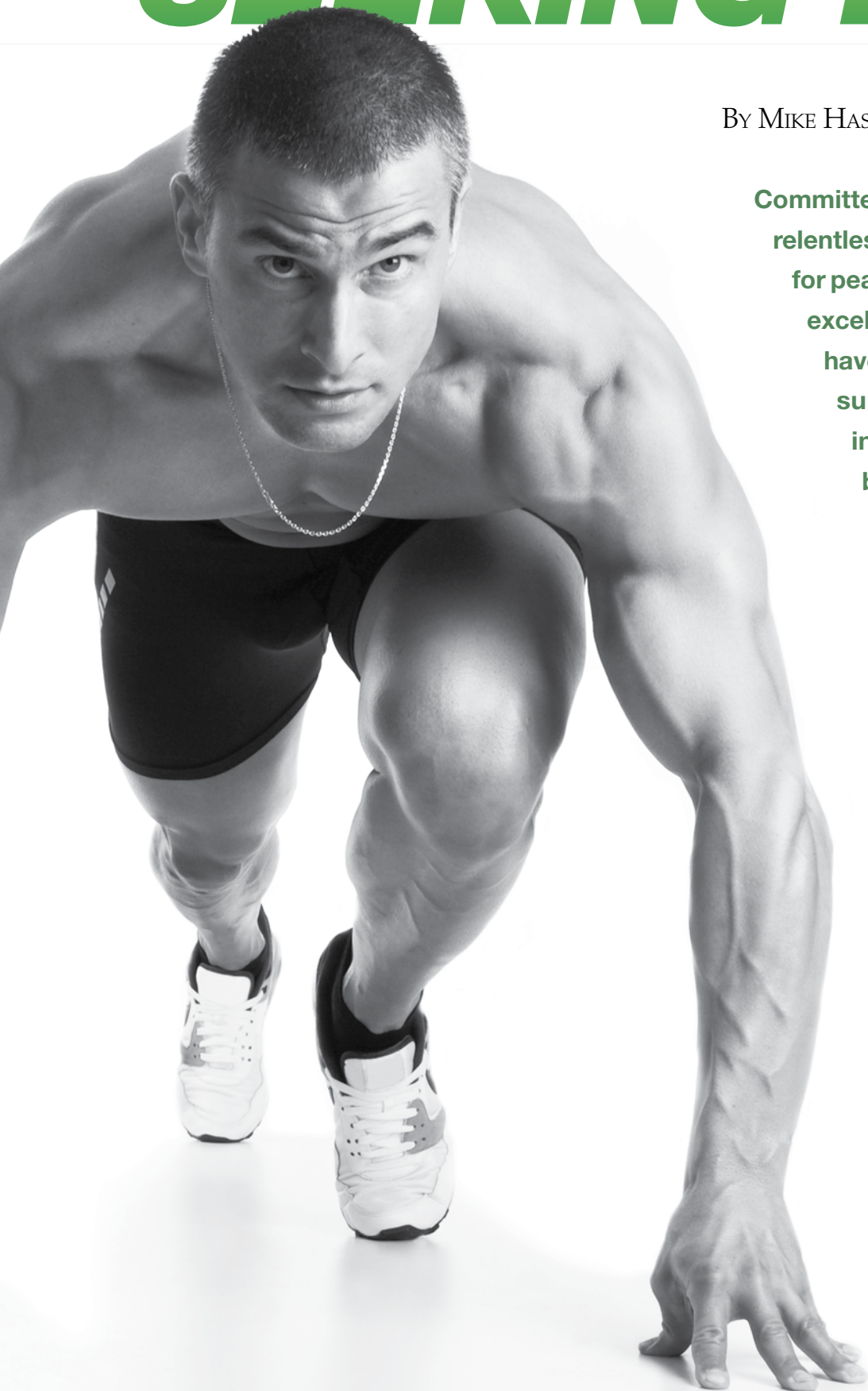


SEEKING PEAK

BY MIKE HASKEW

Committed athletes everywhere train relentlessly, preparing mind and body for peak performance. In an effort to excel in their chosen sport, some have turned to drugs, others to supplements. Young athletes in particular are bombarded by marketing campaigns that promise optimal performance, enhanced performance, quicker recovery and more. Consequently, there is much confusion about what is good for you, what is bad; what is regulated, what is not; what is legal, what is illegal; and what really works.



PERFORMANCE

Understanding Performance Enhancing Drugs and Supplements

Performance Enhancing Drugs - Dangerous

Performance enhancing drugs consist of a variety of substances that are intended to improve athletic sports performance. Some of these substances are naturally occurring, easily available and completely legal while others are manufactured, illegal, or banned by many sporting organizations. All are potentially dangerous to one's health.

The use of performance enhancing drugs, commonly known as doping, has resulted in many high-profile athletes forfeiting victories, surrendering Olympic medals, and actually being banned from their sports.

Among the most prominent performance enhancing drugs are anabolic-androgenic steroids (commonly referred to as simply anabolic steroids), human growth hormone, diuretics, androstenedione, and erythropoietin. The most recognized of these are the anabolic steroids, commonly ingested to increase muscle mass.

Anabolic steroids are particularly dangerous when taken in large doses, and the adverse effects on the body are not completely known today. They may be linked to cancer and other serious health conditions. Without a prescription, these substances are illegal, and during the last 25 years their possession and resale have become a clandestine, black market activity. Synthetic forms of the male hormone testosterone are among the most widely used of these, and their most noticeable side effects include the emergence of androgenic traits, particularly among women and teens, such as a deeper voice and the growth of facial hair.

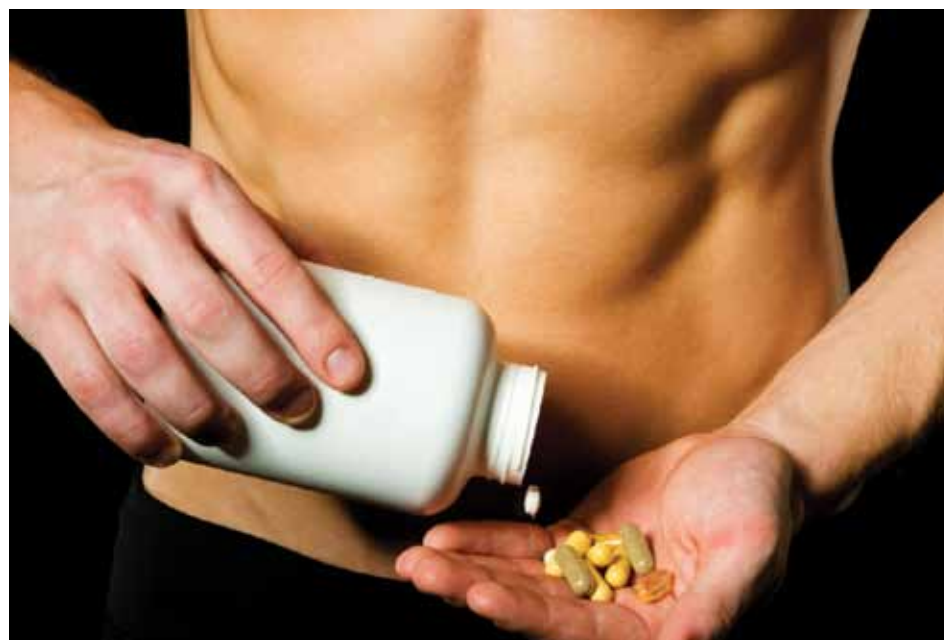
An emerging class of anabolic steroids has been called "designer" steroids. These have been illegally created in order to reduce the likelihood of detection through drug testing. Their development has not been regulated by the Food & Drug Administration, and there is absolutely no guarantee as to the content of any of these substances which an athlete may ingest.

Banned in the U.S., androstenedione is produced naturally in the body by the ovaries, adrenal glands and testes and converted to the male hormone testosterone. While it has been promoted as a substance which allows more rigorous training with minimal recovery time between workouts, it may also lead to lowering of good cholesterol (HDL), and in women to acne, deepening of the voice and even baldness. Men may realize enlarged breasts, lower sperm production, shrinking testicles and acne.

While the ability of human growth hormone to enhance muscle mass or improve endurance is not documented and the drug is available only through physicians and by prescription, its use has become prevalent as well. Adverse effects include difficulty in maintaining appropriate glucose levels in the body, carpal tunnel syndrome, fluid retention and joint pain.

Some athletes have taken erythropoietin to increase the volume of red blood cells and hemoglobin in the body and therefore the capacity of the blood to carry oxygen and enhance endurance. Often taken in synthetic form, erythropoietin was linked to numerous deaths during the 1990s and may increase the likelihood of a heart attack, stroke or pulmonary edema, a dangerous accumulation of fluid in the lungs. The hormone is regularly used to treat anemia in patients who suffer from serious kidney disease.





Supplements – Potentially Unsafe

The primary difference between performance enhancing drugs and supplements is the classification of supplements as food or dietary supplements rather than actual drugs. Supplements are available in numerous forms such as pills, powders, food or energy bars, and shake formulas. They are available over the counter and may be marketed as vitamins, minerals, herbs, extracts, or other substances. Those substances classified as dietary supplements are not subject to FDA approval. However, clean and safe production methods are required. The FDA is responsible for taking action if a supplement is found to be unsafe after reaching the market.

Androstenedione and another naturally occurring hormone, dehydroepiandrosterone or DHEA, may be classified as supplements by some authorities because they are also produced in the body and may be broken down into testosterone. Other popular supplements include creatine, thermogenics (commonly known as fat burners), amino acid supplements, and some stimulants.

The herb ephedra was once a common ingredient in fat burning supplements. Marketed under trade names which included

the terms ephedrine or ma huang, this naturally occurring substance was utilized to stimulate the body's metabolism but was also linked to heart disease and strokes. While ephedra has been banned, other fat burning supplements have emerged. Some of these may contain substances called country mallow or bitter orange which could present similar hazards to ephedra. Caffeine is another common ingredient in fat burners, and its side effects include heightened anxiety, irregular heartbeat, and general restlessness.

In addition to caffeine, other stimulants are found in cold medicines, readily available over the counter, as well as in illegal drugs such as cocaine or amphetamines. While these stimulants may help with weight loss by curbing appetite or reducing fatigue and improving endurance, they may also result in insomnia, heat stroke or dehydration, anxiety and addiction.

Amino acids are primary components of protein, which is essential for growth and development. While some amino acid supplements may enhance overall health, these products should be used under a doctor's supervision, and their side effects are serious, including nausea and vomiting, skin irritation, and diarrhea.

Misunderstood – Managed Nutritional Supplements

By definition, a nutritional supplement is a preparation intended to supplement the diet and provide nutrients, such as vitamins, minerals, fiber, fatty acids, or amino acids, that may be missing or may not be consumed in sufficient quantities in a person's diet. Nutritional supplements can be added to the diet to

- boost overall health and energy
- provide immune system support
- reduce the risks of illness and age-related conditions
- improve performance in athletic and mental activities
- support the healing process during illness and disease

Despite this acknowledgement, the belief among many is that nutritional supplements are unregulated and potentially harmful. "The most concerning issue with the use of nutritional supplements for athletes is that a few of these companies are unscrupulous, and this has given the nutrition industry a black eye in this area," says Ed Jones, owner of Nutrition World. "Additionally, a lack of knowledge among the general public, nutritionists and even some medical professionals for how to use nutritional supplements safely and effectively to enhance athletic performance has caused confusion and a misunderstanding for the efficacy of nutritional supplements." Jones adds, "There are a number of high quality brands that when administered properly will enhance an athlete's performance safely. We have athletes of all ages that perform at the top of their class that safely use legal, nutritional supplements to complement a sound nutritional diet to achieve peak performance. It is important that an athlete establish his or her objectives, have a sound diet – nothing replaces the choices of what gets on your fork and spoon – identify

How healthy is your healthcare business?

Need help maximizing opportunities and solving problems? LBMC has an extensive team of healthcare professionals with experience in:

- Financial Services – Audit, Tax, Due Diligence
- Valuations and Mergers & Acquisitions
- Strategy and Performance
- Reimbursement Services
- Coding and Compliance
- Human Resources Solutions
- IT Security
- Technology Solutions

Give us a call and let's discuss how we can make a difference in your healthcare business.

Smart Business Solutions That Make a Difference.



HEALTHCARE SERVICES
ACCOUNTING - CONSULTING -
HUMAN RESOURCES - TECHNOLOGY

CHATTANOOGA | NASHVILLE | KNOXVILLE
ph: 423.756.6585 | www.lbmc.com

Recapture Everyday Moments with Breakthrough Tinnitus Treatment



Darnell H. Scafe, MA, CCC-A Masters of Audiology | Lynda Klee, Au. D. Doctor of Audiology | Ken Parker, Au. D. Doctor of Audiology

hearchattanooga.com
We're Here To Help You Hear!

AUDIOLOGY SERVICES OF CHATTANOOGA, INC.

Call Today For More Information:
6151 Shallowford Rd., Ste. 104 | 2600 Taft Highway, Ste. 200
Chattanooga, TN | Signal Mtn., TN
(423) 894-1133 | (423) 475-5391

nutritional supplements with the advice of an expert, and select trusted brands.”

Jones recommends, under the guidance of a medical professional or nutritionist, the following specific nutritional supplements for peak performance needs:

- **Conjugated linoleic acid (CLA)** – Conjugated linoleic acid refers to a group of chemicals found in the fatty acid linoleic acid. It may help reduce body fat deposits and improve immune function.
- **American-made creatine** – Creatine is a chemical that is normally found in the body, mostly in muscles. It is involved in making the energy muscles need to work.
- **Arginine products without stimulants (L-arginine)** – L-arginine is needed to make creatine. Arginine also triggers the body to make protein and has been studied for bodybuilding, among other things.
- **Branched-chain amino acids** — Branched-chain amino acids are essential nutrients that the body obtains from proteins found in food, especially meat, dairy products, and legumes. Athletes use branched-chain amino acids to improve exercise performance and reduce protein and muscle breakdown during intense exercise.



- **Proteins (without added products)** – The three common ones are whey, soy and casein protein. Whey is a complete protein, meaning that it contains all nine of the amino acids necessary for human dietary needs.
- **Carnitine** – Carnitine is a nutrient produced by the body in the liver and kidneys that helps the body turn fat into energy.
- **Beta-alanine** – Beta-alanine is necessary for the production of carnosine, which is naturally found in the body and highly concentrated in the muscles and brain. Carnosine has been shown to reduce





fatigue in athletes, act as an antioxidant, and reduce the risk of many chronic diseases as well as many effects of aging.

- **Glutamine** – Glutamine is the most abundant amino acid (building block of protein) in the body. The body can make enough glutamine for its regular needs, but extreme stress such as heavy exercise or an injury may require more than the body can make.
- **Ribose** – Ribose is a kind of sugar that is produced by the body. Ribose is used to improve athletic performance and the ability to exercise by boosting muscle energy.

So what should athletes seeking to achieve their peak performance do? Stay away from illegal drugs or supplements. First and foremost, eat a balanced diet of nutritious foods. Never substitute supplements for foods. Consult with a nutritionist or medical professional about your performance objectives and establish a healthy nutritional plan. Only purchase reputable brands of nutritional supplements and avoid any products that are too good to be true.



Nutrition, Health & Wellness







Knowledge Makes the Difference

NUTRITION WORLD

EST. 1979

423.892.4085 • 6201 Lee Highway
www.nutritionw.com





THE CENTER FOR SPORTS MEDICINE AND ORTHOPAEDICS is a full-service practice, offering orthopaedic care of the highest quality. Whether detecting the cause of recurring symptoms, treating a work-related or sports injury, relieving pain, or replacing a joint, the Center's 16 board certified/eligible physicians and professional support staff are dedicated to setting the standard for sports medicine and orthopaedics in the tri-state area.



CENTER

For Sports Medicine & Orthopaedics

Now with four locations to serve you:

<p>Main Office 2415 McCallie Avenue Chattanooga</p>	<p>Hixson Memorial North Park 2051 Hamill Road Suite 3000</p>
<p>Gunbarrel Area 7480 Ziegler Road Suite 101</p>	<p>Cleveland 4625 North Lee Hwy</p>

Because Life Happens in Motion

To make an appointment, call us at **423.624.2696**

www.sportmed.com