



**College of William and Mary  
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## Orthopaedic surgeons stress the dangers of performance-enhancing drugs

The eyes of the world were focused on the 2008 Beijing Summer Olympics. More than 10,000 athletes from 205 countries competed for medals in 28 sporting events. These athletes had been rigorously training their bones, muscles and joints to successfully participate in the demanding two-week long competition. And all wanted to win.

"The heavy preparation for the Olympics puts severe strain on an athlete's musculoskeletal frame," says Edward McDevitt, MD, spokesperson for the American Academy of Orthopaedic Surgeons (AAOS) and an orthopaedic surgeon specializing in sports medicine. "The dream of every athlete is to win a medal for his or her country, and this is a great attitude to have. But it can become problematic if the athlete develops the 'stop-at-nothing mentality' to win."

This "win-at-any-cost" attitude refers to an athlete's use of performance-enhancing drugs (PEDs). PEDs have reportedly been used by some athletes to increase performance, endurance, muscle mass and strength. Currently, the most commonly used PEDs include, but are not limited to:

**Human Growth Hormones (hGH) or IGF-1:** In theory, this drug increases muscle mass and decreases fat.

**Erythropoietin (EPO):** A natural hormone produced by the kidneys that increases blood cell mass. EPO also increases oxygen saturation to the muscles, allowing athletes to endure longer aerobic sporting events, such as cycling.

**Anabolic steroids:** This class of drug increases the strength of muscles, but also stimulates secondary male sexual characteristics such as male-pattern baldness, increases in body hair and elevation in cholesterol levels.

The biggest problem with PEDs is that athletes are only interested in the potential short-term benefits of these drugs. They discount the significant life-long consequences of these drugs. The AAOS wants to emphasize that these drugs have severe long-term musculoskeletal, psychological and physiological risks, including stunted growth, diabetes, impaired reproductive functioning, the spread of cancerous tumors, early osteoarthritis, accelerated atherosclerotic vascular disease--heart attack and strokes, and increased aggressiveness and possible anti-social behaviors.

Anabolic steroids, growth hormone and other performance enhancing drugs are now easily available through the Internet and through local gyms. Dr. McDevitt suggests that physicians, coaches, athletic trainers and parents develop open communication with their athletes concerning the dangers of PEDs.

"All of us who care about the health of our athletes should be aware of the warning signs of PED use for all athletes, not just Olympians," says Dr. McDevitt. He recommends watching for a dramatic increase in an athlete's height or weight, especially from one season to the next; male-pattern hair loss in men or women; significant acne on the athlete's back; and increased aggressiveness or problems with anger management.

"With the easy availability of these drugs, some athletes are looking to get bigger and stronger as quickly as possible," Dr. McDevitt says. "It is our responsibility to educate and inform our athletes of all ages that use of performance enhancing drugs today can lead to life-long medical and musculoskeletal problems down the road."



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