between the testosterone- and placebo-treated men. In another randomized trial, compared to placebo, testosterone treatment was associated with greater increase in noncalcified plaque volume in the coronary arteries, assessed using CT coronary angiography. An ongoing large prospective randomized trial (TRAVERSE trial) will determine the effects of testosterone replacement therapy on major adverse cardiovascular events in middle-aged and older hypogonadal men at increased risk of CVD.

Androgen Abuse by Athletes and Recreational Bodybuilders

The illicit use of androgenic-anabolic steroids (AAS) to enhance athletic performance first surfaced in the 1950s among powerlifters and spread rapidly to other sports, professional as well as high school athletes, and recreational bodybuilders. In the early 1980s, the use of AAS spread beyond the athletic community into the general population, and now, as many as 3–4 million Americans—most of them men—have likely used these compounds. Most AAS users are not athletes, but rather recreational weightlifters, almost all men, who use these drugs to look lean and more muscular. A subset of AAS users suffers from muscle dysmorphia, a form of body image disorder characterized by excessive preoccupation with leanness and muscularity and poor functioning in social and occupational life. A secular transformation in idealized body image toward greater muscularity and leanness has contributed to increasing prevalence of body image disorders and the use of muscle-building anabolic drugs in young men.

The most commonly used AAS include testosterone esters, nandrolone, stanozolol, methandienone, and methenolol. AAS users generally use large doses of multiple steroids in cycles, a practice known as stacking. AAS users may also typically use other drugs that are perceived to be muscle building or performance enhancing, such as human GH; erythropoiesis-stimulating agents; insulin; stimulants such as amphetamine, clenbuterol, cocaine, ephedrine, and thyroxine; and drugs perceived to reduce adverse effects such as hCG, aromatase inhibitors, or estrogen antagonists. Recent years have witnessed increasing use of unapproved nonsteroidal SARMs and GH secretagogues purchased from internet sites.