a general idea of how the players perform in the Game and predict where the data will go. This article explores the significance and application of basketball game data analysis methods and shows that the analysis of basketball game data can effectively promote the development of basketball.

**Ahn SJ, Schmidt MD, Tate AD, et al. Virtual Fitness Buddy Ecosystem: a Mixed Reality Precision Health Physical Activity Intervention for Children [J]. NPJ DIGITAL MEDICINE, May 21 2024, vol. 7, issue 1.**

**ABSTRACT**

6-11-year-old children provide a critical window for physical activity (PA) interventions. The Virtual Fitness Buddy ecosystem is a precision health PA intervention for children integrating mixed reality technology to connect people and devices. A cluster randomized, controlled trial was conducted across 19 afterschool sites over two 6-month cohorts to test its efficacy in increasing PA and decreasing sedentary behavior. In the treatment group, a custom virtual dog via a mixed reality kiosk helped children set PA goals while sharing progress with parents to receive feedback and support. Children in the control group set PA goals using a computer without support from the virtual dog or parents. 303 children had 8+ hours of PA data on at least one day of each of the 3 intervention time intervals. Conversion of sedentary time was primarily to light-intensity PA and was strongest for children with low baseline moderate-to-vigorous PA than children above 45 min of baseline moderate-to-vigorous PA. Findings suggest that the VFB ecosystem can promote sustainable PA in children and may be rapidly diffused for widespread public health impact.

**Verdel N, Drobic M, Maslik J, et al. Reliability and Validity of Running Step Rate Derived From a Novel Wearable Smart Patch [J]. IEEE SENSORS JOURNAL, May 1 2024, vol. 24, issue 9, pp.14343-14351.**

**ABSTRACT**

A novel, wearable, stretchable Smart Patch can monitor various aspects of physical activity, including the dynamics of running. However, like any new device developed for such applications, it must first be tested for validity and reliability. Here, we compare the step rate while running on a treadmill measured by this smart patch with the corresponding values obtained with the "gold standard" OptoGait, as well as with other devices commonly used to assess running dynamics, that is, the MEMS accelerometer and commercially available and widely used Garmin Running Dynamic Pod. The 14 healthy, physically active volunteers completed two identical sessions with a 5-min rest between. Each session involved two 1-min runs at 11 and 14 km/h separated by a 1-min rest. The major finding was that the Smart Patch demonstrated fair to good test-retest reliability. The best test-retest reliability for the Running Pod was observed in connection with running at 11 km/h and both velocities combined (good and excellent, respectively) and for the OptoGait when running at 14 km/h (good). The best concurrent validity was achieved with the Smart Patch, as reflected in the highest Pearson correlation coefficient for this device when running at 11 or 14 km/h, as well as for both velocities combined. In conclusion, this study demonstrates that the novel wearable Smart Patch shows promising reliability and excellent concurrent validity in measuring step rate during treadmill running, making it a viable tool for both research and practical applications in sports and exercise science.

**Suo X, Tang WD, Li Z. Motion Capture Technology in Sports Scenarios: A Survey [J]. SENSORS, May 2024, vol. 24, issue 9.**

**ABSTRACT**

Motion capture technology plays a crucial role in optimizing athletes' skills, techniques, and strategies by providing detailed feedback on motion data. This article presents a comprehensive survey aimed at guiding researchers in selecting the

most suitable motion capture technology for sports science investigations. By comparing and analyzing the characters and applications of different motion capture technologies in sports scenarios, it is observed that cinematography motion capture technology remains the gold standard in biomechanical analysis and continues to dominate sports research applications. Wearable sensor-based motion capture technology has gained significant traction in specialized areas such as winter sports, owing to its reliable system performance. Computer vision-based motion capture technology has made significant advancements in recognition accuracy and system reliability, enabling its application in various sports scenarios, from single-person technique analysis to multi-person tactical analysis. Moreover, the emerging field of multimodal motion capture technology, which harmonizes data from various sources with the integration of artificial intelligence, has proven to be a robust research method for complex scenarios. A comprehensive review of the literature from the past 10 years underscores the increasing significance of motion capture technology in sports, with a notable shift from laboratory research to practical training applications on sports fields. Future developments in this field should prioritize research and technological advancements that cater to practical sports scenarios, addressing challenges such as occlusion, outdoor capture, and real-time feedback.

**Desai V. The Future of Artificial Intelligence in Sports Medicine and Return to Play [J]. SEMINARS IN MUSCULOSKELETAL RADIOLOGY, Apr 2024, vol. 28, issue 02, pp.203-212.**

**ABSTRACT**

Artificial intelligence (AI) has shown tremendous growth over the last decade, with the more recent development of clinical applications in health care. The ability of AI to synthesize large amounts of complex data automatically allows health care providers to access previously unavailable metrics and thus enhance and personalize patient care. These innovations include AI-assisted diagnostic tools, prediction models for each treatment pathway, and various tools for workflow optimization. The extension of AI into sports medicine is still early, but numerous AI-driven algorithms, devices, and research initiatives have delved into predicting and

preventing athlete injury, aiding in injury assessment, optimizing recovery plans, monitoring rehabilitation progress, and predicting return to play.

**Exel J, Dabnichki P. Precision Sports Science: What Is Next for Data Analytics for Athlete Performance and Well-Being Optimization? [J]. APPLIED SCIENCES-BASEL, Apr 2024, vol. 14, issue 8.**

#### **ABSTRACT**

In elite sports, athletic excellence demands meticulous performance preparation and a sound health status. This paper overviews the current propositions and applications of pervasive computing and data analytics and our vision on how they should be used in future frameworks to contribute to the optimal balance of athletes' performance and health requirements. Two main areas will be discussed. The first area is Sports Performance Optimization, in which we consider interesting recent advancements in data analytics for performance improvement, equipment design, and team member recruitment and selection. We will also briefly discuss how the betting industry has been relaying and developing sports analytics. The second area is Athlete's Wellness and Wellbeing, which will discuss how wearables and data analytics have been used to assess physical activity and sedentary behavior profiles, sleep and circadian rhythm, nutrition and eating behavior, menstrual cycles, and training/performance readiness. In the final part of this paper, we argue that a critical issue for managers to enhance their decision making is the standardization of acquired information and decision-making processes, while introducing an adaptable, personalized approach. Thus, we present and discuss new theoretical and practical approaches that could potentially address this problem and identify precision medicine as a recommended methodology. This conceptualization involves the integration of pervasive computing and data analytics by employing predictive models that are constantly updated with the outcomes from monitoring tools and athletes' feedback interventions. This framework has the potential to revolutionize how athletes' performance and well-being are monitored, assessed, and optimized, contributing to a new era of precision in sports science and medicine.

**Suo X, Tang WD, Mao LJ, et al. Digital Human and Embodied Intelligence for Sports Science: Advancements, Opportunities and Prospects [J]. VISUAL COMPUTER, Jun 2024.**

**ABSTRACT**

This paper presents a comprehensive review of state-of-the-art motion capture techniques for digital human modeling in sports, including traditional optical motion capture systems, wearable sensor capture systems, computer vision capture systems, and fusion motion capture systems. The review explores the strengths, limitations, and applications of each technique in the context of sports science, such as performance analysis, technique optimization, injury prevention, and interactive training. The paper highlights the significance of accurate and comprehensive motion data acquisition for creating high-fidelity digital human models that can replicate an athlete's movements and biomechanics. However, several challenges and limitations are identified, such as limited capture volume, marker occlusion, accuracy limitations, lack of diverse datasets, and computational complexity. To address these challenges, the paper emphasizes the need for collaborative efforts from researchers and practitioners across various disciplines. By bridging theory and practice and identifying application-specific challenges and solutions, this review aims to facilitate cross-disciplinary collaboration and guide future research and development efforts in harnessing the power of digital human technology for sports science advancement, ultimately unlocking new possibilities for athlete performance optimization and health.

**Apostolidis H, Mandroukas A, Papantoniou G, et al. Smart Ladder for Interactive Fitness Training [J]. IEEE INTERNET OF THINGS JOURNAL, May 15 2024, vol. 11, issue 10, pp.17896-17910.**

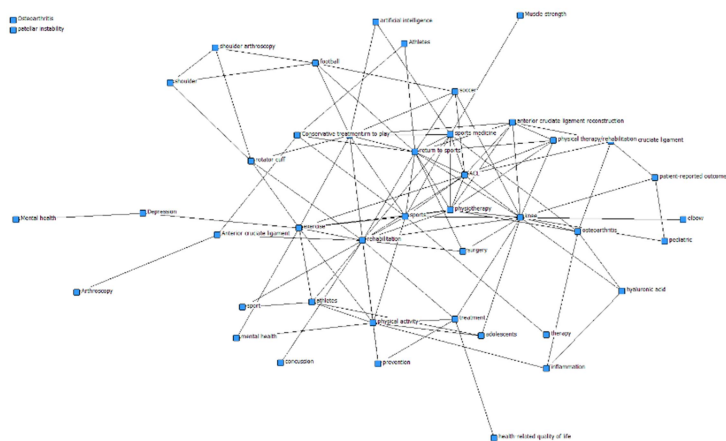
**ABSTRACT**

The agility ladder is a simple piece of fitness equipment that meets modern sports requirements by developing agility, stability, rhythm, change of direction, and rapid foot movement. The proposed project is applying Internet of Things (IoT) technology to upgrade the conventional agility ladder into an interactive training

tool (called "Smart Ladder"). Smart Ladder is exploiting IoT technology (i.e., sensors) and digital apps to support real-time interaction with the users. Every time the user (athlete) executes a drill workout and he/she touches a step of the Smart Ladder which is a mistake, a relevant signal is produced by the IoT sensors. The Smart Ladder provides real-time feedback about the athlete's performance, which is displayed on the trainer's personal computer, tablet or mobile phone. Moreover, if the athlete makes a mistake, Smart Ladder provides real-time feedback to both the athlete and his/her coach. The main goal of this study is to present the Smart Ladder as well as the improvement of coaching and athletes' training. The evaluation activities showed positive results in relation to ease of use, usefulness, ease of learning and the satisfaction (means= 5.83). Furthermore, the experimental group utilizing the Smart Ladder showed a significant improvement in 20-m run and broad jump and a significant decrease in the number of mistakes made regarding the two-foot forward exercise (  $p=0.00 < 0.05$  ).

## 体医融合

本期体医融合学术研究共检索到英文相关文献 319 篇，研究热点主要集中在餐后血糖管理的运动处方、针对残疾儿童和青少年的改良体育干预措施、运动与营养在神经系统健康和康复中的相互作用等方面。检索结果如下：1) 关键词共词分析。提取关键词 1578 个，经过数据清洗后关键词有 1286 个，词频为 4 及以上的关键词有 23 个，累计百分比为 11.6%，高频关键词有重返运动、体育、康复、运动医学、锻炼等，生成可视化知识图谱（见下图）。2) 来源期刊分析。涉及期刊 176 种，其中载文 5 篇及以上的期刊有 13 种，所载文献累计百分比为 29.15%，刊载体医融合前三位的期刊分别为：KNEE SURGERY SPORTS TRAUMATOLOGY ARTHROSCOPY（JCR 学科分区 Q1、Q1），JOURNAL OF CLINICAL MEDICINE（JCR 学科分区 Q1），AMERICAN JOURNAL OF SPORTS MEDICINE（JCR 学科分区 Q1、Q1）。3) 学科交叉分析。引用文献总计 17171 篇，最多的频次为 8 次，其次是 7 次，这两篇文献分别为 *2016 Consensus Statement on Return to Sport from the First World Congress in Sports Physical Therapy, Bern*、*The PRISMA 2020 Statement: an Updated Guideline for Reporting Systematic Reviews*。4) 学术关注度分析。文献级别用量最多的是 30 次，排名前三位的文献分别为 *The Effectiveness of Physical Activity Interventions in Improving Higher Education Students' Mental Health: A Systematic Review*、*Clinical Characteristics Analysis of Pediatric Spinal Cord Injury without Radiological Abnormality in China: a Retrospective Study*、*Impact of Artificial Weathering on Swimwear Fabric*。





**Wingerson MJ, Hunt DL, Wilson JC, et al. Factors Associated with Symptom Resolution after Aerobic Exercise Intervention in Adolescent and Young Adults with Concussion[J]. MEDICINE & SCIENCE IN SPORTS & EXERCISE, 2024, vol. 56, issue.5, pp.783-789.**

#### **ABSTRACT**

Background: Aerobic exercise facilitates postconcussion symptom resolution at the group level, but patient-level characteristics may affect the likelihood of treatment efficacy. Purpose: This study aimed to investigate demographic and clinical characteristics, which differentiate postconcussion aerobic exercise treatment efficacy from nonefficacy in the intervention arm of a randomized clinical trial. Methods: Adolescent and young adult participants initiated a standardized aerobic exercise intervention within 14 d of concussion, consisting of self-selected exercise for 100min center dot wk(-1) at an individualized heart rate (80% of heart rate induced symptom exacerbation during graded exercise testing). Treatment efficacy was defined as symptom resolution within 28-d postconcussion. Treatment efficacy and nonefficacy groups were compared on demographics, clinical characteristics, intervention adherence, and persistent symptom risk using the Predicting Persistent Postconcussive Problems in Pediatrics (5P) clinical risk score. Results: A total of 27 participants (16.1 +/- 2.3 yr old; range, 11-21 yr; 52% female) began the intervention, with a mean of 9.5 +/- 3.7 d after concussion; half (n = 13; 48%) demonstrated treatment efficacy (symptom resolution within 28 d postconcussion). Those whose symptoms resolved within 28 d had significantly lower preintervention postconcussion symptom inventory scores (21.2 +/- 13.2 vs 41.4 +/- 22.2; P < 0.01), greater adherence to the intervention (77% vs 36%; P = 0.05), and longer average exercise duration (median [interquartile range], 49.7 [36.8-68.6] vs 30.4 [20.7-34.7] min; P < 0.01) than those whose symptoms lasted more than 28 d. Groups were similar in age, sex, timing of intervention, and preintervention 5P risk score. Conclusions: A standardized aerobic exercise intervention initiated within 14 d of concussion demonstrated efficacy for approximately half of participants, according to our definition of treatment efficacy. This multisite aerobic exercise intervention suggests that lower symptom severity, higher intervention adherence, and greater

exercise duration are factors that increase the likelihood of symptoms resolving within 28 d of concussion.

**Kim SM, Ko Y, Kim D, et al. Effects of Sports Therapy on Improvement of Menopausal Symptoms, Psychological Status, and Body Morphology in Perimenopausal Women[J]. MENOPAUSE-THE JOURNAL OF THE NORTH AMERICAN MENOPAUSE SOCIETY, 2024, vol. 31, issue 4, pp.326-335.**

#### **ABSTRACT**

**Objective**The aim of this study was to increase the treatment rate of perimenopausal women by providing evidence-based nonpharmaceutical treatments through developing scientific evidence-based sports therapy and verifying its effectiveness. **Methods**In a cross-over design, a total of 33 women were assigned to two different sequences of intervention: sports therapy and telephone intervention (n = 17) or telephone intervention and sports therapy (n = 16). A self-reported clinical symptom survey was conducted before and after the experimental and control periods using the following measures: the Menopause Rating Scale, Patient Health Questionnaire 9, and Patient Health Questionnaire 15. **Results** There were significant differences in the changes in the scores for Menopause Rating Scale total (exercise phase, 17.8 +/- 5.5 at baseline [B] and 13.5 +/- 4.2 at follow-up [F]; control phase, 15.9 +/- 6.0 [B] and 15.4 +/- 5.3 [F]; P < 0.01), somatic symptoms (exercise phase, 9.5 +/- 2.6 [B] and 6.6 +/- 2.0 [F]; control phase, 8.5 +/- 2.8 [B] and 8.0 +/- 1.3 [F], P < 0.01), and urogenital symptoms (exercise phase, 4.9 +/- 1.7 [B] and 4.1 +/- 1.4 [F]; control phase, 4.3 +/- 1.6 [B] and 4.4 +/- 1.5 [F]; P < 0.01) between the exercise and control phases. There were also significant differences in the changes in the scores for PHQ-9 (exercise phase, 4.6 +/- 4.4 [B] and 3.6 +/- 3.3 [F]; control phase, 4.5 +/- 3.8 [B] and 5.5 +/- 4.6 [F]; P = 0.008) and PHQ-15 (exercise phase, 7.2 +/- 4.4 [B] and 5.5 +/- 3.5 [F]; control phase, 6.8 +/- 4.4 [B] and 7.2 +/- 4.9 [F]; P = 0.009) between the two phases. **Conclusions**Sports therapy would improve menopause symptoms, especially somatic and urogenital symptoms. In addition, sports therapy would improve depressive moods in perimenopausal women.

**Jakobsson J, Stoffels AAF, van Hees HWH, et al. Quality of Aerobic Training Description and Its Relation to Intervention Efficacy in Chronic Obstructive Pulmonary Disease Trials: Study Protocol for a Systematic Review, Meta-analysis and Meta-regression[J]. BMJ OPEN, 2024, vol.14, issue 5.**

#### **ABSTRACT**

**Introduction** Chronic obstructive pulmonary disease (COPD) is a major global health concern, characterised by ventilatory constraints, decreased cardiovascular fitness and reduced limb muscle function, profoundly affecting patients' quality of life. Aerobic training plays a crucial role in the treatment of COPD, but the variability in methodologies and incomplete reporting of key components in aerobic training trials limits the assessment of their effectiveness. This systematic review aims to critically evaluate the application of training principles and reporting of key components in aerobic training trials in randomised controlled trials (RCTs) in the COPD literature.**Methods and analysis** The protocol adheres to the Preferred Reporting Items for Systematic reviews and Meta-Analyses Protocol guidelines. The review will include RCTs utilising aerobic training in individuals with COPD. A comprehensive search, following a predefined search strategy will identify studies published from 2007 to 2024 in English from MEDLINE, Embase, CINAHL, CENTRAL and PEDro. Studies including people with COPD and any aerobic training intervention will be included. Two reviewers will independently screen abstracts and titles for inclusion. Two reviewers will independently conduct the screening of full-text documents and data extraction. Study quality will be assessed using the Tool for the assessment of sTudy quality and bias in Exercise, specifically developed for exercise training studies. The certainty of the evidence will be evaluated using the Grading of Recommendations Assessment, Development and Evaluation approach. A systematic synthesis will be provided, with meta-analyses and meta-regression when appropriate.**Ethics and dissemination** As this review will involve the analysis of published data, ethical approval is not required. The findings of this review will be disseminated through peer-reviewed publications and conference presentations. PROSPERO registration number CRD42021247343.

**Meng JH, Tang H, Xiao YF, et al. Long-term Effects of Exercise Therapy Versus Arthroscopic Partial Meniscectomy for Degenerative Meniscal Tear: A Meta-analysis of Randomized Controlled Trials[J]. ASIAN JOURNAL OF SURGERY, 2024, vol. 47, issue 6, pp.2566-2573.**

**ABSTRACT**

Background: Degenerative meniscal tear (DMT) is common in the elderly population. However, there has been controversy over the treatment of DMT regarding whether to adopt arthroscopic partial meniscectomy (APM) or exercise therapy (ET). In order to compare the long-term outcomes between the two treatment methods, we conducted a meta-analysis of randomized controlled trials (RCTs) with long-term follow-up. Methods: PubMed, Cochrane Library, Embase, and Web of Science were last searched on 16 April 2023 for studies on DMT that compared the clinical outcomes between APM and ET. The subjective outcomes of the comparison include the Knee Injury and Osteoarthritis Outcome Score (KOOS), which consists of five sub-scales: pain, symptoms, activities of daily living (ADL), sport and recreation (Sport/recreation), and quality of life (QOL). The objective outcome includes knee osteoarthritis progression. Results: We identified 6 potentially eligible trials, including 1078 participants, from the literature search. ET showed a lower risk of knee osteoarthritis progression than APM (RR, 1.27; 95%CI 1.05 to 1.53). There were no statistically significant differences in the KOOS-pain, KOOS-symptoms, KOOS-ADL, KOOS-Sport/ recreation, and KOOS-QOL between the two treatment methods. Conclusion: For the treatment of DMT, ET showed a lower risk of knee osteoarthritis progression than APM. ET and APM had comparable effects on subjective outcomes including pain management and knee function. Therefore, it is not recommended to use APM but rather recommended to use ET for treating APM. (c) 2024 Asian Surgical Association and Taiwan Society of Coloproctology.

**Muscogiuri G, De Marco O, Di Lorenzo T, et al. Diet and Physical Activity in Fabry Disease: A Narrative Review [J]. NUTRIENTS, 2024, vol. 16, issue 7.**

**ABSTRACT**

Fabry disease (FD) is caused by mutations in the galactosidase alpha (GLA) gene which lead to the accumulation of globotriaosylceramide (Gb-3). Enzyme replacement therapy (ERT) and oral chaperone therapy are the current pharmacological treatments for this condition. However, in the literature, there is a growing emphasis on exploring non-pharmacological therapeutic strategies to improve the quality of life of patients with FD. In particular, the nutritional approach to FD has been marginally addressed in the scientific literature, although specific dietary interventions may be useful for the management of nephropathy and gastrointestinal complications, which are often present in patients with FD. Especially in cases of confirmed diagnosis of irritable bowel syndrome (IBS), a low-FODMAP diet can represent an effective approach to improving intestinal manifestations. Furthermore, it is known that some food components, such as polyphenols, may be able to modulate some pathogenetic mechanisms underlying the disease, such as inflammation and oxidative stress. Therefore, the use of healthy dietary patterns should be encouraged in this patient group. Sports practice can be useful for patients with multi-organ involvement, particularly in cardiovascular, renal, and neurological aspects. Therefore, the aim of this review is to summarize current knowledge on the role of nutrition and physical activity in FD patients.

**de Sousa RR Jr, Sousa AB, de Lima AF, et al. Modified Sports Interventions for Children and Adolescents with Disabilities: A Scoping Review [J]. DEVELOPMENTAL MEDICINE AND CHILD NEUROLOGY, 2024.**

**ABSTRACT**

**Aim**To establish the scope of the literature on modified sports interventions for children and adolescents with disabilities.  
**Method**For this scoping review, articles were screened and the characteristics of studies were extracted. The modified sports interventions were described in terms of their structure, using the items of the Template for Intervention Description and Replication. Components of intervention

treatment were described by using the language of the Rehabilitation Treatment Specification System. Results were analysed and validated by a group of professionals, using the Public and Patient Involvement strategy. Results Twelve studies were eligible for inclusion, investigating interventions for children with autism spectrum disorder, cerebral palsy, and other conditions. Most studies presented a moderate level of evidence. Active ingredients were repeated sports-related motor training and introduction to the sport through a 'learning by action' mechanism. The intervention target was gross motor skills performance, and intervention aims (indirect outcomes) were physical activity participation and different body functions. Interpretation The inclusion of stakeholders in this review helped to validate our findings about the characteristics and structure of modified sports interventions, to identify research gaps, and to provide a step process for clinical implementation. Future investigations are warranted of the effectiveness of modified sports investigations with better quality studies, including participation outcomes and studies with non-ambulant children.

**Pandya J, Rosenbluth LJM, Adams AB. Physical Activity and Sports for Children with Juvenile Idiopathic Arthritis[J]. HSS JOURNAL, 2024.**

**ABSTRACT**

Juvenile idiopathic arthritis (JIA) is the most common rheumatic disease of childhood, presenting clinically as inflammatory arthritis in children younger than 16 years. To date, while evidence supports physical activity for children with JIA, there is limited evidence on the recommended approach to physical activity and sports participation in this population, and no single structured therapeutic exercise program has been established as best practice. This review article presents what is known on the management of physical activity in children with JIA, including recommendations from the pediatric rheumatology and rehabilitation literature, where available, for sports participation, structured therapeutic exercise programs, and return to activity.

**Clemente-Suárez VJ, Redondo-Flórez L, Beltrán-Velasco AI, et al. The Interplay of Sports and Nutrition in Neurological Health and Recovery[J]. JOURNAL OF CLINICAL MEDICINE, 2024, vol. 13, issue 7.**

**ABSTRACT**

This comprehensive review explores the dynamic relationship between sports, nutrition, and neurological health. Focusing on recent clinical advancements, it examines how physical activity and dietary practices influence the prevention, treatment, and rehabilitation of various neurological conditions. The review highlights the role of neuroimaging in understanding these interactions, discusses emerging technologies in neurotherapeutic interventions, and evaluates the efficacy of sports and nutritional strategies in enhancing neurological recovery. This synthesis of current knowledge aims to provide a deeper understanding of how lifestyle factors can be integrated into clinical practices to improve neurological outcomes.

**Weinstock-Zlotnick G, Wolff A, Potter G, et al. Children with Cerebral Palsy's Experiences with Adaptive Climbing: A Qualitative Study on Parents' Perspectives[J]. HSS JOURNAL, 2024.**

**ABSTRACT**

Background: Interest in adaptive sports for children with cerebral palsy (CP) is growing, but current evidence on the benefits and indications for one sport, adaptive climbing, is limited. Purpose: We sought to describe perceived changes observed by parents of children with CP who participated in adaptive climbing. Methods: Parents whose children with CP participated in 5 or more adaptive climbing sessions were eligible to participate and were emailed a recruitment letter and flyer. Data were collected through semi-structured interviews, using a moderator guide. Interviews were transcribed and content analyzed, with data grouped into concepts, categories, and themes until data saturation. Results: Ten parents (9 mothers, 1 father) of 10 children with CP (5 girls, 5 boys; ages 7 to 19 years) were interviewed for 15 to 45 minutes each, yielding 4 themes. First, parents perceived that adaptive climbing challenged the children physically (in reach, balance, strength, and head/neck and

lower limb motion); second, that it sharpened children's cognitive skills (in focus, problem-solving, and strategic thinking); third, that it raised children's confidence (socially, physically, and emotionally); and fourth, that it expanded children's sense of what they could do (in mastering a challenge, claiming an athletic identity, and participating in a sport like their peers).Conclusions: In this qualitative study, parents described physical, cognitive, and psychosocial benefits of adaptive climbing for their children with CP. These descriptions can be used to inform future studies of children with CP who participate in adaptive climbing.

**Bellini A, di Palumbo AS, Nicolò A, et al. Exercise Prescription for Postprandial Glycemic Management[J]. NUTRIENTS,2024, vol. 16, issue 8.**

**ABSTRACT**

The detrimental impacts of postprandial hyperglycemia on health are a critical concern, and exercise is recognized a pivotal tool in enhancing glycemic control after a meal. However, current exercise recommendations for managing postprandial glucose levels remain fairly broad and require deeper clarification. This review examines the existing literature aiming to offer a comprehensive guide for exercise prescription to optimize postprandial glycemic management. Specifically, it considers various exercise parameters (i.e., exercise timing, type, intensity, volume, pattern) for crafting exercise prescriptions. Findings predominantly indicate that moderate-intensity exercise initiated shortly after meals may substantially improve glucose response to a meal in healthy individuals and those with type 2 diabetes. Moreover, incorporating short activity breaks throughout the exercise session may provide additional benefits for reducing glucose response.

**Noone J, Mucinski JM, Delany JP, et al. Understanding the Variation in Exercise Responses to Guide Personalized Physical Activity Prescriptions[J]. CELL METABOLISM, 2024, vol.36, issue 4, pp.702-724.**

**ABSTRACT**

Understanding the factors that contribute to exercise response variation is the first step in achieving the goal of developing personalized exercise prescriptions. This



review discusses the key molecular and other mechanistic factors, both extrinsic and intrinsic, that influence exercise responses and health outcomes. Extrinsic characteristics include the timing and dose of exercise, circadian rhythms, sleep habits, dietary interactions, and medication use, whereas intrinsic factors such as sex, age, hormonal status, race/ethnicity, and genetics are also integral. The molecular transducers of exercise (i.e., genomic/epigenomic, proteomic/post-translational, transcriptomic, metabolic/metabolomic, and lipidomic elements) are considered with respect to variability in physiological and health outcomes. Finally, this review highlights the current challenges that impede our ability to develop effective personalized exercise prescriptions. The Molecular Transducers of Physical Activity Consortium (MoTrPAC) aims to fill significant gaps in the understanding of exercise response variability, yet further investigations are needed to address additional health outcomes across all populations.

**Duan YM, Li SC, Su QS, et al. Influence of Exercise Prescription Intervention Based on WeChat on Glycolipid Metabolism and Fitness of Suboptimal-health Teachers[J]. MEDICINE, 2024, vol.103, issue 21.**

**ABSTRACT**

Exercise is an effective means to promote health, but adherence is low. Due to the advantages of immediacy, economy and effectiveness, the use of WeChat social software has permeated into every aspect in daily life in China. To explore the influence of WeChat-based exercise prescription intervention mode on glycolipid metabolism and fitness of suboptimal-health teachers. 293 suboptimal-health teachers with senior professional titles were randomized to a control group (CG) or an experimental group (e.g.). The CG exercised on its own, while the e.g. adopted the exercise prescription intervention based on WeChat. The intervention period was 6 months. Finally, 264 cases were adhered to and completed, including 132 cases in the CG and 132 cases in the e.g.. The Suboptimal-Health Status Questionnaires-25 scores (SHSQ-25 scores), exercise adherence, subjective feelings, physical fitness, blood glucose and blood lipids were detected before and after intervention and compared between 2 groups. After the intervention, the SHSQ-25 scores in the e.g.

was significantly decreased than those in the CG ( $P < .01$ ). The complete exercise adherence in the e.g. was significantly higher than those in the CG ( $P < .01$ ). After intervention, the subjective feelings of e.g. were significantly improved compared to CG ( $P < .05$ ). The body shape, body function and physical quality in the e.g. was higher than those in the CG ( $P < .05$ ). Total cholesterol (TC), triglyceride (TG), low-density lipoprotein cholesterol (LDL-C) decreased significantly in the e.g. but not in the CG ( $P < .05$ ). Fasting blood glucose (FBG) decreased significantly in the e.g. but not in the CG, with a significant difference between groups ( $P < .05$ ). The subjects in the e.g. were very satisfied with WeChat management. WeChat-based exercise prescription intervention could improve SHS, exercise adherence, subjective feelings, physical fitness and glycolipid metabolism.

**Liu JW, Liu WC, Wan Y, et al. Crosstalk between Exercise and Immunotherapy: Current Understanding and Future Directions[J]. RESEARCH, 2024, vol.7.**

**ABSTRACT**

Accumulated evidence highlights that exercise can modulate multiple cytokines, influencing transcriptional pathways, and reprogramming certain metabolic processes, ultimately promoting antitumor immunity and enhancing the efficacy of immune checkpoint inhibitors in cancer patients. Exploring the mechanisms behind this will, for one thing, help us uncover key factors and pathways in exercise-assisted cancer immunotherapy, offering more possibilities for future treatment methods. For another, it will support the development of more personalized and effective exercise prescriptions, thereby improving the prognosis of cancer patients.

**Liang C, Song ZP, Yao XZ, et al. Exercise Interventions for the Effect of Endothelial Function in Hypertensive Patients: A Systematic Review and Meta-analysis[J]. JOURNAL OF CLINICAL HYPERTENSION, 2024, vol. 26, issue 6, pp.599-614.**

**ABSTRACT**

Endothelial dysfunction is crucial factor to the hypertension occurrence, and controversy remains regarding the effect of exercise on improving endothelial function in hypertensive patients. The authors used meta-analysis to evaluate the intervention effect of exercise on endothelial function in hypertensive patients and to investigate exercise protocols that may have a greater intervention effect. A total of 37 studies and a total of 2801 participants were included. The results were as follows: endogenous nitric oxide (NO)[SMD = .89, 95% CI (.48, 1.30),  $p < .0001$ ], endothelin-1 (ET-1): [SMD = -.94, 95% CI (-1.15, -.73),  $p < .0001$ ], flow-mediated dilation (FMD) [SMD = -.57, 95% CI (.36, .79),  $p < .000001$ ]. In subgroup analysis, high-intensity aerobic exercise, with a single exercise duration of 35-50 min, 3-4 times/week for a total of 10-12 weeks, had the largest amount of intervention effect on NO, and moderate-intensity resistance exercise, with a single exercise duration of  $\geq 60$  min, 6 times/week for a total of 15-18 weeks, had the largest amount of intervention effect on ET-1. In conclusion, exercise can improve NO levels, FDM levels, and reduce ET-1 secretion of hypertension patients, thereby improve their endothelial function. The ideal intervention effect of improving NO level was more likely to be obtained by taking the exercise prescription of high-intensity aerobic exercise with a single exercise duration of 35-50 min, 3-4 times/week for 10-12 weeks; the ideal intervention effect of improving ET-1 was more likely to be obtained by taking the exercise prescription of oderate -intensity resistance exercise with a single exercise duration of  $\geq 60$  min, 6 times/week for 15-18 weeks.



**Byun J, Choi KH, Kim S, et al. Exploring the Social Mediatization of Action Sports Communities in South Korea[J]. SPORT IN SOCIETY,2024.**

**ABSTRACT**

There has been a growing emphasis on examining action sports in diverse local contexts because of their Olympic inclusion. This study explores the social mediatization of the action sports communities in South Korea, with a specific focus on surfing and skateboarding. Data for this qualitative research included archival materials, media data, and semi-structured interviews with key individuals (n = 18) in the action sports communities. The findings highlight the social media logics of programmability, popularity, and connectivity that influence the social media use of actors in the Korean action sports communities. Additionally, key contextual factors associated with the social mediatization are identified. This research demonstrates the generality and uniqueness of the action sports' social mediatization, which has theoretical and practical implications.

**Hayat T, Samuel-Azran T, Laor T, et al. Unveiling the Intersection of Individual Stardom and Team Loyalty in Social Network Reflections: The Case of Soccer-Stars Ronaldo and Messi[J]. AMERICAN BEHAVIORAL SCIENTIST,2024.**

**ABSTRACT**

This study investigates sport fandom's major dimensions: star attraction and team identification, analyzing transfers of soccer players Ronaldo and Messi. Data from teams' official social media (Instagram, Facebook, and Twitter/X) using scripts inform our analysis. Results reveal star attraction's significant prominence over team identification. Instagram, linked to celebrity culture and star fandom, displays the highest online growth, emphasizing star attraction's centrality in sport fandom on social media. Implications for fans, teams, and marketers are discussed, emphasizing the need for nuanced understanding to enhance engagement and marketing. Overall, valuable insights into sport fandom's complex dynamics in the social media age emerge.

**Fontanilla MM. A Contested Victory: Liberal Reformism and Women's Physical Culture in Colombia, 1930-1946[J]. INTERNATIONAL JOURNAL OF THE HISTORY OF SPORT,2024, vol.41, issue 4, pp.300-316.**

**ABSTRACT**

The relationship between women's sports, female physical education, and liberal reformism is pivotal to understanding gender relations in Colombia from 1930 to 1946. The Liberal Republic was a political period when public officials placed cultural reforms at the centre of governmental attempts to 'transform' and 'modernise' Colombia. Print media, official correspondence, and legislation are crucial to grasping women's reactions to the advancement of female physical culture and how they publicly advocated for its implementation. The endeavours of the Liberal Republic to promote physical culture at the national level highlight the way in which their reformism worked in everyday life and uncover how female educators and sports enthusiasts discussed and embraced the government's initiatives from below.

**Billings AC. From Gamification to Personalization: Sports Media, Web 3.0 and the Desire for the Ultimate Fan Experience[J]. INTERNATIONAL JOURNAL OF SPORTS MARKETING & SPONSORSHIP, 2024.**

**ABSTRACT**

**Purpose**The purpose of this essay is to explore the ramifications of Web 3.0 on sports media and the desire for the ultimate fan experience.  
**Design/methodology/approach**The essay explains how Web 3.0 will influence (1) the social TV experience, (2) the drive for zero latency in sports streaming, (3) the desire for exclusive sports memorabilia and experiences, (4) artificial intelligence-driven content and (5) the potential decentralization of certain elements within the sports media ecosphere.  
**Findings**The core fan experience will still be recognizable, but AI, VR, blockchain and other elements will be infused within it.  
**Originality/value**Ramifications on sports media scholarships are offered.

**Travan V, Litchfield C, Osborne J, et al. Cheating' Your Way to the Top: a Focus on Language in the Australian Media's Representation of Performance Enhancing Drugs[J]. SPORT IN SOCIETY,2024.**

**ABSTRACT**

Sports media holds significant power in informing societal views on performance enhancing drugs (PEDs) which are routinely depicted through the ideals of morality and expected sporting behaviours. This has provided an emergent focus for research studies. This study aims to identify how the Australian media frames PEDs across a diverse range of media sources through the selection of five print and online media publications. Using media framing, agenda setting and content analysis, the study analyses the language and framing each publication used to report on individuals and countries associated with, linked to, or found to be using, PEDs. Observed writing styles positioned PEDs as moral transgressions which tarnish the 'spirit of sport'. Such writing revealed the media's self-imposed responsibility to define acceptable sporting acts for the community. This manuscript critiques the negative impact of the media's imbalanced debate and calls for a more balanced approach to reporting.

**Oh T, Kang JH, Lee Y, et al. Comparison of Audience Behavior between eSports and Authentic Sports Fans[J]. BEHAVIORAL SCIENCES, 2024, vol.14, issue 4.**

**ABSTRACT**

This study analyzed how the behavioral patterns of esports and authentic sports viewers differ, adopting user and gratification theory and media transportation theory. In particular, it was investigated whether there was a difference in behavioral patterns according to the experience of playing the sport even among authentic sports viewers. As a result of analyzing the relationship between viewers' motivation and media transportation outcomes through structural equation modeling and multigroup structural equation modeling, it was observed that cognitive motivation was more important for esports viewers than for authentic sports viewers. A second analysis of comparisons among fans of authentic sports showed that viewers with

sports experience had greater cognitive needs. This result shows that there is a difference between the viewer behaviors of esports and traditional sports, but it is concluded that the presence or absence of sports participation experience rather than content is the factor that separates the difference.

**Rai JS, Cho HT, Itani M, et al. The Impact of Social Media-related Motivation on Fantasy Sport Users' Playing Skills, Sense of Competition and Performance Expectancy[J]. ASIA PACIFIC JOURNAL OF MARKETING AND LOGISTICS,2024.**

#### **ABSTRACT**

**Purpose**This study investigated how sources of information across social media platforms influence fantasy users' sport consumption and enhance their performance expectancy. Specifically, we examined the effects of social media-related motivation on fantasy users' playing skills, sense of competition and performance expectancy based on the uses and gratifications theory.**Design/methodology/approach**Data were collected from 453 fantasy sport users on social media platforms. We conducted confirmatory factor analysis to assess a measurement model and used serial mediation techniques to examine the relationship between social media-related motivation and fantasy sport users' performance expectancy.**Findings**Results showed that social media-related motivation had significant and positive impacts on fantasy users' playing skills, sense of competition and performance expectancy. Additionally, we found that fantasy users' playing skills increased their sense of competition and performance expectancy. A sense of competition was found to positively affect fantasy users' performance expectancy.**Originality/value**This study provided a valuable contribution to the existing body of knowledge on social media by investigating the influence of social media-related motivation on fantasy sport users. The findings reveal that sharing content-based information on social media platforms plays a vital role in attracting and motivating individuals to engage in fantasy sports. The updated information enhances the playing skills of fantasy users, fosters a sense of competition and improves performance in virtual sport.



**Treloar J, Litchfield C, Osborne J.'Born and Bred Holden': Investigating the Impact of Holden on Australian Sporting Culture[J]. SPORT IN SOCIETY,2024.**

**ABSTRACT**

The Holden brand has been a part of Australian society ever since it produced its first car in 1948. However, Holden's impact on Australian society and Australian sport has yet to be fully investigated. As such, this study analyses the impact of Holden on Australian culture, sport and on society. Through the use of an online survey of 106 participants, this study was able to identify the impact that Holden had on the lives of Australian communities and individuals, how these Australians interacted with the Holden brand and to what extent Holden automotive culture and Australian motorsport culture, impacted their lives. Using thematic analysis, three themes uncovered in this research are further explored, namely patriarchal influences on fandom, Holden as a foundation for communities and families in Australia and Holden as a sporting powerhouse, through their motorsport activities, sport sponsorship and sports fandom associated with the brand.

**Hahm J, Yamashita R. Japanese National Basketball Association Fans and Social Media Acceptance: Exploring the Role of Brand Respect[J]. COMMUNICATION & SPORT, 2024.**

**ABSTRACT**

This study explores the factors influencing satellite sport fans' social media engagement, focusing on Japanese National Basketball Association (NBA) fans. Using the technology acceptance model and Brand Respect Scale, we analyzed the effects of perceived usefulness, perceived enjoyment, and perceived trustworthiness on social media stickiness and investigated the mediating roles of brand trust, brand performance, brand acceptance, and brand reputation. A partial least squares structural equation modeling analysis of data from 813 Japanese NBA fans revealed that perceived usefulness and enjoyment significantly affected social media stickiness, while perceived trustworthiness indirectly influenced this stickiness through brand trust and acceptance. The study advances the theoretical

understanding of social media behavior among satellite sport fans and provides practical implications for optimizing social media strategies to enhance fan engagement. Our findings offer valuable insights for sport teams and organizations seeking to strengthen their connection with geographically distant fans. In addition, this research paves the way for future studies to encompass diverse age groups, sports, and regions to offer a more comprehensive understanding of the factors influencing satellite sport fans' social media engagement.

**Holbert RL, Holbert LG. Social Media News as a Predictor of Sports Gambling Salience, Attitudes, and Behaviors in the United States[J]. COMMUNICATION & SPORT,2024.**

**ABSTRACT**

Gambling has become a more prominent aspect of American sports culture after the 2018 United States Supreme Court decision offered in *Murphy v National Collegiate Athletic Association* that rendered the Professional and Amateur Sports Protection Act (PASPA) unconstitutional. A secondary analysis of 2022 PEW American Trends Panel (ATP) data (N = 3900) explores social media news exposure and satisfaction as predictors of the salience of, attitudes toward, and behavioral engagement with sports gambling. Social media news exposure and satisfaction do not predict individual-level salience of the expanded legalization of sports betting. However, social media news exposure and an individual's satisfaction with news content on X, Facebook, and YouTube positively predict feelings that sports betting is good for society and sports culture. Social media news exposure positively predicts sports gambling behaviors. A broader media effects research agenda pertaining to sports gambling is outlined based on these findings.

**Wanless L, Kennedy H, Davies, M, et al. Look What We Have Here: Exploring Brand-Related Sport Consumer Twitter Conversation Topics[J]. SPORT MARKETING QUARTERLY,2024, vol.33, issue 2.**

**ABSTRACT**

As sport organizations leverage social media as a critical component of marketing

strategy, tools for exploring the large volume of sport consumer social media conversations are vital. This scholarship demonstrates the value of unsupervised latent Dirichlet allocation (LDA) as a tool for exploring consumers' digital conversations. Specifically, unsupervised LDA was applied to derive latent topics among Women's National Basketball Association -related Twitter conversation over the course of the 2020 season. Quantitative (cv and umass scores) and qualitative (two expert reviews) approaches were utilized to delineate topic configurations. Marginal topic distance established topic importance. Results from 118,518 tweets revealed 18 conversation topics spanning two overarching themes: social justice issues and on -court performance. The range and depth of the results highlight the importance of the unsupervised topic modeling method (without semi -supervised predetermined topic leads) for considering holistic rather than subsampled or snapshot datasets. This empirical investigation extends the conversation surrounding natural language processing to sport management research and practice, delivers a foundation for unsupervised LDA application to sport consumer conversation, and explores social media conversations during a critical moment for the WNBA.

**Duncan S, Kunert J, Karg A. Attitudes to Automated and Human Written Sport Journalism[J]. JOURNALISM,2024.**

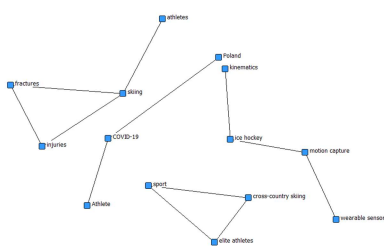
**ABSTRACT**

Automation processes are increasingly being applied to the area of sports journalism. This study examines differences in the perceptions regarding human written and automated match texts using an experimental design with n = 251 Australian sports fans. Results showed that human-written articles rated higher on measures related to enjoyment and liking. Differences in arousal and quality were not significant across the match report content. Importantly for media organizations, perceived differences were prominent for all individuals, not just those who read match reports more frequently. Results suggest that perceptions of 'enjoyment' and 'liking' differ significantly between human written and automated texts; human-written reports were rated as more 'enjoyable' and 'liked' than automatically generated reports.

## 冰雪运动

本期冰雪运动学术研究共检索到英文相关文献 140 篇，研究热点主要集中在精英运动员、冰雪运动装备研究、冰雪运动损伤及康复等方面。就检索导出的数据采用书目共现分析系统（Bicomb V2021）对文献信息进行提取，包括期刊、关键词、标题、发文年份等，相同含义的字段去重且批量合并，同时去除没有实质意义的字段，对所提取的字段进行频次统计，形成高频矩阵，并使用社会网络分析软件 Ucinet 绘制成知识图谱，进行共词聚类分析。检索结果如下：

1) 关键词共词分析。提取关键词 619 个，经过数据清洗后关键词有 569 个，词频为 3 及以上的关键词有 4 个，累计百分比为 1.94%，高频关键词有动作捕捉、越野滑雪、波兰、运动损伤等，生成可视化知识图谱（见下图）。2) 来源期刊分析。涉及期刊 120 种，其中载文 2 篇及以上的期刊有 16 种，累计百分比为 25.7%，刊载冰雪运动前三位的期刊分别为：BMC SPORTS SCIENCE MEDICINE AND REHABILITATION (JCR 学科分区 Q1、Q2)、APPLIED SCIENCE-BASEL (JCR 学科分区 Q1、Q2、Q3)、SCIENTIFIC REPORTS (JCR 学科分区 Q1)。3) 交叉学科分析。引用文献总计 6527 篇，最多的频次为 3 次，频次排名前三的文献分别为 *The reliability of wearable commercial sensors for outdoor assessment of running biomechanics: the effect of surface and running speed*、*Defining Training and Performance Caliber: A Participant Classification Framework*、*Reflecting on reflexive thematic analysis*。4) 学术关注度分析。文献级别用量最多的是 14 次，排名前三位的文献分别 *The Moderating Effect of Ski Influencer on Ski Tourism Intention*、*Investigation of the effects of an 8-week cross-country skiing exercise program on various reaction time parameters, selective attention and academic achievement in adolescents*、*Automatic detection of skate strokes in short-track speed skating using one single IMU: validation of a new method*。



**Zhao C , Shen HW. The Moderating Effect of Ski Influencer on Ski Tourism Intention [J]. SAGE OPEN, Apr 2024.**

**ABSTRACT**

The 2022 Beijing Winter Olympic Games has made more people focus on skiing. How to promote the development of ski tourism is the focus of this study. This study explores the relationship between skiers' motivation and tourism intention. Based on social learning theory, the moderating effect of attractive influencers on satisfaction and travel intentions was explored. The results show that perceived ski motivation and affective engagement positively impact perceived value. The perceived value affects tourism intention through satisfaction, and perceived value directly impacts satisfaction and tourism intention. The willingness of skiers to travel will change with the attraction of ski influencers. Furthermore, the study results provide recommendations for enhancing ski destinations and offer suggestions for improving marketing strategies.

**Clément J, Croteau F, Gagnon M, et al. Automatic detection of skate strokes in short-track speed skating using one single IMU: validation of a new method [J]. ORTHOPAEDIC JOURNAL OF SPORTS MEDICINE, Apr 2024.**

**ABSTRACT**

Greater impulse is a key performance indicator of success in short track speed skating. The main objective of this study was to develop a method to measure skating strokes using a single IMU. Eight elite or world-class speed skaters had one IMU placed against their skin on the lower back, and a camera setup was positioned to capture the test. A maximal speed trial was then executed by each participant, and the data were analysed to estimate agreement between the camera and IMU estimates of skate stroke events. Inter-evaluator reliability was assessed on a dataset of 22 athletes performing speed trials as well. The algorithm detected 100% of the strokes identified on the video capture system with a root mean square error of 0.06s. Bland-Altman analysis showed a bias of 0.03s between the two methods, which corresponds to the frame rate of the camera. The inter-evaluator reliability yielded an intra-class correlation of 1.00 (ICC3,1) from a dataset of 7089 strokes. This study

provides an example of on-ice evaluation of speed skating strokes using a single IMU. This equipment is less expensive than that employed by previous authors and can be implemented in training situations with low invasiveness.

**Raco M, Di Vita S. Replacing place with space: the influences and the challenges of the new norm on the Milan-Cortina Winter Games 2026[J]. PLANNING PERSPECTIVES, May 3 2024.**

**ABSTRACT**

As part of its ongoing review of the processes surrounding the hosting of the Olympic Games (OGs), the International Olympic Committee (IOC) has set out the Olympic Agenda 2020 and the related New Norm (NN). These reforms, respectively approved in 2014 and 2018 to deal with the growing withdrawal of the bids, are in line with recent management studies highlighting the importance of standardization and replicability in the delivery of physical and social infrastructure. Indeed, they aim to convert development projects, historically-embedded in places, into programmable and transferable spaces of action, in which rules of project management and organization can be applied. The example of the Milano-Cortina Winter Games (MCWG) 2026 is used to assess the first effects and impacts of such IOC's new approach. At the backdrop of the historical evolution of mega-event planning in post-war Italy, the rolling-out of the MCWG is examined at the multiple scales of the Olympic macro-region and of the Milan Olympic Village. The analysis shows that, despite the objectives of the NN to overcome existing tensions and conflicts in the involved places, the Games has only succeeded in amplifying them. Such contradiction demands for a further reflection on this model, that remains under-discussed and under-researched.

**Yang YQ, Macintosh E, Xing XY. Examining the relationship among constraints, facilitators and ski participation in the host city of the 2022 Winter Olympics [J]. INTERNATIONAL JOURNAL OF SPORTS MARKETING & SPONSORSHIP, Aug 21 2024.**

**ABSTRACT**

**Purpose**The study's purpose is to investigate the constraints and facilitators influencing skiing participation in Beijing. This research includes three segments based on the frequency of skiing participation (i.e. non-, low-frequency-, and high-frequency skiers). By doing so, the study offers an enhanced understanding of the Chinese skiing market and unveils insights assisting industry professionals to effectively address their customers' diverse needs and expectations.  
**Design/methodology/approach**An online survey was developed based on prior research and consisted of four sections: (1) skiing participation; (2) constraints; (3) facilitators; (4) demographics. Items in the constraint and facilitator scale were measured using a 7-point Likert scale. A total of 409 participants completed the survey. The participants included 137 non-skiers, 134 low-frequency skiers, and 138 high-frequency skiers.  
**Findings**Through an exploratory factor analysis, three constructs emerged: general constraints, facilitators and learning constraints. As expected, facilitators were a positive predictor of skiing participation. Importantly, the emergent construct of learning constraints was a negative predictor of skiing and yet, the construct of general constraints was insignificant. Furthermore, the three segments differ significantly in household status, income, and education level.  
**Originality/value**These results support previous research noting the relevance in skiing participation of the dimensions: facilitators and learning constraints. The findings point to the need for ski resorts in Beijing to offer instructional sessions for beginners so they may become familiar with skiing fundamentals and enhance their confidence, particularly among nonskiers and low-frequency skiers.

**Dietze-Hermosa MS, Montalvo S, Gonzalez MP, et al. The Impact of an 8-Week Resisted Sprint Training Program on Ice Skating Performance in Male Youth Ice Hockey Players [J]. JOURNAL OF STRENGTH AND CONDITIONING RESEARCH, May 2024.**

**ABSTRACT**

Dietze-Hermosa, MS, Montalvo, S, Gonzalez, MP, and Dorgo, S. The impact of an 8-week, resisted, sprint training program on ice skating performance in male youth ice hockey players. *J Strength Cond Res* 38(5): 957-965, 2024-The purposes of this randomized control study were to (a) compare the effects of an on-ice versus an overground resisted sprint training intervention and a control condition and (b) identify changes in ice skating kinematics and kinetics after training intervention participation. Twenty-four youth ice hockey players were randomly allocated into 3 groups: (a) on-ice resisted sprint training (on-ice RST); (b) overground resisted sprint training (overground RST); and (c) body weight resistance training (control). During the 8-week intervention, the 2 RST groups engaged in sled towing methods, whereas the control group engaged in a body weight resistance training program twice a week. A series of individual, repeated-measures analysis of variances with post hoc pairwise comparisons were conducted for variables of interest. An interaction effect was noted for ice skating s-cornering agility drill completion time ( $p = 0.01$ ;  $\eta^2 = 0.36$ ), ice skating 30-m top speed completion time ( $p = 0.04$ ;  $\eta^2 = 0.27$ ), step length ( $p = 0.04$ ;  $\eta^2 = 0.26$ ), and knee angle at touchdown ( $p = 0.03$ ;  $\eta^2 = 0.30$ ). The on-ice RST group displayed superior improvements across ice skating tests compared with the control group. Data show that on-ice RST has the greatest transfer effect to ice skating metrics; however, improvements in certain ice skating metrics can be observed with overground training also.



**Keiner M , Kierot M , StendahlM, et al. Maximum Strength and Power as Determinants of Match Skating Performance in Elite Youth Ice Hockey Players [J]. JOURNAL OF STRENGTH AND CONDITIONING RESEARCH, Jun 2024.**

**ABSTRACT**

Keiner, M, Kierot, M, Stendahl, M, Brauner, T, and Suchomel, TJ. Maximum strength and power as determinants of match skating performance in elite youth ice hockey players. *J Strength Cond Res* 38(6): 1090-1094, 2024-Maximum strength has a strong influence on speed-strength performances such as sprints and jumps. Important for sports practice is whether these findings are also reflected in game performance. Therefore, the aim of this study was to explore the influence of maximum strength and power performance on linear on-ice skating performance in testing and during game play. A cross-sectional study was conducted, and 24 highly trained male youth ice hockey players participated. Jump performances (countermovement jump [CMJ], drop jumps), maximum strength (1 repetition maximum [1RM] squat and isometric trap bar pull [ITBP]), and on-ice linear sprints (15 m [LS15], 30 m [LS30], flying 15 m [FLY15]) were measured. Match performances (among others: peak skating speed) were collected of 4 regular league games using a local positioning system. Correlation coefficient and explained variance were calculated ( $\rho \leq 0.05$ ). Correlations between maximum strength and jump with on-ice linear sprint performance showed 1-35% explained variance. Correlations between "off ice" test (CMJ, relative 1RM) and game data (peak skating speed) showed 22-30% explained variance, respectively, while ITBP and DJ missed significant level. Between linear sprint and game performance showed 15-59% explained variance. In this study, a clear influence of 1RM in squatting and CMJ performance on on-ice linear sprint as well as in-game peak skating speed was observed. These findings show that strength and jumping performance can be valuable tests within a comprehensive test battery and indicate the relevance of strength and jumping tasks within the regular exercise program to improve in-game skating performance.

**Çagin M, Polat SÇ, Sarol H, et al. Investigation of the effects of an 8-week cross-country skiing exercise program on various reaction time parameters, selective attention and academic achievement in adolescents [J]. BMC SPORTS SCIENCE MEDICINE AND REHABILITATION, May 24 2024.**

#### **ABSTRACT**

Exercise slows or helps reverse the shrinkage of key cognitive brain regions such as the hippocampus, which is important for information processing, learning, reasoning and planning. For this reason, it is thought that regular exercise of individuals, especially during adolescence, which is considered one of the most important processes of development, can increase their performance in areas where cognitive activities are at the forefront. Cross-country skiing, one of the leading branches of winter sports, has a much more complex structure, unlike the branches that are widely preferred today (football, basketball, volleyball, etc.) and is a branch where many motor skills are exhibited at the same time. For this reason, the effect of cross-country skiing, which is defined as more complex and difficult in terms of biomotor than other branches, on cognitive activities is a matter of curiosity. Therefore, the aim of the research is; to examine the cognitive effects of cross-country skiing exercise. The study involved 54 (26 male, 28 female) adolescents who had no prior experience in any licensed sports. The average age of the participants was determined as 12.61 +/- 1.32. The participants were divided in experimental and control groups. Reaction performances were determined using the CAGIN Hand and Foot Reaction Tests, selective attention performances were evaluated using the Flanker Test and academic achievement was determined using the e-Okul system. Two-way ANOVA revealed significant group x time interactions for hand and foot simple, selective, discriminative reaction time, selective attention and academic achievement ( $p < 0.05$ ) due to improved values at post-test for the experimental group but not for the control groups. No significant group x time interactions were observed for correct reaction rate for all reaction parameters ( $p > 0.05$ ). The study concludes that the cross-country skiing exercise, which was applied to adolescents for eight weeks, had a positive impact on the parameters of reaction, selective attention and academic achievement. Therefore, parents are suggested to

encourage their children to exercise and engage in sports practices like cross-country skiing to improve cognitive and academic performance during adolescence.

**Zukowski M, Herzog W, Jordan MJ. Velocity-Load Jump Testing Predicts Acceleration Performance in Elite Speed Skaters: But Does Movement Specificity Matter? [J]. INTERNATIONAL JOURNAL OF SPORTS PHYSIOLOGY AND PERFORMANCE, May 2024.**

#### **ABSTRACT**

**Purpose:** In this study, we compared the influence of movement specificity during velocity-load jump testing to predict on-ice acceleration performance in elite speed skaters. **Methods:** Elite long-track speed skaters (N = 27) performed velocity-load testing with 3 external loads during unilateral horizontal jumping, lateral jumping, and bilateral vertical countermovement jumping. For the unilateral tests, external load conditions were set to 10 N, 7.5% and 15% of external load relative to body weight. For the countermovement jumping, load conditions were body weight and 30% and 60% of external load relative to body weight. On-ice performance measures were obtained during maximal 50-m accelerations from a standing start, including maximal skating speed, maximal acceleration capacity, and maximum horizontal power. The 100-m split time from a 500-m race was also obtained. Regularized regression models were used to identify the most important predictors of on-ice acceleration performance. In addition to regularized regression coefficients, Pearson correlation coefficients ( $r$ ) were calculated for all variables retained by the model to assess interrelationships between single predictors and on-ice performance measures. **Results:** The countermovement jump with 30% of body mass demonstrated the strongest association with maximal skating speed, maximum horizontal power, and 100-m time (regularized regression coefficient = .16-.49,  $r = .84-.97$ ,  $P < .001$ ). Horizontal jump with 15% of body mass was the strongest predictor of maximal acceleration capacity performance (regularized regression coefficient = .08,  $r = .83$ ,  $P < .001$ ). **Conclusions:** The findings of this study suggest that mechanical specificity rather than movement specificity was more relevant for predicting on-ice acceleration performance.

**Koller C. The Beginnings of the International Ice Hockey Federation [J]. STRENGTH AND CONDITIONING JOURNAL, May 2024.**

**ABSTRACT**

The foundation of the International Ice Hockey Federation in 1908 was rather complex, as the very essence of the game had to be defined. On the one hand, it had to be decided (not least organisationally) whether ice hockey was to be a discipline of its own or just a sub-discipline of ice sports together with speedskating and figure skating. On the other hand, and more importantly, several different sets of rules were in place and there even existed two distinct ice hockey games: English bandy and Canadian ice hockey. This article reviews international ice hockey relations prior to the foundation of the federation, the foundation process and early development of the federation, the social position and sports careers of the founders and early officials as well as international ice hockey tournaments prior to World War I.

**Decarli G, Vitali F, Zasso S, et al. The power of coaches' emotions: A case study on how coaches' facial expressions impact performance of young female synchronized ice-skaters[J]. PSYCHOLOGY OF SPORT AND EXERCISE, Jul 2024.**

**ABSTRACT**

Objectives: The present study aimed to investigate the impact of coaches' pleasant and unpleasant facial expressions on affects and team performance of young elite female synchronized ice-skaters. Methods: Initially, the coach provided a neutral explanation of the exercise, which was followed by the athletes' execution. The ice-skaters then received either pleasant or unpleasant feedback from the coach, completed two questionnaires, and performed the exercise again. The study involved two familiar and two unfamiliar coaches. Results: Coaches' pleasant expressions increased athletes' arousal/hedonic tone and positive affect, while coaches' unpleasant expressions heightened athletes' negative affect. Moreover, participants significantly performed better after receiving an unpleasant facial expression by the coach. Receiving pleasant/unpleasant feedback from a familiar or unfamiliar coach did not have a significant impact on team pre- and post-feedback performance.

Conclusions: The findings suggest that coaches' facial expressions impacted athletes' positive/negative affect, and that, under specific circumstances, receiving unpleasant feedback from the coach can improve team performance.

**Fan ZJ , Min LB, He WB,et al. Efficacy of multicomponent interventions on injury risk among ice and snow sports participants-a systematic review and meta-analysis [J]. BMC SPORTS SCIENCE MEDICINE AND REHABILITATION, Jun 18 2024.**

#### **ABSTRACT**

**Background** Ice and snow sports, which are inherently high risk due to their physically demanding nature, pose significant challenges in terms of participant safety. These activities increase the likelihood of injuries, largely due to reduced bodily agility and responsiveness in cold, often unpredictable winter environments. The critical need for effective injury prevention in these sports is emphasized by the considerable impact injuries have on the health of participants, alongside the economic and social costs associated with medical and rehabilitative care. In the context of ice and snow sports environments, applying the E principles of injury prevention to evaluate intervention measures can guide the implementation of future sports safety and other health promotion intervention measures in this field. When well executed, this approach can substantially reduce both the frequency and severity of injuries, thereby significantly enhancing the safety and long-term viability of these challenging sports.**Objective** The objective of this study was to rigorously assess and statistically substantiate the efficacy of diverse injury prevention strategies in ice and snow sports, aiming to bolster future safety measures with solid empirical evidence.**Design** Systematic review and meta-analysis.**Methods** The overarching aim of this research was to meticulously aggregate and scrutinize a broad spectrum of scholarly literature, focusing on the quantifiable efficacy of diverse, multicomponent intervention strategies in mitigating the incidence of injuries within the realm of ice and snow sports. This endeavour entailed an exhaustive extraction of data from esteemed academic databases, encompassing publications up to September 30, 2023. In pursuit of methodological excellence and

analytical rigor, the study employed advanced bias assessment methodologies, notably the AMSTAR 2 and GRADE approaches, alongside sophisticated random-effects statistical modelling. This comprehensive approach was designed to ensure the utmost validity, reliability, and scholarly integrity of the study's findings. Results Fifteen papers, including 9 randomized controlled trials, 3 case-control studies, and 3 cohort studies with 26,123 participants and 4,382 injuries, were analysed. The findings showed a significant reduction in injury rates through various interventions: overall injury prevention (RR = 0.50, 95% CI 0.42-0.63), educational training (RR = 0.50, 95% CI 0.34-0.73), educational videos (RR = 0.53, 95% CI 0.34-0.81), protective equipment (RR = 0.64, 95% CI 0.46-0.87), and policy changes (RR = 0.28, 95% CI 0.16-0.49). Subgroup analysis revealed potential heterogeneity in compliance ( $p = 0.347$ ). Compared to controls, multicomponent interventions effectively reduced injury rates. Conclusion This systematic review and meta-analysis demonstrated that multicomponent interventions significantly prevent injuries in ice and snow sports. By applying the E principles of injury prevention and constructing a framework for practical injury prevention research in ice and snow sports, we can gradually shift towards a systemic paradigm for a better understanding of the development and prevention of sports injuries. Moreover, sports injury prevention is a complex and dynamic process. Therefore, high-quality experiments in different scenarios are needed in future research to provide more reliable evidence, offer valuable and relevant prevention information for practitioners and participants, and help formulate more effective preventive measures in practice.