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Effect of ergogenic aids in sports performance

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Abstract
The use of supplement & drugs to enhance performance has become a part of mainstream players. Numerous cryogenic aids that claim to enhance performance in sports are used by professional athletes. More interest is current shown for the contribution of nutrition to optimize training and athletic performance. About this often, scientific studies cannot provide absolutely clear answer to the questions under study. Beta Blockers can enhance performance in sports such as golf and shooting events and therefore have been banned. Divertics increasing urine production, Anabolic steroid use increase muscle mass and strength and reduces body fat, which can improve performance in strength type sports activities. Blood dopping, erythropoietin, oxygen supplementation Amino acids, and creative can also increase sports performance protein & carbohydrate supplementation provides modest benefits with no major adverse effects. An understanding of their products is essential for the sports medicine practitioner to provide sound, safe advice to the athlete. Substance or phenomena that improve an athlete's performance are referred to as Ergogenic aids. Purpose of this study is to find out the effects of Ergogenic aids on sports performance. This study to base on the researcher's personal observation after read many books, research papers & documents of Ergogenic aids.

Keywords: ergogenic aids, beta blockers, diuretics, dopping, erythropoitive oxygen supplementation, amino acids, creative etc.

Introduction
Ergogenic aids are substances or devices that enhance energy production, use or recovery and provide athletes with a competitive advantage. However, most of the products used by athletes do not provide sufficient scientific evidence regarding their efficiency in enhancing physical performance as well as their specificity of action & safety. The list of possible ergogenic aid is long, but the number that actually possess ergogenic properties is much shorter. In fact, some allegedly ergogenic substances or phenomena actually can impair performance. The science of nutrition has brought fourth many dietary substances, micro and macro nutrients which when added or manipulated in the diet, bring about the desirable effect of boosting performance. Research on nutritional ergogenic aids is going on the world over, to get the maximum advantage for a margin of victory.

Objective of the study
The study is aimed at an analysis and evaluation of the prevalence of using effective ergogenic aids (creative, caffeine, isotonic drinks, carbohydrate & proteins etc.) in a group of polish professional athletes.
Realizing that science is limited in its ability to unequivocally determine the efficacy of a substance, we can now examine some proposed ergogenic aids. We consider substances in four classes.
- Pharmacological agents
- Physiological agents
- Nutritional agents

Pharmacological Agents
The International Olympic Committee, The International Amateur Athletic Federation and more all publish extensive lists of banned substances, most of which are pharmological agents. The IOC use the standards established by the World Anti-Doping Agency (WADA). The list of banned substances is updated annually. We review here only drugs for which a research base has been established.

Sympathomimetic Amines
Amphetamines & related compounds are central Nervous system stimulants. Also includes sympathomimetic amines which means that their activity mimics that of the sympathetic nervous system.

Effects
- Increase in reaction time, acceleration & speed
- Weight lose
- Strength, power & muscular endurance
- Better focus, and fine motor coordination
- Higher maximum heart rate and peak locate concentrations at exhaust.

B-Blockers
Beta Blockers can enhance performance in sports such as golf and shooting events and therefore have been banned. Beta blockers decrease the effects of sympathetic nervous system activity. Its reduces the heart rates (Resting and submaximal heart rate also).

Caffeine
It can enhance performance in endurance sports and may even be benefit in activation of 1 to 5 minutes duration. Caffeine increased mental alertness, fatty acid mobilization, use of

muscle triglycerides & concentration. It elevated mood by decreased fatigue and delayed onset.

Diuretics
Diuretics affect the kidneys, increasing urine production. Its lead to significant temporary weight loss. The fluid lose results primary from losses in extracellular fluid, including plasma. This may dehydration, increased cardiac strain, and electrolyte imbalances. Weight loss is the only proven ergogenic effect of diuretics.

Physiological Agents
These agents are supposed to improve physiological responses during activities. We will include only some major physiological agents.

- Blood Dopping
- Erythropoietin
- Oxygen Sypplementation

Blood Dopping
Blood dopping refers to any means by which a person's total volume of RBC is increased. It also includes the use of erythropoietin. After blood dopping most oxygen is carried in blood bound to hemoglobin cause of increasing in number of RBC available to ferry the oxygen to the tissues could benefit performance. It improves aerobic performance.

Erythropoietin
CPO can enhance aerobic capacity & the performance of aerobic sports, or activities. This occur through an increase in RBC in Blood. This procedure involve extreme risk.

Oxygen Supplementation
Oxygen supplementation can increase aerobic performance but on if administered during exercise which is not practical in sports competition. No serious risks are associated with oxygen breathing.

Hormonal Agents
Anabolic steroids & Human Growth Harmone were the harmones most frequently used by athletes between 1950 to 1980s. Major risk are also associated with the use of these Harmones.

Anabolic Steroids
It increase muscles mass and strength, it increases fat free mass. Several studies reported increases in volume it changes in fat free mass and quadriceps and triceps and triceps muscle areas from magnetic resonance imaging, and changes in squat and bench press strength over 10 weeks of placebo & testosterone, with or without exercise training. Anabolic steroids facilitate recovery from high – intensity training is attractive.

Human Growth Hermone (HGH)
Increase fat free mass, decrease fat mass, and increase bone density.

Nutritional Agents
Most of nutritional agents have not been adequately researched, however, so our research of each is brief.

Amino Acids
L-tryptophan, an essential amino acid, has been proposed to increase aerobic endurance performance through its effects on the CNS, acting as an analgesic and delaying fatigue.
Branched-Chain Amino Acids (BCAA) – leucine, valine & isoleucine – have been postulated to work in combination with L-tryptophan to delay fatigue, primarily through CNS mechanism.

Creative
Creative supplementation has been shown to increase muscle creative level and increase performance in sports involving brief periods of high-intensity exercise. The high expectations for performance enhancement exceed the true ergogenic benefits.

Conclusion
The nutritional supplements industry has gone through a surprising involution in recent years, powered by the athletes' permanent desire to improve performance. Athletes are increasingly tempted to use ergogenic substances that can contribute to increasing strength, endurance, recovery of exercise capacity or adjusting body composition, provided that the category of ergogenic aids contains both natural substances and those considered prohibited by WADA. All athletes must recognize the legal, ethical, moral, and medical consequences of using any ergogenic agent. The list of banned substances continues to increase. Athletes who use banned substances risk disqualification from the competition, or for long time. Unfortunately, too many athletes are blinded by ambition and do not consider the consequences of their careers have been jeopardized or their health seriously impaired.

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