

**Romanian Sport Medicine Society & University of Craiova Simposium,
Craiova - November 3, 2018**
(selected abstract)

Monitoring Athlete through Biological Markers (Muscle Status)

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For the monitoring recovery and performance of athletes, a lot of small molecules (proteins, metabolites, vitamins, electrolytes) known as biochemical markers can be used. Biochemical blood markers give us important informations about the responses to training and sports competition, adaptations to physical exercise, about the level of the individual performance and the recovery profile.

Biomarkers may assess the athlete's health status, nutrition, hydration, metabolic and muscle status, inflammation and risk of injury status, cardiovascular status etc.

Using of the biochemical blood biomarkers must follow several main rules: testing at the beginning and the end of the most important training periods (the preseason period, competitive period, at the dramatically changing of the exercise parameters, after the end before the competitive season), at the end of a strenuous bout or an exercise period, after a major competitive event or an injury).

Monitoring of the athlete's muscle status is a very important aspect of exercise testing. Biomarker dosing follows the endocrine regulation of the muscle metabolism (catabolic and anabolic processes), the substrate availability, protein and aminoacids metabolism, damage, repair and muscle adaptation processes related to the sport exercises, as well as the inflammation feedback.

Key words: *biochemical blood markers, athletes, training, sport exercises.*

The main personality traits of Romanian athletes in terms of sports performance

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International research in the field of sports psychology has revealed that there is a personality structure specific to top performers, both at individual level and team level. Among the most important psychological dimensions, we find: The Harmonious Passion and The Obsessive Passion for sports, Perfectionism, Mental Training of Athletes, Adversity to Imperfectionism, Focus under Pressure, Competitive Resilience, Coachability, Adaptability, Team Cohesion, Leadership, Consciousness, Somatic Anxiety, Cognitive Anxiety, Self-Efficacy and The Spirit of Competition.

Most of the time, athletes are evaluated with personality or cognitive questionnaires that are not specific to sports psychology. In the happiest cases, sports psychologists translate questionnaires specific to sports psychology and apply them to individuals practicing a certain type of sport.

There is no test in Romania to provide such information that is so complex and useful from a psychological point of view. So, the battery of psychological tests *SPORTS PSY PROFILE* appeared as a result of an extensive study that lasted nearly two years and was applied on 1,000 athletes. *SPORTS PSY PROFILE* offers vital information to athletes and their parents, coaches, club presidents and federations on how to effectively invest resources like time, money and energy for the optimal development of future champions.

Key words: *athletes, sport psychology, questionnaire, SPORTS PSY PROFILE.*

Nutrition for Football Players

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Working with an elite team is a challenge for a nutritionist, as for any sports related professional. In football, as in many other sports, nutrition needs to be a priority of a player's daily program. What he eats every day, week and month will affect his energy level, performance and overall health. Football is a competitive sport with high intensity effort and the demands on a players' body is important in terms of energy consumption. During a training or a match, a player is in constant motion for 30-45 minutes, depending on age and level of play, followed by a short break and then another 30-45 minutes of constant activity. The average football player can ran for about 10-12 km per game, at different speeds. This means that a great amount of energy is used (about 800-1200 kcal) and must be replaced. It is very important that football players eat a well balanced diet high in complex carbohydrates, with an optimal intake of proteins which will help them to maximize their energy levels, to properly recover after effort and perform at their optimal levels. Nutritional supplements could be a real help for football players, in order to provide them rapid available energy between the two parts of the match and during the trainings and games. We used different combinations of nutritional supplements to help recovery after training sessions.

Key words: *sports, nutrition, football, supplements.*

News in evaluation and rehabilitation of foot balance at athletes

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Sport performance is based on anatomo-functional integrity of musculoskeletal structure. Much more is need to have specific preventive program for overuse injuries and recurrences, but also the specific rehabilitation protocols. Start from this we can say that is need to have good knowledge about how to do the specific evaluation and build the diagnostic in case of ankle-foot injuries that generate instability. This because many of sport activities include use the ankle-foot system in closed kinetic chain. During the closed kinetic chain we have to take in consideration the role of ground reaction force, which affect the talus and fibula, but also the pressure that increase on subtalar angle and increase with 42% of the pressure. Overuse injuries mechanisms are eversion, inversion and pronation of the ankle foot complex during the closed kinetic chain activity, that mean development the instability and change the static and balance of the foot. In this situation is need to have a complex assessment that is based on: clinical and functional evaluation, specific tests like, Squeeze Test, dorsiflexion test, Kleigers Test, Cross-leg Test, and also biomechanic assessment (force pressure platform, that gives us informations about ground reaction force, force development to the ankle and foot, load of the foot, impulse, surface contact, foot axis and subtalar angle). The last is important for have information about the exo/endorotation of the ankle foot that are in correlation with instability.

The rehabilitation protocols based on physical exercises follows the restoring of the static and dynamic foot balance: phase I (0-5 days): decrease the pain and edema, cryotherapy, e-stim, joint mobilization, stretching on foot muscle and ankle muscle; phase II (6-10 days): orthosis, decrease the pain and edema, proprioception training, flexibility technics, mobilization and exercises for development the muscle force; phase III (18-25 days): prevent the recurrence, pain control, start the sport specific activity, proprioception training, increase the muscle force and flexibility. Criteria for restart the sport activity mean the normal muscle force, range of motion, functional skills, lack the recurrence.

Key words: *foot balance, evaluation, proprioception, rehabilitation.*

Principles of Dynamic Tape© – The Biomechanical Tape in elite sports injury

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In sport rehabilitation and physiotherapy, we have used rigid athletic tape and kinesiology tape to give the professional athletes support during sport activity, role of prevention and physiotherapeutic procedures after musculoskeletal injuries.

An athlete making an explosive movement puts extremely high loads through the contractile and non-contractile musculo-tendinous elements attached to their skeletal structure. During a change in direction, need to tolerate a rapid deceleration while maintaining appropriate balance, dynamic joint position and control, placing stress on capsules, ligaments and fascia, and this continues through out the duration of their event or training session. Dynamic Tape has the mechanical properties to absorb the load, manage function and force trough full ROM, using elastic potential energy conversion into kinetic energy. It is likely that DT will become a well known product in the sphere of prevention and rehabilitation in the coming years. Dynamic Tape has revolutionised therapeutic taping by introducing the world's first range of tapes with varying grades of stretch, strength, and recoil to solve different clinical problems far more specifically.

Key words: *biomechanical taping, prevent injury, manage load, modify movement.*

Global Active Stretching - a method for injuries prevention in sports and a better performance

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Competitive sport practice is a well-known risk factor for Low Back Pain and other common injuries. The posture is worldwide considered like the way our body faces the external stimuli like gravity or instability and, furthermore, it influences our ability to move and our way to behave. The posture influences, also, the sport's skills execution and often it is the continuous training aimed at the sporting gesture that creates postural imbalances.

The Global Active Stretching aim is to introduce a prevention protocol in all sport training program.

SGA consists of various postural stretching exercises that are in agreement with the neuromuscular coordination chains identified by Phillippe Souchard (SGA Souchard).

Before proposing a postural exercise, it is necessary to carefully analyze the characteristics of each sport. Sports gestures are evaluated for strength, technical skills, need for muscular flexibility and joint freedom. The best performers are the most flexible athletes and in sports but also in dance, SGA is done mainly at the end of training or in sessions separate from the training, stretches before competitions are very mild and serve to find concentration.

Key words: *stretching, sport, injury prevention.*