

# Supplements

Athletes are often under pressure to perform for coaches, team-mates, parents and fans. Unfortunately, this can lead to a win-at-all costs attitude, which makes some athletes feel they need to gain that extra edge by whatever means possible. Although sports and winning definitely contribute to the multi-million dollar supplement business, controlling body weight, improving energy levels and the need some people have to look good (as defined by society) add their fair share.

The Coaching Association of Canada state “Supplements are, and will continue to be, a major topic of debate. The athlete is ultimately responsible and accountable for all substances used.” Prior to using any supplements the Coaching Association of Canada suggests asking the following questions:

- Are you informed about all the ingredients in the product?
- Do you know if the product is safe (from a short- and long-term health perspective)? A product promoted as “natural” is not guaranteed to be safe.
- Does the product contain any banned or restricted substances from the World Anti-Doping Agency list?
- Have you sought professional advice from medical, physiological and/or nutritional experts?
- Is your training plan optimal (in terms of nutrition, recovery, and mental and physical preparation)?



## The Difference Between Supplements

Under Canadian regulations there are two categories of supplements.

1. **Nutritional Supplements** include food products that are meant to help correct a diet that may be inadequate in energy and/or essential nutrients (e.g., sports drinks, energy bars, protein bars). Nutritional supplements are regulated by the Canadian Food Inspection Agency through the *Food and Drug Act*. Food labels for supplements need to be approved, but the purity of a substance is not monitored and may contain added ingredients.
2. **Dietary Supplements** include vitamins, minerals herbal and homeopathic preparations. Health Canada has been regulating the safety, quality and effectiveness of dietary supplements and as they are approved, they receive a Drug Identification Number (DIN) or Natural Product Number (NPN). However, these numbers do not guarantee they will meet the World Anti-Doping Agency’s criteria.











Nutritional and dietary supplements are meant to *supplement* a regular diet with additional nutrients, not replace your regular diet.



In the United States, products classified as dietary supplements are not required to meet Food and Drug Administration (FDA) standards. There are no regulations that guarantee the safety or purity of something sold as a supplement. Further, there are no regulations for the claims that manufacturers put on their products (e.g., “Gain 10 lbs. of muscle in 2 weeks!”). Finally, the FDA is prohibited from removing a product from the market unless it can prove that the product will cause a medical problem. Most health risks are discovered after the product has already been on the market.

## Common Performance Enhancing Supplements

Supplement	What is it?	Possible performance enhancement	Side Effects
Protein Powder/ Shake 	Building block of muscle	Increased muscle size	Kidney problems; limit your intake, at most 1 a day
Creatine Creatine Monohydrate 	Produces ATP (energy needed for muscles)	Increased energy level Delay of muscle fatigue Increased body size (mostly due to water retention)	<b>Short Term Effects</b> Nausea, vomiting, diarrhea, cramping, heat exhaustion, hypertension, kidney and liver problems. <b>Long Term Effects</b> Unknown** Possible kidney and liver failure, heart disease
Stimulants Caffeine  Ephedrine 	Excite the nervous system	Reduce Fatigue Increase Alertness Increase Metabolism (fat burning)	<b>Short Term Effects</b> Nervousness, irritability, muscle tremor, seizures, hallucinations <b>Long Term Effects</b> Addiction, sleep disorders, hypertension, heart disease
Androstenedione DHEA Andro 	Testosterone building block (testosterone precursor)	Anabolic (muscle building) effect  Reduced recovery time for muscles	<b>Short Term Effects</b> Increased androgenic effects (puberty), violent behaviour, testicular atrophy, hypertension, acne, body hair growth <b>Long Term Effects</b> Cancer, premature baldness, breast enlargement (males), atherosclerosis, voice deepening (female),
Steroids Android Oxandrin Anadrol 	Synthetic Testosterone		
Designer Steroids THG Madol Genabol 	Synthetic Testosterone (undetectable in <b>current</b> drug tests)		
Oxygen Enhancing Erythropoietin (EPO) Blood doping 	Ways to increase the red blood cell count in your body	Increase in the oxygen transport to muscles  Delay fatigue  Increase recovery time	<b>Short Term Effects</b> Blood clots in lungs or brain <b>Long Term Effects</b> Heart disease, stroke

\*\*The short term effects of creatine have been extensively studied, but the long term effects have not known. Steroid research was similar, it wasn't until later we found out about the long term effects...and this destroyed people's lives.

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## Questions

1. List four reasons why individuals choose to use supplements.
2. From the five questions that the Coaching Association of Canada suggests you ask before using supplements, which do you feel are the two most important for you to ask? Explain why.
3. Which Canadian organizations regulate nutritional and dietary supplements?

4. Group the following into nutritional supplements of dietary supplements.  

Creatine Powder	Iron Pills	Protein Powder	Glucosamine
Amino Acid Pills	Gatorade	Ephedrine	Folate

Nutritional Supplements

Dietary Supplements

5. Currently, the FDA cannot remove products until they are proven unsafe. Agree or disagree with this statement: “The FDA should be able to remove products from the market until tests prove they are safe.” Justify your reasoning.
6. From the list of side effects, which three side effects would you consider the biggest deterrents? Explain why.
7. Given the dangers of supplements, why do you think individuals still use them?
8. Choose one of the following positions and support your opinion. Write on the back of the sheet.

“As a coach, I feel that the intentional use of performance enhancing substances create an unfair advantage and should be considered unethical and immoral.”

“As a coach, I feel that any legal advantage gained through performance enhancing substances should be encouraged in sport, even if possible side effects exist.”