24" for HEALTH

La Revista Digital de la Asociación Española de Médicos de Baloncesto

2019 NÚM3

Carta del Presidente

Estimados compañeros y compañeras,

Quiero presentaros el nuevo número de 24” for Health.

Creo que encontrareis tremendamente interesante este nuevo número ya que contiene una gran variedad de temas relacionados con la práctica médica y el baloncesto (traumatología, fisiología, Entrenamiento, Dopaje y hasta obstetricia) y que os sean de utilidad para ampliar nuestros conocimientos.

Me gustaría animaros a colaborar con artículos, casos clínicos, etc. a todos aquellos que estéis interesados en compartir vuestras experiencias con todos nosotros.

Por último quiero agradecer a todos los compañeros y compañeras que hacen posible esta publicación su dedicación.

Un saludo.

Juan José Pérez Toledano
Presidente de la AEMB.

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Índice de artículos

Ankle Sprain Versus Muscle Strain Injury in Professional Men's Basketball: A 9-Year Prospective Follow-up Study.

01

Orthop J Sports Med. 2019 Jun 21;7(6)

Rodas G1,2, Bove T1,3, Caparrós T4,5, Langohr K6, Medina D1, Hamilton B7,8, Sugimoto D9,10,11, Casals M1,5,12.

Background:

Ankle sprain is the most common injury in basketball players. However, in our routine clinical evaluation, we observe a high frequency of muscle injury. Currently, no reliable information is available regarding the magnitude of these types of injury.

Purpose:

To describe the type and rate of muscle injuries in male basketball players and discuss clinical management and prevention strategies.

Study Design:

Descriptive epidemiology study.

Methods:

A total of 59 professional male basketball players were evaluated over 9 seasons (2007-2015). All injuries during the study period were registered through use of a validated electronic medical record system.

Results:

We analyzed 463 injuries, of which 207 resulted in time loss and 256 required medical attention, for a total exposure time of 42,678 hours for the 59 players involved in the study. Muscle strains and ankle sprains accounted for 21.2% (n = 98) and 11.9% (n = 55) of all injuries, respectively. The global incidence rate was 10.8 injuries per 1000 player-hours (95% CI, 9.9-11.9). The global injury burden was 53.9 days lost due to injuries per 1000 hours for a total exposure time. The incidence rate of muscle strains (2.3; 95% CI, 1.9-2.8) was higher than that of ankle sprains (1.3; 95% CI, 1-1.7). The incidence rate for muscle injuries for the entire study period was 1.8 times higher (95% CI, 1.28-2.49) than that for ankle sprains.

Conclusion:

In this study, muscle injuries were more commonly observed compared with ankle sprains. Prevention strategies for muscle injuries may be worth discussing.

Keywords:

ankle sprain; basketball; injury epidemiology; injury prevention; muscle sprain

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6589969/

Clinical risk factors for Achilles tendinopathy: a systematic review

02

Br J Sports Med 2019;0:1–11

Arco C van der Vlist, 1 Stephan J Breda,2 Edwin H G Oei,2 Jan A N Verhaar,1 Robert-Jan de Vos1

Achilles tendinopathy is a common problem, but its exact aetiology remains unclear. Objective To evaluate the association between potential clinical risk factors and Achilles tendinopathy. Design Systematic review. Data sources The databases Embase, MEDLINE Ovid, Web of Science, Cochrane Library and Google Scholar were searched up to February 2018. Eligibility criteria To answer our research question, cohort studies investigating risk factors for Achilles tendinopathy in humans were included. We restricted our search to potential clinical risk factors (imaging studies were excluded). Results We included 10 cohort studies, all with a high risk of bias, from 5111 publications identified. There is limited evidence for nine risk factors: (1) prior lower limb tendinopathy or fracture, (2) use of ofloxacin (quinolone) antibiotics, (3) an increased time between heart transplantation and initiation of quinolone treatment for infectious disease, (4) moderate alcohol use, (5) training during cold weather, (6) decreased isokinetic plantar flexor strength, (7) abnormal gait pattern with decreased forward progression of propulsion, (8) more lateral foot roll-over at the forefoot flat phase and (9) creatinine clearance of <60 mL/min in heart transplant patients. Twenty-six other putative risk factors were not associated with Achilles tendinopathy, including being overweight, static foot posture and physical activity level. Conclusion From an ocean of studies with high levels of bias, we extracted nine clinical risk factors that may increase a person’s risk of Achilles tendinopathy. Clinicians may consider ofloxacin use, alcohol consumption and a reduced plantar flexor strength as modifiable risk factors when treating patients with Achilles tendinopathy. Trial registration number CRD42017053258.

Return to play and performance after shoulder instability in National Basketball Association athletes.

03

Shoulder Elbow Surg. 2019 Aug 19.

Lu Y1, Okoroha KR1, Patel BH1, Nwachukwu BU1, Baker JD1, Idarraga AJ1, Forsythe B2.

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Abstract

Hypothesis:

We hypothesized that players in the National Basketball Association (NBA) who sustained a shoulder destabilizing injury could return to play (RTP) successfully at a high rate regardless of treatment type.

Methods:

We used publicly available data to identify and evaluate 50 players who sustained an in-season shoulder instability event (subluxation/dislocation) while playing in the NBA. Demographic variables, return to NBA gameplay, incidence of surgery, time to RTP, recurrent instability events, and player efficiency rating (PER) were collected. Overall RTP was determined, and players were compared by type of injury and mode of treatment.

Results:

All players (50/50) returned to game play after sustaining a shoulder instability event. In those treated nonoperatively, athletes who sustained shoulder subluxations returned after an average of 3.6 weeks, compared with 7.6 weeks in those who sustained a shoulder dislocation (P = .037). Players who underwent operative management returned after an average of 19 weeks. Athletes treated operatively were found to have a longer time interval between a recurrent instability event (70 weeks vs. 28.5 weeks, P = .001).

Conclusion:

We found 100% rate of RTP after a shoulder instability event in an NBA athlete. Players who experience shoulder dislocations were found to miss more time before RTP and were more likely to undergo surgical intervention compared with those who experienced a subluxation. Surgical repair maintained a longer interval between recurrent instability. Future investigations should aim to evaluate outcomes based on surgical procedures and identify possible risk factors predictive of recurrent instability or failure to RTP.

Keywords:

Bankart; NBA; Shoulder instability; professional basketball; return to sports; shoulder dislocation; shoulder stabilization; shoulder subluxation

Does exercise during pregnancy impact on maternal weight gain and fetal cardiac function? A randomized controlled trial

04

Ultrasound Obstet Gynecol 2019; 53: 583–589

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Keywords:

ductus arteriosus; exercise; fetal cardiac function; maternal weight; physical activity

Abstract:

Objective To evaluate the association between physical exercise during pregnancy and maternal gestational weight gain and fetal cardiac function.

Methods:

This was a randomized controlled trial of women with a singleton pregnancy managed from the first trimester at the Hospital de Torrej´on, Madrid, between November 2014 and June 2015. Women were randomized to either follow a supervised physical conditioning program, consisting of a 60-min session 3days per week for the duration of pregnancy, or not attend any exercise program (controls). The primary outcome was maternal weight gain during pregnancy. Secondary outcomes included fetal cardiac function parameters evaluatedat20,28and36 weeks'gestation,Cesareansection, preterm delivery, induction of labor and birth weight. A sample size of 45 in each group was planned to detect differences in maternal weight gain of at least 1kg, with a power of >80% and α of 0.05..

Methods:

Two independent reviewers performed the literature search based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, with a third author resolving any discrepancies. RCTs comparing PRP or PRF to a control in rotator cuff repair were included. Quality of evidence was assessed using the Jadad score. Clinical outcomes were compared using the risk ratio for dichotomous variables and the mean difference for continuous variables. A P value \.05 was deemed statistically significant.

Results:

During the study period, 120 women were randomized into the exercise (n=75) and control (n=45) groups. Following exclusions, the final cohort consisted of 42 women in the exercise group and 43 in the control group. Baseline characteristics (maternal age, prepregnancy body mass index, parity, conception by in-vitro fertilization, Caucasian ethnicity, physical exercise prior to pregnancy and smoker) were similar between the two groups. No differences were found between the groups in

maternal weight at 20, 28, 36 and 38weeks’ gestation or in weight gain at 38weeks. However, the proportion of women with weight loss ≥9kg at 6weeks postpartum was higher in the exercise compared with the control group (68.2% vs 42.8%;relative risk 1.593; P=0.02). The ductus arteriosus pulsatility index (DA-PI) at 20weeks (2.43±0.40 vs 2.26±0.33, P <0.05) and the ejection fraction (EF) at 36weeks (0.85±0.13 vs 0.81±0.11, P <0.05) were higher in the exercise compared with the control group. All other evaluated fetal cardiac function parameters were similar between the two groups.

Conclusions:

Performing exercise during pregnancy is not associated with a reduction in maternal weight gain but increases weight loss at 6weeks postpartum. Physical exercise during pregnancy is associated with increased fetal DA-PI at 20weeks and EF at 36weeks, which could reflect adaptive mechanisms.

Review Intended or Unintended Doping? A Review of the Presence of Doping Substances in Dietary Supplements Used in Sports

05

Journal of human nutrition published monthly online by MDPI

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Introduction:

The use of dietary supplements is increasing among athletes, year after year. Related to the high rates of use, unintentional doping occurs. Unintentional doping refers to positive anti-doping tests due to the use of any supplement containing unlisted substances banned by anti-doping regulations and organizations, such as the World Anti-Doping Agency (WADA). The objective of this review is to summarize the presence of unlabeled doping substances in dietary supplements that are used in sports. Methodology: A review of substances/metabolites/markers banned by WADA in ergonutritional supplements was completed using PubMed. The inclusion criteria were studies published up until September 2017, which analyzed the content of substances, Metabolites and markers banned by WADA.

Results:

446 studies were identified,23 of which fulfilled all the inclusion criteria. In most of the studies, the purpose was to identify doping substances in dietary supplements. Discussion: Substances prohibited by WADA were found in most of the supplements analyzed in this review. Some of them were prohormones and/or stimulants. With rates of contamination between 12 and 58%, non-intentional doping is a point to take into account before establishing a supplementation program. Athletes and coaches must be aware of the problems related to the use of any contaminated supplement and should pay special attention before choosing a supplement, informing themselves fully and confirming the guarantees offered by the supplement.

www.mdpi.com/journal/nutrients

Wake up and smell the coffee: caffeine supplementation and exercise performance—an umbrella review of 21 published meta-analyses

06

Br J Sports Med 2019;0:1–9.

Jozo Grgic, 1 Ivana Grgic,2 Craig Pickering, 3,4 Brad J Schoenfeld,5 David J Bishop,1,6 Zeljko Pedisic 1

Objective:

To systematically review, summarise and appraise findings of published meta-analyses that examined the effects of caffeine on exercise performance. Design Umbrella review. Data sources Twelve databases. Eligibility criteria for selecting studies Metaanalyses that examined the effects of caffeine ingestion on exercise performance. Results Eleven reviews (with a total of 21 metaanalyses) were included, all being of moderate or high methodological quality (assessed using the Assessing the Methodological Quality of Systematic Reviews 2 checklist). In the meta-analyses, caffeine was ergogenic for aerobic endurance, muscle strength, muscle endurance, power, jumping performance and exercise speed. However, not all analyses provided a definite direction for the effect of caffeine when considering the 95% prediction interval. Using the Grading of Recommendations Assessment, Development and Evaluation criteria the quality of evidence was generally categorised as moderate (with some low to very low quality of evidence). Most individual studies included in the published meta-analyses were conducted among young men. summary/conclusion Synthesis of the currently available meta-analyses suggest that caffeine ingestion improves exercise performance in a broad range of exercise tasks. Ergogenic effects of caffeine on muscle endurance, muscle strength, anaerobic power and aerobic endurance were substantiated by moderate quality of evidence coming from moderate-to-high quality systematic reviews. For other outcomes, we found moderate quality reviews that presented evidence of very low or low quality. It seems that the magnitude of the effect of caffeine is generally greater for aerobic as compared with anaerobic exercise. More primary studies should be conducted among women, middle-aged and older adults to improve the generalisability of these findings.

https://bjsm.bmj.com/content/bjsports/early/2019/03/29/bjsports-2018-100278.full.pdf

Changes in physical demands between game quarters of U18 elite official basketball games.

07

PLoS One. 2019 Sep 3;14(9):e0221818. doi: 10.1371/journal.pone.0221818. eCollection 2019.

Vázquez-Guerrero J1, Fernández-Valdés B2,3, Jones B4,5,6,7,8,9, Moras G2, Reche X1, Sampaio J10.

Purpose:

The aim of this study was to describe the physical demands during U18 elite basketball games according to the game quarter and to identify a smaller subset of variables and threshold scores that distinguish players' physical performance in each quarter.

Methods:

Data was collected from ninety-four players who participated in the study (age: 17.4 ± 0.74 years; height: 199.0 ± 0.1 cm; body mass: 87.1 ± 13.1 kg) competing in the Euroleague Basketball Next Generation Tournament. Players' movements during the games were measured using a portable local positioning system (LPS) (WIMU PRO®, Realtrack Systems SL, Almería, Spain) and included relative distance (total distance / playing duration), relative distance in established speed zones, high-intensity running (18.1-24.0 km•h-1) and sprinting (> 24.1 km•h-1). player load, peak speed (km•h-1) and peak acceleration (m•s-2) number of total accelerations and total decelerations, high intensity accelerations (> 2 m•s-2) and decelerations (< -2 m•s-2).

Results:

There was an overall decrease in distance covered, player load, number of high intensity accelerations and decelerations between the first and last quarter of the games in all playing positions. A classification tree analysis showed that the first quarter had much influence of distance covered (above 69.0 meters), distance covered <6.0 km•h-1 and accelerations (> 2 m•s-2), whereas the fourth quarter performance had much influence of distance covered (below 69.0) and distance covered 12.1-18.0 km•h-1.

Conclusion:

A significant reduction in physical demands occurs during basketball, especially between first and last quarter for players in all playing positions during basketball games of under 18 elite players.

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0221818

Effect of four weeks of ocular-motor exercises on dynamic visual acuity and stability limit of female basketball players.

08

Gait Posture. 2019 Sep;73:286-290.

Minoonejad H1, Barati AH2, Naderifar H3, Heidari B4, Kazemi AS5, Lashay A6.

Introduction:

Visual skills are an integral part of most daily activities and an effective indicator of the functional ability of athletes, particularly in the fields of dynamic sports like basketball. Despite the important role of vision and effect of ocular exercises on functional skills in athletes, a few studies have been conducted in this regard. Thus, this study aimed to investigate the effect of ocular-motor exercises on dynamic visual acuity and stability limit of female basketball players.

Methods:

In this semi-experimental study 30 club elite female basketball players aged between 18 and 24 years, with at least three years of specialized basketball experience, were randomly assigned to two intervention and control groups. The athletes in the intervention group participated in the designed four-week program (six sessions per week) of the oculo_motor exercises. The control group did just their own daily routine exercises. The limit of stability was measured by the Biodex balance system SD and dynamic visual acuity was measured by the PowerPoint, which is for detecting dynamic visual acuity. Also, the SPSS software version 19 was used to analyze the data by using descriptive statistics methods: independent t and Paired t tests, at a significance level of $P \leq 0.05$.

Results:

The results showed that doing four weeks of the oculo_motor exercises led to a significant increase in the overall stability index (OSI) from 28/66 ± 7/23 to 51/60 ± 6/38 ($p = 0.001$), as well as in dynamic visual acuity from 29/73 ± 4/19 to 56/20 ± 8/81($p < 0.001$); in the intervention group, these changes were also statistically significant in comparison with the control group and before doing the exercise protocol ($p < 0.05$).

Conclusion:

According to the obtained results, the oculo_motor exercises can be used to enhance the limit of stability and dynamic visual acuity in basketball players and other dynamic sports.

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0221818

Review Intended or Unintended Doping? A Review of the Presence of Doping Substances in Dietary Supplements Used in Sports

09

Sci Rep. 2019 Jun 26;9(1):9286. doi: 10.1038/s41598-019-45773-0.

Šiupšinskas L1, Garbenytė-Apolinskienė T2, Salatkaitė S2, Gudas R2,3, Trumpickas V4.

Abstract:

TBasketball is one of the most popular sports in Lithuania, and participation in women's basketball is on the rise. Pre-participation examinations, including musculoskeletal screening and functional performance testing, is an essential part of a multidisciplinary approach to prevent future injuries. Because the lower extremities are the most commonly-injured body area in basketball players. Assessing fundamental movement qualities is of utmost importance. The aim of our study was to determine if functional tests can predict sports injuries in elite female basketball players. A total of 351 records for professional female basketball players were screened during 2013-2016 season. We analysed functional characteristics before the season and used functional performance tests for injury risk assessment: the Functional Movement Screen (FMS), the lower quarter Y Balance test (YBT-LQ) and the Landing Error Scoring System (LESS). Data from 169 players' records were analysed: 77 of them made it to the end of season without injury, making up the non-injured group, while 92 of them suffered lower limb sport injuries during the sport season (injury group). Student's t-test and the Mann-Whitney U-test were used to determine differences between groups. The most commonly encountered sports injuries in our population were those of knee 40.2% and ankle 38%. The injury group had a lower total FMS score ($p = 0.0001$) and higher total LESS score ($p = 0.028$) than non-injury group. The dynamic balance of lower limbs was similar in both groups. Imperfect functional movement patterns and poor jump-landing biomechanics during pre-season screening were associated with lower extremity injuries in elite female basketball players. Impairments of dynamic stability in the lower extremities were not associated with injury rates in our population. A combination of functional tests can be used for injury risk evaluation in female basketball players.

Review Intended or Unintended Doping? A Review of the Presence of Doping Substances in Dietary Supplements Used in Sports

10

https://doi.org/10.1177/0363546519869326

Bertrand Sonnery-Cottet, MD*, Adnan Saithna, MD, Felipe Galvão Abreu, MD, ...

Professional athletes are reported to be at greater risk of septic arthritis (SA) after anterior cruciate ligament reconstruction (ACLR) than the nonprofessional population. However, this finding has been controversial, and confusion has arisen in the literature owing to the underpowering of previous studies.

Purpose/Hypothesis:

The purpose was to report the differences in the rate of SA after ACLR in a large series of patients and to perform pooled data analysis including previously published studies. The hypothesis was that professional athletes have a significantly higher risk of SA than nonprofessional athletes.

Study Design:

Case-control study; Level of evidence, 3.

Methods:

A retrospective analysis of prospectively collected data was performed. Patients who underwent ACLR between January 2009 and July 2017 (with a minimum follow-up of 12 months) were considered for study eligibility. The rate of SA was determined, and multivariate analysis was used to evaluate potentially important risk factors, including participation in professional sport. Furthermore, a literature search was performed, and data were extracted from all identified relevant studies. A pooled data analysis was performed to determine differences in the risk of SA between professional and nonprofessional populations.

Results:

The current series comprised 4421 anterior cruciate ligament surgical procedures with 265 professional athletes. There were 15 cases of SA diagnosed over the study period (0.34%; 95% CI, 0.19%-0.56%). Ten cases occurred in professional athletes (3.8%; 95% CI, 1.82%-6.83%). The percentage of SA was 0.12% (95% CI, 0.04%-0.28%) in the nonprofessional population. Being a professional athlete was associated with a significantly increased risk of SA after ACLR (odds ratio, 21.038; 95% CI, 6.585-75.789; $P < .0001$). This finding was confirmed in the pooled data analysis comprising 11,416 patients including 1118 professional athletes (odds ratio, 5.03; 95% CI, 1.17-21.61).

Conclusion:

Professional athletes are at greater risk of SA after ACLR than nonprofessional athletes. The results of previous studies may have been conflicting owing to underpowering. The current study confirms the elevated risk by using a large clinical series and pooled data analysis to avoid the limitations of previous studies.

Keywords:

anterior cruciate ligament, septic arthritis, professional athletes, pooled analysis

Isometric exercise for acute pain relief: is it relevant in tendinopathy management?

11

http://dx.doi.org/10.1136/bjsports-2019-100591 (free)

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Isometric exercise as an initial treatment and in-season pain management for tendinopathies has become the latest trend, yet clear evidence in support of this approach is lacking. This new approach is based on a small cross-over study (n=6)1 and a small randomised control trial (n=20)2 comparing isometric and isotonic muscle contraction by Dr Ebonie Rio and colleagues. They reported substantial, acute effects of isometric exercise on pain in patients with patellar tendinopathy, which was greater than seen with isotonic exercise. While the pain relieving response of isometrics in the first trial1 was dramatic and homogenic, the pain relief response of the second trial2 was much more heterogenic. Based on these results an isometric management approach was quickly extrapolated to other tendons, as evinced in a popular recently updated sports medicine textbook.3 We contend that three important questions need to be answered before isometric exercise is widely adopted as standard valid first step in tendinopathy management.

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