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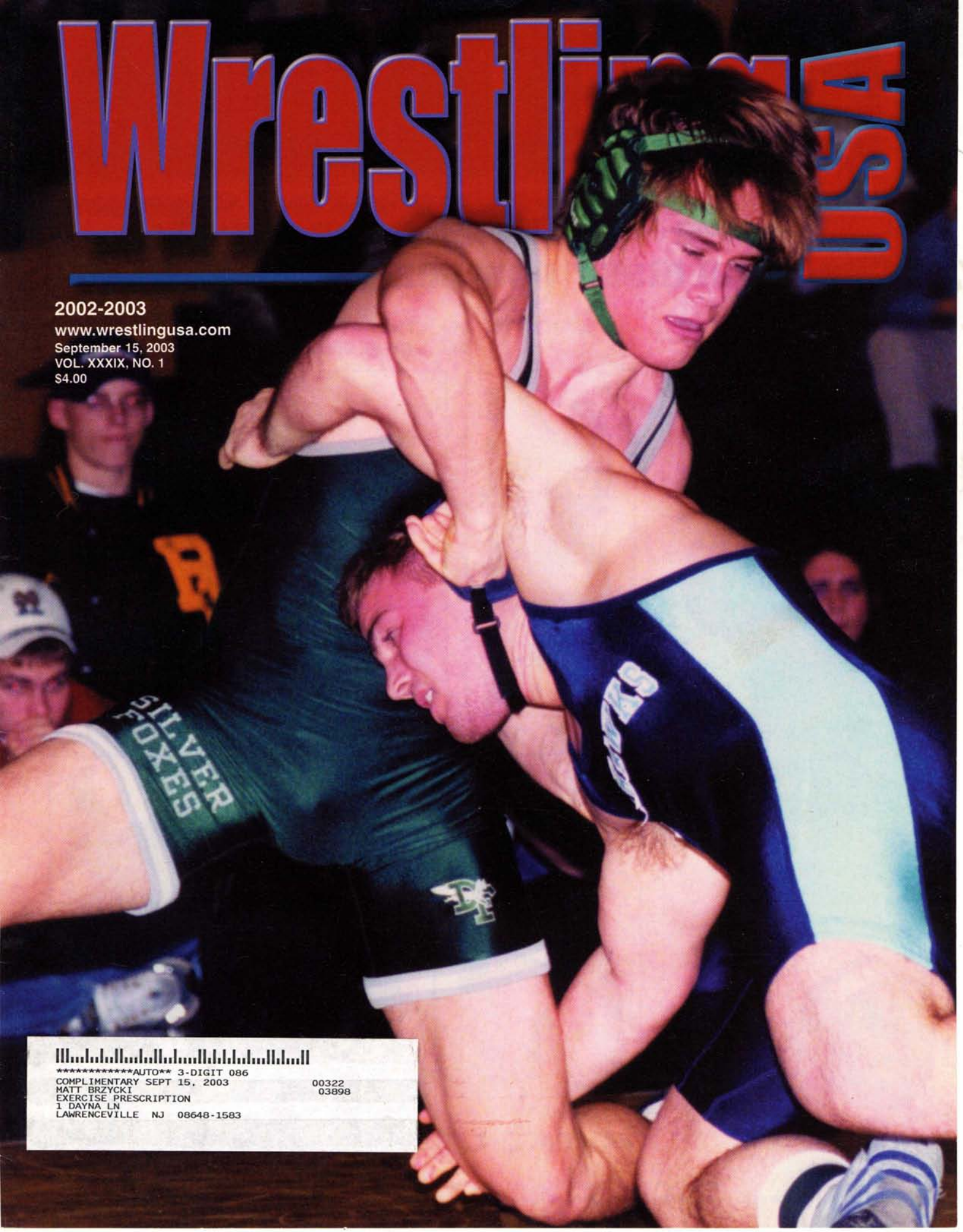
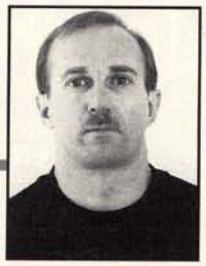


# Nutritional Questions & Answers



**By Matt Brzycki**

Despite the efforts of the scientific and academic communities, myths concerning nutrition continue to abound. The following questions are often asked about nutrition (and supplements):

## Question: Is it true that boron increases muscular size and strength?

**Answer:**

Because of gross exaggerations by the supplement industry, individuals have used boron thinking that it will increase their muscular size and strength. One study that was frequently cited by the supplement industry showed that boron increased serum testosterone concentration up to 300%. What the promoters did not mention was that the subjects in this study were postmenopausal women whose testosterone levels were quite low. In fact, these women had not received adequate boron intake for the previous 119 days prior to the supplementation. In another study that involved 19 male bodybuilders (aged 20 - 27), the researchers concluded that boron supplementation had little effect on total testosterone, lean-body mass and muscular strength.

## Question: Does caffeine affect my performance?

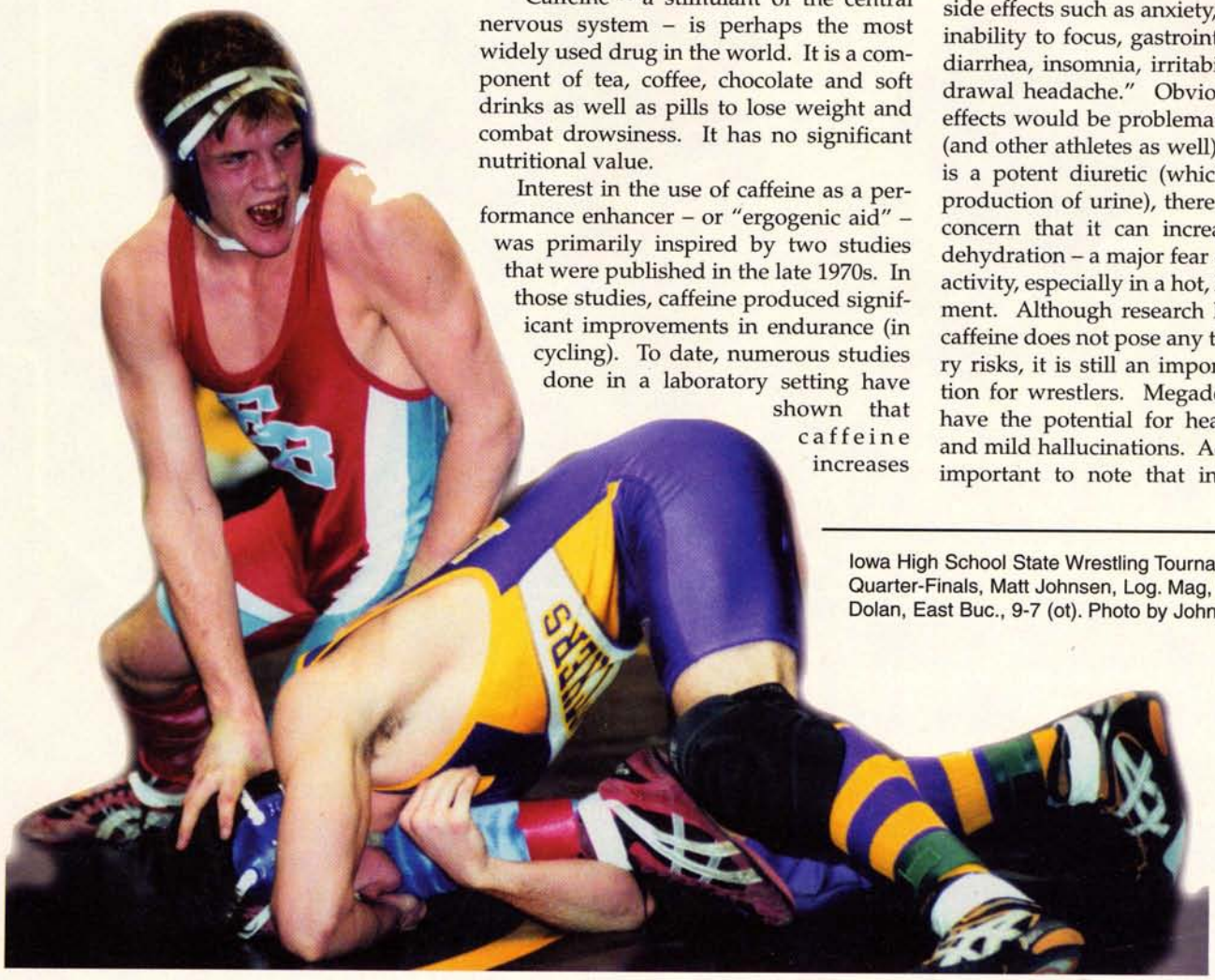
**Answer:**

Caffeine – a stimulant of the central nervous system – is perhaps the most widely used drug in the world. It is a component of tea, coffee, chocolate and soft drinks as well as pills to lose weight and combat drowsiness. It has no significant nutritional value.

Interest in the use of caffeine as a performance enhancer – or "ergogenic aid" – was primarily inspired by two studies that were published in the late 1970s. In those studies, caffeine produced significant improvements in endurance (in cycling). To date, numerous studies done in a laboratory setting have shown that caffeine increases performance in cycling and running for efforts that last roughly 5 - 20 minutes. But studies done outside a laboratory have found mixed results. At this time, it does not appear as if caffeine improves sprint performance (inside or outside a laboratory).

In low doses, caffeine can improve perception, increase alertness, decrease reaction time and lower anxiety levels. Keep in mind, though, that the effects are related to the dosage: Individual differences in the sensitivity and tolerance to caffeine certainly come into play.

When consumed in low doses, caffeine does not pose any serious risks for healthy individuals; when consumed in high doses, caffeine has the potential for many adverse side effects such as anxiety, jitters, tremors, inability to focus, gastrointestinal distress, diarrhea, insomnia, irritability and "withdrawal headache." Obviously, these side effects would be problematic for wrestlers (and other athletes as well). Since caffeine is a potent diuretic (which increases the production of urine), there has been some concern that it can increase the risk of dehydration – a major fear during physical activity, especially in a hot, humid environment. Although research has shown that caffeine does not pose any thermoregulatory risks, it is still an important consideration for wrestlers. Megadoses of caffeine have the potential for heart arrhythmias and mild hallucinations. Additionally, it is important to note that individuals who



Iowa High School State Wrestling Tournament. 152 lb. 1A Quarter-Finals, Matt Johnsen, Log. Mag, decisioned Dave Dolan, East Buc., 9-7 (ot). Photo by John Johnson.

have pre-existing ulcer conditions and those who are prone to stomach distress should avoid caffeine. Finally, be aware that the United States Olympic Committee restricts the use of caffeine.

## Question: Is it true that carbohydrates make you fat?

### Answer:

Absolutely not. The truth is that eating too much and exercising too little make you fat.

If anything, it is important for you to consume carbohydrates to fuel your athletic lifestyle. In fact, the primary function of carbohydrates is to supply you with energy – especially during intense exertions. The other two macronutrients that are sources of energy – protein and fat – have major limitations for athletes. Protein is actually your last resort since it is located in your muscles and if you are in a situation where you must rely on it as an energy source, then you are literally cannibalizing yourself; fat is an inefficient source of energy and, therefore, is preferred during low-intensity efforts when your body does not need to be efficient. In short, eliminating carbohydrates from your diet will inhibit your stamina and endurance.

Additionally, consuming too much protein and fat is associated with a greater risk of heart disease. Finally, remember that if you avoid carbohydrates, you also avoid foods with highly valuable nutrients such as fruits, vegetables and whole grains. This may lead to vitamin and mineral deficiencies. Clearly, carbohydrates are miscast villains.

## Question: Are the product labels of herbs and other nutritional supplements accurate?

### Answer:

First of all, it is important to know that the Food and Drug Administration does not regulate herbs and other nutritional supplements for safety, effectiveness, purity or potency. As a result, you really do not know exactly what is in the products. Independent researchers have found ingredients in the products that were not listed on the labels. In one study, researchers analyzed 75 different nutritional products and found that seven (9.33%) contained substances that were not shown on the labels. Moreover, the active ingredient may be higher or lower than the amount listed on the label. Independent testing of 16 dehydroepiandrosterone (DHEA) products found that only eight (50%) contained the exact amount of DHEA that was stated on the labels and the actual levels varied *as much as 150%*. Amazingly, three (18.75%) of the 16 products did not contain any DHEA whatsoever. And some products may have ingredients that are truly bizarre. In a review of 311 advertisements for nutritional supplements, the researchers noted 235 unique ingredients including ecdysterone which is an insect hormone with no known use in humans. Herbs and other nutritional supplements may also contain contaminants such as aluminum, lead, mercury and tin.

## Question: Is it safe to use herbs and other nutritional supplements that are natural?

### Answer:

Many herbs and other nutritional supplements are promoted as "natural." Because a product claims to be "natural" or have "natural" ingredients does not mean that it is necessarily safe. Dirt and urine are "natural" but that does not mean dirt is safe to eat and urine is safe to drink. The truth is that many "natural" substances can be quite harmful including high-potency doses of some vitamins, minerals and certain herbs. For instance, large doses of the natural stimulants found in ginseng can cause hypertension, insomnia, depression and skin blemishes. In addition, the medical literature contains numerous reports of severe liver toxicity linked to such widely used herbs as chaparral, comfrey and germander. There are similar safety concerns with high-potency enzymes, inert glandulars and animal extracts. One final point is that it is difficult to predict how some herbs interact with prescription and over-the-counter medications (as well as other nutritional supplements).

Finally, remember that many herbs and other nutritional supplements come with express or implied disease-related claims and are marketed for specific therapeutic purposes for which there may not be valid scientific proof. In one study, researchers reviewed all of the clinical trials that were published in 1966 - 1992 and compared the pertinent human and/or animal studies to that of the manufacturer's claims. It was found that 8 of the 19 products (42%) had no published scientific evidence to support the promotional claims. Another 6 of the 19 (32%) were judged as being marketed in a misleading manner. The fact of the matter is that the majority of herbs and other nutritional supplements have no recognized role in nutrition.

## Q: Does whey protein increase muscle mass more than other proteins?

### Answer:

The supplement industry has claimed that whey protein promotes greater increases in muscle mass than other proteins. As support for this contention, the supplement industry has referenced a

study in which the subjects significantly increased their bodyweights. What the promoters failed to mention was that the subjects in this study were starved rats. In the study, rats that were fed a whey-protein formula regained their lost weight faster than other rats that were fed a free-amino acid mixture. Obviously, it is difficult to extrapolate the influence of whey protein on starved rats to that of healthy humans.

**Question: Is the food pyramid outdated?**
**Answer:**

Not really. Consuming an assortment of foods helps to ensure that you have obtained adequate amounts of carbohydrates, protein and fat along with sufficient quantities of vitamins and minerals. According to the U. S. Department of Agriculture and Department of Health and Human Services, a variety of daily foods should include an appropriate number of servings from these six food groups (with the servings in parentheses):

Bread, Cereal, Rice and Pasta (6 - 11)
Vegetable (3 - 5)
Fruit (2 - 4)
Milk, Yogurt and Cheese (2 - 3)
Meat, Poultry, Fish, Dry Beans, Eggs and Nuts (2 - 3)
Fats, Oils and Sweets (use sparingly)

The exact number of servings that are suitable for you is contingent upon your caloric (or energy) needs. Your caloric needs depend upon a number of factors, including your age, gender, size, body composition, metabolic rate and level of activity.

The recommendations for daily servings are based upon the Food Guide Pyramid that was introduced by the U. S. Department of Agriculture and Department of Health and Human Services in 1992. Two professors at the Harvard School of Public Health have suggested a new pyramid with different daily servings. While their proposal is interesting, it has yet to gain wide acceptance by the scientific and medical communities. There are also a number of other "pyramids" including the Asian Diet Pyramid, the Latin American Diet Pyramid, the Mayo Clinic Healthy Weight Pyramid, the Mediterranean Diet Pyramid and the Vegetarian Diet Pyramid. Despite the differences in the names, all of these pyramids have much in common. Bottom line: The daily servings that are currently recommended by the U. S. Department of Agriculture and Department of Health and Human Services are appropriate for wrestlers.

**Question: Do wrestlers need to consume more than the RDA?**
**Answer:**

First published in 1943 and updated regularly, the Recommended Dietary Allowances (RDAs) were developed by the Food and Nutrition Board of the National Academy of Sciences/National Research Council. The RDAs are set by first determining the "floor" below which deficiency occurs and then the "ceiling" above which harm occurs. A margin of safety is included in the RDAs to meet the requirements of nearly all healthy people. In fact, the RDAs are designed to cover the biological needs of 97.5% of the population. In other words, the RDAs exceed what most people require in order to meet the needs of those who have the highest requirements. So, the RDAs do not represent minimum standards. And failing to consume the recommended amounts does not necessarily indicate that you have a dietary deficiency.

*Matt Brzycki has been involved in the strength and conditioning of collegiate wrestlers for more than 20 years. Since 1986, he has authored more than 70 articles for Wrestling USA magazine. Reprints of 42 of these articles have been updated and adapted into two books (Wrestling Strength: The Competitive Edge and Wrestling Strength: Prepare to Win). A third book in this series (Wrestling Strength: Dare to Excel) will contain reprints of another 21 articles and be published in the spring of 2004. All books are available through Cardinal Publishers Group (800-296-0481).*