FACTS ABOUT SPORTS SUPPLEMENTS

Everything you need to know about sports supplements

3d leisure

Sports supplements represent a multi-million-pound industry. Active adults and athletes are often enticed by effective supplement marketing. The promises of enhanced performance among other claims are motivating factors to purchase alternative nutrition to achieve results.

WHAT IS A SUPPLEMENT?

Supplements are considered an addition to an already healthy diet. Active adults or athletes may include supplements to help meet their nutritional needs, improve nutrient deficiencies, enhance athletic performance, or achieve personal fitness goals. But without a well-designed nutrition plan in place, supplementation is said to be rarely effective.

SUPPLEMENT REGULATION AND STANDARDS

Dietary supplements have been placed in a special food category and not considered drugs. Supplements aren't required to be submitted to the Food and Drug Administration (FDA) for regulation. Although the FDA can review ingredients and health claims of supplements, very few are investigated.

Sport supplement manufacturers are allowed to make health claims with FDA approval if the product statements are true and based on scientific evidence. Unfortunately, very few supplements claiming ergogenic benefits are supported by clinical research. This leaves the active adult or athlete without a guarantee of safety, effectiveness, potency, or purity of supplements for dietary or ergogenic purposes.

Dietary supplements include: Vitamins, minerals, amino acids, herbs, botanicals, extracts, or concentrates from plants or foods. They are typically sold as capsules, tablets, liquids, powders, or bars and required to be clearly labelled as a dietary supplement.

Ergogenic aids include: Substances, drugs or techniques used to enhance athletic performance. They can range from acceptable practices of carbohydrate loading to illegal and even unsafe approaches including the use of anabolic-androgenic steroids.

EVALUATING THE BENEFIT OF SUPPLEMENTS

Supplement use remains controversial and is a personal choice. Common questions asked by active adults, athletes, and sports nutritionists relate to manufacturing and supplement quality. Locating evidence-based research information is highly advised before considering sports foods and supplements.

The International Society of Sports Nutrition (ISSN) recommends evaluating the validity and scientific merit behind supplement claims for enhanced athletic performance. The following questions are suggested:

- Does the supplement claim make sense?
- Is there scientific evidence available?
- Is the supplement legal or safe?

Supplements are marketed for health and exercise performance based on hypothetical applications gathered from preliminary research. The claims sound promising but often don't agree with clinical findings. Reliable online references like the Journal of the International Society of Sports Nutrition or the National Library of Medicine's PubMed will help you discern if a supplement is based on sound scientific evidence or not.

HOW SCIENCE CLASSIFIES SUPPLEMENTS

Dietary supplements and ergogenic aids are marketed and claim to enhance the diet and athletic performance of an active adult or athlete. Clinical research continues to uncover flaws in these supplement health claims.

The International Society of Sports Nutrition (ISSN) has provided a classification for supplements based on clinical research:

APPARENTLY EFFECTIVE: Many supplement research studies show safe and effective.

POSSIBLY EFFECTIVE: Initial supplement findings are good, but more research is required to examine the effects on training and athletic performance.

TOO EARLY TO TELL: Supplement theory makes sense but lacks sufficient research to support using it.

APPARENTLY INEFFECTIVE: Supplements lack sound scientific evidence and/or research has shown the supplement to be clearly ineffective and/or unsafe.

The International Society of Sports Nutrition (ISSN)

indicates the foundation of a good training program is a sound energy balanced, nutrient-dense diet. If supplements are being considered, the ISSN suggests supplements only from category one (apparently effective).

WATER AS AN ERGOGENIC AID FOR ATHLETES

Water is considered the most important nutritional ergogenic aid for active adults and athletes. If 2% or more of body weight is lost through sweat, athletic performance may be significantly impaired. Weight loss of 4% or more during exercise may lead to heat illness, heat exhaustion, or more severe adverse health effects.

It is critical for active adults and athletes to implement hydration management during training and competitive events. The International Society of Sports Nutrition (ISSN) recommends:

- Consuming enough water and sports drinks to maintain fluid balance and hydration throughout the day. Drink at least 500 ml before bedtime, and then another 400-600 ml of water 20-30 minutes before onset of exercise. More may be needed.
- Athletes should drink 0.5 to 2 litres per hour of fluid in order to offset water loss.
- Don't depend on thirst as an indicator to drink water or sports drinks.
- Athletes should weigh themselves prior to and following exercise.
- Consume three cups of water for every pound lost during athletic training.
- Avoid excessive weight loss techniques including sauna sweats, wearing rubber suits, using diuretics, vomiting, or severe dieting.

THE ROLE OF DIETARY SUPPLEMENTS FOR ATHLETES

Dietary supplements can play an important role in an athletic diet. However, they should be viewed as supplements to the diet, not replacements for a good diet. While there are very few supplements backed by scientific evidence to enhance athletic performance, there are some shown to be helpful for exercise and recovery. Whether you're an active adult, athlete working alone, or have hired a sports nutrition specialist, it's important to stay current on supplement research.

The following common nutritional supplements have been researched and classified as either: apparently effective, possibly effective, too early to tell, or apparently ineffective:

APPARENTLY EFFECTIVE

MUSCLE BUILDING SUPPLEMENTS

- Weight gain powders.
- Creatine.
- Protein.
- Essential amino acids (EAA).

WEIGHT LOSS SUPPLEMENTS

Low-calorie foods, meal replacement powders (MRPs), ready-to-drink shakes (RTDs).

Caffeine, and salicin containing thermogenic supplements taken in recommended doses for appropriate populations (ephedra is banned by the FDA).

PERFORMANCE-ENHANCING SUPPLEMENTS

- Water and sports drinks.
- Carbohydrates.
- Creatine.
- Sodium phosphate.
- Sodium bicarbonate.
- Caffeine.
- B-alanine.
- Beetroot.

POSSIBLY EFFECTIVE

MUSCLE BUILDING SUPPLEMENTS

- HMB in untrained individuals, start-up training programs.
- BCAA (branched-chain amino acids).

WEIGHT LOSS SUPPLEMENTS

- High-fibre diets.
- Calcium.
- Green tea extract.
- Conjugated linoleic acids (CLA).

PERFORMANCE-ENHANCING SUPPLEMENTS

- Post-exercise carbohydrate and protein.
- Essential amino acids (EAA).
- Branched-chain amino acids (BCAA).
- HMB.
- Glycerol.

TOO EARLY TO TELL

MUSCLE BUILDING SUPPLEMENTS

- α-Ketoglutarate.
- α-Ketoisocaproate.
- Ecdysterone.
- Growth hormone-releasing peptides and secretagogues.
- Ornithine α-Ketoglutarate.
- Zinc/magnesium aspartate.
- WEIGHT LOSS SUPPLEMENTS
- Gymnema Sylvestre, chitosan.
- Phosphatidyl Choline.
- Betaine.
- Coleus forskolin.
- DHEA.
- Psychotropic Nutrients/ Herbs.

PERFORMANCE-ENHANCING SUPPLEMENTS

- Medium-chain triglycerides.

APPARENTLY INEFFECTIVE

MUSCLE BUILDING SUPPLEMENTS

- Glutamine.
- Smilax.
- Isoflavones.
- Sulfo-polysaccharides (myostatin inhibitors).
- Boron.
- Chromium.
- Conjugated linoleic acids.
- Gamma oryzanol.
- Prohormones.
- Tribulus Terrestris.
- Vanadyl sulfate (vanadium).

WEIGHT LOSS SUPPLEMENTS

- Calcium Pyruvate.
- Chitosan.
- Chromium (for people who don't have diabetes).
- HCA.
- L-Carnitine.
- Phosphates.
- Herbal diuretics.

PERFORMANCE-ENHANCING SUPPLEMENTS

- Glutamine.
- Ribose.
- Inosine.

BENEFITS OF TAKING – APPARENTLY EFFECTIVE SUPPLEMENTS – FOR TRAINING

CREATINE

Creatine is a natural substance that turns into creatine phosphate in the body. Creatine phosphate helps make a substance called adenosine triphosphate (ATP). ATP provides the energy for muscle contractions.

The body produces some of the creatine it uses. It also comes from protein-rich foods such as meat or fish.

Creatine is thought to improve strength, increase lean muscle mass, and help the muscles recover more quickly during exercise. This muscular boost may help athletes achieve bursts of speed and energy, especially during short bouts of high-intensity activities such as weight lifting or sprinting.

PROTEIN

Whey protein is among the best studied supplements in the world, and for good reason.

It has a very high nutritional value, and scientific studies have revealed numerous health benefits.

Protein plays a starring role in how muscles recover from exercise. It repairs the damage to muscle fibres and formulates new proteins for muscle growth while replenishing energy.

ESSENTIAL AMINO ACIDS (EAA)

Taking EAAs pre, intra or post workout has been shown to increase in Muscle Protein Synthesis, creating a positive protein balance that allows your body to recover and grow.

They're vital for functions such as protein synthesis, tissue repair and nutrient absorption. Some may also prevent muscle loss and improve mood, sleep, athletic performance, and weight loss.

CAFFEINE

Caffeine stimulates the central nervous system to reduce fatigue and drowsiness. It may also benefit exercise performance; research has shown that it can improve endurance and increase muscular strength. As such, it is no surprise that caffeine is a popular go-to performance enhancer for athletes.

Dose is often 200–400 mg for most people, although some studies use up to 600–900 mg. ALWAYS start low, at 150–200 mg, to assess your tolerance. Then increase the dose to 400 or even 600 mg, in order to maintain a performance benefit.

SODIUM PHOSPHATE

Phosphates make your bones and teeth as hard as rocks, but they also might help you grind your way to faster workouts and competitive efforts.

Your muscles use phosphates to make ATP and CP, two high-energy chemicals which provide the energy necessary for muscle contractions. Surplus phosphates also prevent unwanted increases in muscle acidity and may increase the flow of oxygen from your red blood cells into your muscles.

SODIUM BICARBONATE

Sports-medicine researchers have known for years that consuming baking soda (sodium bicarbonate) can ease the muscle fatigue that sets in with strenuous physical exertion.

Sodium bicarbonate may improve muscle coordination and increase strength. It could also increase the number of heavy-weight repetitions you can do at the gym.

B-ALANINE

In your muscles, histidine levels are normally high and beta-alanine levels low, which limits the production of carnosine. Supplementing with beta-alanine has been shown to elevate carnosine levels in muscles by 80%

Since beta-alanine supplements increase carnosine levels, which help your muscles reduce their acid levels during exercise. This improves athletic performance by reducing fatigue, increasing endurance, and boosting performance in high-intensity exercises. Beta-alanine supplements increase carnosine, which reduces the acidity in your muscles during high-intensity exercise.

BEETROOT

Beets are a rich source of potent antioxidants, such as vitamin C, carotenoids, phenolic acids, and flavonoids, along with nitrate. Nitrate is a chemical naturally occurring in certain foods and is converted into nitric oxide when consumed.

Drinking beet juice raises nitric oxide levels in your body. Research shows nitric oxide can increase blood flow, improve lung function, and strengthen muscle contraction. This combination has stimulated athletes to supplement with beet juice for improved cardiorespiratory endurance and performance.

GENERAL HEALTH SUPPLEMENTS SUGGESTED FOR ATHLETES

Maintaining good health for active adults and athletes is essential.

It is suggested athletes supplement with a few additional nutrients to stay healthy during intense exercise.

While there is no consensus among health experts as to whether adults should take multivitamins, governing bodies recommends a daily low-dose multivitamin to help ensure that adequate levels of nutrients are being met in the diet.

NOTE

Dietary supplements are generally not required for the well-nourished active adult or athlete. Many ergogenic aids are unreliable and should only be considered after careful evaluation of effectiveness, potency, and safety. Extra caution should also be taken because these products are not regulated by FDA. However, sports supplements are here to stay and can play a meaningful role in your training program.

Any supplement under consideration should be backed by chronic clinical studies and clear evidence of their health or ergogenic claims. In other words, become supplement smart for your health and athletic performance and consult a registered dietitian, nutritionist, or your healthcare provider if you have questions.