1289th Conference



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Posters

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Homogeneity among centers in the application of the Pilar Domínguez method in children and adolescents assessed by musculoskeletal parameters: A pilot study

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Background: Pilar Dominguez Method (PDM) is an individualized exercise program based in classical dance, intended to prevent and improve pain and musculoskeletal disturbances consequence of improper postural placement.

Aim: Aim of this study is to evaluate the homogeneity between centers in the results of the application of PDM.

Methods: 140 subjects from 5.1 to 19.1 year old (mean 12.3 ± 2.6), 100 (71.4%) females, with pain or some musculoskeletal disturbances (MSD), who assisted at one of the two centers of the Instituto Pilar Dominguez (IPD) were enrolled. PDM was applied in 1-hour sessions, twice a week for 5 months. Differences among the two centers in pain relieve evaluated by the VAS scale, flexibility by the Kraus-Weber test, and arrow's test, was evaluated. Statistical bilateral tests were undergoing with a significance level of 0.05.

Results: 73(52.1%) subjects were enrolled in Muntaner Institute and 67(47.9%) in M Girona. The most frequent disturbances were 43(34.7%) scoliosis, 18(14.5%) hamstring shortening, and 12 (9.7%) hypercifosis, without differences between the two centers. PDM produced a statistically significant positive effect on pain, flexibility and lumbar lordosis at 5 months. No statistical differences between centers were detected in any of the outcomes (p=0.11; p=0.55 and p=0.51) respectively.

Conclusions: PDM is an effective intervention in the improvement of pain and MSD, with similar results between centers. The effectiveness of PDM is independent of the center, provided the monitors are qualified to apply the method and the center has the required equipment.

Biography

Carme Carré Llopis has completed her PhD from Universitat Autonoma de Barcelona; MD from Universitat Autonoma de Barcelona, School of Medicine and; MSBS from Universitat de Barcelona, School of Biology. She is the Medical Director of Instituto Pilar Dominguez (IPD), a musculoskeletal maintenance and rehabilitation center. She has published more than 30 papers in reputed journals. She teaches at Barcelona University and at other recognized schools of professional studies.

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Evaluation of female athlete triad in female university athletes

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Introduction & Aim: Female athlete triad (FAT) including low energy availability, functional hypothalamic amenorrhea, and low bone mineral density (BMD) is a serious problem in elite athletes. The purpose of this study was to assess the female athlete triad in different sports.

Materials & Methods: All 47 female athletes in the department of Health and Sports Science of Juntendo University participated in the study. These athletes were divided into three groups who participate in different sports: track and field, volleyball, and football. This study was approved by the institutional review boards at the Juntendo University institution.

Results: The percentages of athletes who have suffered fatigue fracture, were 46.2% (6/13runners), 15.4% (2/13 volleyball player), 23.2% (5/21 football player), respectively. Two volleyball players had the bone mineral density appropriate for their age. All three runners who had suffered from fatigue fracture repetitively had hypothalamic amenorrhea.

Discussion: There was characteristic body composition for each sport. It suspected that the volleyball player needed higher body height and body weight because they needed to jump higher and attack powerfully. Runners had lower body weight and body fat mass because they believe that lower body weight and body fat mass is related to having a positive effect on running performance.

Conclusion: It considered that the fatigue fracture in two of the volleyball players had no association of female athlete triad because they had appropriate body fat mass percentage and body mineral density, and their fracture occurred from repetitive stress in the bone.

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Beginnings and development of sports sciences in Czechoslovakia 1918 – 1938

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In 1918 within the new arrangement of the Central Europe was established Czechoslovak Republic and in the same year a new science of motion has begun to form. The main founder of this science became Dr. Charles Weigner, a professor at Charles University, head of the Institute of Anatomy, which in 1937 became rector of Charles University. Professor Karel Weigner as physician emphasized the importance of health physical education and sport. He is also credited for the development of sports medicine, which emphasized medical examinations of athletes, as well as children and youth in schools.

Biography

Dr. Marek Waic has completed his graduation in history at the Faculty of Arts at Charles University and completed his PhD from the Faculty of Physical Education and Sport in 1990. In 2007. He was appointed as professor and head of department, Kinanthropology and Humanities. In the years 1996 - 2004 he lectured at German University of Sport and universities in Freiburg, Munster, Hanover and Göttingen. He is the principal author and co-author of 8 monographs and more than 40 articles in Czech and German Scientific Journals.

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Ski injuries of dizin ski slope infirmary patients during skiing season of 2008-2009

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Skiing is a kind of wilderness sports that may cause injuries and damages to the organs of body. This cross-sectional descriptive analytical study was performed on 1233 injured skiers admitted by Dizin Slope Infirmary for five months skiing season of 2008-2009. The obtained data included of age, gender, injury type and medical interventions. All data were analyzed by SPSS 16.0 software using statistical tests including Kolmogorov-Smirnov, Man-Whitney, Kruskal-Wallis, Chi-Square and Fisher Exact tests. 75% of patients were male and 25% female. The mean age of patients was 27.86 (SD 9.95) years. Most patients had 20-29 years old (55.2%). The most common injury caused by skiing was knee trauma (14.4%). Other common injuries were soft tissue injury (12.1%), shoulder trauma (8.1%), head and face trauma (7%) and wrist trauma (5.5%) respectively. The most common medical intervention was pain relief and anti-inflammatory drugs prescription (33.1%). There was a significant relationship between age and gender by which women age was less than men's (P=0.000). We found a relationship between age and injury type (P=0.000). Minimum age (24.83) was reported in the patients with head and face injuries and maximum age (44.5) was in ones with malleolus fracture. There was a significant relationship between gender and knee trauma which showed higher injuries in women (P= 0.001). There was also a significant relationship between gender and shoulder injuries showing higher injuries prevalence in men (P=0.015).

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Psychological characteristics of male youth soccer players: Specificity of mental attributes according to age categories

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The psychological development of youth soccer players is limitedly understood and demands alternatives to gain entry in order to assist young players reaching elite levels. Distinguishing features of expertise and identifying factors that influence the player progression is highly recommended. Moreover, predicting success in youth soccer is a challenge at any age. The aim of this study is to investigate selected psychological skills of youth male Tunisian soccer players in different age categories. This study examines differences of 180 male youth soccer players between the ages of 15 and 19 years and from different youth class divisions. The subjects are divided into two groups, namely; U19 (n=90) and U17 (n=90), and are compared with regard to twelve psychological skills is found in the various psychological skills. At the overall sample, U19 soccer players consistently outperform the U17 in term of confidence, stress reaction, activation and relaxation. The U19 soccer players belonging to the 1st youth class score higher values than the U17, in term of goal setting, confidence, stress reaction, activation, relaxation, focus, refocus and imagery. The results of the study provide support for the hypothesis that age differences in terms of psychological skills exist. More specifically, statistical evidence suggests that youth soccer players can be differentiated as a function of psychological skill and age category on the team.

Biography

Amira Najah has obtained her PhD in Clinical and Sports Psychology from Faculty of Humanities, University of Tunis Al Manar. She is a working as a licensed Psychologist at Aspetar Orthopedic and Sports Medicine Hospital, Qatar. She is also an academic contributor to the Athlete Learning Gateway (International Olympic Committee) platform and has conducted several researches to study the mental side of non-performing athletes. Later, she focuses on the study of religion and spiritualty roles in mental health of athletes with anterior cruciate ligament injury.

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The evaluation of self-efficacy and sport self-confidence of the swimmer practicing pool training and land training in terms of gender

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Swimming sports are known to provide significant benefits in terms of physical, mental, psychological and motoric development. Improvement in self-esteem and self-efficacy of children interested in swimming are observed by the swimming coaches over time. Sport as one of the psychological factors that influence and determine the performance indicates the concept of self-confidence. The purpose of this research is to evaluate self-efficacy and self-confidence of the swimmers who practice and training as well as pool training in terms of gender. 45 male athletes, 47 female athletes, total 92 athletes (Age; \times :12.18±2.61) participated the study. Data were collected by Self-Efficacy Scale which contained 10 items and developed by Riggs, Warka, Babasa, Betancourt and Hooker and Self-Confidence Scale which contained 26 items and developed by Vealey. Collected data were analyzed by SPSS 22 and T-test was used to analyze the data for independent groups and descriptive statistics. According to findings there is no significant difference among female and male swimmers' Self-efficacy (t=0.75; p>0.05), trait self-confidence (t=1.71; p>0.05) and state self-confidence (t=0.88; p>0.05) in terms of gender. And in the light of analyzed data, there is no significant difference among Self-efficacy (t=0.74; p>0.05) and state self-confidence (t=0.975; p>0.05) of female and male swimmers' practicing with and without land training in terms of gender. In the conclusion of this research, it is obtained that there is no significant difference among self-efficacy, trait self-confidence and state self-confidence of male and female athletes inspected in terms of gender. These findings are in parallel with the literature.

Biography

Gonca Eren completed her Bachelor degree at Anadolu University, Faculty of Sport Sciences in 2015. She started her MSc at Anadolu University, Graduate School of Health Sciences in 2016. She is currently working as a Research Assistant in Department of Physical Education and Sport Teaching since 2017.

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The effect of road cycling vs. distance running on loaded and non-loaded limb bone density in recreational male athletes

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Previous studies have demonstrated the effect of physical activity on bone mineral density (BMD) on both weight bearing and non-weight bearing limbs. However, few studies have compared the BMD of recreational endurance athletes involved in cycling and running. The study consisted of male cyclists (non-weight bearing [NWB]; n=17, 42.3yrs (\pm 10.38) 21-67yrs) and runners (weight-bearing [WB]; n=24, 42.6yrs (\pm 13.63) 24-65yrs) were recruited from two-community sports club. A bone density ultrasound sonometer (Sunlight Omnisense 8000) was used to assess the BMD of the distal radius and mid-shaft of the tibia. Bone-loading history was estimated from a bone-specific physical activity questionnaire (BPAQ). In this study, cyclists [NWB] showed significantly greater (p<0.05) bone density in both the loaded (tibia) and non-loaded limbs (radius) than the runners [WB] despite having similar age, weight and body mass index. Fifty percent of runners were found to exhibit osteopeanic values of the tibia compared with 18% in cyclists. Radial osteopenia was not seen in the cyclists but was demonstrated in 12.5% of runners. A negative relationship between BMD of the radius and the lifetime loading history scores (pBPAQ) was found within both group of athletes (r =-0.521, r2 0.271, p<0.001) with similar results found for tibial BMD and weekly training hours performed during the preceding 12months (cBPAQ) for both groups (r=-0.410, r2 0.168 p <0.05). In conclusion, the cycling cohort demonstrated an increased BMD in both the loaded and non-loaded sites when compared to anthropometrically matched runners. However quantification of site-specific geometrical adaptation to lower limb bone diameter and cortical thickness may be of more importance to runners than bone mass.

Biography

Marc Potter is a former personal trainer and exercise professional and completed his MSc in Exercise and Sport Physiology at Manchester Metropolitan University in 2015. With a passion for ultra-endurance, he has participated in over 90 marathon, ultra-marathon and Ironman triathlon. As a Lecturer in Exercise Physiology, his research interests are in Ultra-endurance, Immunology and Fatigue.

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The regular practice of running remarkably increases plasma BDNF levels in middle-aged and elderly amateur runners

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B rain-Derived Neurotrophic Factor (BDNF) is a member of the neurotrophins family known to promote synaptic plasticity, induces neurogenesis and neuronal survival. BDNF also exert a key role in learning and memory abilities. Furthermore, reduced levels of BDNF have been linked to depression, anxiety and the physiopathology of neuropsychiatric and neurodegenerative conditions such as Schizophrenia and Parkinson's disease, respectively. Importantly, peripheral BDNF levels have been used as a biomarker in several clinical studies, since this neurotrophin is able to cross the blood-brain barrier in a bi-directional manner and seems to present a strong correlation with the central nervous system fluid levels. Experimental and clinical studies have demonstrated that different exercise protocols remarkably increase BDNF levels in both healthy and patient populations. However, this response in well-trained individuals has been poorly explored. Among the various categories of physical activity available, running is probably the oldest performed by humans. Therefore, this study aimed to investigate the effect of regular running practice on BDNF levels in plasma of middle-aged (aged 30-50 years old) and elderly (aged \geq 60 years old) healthy individuals. Then, amateur runners (EXE groups) and sedentary individuals (SED groups) were submitted to a basal blood collection (15 ml). Plasma BDNF levels were determined by the ELISA method, from Sigma–Aldrich commercial kit (catalog number RAB0026) according to the manufacturer's instructions. A significant increase in BDNF levels in EXE individuals compared to the SED group was observed in both groups, young and elderly (p=0.036, p=0.007, respectively). These findings might suggest that the increased levels of BDNF might be linked to runners' phenotype, regardless of age.

Biography

Maristela P. Souza completed her PhD in Cardiovascular Physiology at the Department of Physiology of the Federal University of Rio Grande do Sul, Brazil. Works as a professor and researcher in the field of exercise physiology at the Methodist University Center IPA, and a student of the music course at the same institution. Her research interest includes the influence of running on physiological aspects and the quality of life of different populations.

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The evaluation of physical education teacher candidates' views on integration programs according to their genders

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This study's purpose is to evaluate the views of physical education teacher candidates on integration programs which are designed for children who need special education according to some variables. In total 119 students who consist of 51 females and 68 males (avg. age 22.59; Ss 2.06) from 3rd and 4th grades of Anadolu University's and Sakarya University's physical education and sports teacher departments attended to the study. In the study, "Survey of Integration Education" which was developed by Aksüt was used. To analyze the data, T-tests for describing statistics and independent samples were used. According to the results of the study; the only difference was found on applying the knowledge of the methods and techniques of integration education which was based on physical education teacher candidates' views on integration programs according to their genders (p<0.05). Other sub-dimensions showed no statistically significant difference according to genders (p>0.05). As a result, some differences on sub-dimensions were found according to genders of physical education teacher candidates' views on integration programs which were participated by children with special needs.

Biography

Nalan Aksakal is pursuing her Doctorate studies at Anadolu University. She is the Vice President of Physical Education and Sports Teaching Department, Faculty of Sports Science at Anadolu University since 2014. She published more than three papers in scientific journals. She currently gives lectures on Handball, Sport Pedagogy, and Educational Games.

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Chronic head trauma in sports as a cause of hypopituitarism: a survey on Iranian national boxers

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Background: Due to recurrent and progressive head trauma in boxers, this athlete group may face various metabolic, hormonal, and hemodynamic defects. The present study was conducted to study the hormonal and biochemical characteristics of Iranian national boxers.

Hypothesis: Pituitary dysfunction is a common finding in athletes especially among those who suffered head trauma so about 25–50% of head trauma patients have some degrees of pituitary dysfunction.

Methods: A case-control study was conducted with level of evidence 3b. A total of 16 male (age range 19-32 yrs.) boxers of Iranian National Camp participated in the study. Along with this athletic group as the case, 16 male individuals were also randomly selected from archery as the control. We recorded subjects' baseline characteristics including demographic parameters and duration of exercise (in the case group) by interviewing. Participants were advised not to engage in strenuous activities for two days before an exercise test and not to exercise on the day of the test.

Results: Comparing chemical biomarkers between boxers and control groups showed higher serum levels of cortisol and ACTH levels, but lower serum levels of FSH, testosterone, and GH in boxer group when compared with the control group. There was no significant correlation between duration of boxing and serum levels of various biomarkers. Using multivariate linear regression models with the presence of age and BMI variables, showed that the boxing could predict lowering serum levels of FSH (beta=1.841, p<0.001), testosterone (beta=2.352, p<0.001), and GH (beta=0.189, p<0.001) as well as elevating serum levels of cortisol (beta=213.609, p<0.001) and ACTH (beta=-45.991, p=0.004).

Conclusions: GH deficiency, hypogonadism, and hypercortisolism may be common findings in boxer due to head trauma.

Biography

Nalan Aksakal is pursuing her Doctorate studies at Anadolu University. She is the Vice President of Physical Education and Sports Teaching Department, Faculty of Sports Science at Anadolu University since 2014. She published more than three papers in scientific journals. She currently gives lectures on Handball, Sport Pedagogy, and Educational Games.

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Accepted Abstracts

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Current status of youth fitness in United States

Benedict O Atakpu

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Children in the United States are fatter, slower, and weaker than their counterparts in other developed nations. In addition, US children seem to be adopting a sedentary lifestyle at early ages. Although there is no easy solution to this problem, there are specific efforts to ensure improvement in this area. For example there are programs that seek to increase physical activity both in school and at home. Daily, quality physical education in grades K-12 is mandated in all states. Schools establish fitness testing programs for children based on health-fitness parameters rather than on athletic performance variables. Parents are being educated regarding the critical importance and the multitude of benefits to be derived from their involvement in fitness-related activities with their children. At home, a healthy balance is being established between sedentary activities, e. g., television and video games, and physical activity. To ensure improvements in youth fitness across the United States, other interventions have been initiated such as appropriate involvement of local communities, state and federal governments, the medical health professions, and the media.

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Inter-limb asymmetries: methods of calculation, effects on physical performance and training strategies to reduce imbalances

Chris Bishop Middlesex University, UK

Inter-limb asymmetries refers to the performance of one limb in relation to the other and has been widely investigated in the sports science literature. The majority of literature has focused on injury risk and occurrence, with differences greater than ~15% suggested as a threshold where athletes may be at heightened risk. Interestingly, numerous methods of quantifying these between-limb differences have been identified and with multiple equations being proposed, it is challenging for practitioners to understand the most appropriate method for calculating these differences. Furthermore, despite the volume of literature pertaining to this topic, few have related their findings to physical performance measures. Of those that have, inter-limb differences in strength have reported a detrimental effect on jumping and sport-specific skills. When asymmetries have been quantified during jumping-based tasks, results are less conclusive with some studies showing a detrimental effect on change of direction speed and some not. Additional studies have calculated inter-limb asymmetries during sport-specific actions and again, shown mixed findings. Finally, the cumulative body of literature appears to lean towards a tendency that heightened inter-limb asymmetries may be detrimental to physical performance; thus, methods to reduce these between-limb differences have also been proposed.

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The integrated spring-mass model approach to thoracic outlet syndrome

James Stoxen President, Team Doctors, Treatment and Training Center, USA

I will discuss the three models of human movement, the inverted pendulum model, the spring-mass model and the integrated spring-mass model (ISMM). The (ISMM), which integrates the spring suspension systems of the foot and shoulder region as well as the torsion spring of the spine and the mass, the head. I will discuss my clinical findings show compressive disorders like TOS and herniated discs are merely an over control of tension on the human spring mechanism leading to these syndromes. I will give brief review of the symptoms and their patterns, the common orthopedic tests, and diagnostic tests, the 16 different common conservative therapies and the 10 reasons for when surgery is medically necessary. I will discuss an alternative treatment for this disorder based on the integrated spring mass model.

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Ways physicians can improve athlete's human performance by the earliest detection, intervention and prevention of abnormal spring stiffness

James Stoxen

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Fificient, stress and strain free movement with efficiency is an essential aspect of survival for living things. Therefore Eunderstanding normal movement and how the human organism accomplishes normal movement is vitally important for physicians to understand so they can determine what is normal and abnormal movement is. The medical model and approach to the earliest detection intervention and prevention of musculoskeletal conditions, is over 300 years old. In this presentation I will present a more logical and accurate model for the way the human body moves, absorbs collisions, recycles energy and provides joint spaces and tunnels for safe movement and passage of blood vessels and nerves. With this new model, I will reveal ways the physician can improve human performance of patients in sport by examining and treating the human body based on the integrated spring-mass model of biomechanics. The perfect stress and strain-free movement is controlled by a constant interplay between the sensory cells like the spindle cells, the brain and the muscles. The athletes sensory system is constantly sending the newest afferent copy's to your brain for processing and patterning. However, the bodies neural feedback system can also over modulate spring stiffness by over controlling muscle tension that may cause friction, internal compressive forces and locking of the bodies spring mechanism. Optimum medical management of athletes health mandates an understanding of the underlying cause(s) of the over modulation and control. If your goal is to provide clinical management of the athlete that is intended to insure or improve human performance you must know the earliest detection and intervention of the over modulation by examining for abnormal movement patterns with gait evaluation and through table examination for the changes in the muscles, tendons, and joints. By evaluating patients this way a physician can fairly accurately predict where these compressive forces will be, thus predicting where compressive injuries will occur before the onset of symptoms.

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Hargol FoodTech (formerly knows as Steak TzarTzar) – Revolutionaizing the protein ingredient industry with a healthier more sustainable protein alternative from edible grasshoppers

Dror Tamir

CEO and Co-founder of Hargol FoodTec, Israel

Which expected 70% rise in demand for protein over the next decades and with existing protein sources taking a big toll on the environment there is a need to develop alternatives. Insects are considered that alternative. Already eaten by billions around the word as a whole for thousands of years and by millions of Americans in recent years as a protein ingredient in their healthy foods. We at Hargol FoodTech believe that grasshoppers are a game changer: 1. Superior nutrient content (70% whole protein and almost no saturated fat or cholesterol, rich in Iron and Zinc). 2. Reducing the impact on the environment by X20 according to the FAO considering Methane emissions, water consumption, arable land usage and feed conversion efficiency. 3. And 30% lower production costs compare to North American cricket farmers. 4. They are kosher. But, today there are no industrial scale grasshopper farms since these are challenging creatures to grow. Hargol FoodTech develop innovative protocols and technologies to enable growing commercial quantities of grasshoppers in climate controlled facilities achieving the following milestones: Brought 2 grasshopper species to the threshold of commercialization. Managed to increase the number of life cycles from 1 to 10 cycles per year. Developed a climate controlled infrastructure that make grasshoppers available all year round compare to only 6 weeks today. Identified feed alternatives that yield superior nutrient content grasshoppers. The grasshoppers are processed into nutrient rich protein powder (70% whole protein) to be used an ingredient by food manufacturers. And one more interesting notion: As the Middle East's most widely eaten insect grasshoppers which are also Kosher and Halal represent an amazing opportunity for regional economic collaboration.

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Gut microbiota, food intolerance and sports performance

Gill Hart York University Science Park, UK

Every individual has their own distinctive pattern of gut microbiota whose functions include enhancing the way we absorb Inutrients and vitamins, converting the food we eat into valuable by-products, working with the immune system protecting against inflammation and increasing ability to access fat as fuel. If the gut microbiology is not optimised then this can lead to increased gut permeability; the movement of gut microbiota and their products, and incompletely digested nutrients such as food proteins; linked with conditions such as digestive complaints, low energy, and musculo-skeletal problems. Diet is key to improving gut condition and food-specific IgG antibodies can indicate gut damage has occurred and promote inflammation across the body. A clincal trial was carried out, which tested a personalised diet approach adapted for food-specific IgG reactions, involving 24 first team members from top rugby league club Wigan Warriors. The trial aimed to address symptoms such as fatigue, muscular-skeletal pain, maintaining weight gain, alongside migraine, low energy, joint pains, skin and respiratory conditions and digestive complaints. The study revealed that 58% of the players participating felt their symptoms negatively affected their on-pitch performance; some team members had problems for over 10 years. 67% felt their performance improved as a direct result of their new diet. There is a correlation between diet, food intolerances and performance. Dietary optimisation is needed as part of a sports programme. An optimal diet requires a personalised approach, taking food reactions into account. Food-specific IgG testing can be used to help understand the root cause.

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Proprioception - science and practical application

Guido Van Ryssegem Safe Recovery, LLC, USA

Recently so called proprioceptive exercises have become very popular and have influenced the way exercise and rehabilitation professionals prevent, rehabilitate and augment performance. Additionally, several have claimed that balance and proprioceptive exercises improve proprioception. Not only do we find that the words 'balance' and 'proprioception' are used interchangeably in the literature, its exercise strategies and research measurements are applied interchangeably as well. As exercises are prescribed as an intervention to influence balance and proprioception a clear understanding of what proprioception, balance and proprioceptive exercises are is needed. This paper reviews the literature related to proprioception and balance, what its relationship is to injury and performance, how the concepts related to proprioception theories and research can be manipulated so performance or return to performance can be improved. Exercise recommendations are brought forward.

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Pharmaceuticals shoulder disease patterns of the wheelchair athletes of table-tennis and archery: a pilot study

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Objective: To investigate the shoulder disease patterns for the table-tennis (TT) and archery (AR) wheelchair athletes via ultrasonographic evaluations.

Methods: A total of 35 wheelchair athletes were enrolled, made up of groups of TT (n=19) and AR (n=16) athletes. They were all paraplegic patients and were investigated for their wheelchair usage duration, careers as sports players, weekly training times, the Wheelchair User's Shoulder Pain Index (WUSPI) scores and ultrasonographic evaluation. Shoulders were divided into playing arm of TT, non-playing arm of TT, bow-arm of AR, and draw arm of AR athletes.

Results: For the non-playing arm of TT athletes, there was a high percentage of subscapularis (45.5%) and supraspinatus (40.9%) tendinopathy. The percentage of subacromial-subdeltoid bursitis showed a tendency to be present in the playing arm of TT athletes (20.0%) compared with their nonplaying arm (4.5%), even though this was not statistically significant. Biceps long head tendinopathy was the most common disease of the shoulder in the draw arm of AR athletes, and the difference was significant when compared to the non-playing arm of TT athletes (p<0.05).

Conclusion: There was a high percentage of subscapularis and supraspinatus tendinopathy cases for the nonplaying arm of TT wheelchair athletes, and a high percentage of biceps long head tendinopathy for the draw arm for the AR wheelchair athletes. Consideration of the biomechanical properties of each sport may be needed to tailor specific training for wheelchair athletes.

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Exclusive review of balance tests in partially deaf society among endomorph, endo-mesomorph and ectomorph girls

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B alance plays a vital role in everyday life, especially in people who suffer from hearing problems and weaker in keeping bady balanced. Body type, is also known as an important factor in balance. Therefore, the purpose of this study was to assess balance tests in partially deaf society regarding to body type. With institutional ethics approval, 36 girls (12 endomorph, 12 endo-mesomorph, 12 ectomorph) with hearing impairments were participated in this study. All participants performed three static, semi-dynamic and dynamic types of balance tests for 3 times interspersed with 72 hours. Intraclass Correlation Coefficient (ICC) statistic method was used for studying group's differences at a significance level of $0.05 \ge P$. Results shown that endo-mesomorph group has got the greatest scores in two static tests –Angle (opened-eyes: 20.2, closed-eyes: 10.7) and BESS (16.9)-, all semi-dynamic tests –Star (73.25), Modified Star (right-leg: 69.38) and Y (66.9)- and two dynamic tests – TUG (6.54) and TBT (47.1)- while ectomorph group has shown better performance in Romberg static test (59.97), semi-dynamic Modified Star test (left-leg:70.6) and Tandem dynamic test (59.7). Results can help sport coaches in choosing athletes for deaf society related competitions and sport teachers in designing the best sport program for partially deaf people. Furthermore, sport coaches and teachers can use tests used in this study to assess their athlete balance condition and help them to improve performance and prevent injuries resulted from lack of good balance condition.

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Sport, health and fitness in the 21st century city

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A round the world cities are using sport and fitness in urban design, economic development strategies and as focal points for smart city initiatives. Examples include Sports City, Dubai; Aspire Zone; and the Frisco IS Sports initiatives in Frisco, Texas, part of the Dallas-Fort Worth Metroplex (DFW). We conducted an analysis of the ways in which sport, fitness and healthy lifestyles have become focal points of urban design and development examining how widespread such designs are in broad social impact using social return on investment analyses (SROI). Our findings are illuminated by case studies from four different cities of the DFW region, Frisco, McKinney, Allen and Grand Prairie each of which has a distinctive approach to how urban design, economic development and the promotion of health, fitness and sports contributes to local development and attraction of residents and business enterprises to their cities. I finish my discussion with a template for cities to promote health, fitness and sport into the 22nd Century.

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Comparing the attitudes of female students studying in Kerman University of Medical Sciences relative to two training methods in general physical education

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Physical education is a general unit presented for all students studying in Associate degree and Bachelor's degree level in all universities and higher education institutes in Iran. This research aims to study the students' attitudes towards the two training methods in physical education within one term and to study the students' ideas about the teaching method of this unit. In this descriptive and analytical research, the participants included 117 female students out of 180 ones studying in Kerman University of Medical Sciences. Students' attitudes were collected using questionnaire and were statistically analyzed using dependent T-test. Two training methods included compound aerobic and anaerobic exercises for a half semester, and aerobic ones with rhythmic music for a half semester. The questionnaire questions assessed the students' attitudes in 5 areas of sports performance, program content, exercise attractiveness, variety and intensity of exercise. There was a significant difference between students' attitudes and exercise attractiveness (P>0/05); There was no significant difference between students' attitudes towards aerobic exercises with rhythmic music is more positive; it is, therefore, recommended that aerobic exercises are used with appropriate music in physical fitness classes for motivation and more vitality.

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Aerobic but not resistance exercise can induce inflammatory pathways via toll-like 2 and 4: a systematic review

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The relationship between toll-like receptors 2 and 4 (TLR2 and TLR4) and the production of local and systemic cytokines in response to physical exercise has been poorly explored, and studies of a connection have produced conflicting results. Objective: To evaluate the extent to which TLR2 and TLR4 expression and signaling are linked to acute and chronic exercise outcomes. Methods: PubMed databases were consulted. This systematic review selected 39 articles, 26 involving humans and 13 based on rodents. Results: In acute resistance exercise studies, 75% showed a decrease and 25% did not find differences in TLR4 or TLR2 expression. For chronic resistance exercise studies, 67% found a reduction of expression and 33% did not show any difference. Both types of studies showed reductions in proinflammatory cytokines. In acute aerobic exercise studies, 40% revealed a decline, 7% did not show a difference, 40% showed an increase and 13% did not directly test the expression of the receptors. For chronic aerobic exercise, 58% of the studies showed a reduction in expression, 17% did not show a difference, and 25% found an increase. Among the studies that focused on combined exercise, 50% found a decline and 50% did not show a difference. Conclusions: A majority of the articles (54%) report a decline in TLR4 and TLR2 expression. However, aerobic exercise has the potential to evoke inflammatory responses by influencing these receptor pathways and acute sessions provided a greater inflammatory condition (40%) than regular sessions (25%).

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A therapeutic nutritional approach in assisting neuro-metabolic recovery in concussions

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Neuro impact is a US patented blend of vitamins, supplements, and herbs to be included in the recovery protocol of MTBI/ Concussions. The goal of this clinical observation study is to document therapeutic usage of Neuro Impact on a variety of concussion cases. The factors of dosage, dosage intervals, therapeutic duration, and adjunctive therapies were examined in each case. By using a blend of herbs, vitamins, and supplements, the body can combat the neuro-metabolic cascade that occurs when an athlete sustains a concussion. Four components of a concussion can be addressed nutritionally including Emotionality, Cognitive, Sleep disturbance, and Somatic symptoms. This is accomplished by making available the nutrients, precursors and modulators needed for normal and optimal brain function. By stabilizing the blood-brain barrier, optimizing normal neurochemical pathways, and combating neuro-metabolic excitatory dysfunction; the brain will repair and return to a more normal state with greater efficiency. This application and observation study substantiates Neuro Impact's success within the manufacturer's recommendations. The formula was well tolerated with no adverse effects.

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Evaluation of a 16 week, exercise professional led physical activity and dietary intervention for obese patients with knee osteoarthritis

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Background: Osteoarthritis is the most prevalent joint condition in the world. The knee is the primary large joint affected by the disease. Obesity has been shown to both cause and exacerbate osteoarthritis and is the most notable risk factor which can be modified. There is evidence to endorse weight reduction as a treatment for osteoarthritis. There is also good evidence showing that education and Exercise interventions can reduce pain and increase physical ability.

Aim: To improve patient's knee osteoarthritis symptoms by improving the diet, physical activity level and reducing the weight of obese patients.

Method: 181 Patients were referred to the programme from various clinical settings including primary care, and secondary care orthopaedic and rheumatology services. To qualify for the intervention patients had to show radiological evidence of knee osteoarthritis and have a BMI over 30. 112 Patients completed the programme with an average age of 57.4. The main reasons for program withdrawal were health reasons and inability to attend the session times. The programme was 16 weeks in duration and consisted of 2 exercises and one dietary session per week. Several objective and subjective markers were used at the beginning and end of the intervention to evaluate the effect of the programme on the patient's symptoms. Primary assessments included Oxford knee score (OKS), 30 second sit to stand (30s s-s), 6 minute walk test (6MWT) and the EQ5D quality of life assessment (EQ5D). Weight was measured as a secondary outcome. Using sub analysis of the results it was attempted to identify which patient's benefitted most and least from the programme. Patients were categorized based on age, initial OKS, and initial weight. These categories were then ranked against each other in relation to the patient's assessment results in order to compare categories.

Results: Statistically significant changes were seen in outcome measures: OKS (mean change 5.03) (p<0.05)(SD=9.8), 30s s-s(mean change 3.8)(SD 3.7)(p<0.05), 6MWT(mean change 115.4)(SD 126.5)(p<0.05), EQ5D(mean change 10.4) (SD 22.4) (p<0.05), weight (mean change -4.0) (SD 4.4)(p<0.05). Sub analysis identified patient categories of age <40 or 50-60, weight 100-110kg and initial OKS 10-20 as the most successful during the intervention, obtaining the most improvement across the outcome measures.

Conclusion: The 112 patients who completed the programme showed significant improvements in both objective and subjective markers assessed. The results suggest that interventions of this type, delivered by an exercise professional, are effective and could have a useful role in the management of knee osteoarthritis.

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The effect of 14 weeks of gait cycle in autism spectrum disorder

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The term hippotherapy refers to how occupational therapy, physical therapy, and speech-language pathology professionals use evidence-based practice and clinical reasoning in the purposeful manipulation of equine movement to engage sensory, neuromotor, and cognitive systems to achieve functional outcomes (AHA, 2016). This paper discusses the effect of 14 weeks of hippotherapy on Gait Cycle(length of steps, speed of steps, number of steps per minute, gait cycle duration) of individuals with autism spectrum disorder. The participants consisted of 24 males between 7-18 years old, diagnosed with autism spectrum disorder and randomly placed in experimental and control groups (N=12) for each group. The experimental group participated in 14 weeks of hippotherapy sessions. The control group did not attend in any hippotherapy or any physical activity outside of their ordinary life during the research period. The statistical analysis show significance in the scores of the Gait Cycle(length of steps per minute, speed of steps) of the experimental group versus the control group as compared with the time before the exercises (p=0.027), (p=0.001), (p=0.001), (p=0.001). The result has shown 14 sessions of hippotherapy had a positive effect on Gait Cycle of people diagnosed with autism spectrum disorder, with being in unstable level and improvement in balance systems and physical statue, especially flexibility and strength.

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Typology of gender schemes and the levels of physical fitness of futsal athletes

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This study aimed to evaluate if Futsal athletes that differ in the gender schemas types present differences in the body composition and in the physical fitness level. The initial sample was composed of 92 male athletes with 24,58 (\pm 4,53) age, which were classified in typological group schemas of gender Interactive Model: Male Heteroshematic, Female Heteroshematic and Isoshematic. In order to classify the sample in typological groups, the Masculine Inventory of the Self-concept's Gender Schemas (IMEGA) was used. The anthropometric technique was used to measure body composition, and Squat Jump, Counter Movement Jump and Running Anaerobic Sprint Test were used to assess respectively, explosive power and anaerobic power. The results were analyzed with One Way Variance Analysis (ANOVA) and with Multiple Variance Analysis (MANOVA). The results indicate that Male Heteroshematic, Isoshematic and Female Heteroshematic groups presented differences in the fatigue level, and that Male Heteroshematic presented more fatigue than the other groups. In the assessment of six sprints executed by the athletes, it was observed that this group presented more variation between the initial and final maximum potency, when compared with the other groups. These results lead to the conclusion that different psychological profiles adapt better to some game positions performance and/or to some specific situations during the game. Finally, it is suggested that psychological profile must be used in the selection of the athletes, considering also physiological, technical and tactical factors.

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Body mass index of montenegrin athletes participating in U21 national basketball team

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The purpose of this study was to describe body height, body weight and body mass index of Montenegrin basketball players L participated in U21 nation team and to detect possible differences in relation to sedentary subjects from the same country. Thirty-five males were enrolled in the study. They were divided into two groups: Fourteen basketball players participated in U21 national team of Montenegro (19.14±0.66 yrs.) and twenty-one healthy sedentary subjects from the same country (20.94±3.10 yrs.). All subjects were assessed for the anthropometric measures, using the standardized procedure recommended by the International Biological Program (IBP) standards. Height and weight was measured to the nearest 0.1 cm. Body mass index (BMI) was calculated as body mass in kilograms divided by height in meters squared (kg/m2). The descriptive statistics were expressed as a mean (SD) for each variable. Independent-samples T test was carried out to detect the effects of football sport on each variable: body height, body weight and body mass index (BMI). The mean of the body height was 194.72±6.99 centimeters for basketball players and 184.14±0.07 for non-athletes, body weight was 95.00±13.19 (athletes) and 82.66±14.11 (non-athletes) and BMI was 24.98±2.84 (athletes) and 24.34±3.71 (non-athletes). A significant difference was not found for all variables: body height (p=0.000), body weight (p=0.014) and body mass index (p=0.591). The results of this study revealed that although most of the sedentary subjects are not regularly trained; they didn't show significant differences in body mass index. Hence, these findings suggest us to conclude that sedentary boys in Montenegro have great body composition assessment and they are not obese. On the other hand, basketball players are significantly taller and heavier, comparing to sedentary subjects, and this is caused by selection of young people for this sport.

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Analytical study of the body angles during repel some miscellaneous balls for goalkeepers handball as a basis for the development of quality exercises

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The research aims to identify the corners of the body while blocking some balls diverse Goalkeepers Handball "as a basis for the development of exercises the quality of the research methodology the researcher used the experimental method so as to suitability for the application of research and procedures, using the experimental design with pre and post-test to two groups, one experimental and the other officer was selected sample of the research method intentional thundering of players from the Premier Club for Petroleum Refinery Company, and the strength of the research community (4) players from goalkeepers researcher used the tools and equipment. A computer for analysis of motor program K13D balance of medical standards - to measure body weight, body Stammer - Dynamometer, balls, medical. The most important results to find the best angle to the body while blocking some balls is high and low, which is difficult for handball goalkeepers to deal with such balls with the development of appropriate training for such angles.

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Effect of fitness training encompassing gymnastics-oriented program of six weeks duration on performance of volleyball players

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Introduction & Aim: The present trend which is universally accepted for achieving high class performance from top volleyball players is fitness which is achieved through sustained, systematic and scientifically planned conditioning program. The main aim of the study was to know how the gymnastic oriented training program will affect the fitness levels and the technical performance of the volleyball players.

Method: 27 Volleyball players were divided into 12 experimental and 15 control group aged between 18 to 24 years. The tests for Fitness included vertical jump, push-ups, chin ups, sit ups, back strength, 30 m sprint, boomerangs test; 600m run, sit & reach bridge up and shoulder rotation and technical skill tests like passing, spiking and service were used for the study. A pre and post test was conducted before and after the training program of 6 weeks.

Results: The results indicated no significant difference in the anthropometric measurements of age, height and weight between the experimental and control group as the 't' values observed were 0.28, 1.63 & 1.60 respectively . There were significant improvements in Vertical jump, push-ups, sit-ups, modified boomerang test, bridge test and shoulder rotation index with the't' values being 2.60, 3.41, 3.91,4.02,3.55 and 2.33 respectively. However no significant differences existed in Chin-ups, Back strength, 30 M sprint and 6000 M run with the't' values being 2.08, 1.77, 1.28 and 0.80 respectively. There were significant improvement in the post test for the technical skills tests in the experimental group with 't' values being 3.65, 2.57 , and 3.62 for the passing, spiking and service respectively. There was no significant difference in the values of the control group except in the service which showed significant difference.

Conclusion: It was found that both the physical fitness and skill proficiency of the volleyball players increased through the participation in the gymnastics oriented program.

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The relationship between subjective wellbeing and attitude towards physical education and sports: Example of vocational high school

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Subjective well-being (SWB) can be described as people's cognitive and emotional evaluations about their own lives. Attitude towards physical education and sports plays a decisive role in one's physical activity level. The purpose of this study was to investigate the relationship between SWB and attitude towards physical education and sports. 336 students (266 male, 70 female) participated in this study. Physical education and sports attitude scale which contained 24 items (12 negative, 12 positive) and developed by Demirhan and Altay (2001) and adolescent subjective wellbeing scale which contained 15 items and developed by Eryılmaz (2009) were used as data collection tools. Collected data was analysed by SPSS 22. Independent samples t-test, Kruskal Wallis, Mann Whitney-U and Bivariate Correlation tests were used. The Cronbach Alpha reliability values were calculated as .840 for physical education and sports attitude scale and .915 for SWB. Statistically significant difference was found between the licensed athlete-students and non-licensed students (p<.05) in physical education and sports attitude scales. As the physical education and sports attitude scores increased, it was seen that physical activity levels also increased. Moderate positive correlation was found between physical education and sports as licensed has a positive impact on SWB. Students with high levels of attitude towards physical education and sports subjectively feel better than the rest which means being physically active can affect your mental health positively. These findings are in parallel with the literature.

Biography

Serdar Kocaekşi has completed his PhD at Hacettepe University in 2010. He is the Head of Physical Education and Sports Teaching department in Sport Sciences Faculty of Anadolu University since 2014. He published more than 15 papers in scientific journals.

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