Performance-enhancing drug use more prevalent than Type 1 diabetes or HIV infection

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A new Scientific Statement issued today by The Endocrine Society represents a comprehensive evaluation of available information on the prevalence and medical consequences of the use of performance-enhancing drugs (PEDs). The statement highlights the clinical pharmacology, adverse effects and detection of many substances often classified as PEDs, identifies gaps in knowledge and aims to focus the attention of the medical community and policymakers on PED use as an important public health problem.

PEDs are synonymous with the names of certain elite athletes who have been accused of using illegal substances to gain a competitive edge, but in reality professional athletes make up only a small fraction of the nation's 3 million PED users. Most users are non-athlete weightlifters who are more focused on personal appearance, in that they want to look leaner and more muscular. But according to the Society's new statement, PED use can take a heavy and dangerous toll on personal health.

"There is a widespread misperception that PED use is safe or that adverse effects are manageable," said Shalender Bhasin, MD, Director, Research Program in Men's Health: Aging and Metabolism, at the Brigham and Women's Hospital, and chair of the task force that developed the statement. "The truth is, PED use has been linked to increased risk of death and a wide variety of cardiovascular, psychiatric, metabolic, renal and musculoskeletal disorders."

There are several categories of PEDs, but the most frequently used substances are lean mass builders which are generally anabolic drugs that increase muscle mass and/ or reduce fat mass. By far the most prevalent illicit PEDs are anabolic-androgenic steroids (AAS), followed by human growth hormone, insulin-like growth factor-1 (IGF-1), insulin, stimulants, erythropoietin, diuretics and even thyroid hormone.

PED users at greatest risk for adverse effects are those who develop a dependence on the drugs and accumulate many years of exposure. According to the statement, nearly a third of AAS users will develop AAS dependence and about 1 million men have experienced AAS dependence at some time.

PED use can result in infertility, gynecomastia, sexual dysfunction, hair loss, acne and testicular atrophy. Furthermore, athletes and non-athlete weightlifters that use PEDs often engage in other high-risk health behaviors including concomitant use of other drugs such as alcohol and opiates with AAS. AAS users may be more susceptible to rage, antisocial and violent behaviors, and suicide.

"The use of performance-enhancing drugs is far more prevalent than is generally believed and deserves substantially greater investigation of its medical consequences, mechanisms, prevention and treatment," said Harrison G. Pope, Jr. of McClean Hospital at the Harvard Medical School in Belmont, MA, and another author of the statement. "Long-term observational studies (registries) to determine the health risks associated with PED use are a public health imperative."

Much of the national effort has focused on measures to detect, punish and shame elite athletes in the hope that these measures would discourage PED use by the rank-and-file PED user, who is not an athlete. The empiric experience of the past 20 years suggests that this approach has had very limited success. The statement emphasizes that

PED use by athletes and non-athlete weightlifters are two distinct cultural phenomena; these two categories of PED users differ in their motivation to use PEDs and in their sociodemographic profile. The Position Statement makes the point that the PED use by non-athlete weightlifters is a major public health problem associated with potentially serious adverse health consequences.

The statement highlights several obstacles to better appreciating the adverse effects of PEDs. These include:

- Randomized trials of PED use, in the does that athletes and non-athlete weightlifters typically use them, will never be possible because of ethical concerns. Most evidence of medical consequences of PED use come from animal models, case-control studies, case reports, and retrospective surveys;
- Since widespread illicit PED use did not appear in the general population until the 1980s and 1990s, the great majority of PED users are still under the age of 50. As such, this population has not yet reached the age of risk for a range of diseases, such as cardiovascular problems, that often arise later in life;
- PED use is usually covert. People are less apt to disclose PED use than other forms of drug use. In one study, 56 percent of PED users reported that they never disclosed their use to any physician.

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