

Supplements & Drug Testing



2008 Summer Competition Series
Liberty ~ Skate Detroit ~ Silicon Valley

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"Success in competition should be the outcome of quality training, not chance or luck. It should be planned for and thus expected."

THE TIMES

September 20, 2001

"Nearly 40 of 200 over-the-counter food supplements tested in one of the world's leading drugs laboratories contain nandrolone.

None of these food supplements carried warnings that they might contain a substance banned in most international sports."



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 **The American Journal of
CLINICAL NUTRITION**

73:1101-1106, 2001

Analysis of 25 commercial ginseng products from a local health food store:

Concentrations of "marker compounds" were significantly different from the amounts indicated on the labels.

Siberian **ginseng** products showed the most inconsistency (versus Asian ginseng).

Liquid extracts varied more than powdered products.

Variability from product to product was significant.



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Commercially marketed supplements for bodybuilding athletes:

Survey found unusual or unidentifiable ingredients in supplements advertised in bodybuilding and health magazines.

22% of the products provided no ingredient information in the advertisement.





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Hormone Products and Analytical Challenges:

Only 1 in 8 brands of androstenedione conformed to DSHEA requirements.

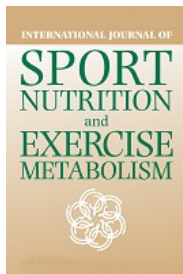
So-called "pure" andro contained nandrolone metabolites , causing subjects to exceed IOC threshold for nandrolone (2 ng/mL).



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Nutritional supplements as a source for positive doping cases.

Analysis of 75 different nutritional supplements bought through the internet:



7 out of 17 prohormones contained different substances than listed on the labels.

Two "mental enhancers" contained **caffeine** and **ephedrine**, neither of which was clearly declared on the label or declared at all.

Kamber, M, N Baume, M Saugy and L Rivier. (2001). 11:258-263.



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WHY IS THIS HAPPENING?



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DSHEA (1994) separated dietary supplements from drugs.

Claims made by supplement manufacturers no longer strictly evaluated by the FDA.

DRUGS:

- Require FDA safety approval before going to market.

SUPPLEMENTS:

- Safety determined by manufacturer.
- No FDA approval required.
- Often must be proven harmful by FDA before removal from market.



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What does this have to do with me?

The failure of a supplement's ingredients list to match the product's contents 100% opens the door for:

- 1. Positive drug tests.**
- 2. Adverse health affects.**
- 3. Wasted dollars.**



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Two most important (and sometimes conflicting) entities we deal with:

1. USADA
2. People close to us

USADA considers all dietary supplements "Take at Your Own Risk"

- **The rule of strict liability will always prevail.**

Dietary supplements are often recommended to us by people who care about us the most:

- Family members, friends, team-mates
- Coaches
- Performance Support Teams (Trainers, physios, Nutritionists, Physicians, pharmacists, etc)



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EDUCATION

RESPONSIBILITY

CRITICAL THINKING



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Before using any dietary supplement, take the time to learn the answers to these five questions:

1. Do the proposed effects of this supplement apply to me and/or my sport in terms of health, training and/or competition?
2. Is the product legal?
3. Are the proposed effects supported by peer-reviewed scientific research, and were the amounts studied the same as the recommended amounts on the supplement's label?
4. Are the ingredients listed on the label exactly what are inside the container?
5. Are there foods, dietary practices, or other lifestyle or training alternatives that may have the same effect?



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EXTRA CREDIT:

- Stacking (antagonism, synergism, potentiation)
- Responders vs Non-responders
- Inter-subject Variability
- Long-Term Effects
- Problems with research (untrained, deficient)
- "Active Ingredients" in Nutrition Facts products
- Nutrition Facts vs Supplement Facts



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| Amount Per Serving | | | |
|--------------------------------|-------|-----------------------|------------|
| Calories | 237 | Calories from Fat | 82 |
| | | % Daily Value* | |
| Total Fat | 9.1g | | 14% |
| Saturated Fat | 3.6g | | 18% |
| Polyunsaturated Fat | 1.2g | | |
| Monounsaturated Fat | 3.5g | | |
| Cholesterol | 1mg | | 0% |
| Sodium | 26mg | | 1% |
| Total Carbohydrates | 33.5g | | 11% |
| Dietary Fiber | 4.2g | | 17% |
| Sugars | 11.5g | | |
| Protein | 5.3g | | |
| Vitamin A | 0% | Vitamin C | 2% |
| Calcium | 6% | Iron | 7% |
| Nutritional Units 5 | | | |
| * Based on a 2000 calorie diet | | | |

To report adverse events call FDA's MedWatch at 1-800-332-1088

DIRECTIONS:
Take one caplet three times per day.

This product has 12 mg naturally-occurring concentrated ephedrine group alkaloids per serving in the form of herbal extracts, 0.3 mg of Yohimbine and 40 mg naturally-occurring caffeine per serving (equivalent to one-half cup of coffee). The maximum recommended dosage of ephedrine for a healthy adult human is 100 mg in a 24-hour period for not more than 12 weeks. Improper use of the product may be hazardous to a person's health.

| Supplement Facts | | |
|---|--------------------|---------------|
| Serving Size: 1 Caplet | Amount Per Serving | % Daily Value |
| Servings per Container: 60 | | |
| Vitamin C (as Ascorbic Acid) | 10 mg | 17% |
| Vitamin E (as D-Alpha Tocopheryl Succinate) | 5 IU | 17% |
| Vitamin B6 (as Pyridoxine Hydrochloride) | 2 mg | 100% |
| Pantothenic Acid (as D-Calcium Pantothenate) | 5 mg | 50% |
| Calcium (as Dicalcium Phosphate) | 97 mg | 9.7% |
| Iron | 0.54 mg | 3% |
| Phosphorus (as Dicalcium Phosphate) | 70 mg | 7% |
| Magnesium (as Magnesium Oxide) | 6.7 mg | 2% |
| Zinc (as Zinc Oxide) | 2.5 mg | 17% |
| Manganese (as Amino Acid Chelate) | 0.67 mg | 34% |
| Chromium (as Amino Acid Chelate) | 40 mcg | 33% |
| Proprietary Herbal Blend #1: Ephedra Stem, Yohimbe Bark, Siberian Ginseng Root, Licorice Root, Rutin, Kelp, Fenugreek Seed, Hesperidin Complex. | 185 mg | † |
| Proprietary Herbal Blend #2: CocoGen [®] Caffeine, Green Tea Leaf Extract | 130 mg | † |

† Daily Value not established.

OTHER INGREDIENTS: Gelatin, Microcrystalline Cellulose, Croscarmellose Sodium, Stearic Acid, Silicon Dioxide, Pharmaceutical Glaze, Carnauba Wax (224-107)

Directions - This panel tells you how much to take.

This panel states the recommended dosage of one of the active ingredients - ephedrine-and states that it can be hazardous to your health.

***FOR ADULT USE ONLY. Not for use by individuals under 18 years of age.**

WARNINGS:

- DO NOT TAKE MORE THAN THREE CAPLETS PER DAY (24 HOURS). Do not exceed recommended serving size. Exceeding the recommended dose has not been shown to result in greater effectiveness.
- There have been reports that stroke, seizure, heart attack, arrhythmia, psychosis and death might be associated with ingestion of ephedrine. Exceeding the recommended serving may cause or increase the risk of these and other serious adverse health effects. Individuals who consume caffeine with this product may experience serious adverse health effects.

DO NOT USE IF YOU:

- Are pregnant or nursing
- Have any of the following symptoms: rapid heartbeat, dizziness, severe headache, shortness of breath, nervousness or other similar symptoms. If any of these occur, stop taking this product and consult a doctor.
- Have high blood pressure, have, or have a family history of any of the following: heart disease, thyroid disease, kidney disease, asthma, diabetes, glaucoma, stroke or stroke-like events, seizure disorder, recurrent headaches, depression or other psychiatric condition, difficulty in urinating, or prostate enlargement, or any other disease, except under the supervision of a doctor.

DO NOT USE IF YOU ARE TAKING:

- A monoamine oxidase inhibitor (MAOI) for depression or for two weeks after stopping use of an MAOI without first consulting a doctor.
- Any other dietary supplement or any product containing ephedrine, pseudoephedrine, or phenylpropanolamine (ingredients that may be in certain allergy, asthma, cough/cold and weight control products).
- Any prescription drug without first consulting a doctor.

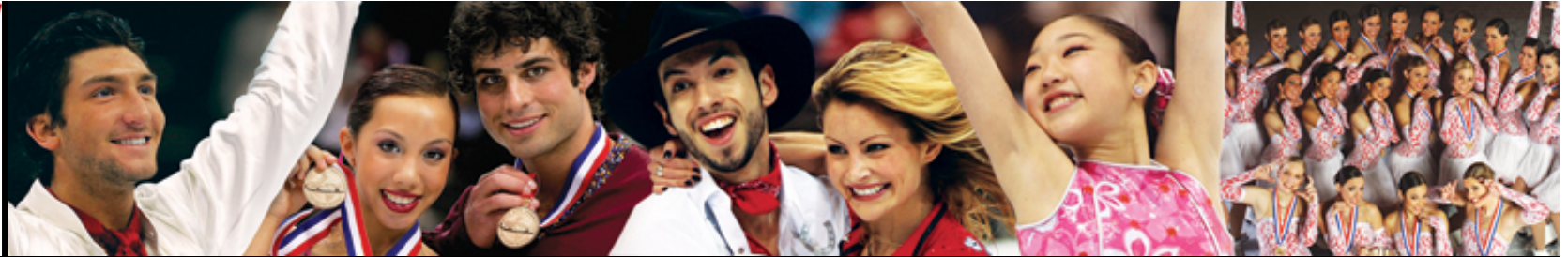
• SALE TO PERSONS 17 OR YOUNGER PROHIBITED IN TEXAS AND WHERE OTHERWISE PROHIBITED BY LAW.

• KEEP OUT OF REACH OF CHILDREN.

• IF INNER FOIL SEAL IS CRACKED OR MISSING, DO NOT USE

This panel warns of the potential harm that the supplement can cause if taken in specific situations. It also warns of possible drug-supplement interactions.

All supplement products must have a supplement facts panel that provides information about the recommended serving size, servings per container, and names and amounts of each ingredient per serving. The percent daily value listed to the right of each ingredient is based on a 2,000 calorie diet. This number indicates how a nutrient fits into an overall daily diet.



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TIPS for Selecting Healthy and Safe Products:

- Confirm your personal nutritional status with a qualified professional to avoid harmful excess, and choose only products which will address a nutritional inadequacy or deficiency that is specific to your current situation.
- Choose products with Nutrition Facts labels first (but check their ingredients lists too!).
- Limit Supplement Facts product selections to products from well-established, reputable companies whose product line is narrow and specific and who are willing to discuss with you their GMPs (Good Manufacturing Practices); If they don't know what GMPs are, run away!
- Avoid anything with words or prefixes like andro, ephedrine, anabol, energize, weight loss, muscle builder, stack, ma huang, guaranna and anything else made by a company that makes these products.
- Beware marketing lures; If it sounds too good to be true, it probably is! And remember that not every product is made for you.
- Rely on the rule of thumb: If it works, it's probably banned, and if it's not banned, it probably doesn't work.
- Check any product or active ingredient at anytime by using www.usantidoping.org/dro or (800)233-0393



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