

**Skinny** **SCIENCE**®

**Skinny Science ®**  
**NUTRITION NEWS**

**Newsletter No. 12008**

**January 2008**

**TOPICS**

**Ingredient in Energy Drinks Deemed Dangerous**  
**Taurine: Culprit in Heart Function & Blood Pressure**  
**Are Energy Drinks Safe for the Heart?**

**Skinny Science Researcher Interviewed by Woman's World**



## **NUTRITION NEWS**

**Newsletter No. 12008**

**January 2008**

### **Ingredient in Energy Drinks Deemed Dangerous** **Taurine: Culprit in Heart Function & Blood Pressure** **Are Energy Drinks Safe for the Heart?**

The AMERICAN HEART ASSOCIATION (AHA) recently announced that energy drinks can dangerously affect heart function and blood pressure.

This announcement was made at the American Heart Association's Scientific Sessions and came as quite a surprise to researchers.

The AHA report was based on clinical studies that demonstrated "Blood pressure and heart rate levels increased in *healthy adults* who drank two cans a day of a popular energy drink containing Taurine and caffeine."

## **DANGEROUS COCKTAIL**

Clinical trials involving energy drinks have shown that caffeine/Taurine beverages can be dangerous to patients with heart disease, and that drinking more than two cans a day can lead to higher risk increases, even in healthy people (1).

The researchers advised people with high blood pressure and heart rate to "avoid these drinks".

The dangerous cocktail of Taurine and caffeine was proven to cause pressure-induced bradycardia which induced changes in heart rate and mean arterial blood pressure.

## **SAFETY OF CAFFEINE**

Caffeine is safely consumed in high doses on a daily basis, by most Americans, in the form of coffee, rendering Starbucks ® one of the most popular beverage-destinations. Globally, coffee is one of the top-3 *most consumed beverages* in the world.

Consumption of caffeine is known to cause fat-storage, but does not cause the serious health effects as evidenced in the *combination* of caffeine and Taurine.

In *double-blind placebo trials*, the strictest and most accurate form of clinical trials, Red Bull was proven to cause “*significant decline in heart rate and an increase in mean arterial blood pressure (2).*” Red Bull contains both Taurine (an amino acid) and caffeine.

Caffeine has been safely consumed in both high and low doses for decades, and only recently has the combination of caffeine and Taurine been introduced in functional beverages.

It is clear, from the scientific evidence, that combinations of caffeine and Taurine can cause serious potential health effects.

## **ENERGY DRINKS JOLT BLOOD PRESSURE**

*MEDSCAPE, Diabetes & Endocrinology; Energy Drinks Jolt Blood Pressure* (3), reported that energy drinks containing caffeine and the amino acid Taurine, “*can adversely affect heart function and blood pressure.*”

The results prompted researchers to advise people with hypertension or heart disease to avoid energy drinks containing caffeine and Taurine, as they could impact the effectiveness of medication, as well as their blood pressure.

Top Neurologists have additionally confirmed that the combination of caffeine and Taurine could cause seizures in humans. Researchers stated that large consumption of energy drinks that contain both caffeine and Taurine can provoke seizures (4). The Neurologists reported that “*Once the patients were abstinent from the energy drinks, no recurrent seizures were reported.*”

## **EUROPEAN COMMISSION ON FOOD SAFETY**

The *European Commission on Food Safety (ECFS)* concluded that reasonable levels of caffeine ingestion are safe in humans, and that levels of 300 mg/day caffeine, even in pregnant women, show no evidence of health problems. The EUFS stated, “*Most of the available epidemiological data [on caffeine] suggest there is no problem if total intake is below 300 mg caffeine/day.*”

Regarding Taurine ingestion in humans, the *European Commission on Food Safety (ECFS)* reported that:

- At present, there is insufficient information on which to set an upper safe level for daily intake of Taurine.
- It may also be necessary to take into consideration, that absorption of Taurine from beverages may be more rapid than from a food matrix.
- Against this background, the Committee is unable to conclude that the safety-in-use of Taurine in the concentration range reported for Taurine in "energy" drinks has been adequately established.
- Further studies would be required to establish an upper safe level for daily intake of Taurine.

## **DRINKS CONTAINING CAFFEINE & TAURINE**

According to *Wikipedia.org* January 2008, energy drinks that contain both caffeine and Taurine include *Red Bull, Full Throttle, NOS, Rockstar, Monster, Rip It and SoBe*.

Many other energy drinks contain caffeine and Taurine, so consumers are encouraged to read the labels to ascertain if the product contains Taurine combined with caffeine. If in doubt, contact the manufacturer.

## **IN CONCLUSION**

Alarmed by current research regarding the combination of caffeine and Taurine, the news media alerted the public as to the potential dangers of energy drinks.

*MSNBC* and *Medical News Today* warned people to avoid consuming beverages that contain caffeine and Taurine.

Though some of the energy drinks are targeted at athletes, researchers have also warned *against* the use of energy drinks during sports events and/or intense exercise.

As a result, some countries advise *against* using energy drinks to quench thirst while playing sports. Researchers explain that “*Blood pressure and heart rate naturally go up during physical activity, and that this could be further augmented by energy drinks* (Kalus et al)(1).

The bottom line is that *caution is recommended* in selecting energy beverages that contain both caffeine and Taurine, particularly in persons with specific health profiles, such as cardiovascular, hypertension (blood pressure), pregnancy, lactating women, children under age 18, and during sports events.



## **Skinny Science ® Researcher** **Interviewed by Woman's World**

Skinny Science ® researcher, Dr. Ann de Wees Allen was recently interviewed by *Woman's World* magazine, one of the most popular magazines in the country.

*Woman's World* magazine has 1.6 million readers, and is a National staple at major grocery store check-out lines. It has held the title of *Most Popular Newsstand Magazine*, and continues to be the best-selling women's publication, with sales of over 77 million copies per year.

*Woman's World* interviewed Dr. Allen on a variety of topics, with a primary focus on the benefits of L-Arginine. Dr. Allen holds Patents on L-Arginine, and with over 20 years of research in the field of L-Arginine, is considered the leading expert on L-Arginine.

Dr. Ann de Wees Allen was recently honored by *Who's Who* for her long-term research on the Glycemic Index. As *Chief of Biomedical Research* at the *Glycemic Research Institute*, Dr. Allen received the first worldwide Glycemic patent ever awarded, and is also named in the *Who's Who of American Inventors*.

The February 4, 2008 edition of *Woman's World* contains Dr. Allen's statement on L-arginine (pg 16).

Dr. Ann de Wees Allen and her research team provide education on L-Arginine, as well as other scientific topics, at [SkinnyScienceEDU.com](http://SkinnyScienceEDU.com)

Skinny Science ® Teleseminars are available to physicians, researchers, and the public at [SkinnyScienceEDU.com](http://SkinnyScienceEDU.com)

## REFERENCES & BIBLIOGRAPHIES

### **Skinny Science ®** **NUTRITION NEWS** **Newsletter No. 12008** **January 2008**

(1) Dr. James Kalus, Leah Steinke, Pharm.D., Vishnuprabha Dhanapal, Pharm.D., Helen D. Berlie, Pharm.D., David E. Lanfear, M.D. Henry Ford Hospital. 2007

(2) Bichler et al. *Univ of Wisconsin. Amino Acids.* 2006 Nov;31(4):471-6. A combination of caffeine and taurine has no effect on short term memory but induces changes in heart rate and mean arterial blood pressure.

(3) MEDSCAPE, *Diabetes & Endocrinology; Energy Drinks Jolt Blood Pressure.* Nov 2007

(4) Iyadurai SJ, Chung SS. *Epilepsy Behav.* 2007 May;10(3):504-8. Epub 2007 Mar 8; New-onset seizures in adults: possible association with consumption of popular energy drinks.

*Evaluation of the Potential Risks to Health from "Energy Drinks": Background Information. Unpublished submission to the European Commission compiled from information submitted by Member States. CS/PLEN/ENDRINKS/1 + Addendum. 2 December 1996.*

*Scientific Documents for the Evaluation of the Harmlessness of Red Bull ® Energy Drink. Unpublished submission to the European Commission by Red Bull ® GmbH, Austria. CS/PLEN/ENDRINKS/2. January 1997.*

*An evaluation of the health aspects of caffeine as a food ingredient. Unpublished submission to the European Commission by Red Bull ® GmbH, Austria. CS/PLEN/ENDRINKS/3. May 12 1997.*

*Scientific Committee for Food (1983). Report of the Scientific Committee for Food on Caffeine. Reports of the Scientific Committee for Food (Fourteenth Series). Commission of the European Communities, Luxembourg.*

*Barone JJ and Roberts HR (1996) Caffeine consumption. Food Chemical Toxicology 34, 119-129.*

*Joint Food Safety and Standards Group (1998). Survey of caffeine and other methylxanthines in energy drinks and other caffeine-containing products (updated). Food Surveillance Information Sheet No.144, March 1998 (No.103 revised). MAFF, London.*

*Rana SK and Sanders TAB (1986). Taurine concentrations in the diet, plasma, urine and breast milk of vegans compared with omnivores. British Journal of Nutrition 56, 17-27.*

*Laidlaw SA, Grosvenor M, Kopple JD (1990). The taurine content of common foodstuffs. Journal of Parenteral and Enteral Nutrition 14, 183-188.*

*Hayes KC and Trautwein EA (1994). Modern nutrition in health and disease. In: Taurine. Lea & Febiger. Pp477-485.*

*Huxtable RJ (1992). Physiological actions of taurine. Physiological Reviews 72, 101-163.*

*Geiss K-R, Jester I, Falke W, Hamm M and Wang K-L (1994). The effect of a taurine –containing drink on performance in 10 endurance-athletes. Amino Acids 7, 45-56.*

*Friedman AL, Albright PW, Gusowski N, Padilla M and Chesney RW (1983). Renal adaptation to alteration in dietary amino acid intake. American Physiological Society 245, 159-166.*

*Dietrich MF, Laidlaw SA, Vargas HI, Lamtenzan MP, Kopple JD and Block JB (1988). Role of taurine (T) in modulation of mutagenesis of oxidative mutagens. Proceedings of American Association of Cancer Research 29, 128.*

*Ordaz-Téllez MG and Ramos-Morales P (1997). The sulfured amino acid taurine increased dimethylnitrosamine's genotoxicity in somatic cells of *Drosophila melanogaster*. Environmental and Molecular Mutagenesis 29, Supplement 28, 39.*

*Masuda M, Horisaka K and Koeda T (1984). Role of taurine in neutrophil function. Nippon Yakurigaku Zasshi 84, 283-292.*

*Register of Toxic Effects of Chemicals 1996.*

**Copyright © Skinny Science ® January 2008**

This material is protected under the *Copyright Law of the United States of America*, and related laws contained in *Title 17 of the United States Code*. Illegal copying of this material is a Federal offense and violators will be prosecuted in Civil and/or Federal court. No copies may be made and distributed via electronic, Internet, hard-copy, website or any other use thereof.

**SkinnyScience.com**  
**SkinnyScienceEDU.com**