

## Performance Enhancement Training in Athletes

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### Abstract

The Performance enhancement is referred to as an ergogenic aid in sports to enhance the performance of athletes. The ever growing popularity of sports and covid - 19 make a strong impact on the performance enhancement of athletes'. The ever growing popularity of sports has made the "sports industry" extremely competitive and financially lucrative for athletes, with many striving for elite professionalism(Dhilonet al., 2017).The corona virus pandemic has sent shockwaves around the world, leading to a public health emergency that has killed thousands and plunged the global economy. Not surprisingly, COVID-19 has also upended the sporting calendar, with professional leagues everywhere suspending their activities to limit the spread of the virus (World Economic Forum, 2020). It diminishes the performance level of many athletes'. This has consequently intensified the physical and emotional burden of sports, increased the training and practice regimens required, and exposed those involved in this quest to a higher risk of injury.

**KEYWORDS:** Performance enhancement, Training (PET), Physical activity, Stress Reduction Strength, Agility.

### Introduction

The Performance enhancement is referred to as an ergogenic aid in sports to enhance the performance of athletes. Sport is a major contributor to economic and social development. Its role is well recognized by governments, including the Political Declaration of the 2030 Agenda, which reflects on "the contribution sports make to the empowerment of women and of young people, individuals and communities, as well as to health, education and social inclusion objectives."

The performance enhancement can be anything that improves our abilities for a specified activity, which needs an effective team approach involving the sports physician, physiotherapist, strength and conditioning coaches, sports psychologist, nutritionist, coach, and the athlete is critical. Most importantly the rehabilitation needs to follow a biopsychosocial approach. (Dhillon et al., 2017). The quantity (volume), quality (intensity), and frequency of exercise performed during training are among the factors known to determine the degree of adaptation to training.

### Performance Enhancement is more than drug intake

Most people assume "performance enhancement" means taking steroids/drugs. . Although stimulants can boost physical performance and promote aggressiveness on the field, they have side effects that can impair athletic performance, including, Nervousness and irritability, which make it hard to concentrate on the game ;Insomnia, which can

prevent an athlete from getting needed sleep; Dehydration; Heatstroke; Addiction(Mayo clinic, 2004).In recent years, many athletes have used performance enhancing training to combat athletes who use illegal performance enhancing drugs to gain unfair advantages when training and competing. It is equally effective if not more beneficial than the aforementioned PED's and in fact is legal/fair.

### **Common Barriers for physical performance**

The Barriers for physical activity can be either personal or environmental. In a 2013 study that aimed to identify the external and internal barriers to physical activity and exercise participation among middle-aged and elderly individuals the most common external barriers among the middle-aged and elderly respondents were 'not enough time', 'no one to exercise with' and 'lack of facilities'. (Physiopedia, 2009). The most common internal barriers for middle-aged respondents were 'too tired', 'already active enough', 'do not know how to do it' and 'too lazy', while those for elderly respondents were 'too tired', 'lack of motivation' and 'already active enough'. The top three barriers to engaging in physical activity across the adult lifespan are time ,energy, motivation.

The other common barrier for physical activity in athletes are climatic variations in sufficient time to exercise, Lack of time, Friends and family don't share your interest in physical activity, Lack of motivation and/or energy, Lack of resources/equipment, Family care giving obligation lack of self-motivation on-enjoyment of exercise, boredom with exercise, lack of confidence in their ability to be physically active (low self-efficacy)fear of being injured or having been injured recently lack of self-management skills.(ADA2018)

### **Impact of Performance Training in well-being.**

Sport Performance Enhancement helps individuals learn to control their thoughts, eliminate negative self-talk, substitute positive self-talk and increase the athlete's focus and concentration, which is needed for a higher quality of sports performance. Athletes have been looking to increase their performance in sports (Kimberlys, 2015).

Performance enhancement training will enhance level of knowledge and understanding. For example, performance enhancement can help clarify how much pre-performance anxiety is too much anxiety, and what other skills may be appropriate besides three deep breaths to decrease the anxiety. In this situation, performance enhancement can also help athletes determine when else the athlete may be experiencing anxiety, what it feels like, and how the athlete may decrease that as well.

Performance Enhancement training should include services that emphasize education carefully monitored improvement plans and established techniques to increase speed, agility, strength, and power. The goal with this type of training is to build the complete athlete by focusing on sport-specific movements at game speed. It focuses on the drills and skills that address quickness, reaction time, dynamic flexibility and postural strength. PET train athletes to perform according to the sports in which they participate.

### **Impact of Covid -19 on Physical performance and well being of sports persons**

The global outbreak of COVID-19 has resulted in closure of gyms, stadiums, pools, dance and fitness studios, physiotherapy centers, parks and playgrounds. Many individuals are therefore not able to actively participate in their regular individual or group sporting or physical activities outside of their homes. Low-income families are especially vulnerable to negative effects of lock-down strategy. Studies have shown that

this pandemic outbreak reduces the overall physical fitness, and immunological status of people, those who had actively participated in the physical activities earlier. In order to overcome this, Prioritize participating in outdoor activities over indoor activities and stay within your local area as much as possible. If using an indoor facility, allow previous groups to leave the facility before entering with your team. If possible, allow time for cleaning and/or disinfecting. Check the league's COVID-19 prevention practices before you go to make sure they have steps in place to prevent the spread of the virus. If you are at an increased risk for severe illness or have existing health conditions, take extra precautions and preventive actions during the activity or choose individual or at-home activities. (Centers for Disease Control and Prevention 2020).

### **Role of Modern Digital Technologies in Performance enhancement**

Twenty years from now, there is a real possibility that young people could be completely overwhelmed by technology. It was no surprise to find the digital world at the heart of the research which looked at key influencers on young people's relationship with physical activity and sport in the future. The report demonstrates how technology can be used to advance PE and school sport, empower young people to take responsibility for their own activity levels, and importantly that PE can play an important role in educating young people about healthy balance in their lives.

Wearable performance devices and sensors are becoming more readily available to the general population and athletic teams. Advances in technology have allowed individual endurance athletes, sports teams, and physicians to monitor functional movements, workloads, and biometric markers to maximize performance and minimize injury. Movement sensors include pedometers, accelerometers/gyroscopes, and global positioning satellite (GPS) devices.

### **Techniques for extreme performance enhancement techniques in sport**

\*Effective sports rehabilitation,-For a good sports rehabilitation practitioner, the motto should be "know the sport, review the literature." Once defined, the rehabilitation is broken into different stages, and the athlete progresses through them till he is fit to return to play (RTP).

Tommy John Surgery-Tommy John surgery is another term for ulnar collateral ligament (UCL) reconstruction. It's a procedure to treat an elbow injury that tends to occur among throwing athletes, such as baseball pitchers. Tommy John was a long-time Major League Baseball pitcher, and he was the first to have this now-common surgery.

\*Plate-Rich plasma therapy, Soft tissue injuries generally heal slowly. Reason being tendons and ligaments have poor healing properties. Enter platelet-rich plasma (PRP) therapy, which involves taking a patient's own blood, and putting it in a centrifuge. The centrifuge is then spun at very high speeds to concentrate the platelet level and growth factors in the blood. The platelet rich blood is then injected back into the injured area, where it promotes healing.

\*Full body cryotherapy-A brief full body exposure to dry air at cryogenic temperatures lower than  $-110^{\circ}\text{C}$  has become widely popular in sports medicine, often used to enhance recovery after injuries and to counteract inflammatory symptoms resulting from overuse. WBC, used either as a therapy or stimulation, is a medical treatment and as such it has contraindications and standard safety procedures.

\*Virtual Reality-Virtual reality (VR) is now being used in sports. Mostly it is being used to enhance the fan experience. Sky Sports, for instance, is using VR during its Premier

League coverage to enhance the fan viewing experience by giving them exclusive behind the scenes access. Professional clubs like Liverpool and Manchester United, on the other hand, have been using VR as a training tool to enhance players' reflexes and resilience. Now VR is also being used in sports injury rehabilitation.

\*Stem cell therapy. Given increasing in popularity, sports medicine doctors use stem cells to treat a wide variety of sports injuries, including damage to tendons, ligaments, muscles, and cartilage. Stem cell therapy to an injured area could be done through direct surgical application, stem-cell-bearing sutures, and injection. Stem cell therapy holds potential for repair and functional plasticity following sports injuries compared to traditional methods. Using stem cell treatment might restore continuity and regeneration and promote growth back the organ targets. Besides, using a noninvasive medical imaging method would have the long-time monitoring advantage to the stem cells transplanting individual.(Sadegh Rahim et al 2019)

\*There are many potential benefits for athletes who undergo one of these sport performance enhancement techniques.

### Conclusion

Performance enhancement is not just a physical training. As many believes that performance improvements are directly related to the amount of work done during training and that athletes can only reach their full potential by undergoing extremely long arid intense training. Performance enhancement Training is not just a physical training., it's a well planned, documented graded training which needs an effortful teamwork that enhance the overall physical and mental wellbeing of an athlete.

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