



Stimulant Medications and Supplements: Clinical Implications for the Sports Medicine Provider

**Collaborative Solutions for
Safety in Sport**

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DISCLOSURE

- I have no relevant financial disclosures in reference to this lecture.
- That being said, I am a physician in the US Army, and work for the DoD.



My opinions and assertions contained herein are private views and are not to be construed as official or as reflecting the views of the U.S. Army Medical Department , Uniformed Services University or the Department of Defense at large.

Case Presentation 1

- 25 y/o soldier presents to the sports medicine clinic for heat tolerance testing and a **return to duty assessment**;
- He sustained an **exertional heat stroke (EHS)** during Special Forces accession.
- Soldier was acclimatized with no history of EHS; he **had been using a pre-workout stimulant**.



Case Presentation 2

- 25 y/o soldier presents to the medical aid station complaining of **palpitations, agitation and insomnia.**
- He has **sinus tachycardia** on the monitor and reports regular use of **Red Bull and caffeine gum.**
- Unit is requesting guidance on strategies for sleep.



Case Presentation 3

- A warfighter contacts the Human Performance Resource Center looking for help.
- Recently using a **new pre-workout supplement** to enhance training.
- Unfortunately the soldier “**popped positive**” on a recent urine drug screen.



Case Presentation 4

- Alison is a 19 y/o **transfer** female basketball player.
- She states she has a **personal history of ADHD** and would like to renew her prescription for Ritalin.
- At the present point in time, she has **no supporting documentation** in her medical record.



Objectives

- Review the epidemiology, purported performance benefits, and adverse effects of stimulants.
- Discuss stimulant use in the NCAA athlete with **ADHD**.
- Identify resources to assist with patient education, **physician reporting** and athletic participation.





Stimulant Use In Athletes



Epidemiology: NCAA

- NCAA study of **21,000 college** students from **713 NCAA member institutions** in 2001 showed an **increase** in ephedrine use from 3.5% to 3.9% c/w rates in 1997.
- **Men's lacrosse (5.5%) and women's gymnastics (8.3%)** had the highest rate of ephedrine use among NCAA athletes.
- **Reasons:** improved athletic performance (27.3%), improved physical appearance (27.3%), and weight control (19.7%).



NCAA Research Staff: NCAA study of substance use habits of college student-athletes. The National Collegiate Athletic Association, 2001. http://www.ncaa.org/library/research/substance_use_habits/2001/substance_use_habits.pdf

Epidemiology: Stimulants

- 139 collegiate **hockey players** were surveyed;
- **52% of hockey players** admitted to using **stimulants**.
- 17% utilization of pseudoephedrine.
- 33% would use if it would help them get in the NHL.



Bents, R.T., and E. Marsh. Patterns of ephedra and other stimulant use in collegiate hockey athletes. Int. J. Sport Nutr. Exerc. Metab. 2006;16: 636- 643.

Epidemiology: Supplement use in Warfighters

- **Eighty-two percent of deployed** and 74% of garrison soldiers used DSs ≥ 1 time-week(-1).
- Logistic regression analyses, adjusted for significant demographic and health predictors of DS use, showed **deployed personnel were more likely than garrison soldiers** to use protein, amino acids, and **combination products**.



Austin KG, McLellan TM, Farina EK, McGraw SM, Lieberman HR.
Soldier use of dietary supplements, including protein and body building supplements, in a combat zone is different than use in garrison.
Appl Physiol Nutr Metab. 2016 Jan;41(1):88-95.

Stimulant Use in Deployed Marines

- A total of 329 **active duty Marines** completed the survey.
- The prevalence of supplement use was 72% for males and 42% for females ($p = 0.009$).
- Of the **12% of Marines reporting side effects**, **79% were taking multiple supplements** and **89% were using stimulants**.
- **Deployment** was significantly associated with new supplement use ($p < 0.001$).



**Cassler NM, Sams R, Cripe PA, McGlynn AF, Perry AB, Banks BA.
Patterns and perceptions of supplement use by U.S. Marines deployed
to Afghanistan. Mil Med.2013 Jun;178(6):659-64.**

Epidemiology: Energy Drinks (ED)

- 692 college students completed surveys at a large private university.
- **36% (197 non-athletes, 58 student athletes)** of participants reported ED consumption in the preceding 30 days.
- **No difference in ED consumption based on status.**
- **Episodic drinking and prescription stimulant misuse were both correlated with increased ED consumption.**



Gallucci AR, Martin RJ Morgan GB: The Consumption of Energy Drinks Among a Sample of College Students and College Student Athletes. J Community Health. 2015 Aug 9.

Epidemiology: ADHD Medication Diversion

- Majority of nonprescription stimulant users reported obtaining the **drugs from a peer** with a prescription – termed diversion.
- **Lifetime rates** of diversion ranged from **16% to 29%** of students asked **to give, sell, or trade** their medications.
- A study of 9161 undergraduates reported an **8.1%** lifetime nonprescription stimulant **misuse rate among college students.**



· **Lakhan S^{et} al: Prescription stimulants in individuals with and without attention deficit hyperactivity disorder: misuse, cognitive impact, and adverse effects. Brain and Behavior. 2012;2(5):661-677.**



Stimulants and the Athlete: Do They Work!



Yes they Do!

- CNS stimulants are used to **reduce fatigue and increase alertness, competitiveness, and aggression.**
- Accepted ergogenic aid for **endurance performance.**
- “Recent studies with trained subjects support observation that caffeine seems **highly ergogenic** for speed endurance exercise ranging in duration from **60 to 180 seconds.**”
- Studies employing sport-specific methodologies (i.e. hockey, rugby, soccer, basketball, volleyball) with shorter duration (i.e. **4-6 seconds**) show **caffeine to be ergogenic during high-intensity intermittent exercise.**

Davis JK, Green JM Caffeine and anaerobic performance: ergogenic value and mechanisms of action. Sports Med. 2009;39(10):813-32.

Caffeine and Exercise

- Caffeine acts **antagonistically on adenosine receptors, inhibiting** the negative effects adenosine induces on neurotransmission, **arousal and pain perception.**
- The **hypoalgesic effects of caffeine** have resulted in **dampened pain perception and blunted perceived exertion during exercise.**



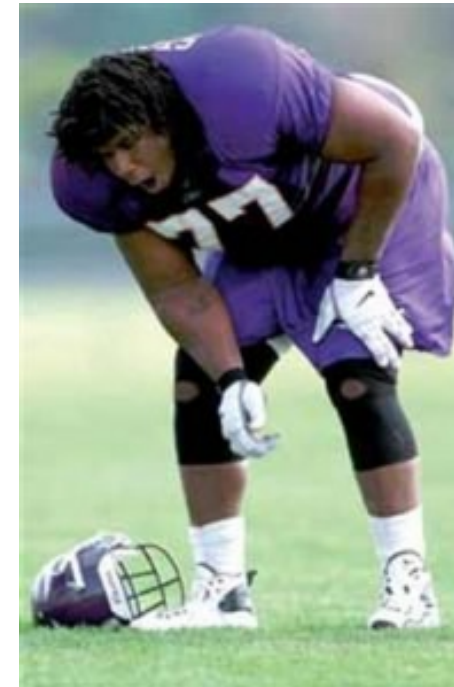


Stimulants and the Athlete: Adverse Effects



Korey Stringer Cause of Death

- **Korey Stringer died of exertional heat stroke in 2001.**
- In (his) locker, Kelly said, were an empty bottle of the supplement **Ripped Fuel**; a vial of **Celebrex**, an anti-inflammatory prescription drug; an unopened bottle of the weight-loss product **Xenadrine**, and the herbal supplement **Mo' Power**, a performance-enhancing product...
- The St. Paul Pioneer Press..., cited team sources who said one player told team officials he'd seen Stringer take **two Ripped Fuel capsules before the morning practice on July 31.**



Steve Bechler Cause of Death

- CLEARWATER, Fla. — The Broward (Fla.) County medical examiner said Thursday the dietary supplement **ephedra definitely** contributed to the heatstroke death of Baltimore Orioles pitching prospect Steve Bechler on Feb. 17. Dr. Joshua Perper, in releasing the results of toxicology tests on the 23-year-old, confirmed that "**significant amounts**" of the **over-the-counter supplement containing the herb ephedra** were partly to blame for the death. (2003)



Increase in Heat Stroke Fatalities?

- Recent trends in football heatstroke fatalities toward significant increases may, in part, be **attributable to or aggravated by the use of dietary supplements.**
- Credible scientific evidence has been found that **amphetamine derivatives and the ergonomic aid creatine may contribute to subclinical dehydration and heatstroke in selected individuals.**
- Caution is urged in the education and evaluation of football players who train during the hot summer months.



Bailes JE, Cantu RC, Day AL

The neurosurgeon in sport: awareness of the risks of heatstroke and dietary supplements. Neurosurgery. 2002 Aug;51(2):283-6.

1,3-dimethylamylamine (DMAA)

- A **21-year-old healthy man** had a witnessed out-of-hospital cardiac arrest while exercising at a gym.
- The **patient confirmed using the supplement for the first time before exercising on the day of admission.**



**Karnatovskaia LV, Leoni JC, Freeman ML:
Cardiac arrest in a 21-year-old man after ingestion of 1,3-DMAA-
containing workout supplement. Clin J Sport Med. 2015 Jan;25(1):e23-5.**

The Danger of Combination Ingredients

- Case of a previously healthy **22-year-old** man who presented with anginal chest pain and was diagnosed with a non-ST-elevation MI.
- For **3 weeks**, he had been ingesting the dietary supplements **Jack3d®** (principal ingredient, 1,3-dimethylamylamine) and **Phenorex™** (ingredient, Citrus aurantium) daily, before undertaking physical activity.
- Coronary angiograms revealed a proximal left anterior descending coronary artery thrombus with distal embolization.



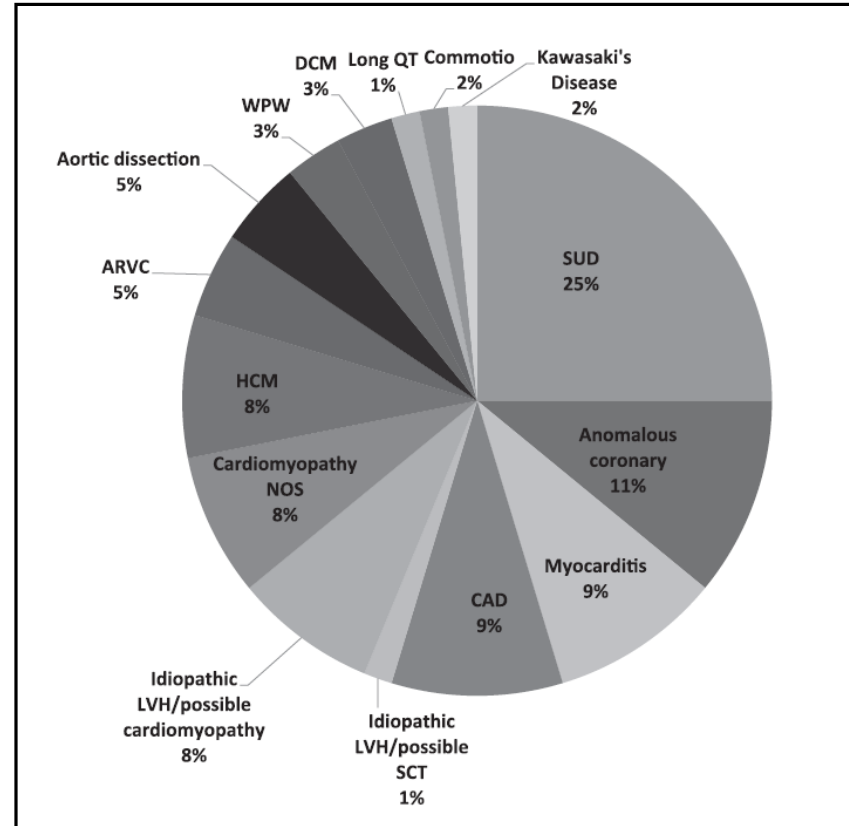
Smith TB, Staub BA, Natarajan GM, Lasorda DM, Poornima IG: Acute myocardial infarction associated with dietary supplements containing 1,3-dimethylamylamine and Citrus aurantium.

Tex Heart Inst J.2014 Feb;41(1):70-2.

Sudden Unexplained Cardiac Death (SUD)



- The incidence of SCD in Division 1 male basketball athletes was 1:5,200 AY.
- The **most common findings** at autopsy were **autopsy-negative sudden unexplained death** in 16 (25%), and definitive evidence for hypertrophic cardiomyopathy was seen in 5 (8%).



Harmon KG et al: Incidence, Cause, and Comparative Frequency of Sudden Cardiac Death in National Collegiate Athletic Association Athletes: A Decade in Review. *Circulation*. 2015 Jul 7;132(1):10-9.

Military Perspective



O'Connor FG: Dietary supplements and warfighters: a challenge for military providers. Mil Med. 2012 Dec;177(12):1448-9

Don't Forget the Supplements!

- Of the **48 sudden deaths** temporally associated with supplement use, the mean age was 34.2 ± 10.0 years and predominantly male ($n = 44, 91.7\%$).
- The **underlying cause of death was fatal atherosclerotic coronary disease** in 18 (37.5%), sudden unexplained death in 16 (33.3%), and hypertrophic cardiomyopathy in six (12.5%).
- **Compared with controls**, there were no statistically significant differences in adjudicated cause of death.
- **Ergogenic supplements increase risk of SCD 5 fold** in soldiers >35 years.



Appel DA et al: Thermogenic supplement use does not alter characteristics of sudden death in the young. Pacing Clin Electrophysiol.2012 Nov;35(11):1332-7.

1,3-dimethylamylamine (DMAA)

- Case reports for **two soldiers** who were taking commercially available dietary supplements containing multiple ingredients to include the sympathomimetic, **1,3-dimethylamylamine (DMAA)**; **both collapsed during physical exertion from cardiac arrest and ultimately died.**
- Our cases highlight concerns that **DMAA in combination with other ingredients** may be associated with significant consequences, reminiscent of previous adverse events from other sympathomimetic drugs removed from the market.



**Eliason MJ, Eichner A, Cancio A, Bestervelt L, Adams BD Deuster PA
Case reports: Death of active duty soldiers following ingestion of
dietary supplements containing 1,3-dimethylamylamine (DMAA).
Mil Med. 2012 Dec;177(12):1455-9.**

The Danger of Pushing Too Hard!

- Case report of a highly trained, **heat-acclimatized infantry soldier** who suffered from **exertional heatstroke** during a 12-mile road march shortly after taking an ephedra-based supplement.
- Clinicians and military commanders should strongly discourage the use of ephedra-containing substances in active duty soldiers undergoing strenuous exercise.



Oh RC, Henning JS: Exertional heatstroke in an infantry soldier taking ephedra-containing dietary supplements. Mil Med.2003 Jun;168(6):429-30.

What's Really in There!



Supplement Facts

Serving Size 1 Scoop (5.3 g)

Servings Per Container 45

Amount Per Serving	% Daily Value	
Vitamin C (as Ascorbic Acid)	250 mg	417%

Kineses Proprietary Blend	4580 mg	*
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Trimethylglycine (Betaine Anhydrous)

Creatine Monohydrate

L-Citrulline

Dendrobex (Dendrobium Extract)(stem)
(Concentrated for alkaloid content
including Dendrobine, Dendroxine,
Dendramine, B-Phenylethylamine, N,N-
Dimethyl- B-Phenylethylamine, and
N,N-Diethyl-B-Phenylethylamine)

B-Phenylethylamine HCl

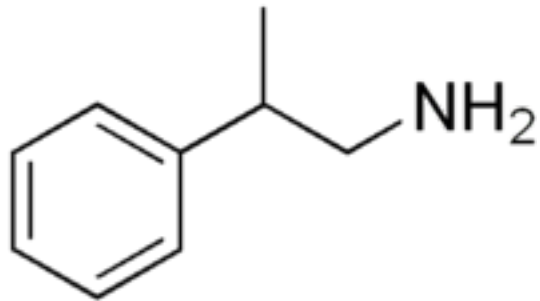
Citramine (Citrus Reticulata Extract)
(fruit) (Concentrated for N-
Methyltyramine content)

Caffeine Anhydrous

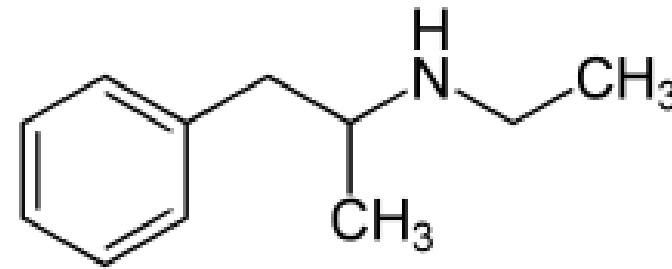
* Daily Value not established.

Other Ingredients: Citric Acid, Malic Acid, Natural and
Artificial Flavors, Sucralose, Acesulfame Potassium, FD&C
Red #40, RD&C Blue #1.

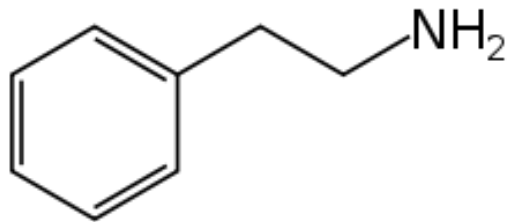
Analysis of Craze



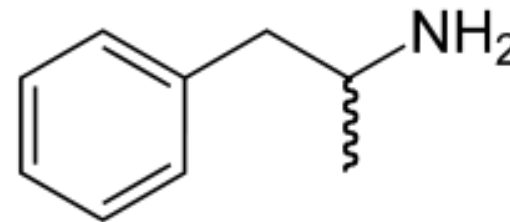
β-Methylphenethylamine



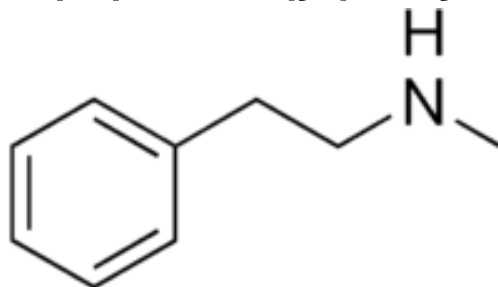
Ethylamphetamine



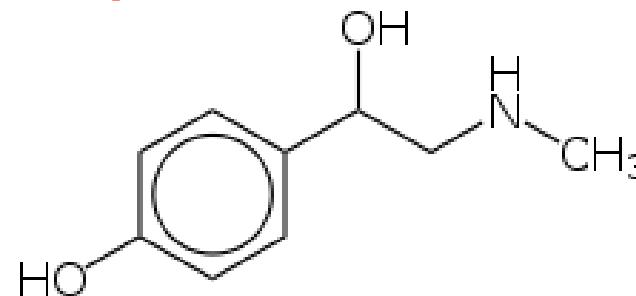
B (2-)-Phen(yl)ethylamine



Amphetamine



N-Methylphenethylamine



Synephrine



Stimulants and the Adverse Events: Why?



Stimulants and Exercise

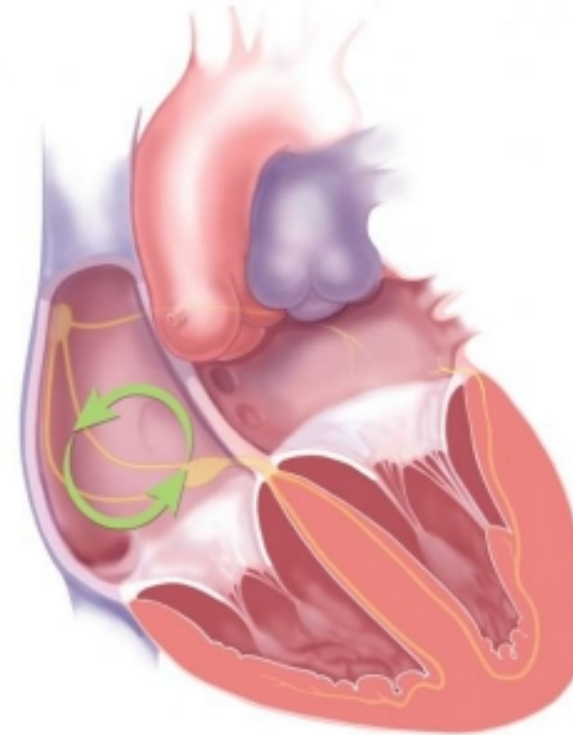
- Vasoconstrictor
 - Inability to properly thermoregulate
- Strain to Cardiovascular System
 - Increased BP
- **Increased Metabolic Heat**
 - Increased cellular metabolism
- **Excessive Sense of Energy**
 - Loss of “governor” to regulate activity



O'Connor FG: Dietary supplements and warfighters: a challenge for military providers. Mil Med. 2012 Dec;177(12):1448-9.

Cardiovascular Mechanisms for Adverse Events

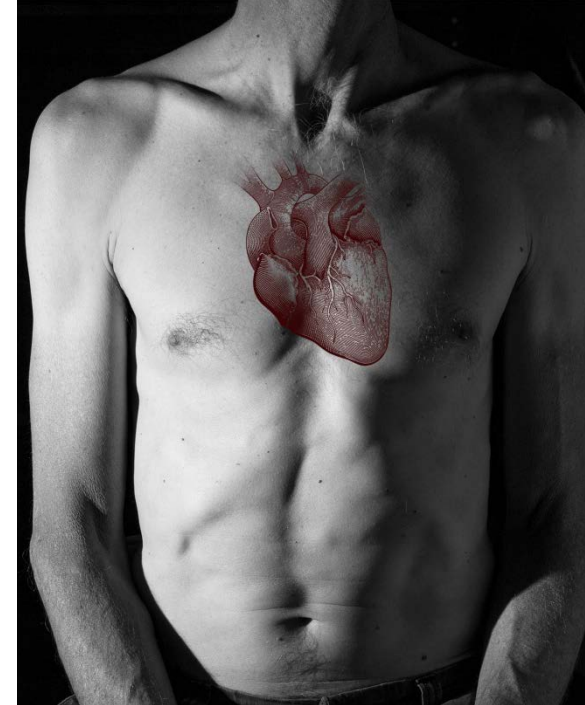
- **Coronary vasoconstriction, tachycardia, and hypertension** are principal mechanisms for myocardial ischemia and infarction.
- **Reentrant cardiac arrhythmias** are thought to be secondary to **adrenergic shortening of cardiac refractory periods**.



Dhar R, Stout CW, Link MS, Homoud MK, Weinstock J, Estes NA 3rd
Cardiovascular toxicities of performance-enhancing substances in
sports. Mayo Clin Proc.2005 Oct;80(10):1307-15.

Potential Mechanism with Long Term Use

- **Two cases of ventricular arrhythmias** induced by abuse of ephedrine in two competitive athletes.
- Endomyocardial biopsies guided by electroanatomic mapping revealed **contraction-band necrosis**, a myocardial injury frequently observed in cases of catecholamine excess.
- Our cases suggest that **long-term abuse** of ephedrine may result in **myocardial damage**, and that these structural alterations may promote areas of slow conduction **favoring re-entrant ventricular tachyarrhythmias** and a long-lasting risk of ventricular arrhythmias.



Casella M^{et} al: Ventricular arrhythmias induced by long-term use of ephedrine in two competitive athletes. Heart Vessels. 2015 Mar;30(2):280-3.

Cardiovascular Effects of Stimulants

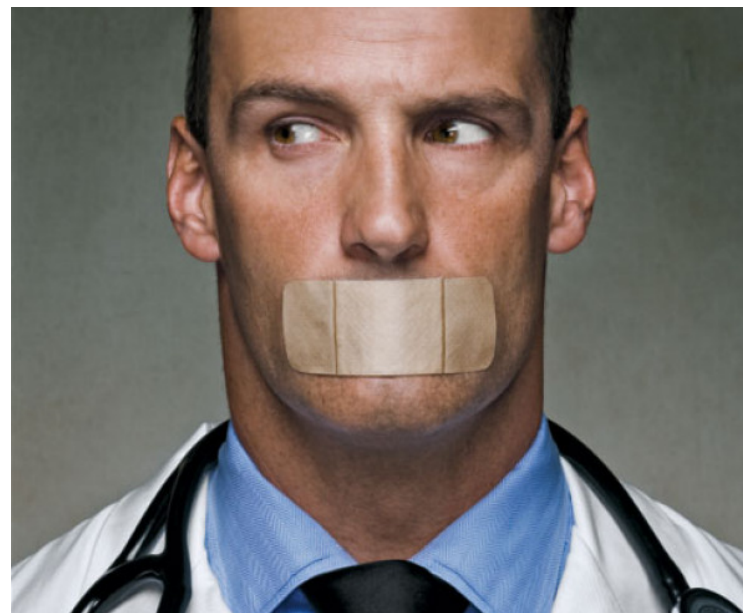
- The caffeine concentration in these drinks is high and their overconsumption could lead to insomnia, agitation, tremors and cardiovascular complications including **sudden death**.



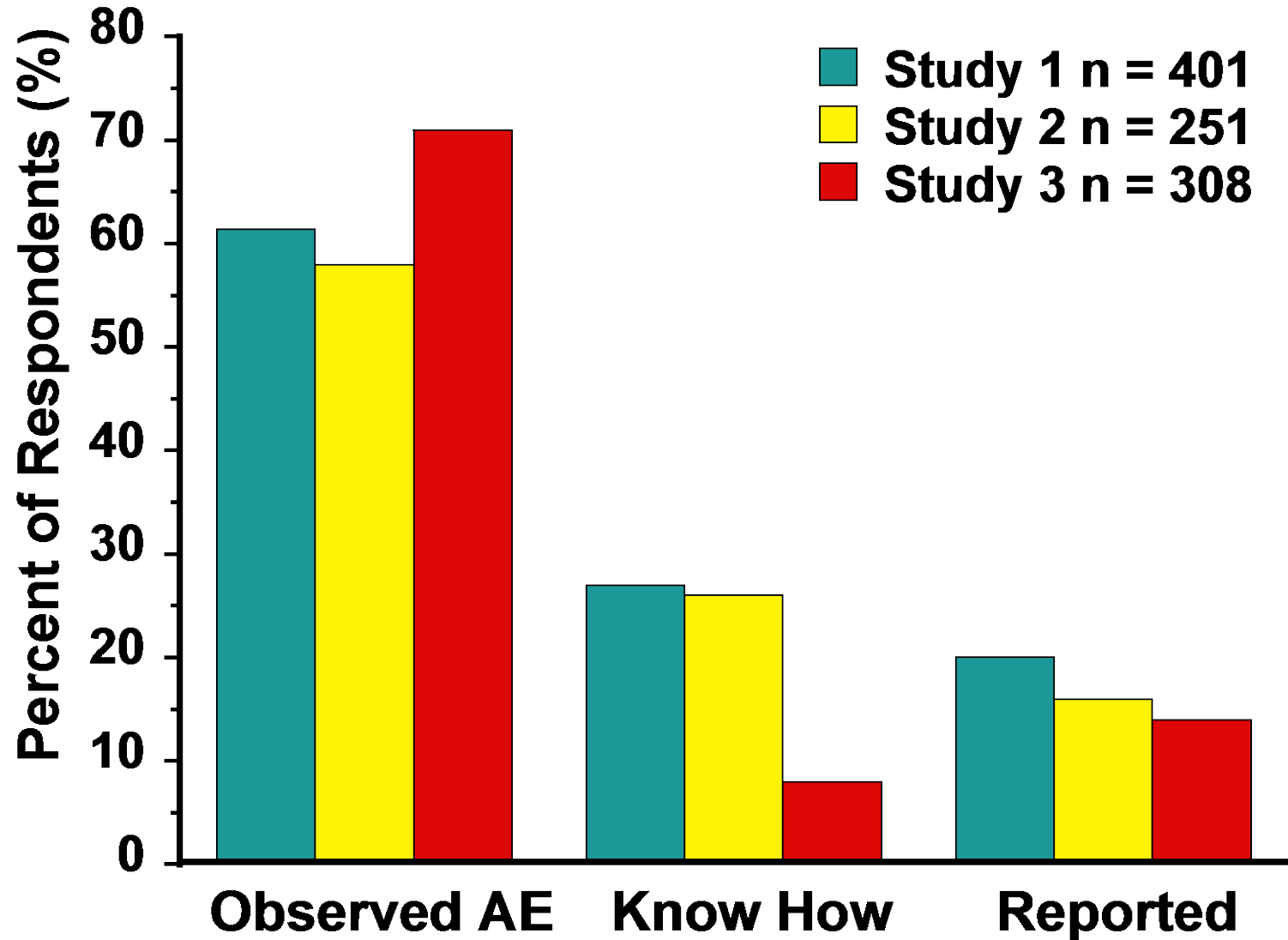
Chrysant SG, Chrysant GS: Cardiovascular complications from consumption of high energy drinks: recent evidence. J Hum Hypertens.2015 Feb;29(2):71-6.



Stimulants and the Adverse Events: The Lack of Reporting



Know How and Where to report Adverse Events



■ RESULTS:

- A total of **311 AMSSM physicians**.
- Only **51% of respondents had a reliable source for information on DS safety**; 58% routinely discussed DS use with their patients.
- **Although a majority (71%) of respondents had encountered adverse events associated with DS use, few of those (10%) confirmed reporting such events**
- .Reasons that physicians did not report adverse events were **lack of knowledge regarding where to report (68%)**, how to report (61%), and availability of time (9%).



**Pascale B, Steele C, Attipoe S, O'Connor FG, Deuster PA
Dietary Supplements: Knowledge and Adverse Event
Reporting Among American Medical Society for Sports
Medicine Physicians. Clin J Sport Med. 2016 Mar;26(2):139-44.**



Stimulants and the Athlete with ADHD



NCAA Guidance August 2009

- Student athletes (SA) require **formal documentation** of a comprehensive evaluation that supports a diagnosis of ADHD.
- SA with a diagnosis of ADHD require documentation of an **annual clinical examination**.
- Clinicians must provide statement that non-stimulant medication was considered.

TABLE 2 (CONT.)
WEISS FUNCTIONAL IMPAIRMENT RATING SCALE—PARENT REPORT

	Never or Not at All	Sometimes or Occasional	Often or Much	Very Often or Very Much	Not applicable
A. School					
1. Makes it difficult to keep up with schoolwork	0	1	2	3	<input type="checkbox"/>
2. Needs extra help at school	0	1	2	3	<input type="checkbox"/>
3. Needs tutoring	0	1	2	3	<input type="checkbox"/>
4. Causes problems for the teacher in the classroom	0	1	2	3	<input type="checkbox"/>
5. Receives "time-out" or removal from the classroom	0	1	2	3	<input type="checkbox"/>
6. Having problems in the school yard	0	1	2	3	<input type="checkbox"/>
7. Receives detentions (during or after school)	0	1	2	3	<input type="checkbox"/>
8. Suspended or expelled from school	0	1	2	3	<input type="checkbox"/>
9. Misses classes or is late for school	0	1	2	3	<input type="checkbox"/>
10. Receives grades that are not so good as his/her ability	0	1	2	3	<input type="checkbox"/>
B. Family					
C. Learning & school					
D. Life skills					
E. Social activities					
F. Risky activities					
Total					
C. Life Skills					
1. Excessive use of TV, computer, or video games	0	1	2	3	<input type="checkbox"/>
2. Keeping clean, brushing teeth, brushing hair, bathing, etc.	0	1	2	3	<input type="checkbox"/>
3. Problems getting ready for school	0	1	2	3	<input type="checkbox"/>
4. Problems getting ready for bed	0	1	2	3	<input type="checkbox"/>
5. Problems with eating (spicy water, junk food)	0	1	2	3	<input type="checkbox"/>
D. Life Skills					
6. Gets hurt or injured	0	1	2	3	<input type="checkbox"/>
7. Avoids exercise	0	1	2	3	<input type="checkbox"/>
8. Needs more medical care	0	1	2	3	<input type="checkbox"/>
9. Avoids exercise	0	1	2	3	<input type="checkbox"/>
10. Has trouble taking medication, getting needles or visiting the doctor/dentist	0	1	2	3	<input type="checkbox"/>
B. Child's Self-Concept					
1. My child feels bad about himself/herself	0	1	2	3	<input type="checkbox"/>
2. My child does not have enough fun	0	1	2	3	<input type="checkbox"/>
3. My child is not happy with his/her life	0	1	2	3	<input type="checkbox"/>
E. Social Activities					
1. Being teased or bullied by other children	0	1	2	3	<input type="checkbox"/>
2. Teases or bullies other children	0	1	2	3	<input type="checkbox"/>
3. Problems getting along with other children	0	1	2	3	<input type="checkbox"/>
4. Problems participating in after-school activities (sports, music, clubs)	0	1	2	3	<input type="checkbox"/>
5. Problems making new friends	0	1	2	3	<input type="checkbox"/>
6. Problems keeping friends	0	1	2	3	<input type="checkbox"/>
7. Difficulty with parties (not invited, avoids them, misbehaves)	0	1	2	3	<input type="checkbox"/>
F. Risky Activities					
1. Easily led by other children (peer pressure)	0	1	2	3	<input type="checkbox"/>
2. Breaking or damaging things	0	1	2	3	<input type="checkbox"/>
3. Doing things that are illegal	0	1	2	3	<input type="checkbox"/>
4. Being involved with the police	0	1	2	3	<input type="checkbox"/>
5. Smoking cigarettes	0	1	2	3	<input type="checkbox"/>
6. Taking illegal drugs	0	1	2	3	<input type="checkbox"/>
7. Doing dangerous things	0	1	2	3	<input type="checkbox"/>
8. Causes injury to others	0	1	2	3	<input type="checkbox"/>
9. Says mean or inappropriate things	0	1	2	3	<input type="checkbox"/>
10. Sexually inappropriate behaviour	0	1	2	3	<input type="checkbox"/>


Weiss Functional Impairment Rating Scale—Parent Report (WFIRS-PR), © 2004, Margaret D. Weiss, Michael B. Woodford, Melissa M. Bombers, Version 2, November 29, 2004
Weiss MD, Primary Psychiatry, WI 17, No 5, 2010.

**NCAA Banned Drugs and Medical Exceptions Policy
Guidelines Regarding Medical Reporting
for Student-Athletes with Attention Deficit Hyperactivity Disorder (ADHD)
Taking Prescribed Stimulants**

AMSSM Position Statement



Putukian M^{et} al: Attention deficit hyperactivity disorder and the athlete: an American Medical Society for Sports Medicine position statement. Clin J Sport Med.2011 Sep;21(5):392-401.


Leading Sports Medicine into the Future

Medical Exception ADHD / ADD

Date ____ / ____ / ____
Name _____ Date of Birth ____ / ____ / ____

Provider: Your patient is a student athlete participating in intercollegiate athletics. The NCAA bans the use of some stimulant medications and requires that the following documentation is submitted to support a request for a medical exception in the case of a positive drug test for such use. For additional information, please visit the NCAA Health & Safety website <http://www.ncaa.org/wps/ncaa?ContentID=481>

Date of Clinical Evaluation: ____ / ____ / ____

Required ADHD evaluation components Comments:

Comprehensive clinical evaluation (using DSM-IV criteria) _____

Adult ADHD Rating Scale (e.g., Adult ADHD self report scale (ASRS), CONNER's Adult ADHD reporting scale (CAARS) Score: _____

Monitored blood pressure¹ and pulse _____

Alternative non-banned medications have been considered _____

****please submit copies of test results for the athlete's college medical record/NCAA****

Additional ADHD evaluation components

Reporting of ADHD symptoms by other significant individual(s): _____

Other Psychological testing: _____

Physical exam Date: ____ / ____ / ____ Results: _____

Laboratory/testing: _____

Previous documentation of ADHD diagnosis: _____

Other/Comments: _____

Diagnosis: _____

Medication(s) and Dosage: _____

The student-athlete will follow-up with me in (circle one) 3 months, 6 months, 12 months, other _____

Physician Name (Printed): _____ Date: ____ / ____ / ____

Physician Signature: _____ Specialty: _____ (MD or DO)

Office Address: _____ Contact #: _____

Please feel free to attach any clinical SOAP notes that may help clarify your patient/ our athlete's diagnosis of ADHD/ADD and the need for stimulant medications. THANK YOU FOR YOUR TIME!

Student Athletes: Please complete the following:

I, _____ give _____ permission to release all information regarding my treatment for ADHD to the _____ and the National Collegiate Athletic Association. This authorization will be valid for one calendar year beginning on the date I sign this authorization. I may revoke this authorization at any time by submitting a letter in writing to the Director of Athletic Medicine or another member of the University Health Services, understanding that all information released prior to my revocation is excluded.

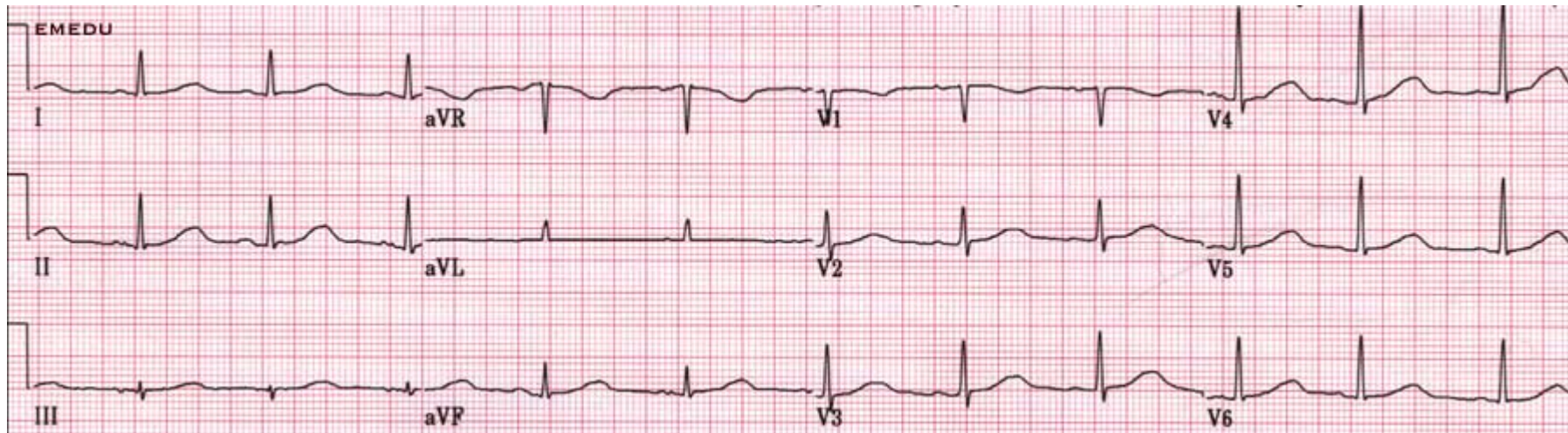
My signature below indicates that I have read and understand the above statement.

Signature: _____ Date: _____

Parent/Guardian signature: _____ Date: _____ (if under 18 years)

ADHD Medications and the Need for a Baseline ECG

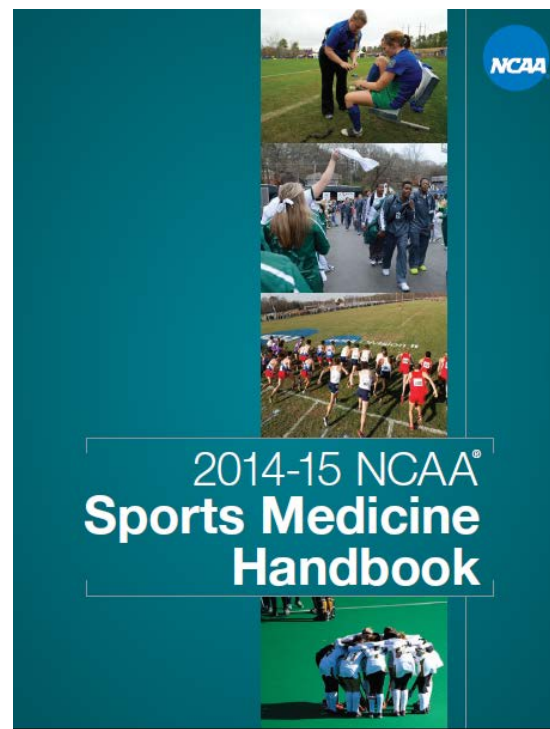
- “The ... statement advocates a thorough history and physical examination before starting stimulant medications, with an emphasis on the identification of risk factors for sudden death, but **does not routinely recommend** electrocardiographic screening or cardiac subspecialist consultation ...”



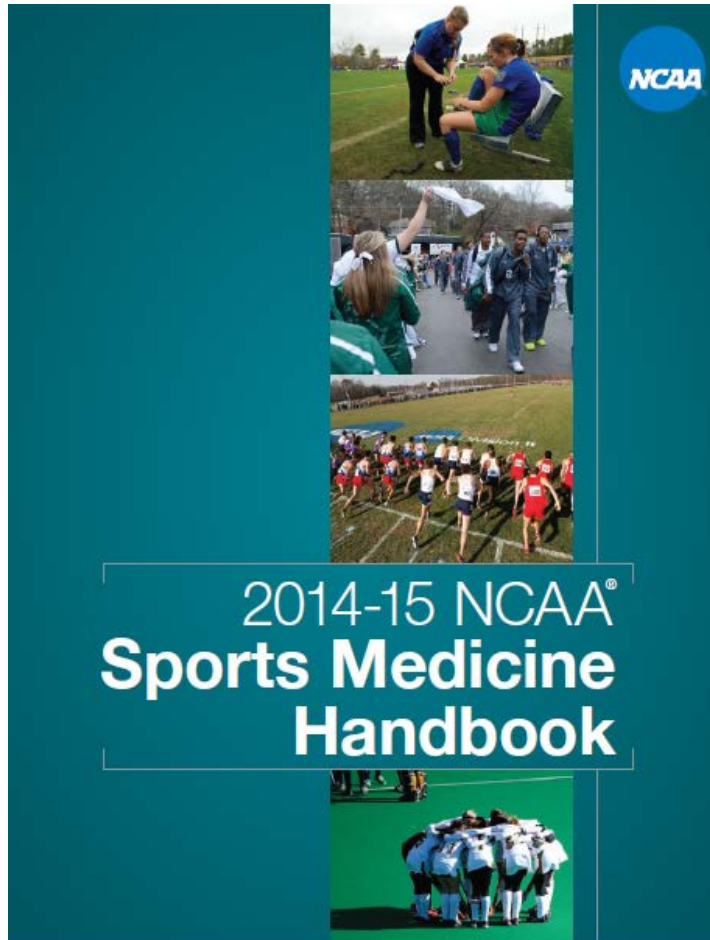
Warren AE et al: Cardiac risk assessment before the use of stimulant medications in children and youth: A joint position statement by the Canadian Paediatric Society, the Canadian Cardiovascular Society, and the Canadian Academy of Child and Adolescent Psychiatry. Can J Cardiol.2009 Nov;25(11):625-30.



References for the Team Physician on the Utilization of Stimulants



NCAA Guidance



NCAA Guidelines to Document ADHD Treatment with Banned Stimulant Medications Addendum to the January 2009 Guidelines Q & A March 2009

1. Why is the NCAA instituting a stricter application of the medical exception policy for the use of banned stimulant medications to treat ADHD?

- The stricter application reflects a stronger stand on policy enforcement, protecting the student-athlete competing while using these stimulants, and the integrity of the sport. **This stricter application of the medical exception policy is intended to provide clearer documentation of the student-athlete's evaluation, and not intended to replace the clinician's evaluation and treatment.**

As experienced across campus, more and more college students-athletes are being treated with stimulant medications for ADHD. These stimulants are banned for use in NCAA competition for both performance and health reasons, and using them may result in a positive drug test and loss of eligibility, unless the student-athlete provides adequate documentation of a diagnostic evaluation for ADHD and appropriate monitoring of treatment. In recent years, the number of student-athletes testing positive for these stimulant medications has increased 3 fold, and in many cases there has been inadequate documentation submitted in support of the request for a medical exception to the NCAA banned drug policy.

2. Who was consulted in the development of the guidelines?

- The NCAA sought consultation from MDs, Psychiatrists, Psychologists and others in the development of the guidelines for appropriate documentation requirements; these were then reviewed and approved by the NCAA Committee on Competitive Safeguards and Medical Aspects of Sports.

3. How was the change communicated to the membership?

- Beginning in January 2008, the membership received notification of the effective date of the stricter application -- August 2009 -- in the form of NCAA News articles, notices in email communications, and the posting of a video describing the rationale and expectations of the stricter application. This 18 month period of notice would allow member institutions to inform current and incoming student-athletes to be prepared to gather the necessary documentation of the diagnosis, course of treatment and current prescription.

4. Who needs to conduct the evaluation?

WADA



The World Anti-Doping Code

THE 2015 PROHIBITED LIST

INTERNATIONAL STANDARD

The official text of the *Prohibited List* shall be maintained by WADA and shall be published in English and French. In the event of any conflict between the English and French versions, the English version shall prevail.

This List shall come into effect on 1 January 2015

FDA MedWatch



The image shows a sample of the FDA MedWatch form, which is a detailed reporting form for adverse events. The form is titled "MEDWATCH" and includes sections for "A. INCIDENT INFORMATION", "B. PATIENT INFORMATION", "C. PRODUCT INFORMATION", "D. REPORTING INFORMATION", and "E. CONTACT INFORMATION". A black pen is resting on the form, pointing towards the top right corner.



HPRC is a DoD initiative under the Force Health Protection and Readiness Program.

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THE EDGE YOU NEED FOR TOTAL FITNESS

HPO encompasses those areas (physical, environmental, nutritional, psychological, social, spiritual, behavioral, and medical conditioning) that will enable our warriors to enhance and sustain their physical and mental performance under any environmental conditions, will provide resilience to resist injury and illness and will enhance recovery for the injured and ill. The result is Total Force Fitness: Warfighters "optimized" to carry out their mission as safely and effectively as possible.



FEATURED UPDATES

Strategies to impact your well-being: Week #4

A recent study examined eight different strategies for processing emotions and how they were linked to positive emotions and life satisfaction.

[More...](#)

ALERTS

[FDA Press Release: Don't use products marketed as antimicrobial dietary supplements](#)

[FDA Press Release: FDA warns about counterfeit ExtenZe dietary supplements](#)

[FDA Alert: "Slim Xtreme Herbal Slimming Capsule" contains undeclared drug ingredient](#)

[FDA Press Release: FDA and FTC issue warning letter to companies selling fraudulent STD products](#)

ANNOUNCEMENTS

[HPRC in the News - Older active duty military personnel and readiness](#)

[2011 COSC Conference Presentations now available online](#)



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Home > Dietary Supplements

DIETARY SUPPLEMENTS

The extreme demands of military performance often require that a Warfighter's diet be supplemented with vitamins, minerals, and the like. Making an informed decision about using dietary supplements can be difficult, and a bad decision could adversely affect health.

HPRC provides research-backed information to help users make good decisions about supplements. We provide a portal to the Natural Medicines Comprehensive Database for proven information on supplements and natural medicines. We also provide alerts of recalls, market withdrawals, and safety bulletins, plus links to additional reliable information on supplements.

Dietary Supplements Resources



Questions from the Field

Articles researched and written by HPRC on topics you asked about



Supplement Alerts

Alerts on dietary supplements to keep you informed on recalls, market withdrawals, and safety alerts.



Natural Medicines Comprehensive Database

Many warfighters use supplements to improve their health and performance, but getting good information isn't always easy. Check out resources from our partners at the Natural Medicines Comprehensive Database



Dietary Supplements Classification System

Now on the homepage ...



Before taking your vitamins, do your research

Dietary supplements may appear to be a healthier alternative to other medications, but they have their own risks and can interact with medications and one another. Proceed with caution.

[more...](#)

DIETARY SUPPLEMENTS NEWS

All

Op-Ed

Healthy Tips

Performance News

1 2 3 4 ... 9

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Before taking your vitamins, do your research

Dietary supplements may appear to be a healthier alternative to other medications, but they have their own risks and can interact with medications and one another. Proceed with caution.

[more...](#)



FDA warning: "Black Ant" drug content could be dangerous

The FDA found an ingredient in this sexual enhancement supplement that could have dangerous interactions with some prescription drugs.

[more...](#)



Tainted dietary supplements: How do you know?

Dietary supplements do not require approval by the FDA, so how can you know if the supplement you are considering is tainted? Read on for warning signs and new actions by the FDA that can help.

[more...](#)

ALERTS

[FDA warning: "Black Ant" drug content could be dangerous](#)

ANNOUNCEMENTS

[2011 DOD/USDA Family Resilience Conference April 27-29](#)

[US Navy and Marine Corps Combat & Operational Stress Control \(COSC\) Conference 2011 April 26-29](#)

NATURAL MEDICINES
COMPREHENSIVE DATABASE

ASK
the expert



NATIONAL
SUICIDE
PREVENTION
LIFELINE
1-800-273-TALK (8255)
suicidpreventionlifeline.org



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Home > Dietary Supplements > **Natural Medicines Comprehensive Database**

Natural Medicines Comprehensive Database

Many warfighters use supplements to improve their health and performance, but getting good information isn't always easy. Check out resources from our partners at the Natural Medicines Comprehensive Database

The Natural Medicines Comprehensive Database provides scientifically reliable answers to questions about dietary supplements and alternative therapies. Updated daily, the Database has information on supplements' safety, benefits, side effects, drug interactions and more.

Healthcare Professionals



Information on nutritional supplements for the healthcare professional

Warfighters



Information on nutritional supplements for the end-user.

Click here to report an Adverse Event



Help the Natural Medicines Comprehensive Database stay on top of adverse effects here.

ANNOUNCEMENTS

HPRC has grown! We have expanded and improved our website, and are working through the construction issues that may arise from this transition. Please contact us if you cannot find what you are looking for. Thank you for your patience.





HPRC is a DoD initiative under the Force Health Protection and Readiness Program.

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Home > Dietary Supplements > **Dietary Supplements Classification System**

Dietary Supplements Classification System

Make informed decisions about supplements with the Dietary Supplement Risk Table.

Dietary Supplements Classification System—Risks and Benefits

Before using any dietary supplement, a Warfighter—or anyone—should ask: “What are the potential benefits?” and “What are the risks associated?” And finally, “Are the potential benefits worth the risks?” This Dietary Supplement Risk Table was developed to assist healthy military personnel in making informed decisions about supplements. Benefit was ranked on a scale of low, moderate, or high potential benefit. Safety concern was similarly ranked on a scale of minimal, low, moderate, or high concern.

Dietary Supplement Risk Table					
		Safety Concerns			
		Minimal	Low	Moderate	High
Potential Benefit	High	1	2	7	9
	Moderate	3	4	8	10
	Low	5	6	11	12

Disclaimer: This table includes consideration of the safety and potential benefits of dietary supplements based on use at appropriate doses and availability of current data in the literature. The matrix is meant to be informative and not prescriptive. For individual guidance, consult with designated health professional for your respective service or specific organization.

Scores of 1-3 are in the "green zone," 4-8 in the "yellow zone," and 9-12 in the "red zone."

ALERTS

FDA warning: ["Black Ant" drug content could be dangerous](#)

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[NATURAL MEDICINES COMPREHENSIVE DATABASE](#)

ASK the expert



Supplements		
Green Zone	Yellow Zone	Red Zone
Antioxidants	Beta-Alanine (B-Alanine)	Ephedra
Branched-Chain Amino Acids	*Caffeine	Melatonin (for flight personnel)
Fish Oil/Omega-3 Fatty Acids	Carnitine	Nitric Oxide (NO) Products
Melatonin	Chromium picolinate	Synephrine (Bitter Orange)
Probiotics	Coenzyme Q10	Testosterone Precursors/Boosters and Anabolic Compounds
Tyrosine	Creatine	Weight-loss Supplements
Vitamin B Complex	Glutamine	
Multivitamins & Minerals	Megavitamins & Minerals	
	Quercetin	
Food-based Products		
Sports Bars	Protein Powder (including whey)	**Energy Boosters
Sports Drinks	*Energy Drinks	
Sports Gels		

*Excessive consumption is potentially dangerous and could lead to side effects and/or adverse reactions.
 **Insufficient evidence to support a recommendation for use.
Note: Supplements in bold appear in more than one zone.





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Home > Dietary Supplements > OPSS: Operation Supplement Safety

OPSS: Operation Supplement Safety

OPSS: Operation Supplement Safety

You could be putting yourself at risk every day in a way that might surprise you—by using dietary supplements. Some dietary supplements, including ones sold on military installations, may contain problematic and potentially harmful ingredients. "OPSS: Operation Supplement Safety" is a joint initiative between the Human Performance Resource Center and the DoD to educate warrior athletes and consumers about the risks associated with dietary supplement use and how to choose supplements wisely.



Operation Supplement Safety—What's the scoop on supplement safety?

Dietary supplement use among military service members is high. HPRC's Operation Supplement Safety outlines what you can do to determine if a dietary supplement product is relatively safe or not.

Resources

Organizations

Databases

General Information

Publications

Operation Supplement Safety (OPSS) Resources

Publications and databases for detailed dietary supplements information

TAINTED PRODUCTS MARKETED AS SUPPLEMENTS



- Alerts
- Info
- Updates

[Public Notification: "Mojo Nights" Contains Hidden Drug Ingredients](#)

Published On: May 25, 2012

[Public Notification: "Kaboom Action Strips" Contains Hidden Drug Ingredient](#)

Published On: May 25, 2012

[Public Notification: "EreXite" Contains Hidden Drug Ingredient](#)

Published On: May 22, 2012

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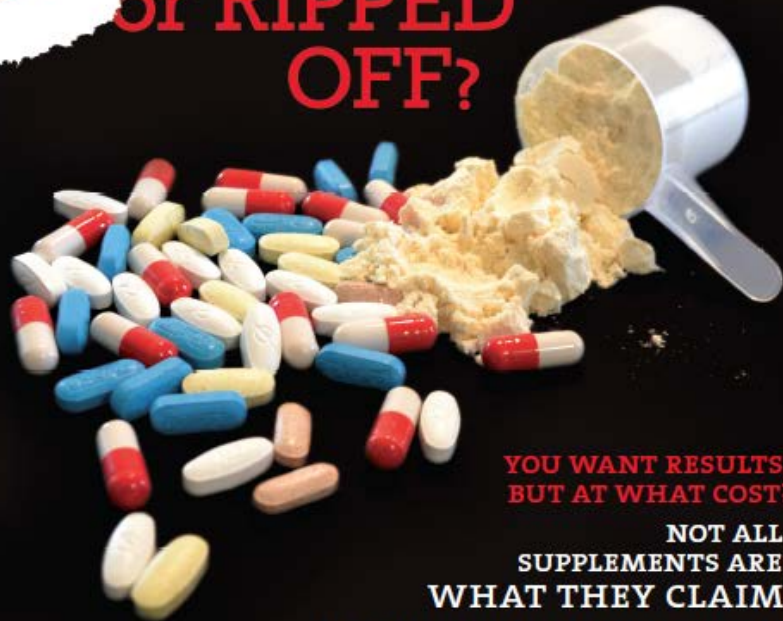
Flash Player 9 or above is required.





RIPPED

or RIPPED OFF?



**YOU WANT RESULTS,
BUT AT WHAT COST?**

**NOT ALL
SUPPLEMENTS ARE
WHAT THEY CLAIM.**

Worse, some supplements contain undisclosed ingredients
that may be illegal and/or potentially dangerous.

**CHOOSE "CLEAN"
SUPPLEMENTS ONLY.**

Products with a seal from an independent organization such
as USP or NSF have been evaluated for authenticity and safety.



www.hprc-online.org/dietary-supplements/OPSS



OPERATION SUPPLEMENT SAFETY

Know the red flags. Know the risks. Know the reputable sources.

www.hprc-online.org/dietary-supplements/OPSS

iPhone Apps [See All >](#)



Natural Medicines Compreh...

Medical

Updated Apr 26, 2012

+ FREE **-**

iPad Apps [See All >](#)



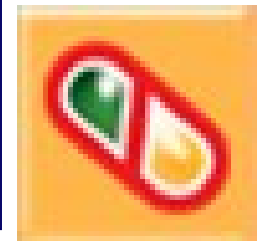
Natural Medicines Compreh...

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+ FREE **-**

**Warfighter
App to come!**



Questions?

