

Playing RUSSIAN ROULETTE with Supplements

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Getting that extra edge ... vitamin, mineral, herbal, and other nutritional supplements are becoming an increasingly important part of the athlete's quest to achieve peak athletic performance. Yet recently we have witnessed a rash of positive doping tests and in many cases nutritional supplements are being pointed to as the culprit. Coaches have a vital role to play in educating themselves and their athletes about the dangers and risks of nutritional supplements.

Manufacturers of these supplements are aware that just the slightest edge can make the difference between winning and losing in the competitive sport environment. Many manufacturers are marketing their products directly to the sport community and are both promoting and selling their products on the Internet. Often, such marketing is based on the personal endorsement of a well-known figure or on anecdotal information, neither of which has any basis in scientific studies or accurate, reliable evidence.

Vitamins and minerals are not banned substances in sport and, in fact, may be an important part of an athlete's dietary regime. The problem with using these vitamin, mineral, herbal, and other nutritional substances is that they are not subject to stringent regulatory inspection and licensing requirements as are medical and therapeutic substances. As a result, labelling is often inaccurate, and the contents may change from batch to batch because the production of the supplements is not carefully controlled. There are well-documented cases where nutritional supplements and herbal preparations have been found to contain prohibited substances, usually ephedrine and caffeine, even though the labelling did not indicate this. Laboratory studies have also shown that the contents of an unregulated product may vary from one batch to another.

One doping case involving mislabelling is a Canadian one.

Jim Dan Corbett¹ was a member of the Canadian team at the 1994 Commonwealth Games. Corbett had purchased a herbal vitamin supplement called "Nature's Nutritional Formula One," which he was told was an energy booster. Corbett checked the ingredients as they appeared on the label against the list of prohibited substances. The label showed no banned substances. He even went so far as to ask the team medical staff about the supplement and was informed that the supplement was "OK."

Corbett went on to compete in the Commonwealth Games and won three bronze medals in his weightlifting category. After his events he was selected for drug testing. He tested positive for banned stimulants in his system—specifically, Ephedrine, Pseudoephedrine, and traces of N-methylephedrine. He was disqualified, his performances nullified, and his medals returned to Games organizers.

Later analysis of the supplement used by Corbett by both an IOC-accredited laboratory and the Drugs Directorate at the Health Protection Branch of Health

Canada confirmed that, although they were not listed on the package label, the product did actually contain the three banned stimulants.

Mislabelling may be the most obvious problem associated with nutritional supplements. In addition to the danger of ingesting a banned substance, there is also a danger of adverse health effects associated with the unknown, or unidentified, ingredients of such substances. A second problem is that even where the ingredients of a supplement are known, the ways in which these ingredients interact is not. As noted in a recent publication on the subject, “In the context of a herbal product [or supplement] adverse effects are invariably due not to the intended herb but rather to misidentification, contamination or adulteration² [emphasis added]”. In Canada, as in virtually all other countries, unless products have a clear therapeutic use there is no regulation, no standardization, no inspection of manufacturing facilities, and no guarantee of quality or effect. Caveat Emptor – Buyer Beware!!

Even where the ingredients in a nutritional product are properly listed on the packaging, this information alone might not be adequate to protect the user from a positive drug test. One Canadian athlete who didn't look any further than the label recently found himself facing a doping infraction. The substance he used was 19-NoraFORCE Dietary Supplement. It is produced by Euthenics Sport Nutrition, a company in San Diego. A review of the label should have caused the athlete to proceed cautiously, while further research by the athlete would have made it absolutely clear that the supplement would give rise to a positive test.

A simple search of the Internet would have provided this athlete with more information about the supplement and its effects. When ingested, one of the active ingredients of 19-NoraFORCE metabolizes as Nandrolone, an anabolic steroid appearing on the list of banned substances.³ This active ingredient is known as a precursor to Nandrolone. A precursor is a substance from which another substance is formed. In this case the precursor was metabolized in the body to form Nandrolone.

Two particular precursors (Norandrostenedione and Norandrostenediol) are expressly identified on the IOC banned-substances list. But they appear as ingredients in dozens of supplements that are sold under all sorts of different names and they may or may not be listed as ingredients on the label. The supplements themselves are not identified on the list of banned substances. There are simply too many and they are changing constantly. It would be impossible to track them all.

There has been a recent and significant increase in the number of positive tests involving Nandrolone. Much controversy surrounds these cases; in the United Kingdom the UK Sports Council has set up a committee to investigate the body's normal production of Nandrolone, the effect of exercise on Nandrolone production, and the whole area surrounding the external sources of Nandrolone metabolites, including precursors in nutritional supplements.

The athlete is ultimately responsible for what he or she ingests. However, it is clear that coaches have an important role to play both as role models and as educators. Athletes looking for that “extra edge” need careful guidance. A vast array of nutritional substances can be acquired with the click of a mouse—but athletes and coaches must remember that this burgeoning market is almost entirely unregulated and is fraught with danger.

1. In the Matter of Jim Dan Corbett and the Commonwealth Games Association of Canada, Canadian Weightlifting Federation and Sport Canada, Decision of an Independent Arbitrator, November 9, 1994.
2. Chandler, Frank (Ed.) Herbs: Everyday Reference for Health Professionals. Nepean, Ont.: Canadian Pharmacists Association and Canadian Medical Association, 2000 at p.p. 25.
3. As an aside, the athlete purchased the product over the counter in the United States. While legal in the United States, certain ingredients in the product are illegal in Canada under the Controlled Substances Act and can lead to a criminal conviction. Bringing this product into Canada is illegal. This athlete, although he or she probably did not realize it, took a very big risk in carrying this nutritional substance across the border.