

SPORTS MEDICINE SPECIALIST: THE ROLE OF A TRAINER BEHIND A SUCCESSFUL ATHLETE

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ABSTRACT: The Sports Medicine Squad primarily consists of various medical field experts such as General physicians, Psychologists, Chiropractors, Physiotherapists, and Nutritionists. The main function of this team is to upkeep the maintenance and fitness level of athletes as well as to assist them in carrying a healthy lifestyle, injury prevention techniques, discouraging the use of Performance Enhancement Drugs, bringing awareness of associated health risks disease, and Doping standards and protocols to their knowledge. Together, the entire team and the athletes improve the athlete's entire performance. Besides that, there is still plenty that Sports Medicine can do to promote athletes' health and welfare. In the current review, we have discussed the value of various Sports Medical Team professionals for athletes, along with the moral dilemmas that arise from this responsibility and the efforts being made on a local and global level to combat the doping threat.

Keywords: Sports Medicine, Athletes, Psychologist, Key Players, Sports Person ,Chiropractioner, Podiatric

INTRODUCTION

Sports Medicine usually referred as Sports & Exercise Medicine, it is a subspecialty of Medical Science that mainly focus on athletes' fitness, injury prevention or treatment and general athlete conditioning. Promoting exercise and health reduces the gap between Science and Practical execution [1]. The function of Sports Medicine includes the management and prevention of any kind of sports injury; the use of exercise to maintain a healthy body; the appropriate use of drugs while competing; the promotion of a good diet; and the support of the athletes' mental health. It makes it easier to lead an active lifestyle and for the top athletes it supports the pursuit of physical performance limits. There is enormous significance in the Culture and Industry as an increasing number of the population is realizing the value of physical activity and exercise for sustaining good health and fitness. Sports Medicine has grown tremendously important, particularly in Pakistan where the Government is encouraging the Sports industry and various other Sports sectors those are becoming more organized and professional [2].

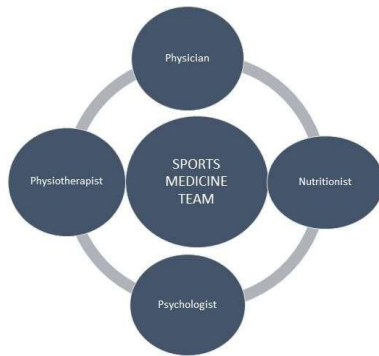


Figure1:Sports Medicine Squad

KEY SPORTS MEDICINE TEAM MEMBERS AND THEIR ROLES

I. Physicians' Role

In the last two decades, there has been a significant change in the existing function of Medical Science and in the life of a sportsperson. A Sports Medicine expert did not contributed and execute much useful work earlier in sporting organizations, as the only aspects that mattered were the players and the coach. Additionally, the concerned physicians were lacking the qualifications or expertise needed to effectively assess or treat a sports injury. Currently, Sports Medical professionals are highly skilled and professionally trained [3].

With the passage of time they are capable of treating any sports-related injury with modern techniques as the boom in the Industry has pushed several institutions to improve the quality of the care and treatment they were providing to athletes that result in the production of Sports Medicine sector accordingly to the need of the sporting industry and therefore has been considered a separate specialty in various countries including Pakistan [4].

1. Inclusive Fitness Supervision of the athlete is the most important task of the physician so that the sportsperson is competent enough to participate and execute with the best of their ability.

- Early detection, treatment, and prevention of numerous illnesses and injuries associated with sports are essential for the athletes' better fitness and performance. In the framework of the Sport and the requirements of the team, the physician looks upon the athletes' physical and emotional needs as well.
- Athletes are screened to ensure effective injury monitoring..

▪ The physician should have a thorough understanding of the needs of the sport to offer the athlete excellent care and guidance. A deep understanding of the technological, psychological and physiological requirements of the athletes'

sport for practice and competition must be thoroughly understood. The practitioner should concentrate on giving the athletes' quality and on-going clinical care.

- The practitioner must keep up to date on the various injuries as well as new and innovative treatment approaches and methodology.
 - The role of a physician extends beyond the diagnosis and treatment that includes prevention of injuries, re-injuries, and disabilities.
 - The athlete must always be counseled and fully informed when there is a medical contraindication for participating or for practicing so that the event is avoided.
2. The physician's duty extends beyond treating sports-related injuries to include a wide range of conditions that are unrelated to sports but could nevertheless have an impact on an athletes' overall performance and personality. These illnesses could be physical, surgical, or mental.
 3. A team of physicians and trainers accompanying medical team should design a thorough plan for the measures that must be taken to prevent injuries as well as for the assessment, treatment and disposition of injuries sustained on the field or at other sites. The physician team will be better able to foresee potential issues if plans and protocols are on paper and there is familiarity with the physical environment [5].
 4. It's not compulsory that the physician will do an overview of pre or post match before or after the games are played. Incidents can arise at any time during a game or during the training. Heart attacks, anaphylaxis, asthma attacks, fractures, brain injuries, spine injuries, and other emergencies of this case are examples of this type. A physician who specializes in Sports Medicine needs to have experience and the right tools for the job. The doctor should be familiar with the area and bring any equipment that would be needed in an emergency situation, such as a defibrillator, oxygen delivery supplies, drugs, spine immobilization devices, etc. The physician must be able to protect the athlete in these instances as failure to do so could quickly result in death.
 5. In addition to diagnosis and treatment, the physician also has the responsibility to make major decisions for a sportsperson. The physician is trusted by athletes, coaching staff and the administrative team to make critical judgments regarding an athlete's fitness, eligibility to join the team, and ability to participate in the sport without risking the athlete's safety. The physician's decision must be carefully considered because it may effect on the athlete's or team's success [6]. The success of the doctor relies on their capacity to satisfy the athlete's medical and psychological requirements so that the athlete can perform at his or her best, which is only possible if the athlete is in peak physical and mental condition. Therefore, the focus of healthcare professionals in this field should not only be on the treatment of injuries but also on injury prevention, athlete rehabilitation, good nutrition and appropriate training and exercise methods so that athletes can maintain their focus on their sport rather than injuries giving them the confidence to improve their sports performance [7].

Podiatric Medicine is a different specialty that has expanded into the disciplines of Sports Medicine. It addresses the prevention and treatment of lower extremity injuries caused by sports. This specialty first appeared in the 1970s, a boom time for track activities like jogging. The term "the athlete's doctor" was also used to describe podiatric medicine. In the 1970s, Podiatrist Richard Gilbert initiated it by joining the Sports Medicine Squad for a professional sports team [8]. As a result, numerous Podiatrists began to play a significant part in the Sports Medicine team. The fundamental issue is why a Sports Medicine squad needs a Podiatrist when there are already capable medical specialists on staff compared to a Physician or Orthopedics, a Podiatrist is more knowledgeable and skilled in treating injuries to the lower extremities because they are focused on the entire body rather than just a specific part. Podiatrists are trained to treat a wide range of illnesses affecting the lower extremities, including vascular, neurological, dermatological, etc. In addition to becoming knowledgeable about medical situations, Podiatrists are also knowledgeable about the lower extremities', Physiological features and Biomechanics. The Podiatrists give the Sports Medicine team an advantage in the active management of disorders and in helping athletes improve their performance [9]

Chiropractic care aims to improve the body's inherent ability to heal itself by correcting spinal or other musculoskeletal-related injuries. Sports chiropractic is thought to improve and restore the body's musculoskeletal system to improve performance. Chiropractic physicians are knowledgeable in a variety of spine manipulation and bone alignment techniques that aids in the treatment of injuries. Sports Chiropractors can assist athletes with their overall body alignment by collaborating with other members of the team and physicians. Their work is not just limited to malformations of the spine but to an overall bone setting that helps in multiple body issues like posture, nerve compression, etc. According to some reports, Chiropractic treatment is the only way for athletes to perform at their absolute optimum[3]. However, there are some suggestions that having these professionals on the Sports Medicine crew won't bring any further value.

- a. The inclusion of a Chiropractor will merely result in an unneeded increase in expenditures and resources because many of the physiotherapists will already have a basic understanding of spinal manipulation procedures.
- b. There might be problems over how the work is distributed between the chiropractors and physiotherapists due to ego clashes(Coppel, 2010).

Nutritionist Role

Sports Nutrition may be elaborated as implying the information and knowledge about the nutrition to the athletes that fuels their athletic endeavors, aids in the process of replenishing the body energy stores after physical exertion and advancement of health and fitness.

The role of a nutritionist for a sportsperson or team is critical because the physical demands to be found on an athlete's body are difficult to meet without the proper nutrition, and the body may not be able to withstand those demands [8].

- A Sports Nutritionist and a Sports Medicine practitioner can help an athletes' health and fitness levels by changing their diet to accommodate their body physiology, game requirements, or changes caused by illness or injury. Their job is to alter the athlete's diet and lifestyle practices, often using medicine or supplements as necessary and set short-term or long-term goals.

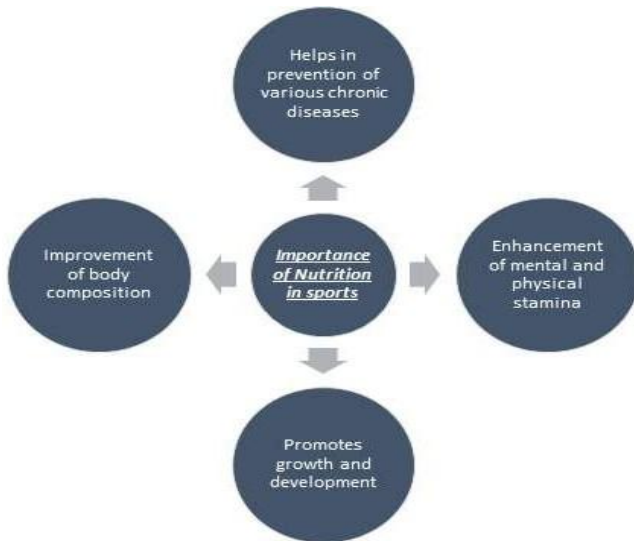


Figure 2: Nutritional Chart for Athletics

- It's crucial to comprehend a person's dietary habits and eating behaviors preferences, dietary options and encourage athletes to eat well.
- They offer dietary recommendations that are intended to increase an athlete's stamina and endurance, as well as a variety of plans for post-workout recovery requirements based on Recommended Daily Allowance (RDA).
- They also keep an eye on the athlete's diet and health and adjust their recommendations as necessary [3].

II. Physiotherapist Role

Physiotherapy has a critical and crucial role in the management of injuries and the general improvement of the athlete. The goal of physiotherapy is not limited to treatment but also to rehabilitate athletes after injury or surgery so that they can return to their sport as soon as possible [10]. A Physiotherapist is an essential members of the Sports Medicine crew as they are knowledgeable and experienced in dealing with sports-related injuries.

- They use physical activity and exercise to maintain the athletes' long-term wellness. Many health issues can be alleviated through exercise.
- After a strenuous day on the field or following a workout, it helps the player unwind and rebuild body strength in addition to aiding with injury management.
- A Physiotherapist assists an athlete in enhancing their body's toughness, robustness, and strength by

strengthening their bones, joints, muscles, and ligaments.

- Physiotherapy improves the physical flexibility that players may need for various sports.

Aside from physiotherapist, there are Strength-and Conditioning coaches who collaborate with head coaches, physiotherapists, and physicians to create an efficient plan for assisting athletes in shaping their bodies to the needs of the sport. It will aid in the prevention of injuries as well as the performance of the athlete. Lack of communication among team members may result in the preparation of an ineffective plan, which may be detrimental to the athletes' efficiency as well as the team. Cross-Discipline collaboration and communication are essential for all parties involved in the sports team [7].

III. Psychologist Role

Athletes, Doctors, and Coaches are beginning to understand how mind science and psychology might improve performance, this is why many individuals and teams of athletes have begun to temporarily or permanently add a psychologist to their coaching or medical teams [3].

- Applying psychological principles to achieve or improve peak mental , cognitive behavior and athletic performance.
- Educating participants on the benefits of physical activity and sports in terms of personality development, psychological, psychosocial growth, and overall health and well-being.

The American College of Sports Medicine article "Psychological Issues Related to Injury in the Athlete and the Team Physician" best explains the function of Sports Psychology in athletes [11].

1. In addition to physical ailments and injuries, a variety of psychological concerns, such as behavior, emotional, and adjustment problems can have an impact on an athlete's performance. The athletes' health and wellbeing depend greatly on these factors. Psychological growth is crucial since mental strength accounts for 80% of a strong performance.
2. Athletes are more susceptible to mental health issues than the average person, so no one is immune to them. Examples of these issues include:

- Performance phobia
- Depression
- Stress
- Panic
- Distracting thoughts
- Phobia,
- Substance abuse, PTSD, and so on

All of these issues result in decreased performance, so a sports psychologist is needed in this situation.

3. Sports Psychologists may also significantly help with the psychological effects of an injury, as they can support the athlete through recovery and rehabilitation when they feel depressed as a result of their ailment. When an athlete returns to play and experiences psychological problems such as self-doubt, low self-esteem, or lack of confidence, these issues may all have an impact on how well they

perform. Sports Psychology is crucial in these situations. Sports Psychologists are equally important to the players and the team since they can benefit both the athlete and the team by using their experience and expertise in dealing with sporting injuries and stressful factors that could impact the possibility of injuries.

4. A Sports Psychologist can significantly improve an athlete's or team's mental state of well-being by using his or her knowledge of psychology to boost the group's morale, assist in overcoming performance anxiety, and encourage optimism even in the face of setbacks.

MEDICAL ETHICS IN SPORTS

I. Physicians who practice Sports Medicine must deal with a variety of special ethical problems and conflicts of interest. The athlete's decisions about performance enhancement, returning to play right away after an injury, etc., may benefit them in the short term but harm them in the long run. The effectiveness of the physician relies on the athlete's health and the players' endurance on the field, which may necessitate the physician's use of unethical tactics for quick advantages [12].

II. Since maintaining patient-physician confidentiality is important, athletes provide information to their subjective doctors with the understanding that it will remain private. However, team doctors may occasionally be required by contract to divulge patient information to team management. This causes the physician to have ethical concerns.

III. The patient or players makes their own choices under the autonomous decision-making approach. After outlining all the alternative diagnoses and treatments, the doctor must accept the patient's choice. This model of decision-making is inadequate since numerous outside circumstances may affect the choice. For instance, a sportsperson with persistent knee pain who has been identified with a meniscal injury may be given the option of an arthroscopic partial meniscectomy or meniscal repair.

The best course of action, in the doctor's opinion will be meniscal repair. This will prolong the athlete's recuperation period and cause them to miss the tournament. Therefore, should the doctor make the choice instead of the athlete? There is a moral conundrum here. The needs of the athlete's team may also have an impact on his ability to make decisions. The athlete may be under pressure from coaches, teammates, or management to do something beneficial to the team but not to him personally. For instance, a cricketer performing for a corporate league would feel pressured to continue despite being unable to play owing to a knock on his finger. This could put him at risk of further aggravating the injury. This puts the doctor in the difficult moral position of having to decide whether to support the management's choice to allow the player to keep their job or reject it. However, the doctor must always put the athlete's needs first because it is what he is primarily responsible for doing [13].

IV. The Sports Medicine team's major objective following an injury is to get the player back on the field as soon as possible, but they must deal with numerous ethical dilemmas. While the coaches, management, and players' major worry is that the team shouldn't struggle and that the player should get

back on the field immediately, the physician must assess and make a decision on the player's return to play based on the athlete's short- and long-term health. The physician's decisions should not be influenced by team management, but rather should be established on the risks and effects on the athlete's health. However, it might give rise to ethical concerns since while the team's Sports Medicine physician is concerned for the athlete's health; he should also be mindful of the team's objectives and needs as these could affect his decisions. In a study, medical teams who responded to a survey about the ethical problems in Sports Medicine stated that the tension was between the athlete's health and the push to get them back on the field [14].

EFFORTS TO PREVENT DRUG ABUSE ON A GLOBAL SCALE

If one of the following principles is broken, doping is considered to be present:

- Attempting to use a prohibited chemical, drug, peptide, or hormones.
- Refusing to deliver the sample after being notified by the appropriate authorities and failing to provide a valid reason.
- Presence of illegal substances or their metabolites in athletes' samples.
- Trying to deceive with specimens or any other aspect of the anti-doping system.
- Use of prohibited substances and techniques
- Using or attempting to use a prohibited substance or technique, or aiding, abetting, or concealing any infraction.

Formal drug testing for both the summer and winter Olympics began in 1968 and has continued ever since. The World Anti-Doping Agency (WADA), which was tasked with creating a strict doping control regime globally, was established in 1999 following the World Conference on Doping and Sport. WADA has launched a number of platforms in an effort to prevent doping [15]. The Anti-Doping e-Learning platform (ADeL), which WADA introduced in 2018, provides courses for athletes, coaches, medics, administrators, and anyone else interested in learning more about anti-doping and upholding the principles of clean sport. Numerous courses are offered, such as the online "Athlete Learning Program about Health and Anti-Doping (ALPHA)" e-learning education system. It informs the athletes about the dangers of doping as well as the importance of anti-doping. The primary goal is to encourage athletes to adopt a positive attitude toward doping avoidance. Coach True, the Sports Physician Toolkit online, ADO Kickstart, and the Parents Guide to Support Clean Sport are additional modules that are included [3, 9].

Anti-Doping Organization Pakistan [ADOP] was founded in 2009 to serve as a separate Anti-Doping Organization, joining the ranks of many other countries' similar organizations. As part of its tight monitoring system, NADA announced at the beginning of 2017 that it will test 7,000 athletes over the course of the next year. Although it came

close, Pakistan fell well short of its goal of becoming a big medal winner at the Olympics. Despite this, the country ranked third in doping violation statistics for three straight years (2013–2015) [16]. In a recent proposal, it was decided that five separate regional Anti-Doping Centre will be established across Pakistan to help put an end to the practice. More than fifty workshops and seminars, as well as an awareness program, were held by NADA to address anti-doping issues. The National Anti-Doping Agency (NADA) has created a massive educational initiative called the Mass Athlete Awareness Program against Doping (MAAPAD) [5]. The goals are as followed :

- To promote education against doping
- Digital/electronic medium for the dissemination of anti-doping information
- Reducing the prevalence of doping in Pakistani athletes and encouraging a culture of fair play.

Physicians who interact with athletes should be knowledgeable about various performance-enhancing substances. Elite athletes, whose performances are expected to be at the highest level, may use performance-enhancing substances more frequently. According to a study, the doping rate amongst top athletes is 14–39% [17]. The use of performance-enhancing substances is viewed by sportsmen as a quick route to success. Intense contests like the Tour de France, WAF and marathons enhance the likelihood of doping. Thus, doctors must assume the role of advisors to the athletes and earn their trust in order to prevent the use of drugs as well as safeguard their present and future health [18]. In a study, more than 50% of professional athletes said they would take a drug if it would help them win a gold medal but would kill them in five to ten years. This reveals the athletes' fragility, and physicians must be cognizant of these psychological factors and take steps to prevent drug usage.

A technique for reducing drug usage is education of athletes, but in order to be productive, it must begin early. According to a 2005 NCAA survey, there has been a rise in the number of high school players using ergogenic aids. Education must begin during school hours because primary prevention cannot be initiated at the college level [19].

PAKISTAN'S STATUS OF SPORTS MEDICINE

Sports Medicine has grown in favor amongst the Doctors as sports have grown in popularity in Pakistan. Sports Medicine is now a distinct profession in Pakistan, with some universities offering Sports Medicine and Diploma degree programs.

The Sports Medicine Association of Pakistan (SMAP) founded in 1989 is the sole sports medicine association in Karachi, Pakistan. It has paved the path for the sporting community to promote physical wellness. The SMAP actively offers workshops and seminars that benefit Sports Medicine doctors.

CONCLUSION

It has been a component of medicine for a while, but recently it has become more significant. People have also gotten more interested in exercise and fitness as sports have become more professional and organized. Each member of the Sports Medicine squad plays a crucial part. Each member has a distinct role but they are all committed to the same objective: Creating a great athlete who is both physically and psychologically fit. Due to a lack of understanding this sector is still considerably behind in many countries. The fundamentals of Sports Medicine must be covered from the start of foundation (High School) or Graduate Degree course program as this discipline is growing and becoming increasingly relevant today with respect to all sectors includes office ergonomics..

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