

2013 FACS



& FOOD SCIENCE CONFERENCE



Trends in Supplement Use:

A Focus on Energy Drinks, Fish Oil, & Vit. D

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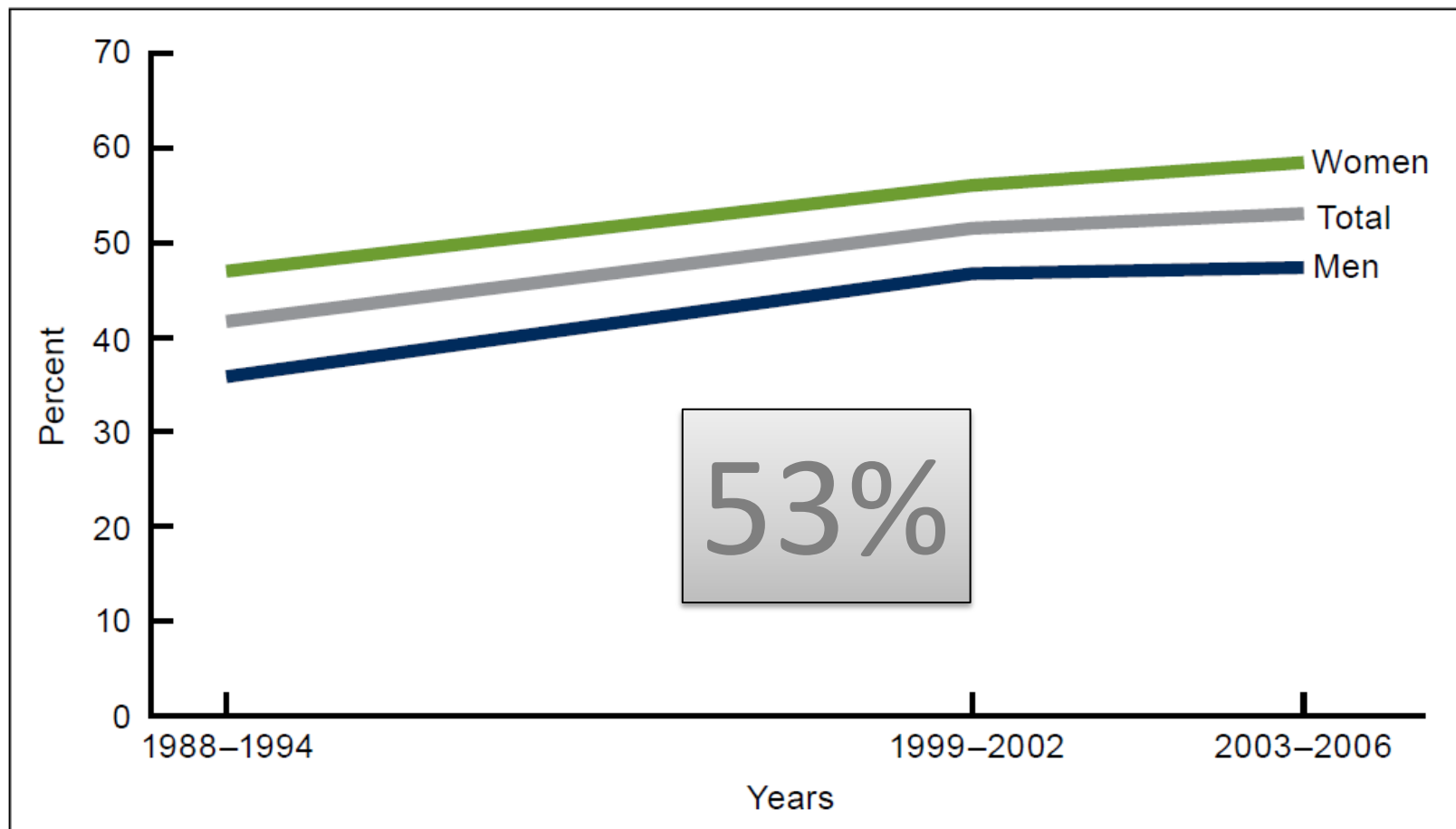
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Dietary supplement use in the United States has increased since the National Health and Nutrition Examination Survey (NHANES) III (1988–1994).

Figure 1. Trends in the percentage of persons using dietary supplements, by gender for adults aged 20 and over: United States, 1988–2006



NOTES: Significant linear trend from 1988–1994 through 2003–2006. Statistically significant difference for men compared with women for all time periods, $p < 0.05$ for comparison between genders within survey periods. Age adjusted by direct method to the year 2000 projected U.S. population.

Name that Supplement...

✓ Create a list of supplements – as many as you can think of – in 1 minute.

Vitamin/Mineral

Vitamins A, D, E, K
Vitamin C
B-vitamins (e.g. folate)

Herbal & Botanical

Acai
Black Cohosh
Dandelion
Fenugreek
St. John's Wort

Amino Acids/Protein

Whey protein
Glutamine
Arginine
Branched-Chain Amino Acids

Enzymes

Lactase
Papaya
Multi-enzymes

Others

Fish oil (omega-3 fatty acids)
Any other supplement
ingredient not found in
other categories.

What supplement forms can you buy?

Energy Bars

Drinks

Powders

Capsules

Traditional Tablets

Questions to Consider...

- In what situations do people use supplements? When are they appropriate?
- Why do people use supplements?
- What about safety & efficacy of supplements?

Safety & Efficacy

- “Dietary Supplement Health and Education Act of 1994” (DSHEA)
- FDA & FTC
- “Structure function” claims but not “drug” claims allowed on the label
- <1% of adverse events get reported
- Guarantee Seals: USP, Consumer Lab, NSF

Herbal & Botanical Supplements:

Plant Parts Used

Flowers



```
graph TD; Flowers[Flowers] --- L1[ ]; Stems[Stems] --- L2[ ]; Leaves[Leaves] --- L3[ ]; Roots[Roots] --- L4[ ]
```

Stems

Leaves

Roots

How do you judge accurately?

- How do people find info about supplements?

72% look online*

**Google, Bing, & Yahoo [77%], Health sites like WebMD [13%], Wikipedia [2%], FB [1%] – Pew Internet: Health, 2013*

How do you judge accurately **ONLINE**?

What is the Web site's purpose?

Who pays for the Web site?

What is the original source of the Web site's information?

What information about users does the Web site collect, and why?

How current is the information on the Web site?

How does the Web site manage interactions with users?

Who runs the Web site?

How does the Web site document the evidence supporting its information?

Who reviewed the information before the owner posted it on the Web site?

How does the Web site owner choose links to other sites?

The Energy Drink Phenomenon

Sales (\$) of Energy Drinks

<http://www.bevindustry.com/articles/85655-consumers-seek-out-energy-boosts>

Energy Drinks

- **Health Claims?**

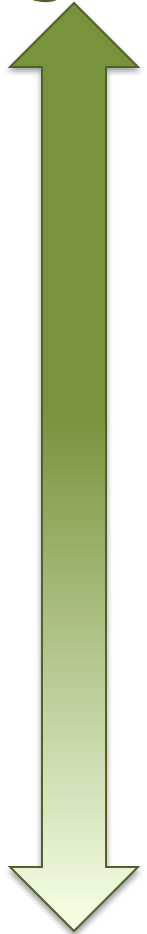
- Provide extra energy through B-vitamins, caffeine, herbal ingredients

- **Safety & Efficacy?**

- Limited evidence if gives extra energy & in studies showing a positive effect, is it the caffeine? B-vitamins? herbal ingredients?
- Pregnancy: controversial because some studies suggest miscarriage & LBW with caffeine
- Lactation: recommended 200 mg/d
- AAP: NEVER appropriate for children or teens because of high caffeine levels
- Up to 400 mg/d OK for adults; > 400 mg/d = nervousness, irritability, sleeplessness, abnormal heart rhythms, decreased bone levels, GI issues

Caffeine Levels in Selected Beverages

Highest



Lowest

Drink	fl oz	Caffeine (mg)	mg/fl oz
5-Hour Energy	2	138	69
Java Chai Tea	8	120	15
Coffee (Brewed)	8	108	13.4
Starbucks Grande Caffè Mocha	16	175	10.9
Monster Energy Drink	16	160	10
Rockstar	16	160	10
Red Bull	8.46	80	9.5
Starbucks Bottled Frappuccino	9.5	90	9.5
Coca-Cola Classic	12	35	2.9
Amp Energy Drink	16	143	8.9
Starbucks Tall Iced Espresso	12	75	6.2
Iced Tea	8	47	5.9
Mountain Dew	12	54	4.5
Dr. Pepper	12	41	3.4
Pepsi Cola	12	38	3.2
Green Tea	8	25	3.1
Barq's Root Beer	12	23	1.9
Coffee (Decaf, Brewed)	8	6	0.7

Fish Oil (Omega-3)

- Sales: \$1.1 billion (2011)
- **Health Claims?**
 - Prevent heart disease
 - Relieving rheumatoid arthritis symptoms
 - Cognitive development (fetus/infant)
 - Other diseases of eye & brain
- **Safety & Efficacy?**
 - Usually no adverse side effects
 - Drug-nutrient interaction possible
 - No convincing evidence in preventing heart disease
 - Still researching efficacy of other health claims

Vitamin D

- **Sales:** \$42 million (2002) - > \$605 million (2011)
- **Health Claims?**
 - Bone Health
 - Chronic diseases (diabetes, hypertension, cancer)?
 - Autoimmune conditions (such as MS)?
- **Safety & Efficacy?**
 - Prevents rickets (children) & osteomalacia (adults)
 - Toxicity possible (UL = 4000 IU/d for > 9 y.o.)

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How To Find a Practitioner >

Information on seeking CAM treatment.

Información en Español >**Videoed Topic****Hepatitis C Scientific Results**

Find out what the science says about the safety and effectiveness of herbs and other supplements for hepatitis C.

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1 2 3 4 5

**Research Results >**

Highlights of recently published studies funded by NCCAM.



Study Finds Association Between Biological Marker and Susceptibility to the Common Cold (February 22, 2013)



Study Quantifies Physical Demands of Yoga in Seniors (January 9, 2013)

[See more research results >](#)[Resources for Health Care Providers >](#)**News >**

- NIH's NCCAM Welcomes Four New Advisory Council Members (06/07/13)
- Understanding Health News
- Asthma and Complementary Health Approaches
- Advisory Council 49th Meeting Agenda—June 7, 2013
- Children and Complementary Health Approaches
- Blog Post: New Standards Being Developed for Studying Low-back Pain (05/17/13)
- Age-Related Eye Disease Study 2 (AREDS2) (NEI)

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<http://nccam.nih.gov/>

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Health Information

[Frequently Asked Questions \(FAQ\)](#)

[Dietary Supplements: What You Need to Know](#)

[Tips for Older Supplement Users](#)

[How to Spot Health Fraud](#)

[How to Evaluate Information on the Internet](#)

[FDA: Warnings and Safety Information](#)

[Información en español](#)

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Dietary Supplement Fact Sheets

The Office of Dietary Supplements (ODS) fact sheets give a current overview of individual vitamins, minerals and other dietary supplements. ODS has fact sheets in two versions—Health Professional and QuickFacts. Both versions provide the same types of information but vary in the level of detail. QuickFacts are now available in Spanish. [More Dietary Supplement Fact Sheets »](#)

General Information

- [Background Information](#)
- [Botanical Dietary Supplements](#)
- [Full List of Fact Sheets](#)
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Featured Dietary Supplement Fact Sheets



Vitamin A

Vitamin A is important for vision, the immune system, and reproduction. [More »](#)



Multivitamin/mineral Supplements

More than one-third of Americans take MVMs. [More »](#)

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Additional Resources

- **NIH National Library of Medicine's Medline Plus**
 - <http://www.medlineplus.gov> > Drugs & Supplements > Herbs and Supplements
- **CAM on PubMed**
 - <http://nccam.nih.gov/research/camonpubmed/> >

Ideas for Classroom Activities/Assignments...

“Is it too good to be true?”

1. Work in **teams** (2-4).
2. Choose a **supplement (actual or printed)**.
3. **Read the supplement label.** What does it claim to do for your health?
4. **Research online scientific databases.** What does the evidence say?
5. **Overall conclusion.** Is the health claim on your supplement label too good to be true? Why or why not?

1

Internet: Google search

2

Visit Health Food/GNC Store

Choose/Assign
Supplement

3

Use scientific research (one of
4 websites listed earlier)

Ask friend/family about supplement

4