



Dietary supplements



What are they?

- **Any product intended to supplement the diet by providing one or more vitamins, minerals, herbs or other botanical products, or amino acids**
- **They include vitamin and mineral pills, herbal remedies and non-nutrient supplements**



Regulation of dietary supplements

- Vitamin and mineral supplements are regulated much like foods
- Other supplements i.e., herbs, amino acids, and non-nutrients (shark cartilage and bee pollen) are unregulated for the most part
- Although dietary supplements are sold as treatment for certain disorders, they are not considered drugs
- They are not subject to vigorous testing to prove their safety and effectiveness



Regulation of dietary supplements

- **Supplements are considered to be safe until demonstrated to be hazardous by FDA**
- **Because few dietary supplements have been adequately tested, it is very difficult to prove that particular supplements are unsafe**



Regulation of dietary supplements

- **FDA rules for vitamin and mineral supplements**
 - They must be labeled as **“dietary supplements”**
 - They must carry a **“Supplement Facts”** panel that includes:
 - **An appropriate serving size**
 - **Content information and % Daily Value (DV) for each nutrient contained or claimed to be contained**



FDA rules for vitamin & mineral supplements

- "Good source" can be used on the label if the supplement provides 10-19% of the DV and "High source" can be used if it contains 20% or more of the DV
- The term "high potency" can be used on the label if it supplies the mineral or vitamin equal to or more than 100% of the DV



Regulation of dietary supplements

- **Manufacturers are not supposed to claim that a supplement prevents or cures a disease**
- **They can claim that a supplement has health effects, i.e., improves circulation or supports immune system, etc.**



Bioavailability of vitamin and mineral supplements

- **Bioavailability**
 - The amount of a nutrient consumed that is absorbed and available for use by the body
- Many factors affect bioavailability i.e., going into solution in stomach or small intestine



Bioavailability

- USP is the **test for the ability of a pill to dissolve**
 - U.S. Pharmacopeia (USP), an independent, non-profit organization, has developed a test for dissolution of supplements
 - The requirements are met, and the label can state USP, if at least 75% of the labeled content of folic acid and at least 75% of the assayed content of the index vitamin or index element from the units tested are dissolved in 1 hour



Bioavailability

- **In general the more vitamins and minerals in a single supplement, the lower the absorption of each**
 - **Because they make insoluble compounds**
 - **And they compete with each other for absorption**
- **Supplements containing a single vitamin or mineral are better absorbed than multivitamins/minerals**



Who might benefit from supplements?

- **People with vitamin/mineral deficiency diseases**
Very few such people in the U.S. unless they have some other disease
- **Newborns (Vitamin K)**
- **People living in areas without fluoridated water (fluoride)**
- **Vegans (Vitamin B₁₂ and D)**
- **Pregnant women (iron and folate)**
- **People experiencing blood loss (iron)**



Who might benefit from supplements?

- **Elderly persons on limited diets (multiple vitamins/minerals)**
- **People on restricted diets (multiple vitamins/minerals)**
- **Adults at risk for heart disease (folate, vitamin E)**
- **People at risk for osteoporosis (Calcium, vitamin D)**



Using supplements for the **wrong** reason

- People use supplements as a sort of insurance policy against problems caused by poor food choices
- They may fill the gaps but cannot make up for unhealthy food choices
- Good food choices depend not only on vitamins and minerals but on their caloric, fat, fiber, cholesterol, complex carbohydrates and protein content
- Foods might also contain beneficial phytochemicals not found in a supplement



The rational use of supplements

- **Should be taken only when there is a medically-sound need for them**
- **Dosage should not be excessive**



Guidelines for using supplements

1. Purchase supplements labeled USP
2. Check the expiration date
3. Choose supplements with 100% or less of the DV
4. Synthetic vs. natural – they are basically same
5. Don't take them on an empty stomach
6. If there is a need for certain vitamins or minerals, just use that rather than a multivitamin or mineral supplement
7. Store away from kids
8. Avoid calcium supplements made from oyster shells/bones - lead/aluminum



Herbal remedies

- Herbs are dietary supplements
- Nevertheless, the rules established by FDA for Dietary Supplements do not apply to herbs



Cautious use of herbal remedies

- 1. Don't use herbal remedies for serious, self diagnosed conditions i.e., depression, persistent headaches and memory loss**
- 2. Let your doctor know what herbal remedies you are using**
- 3. If you are taking prescription medication, clear the herbal intake with the doctor**
- 4. During pregnancy or lactation use herbal remedies only with medical advice**



Cautious use of herbal remedies

5. Don't exceed safe dosages of herbal remedies
6. Don't mix herbal remedies
7. Make sure you are not allergic to a certain plant used in herbal remedies
8. Stop using it if a bad reaction occurs



Other nutrient and non-nutrient supplements

- Shelves of grocery stores, pharmacies and health food stores are often lined with supplements, i.e.,
 - Lysine, methionine, bee pollen, protein powders, shark cartilage
- Should you try them? The answer is “No”
- There is no scientific evidence of their safety or effectiveness

LIGHTNING QUIZ