

TerranearPMC Safety Share

Week of January 28, 2013 – The High Cost of Winning -Substances in the World of Sports

Last week, the legendary cyclist, Lance Armstrong, gave an interview to Oprah Winfrey concerning his use of performance-enhancing drugs. While Lance Armstrong had denied for years that he used such measures, he finally admitted to using a number of illegal substances during the interview. In October, the U.S. Anti-Doping Agency (USADA) released more than 1,000 pages of evidence in doping allegations against Armstrong and his teammates.

The USADA charged Armstrong with using or attempting to use "prohibited substances and/or methods including EPO, blood transfusions, testosterone, corticosteroids and/or masking agents." He was stripped of his seven Tour de France titles in the scandal.

The charges against Armstrong are all too common in the cycling world. Charges stemmed from his masseuse to fellow-cyclists. One such case was Floyd Landis, who was stripped of his 2006 Tour de France title after failing a drug test. He made a series of claims against Armstrong in 2011.

According to the USADA, eighty percent of the Tour de France medalists between 1996 and 2010 have been "similarly tainted by doping," Meanwhile cyclists say calls to clean up the sport may lead to a new era. However, just what that era will be is anyone's guess.

"From day one, we always hoped this investigation would bring to a close to this troubling chapter in cycling's history and we hope the sport will use this tragedy to prevent it from ever happening again," USADA CEO Travis Tygart said in a statement this past October. "Our mission is to protect clean athletes by preserving the integrity of competition not only for today's athletes but also the athletes of tomorrow. We have heard from many athletes who have faced an unfair dilemma -- dope, or don't compete at the highest levels of the sport. Many of them abandoned their dreams and left the sport because they refused to endanger their health and participate in doping. That is a tragic choice no athlete should have to make."

One of the practices Lance Armstrong used to improve his cycling performance is known as blood doping. This involves the use of erythropoietin (EPO), a hormone naturally produced by human kidneys to stimulate red blood cell production, according to the World Anti-Doping Agency. Cyclists and other athletes use EPO to raise their red blood cell counts, which increases the amount of oxygen that can be delivered to muscles, improving recovery and endurance. Although EPO has been banned since the 1990s, the first screening test was used at the 2000 Summer Olympic Games in Sydney.

Blood transfusions have a similar effect on the body's red blood cell count. Usually an athlete will store some of his blood when his hemoglobin levels are high, then reinfuse it right before an event. This type of transfusion cannot be detected by current tests, according to the USADA.

Both methods can have dangerous side effects. Increased levels of hemoglobin, which literally thickens the blood, can lead to complications with circulation, putting athletes at risk for cardiovascular problems.

Another method used by athletes is the use of Corticosteroids. These are man-made drugs that resemble the natural hormone cortisol and are different from anabolic steroids, which increase muscle size and strength. The most common types are cortisone, prednisone and methylprednisolone. Cortisol is most commonly known as a stress hormone. Corticosteroids work to decrease inflammation that can cause swelling and pain. They can be administered locally -- to the specific area that hurts -- or systemically through a pill or intravenously. The list of possible side effects for corticosteroids is long, including suppression of the immune system, gastrointestinal ulcers and bleeding, weight gain, sudden mood swings, depression, blurred vision, osteoporosis and high blood pressure.

Another drug commonly used in the sports world is testosterone. Testosterone is a naturally occurring hormone that helps regulate bone density, fat distribution, muscle strength, red blood cell production and sex drive. It is found in both men and women; in men, it also helps to regulate sperm production. Athletes generally abuse testosterone to "bulk up." The side effects are similar to both blood doping and anabolic steroid use. Testosterone increases the body's red blood cell count, and therefore increases the risk for cardiovascular disease. Mood swings, muscle weakness and liver dysfunction are also common for both sexes with overuse. Using testosterone also shuts down the body's natural production of the hormone. This can cause the testicles to shrink in men, reducing sperm production.

Using performance enhancing drugs in the world of sports is, by no means confined to cycling. We have seen more and more of our heroes in baseball (Roger Clemens, Manny Ramirez, and Mark McGwire) as well as our Olympians (remember Maryann Jones who had to return her five metals - three gold and two bronze from the 2000 Sydney games?) succumb to their temptations in the name of winning. During the 1984 Olympic games in Los Angeles, a survey was given to the participating athletes (all questions and answers were recorded anonymously) where they were asked if they could take an undetectable substance that would guarantee a gold medal but cause them to have a dramatically shortened life (die within five years), would they take the risk. The overwhelming majority of those that took this survey answered that they would indeed take the substance. It is apparent that our need to achieve: whether in sports or excel at work or other endeavors that we hold in high esteem, outweighs our concern for health.

Athletes have always been revered by the public ó and especially our youth. If such external stimulants are continued to be taken by our heroes, what message are we sending to our youth? Quite possibly the same message that was presented to young people a few generations ago when smoking cigarettes was considered glamorous and sophisticated. We can see just how hard it to reverse a message once it has been accepted in our society. So today, while laws have been enacted to reduce the use of tobacco products, many of us still smoke and leave ourselves susceptible to the risk of a host of debilitating diseases. And where will this end? Will performance enhancing drugs become accepted in our lives? How do we combat such an allure that claims to guarantee success; whether in the world of sports, our professions, or even our own personal lives?

Knowledge is power. Information is liberating. Education is the premise of progress, in every society, in every family.

Kofi Annan (UN Secretary General 1997 - 2006)