




BRAIN JUICE

James R. Ginder, MS, NREMT, PI, CHES
Health Education Specialist
Hamilton County Health Department
www.hamiltoncounty.in.gov



The Reader Will Be Able To..

- List three ingredients in an energy drink
 - Recall the history of energy drinks
 - Explain three health effects of drinking energy drinks
 - Describe three ways to “have” energy
- 

Myths Of Energy Drinks...

- There is limited evidence that consumption of energy drinks can significantly improve:
 - Physical and mental performance
 - Driving ability when tired
 - Decreased mental fatigue during long periods of concentration
 - Studying
 - Consumers ability to “feel more awake”



What Is An Energy Drink?

- The term “energy drinks” refers to beverages that contain caffeine in combination with other ingredients, such as taurine, guarana, and B vitamins.
- They are purported to provide its consumers with extra energy.
- This term was created by companies in the beverage industry and is not recognized by the FDA



History Of Energy Drinks...

- It all started in Japan, when Taisho Pharmaceuticals released a drink called Lipovitan-D in 1962
- It contained a mix of B1, B2, and B6 vitamins, along with niacin and taurine, all of which are metabolic agents intended to boost energy and concentration.
- “Tonic drinks” soon grew in popularity in Asia and, in 1987, an Austrian named Dietrich Mateschitz took the concept, added caffeine and sugar, and formulated Red Bull, which quickly became popular in Europe.



History Of Energy Drinks...

- The first "energy" drink to reach the United States was more of a hyped-up soft drink called Jolt Cola.
- The "jolt" in the cola was a lot of added sugar and caffeine.
- Introduced in the 1980s, Jolt Cola quickly became a staple of college campuses.



Marketing Of Energy Drinks...

- Energy drinks are marketed primarily to people between the ages of 13 and 30 as a stimulant, which is why energy drinks have names that convey strength, power, speed, and sexuality, such as:
 - Red Bull Energy Drink
 - Monster Energy Drink
 - Full Throttle Energy Drink
 - Amp Energy Drink
 - XS Energy Drink
 - Redline Energy Drink
 - Rock Star Energy Drink
 - Spark Energy Drink



WHY DO TEENS DRINK ENERGY DRINKS?



Why Teens Drink Energy Drinks...

- Edgy packaging
- Vibrant colors
- Promises of performance enhancement
- Exotic flavors
- Cause them to have physical energy levels
- Causes them to have the feeling of somewhat 'high.'
- Makes them feel "nice"



Teenagers And Energy Drinks...

- Energy drinks represent a rapidly expanding segment of the beverage industry
- Thirty-one percent of 12-17 year old U.S. teenagers have reported regular consumption of the drinks according to Simmons Research.
- This represents 7.6 million teens, an increase of almost three million teens in three years.



Soft Drinks/Sport Drinks Vs Energy Drinks..

- Energy drinks are set apart from other soft drinks and sports drinks by their high caffeine content and their promotion as a way to relieve fatigue and improve performance.



Energy Drinks And Caffeine...

- Adrenaline is a hormone that makes the heart beat faster and the eyes dilate.
- It causes the liver to release extra sugar into the bloodstream for energy.
- All of these physical responses make you feel as though you have more energy.



Caffeine Amounts...

Drink	Ounces	Caffeine (mg)
Coke	12	35
Coffee	8	108
Mountain Dew	12	55
Tea (Ice)	8	47
Full Throttle	16	144
Monster	16	160
NOS	16	260
Red Bull	8.6	80
Red Line	8	250
Rock Star	16	240

What Is In Energy Drinks...

- Caffeine-
 - Stimulation of the central nervous system, heart, and skeletal muscles. It also is a diuretic
- Glucose-
 - All energy drinks contain sugar in the form of sucrose, glucose, and/or high-fructose corn syrup.



Caffeine

What Does Caffeine Do In Energy Drinks ?

- Caffeine works by blocking the effects of adenosine, a brain chemical involved in sleep.
- When caffeine blocks adenosine, it causes neurons in the brain to fire.
- Caffeine makes the body think it is in an emergency, which causes the body to release adrenaline.



What Is In Energy Drinks...

- **Ephedrine** –
 - A stimulant that works on the central nervous system. It is a common ingredient in weight-loss products and decongestants, but there have been concerns about its effects on the heart.
- **Taurine** –
 - A natural amino acid produced by the body that helps regulate heart beat and muscle contractions. Many health experts aren't sure what effect it has as a drink



Taurine

What Is In Energy Drinks...

- **B-Vitamins-**
 - A group of vitamins that can convert sugar to energy and improve muscle tone
- **Guarana seed –**
 - A stimulant that comes from a small shrub native to Venezuela and Brazil.
- **Carnitine –**
 - An amino acid that plays a role in fatty acid metabolism.



Carnitine

What Is In Energy Drinks...

- **Creatine** –
 - An organic acid that helps supply energy for muscle contractions.
- **Inositol** –
 - A member of the vitamin B complex (not a vitamin itself because the human body can synthesize it) that helps relay messages within cells in the body.
- **Ginkgo biloba** –
 - Made from the seeds of the ginkgo biloba tree, thought to enhance memory.



Ginkgo biloba

Energy Drinks During Sports Activity...

- Energy drinks should not be confused with sports drinks such as Gatorade, which are consumed to help people stay hydrated during exercise.
- Sports drinks also provide carbohydrates in the form of sugar and electrolytes that may be lost through perspiration.
- The caffeine in energy drinks acts as a diuretic and promotes dehydration.



Energy Drinks And Alcohol

- The caffeine masks the effects of the alcohol
- Causes a person to drink more.
- The caffeine wears off first, and the person can quickly be overcome by the sudden impact of the alcohol.
- This can be fatal



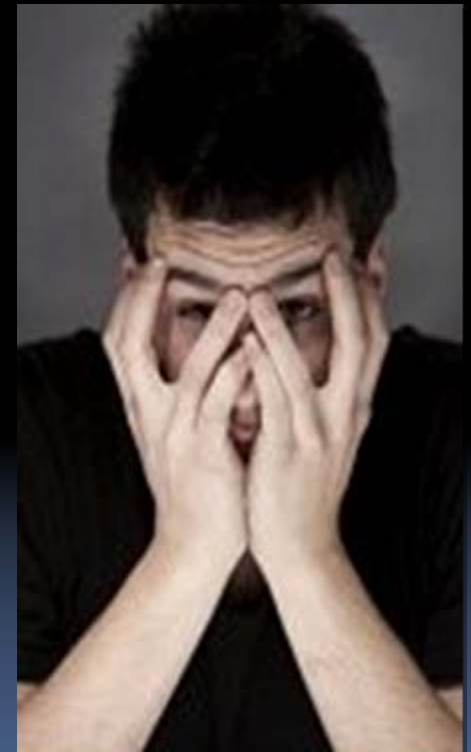
Signs of Energy Drink Abuse...

- Restlessness
- Insomnia
- Excitement
- Irritability
- Increased urination
- Depression
- Disorientation.



Health Effects Of Energy Drinks...

- Restlessness and irritability.
- Headaches, tremors, nausea and insomnia.
- Increased blood pressure
- Stroke
- Change in heart rhythm.
- Possible dehydration
- Obesity
- Seizures
- Dental health problems
- Heart attack
- Electrolyte problems
- Death



Healthy Ways To Find Energy...

■ Decrease sweets-

- Consuming products high in sugar will lead to a peak in blood sugar and then a major drop
- The drop is what leads to feelings of fatigue. If you cut out sweets, you'll avoid the blood sugar swings.

■ Exercise-

- Getting your blood flowing and getting into shape will increase your metabolism and stamina.

■ Sleep-

- You'll always feel tired if you don't get your Z's. Try to slow down and aim for at least 7 hours of sleep per night.



Healthy Ways To Find Energy...

- Eat breakfast-
 - Eating something in the morning can rev up your metabolism and start your day out right.
 - Often, we get tired because our blood sugar drops too low. To prevent the drop, eat a healthy meal or snack every few hours.
- Drink water-
 - If you're dehydrated, you will feel fatigued. Get your 8-10 8 oz glasses to keep you awake.



Sources...

- Associated Press
<http://www.foxnews.com/story/0,2933,226223,00.html>
- Center for Young's Women's Health
<http://www.youngwomenshealth.org/energydrinks.html>
- Energy Drinks <http://www.mupsip.com/>
- FDA <http://www.fda.gov/>
- Mayo Clinic <http://www.mayoclinic.com/health/taurine/AN01856>
- Today Show "Energy drinks may put teenagers at risk"
<http://today.msnbc.msn.com/id/24831859>
- University of California <http://ucanr.org/freepubs/docs/8265.pdf>