

# **THE FOOD GROUPS DIETARY GUIDELINES**

# THE FOOD GROUPS

1. **Grains** 6 ounces /day

2. **Vegetables** 2 1/2 cups /day

3. **Fruits** 2 cups /day

4. **Milk** 3 cups /day

yogurt, cheese

5. **Meat and Beans** 5 1/2 ounces /day



# Nutrients: spread around 5 food groups

## 1. Grains

Thiamin Folic Acid Magnesium Iron Copper Carbohydrate Fiber



## 2. Vegetables

Vitamin A Potassium Fiber



## 3. Fruits

Vitamin A Fiber



## 4. Milk

Riboflavin Vitamin B12 Calcium Phosphorus

yogurt, cheese



## 5. Meat and Beans

Niacin Vitamin B6 Zinc Protein



## Oils

## & Soft Magarines

Vitamin E Polyunsaturated fat Omega-3 fat

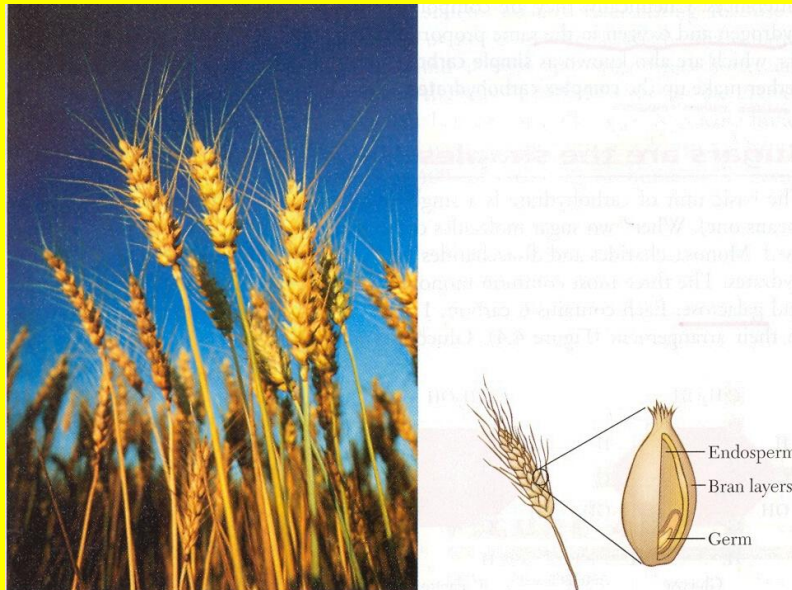


# Combos are good

- Mix and match foods from all groups
- Recommendation: Eat foods from each group everyday

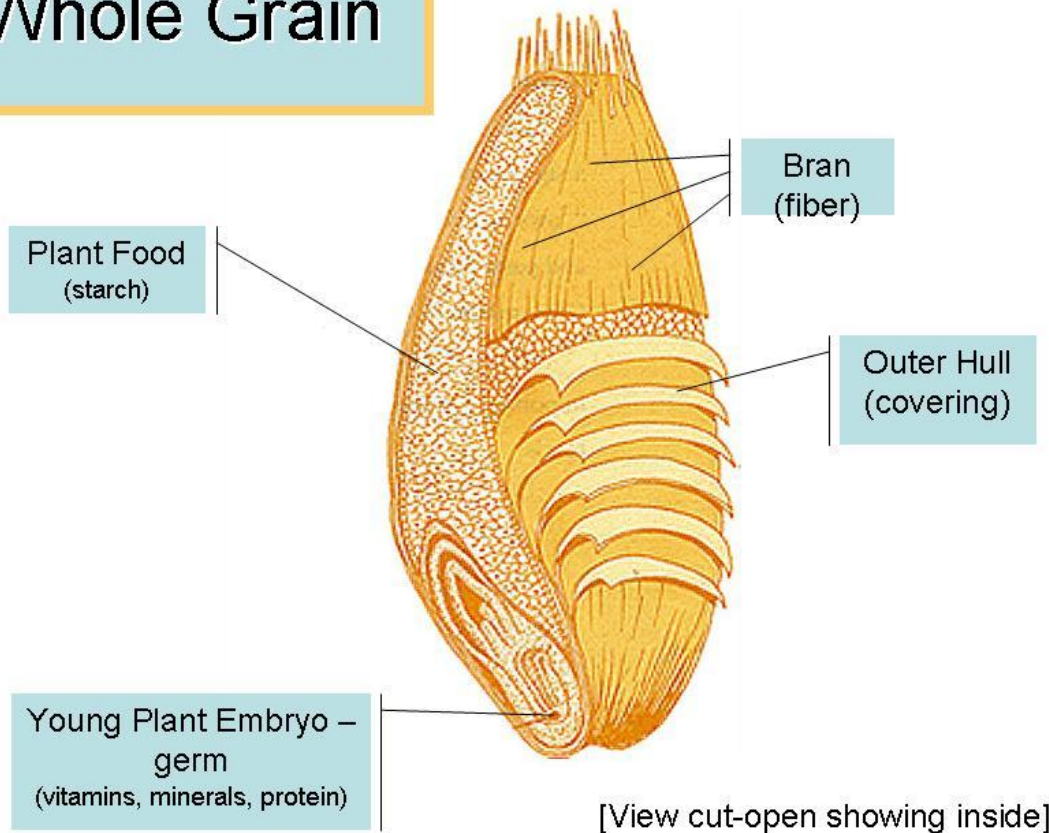
# GRAINS

- Cereals, breads, crackers, rice, pasta, snacks
- Grains come from seed plants:  
wheat, oats, corn, barley, rice



All grains start out whole: all parts together, not broken up

## Whole Grain



# Whole vs. Refined Grains

- **Whole grains:** natural, rich in vitamins, minerals, fiber
- **Refined grains:** broken apart (milled), processed (bleached, degerminated) by food companies

# Refined Grains

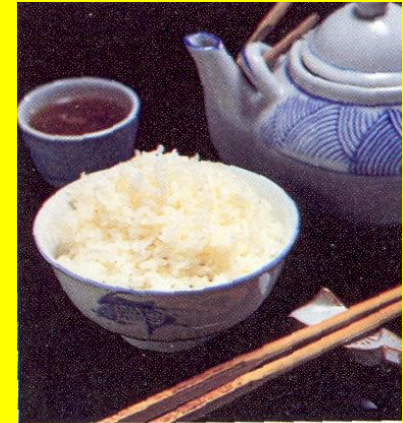
- Why processed?

Softer

Whiter

Shorter cooking time (white vs.  
brown rice)

Longer shelf life



**FIGURE 8.5**

Unenriched white rice is a poor source of thiamin. (Charles D. Winters)



# Refined grains: loss of nutrients & fiber

- Some nutrients, fiber (not all) added back = “enriched”  
“fortified”
- Some products: **mixture** whole + refined grains

# Whole vs. Refined Grains

- Important **difference**: amount of **fiber**

## Whole

100% whole grain  
wheat flour

**12.2 grams**

## Refined

Enriched,  
bleached,  
white flour

**2.7 grams**

↑ Refined starches + added  
sugars (snacks)

↑ Risk diabetes

↑ Rapid- Blood sugar

↑ Insulin

? Long term: ↓ Insulin  
production-  
pancreas  
(fatigue)

# Whole grains: better for you

↑ Whole grains ↓ Risk

1) heart  
disease/stroke

4) colorectal  
cancer

2) diabetes (slower  
increase in blood  
sugar)

5) inflammatory  
diseases

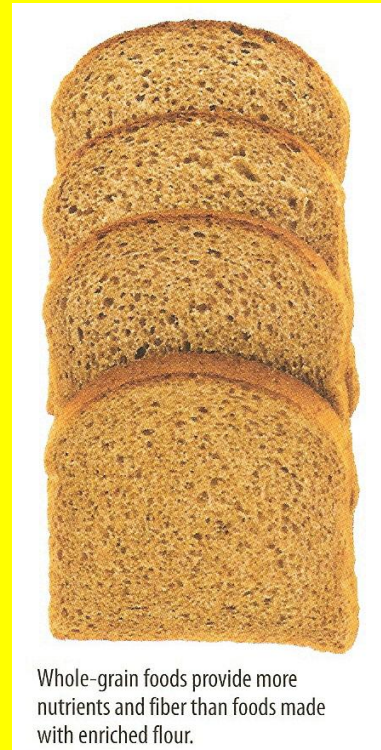
3) help prevent  
weight gain

# Whole Grains

- More nutrients + fiber
- Fewer calories
- Low in fat
- Rich- antioxidants



Brown rice is a good food source of dietary fiber.



Whole-grain foods provide more nutrients and fiber than foods made with enriched flour.

# Whole Grains: How to find them

- Look at **ingredients**
- First key words: **“whole grain”, “100% whole grain”**
- “Multigrain, seven grain, twelve grain” **≠ Whole grain**

Problem: Americans eat:

< 1 serving/day  
whole grain food



Important: start early:  
children- whole grains

# GRAINS

CEREALS - BREADS - CRACKERS - RICE - PASTA

## Recommendation:



Eat at least **6 ounces** of grain foods everyday.

At least half (**3 ounces**) should be **whole-grain foods**

1 ounce = 1 slice of bread, or  
1 cup of cereal, or  
1/2 cup of cooked  
rice, cereal, or pasta

**Food label:** Key words

*“100% whole grain” or “whole”*



# Fruits & Veggies

Why eat fruits & veggies everyday?

Fruits & Vegetables help:

↓ Risk stroke, heart disease

Control blood pressure-  
naturally

# Fruits & Vegetables help:

↓ Chances of **type 2 diabetes**

↓ Risk of cancer: mouth, throat, voice box, lungs, esophagus, stomach, colon, rectum

**Control your weight: rich in H<sub>2</sub>O, low in calories**

# What's good in fruits & veggies?

- **Carotenoids** (plant pigments)

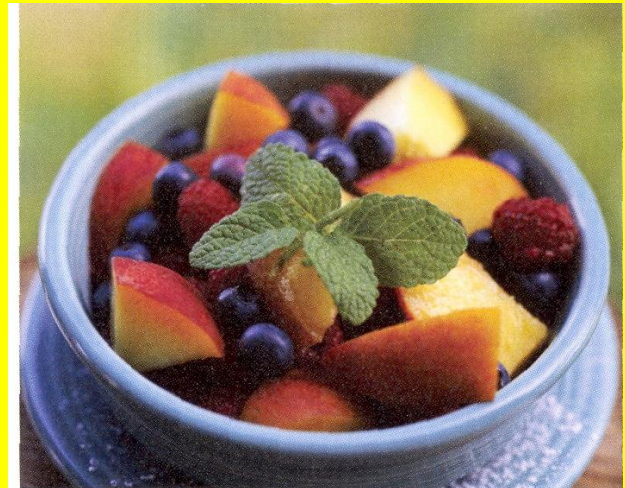
Ex. **beta carotene** → **vitamin A**

1) vision (night)

2) growth

3) reproduction

4) healthy skin



Fruits are an abundant source of water-soluble vitamins.

# Carotenoids- Good foods:

Carrots, sweet potatoes, pumpkin, tomatoes, red pepper, spinach, kale, green leaf and romaine lettuce, mangoes, cantaloupe, apricots, red or pink grapefruit

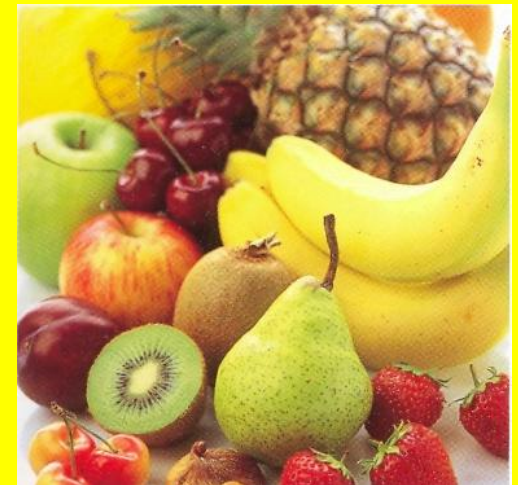
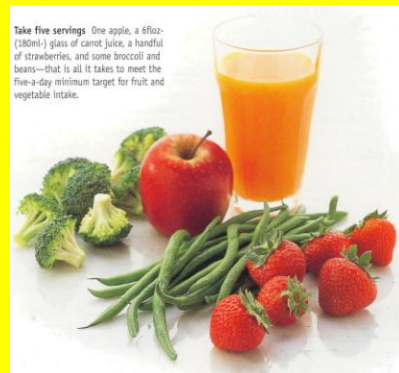


In addition to dairy products, kale is an excellent source of calcium.

- **Vitamin C:** your body can't make- need in diet
- 1. Important for: collagen synthesis (body support)**
  - 2. Protects DNA from damage**
  - 3. Helps fight bacterial infections**
  - 4. Helps repair wounds**

# Vitamin C: Good Foods

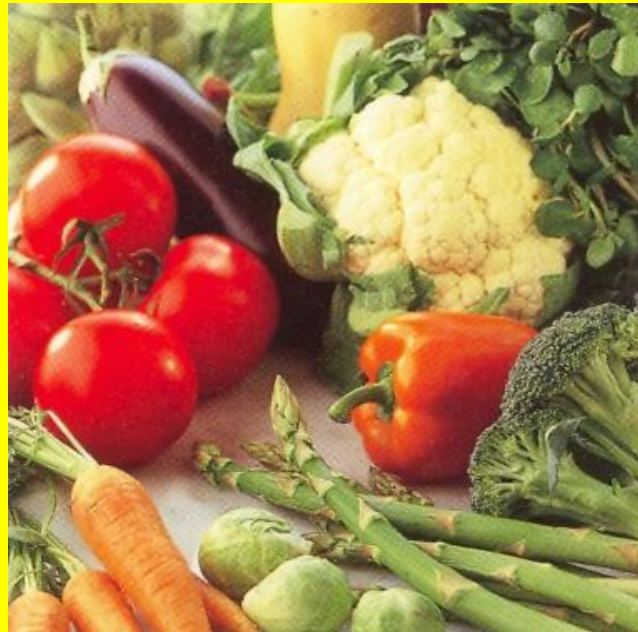
Oranges, grapefruit (and juices), lemons, lime, kiwi fruit, strawberries, guava, papaya, cantaloupe, broccoli, peppers, Brussels sprouts, potatoes, romaine lettuce, spinach



- **Folic acid (B vitamin):** can't be made by you
  - 1) Helps form DNA (genes) for new cells
  - 2) Folic acid deficiency: fatigue, type of **anemia**
  - 3) Pregnancy - women planning for or who are: protects growing fetus- **nervous system defects**

# Folic acid- Good Foods:

Cooked dry beans & peas,  
oranges, OJ, spinach, mustard  
greens, foods with **dark green**  
**leaves**



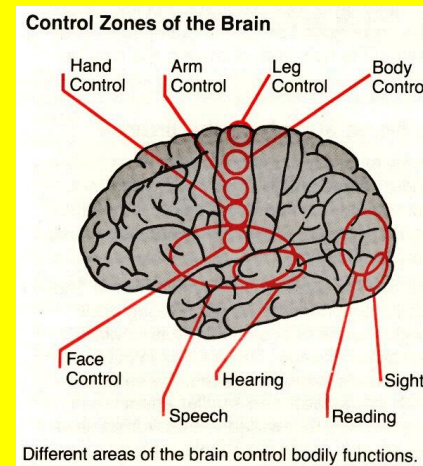


- **Potassium** (mineral)- anti-salt

1) Need for nerve/muscle cells

2) Lowers blood pressure

3) ↓ Risk stroke

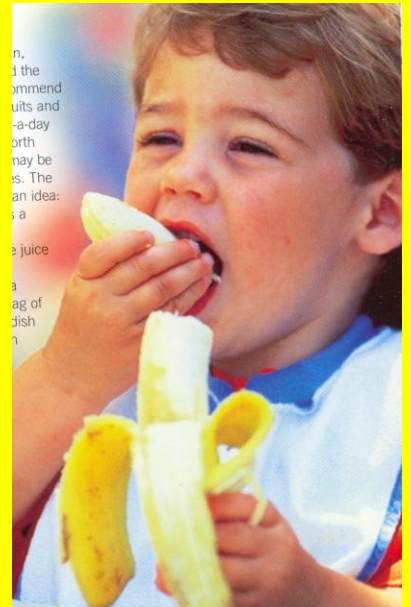


4) Exercise/sweating hot weather:



Potassium loss- replace it

# Potassium- Good Foods

Bananas, potatoes, spinach, winter squash, dried fruits, oranges, OJ, cantaloupe, honeydew melons, cooked dry beans, soy beans, tomato sauce/paste




# • Fiber

- 1) Bulk without calories
- 2) Feel full after eating
- 3) Help control weight
- 4) Slows sugar in food  blood
- 5) Binds cholesterol in intestine  feces
- 6) Helps relieve constipation

# Fruits- Good: Fresh, frozen, canned, cooked, raw

## Some fruit juice OK

**Vitamins Galore**



Some sorbets are rich in vitamins. A cup of this one has 80 percent of a day's vitamin A and 20 percent of a day's vitamin C. How to tell? Check the Nutrition Facts on the label.



**Fruit sorbet with fresh berries** Jam-packed with essential vitamins, fruits can be presented in a number of ways, such as this refreshing mixed-fruit sorbet with fresh fruits.



# FRUITS

FRESH - FROZEN - CANNED - DRIED

## Recommendation:



Eat 2 cups of a variety of fruit everyday.

Eat mostly whole fruit, but some fruit juice is okay.

## Consider These:

apricots	apples	bananas
dates	grapes	grapefruit
grapfruit juice	guava	kiwi fruit
mangoes	melons	oranges
orange juice	papaya	peaches
pineapples	prunes	raisins
strawberries	tangerines	

# VEGETABLES

DARK GREEN - ORANGE - DRY BEANS & PEAS - STARCHY

## Recommendation:

Eat  $2\frac{1}{2}$  **cups** every day -  
fresh, frozen, canned, cooked,  
or raw

## Consider These:

Broccoli, spinach, carrots, sweet potatoes,  
squash, pumpkin, dry beans, green beans,  
chickpeas, tofu, corn, potatoes, peas, tomatoes,  
cabbage, celery, cucumber, lettuce, onions, pep-  
pers, cauliflower, mushrooms

# Milk, Yogurt, Cheese: "low fat is beautiful"



**DAIRY CALCIUM.  
A FORM FOR EVERY DIET.**

# Milk

**Rich in:**

Protein

Vitamin A

Vitamin D

Calcium

Potassium

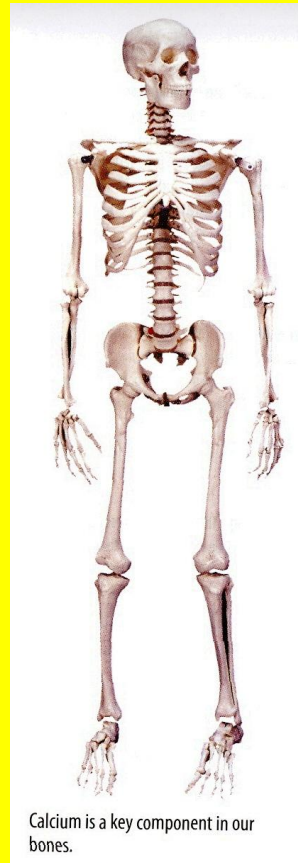
Magnesium

Yogurt & cheese: made from milk,  
similar nutrients



**Calcium:** highest mineral in body

99% in bone & teeth (structure)



Calcium is a key component in our bones.

Rest of **calcium** used for:

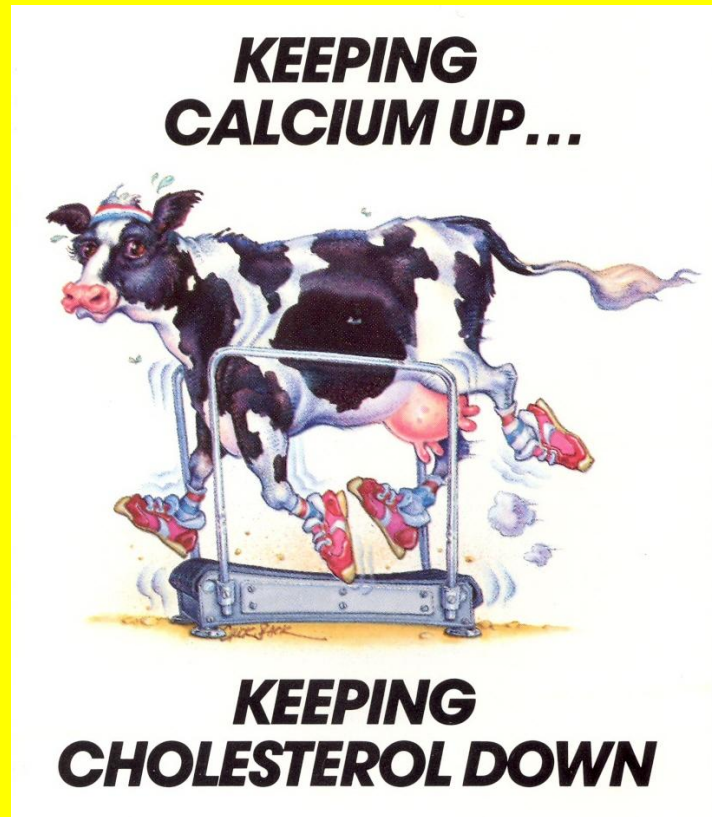
**Blood Clotting**

**Muscle contractions**

**Nerve impulses**

**Men & Women need:**

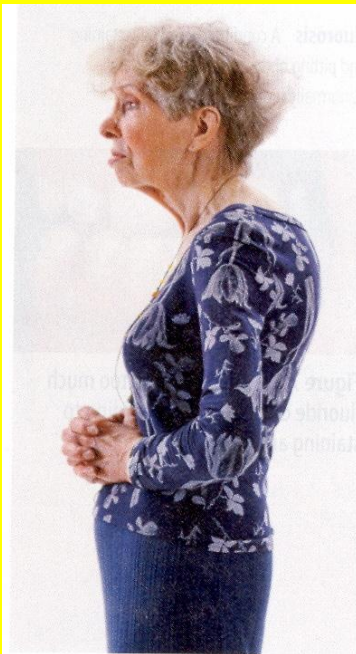
**1000 milligrams calcium/day**



# Not enough calcium in diet?

Bones → calcium → blood

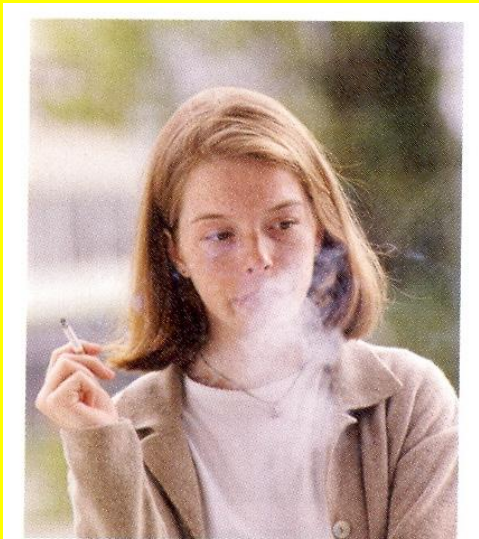
## Bone thinning: osteoporosis



**Figure 7.17** Gradual compression of the vertebrae in the upper back causes a shortening and rounding of the spine called *kyphosis*.



**Figure 7.16** The trabecular bone within a vertebra of a person with osteoporosis (right) is thinner and more collapsed than the trabecular bone within a vertebra of a healthy person. Notice that the bone tissue on the left is more dense and uniform.



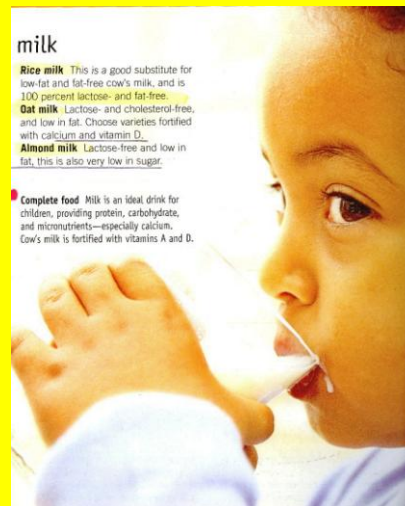
Cigarette smoking decreases bone density and is a risk factor for osteoporosis.

# Problem: adults not getting enough calcium

Children ↑ soft drinks ↓ milk

Dangerous: **9-18** years rapid bone growth

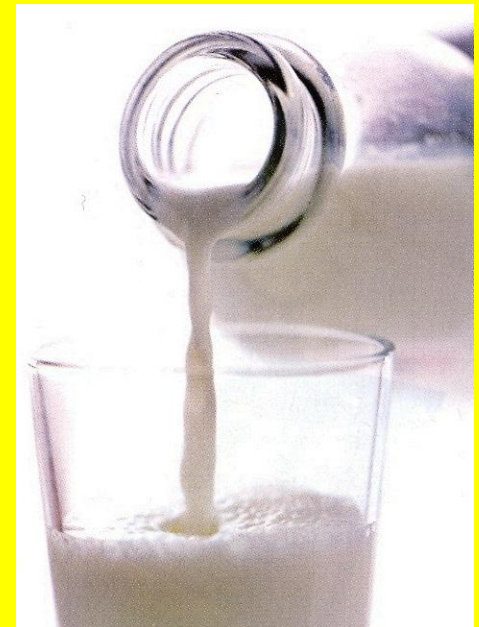
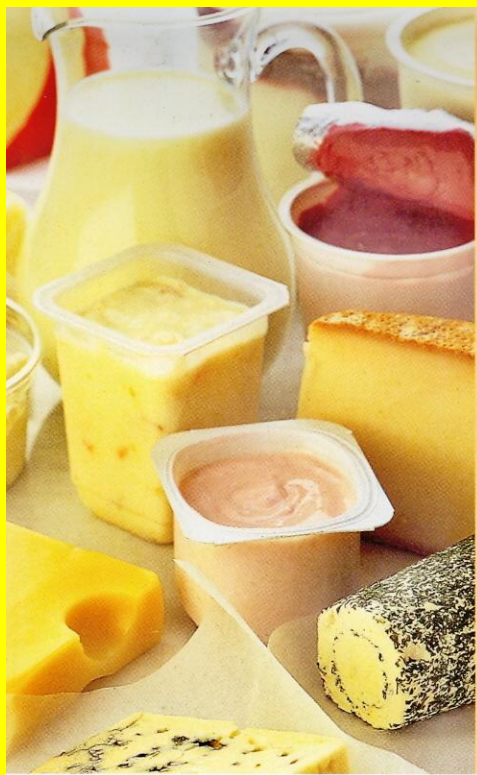
Bones less **sturdy** → fracture as adults



# Older Americans

↑ **Milk/milk products**

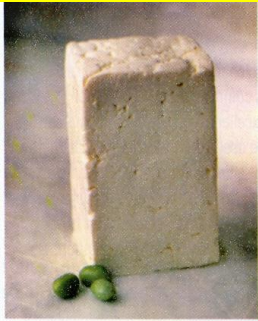
↓ Chances: **fractures**



# Other (non-dairy) calcium sources: vary in how calcium is absorbed

So ... Eat variety of these foods

Especially important: vegetarians



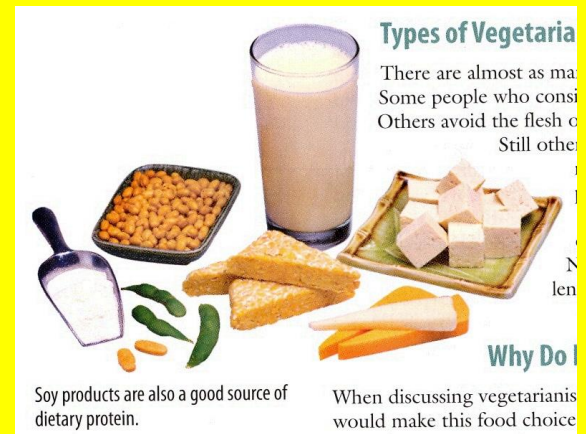
Tofu, also known as bean curd, is a soft, cheese-like product made by curdling fresh hot soy milk. (Steven Mark Needham/Foodpix/PictureArts Corp.)



**Weight Watchers** Eating well-balanced, nutritious meals, such as grilled salmon with mashed potato and green beans, is encouraged by this points-based diet program. the behavioral aspects of weight control and encourages personal accountability for the lifestyle choices that you make. The regimen thus promotes permanent



**Sardines are good for rheumatoid arthritis**  
Containing high levels of calcium, iron, B vitamins, and omega-3 fatty acids, sardines on toast makes an easy and nutritious snack.



### Types of Vegetaria

There are almost as many types of vegetarians as there are people. Some people who consider themselves vegetarians still eat the flesh of certain animals. Others avoid the flesh of all animals. Still other vegetarians avoid all animal products.

### Why Do I

Soy products are also a good source of dietary protein. When discussing vegetarianism, it would make this food choice

**Vitamin D:** important- helps intestine absorb calcium

- Dietary Guidelines 2010-

Vitamin D: “Nutrient of Concern”

- Vitamin D: also made- skin  
**“sunshine” vitamin**
- Recommended: children & most adults: **600 IU/Day**
- **D3** Bio-active form- supplement



Concern: older adults

↓ Dairy products

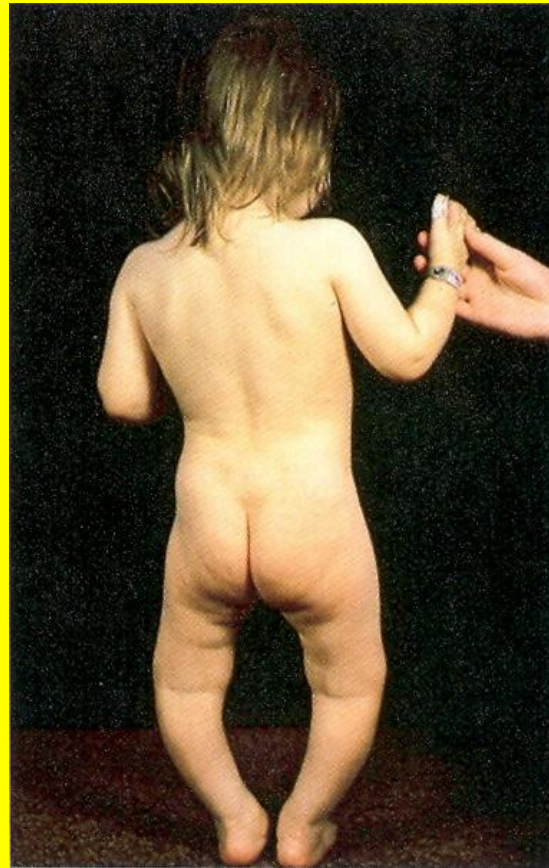
Shut-ins: little sunlight

May need vitamin D supplements,  
fortified milk, OJ



# Children: Vitamin D deficiency

- Rickets

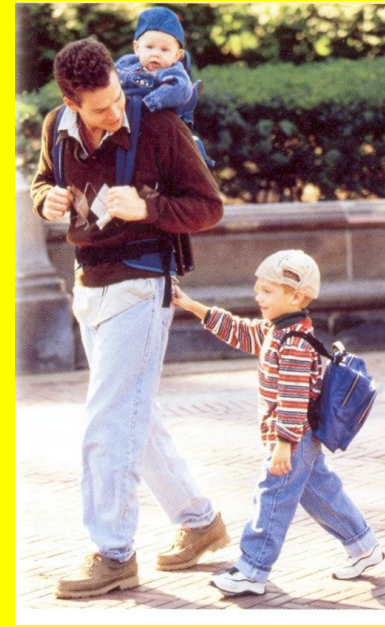
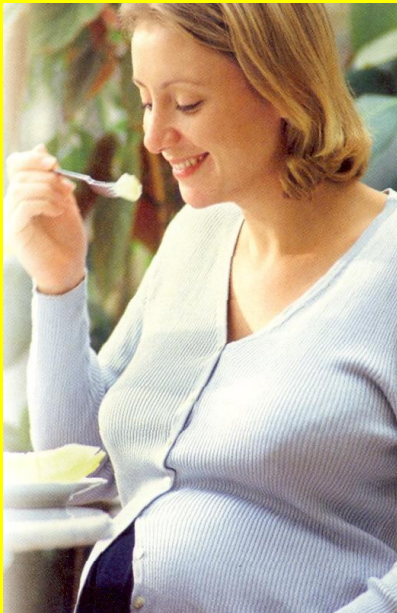


**FIGURE 8.25**

Bowed legs are characteristic of the vitamin D deficiency disease rickets. (Biophoto Associates/Photo Researchers)

# Good bone health starts early

- **Pregnant women** given vitamin D supplement
- **9 years later: children bone mass** ↑

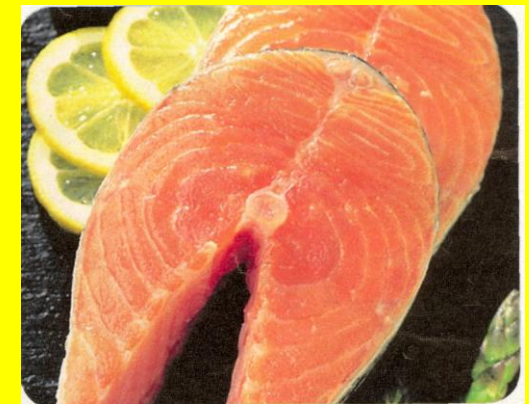
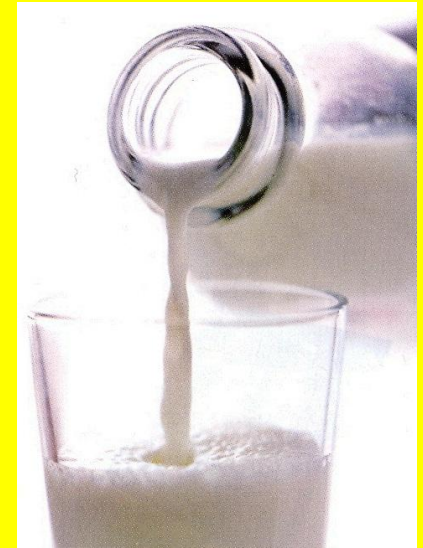


# Vitamin D: good sources

- Fortified milk
- Egg yolk
- Cod liver oil
- Mackerel
- Salmon
- Sardines
- Tuna



Sardines are good for rheumatoid arthritis  
Containing high levels of calcium, iron, B vitamins, and omega-3 fatty acids, sardines on toast makes an easy and nutritious snack.



# Lactose Intolerance

- Bloating/cramping after drinking milk
- Solutions:

Lactose-free milk

Yogurt

Cheese

Lactase supplement

Soy, rice, oat, almond milk (lactose free)



# Anything bad about milk/milk products?

- ↑ Saturated fat, cholesterol, fat (9 calories/gram)
- Dietary recommendations: choose **fat-free** or **low fat** milk & milk products



Low- and nonfat yogurt is an excellent source of calcium.



Frozen yogurt A refreshing alternative to ice cream, frozen yogurt is available in low-fat and fat-free varieties as well as in many flavors.

# Recommendations: Milk/Milk Products

Age

Amount

Children

2 cups/day

2-8 years

Children

3 cups/day

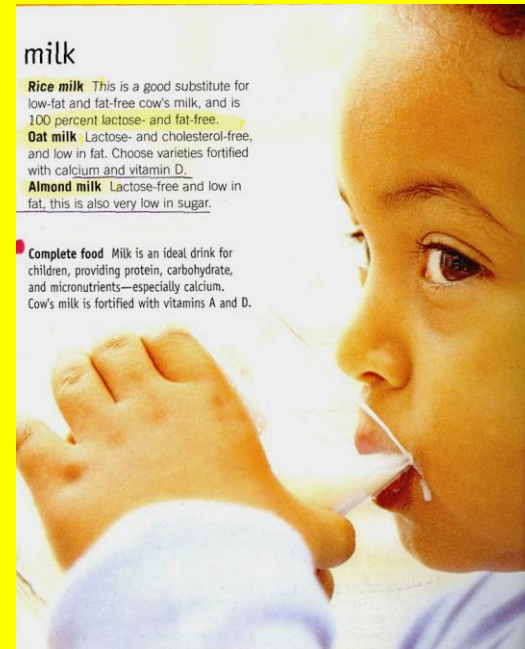
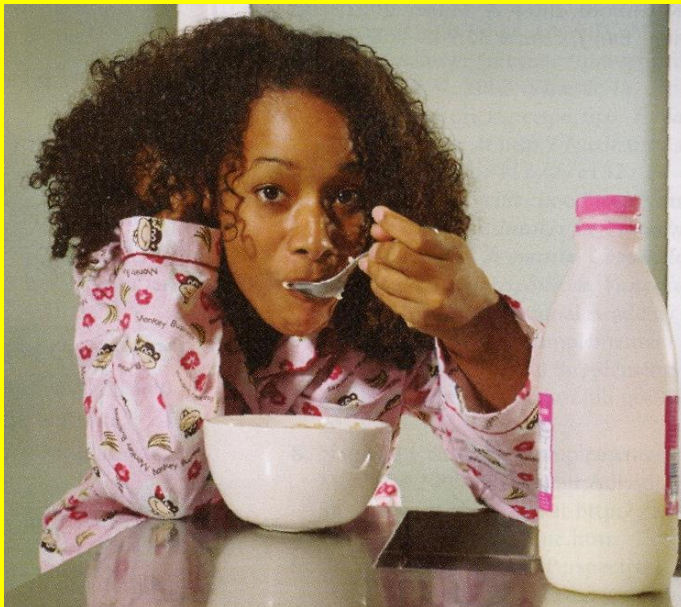
≥ 9 years

**Adults**

**3 cups/day**

# 3 cups/day: fat-free, low fat milk/milk products

- Will you gain excess weight?
- Most research says: **No**



## milk

**Rice milk** This is a good substitute for low-fat and fat-free cow's milk, and is 100 percent lactose- and fat-free.

**Oat milk** Lactose- and cholesterol-free, and low in fat. Choose varieties fortified with calcium and vitamin D.

**Almond milk** Lactose-free and low in fat, this is also very low in sugar.

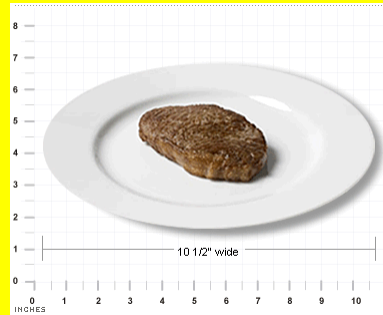
**Complete food** Milk is an ideal drink for children, providing protein, carbohydrate, and micronutrients—especially calcium. Cow's milk is fortified with vitamins A and D.



# MEATS & BEANS

The Meat Group is mostly hamburgers, hot dogs, chicken, and steak.

**Right?**



# WRONG

## USDA Meat & Beans Group:

- **Meat**
- **Poultry**
- **Fish**
- **Dry beans**
- **Peas**
- **Eggs**
- **Nuts**
- **Seeds**

**less known,  
but important**

# Dietary Guidelines

5.5 Ounce  
Equivalents/day

## MEATS, POULTRY, FISH

DRY BEANS - PEAS - EGGS - NUTS

### Recommendation:

Eat 5½ ounces every day

1 ounce is equivalent to:

- 1 ounce of meat, poultry, or fish
- or ¼ cup cooked dry beans
- or 1 egg
- or 1 tablespoon peanut butter
- or ½ ounce of nuts or seeds

### Key words:

Low-fat, lean, extra-lean, trimmed meats, skinless poultry

### Eat more:

Fish, beans, peas, nuts and seeds

### Better:

Baked, broiled, grilled, roasted, poached, boiled - instead of fried. Trim fat. Drain fat during cooking. Limit breading, high fat sauces and gravies

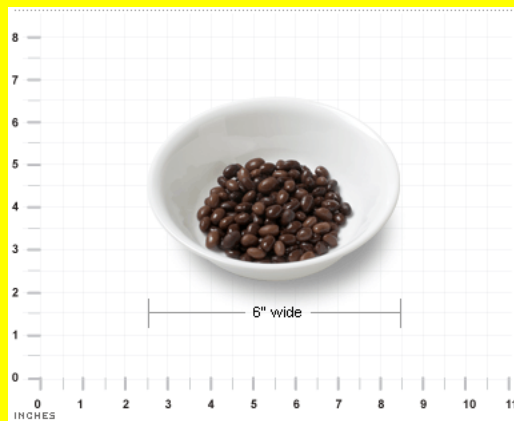
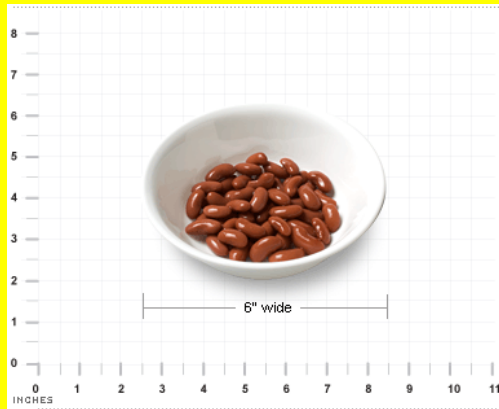
**Vegetarians:** Eat a variety of foods: Beans, nuts, nut butters, peas, soy products, eggs (ovo-vegetarians)

# Why are these lumped together?

## **All similar:**

- **Protein**- good source
- **B vitamins** (energy release, nervous system, new tissue)
- **Iron- O<sub>2</sub>** : hemoglobin
- **Magnesium**- Bone building, energy release- muscles
- **Zinc**- immune system, biochemical reactions

# Note: Dry Beans & Peas can also be included with vegetables



A vintage advertisement for Green Giant Peas. At the top, a thought bubble contains a close-up of bright green peas. Below the bubble, a woman with blonde hair, wearing a red short-sleeved shirt, is shown holding a can of Green Giant peas and looking thoughtful. The text reads: "Fresh thought for tonight..." followed by a paragraph describing the product's quality and freshness. At the bottom, there is a can of Green Giant Sweet Peas and the brand name "GREEN GIANT PEAS" in large letters.

*Fresh thought for tonight...*

When you find this thought floating up from your subconscious—relax! Your folks are in for some real eating enjoyment with these luscious big, baby-tender Green Giant Brand peas. Grown from special seeds by a scientific system of "Flavor Farming." Packed at that "fleeting moment of perfect flavor" (before the sugar has turned to starch). The Green Giant on the label is your assurance of the same dewy freshness in every can.

*Minnesota Valley Canning Company, headquarters, Le Sueur, Minnesota; First Foods of Canada, Ltd., Toronto, Ontario, also packers of Niblets Brand whole kernel corn.*

Shown in the Fred Waring Show on NBC every Friday morning for the Green Giant BRAND



A vintage advertisement for Green Giant featuring Art Linkletter. He is shown holding a can of Green Giant peas and a can of Niblets corn. The text reads: "Art Linkletter big man of radio, screen and television likes up with the Green Giant". At the bottom, it says "Niblets and Corn - Green Giant Peas".

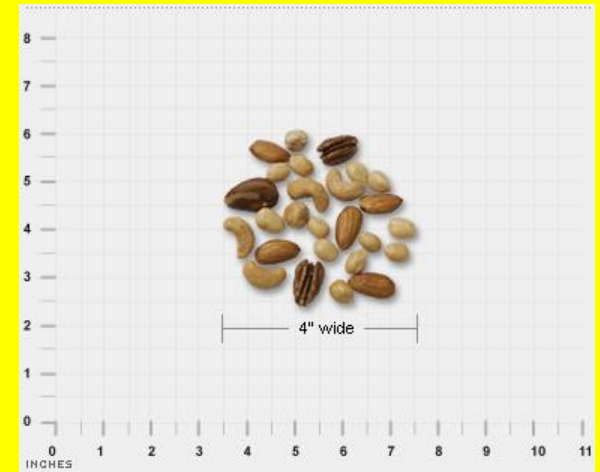
*Art Linkletter*  
big man of radio, screen and television  
likes up with the  
**Green Giant**

Niblets and Corn - Green Giant Peas

# Dietary Guidelines: Mix it up!

## Variety is good

- Substitute: fish, beans, peas, nuts & seeds for **meat** during week.



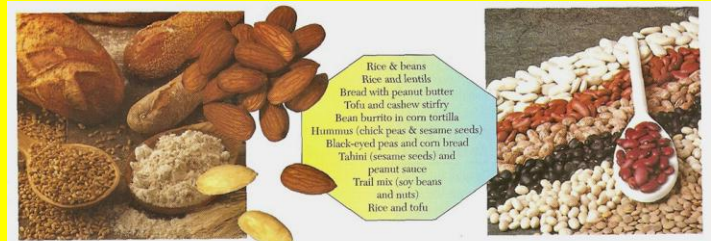
# How? Add them in:

- 1. Salads:** seeds, nuts, beans
- 2. Soups:** split pea, lentil, bean
- 3. Chili:** kidney, pinto beans
- 4. Stir fry/steamed veggies:** nuts
- 5. Pesto sauce:** pine nuts
- 6. Snacks:** seeds, nuts
- 7. Desserts:** nuts on low fat ice cream/yogurt

# How?

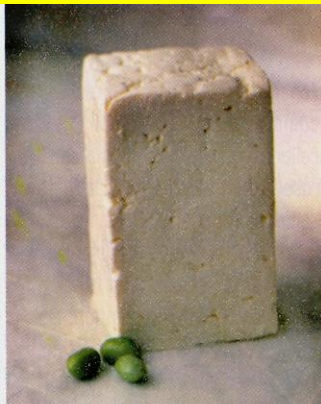
**8. Main course: veggie burgers (soy) or tofu**

**9. Side dish: beans**



**FIGURE 6.20**

Common combinations of plant foods provide complementary protein sources that can meet needs in vegetarian diets in the United States and around the world. (Breads: Jean-Paul Chassevet/Photo Researchers; nuts: Corbis Images; beans: George Sample)



Tofu, also known as bean curd, is a soft, cheese-like product made by curdling fresh hot soy milk. (Steven Mark Needham/Foodpix/PictureArts Corp.)





# Meats: the good and the bad

- **Good: valuable protein & nutrients**
- **Bad: All contain:**
  - Saturated fat + cholesterol
  - Fat calories**

What to do: choose low fat, lean, skinless, trim fat before cooking

2009 National Cancer Institute  
Study: 500,000 Americans

## **RED MEAT EATERS**

- **Premature Death**
- **↑ Cancer**
- **↑ Heart Disease**

**Eating Fish, Chicken, Turkey**

- **↓ Death Risk**

# Fish, Nuts, Seeds

Good fats: omega-3,  
monounsaturated,  
polyunsaturated } heart  
disease ↓

Dry beans, peas, nuts & seeds

↑ **Fiber**

# Eggs

- Good: protein, nutrients, antioxidants
- Bad: yolk: **213** milligrams-cholesterol (limit: **300** mg/day)
- 2010 Guidelines: 200 mg/day: people with heart disease and Type 2 diabetes
- Egg whites, egg substitutes:  
~~cholesterol~~



# Meats: how to cook/prepare



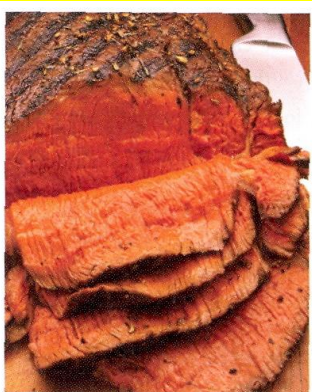
**Smart way: Liquid vegetable oils**  
**(canola, corn, olive- good fats)**

**vs.**

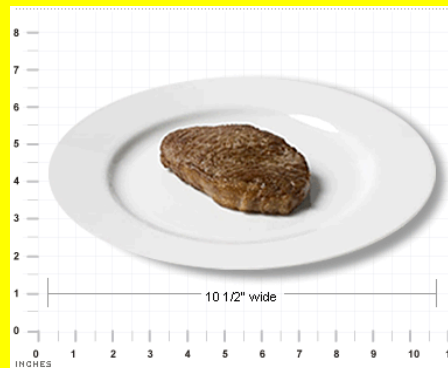
**Butter, lard, hydrogenated: bad fats**

# Meats: how to cook/prepare

- **Trim** fat
- **Drain** fat during cooking
- Baking, broiling, grilling, roasting, poaching, boiling better than



Meats are one of our primary sources of proteins.



**FRYING**

