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## **HIDDEN DANGER: VASCULAR INJURIES IN SPORT**

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Associate Director, UCSD primary care Sports Medicine Fellowship  
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Athletes are at a substantially higher risk of vascular injuries due to the nature of sport, injury, treatments and travel. Often due to the rare nature of these injuries they are overlooked with dangerous consequences. Injuries including arterial injuries with dislocations or manipulation, deep venous thrombosis/pulmonary embolus, dissections and even cerebrovascular accidents are often missed in the critical minutes and hours after injury. Athletes are at greater risk for deep venous thrombosis secondary to dehydration, travel, muscle hypertrophy, bradycardia, vessel injury, immobilization, oral contraceptives and in some cases anabolic steroids. Utilization of technology to avoid stasis and immobilization and careful review for thrombophilia risk in the case of injury can help identify high risk athletes and prevent clots. Early recognition and management can result in tremendous improvement in morbidity and save life's. My presentation will use a case-based approach to highlight the dangers for athletes and point out the need for prevention and urgent management on the field and in the hospital.

## **NEW APPROACHES TO CORRECTION OF ARTERIAL BLOOD PRESSURE AND ASSESSMENT OF REGULATION ACTIVITY OF HUMAN ORGANISM**

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**K.Y. Malakhov (3) (Russia)**

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*2 «Shvabe» Ltd, Moscow*

*3 LLC «Inferum», Yekaterinburg*

Arterial hypertension remains in the global scale one of the most common diseases, cause of premature death and disability of millions patients in the world. Effective diagnosis and treatment of arterial blood pressure disorders remain a global challenge for health systems and personal health.

Portable electrostimulation device “AVR-051” is intended for arterial blood pressure correction in hypertonic and hypotonic conditions through transcutaneous non-invasive electric stimulation. Mode of arterial blood pressure correction depends on application zone (inner or outer left wrist zone) and selection of appropriate short electric stimuli programme. One procedure lasts for 6 minutes with recommended treatment course duration for 10-14 days. The method is effective in psycho emotional status improvement and increasing adaptation to workload, different stress factors, including physical activities.

Hardware-software complex “ROFESE01C” is a household mobile device linked to a computer or to a smartphone. The applied method is based on stimulating the biologically active point on the inner side of left wrist by electrical microcurrent impulses causing body electric response reactions which potentials are registered and analyzed by the device. “ROFESE01C” testing promptly and easily provides with the data on quality of human body regulation systems functioning. This assessment allows controlling exposure effects of internal and external factors such as a diet, physical activities, stress etc.

## **WHY RICE BECAME POLICE: THE EVIDENCE BASE FOR THE MANAGEMENT OF SOFT TISSUE INJURIES**

**Claire Doherty (Australia)**

*SENIOR PHYSIOTHERAPIST TAMWORTH RURAL REFERRAL HOSPITAL, NSW, AUSTRALIA*

*PHYSIOTHERAPIST, AUSTRALIAN MASTERS TEAM*

This evidence-based review will review the phases of healing after injury. An understanding of the phases of healing underpins the evidence base for soft tissue injury management.

The concept of RICE will be challenged and the evidence supporting the more recent paradigm of POLICE (Protection, Optimal Loading, Ice, Compression and Elevation) will be presented.

The process of mechanotransduction and the role of tissue loading to facilitate tissue repair (mechanotherapy) will be discussed with an emphasis away from prolonged immobilization and towards early mobility. Clinically relevant tips on how to optimize the “dose” of tissue loading will be presented.

## **FOOTBALL AND THE RISK OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS INFECTION**

**Kevin Gregg, MD (USA)**

*Associate Professor of Medicine*

*Division of Infectious Diseases*

*University of Michigan, Ann Arbor, USA*

Community-acquired Methicillin-resistant Staphylococcus aureus (CA-MRSA), a frequent cause of skin and soft tissue infections, colonizes mucous membranes and skin and can survive for prolonged periods on inert objects. There are numerous reports of CA-MRSA outbreaks among teams in various sports, including football, with infections sometimes leading to severe disease requiring hospitalization, intravenous antibiotics and surgical intervention. Transmission of CA-MRSA between athletes may occur through skin-to-skin contact or sharing of equipment. In this presentation, the epidemiology of CA-MRSA carriage and infection among football teams, clinical characteristics and diagnosis of CA-MRSA infection and antibiotic treatment options will be discussed, as well as preventative measures to decrease the risk of CA-MRSA transmission.

## **WELL-BEING IN ADOLESCENT ELITE ATHLETES: A REVIEW**

**Christopher Grybauskas, MD (USA)**

*Pediatric Hospitalist, Johns Hopkins University School of Medicine, Baltimore, MD 21287 USA*

Elite athletes (EA) face unique challenges in adolescence, as well as all of the normal developmental tasks they must achieve in order to achieve well-being in adulthood. Football (soccer) players are being identified and developed in elite academies at earlier and earlier ages, even in the USA where soccer is not the dominant sport. American families often resist sending their adolescent EA to far-off soccer academies, due to social concerns and a natural desire to stay close to home. One hypothetical concern raised is that normal adolescent development may be hindered by such intense pressure and separation from family at a critical time in life. Case studies of several American EAs, and literature from research conducted with a wide range of German EAs is presented, making the case that adolescent EAs, despite their additional stressors, often meet normal milestones and test well on psychological assessments of well-being.

## **ROLE OF ULTRASOUND IN THE ASSESSMENT OF PATIENTS WITH PUBALGIA**

**Dr. Guñazú A. Guillermo A. (Argentine)**

Pubalgia is a syndrome characterized by chronic inguinal pain. There is a wide variety of terms in medical literature to describe this syndrome, including athletic pubalgia, athlete's hernia, Gilmore's groin, pubic osteitis, or chronic inguinal pain. This highlights the difficulty in understanding this syndrome, which makes its diagnosis and subsequent treatment complex. The pubalgia, understood as "pain in the pubis" is a prevalent consultation in the sports community.

Ultrasound allows a dynamic assessment of the lower abdominal wall to detect weaknesses at that level, and the tendon state in the proximal attachment of the abductor muscles, two important points to take into account in the evaluation of this pathology.

In addition we can evaluate the soft and muscular planes near the hip joint, peritrochanteric planes, hamstring pathology, deep subgluteal syndromes and other entities that are part of the differential diagnoses in patients with pubalgia.

One of our theoretical pillars is the work on "sports hernias" performed by Dr. Osvaldo Santilli and his team and his experience in the diagnosis and treatment of athletes with pubalgia evaluated in a sports pathology center.

## **VR-TECHNOLOGY IN SPORTS REHABILITATION**

**Gulko Nadezhda K.<sup>1</sup>, Ivan Ozhgikhin V.<sup>2</sup> (Russia)**

*1 «Shvabe clinic » Ltd.*

*2 «Shvabe» Ltd.*

«Shvabe clinic» is network medical company of a fundamentally new format with the concept of "clinic of the future", "innovative platform" for the implementation of breakthrough ideas and technological solutions at the junction of basic medical research, medical technologies, innovative medical equipment and medical services in rehabilitation on the principles of the systems approach and complex innovative technologies for personalized medicine.

The visiting card of «Shvabe clinic» is the use virtual reality technologies and robotic locomotive therapy in the rehabilitation of patients.

Sports rehabilitation is a priority line. Sport of higher achievements is accompanied by traumas and a high risk of development occupational diseases. Special importance is acquired by medical rehabilitation in connection with this fact.

The main goal of sports rehabilitation in "Shvabe clinic" is the development of rehabilitation programs aimed at improving sports performance and rapid rehabilitation of football players and other sportsman after injuries.

For this purpose, experts of clinic use medical helmet of virtual reality, high-precision system of capture and analysis of movements, unique software, telemedicine module for communication between the doctor and the patient. Due to this product the doctor has up-to-date information about patient's condition, quality and quantity of trainings.

Product value is personified control for health status and reserves organism for patients with orthopedic pathologies.

**EVALUATION OF ERGONOMICS, PHYSICAL AND MENTAL EFFORTS IN  
OPEN, LAPAROSCOPIC AND ROBOT-ASSISTED RADICAL PROSTATECTOMY  
AND HOW THE HEALTHY STATUS AND EXERCISES IMPACT ON THE  
SURGEONS' WORK**

**Marcel C. Hayashi, Pamela A. S. V. Pereira, Raisa A. O. G. Faria, Geovanne F. Souza,  
Eliney F. Faria (Brasil)**

**Background:** Interests in ergonomic principles emerged, despite little scientific data in the area. In the “minimally invasive era” this subject have been gained greater repercussion. Robot-assisted surgical systems have the potential to improve ergonomics for the surgeon. This study aimed to compare the user’s ergonomics, mental and physical efforts performing standard open radical, laparoscopic and robot-assisted radical prostatectomy.

**Methods:** This study was conduct inside operating room of the hospitals. Twelve surgeons were analyzed and filmed by lateral view, and each surgeon has performed at least two surgeries using different approaches). Each filmed procedure was paused every 3 minutes and an analysis of REBA (Rapid Entire Body Assessment) scores was performed from the mean of these static observations (REBA software). The final REBA score indicated the level of risk for musculoskeletal injuries and the level of action that should be taken to perform an action (surgery). We also assessed the subjective and qualitative analysis using 3 other questionnaires. The Body Part Discomfort (BPD), NASA (National Aeronautics and Space Administration), and SMEQ (Subjective Mental Effort Questionnaire). They were completed before and after the surgeries. Moreover, we have applied a questionnaire about musculoskeletal disorders, routine of exercises and general healthy status.

**Results:** Preliminary results of the study are indicating better ergonomic results and lower physical and mental stress in robot-assisted surgeries, as well as in surgeons with regular physical activity practices. Although robotic surgery offers some advantages, it remains associated with trunk, wrist, finger strain and siting position of surgeon. Laparoscopic prostatectomy is physically and mentally demanding and technically complex. Robotic technology provides better ergonomics than open and Laparoscopic.

**Conclusions:** Robotic assistance decreases mental and physical effort during the radical prostatectomy. Ergonomics training should be developed to protect surgeons from preventable, potentially career-altering injuries.

## **FUNCTIONAL DEFICITS IN THE WRIST AND FINGER JOINTS OF GOALKEEPERS AFTER MORE THAN 20 YEARS OF PLAYING RECREATIONAL SOCCER**

**Hilber F, MD<sup>1</sup>; Wiesenberg A, MD<sup>1</sup>; Kerschbaum M, MD<sup>1</sup>; Koch M, MD<sup>1</sup>;  
Weber J, MD<sup>1</sup>, Nerlich M, MD<sup>1</sup>; Krutsch V, MD<sup>2</sup>; Krutsch W, MD<sup>1</sup> (Germany)**

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*2 Department of Otorhinolaryngology, Head and Neck Surgery, Paracelsus Medical University, General Hospital Nuernberg, Nuremberg, Germany*

**Introduction:** Soccer is a very popular sport worldwide. Beside an acute injury profile, also chronic injuries are leading to long-term consequences. This study evaluated the functional status of the wrist and finger joints of goalkeepers after more than 20 years of playing recreational soccer.

**Materials and methods:** Goalkeepers and outfield players in soccer were investigated in a retrospective cohort study. The personal history and injury history of each goalkeeper were correlated with the results of the clinical examination of wrist and finger joints and compared to the control group. Participants of the study group and control group were examined with regard to anamnestic complaints, deficits in clinical examination and completion of functional tests.

**Results:** The prevalence of injuries to the wrist and finger joints of goalkeepers during their soccer activity was 100%. After more than 20 years, goalkeepers were significantly more restricted in finger movement ( $p<0.05$ ) and experienced more pain and swelling ( $p<0.05$ ) as well as higher instability ( $p<0.05$ ) in the wrist and finger joints than outfield players. Goalkeepers also had worse functional outcome in their hands than controls, which was not correlated with injury history in affected finger joints.

**Conclusions:** Frequent injuries and continuous overload to wrist and finger joints in goalkeepers with more than 20 years of soccer activity lead to deficits in daily life. Specific future strategies to prevent these deficits and other long-term changes in goalkeepers` hands are needed.

## **THE IMPACT OF PREGNANCY AND PARTURITION ON POST-PARTUM PERFORMANCE IN ELITE ATHLETES: AN UNFAIR ADVANTAGE FOR SOME?**

**Simon Hill (Great Britain)**

*Gynaecologist, East Lancashire Hospitals NHS Trust*

Research suggests that exercise training commonly decreases during pregnancy, even amongst the fittest of women. Despite this, women are typically able to resume pre-pregnancy exercise routines soon after delivery, and increasingly there are anecdotal reports of improved postpartum performance; including high profile athletes such as Paula Radcliffe, Jessica Ennis-Hill, Liz McColgan and Jo Pavey.

Currently, there are limited data to support an ergogenic role for physiological variables' however it is important not to overlook the positive effect pregnancy and parturition may have in a woman's psyche or perceptions toward her athletic abilities as a result of her pregnancy and delivery, although data are lacking.

What is clear is that an increasing number of elite female athletes are maintaining their physical activity and exercise routines during pregnancy, with many able to return to competition soon after delivery. Further research is needed to further explore the relationships among physiologic and psychological variables and postpartum exercise performance. Ideally, these studies should be prospective (studying women prepregnancy through the postpartum period) and include diverse samples of women with regard to activity type and fitness level.

In this review, I will explore possible physiologic explanations for enhanced postpartum exercise performance, for example pregnancy related changes in aerobic fitness, lactate threshold, flexibility, and musculoskeletal fitness.

## **REVIEW OF RISKS RECOMMENDATIONS FOR THE SINGLE KIDNEY ATHLETE**

**Ibrahim A. (Canada)**

*Division of Nephrology, Toronto General Hospital, Toronto, Ontario*

**Purpose:** Due to the rising prevalence of end stage renal disease (ESRD) and the accompanied need for renal transplants, there is an expected rise in living kidney donors, and therefore solitary kidney patients. This is in addition to other reasons for having a solitary kidney including: congenital abnormalities, tumours and trauma requiring nephrectomy, and more commonly functional solitary kidneys (allografts or severe unilateral renal artery stenosis patients). With the exception of some of these etiologies, many patients with solitary kidneys are otherwise healthy and functional, and do participate in athletics both at the adolescent and adult age groups. There is a paucity of recommendations and statistics regarding risks particularly for this patient group. This review aims to present available data on the subject.

**Methods:** Retrospective case series and literature review, including expert group recommendations and surveys.

**Results:** There are few national/international expert group recommendations for this patient group, and those that do exist are fraught with contradiction. The American Academy of Pediatrics (AAP) adopted a “permissive” approach from 1994-2008, and in 2008 qualified this further with “individual assessment” and “protective equipment provision”. The National Kidney Foundation (NKF), on the other hand, recommends avoiding contact sports. At the physician level, several surveys of urology and nephrology associations have revealed anywhere between 40 and 60 percent of physicians advise their patients to avoid contact sports, unless the athlete plays at an “elite level” in a collegiate/Olympic/professional setting. Survey of NFL team physicians and trainers revealed about 60% would allow a solitary kidney athlete to play at the professional level, a number which decreases with decreasing competition level (collegiate, high school, etc). Data on kidney injuries is sparse as well, particularly for solitary kidneys. Data from injury databases including National Athletic Trainer’s Association (NATA), and literature review otherwise reveal that renal injury rates are quite low for all-comers, and were found mostly in the following sports: cycling, football, soccer, skiing and car racing. According to NATA study, the most common sport for injury for males was football, and for females was soccer. The injuries included 18 total, 3 lacerations and 15 contusions, none requiring surgery or leading to loss of function.

Conclusion: There are few evidence-based expert group recommendations for the solitary kidney athlete, with conflicts about participation and level of competition. Available data, although limited to US databases, shows that kidney related injuries are very low and do not lead to any serious sequelae. This is to be taken in context with the patient, the sport, and level of participation, as the injury data is for all-comers, and so may not apply to this special group.

## **RIOR CRUCIATE LIGAMENT PLASTY. META-ANALYSIS.**

**Juan Matus Jiménez (Mexico)**

*Orthopedics, Traumatology and Sports Medicine of Mexico City*

Injuries of the anterior cruciate ligament (ACL) affect the function of the knee and reconstruction is necessary. To determine if there is a risk of transmitting diseases when using allografts, a meta-analysis was performed according to QUORUM.

### **MATERIAL AND METHOD:**

The infection caused or that occurred after the LCA plasty with allografts from 2005 to 2016 was reviewed in Pubmed, Crochane and World Wide Science.

### **RESULTS:**

In Pubmed:

The search began with LCA 16719 articles, reconstruction 8780, allografts 747, infection 69, finally:

-39 articles report infection.

-13 met all the parameters studied,

-in 8 journals were published.

-Up to 3126 patients studied.

-247 with positive cultures

They were used:

-Autografts

-Alografts.

-Microorganisms: saprophytes of the skin.

On WorldWideSciencie.org they found:

-LCA: 128684

-Reconstruction: 110707

-Alografts: 12400

-Infection: 5764

-Reviewed 116 articles

-18 met all the parameters.

-in 12 magazines were published.

-3126 patients studied

-The tendons used:

-Autografts

-Allografts.

-The microorganisms: saprophytes of the skin.

In Cochrane it was found:

-LCA 16

-Reconstruction 10

-Alloinjerto 1

-Infection 5

Of which none covered the revised parameters.

DISCUSSION:

18.84% (Pubmed), 15.52% (WorldWideScience.org) contained all the parameters studied, including journals with a high level of impact. Germs are saprophytes of the skin.

CONCLUSION:

The cases of infection of the ACL plasty should be analyzed in greater detail since there is no clear evidence in the world literature that these were caused by the use of allografts and to look for the cause to prevent this event.

## **A RECIPE FOR SUCCESS: A LITERATURE REVIEW OF RESEARCH INTO PENALTY SHOOTOUTS**

**Keane, G (Ireland)**

*General Practice, Dublin, Ireland*

**Introduction:** The importance of penalty shootouts in knockout international tournaments cannot be overstated. In all corners of the world, penalties are often the final criterion to determine who is crowned champion. This includes the World Medical Football Championships. Can retrospective analysis and research produce a recipe for the successful penalty?

**Objectives:** This narrative literature review will explore the extensive research examining what factors contribute to a successful penalty kick under the highest pressure. We will then distribute a questionnaire to all WMFC national teams in order to examine if our penalty shootouts correlate with the established data.

**Methods:** Literature search for projects examining penalty shootouts in major international tournaments over the past decade. Questionnaire to all participating WMFC teams to explore our penalty taking habits.

**Results/Conclusions:** TBC

## **LONG-TERM RESULTS OF ACL RECONSTRUCTION 1ST WITH B - T - B GRAFT PRESS - FIT TECHNIQUE.**

**Kovanda T., Nachtnebl L. (Czech Republic)**

*1st Orthopaedic Department Masaryk University St. Anne's Faculty Hospital in Brno*

The lecture is divided into 4 main parts. The first one deals with the history and the origin of the above-mentioned ACL replacement method (B-T-B press-fit). In the next section we discuss the specifics of our method compared to other surgical techniques for ACL reconstruction. The third and foremost part of the lecture presents our surgical technique in the form of a structured video. The last part represents the standard postoperative and rehabilitation regime maintained at our clinic after ACL replacement.

## **THE IMPACT OF FOOTBALL MEDICINE RESEARCH ON FOOTBALL PLAYERS**

**Werner Krutsch, Volker Krutsch (Germany)**

*Team Germany*

Background of this speech is the attendance of Prof. Dr. Jiri Dvorak, former Chief Medical Officer of FIFA, in the scientific congress of the WMFC 2018. The speech will describe the developments and research activities in football medicine over the last 15-20 years. Beginning with the foundation of F-Marc and the global network of FIFA Medical Centres of Excellence started the campaign to improve players` health and prevention of injuries in football. Main research areas and the most important findings of football medicine projects around the world will be presented in this speech.

## **CONSEQUENCES OF AN EXTREME DIET IN THE PROFESSIONAL SPORT: REFEEDING SYNDROME TO A BODYBUILDER**

**Indre Lapinskienė, Gabija Mikulevicienė, Jurgis Garšva, Gabija Laubner, Robertas  
Badaras (Lithuania)**

Refeeding syndrome, as a life-threatening condition, is well known among severely malnourished or deeply metabolically stressed patients. This case presents an atypical manifestation of the syndrome to a young bodybuilder, whose extreme diet, including 5 months of insufficient nourishment before the sport competition and 6 days of carbohydrates overload afterwards, has led him to a bilateral lower limb paralysis and drastic homeostatic disturbances. Severe hypokalemia, hypophosphatemia, hypomagnesemia and hyperglycemia with mildly elevated liver enzymes have occurred. The patient could barely move his legs and arms, and his state has been followed by a hypertensive crisis, which required an immediate intravenous treatment. Although his weight was 112,5 kg with a body mass index of 32,2 kg per square meter, and his blood serum albumin concentration resulted inside the normal range, the overall condition was corresponding to the state of extenuated and malnourished patients. This case reflects to high prevalence of eating disorders or non-adequate nutrition among weight-sensitive sport athletes. The importance of prevention and opportune diagnostics of refeeding syndrome among special vulnerable groups should be considered.

# **CARDIOMETABOLIC RISK REDUCTION THROUGH RECREATIONAL GROUP SPORT INTERVENTIONS IN ADULTS: A META-ANALYSIS**

**Felipe Lobelo, MD, PhD, FAHA (USA)**

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and Exercise is Medicine Global Research and Collaboration Center  
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**Background:** Physical inactivity is a leading risk factor for cardiovascular disease (CVD) worldwide. Group sport participation offers a unique and engaging intervention approach, but its overall effect on cardiometabolic risk factors is not clear.

**Objective:** To estimate the pooled effects of community-based, recreational-level group sports on cardiometabolic risk factors and fitness parameters among adults.

**Methods:** We systematically searched electronic databases for English articles reporting the effectiveness of recreational-level group sports, published between January 1, 1965 and January 17, 2017. We extracted baseline and end of intervention means for cardiometabolic and fitness parameters. Random- or fixed-effects meta-analyses were used to obtain pooled pre/post change in outcome means within intervention participants and between groups. From 2,491 screened titles, 23 publications were included (N=902, age [mean  $\pm$  SD] = 46.6  $\pm$  11.7 yrs), comprised of 21 soccer and two rugby interventions.

**Results:** We found significant improvements within-subjects from baseline to post-intervention for systolic blood pressure (SBP) (-7.28 mmHg [-9.29, -5.26]), diastolic blood pressure (DBP) (-3.60 mmHg [-5.03, -2.17]), low-density lipoprotein (LDL) cholesterol (-0.23 mmol/L [-0.39, -0.08]), waist circumference (WC) (-3.78 cm [-7.29, -0.26]), body fat % (-2.26% [-3.06, -1.46]), resting heart rate (-6.13 beats/min [-7.61, -4.65]), VO<sub>2</sub> maximum (3.43 mL/min/kg [2.63, 4.22]), and HOMA-IR (-0.43 [-0.72, -0.14]). Most studies (n=16) were classified as high-quality and we found no evidence of publication bias.

**Conclusions:** We found significant cardiometabolic and fitness improvements following participation in group sport interventions, primarily recreational soccer. Findings suggest group sport interventions are promising strategies for reducing cardiometabolic risk in adults.

## **THE IMPACT OF A PREHABILITATION PROGRAM ON MAJOR ABDOMINAL SURGERY**

**David Machado-Aranda, MD, FACS; Ryan Howard, MD; Stewart Wang, MD, FACS;  
Michael Englesbe, MD, FACS (USA)**

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**Introduction:** Prehabilitation in Orthopedics are training programs designed to strengthen, in order to prevent complications and functional limitations after surgery. We propose that this same concept could be applied to general surgery patients, by increasing their cardiopulmonary reserve they could see potential benefits in reducing adverse events and postsurgical complications.

**Methodos:** We performed a prehabilitation program engaging patients in four activities before surgery: physical activity, pulmonary rehabilitation, nutritional optimization, and stress reduction. Enrollment was voluntary and offered within 4-6 weeks prior to scheduled operation. We prospectively collected demographic, intraoperative (first hour), and postoperative data for patients enrolled undergoing colectomy. Statistical analysis was performed using 2:1 propensity matching and compared Prehab (N=40) to non-Prehab (N=80) patients. Additional emergency group (N=40) was included for signal analysis.

**Results:** Overall, 70% of Prehab patients complied with the program. Demographic data was similar in all groups. At 1-hour anesthesia, Prehab patients showed improved systolic and diastolic blood pressures and lower heart rate compared to other groups. A significant reduction in complications for Prehab group was found compared to non-Prehab and emergency groups (30.1% vs 38% vs 48%,  $p < 0.05$ ). This translated in differences for total charges averaging \$64675 for the Prehab group; \$80298 for the elective non-prehabilitation group and \$141998 for the emergency group ( $p < 0.001$ ).

**Conclusions:** Patients undergoing prehabilitation prior to colectomy showed positive physiologic effects and experienced fewer complications. The average savings of \$15,623 per patient represents a significant return on investment and should be considered for all patients undergoing surgery.

## **MANAGEMENT OF DYSPHAGIA PATIENTS AFTER ACUTE CEREBROVASCULAR ACCIDENT IN TO REHAB UNIT.**

**A.L. Palamarchuk PhD, MD., O.P. Balytskyi PhD, MD., V.V. Strokous MD. (Ukraine)**

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*BPP rehabilitation clinic.*

*Kiev municipal clinical hospital #6*

Dysphagia is a common complication of acute stroke, affecting between 37% to 78 % of stroke survivors. Violation of swallowing as a result of which particles of food or saliva enter the respiratory tract and serve as the etiological factor of aspiration pneumonia, which subsequently leads to a lethal effect, especially in elderly people. Dysphagia also been associated with length of hospital stay and short-term mortality. Therefore, prevention of post-stroke effects and rehab complex represent an urgent problem not only for medicine, but also for society.

The aim of study was to evaluate the role of neuro-muscular electro-stimulation (NMES) during dysphagia rehab in patients with acute cerebrovascular accident.

Equipment: Multifunction Physiotherapy Electromyography System Intellect Advanced Combo (Vital Stim 2) manufactured by DJO, LLC (USA).

Subject of research: 27 patients with a diagnosis - post stroke residue (PSR), swallowing disorders (the term from the main disease - from 3 to 12 months). In to medical history whole patients with the first time NMES rehab complex.

Evaluation of results: Dysphagia outcome and severity scale-final revision (DOSS).

Method: Each patient received the NMES twice a day for 30 minutes, 6 days a week, for 3 weeks; pre-training - stimulation of n.olfactorius (10-15 min.) speech therapy training with NMES duration of 30 minutes. The second procedure is the NMES with traditional training (water + capsaicin) swallowing ( tube test -50 ml of cold water).

Results:

- All patients got it a full treatment protocol for a 3-week course any complications.
- All participants increased personal care and swallowing quality according to the DOSS score compared to the pre and post evaluation.
- No patient remained at the level of the primary level of assessment.
- The power of NMES in all patients increased during course of treatment (min -2mA., max. 9.5mA).

- In three of twenty-seven patients during the first 3-5 days of rehabilitation, one-time regurgitation of food was observed in the oral cavity, which was not accompanied by single monophagia.
- One patient during the last 3 days of rehabilitation during the procedure called the hiccup, which disappeared after the procedure.
- In one patient, headaches were observed continuously after n.olfactorius stimulation, requiring constant correction of this type of pre-training.
- All patients during the first 7 procedures showed positive changes in improving of articulation.

Conclusions: The NMMS protocol can be recommended for the rehabilitation of patients with the consequences of transmitted NMES and diagnosed symptom of dysphagia.

Further studies of the MSD dysphasia should optimize the local clinical protocol to facilitate the use of procedures in community-based settings.

Recommendations: For the positive dynamics of the quality of swallowing and speech defect an important role is given to relatives, relatives and relatives, who spend a long time with the patient and communicate with the patient taking into account the recommendations and pedagogical wishes of the attending physician and speech therapist.

In order to preserve the socio-economic costs and maintain the quality of high-grade personal health, it is important to timely and flexibly reorganize the provision of medical and rehabilitation assistance, taking into account new evidence-based studies in the field of postnatal rehabilitation.

## **FATALITY RATE AFTER PELVIC FRACTURES IN ELDERLY (<65 YR.) PATIENTS**

**Giedrius Petryla, Igoris Šatkauskas, Jaunius Kurtinaitis,  
Rokas Bobina, Valentinas Uvarovas (Lithuania)**

### **Introduction**

Pelvic fractures account for 3 percent of all fractures. 60 percent of pelvic fractures are related to complex injuries of other parts of the body e.g. chest, abdomen, spine, head, etc. According to literature fatality rate after pelvic fractures in one-year period ranges between 5 and 50 percent. Three publications have been found providing fatality rates after low-energy trauma in elderly people (>60 yr.). According the studies pelvic fractures increase case fatality rate, however, they provide low samples and are statistically insignificant. Silke Andrich et al. made a retrospective analysis using Germany trauma database and found that case fatality rate after pelvic fractures in elderly patients (>60 yr.) is 21 percent in contrast to 11 percent in general population without pelvic injury.

### **Purpose**

To submit data of prospective research concerning case fatality rate after pelvic fractures in patients over 65 years of age in Republican Vilnius university hospital (RVUH) and compare it with the results of other researches.

### **Methods**

Since June 2013 all the patients of Republican Vilnius university hospital with pelvic fractures have been registered in a database. These patients participate in a study called “Life quality and fatality rate after pelvic fractures” and are observed for 12 months. Case fatality rates of the current research will be provided and compared with the results of similar researches.

### **Results**

126 Republican Vilnius university hospital patients over 65 years old with pelvic fractures were included in the study in the period between June 2013 and 2016. 21 patients were excluded from the study because of suffering high-energy trauma. Analysis of 105 patients supplies 36 percent case fatality rate in one-year period.

**Conclusion.** Case fatality rate for elderly patients (>65 yr.) with pelvic fractures after low-energy trauma in Republican Vilnius university hospital is 36 percent comparing with retrospective analysis of Silke Andrich et al. in Germany where case fatality rate after pelvic fractures in elderly patients (>60 yr.) is 21 percent.

## MAN FLU

**Kyle Sue, MD, MHM, BSc, CCFP(PC) (Canada)**

*Clinical Assistant Professor, Memorial University of Newfoundland / University of British Columbia, Canada*

“Man flu” is a term so ubiquitous that it has been included in the Oxford and Cambridge dictionaries. Oxford defines it as “a cold or similar minor ailment as experienced by a man who is regarded as exaggerating the severity of the symptoms.” Since about half of the world’s population is male, deeming male viral respiratory symptoms as “exaggerated” without rigorous scientific evidence, could have important implications for male athletes, including insufficient provision of care. Despite the universally high incidence and prevalence of viral respiratory illnesses, no scientific review has examined whether the term “man flu” is appropriately defined or just an ingrained pejorative term with no scientific basis. Therefore, this review thoroughly delves into the scientific literature to determine whether men really do have higher morbidity and mortality from common viral respiratory illnesses, and it also examines whether this could have any evolutionary basis.

This review was published in the British Medical Journal in December 2017 and has been a worldwide topic of discussion since then, covered by over 200 media outlets around the world.

**MENTAL RESILIENCE IS AN ATHLETE'S GREATEST COMPETITOR: LONG-TERM PSYCHO-NEURO-IMMUNOLOGICAL BENEFITS OF THE OPTIMISATION HUB MODULAR APPROACH TO COGNITIVE – BEHAVIOURAL RESILIENCE EDUCATION FOR ATHLETE PERFORMANCE AND WELLNESS.**

**Graziella Thake MA Psych (PHD undergrad) & DR Kelly Bowers,  
Mr Daniel Kulikowski (Australia)**

*Graziella Thake MA Psych Director of Mental Health & International Programs Manager  
The Optimisation Hub*

It is well documented that mental health plays an integral role in athlete performance, and injury recovery. The high rate of athlete mental health concerns following transition to life out of sport is receiving a greater focus across the globe; with comparable rates of negative psychological impact being reported across sporting codes and nations. Such findings suggest that athlete mental health is not as well supported as first thought throughout sport itself. More recently, psycho-neuro-immunological (PNI) research suggests that interconnected biological and psychological systems can reciprocally influence cognitive, stress and immunological responses.

The Optimisation Hub (OHub) works in a prevention and treatment model, offering motivational training and education for athletes, coaches/managers, clubs and players' associations. OHub's programs are designed to stimulate and sustain PNI benefits using a Cognitive Behaviour Therapy (CBT) paradigm. The program measures a range of outcomes regarding athlete welfare, including resilience, athlete engagement, and symptomatology of specific mental health concerns and sports performance resilience. The method has been derived from programs successfully used in 26 multinationals over a 20-year period. To our knowledge, the prevention-treatment model and the services housed within the OHub are amidst the first in the world for athlete services.

Pilot programs conducted with Australian athletes across six sporting codes have indicated improved resilience of 94% across the athletes surveyed utilising the modular techniques and tools, and 93% increased success and engagement in athlete programs provided by participating athletes. Future program facilitation and research is expected to produce PNI advances in athlete body-mind connections, which in turn improve resilience, mental health, and aid injury recovery. The program effectiveness has been tested using standardised testing.

## **OSTEOARTRITIS AND PHYSICAL ACTIVITY**

**Stephen Thompson (Great Britain)**

Osteoarthritis (OA) affects a significant proportion of the population worldwide. Physical activity has been shown to improve pain, function and quality of life in patients with OA. The evidence base will be explored for both the positive and negative effects of physical activity on the various aspects of OA. The use of physical activity as a treatment modality for OA will be discussed, along with alternative treatment options including hyaluronic acid and steroid injections.

## **CASE-STUDY: KNEE PAIN IN AN ADOLESCENT FOOTBALL PLAYER.**

### **Wall N (Ireland)**

*1. Football Academy Doctor, Shamrock Rovers Football Club Academy, Dublin, Ireland.*

*2. General Practitioner, Blessington Family Practice, Co Wicklow, Ireland.*

A 15 year-old male footballer presented to the club's academy medical clinic with right knee pain. At the time of his first review he was engaged in a rehabilitation programme for a groin injury. Initial clinical assessment did not suggest any major structural knee joint pathology. Upon returning to sport the player developed worsening right knee pain, which prevented him from all exercise-based activities. Further clinical assessment demonstrated a small knee effusion, as well as pain at the end-range of passive knee flexion. X-Ray & MRI Right knee were requested and both demonstrated a large osteochondral defect at the medial aspect of the left femoral condyle. A diagnosis of osteochondritis dissecans was given. An orthopaedic opinion was obtained and surgical treatment was advised. Following surgery there was a period of immobilisation, followed by referral to a physiotherapist for physical rehabilitation. The player was given an estimated return-to-play time of 12 months.

Further discussion will focus on the aetiology and presentation of knee osteochondral injuries in adolescent athletes.

## **SPORTS VISION- BEYOND 20/20 VISION**

**Maya Zakzouk (Australia)**

*(Optometrist)*

Vision is more than just a measure of acuity, particularly when considering different fields of Sport. Other critical measures of vision include depth perception, peripheral vision, eye dominance, eye tracking ability and contrast sensitivity.

Sports Vision Therapy improves reaction time, hand-eye or hand-foot co-ordination that can show improved results on the field.

## **HOW TO BOOST YOUR TESTOSTERONE LEVEL 100% NATURALLY**

**Vilmos Zolnai (Hungary)**

The testosterone hormone is commonly related to aggressiveness. But there's nearly no other hormone, that has got such a wild range of enhancement on different source of quality of life: such as sex drive, overall health and body composition.

Numerous testosterone level increasing supplements are available on the fitness industry market. Recent studies show, that the effectiveness of these products are more than questionable. There is a complex way to boost testosterone level effectively without side effects and absolutely naturally. This study will show you how nutrition, meal timing, relaxing, exercising, sex activities will manage to do this deal for you for your maximum efficacy and satisfaction in accordance to your sport activities, gaining muscle, losing fat and a better quality of sex.

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