THE AMATEUR'S COMPLETE GUIDE TO BLOOD DOPING

Turn on the news today and you'll eventually watch a story about blood doping. More precisely, you'll watch an ongoing story about 39 olympic athletes being banned from Rio, or Russian track-and-field athletes that have been outed as cheats by the IAAF – this time for using the banned drug meldonium, the same drug Maria Sharapova was caught using by the World Anti-Doping Agency.

But this isn't the first time the public have been stung by doping. When seven-time Tour de France winner Lance Armstrong admitted his part in the most elaborate blood-doping strategy in sports history, the moral outcry was unanimous. The man who beat testicular cancer to come back stronger of will, harder of leg and longer of lungs was a liar, a cheat, a fraud. When he confessed to using a banned performance enhancer called EPO all his title wins were stripped.

Living stronger

EPO, or erythropoietin to give it its full name, is a peptide hormone produced naturally by your kidneys. It acts on your bone marrow to stimulate red blood cell production and is used medically to treat anemia. The drug's misuse in sport has been banned by the World Anti-Doping Authority (WADA) since 1990 but its prevalence in endurance events has only escalated.

In March this year, the former winner of the Giro d'Italia, Danilo Di Luca, was banned from cycling for life after testing positive for EPO. So why, after all the high-profile cases and shamed sportsmen, would any athlete blood dope? "High-level endurance athletes seek to increase the number of red blood cells in their circulation – EPO does this," says Charlotte Cowie, Team GB's medical officer for the London Olympics. "More red blood cells carrying oxygen around your body means increased aerobic potential."

Put simply, when you inject EPO into your bloodstream you create unnaturally high levels of red blood cells, so your muscles can work harder longer. But the recent testimonies of banned Tour de France cyclists detail how blood-doped riders have to sleep with alarm-rigged heart monitors in case their blood turns to lethal sludge; how they're forced to jump out of bed and churn away on a stationary bike just to keep their circulation going. This scares me.

"Erythropoietin has to accumulate in your body over time and needs careful medical monitoring," says Jörg Stadelmann, a physiologist at Pure Sports Medicine. "There is a reason why Lance Armstrong can be on these drugs for 10 years – he's got the money and medical support to do so and keep it a secret." If I'm going to administer my own EPO transfusion, I want medical sign off. I go back to Dr Cowie for her official verdict on my plans to dope my own blood.

"I would strongly recommend you do not do this. The enormous danger of EPO use is the deadly consequences of having too many red blood cells in circulation," she stresses. "If they go above a certain level, the blood starts to clog and clot in the arteries. This would result in the death of whichever organ the artery is supplying. There is a chance you could lose a limb, suffer a stroke or have a heart attack."

Going to the next level

Doping is now bleeding into more familiar sports as high-salaried professionals vie for a razor-thin edge over the competition. Dr Michael D'Hooghe, the chairman of FIFA's medical commission, has stated that European footballers are blood doping. Roger Federer and Andy Murray have called for better testing in tennis.

Next year, British pharmaceutical giant GlaxoSmithKline will be competing with a Japanese firm to be the first to sell a pill that boosts red blood cell production by replicating the effects of altitude. Both are designed to combat anaemia but the benefits of a prescription-strength blood-doping pill are underlined in red. They have already alerted WADA to the risk of misuse in competition.

When boosting your own blood for a spike in your performance no longer means putting your life on the line, will you take it? Or, should the real question be that, seeing as WADA is unlikely to come knocking, why won't you?

Questions

1) What is the role of EPO in blood doping?
2) What is the dangers of Blood Doping?
3) If no health risk was present for Blood Doping should it be legal? Why?
4) Even if health risks are present should Blood Doping be legal for adults? Why?