

DOPING-FREE LIFESTYLE AND HEALTH CARE TRENDS OFFERED FOR ATHLETES

Summary

This article is a systematic review of recent publication that identify the peculiarities and potential risks for athletes in sports. The research elucidates the benefits of doping-free healthy lifestyle and mentions the crucial role of family physician in health care trends offered for athletes in order to improve their well-being and prevent the potential negative consequences.

Keywords: lifestyle, trends, athletes, health, family doctor, benefits, Prohibited List, Therapeutic Use Exemption

Rezumat

Stilul de viață fără doping și tendințele în îngrijirea sănătății sportivilor

Acest articol este o revizuire sistematică a publicațiilor recente care identifică particularitățile și riscurile potențiale pentru sportivi. Studiul relevă beneficiile unui stil de viață sănătos fără dopaj și remarcă rolul crucial al medicului de familie în tendințele de îngrijire a sănătății sportivilor pentru a le îmbunătăți semnificativ sănătatea și a preveni potențialele consecințe negative.

Cuvinte-cheie: stil de viață, tendințe, sportivi, sănătate, medic de familie, beneficii, lista interzisă, scutirea de uz terapeutic

Резюме

Образ жизни без допинга и тенденции в заботе о здоровье спортсменов

Данная статья представляет собой систематический обзор последних публикаций, выявляющих особенности и потенциальные риски для спортсменов в спорте. В исследовании раскрываются преимущества здорового образа жизни без допинга и отмечается решающая роль семейного врача в тенденциях здравоохранения, предлагаемых спортсменам для улучшения их самочувствия и предотвращения возможных негативных последствий.

Ключевые слова: образ жизни, тренды, спортсмены, здоровье, семейный врач, преимущества, запрещенный список, терапевтическое использование

Introduction

Health, according to the World Health Organization, is "a complete state of well-being, physical, mental and social, and not just the absence of disease or infirmity." Based on this holistic approach to health, it can be understood as a state of optimal performance of the individual, but also a process in which the physical, mental and socio-emotional aspects

of life are involved in achieving the well-being of the individual. A healthy lifestyle is a way of life that intensifies and increases your reserves energy of the body, helping to maintain or even improve health.

According to the World Health Organization reports, a person's healthy lifestyle has a 50% influence on his health, while the environment and the hereditary factors have a significance of only 20%, and medicine has a contribution of only 10 % to the person's health. About 70% of all non-communicable diseases are caused by an unhealthy lifestyle – excessive alcohol consumption, smoking, poor diet, lack of physical activity, stress, poor sleep hygiene, etc. [11].

Adopting a healthy lifestyle is necessary not only to prevent the erosion of the body and the prevention of non-communicable diseases but also to increase the body's resistance to communicable diseases, stress factors, intense physical and psychological activity and demands.

The aim of our research was to reaffirm the benefits of a doping-free lifestyle and to the role of a family physician in healthcare trends offered for athletes in order to improve their well-being and prevent potential negative consequences.

Materials and methods

This article represents a systematic review of the official reports of World Health Organization (WHO), World Anti-Doping Agency (WADA) (World Anti-Doping Code, International Standards, and Prohibited List), European Society of Cardiology and European Association of Preventive Cardiology, and relevant publication from PubMed, Google Scholar, Crossref databases published during the 2004-2022.

Promotion of Healthy life style

The main components of a healthy lifestyle are: a) balanced diet; b) physical activity; c) general body hygiene; d) strengthening the body; e) abandonment of harmful habits; f) psychological balance.

According to World Health Organization, the quality of life is given by the perceptions of individuals on their social situations, in the context of the cultural value systems in which they live and according to their own needs, standards and aspirations [21]. More precisely, the quality of life in medicine is

understood as physical, mental and social well-being, as well as the ability of patients to perform their usual tasks in their daily lives. Quality of life is an indicator of health for both individuals and the population and involves the adoption of healthy lifestyles [17].

Physical activity includes any body movement produced by skeletal muscle that leads to a substantial increase in energy consumption compared to the rest period (stillness or rest) [2]. Healthy living is the foundation of disease prevention. We must emphasize that it achieves the most valuable way of prophylaxis – the initial prophylaxis of diseases that prevent their occurrence, expands the range of possibilities for human adaptation. Health is the most important premise of the correct formation of character, initiative, strong will, natural abilities and skills [4].

The family physicians should demonstrate and apply the same attitudes and behaviours to their own health and well-being. Physicians who engage in healthy behaviours are much more likely to advise their patients about healthy lifestyles and the role of exercise in health [14]. They should understand medical care considerations unique to special athlete populations, including preadolescent, adolescent, geriatric, physically challenged (including those participating in Special Olympics and Paralympics), and pregnant athletes. Residents should understand unique considerations based on the level of the sport (recreational, youth, high school, collegiate, etc.). Furthermore, residents should recognize when the management of these disease processes warrants subspecialty referral [14].

Family doctors should advocate for healthy lifestyle choices and encourage patients to meet the general exercise guidelines [3, 16]. They should be aware of the benefits of exercise, as well as its impact on disease processes, such as hypertension, depression, diabetes, chronic obstructive pulmonary disease (COPD), etc. [3]. Specifically, residents should learn to prescribe exercise for healthy individuals of all ages, including pregnant and postpartum women [10].

Basic knowledge of the concepts related to conditioning and training techniques helps residents to write an exercise prescription using the Frequency, Intensity, Time, Type (FITT) principle. A family doctor should be familiar with the potential negative consequences of exercise and sports participation and be able to recognize signs or symptoms of these conditions [8]. Such disorders include those with the potential risk of sudden cardiac arrest, exercise addiction, illicit use of performance-enhancing substances, alcohol and drugs, disordered eating, relative energy deficiency syndrome (REDS), and the psychologic stressors associated with athletic perfor-

mance placed on the athlete by internal or external sources (coaches, parents, etc.) [8]. Also, a doctor should understand the environmental challenges and consequences of exercising in extreme temperatures, including the recognition and treatment of hypothermia and exertional heat illness/injury.

As a family doctors should understand musculoskeletal injuries, so too should they be familiar with principles of injury reduction. They should know how to counsel patients on proper exercise techniques (start slow and gradually build on time and intensity), the basic concept of buddy taping, and the selection of protective “off the shelf” braces [15]. The family physician should be alert to environmental factors that can adversely affect participant and spectator safety (heat illness, cold injury, lightning safety) and their important role in promoting the enforcement of rules that enhance sports safety (graded return to sport after a concussion, heat acclimatization rules, etc.) [15]. Resident family physicians must be familiar with the principles of rehabilitation, including the difference in skill sets of physical and occupational therapists. They should have an awareness of adjunct rehabilitation options (acupuncture, manual medical techniques, modalities, etc.) and the psychological impact of injury/illness, as well as its effects on recovery [15]. They should know how to prescribe an effective home exercise program and/or when to refer to other professional resources.

Physical activity improves overall health in children and young adults by reducing the risk of obesity, cardiovascular disease, diabetes, depression, and suicide, among other chronic medical conditions [5]. Increasing youth physical activity has become a priority for many countries, leading to the development of national policy statements and strategies to promote physical activity in youth [1, 6].

The US Department of Health and Human Services and the National Physical Activity Alliance recommend that children and adolescents engage in moderate to vigorous physical activity for at least 60 minutes every day [6, 9]. Prior to the COVID-19 pandemic, only 20% of adolescents met these guidelines, and research shows that this percentage decreased even further during the pandemic. Although youth may be engaging in more sports and physical activities since the emergence of the COVID-19 vaccine, the trend of decreasing physical activity and increasing sedentary behavior among children and adolescents remains a challenge [9]. This challenge is even greater for girls, racial and ethnic minorities, youth from households of low socioeconomic status, youth living in rural areas, and youth with disabilities, as these population groups have more barriers to accessing sports and physical activities [6, 9].

The family doctor is a “basic person” in promoting health at the individual, family, and community level, through the activity of prophylaxis and health education that he carries out, taking into consideration the specifics of the activity in which he is employed. Taking into account the directions of orientation, the objectives of health education, and the position of the family doctor in society, his role is essential in increasing the level of health culture of the population and implicitly in promoting health through physical activity [9].

The family doctor directly influences the physical, mental, and social well-being of sportspeople and his patients. It provides an ideal way and infrastructure to promote health to a wide audience [9].

Family physicians treat people who practice physical activity, help them improve their performance, improve their overall health, prevent injury, and maintain their physical activity throughout their lives. While some doctors are surgeons who repair damage to tendons, ligaments, and joints, primary care medicine is non-surgical care that involves [9]:

- Comprehensive healthcare for the active patient, including the diagnosis and treatment of sports-related or activity-related injuries and illnesses;
- The use of manual techniques for the prevention and treatment of muscle and bone diseases common in athletes;
- Special knowledge of the principles of athletic conditioning;
- Injury prevention and rehabilitation, including injuries common to certain sports;
- Overuse injuries, including stress fractures, tendinitis and osteoarthritis;
- Traumatic brain injury or contusions;
- Helping athletes with acute diseases (mono-nucleosis, asthma);
- Exercise recipes for people who want to become more active;
- Injury prevention;
- Decisions to “return to play” for injured or sick athletes;
- Promoting exercise;
- Nutritional guide to build strength and endurance in support of athletic performance.

Trends in health care offered to athletes

The covid-19 pandemic demonstrates new trends like a consultation in an online form, smart healthcare devices introduced, and telemedicine and toolkits for monitoring the health of people who practice physical activity. Sports medicine and team physicians are often the first individuals to become aware of and discuss both injury-related and non-injury-related emotional and behavioral

problems with athletes [7, 8]. The frequency with which physicians encounter various psychological issues in patient athletes, however, has rarely been examined. Despite the well-documented benefits of exercise and sports participation on mental health, some athletes will at times experience psychological, emotional, and behavioral problems at rates similar to or even higher than those of non-athletes [7].

Numerous studies have demonstrated the substantial psychological effects of injuries on athletes. These injuries can restrict athletes from exercise and physical activity, which for many is often a primary outlet to cope with emotional issues and is an important component of identity and self-esteem [12]. Athletes are also subject to unique pressures from performance demands imposed by coaches, fans, family members, peers, and themselves. For some athletes, transition from high school to college athletics creates an additional set of stresses such as increased academic burden, comparison with others with elite athletic ability, and the strain of highly intense training, practice, and game schedules. Finally, some athletes experience factors such as genetic predisposition or general life stresses that may contribute to psychological and behavioral difficulties [12].

In order to increase their performance and to face acute or chronic physical and/or psychological stress, some athletes use prohibited substances (doping), breaking the Olympic Principle of clean sport, the fact that constitutes a violation of anti-doping rules. On the other hand, due to illness or medical condition, an athlete may require the use of medications or treatments included on the World Anti-Doping Agency's (WADA's) Prohibited List [18].

The therapeutic use exemption (TUE) is required for all treatments involving the use of a prohibited substance or method on the Prohibited List and enables the athlete to take the necessary medication without resulting in a doping offense. The therapeutic use exemption application process provides athletes with an opportunity to apply for a TUE and protects clean athletes [20].

When an athlete has a diagnosed medical condition confirmed by relevant medical data, requiring the treatment that contains a substance from the Prohibited List, they must initiate the process of applying for a TUE as soon as possible [19]. According to the regulation, the athlete must obtain a TUE prior to using the substance or method in question; however, in situations of a true medical emergency, the athlete's health is a priority, so they can apply for retroactive TUEs [18, 19].

The therapeutic use exemptions committee (TUEC) grants TUE to an athlete under narrow, well-

defined conditions for a specific dosage, frequency, route of administration, and duration [19].

The family physician, not only the sports medicine or team doctor, plays an important role in the athlete's health. The athlete should inform their family physician on each visit that they are subject to anti-doping rules, and the doctor must consult the Prohibited List before prescription of any medication. If the prohibited substance or method is required for a medical reason, the physician should correctly complete all the medical information, diagnosis, and medication details sections in the TUE application form, sign, and date the physician declaration, and prepare supporting documents [18, 19].

The exponential growth of women participating in competitive sports throughout the years was possible through several initiatives by the International Olympic Committee. However, this positive trend toward gender equity in sports has not transpired for women in medicine, especially in fields that care for elite athletes [13].

A study was conducted to identify specific areas that can be tailored to help female athletes prevent injuries and optimize their athletic performance. It was also highlighted how increased female team physician representation in sports may help optimize care for female athletes. Female athletes are considered to be at high risk for certain conditions such as ACL tears, patellofemoral pain syndrome, bone stress injuries, sport-related concussions, and sexual violence in sports [13]. Addressing factors specific to female athletes has been found to be valuable in preventing injuries.

Strength and conditioning can optimize athletic performance but remains underutilized among female athletes. Although diversity in the healthcare workforce has been found to be beneficial for multiple reasons, women remain underrepresented in sports medicine. Increasing female team physician representation may positively influence care for female athletes [13].

Growth and development can be characterized by behavioral, physiological, and physical changes that are most pronounced during puberty. Girls and boys experience these changes differently. Adolescent female athletes gain more body fat and less lean muscle mass than their male counterparts during puberty, which may increase female athletes' risk for disordered eating, overtraining, and Relative Energy Deficiency in Sports [13]. Girls also tend to have greater ligamentous and joint laxity than boys which persists beyond puberty and can increase their risk for ligamentous injury such as ankle sprains. Furthermore, while boys develop greater shoulder width and muscle mass, girls gain hip-width and fat

mass, which may contribute to their increased risk for ACL injuries [13]. Prevention efforts should first start with increased awareness of these risks and increased focus on neuromuscular training for female athletes to mitigate these injury risks.

There has been exponential growth in women participating in competitive sports throughout the years. Team physicians must understand the physiologic, biomechanical, and anatomic factors that are unique to athletes in order to tailor injury prevention programs and optimize their athletic performance [13]. Despite the achievements made by women in sports, women physicians are still underrepresented in fields that care for elite athletes. Advocating for gender equity in sports medicine by identifying barriers and implementing strategies to advance the representation of women in the field will increase workforce diversity and promote excellence in sports medicine care [13].

Meta-analytic reviews indicate that elite athletes experience broadly comparable rates of mental ill-health relative to the general population in relation to anxiety, depression, posttraumatic stress, and sleep disorders. This should not be unexpected given the considerable overlap in the years of active elite competition and the primary ages of onset for most mental disorders [7]. Increasing evidence points to a range of both athlete-specific and general risk factors associated with mental ill-health in elite athletes. Athlete-specific risk indicators include sports-related injury and concussion, performance failure overtraining (and overtraining syndrome), and sport type (e.g. individual sports conferring a higher risk than team sports). General risk indicators include major negative life events, low social support, and impaired sleep. These risk factors may affect the severity and onset of particular mental health symptoms, but can also guide appropriate response strategies [7].

The current '*state of play*' in supporting elite athletes' mental health and well-being has centered mostly on building mental health literacy or awareness of the signs of mental ill-health amongst athletes. Such awareness is necessary, but not sufficient to address the varied mental health needs of elite athletes. We call for a new model of intervention and outline the backbone of a comprehensive mental health framework to promote athlete mental health and well-being, and respond to the needs of athletes who are at risk of developing, or already experiencing mental health symptoms or disorders [7].

Early detection of, and intervention for, mental health symptoms is essential in the elite sporting context. Such approaches help build cultures that acknowledge that an athlete's mental health needs are as important as their physical health needs and

that both are likely to contribute to optimizing the athlete's overall well-being in conjunction with performance excellence. The proposed framework aims at [7]:

- helping athletes develop a range of self-management skills that they can utilize to manage psychological distress,
- equipping key stakeholders in the elite sporting environment (such as coaches, sports medicine, and high-performance support staff) to better recognize and respond to concerns regarding an athlete's mental health and
- highlighting the need for specialist multi-disciplinary teams or skilled mental health professionals to manage athletes with severe or complex mental disorders.

Combined, these components ensure that elite athletes receive the intervention and support that they need at the right time, in the right place, with the right person.

Conclusion

Family doctor play a vital role in every step of athlete life and represents the person who is always available and accessible. They work together as a team to help patients get back into shape as fast as possible and in the safest way after injury or trauma.

Nowadays, with the help of research and technology, family medicine comes a long way. Sports medicine extends to proper health care, health examination of athletes before they even engage themselves in sports, injury prevention and treatment, rehabilitation, proper exercises, and proper training and nutrition, while family doctor initially will check in any trauma and will give preliminary healthcare and, if needed, will refer easily to any specialization.

When the prohibited substance or method is required for medical reason, the family physician will help the athlete to apply for a TUE by completing the medical information in the TUE application form

The COVID-19 pandemic brought many changes in the trends of healthcare like consultation online, smart healthcare tools, etc. The role of family doctors in maintaining the proper health of athletes was huge during the pandemic.

In *Enhanced performances*, specialists in sports medicine help athletes and other sports enthusiasts to enhance their performance when it comes to sports based on each individual's strengths, weaknesses, and needs coming up with a training plan to help them maximize their full potential. They are considered experts in sports, and they have the knowledge and tools in order to evaluate an individual's strengths and weaknesses, give

specific recommendations, and identify areas for improvement.

In the case of *Enhanced prevention of injuries*, specialists in sports medicine have deep knowledge and understanding of how athletes use their bodies in sports practices and actual games. That is why they can give expert advice and specific instructions on how to avoid injuries and how also to avoid re-injury of an area that has previously been damaged. Sport medicine specialists help athletes to decide whether to return or resume to playing after having an injury. Usually, they run physical exams to make sure that athletes can already resume to their sporting events and activities.

Declaration of conflict of interest.

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