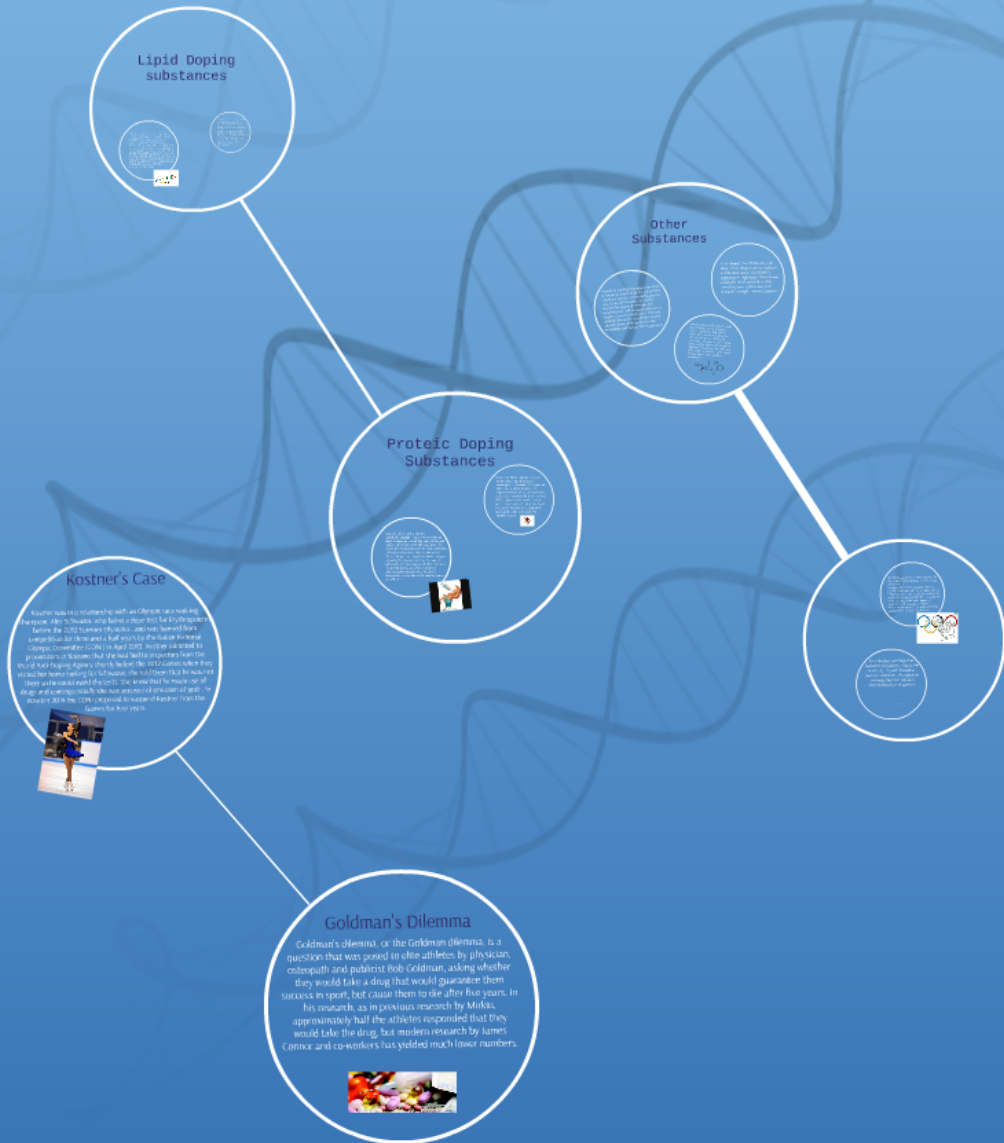
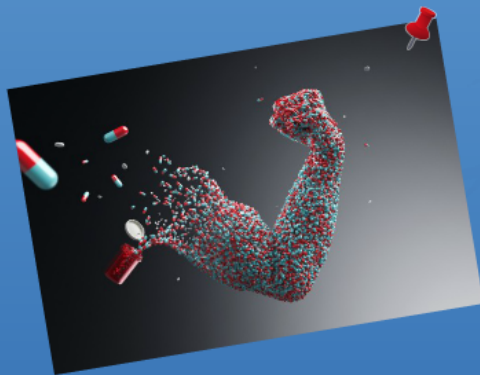




# DOPING

The use of banned performance-enhancing drugs in sports is commonly called doping, particularly by the organizations that regulate sporting competitions. The use of drugs to enhance performance is considered unethical by most international sports organizations.



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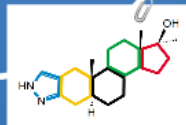






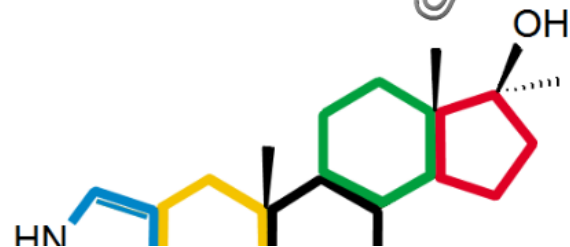
# Lipid Doping substances

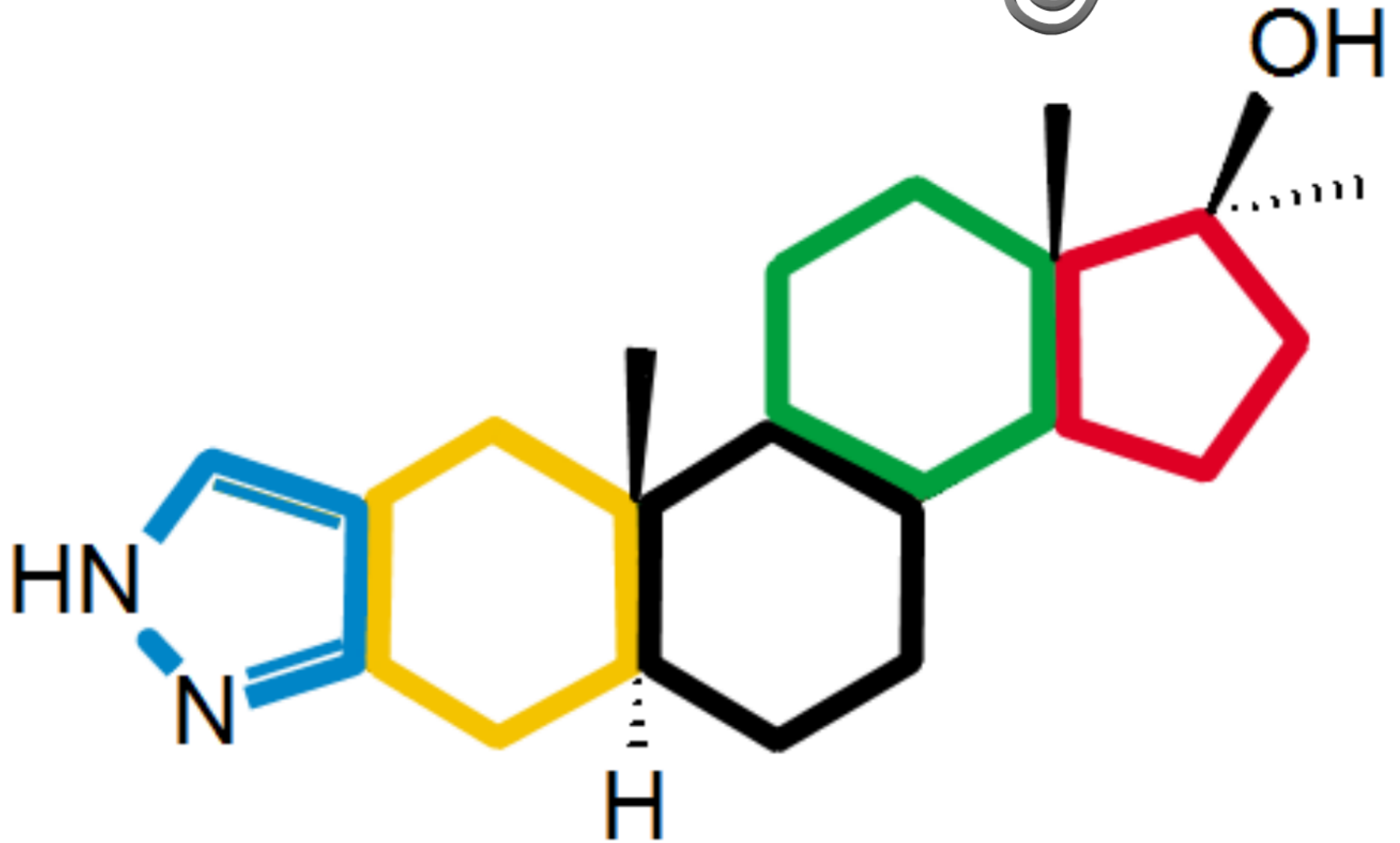
Anabolics are substances with similar action to that of the hormone testosterone that is widely used by binding to specific cell receptors. It induces changes typical linked to sexual differentiation, mainly an increase in muscle mass and strength. The anabolics stimulate the protein synthesis through the link of steroid to the specific receptor cell located in skeletal muscle cells. It increases the production of RNA polymerases. It is able to promote the development of cancer and give life to a whole series of very serious diseases: fibrosis, cysts, abscesses, calcification and breakdown of muscle fibers.



Corticosteroids are a class of chemicals that includes the steroid hormones that are produced in the adrenal cortex of vertebrates, and synthetic analogues of these hormones. Corticosteroids are involved in a wide range of physiological processes, including stress response, immune response, and regulation of inflammation, carbohydrate metabolism, protein catabolism, blood electrolyte levels, and behavior. Prolonged treatment with corticosteroids are possible only on specific medical indications, in particular in the case of asthma and allergic rhinitis. All other uses are considered doping.

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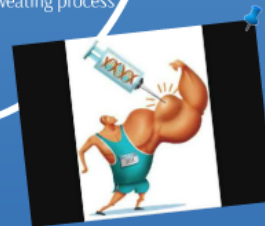
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# Proteic Doping Substances

Protein hormones , glycoprotein: are natural substances that act as " messengers " in the body . This group of substances is rather uneven, as it includes elements which are not closely related pharmacologically between them; EPO is a glycoprotein, involved in the forced increase of red cells in the blood; the growth hormone is a glycoprotein too, used in order to increase the muscular tissues.



Diuretics : it is a form of doping specifically adopted in sports where there are weight categories as wrestling, weightlifting and boxing . They improve the efficiency of kidneys action, decreasing the waste of chemical elements in blood, as potassium, calcium, magnesium. The advantage is to compete in a lower category exploiting the physical structure that would compete to a higher category . On the other side, The dehydration causes the reduction of neuromuscular function and difficulty of temperature control due to the sweating process less efficient.



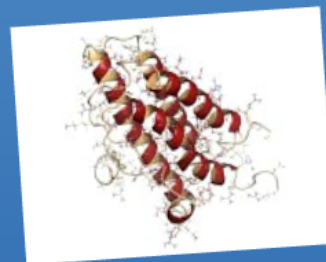


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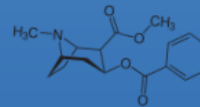


# Other Substances

Stimulants: exciting that repeat the action of mediators produced by the sympathetic autonomic nervous system during exercise and in stressful situations. It's used to improve the degree of attention and concentration, and increase resistance to fatigue and exercise tolerance; the more common stimulants are caffeine, cocaine and ephedrine which accelerates the metabolism and decreases the hunger sense.

Cannabinoids: the effects vary with dose. At low doses it causes euphoria, middle dose causes disinhibition, aggression at high doses. There is also a complex set of symptoms in the central nervous system: decrease in muscle strength, memory, balance.

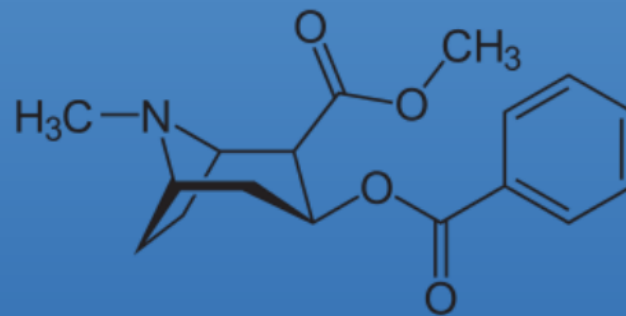
Narcotics are part of the class of opioids and derivatives such as morphine, heroin, methadone. They perform central analgesic and sedative action. They are used to turn off the pain sensations, as in boxing, and partly to counteract the effect of switching off of attention. They are taken in combination with stimulants. Narcotics act on central nervous system on the electrical transmission.



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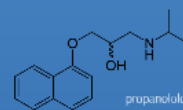


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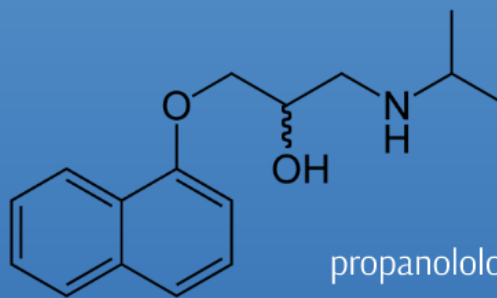
Anesthetics are drugs that block reversibly the transmission of painful stimulus to the central nervous system .  
Injections are considered doping , while it is possible local treatment . The harmful effects are related to the passage into the circulation of the anesthetic and mainly involve the central nervous tissue and the cardiovascular producing alterations in mental status ( agitation, depression , insomnia ) , atrioventricular block , cardiovascular collapse , hypotension.



Beta-blockers are drugs that , between their actions , reduce the heart rate . In some disciplines , such as in the shots , the agitation increases the heart rate and disturbs the phase of pointing.



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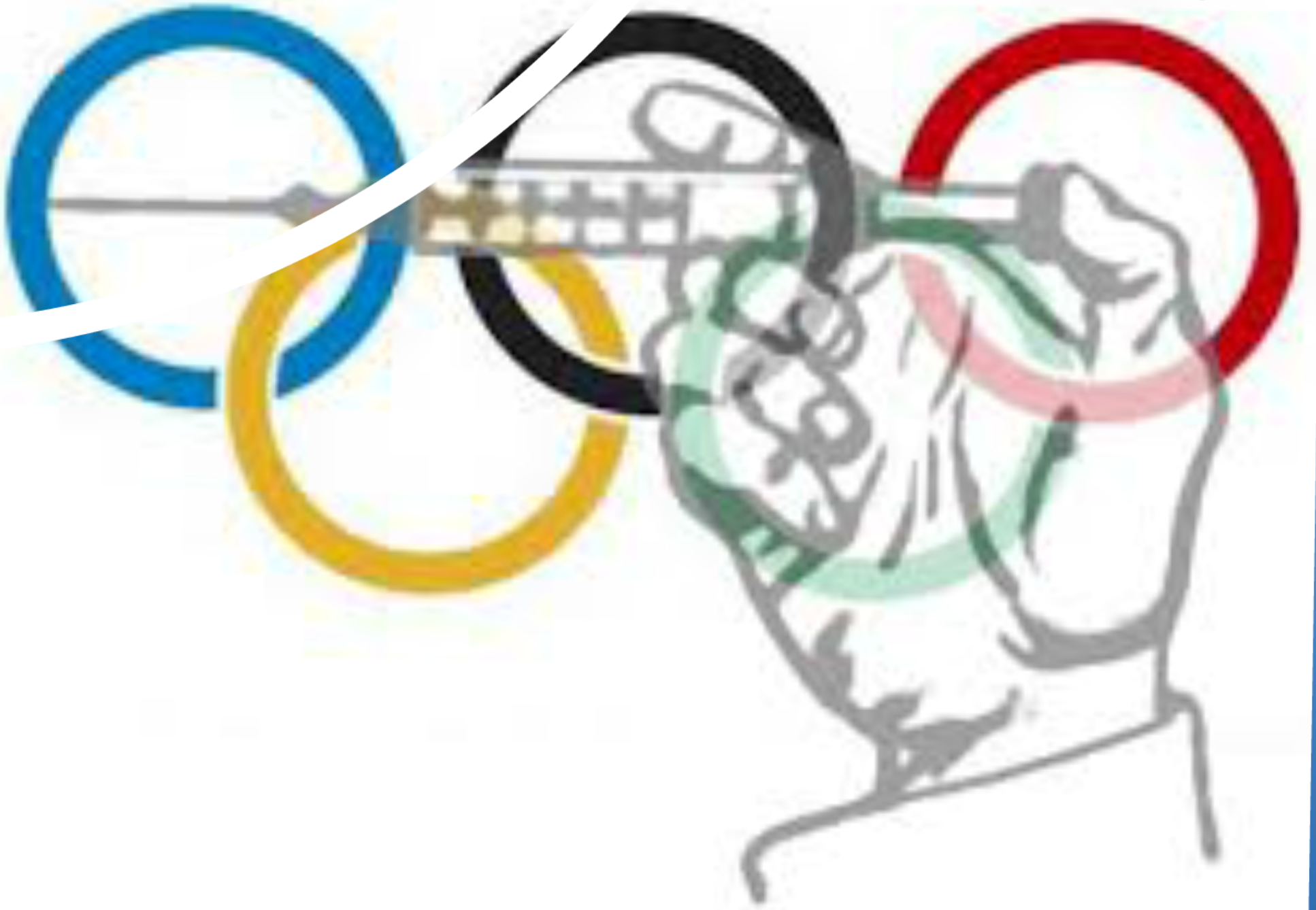


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# Kostner's Case

Kostner was in a relationship with an Olympic race walking champion, Alex Schwazer, who failed a dope test for Erythropoietin before the 2012 Summer Olympics, and was banned from competition for three and a half years by the Italian National Olympic Committee (CONI) in April 2013. Kostner admitted to prosecutors in Bolzano that she had lied to inspectors from the World Anti-Doping Agency shortly before the 2012 Games when they visited her home looking for Schwazer, she told them that he was not there so he could avoid the tests. She knew that he made use of drugs and consequentially she was accused of omission of guilt. In November 2014 the CONI proposed to suspend Kostner from the Games for four years.





# Goldman's Dilemma

Goldman's dilemma, or the Goldman dilemma, is a question that was posed to elite athletes by physician, osteopath and publicist Bob Goldman, asking whether they would take a drug that would guarantee them success in sport, but cause them to die after five years. In his research, as in previous research by Mirkin, approximately half the athletes responded that they would take the drug, but modern research by James Connor and co-workers has yielded much lower numbers.



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