Nutrition and You

Vicki Rethmeier, MS, RD, LMNT, CDE

*Today's Topics

- *Cholesterol
- *Blood Pressure
- *Diabetes
- *Weight Management
- *Alcohol
- *Sugars

Table 5.6

What Your Cholesterol Level* Can Tell You

If Your Total Cholesterol Level Is	That Is Considered
<200	Fabulous! Keep up the good work!
200–239	Borderline high
≥240	High
If Your LDL Cholesterol Level Is	**That Is Considered**
<100	Fabulous! Congratulations!
100–129	Near or above optimal
130–159	Borderline high
160–189	High
190	Much too high!
If Your HDL Cholesterol Is	**That Is Considered**
≥60	Fabulous!
40–60	Good
<40	Too low

Mediterranean Diet Pyramid

A contemporary approach to delicious, healthy eating

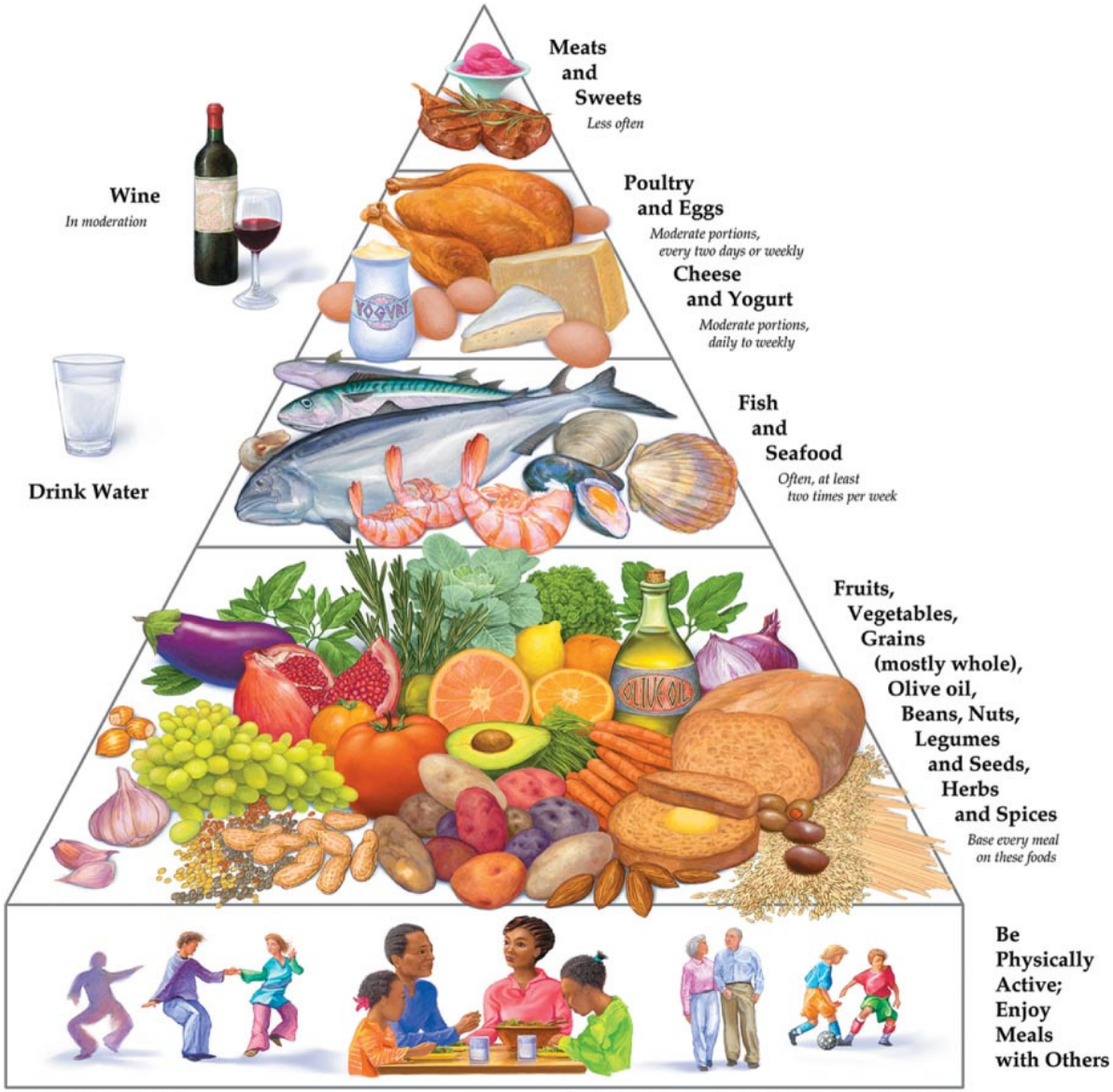


Illustration by George Middleton

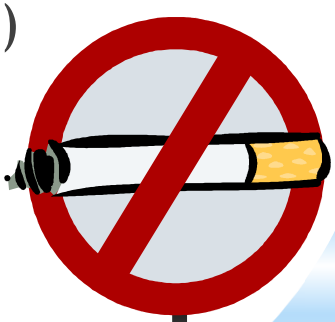
www.oldwayspt.org

Increase:

* Liquid oils (canola, olive, peanut)
* Soluble fiber
* Fish
* Nuts, flaxseed
* Plant foods
* Exercise

Limit:

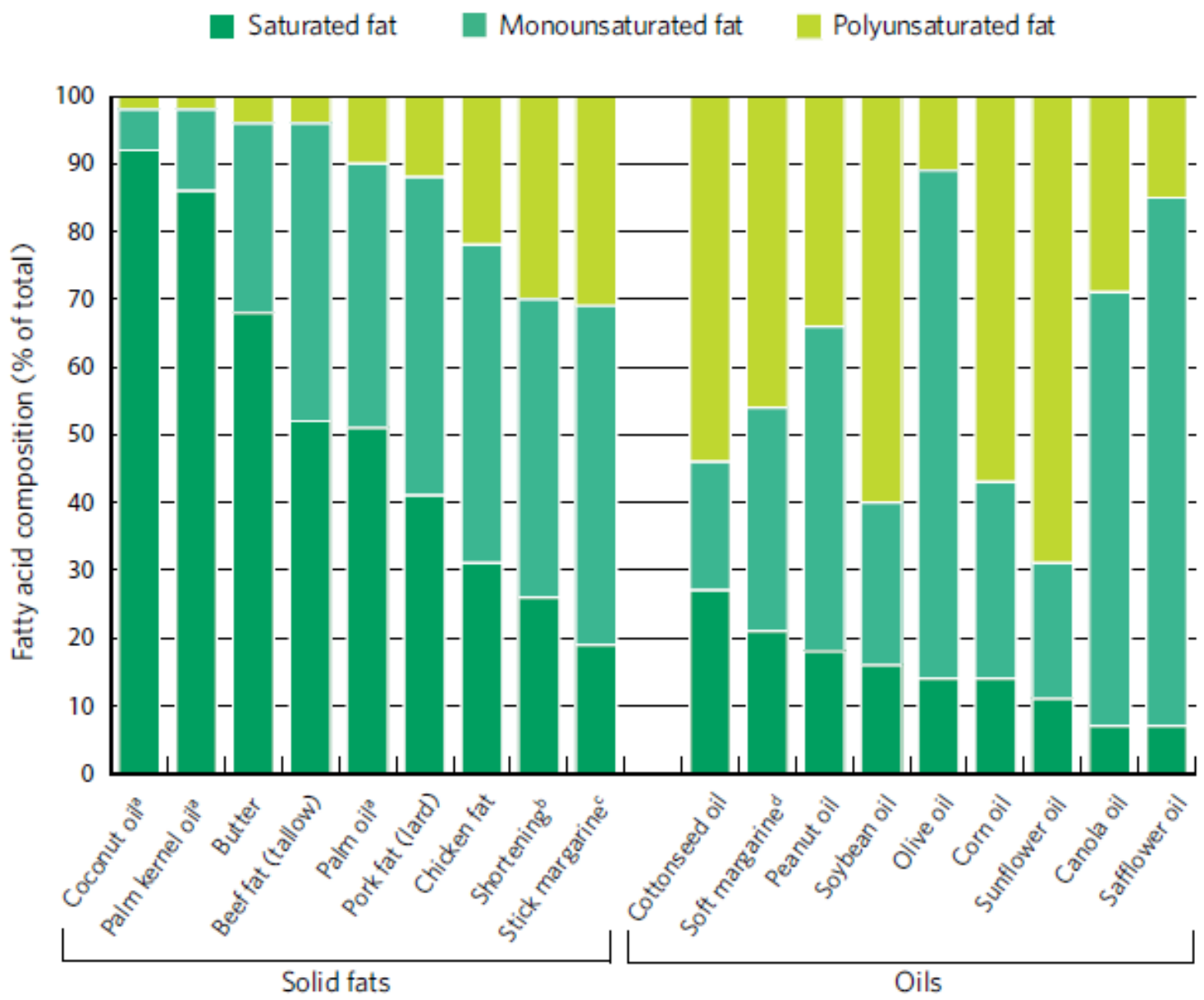
* Solid (saturated) fat:
  * Fatty meats, whole-milk dairy products, skin on poultry
  * Tropical oils (coconut, palm, palm kernel)

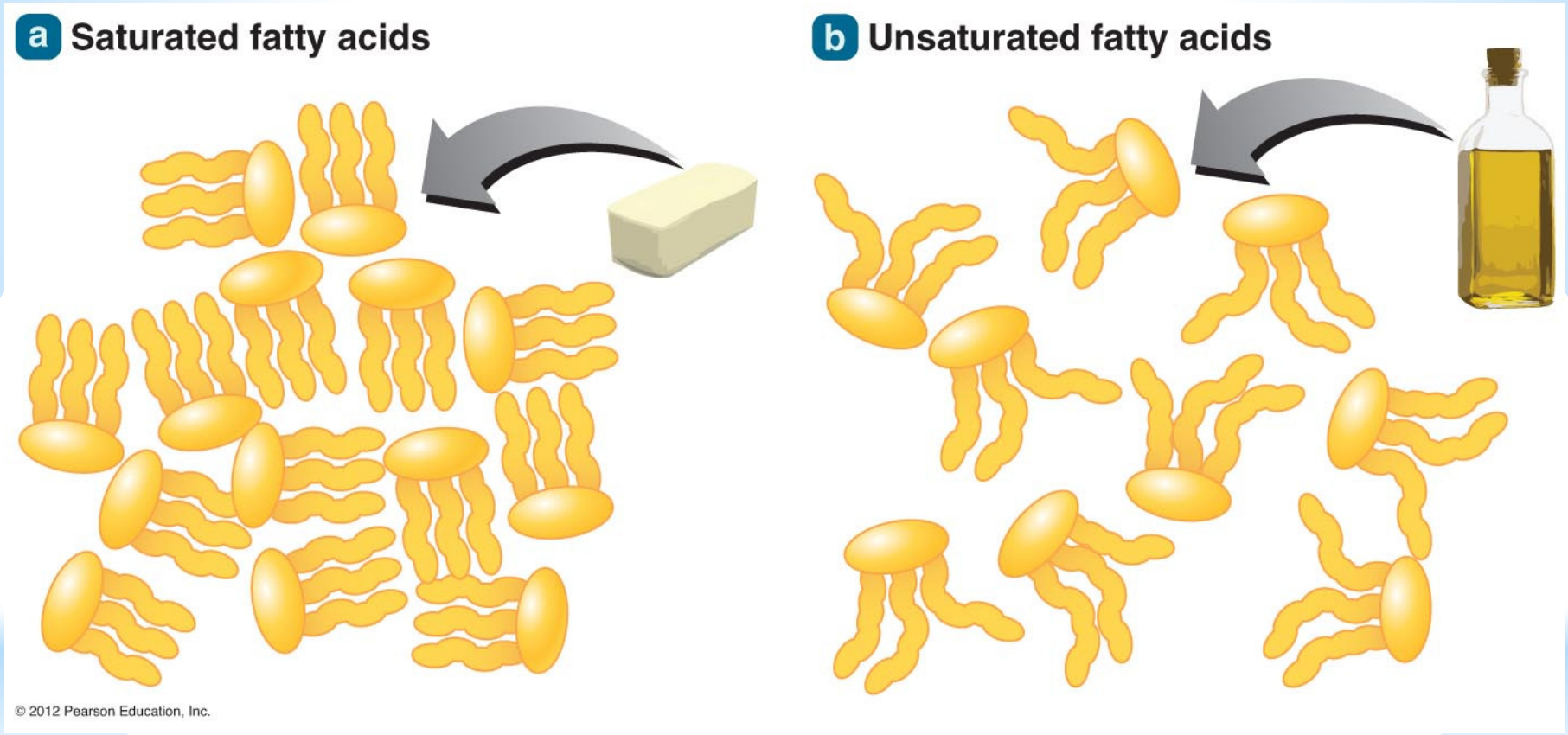


DON'T Smoke!!

* Improving Blood Cholesterol

FIGURE 3-3. Fatty Acid Profiles of Common Fats and Oils




a Saturated fatty acids
b Unsaturated fatty acids
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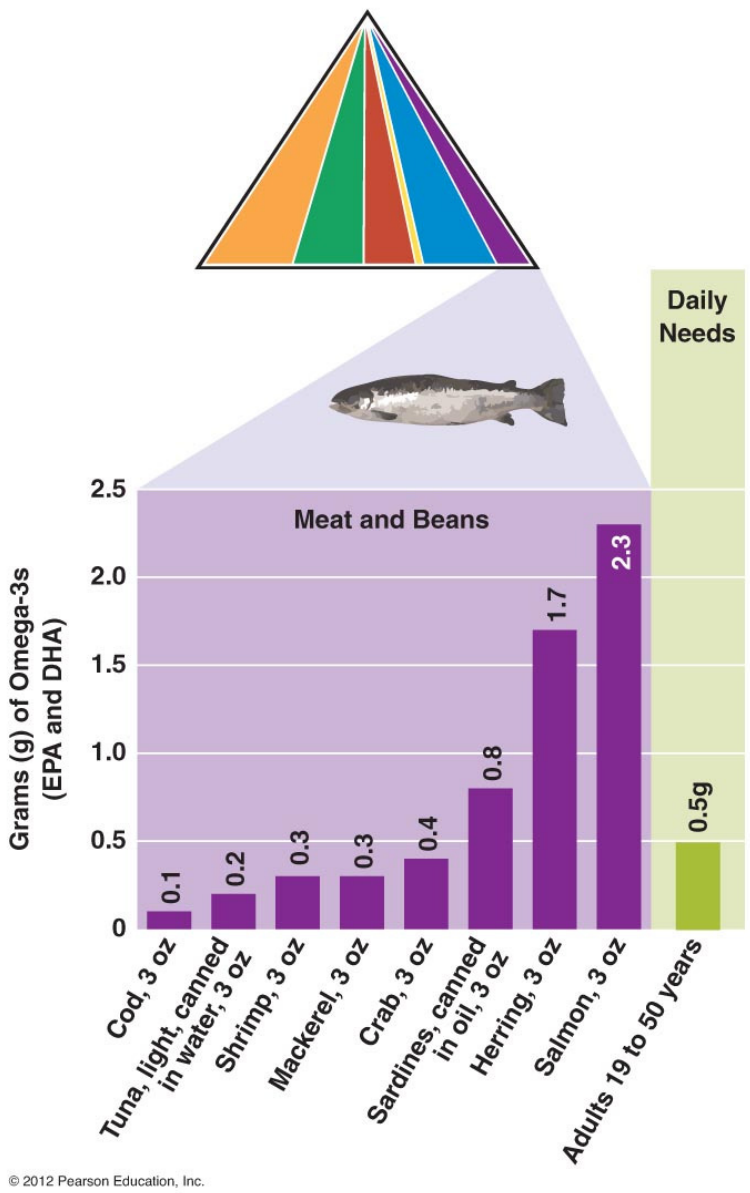
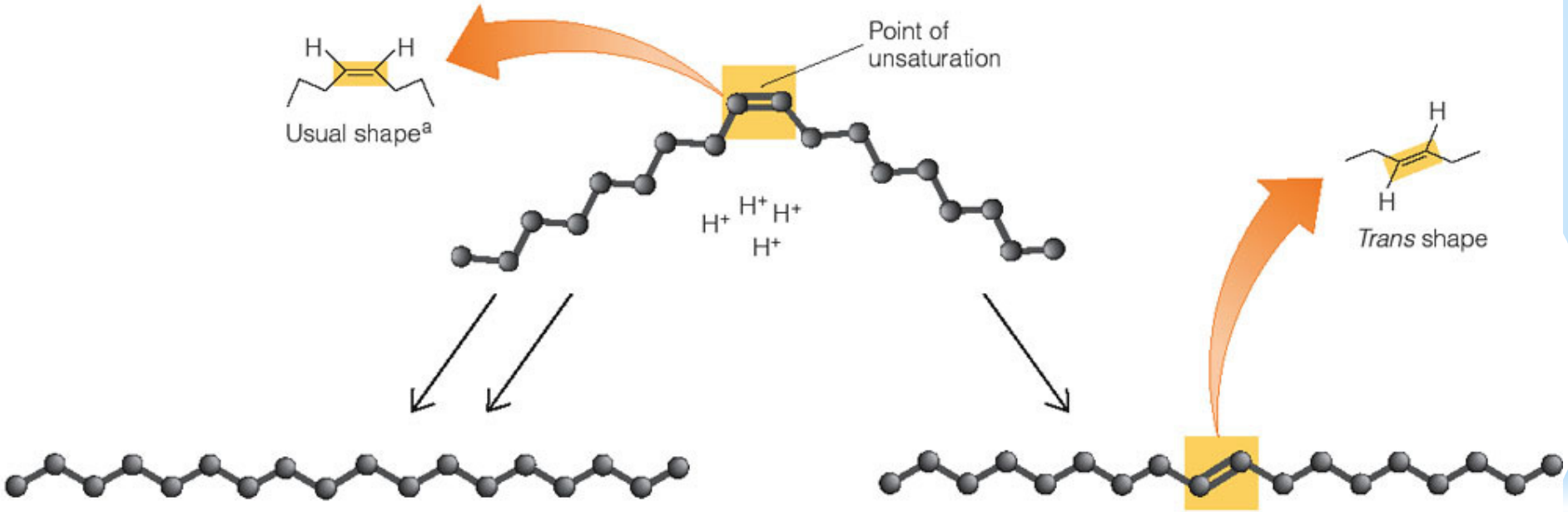
*Omega-3 fatty acid

* Anti-inflammatory properties
* Decrease atherosclerosis
* Decrease blood pressure
* Prevents irregular heartbeat
  * Fatty fish, walnuts, flaxseed, canola oil



*Hydrogenation

Unsaturated fatty acid
Points of unsaturation are places on fatty acid chains where hydrogen is missing. The bonds that would normally be occupied by hydrogen in a saturated fatty acid are shared, reluctantly, as a double bond between two carbons that both carry a slightly negative charge.



Hydrogenated fatty acid (now fully saturated)
When a positively charged hydrogen is made avaliable to an unsaturated bond, it readily accepts the hydrogen and, in the process, becomes saturated. The fatty acid no longer has a point of unsaturation.

***Trans* fatty acid**
The hydrogenation process also produces some *trans* fatty acids. The *trans* fatty acid retains its double bond but takes a twist instead of becoming fully saturated. It resembles a saturated fatty acid both in shape and in its effects on health.

*Major Food Sources of *Trans* Fat

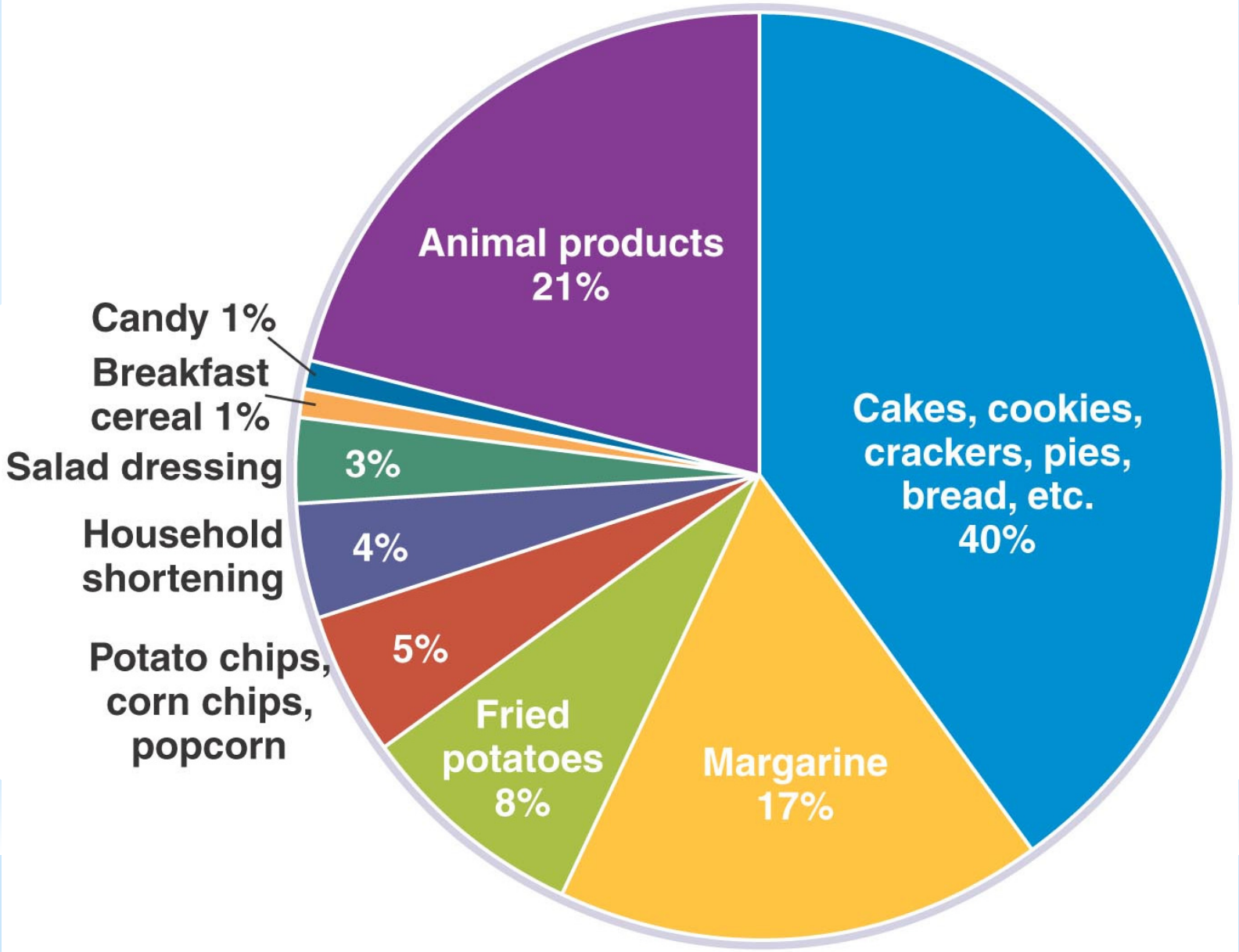


Table 5.7

The Cholesterol-Raising Effects of Popular Foods

Food	Total Fat	Saturated Fat	*Trans* Fat	Total Cholesterol-Raising Fats (Saturated fats + *trans* fats)
Spreads				
Butter, 1 tbs	**11**	**7.0**	0.5	7.5
Margarine (stick), 1 tbs	**11**	**2.0**	3.0	5.0
Margarine (tub), 1 tbs	**6.5**	**1.0**	0.5	1.5
Commercially Prepared Foods and Snacks				
French fries, medium (fast food)	**27**	**6.5**	8.0	14.5
Doughnut, 1	**18**	**4.5**	5.0	9.5
Potato chips, small bag	**11**	**2.0**	3.0	5.0
Cookies, 3	**6**	**1.0**	2.0	3.0

Source: Adapted from Center for Food Safety and Applied Nutrition, Updated 2006, Questions and Answers

Table 7.2

The Phytochemical Color Guide

The National Cancer Institute recommends eating a variety of colorful fruits and vegetables daily to provide your body with valuable vitamins, minerals, fiber, and disease-fighting phytochemicals. Whole grains also have phytochemicals and have been added to this list.

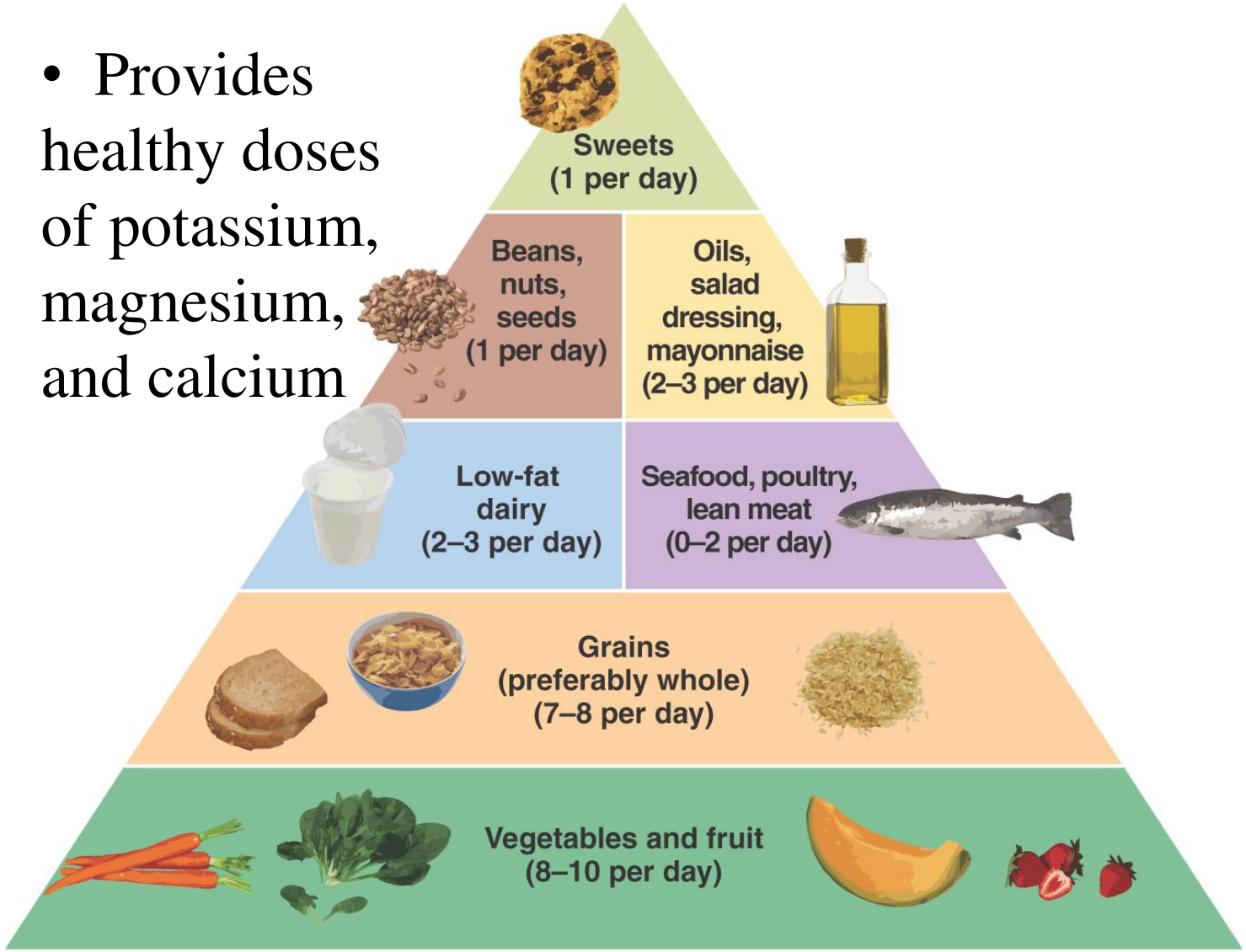
Color	Phytochemical	Found In
Red	Anthocyanins	Apples, beets, cabbage, cherries, cranberries, red cabbage, red onion, red beans
	Lycopene	Tomatoes, watermelon, pink grapefruit
Yellow/Orange	Beta-carotene	Apricots, butternut squash, cantaloupe, carrots, mangoes, peaches, pumpkin, sweet potatoes
	Flavonoids	Apricots, clementines, grapefruits, lemons, papaya, pears, pineapple, yellow raisins
White	Alliums/allicin	Chives, garlic, leeks, onions, scallions
Green	Lutein, zeaxanthin	Broccoli, collard greens, honeydew melon, kale, kiwi, lettuce, mustard greens, peas, spinach
	Indoles	Arugula, broccoli, bok choy, brussels sprouts, cabbage, cauliflower, kale, Swiss chard, turnips
Blue/Purple	Anthocyanins	Blackberries, black currants, elderberries, purple grapes
	Phenolics	Eggplant, plums, prunes, raisins
Brown	Beta-gluton, lignans, phenols, plant sterols, phytoestrogens, saponins, tocotrienols	Barley, brown rice, oats, oatmeal, whole grains, whole-grain cereals, whole wheat

Source: Adapted from the National Cancer Institute, "The Color Guide."

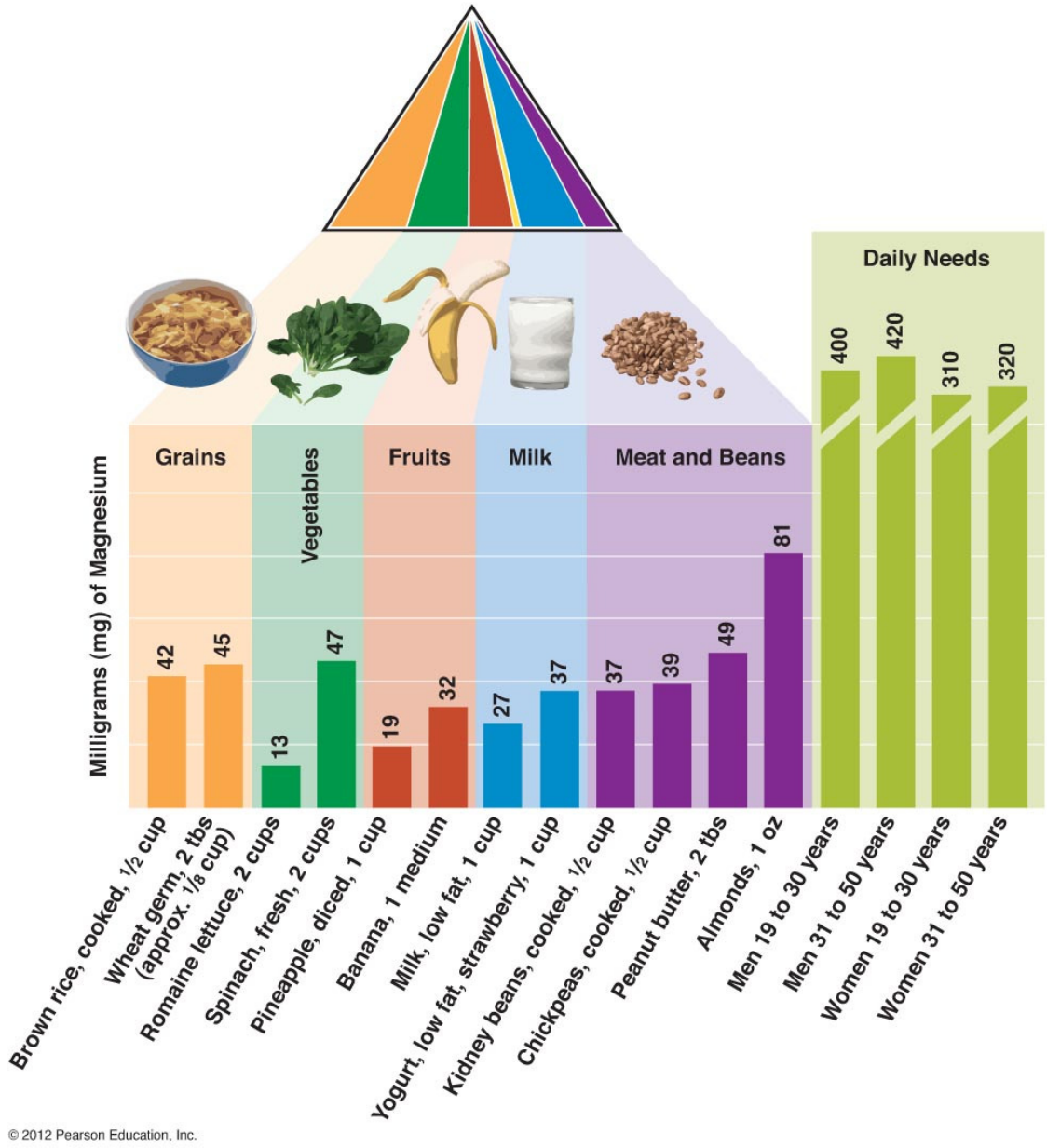
Phytochemical	Food Source(s)	Potential Health Benefit
Alliums/Allicin	Garlic, Onions	May reduce risk of heart disease; May improve immune system function
Beta-Carotene	Carrots, Cantaloupe, Apricots, Peaches	Antioxidant
Catechins	Green Tea	May reduce the risk of certain cancers
Flavonoids	Fruits, Vegetables, Wine	May reduce risk of heart disease
Lutein	Spinach, Kale, Collard Greens	May reduce risk of cataracts and macular degeneration
Lycopene	Tomatoes/Tomato Products	May reduce risk of certain cancers, particularly prostate
Phenolics	Eggplant, Plums, Prunes	Antioxidant
Tannins	Lentils, Grapes, Wine	Antioxidant
Zeaxanthin	Broccoli, Spinach	May reduce risk of cataracts and macular degeneration; Antioxidant

*DASH: (Dietary Approaches to Stop Hypertension)

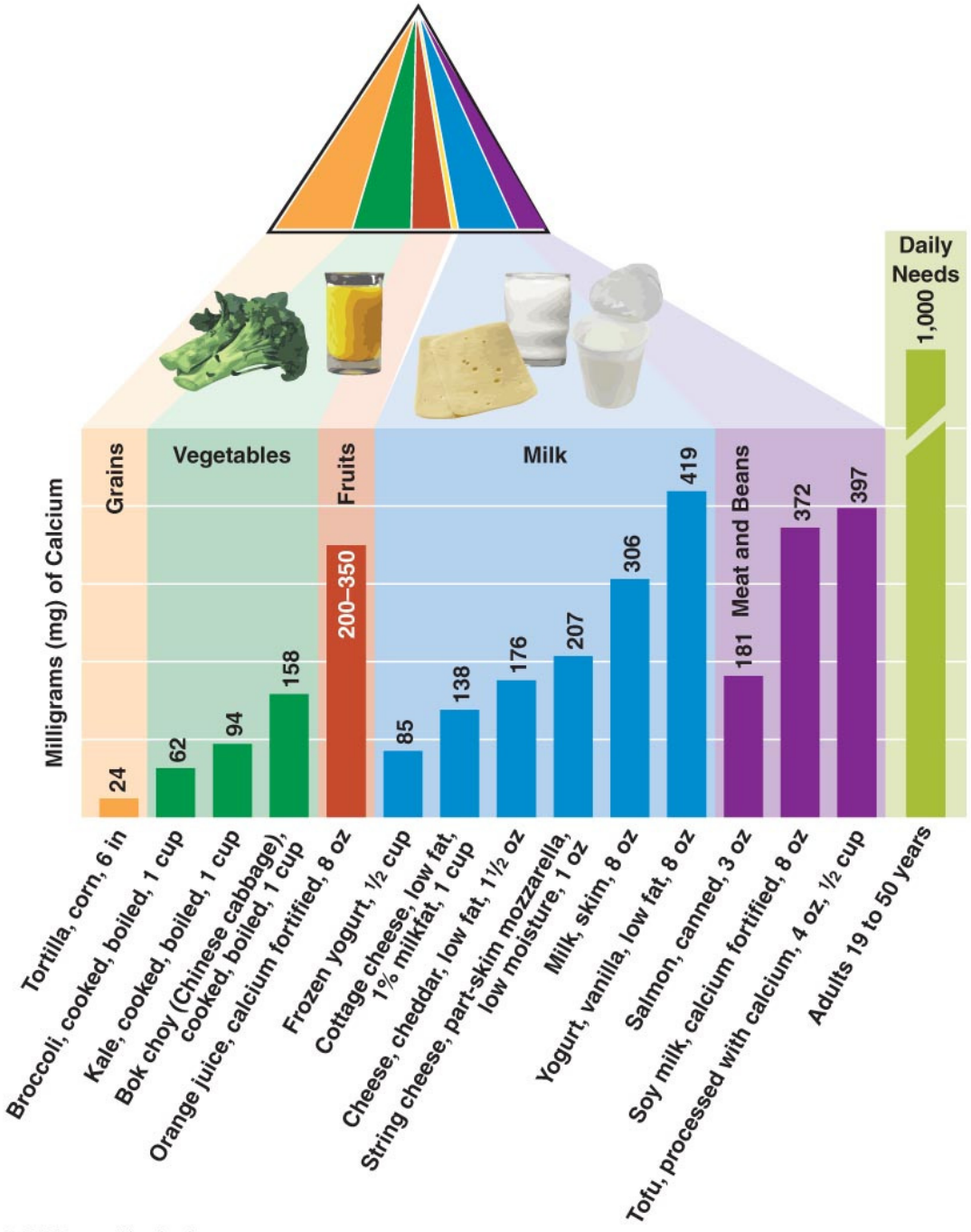
- Provides healthy doses of potassium, magnesium, and calcium



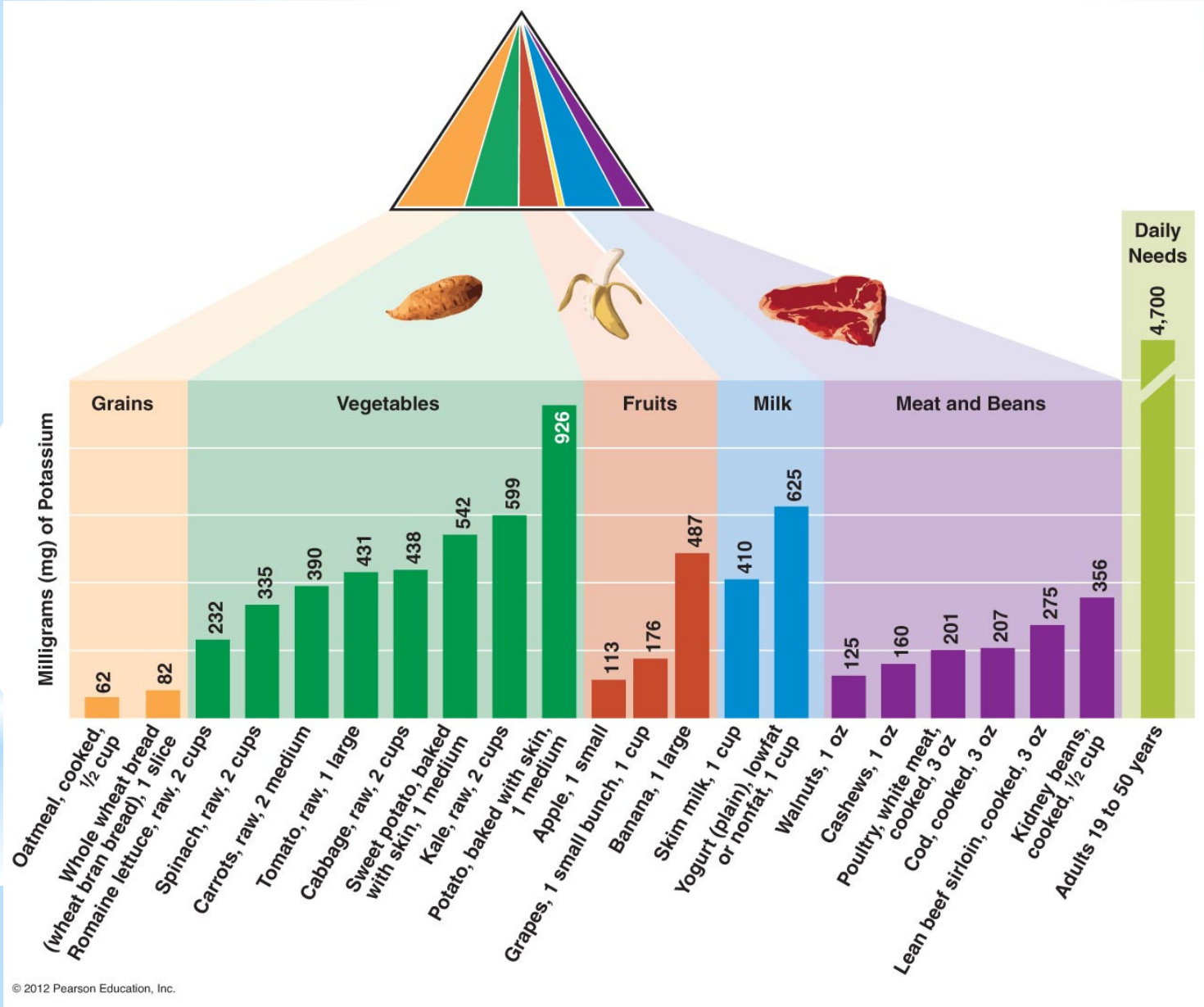
*Magnesium



*Calcium



*Potassium



Take Charge of Your Blood Pressure!

Diet and lifestyle changes help reduce blood pressure and help prevent hypertension.

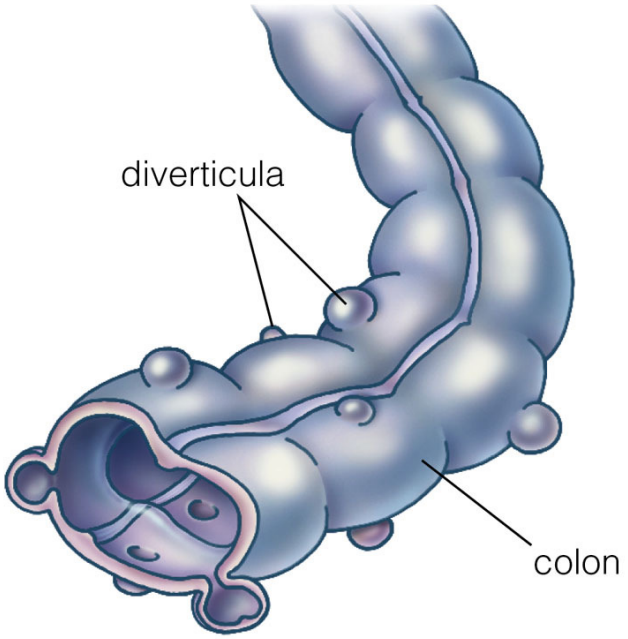
If You	By	Your Systolic Blood Pressure* May Be Reduced by
Reduce your sodium intake	Keeping dietary sodium consumption to less than 2,400 mg daily	8–14 mm Hg
Lose excess weight	An amount that allows you to maintain a normal, healthy body weight	5–20 mm Hg for every 22 lbs of weight loss
Stay physically active	Partaking in 30 minutes of aerobic activity (brisk walking) on most days of the week	4–9 mm Hg
Drink alcohol only in moderation	Limiting consumption to no more than 2 drinks daily for men and 1 drink daily for women	2–4 mm Hg
Follow the DASH diet	Consuming this diet, which is abundant in fruits and vegetables and low-fat dairy products	8–14 mm Hg

*Controlling the systolic pressure is more difficult than controlling the diastolic pressure, especially for individuals 50 years of age and older. Therefore, it is the primary focus for lowering blood pressure. Typically, as systolic pressure goes down with diet and lifestyle changes, the diastolic pressure will follow.

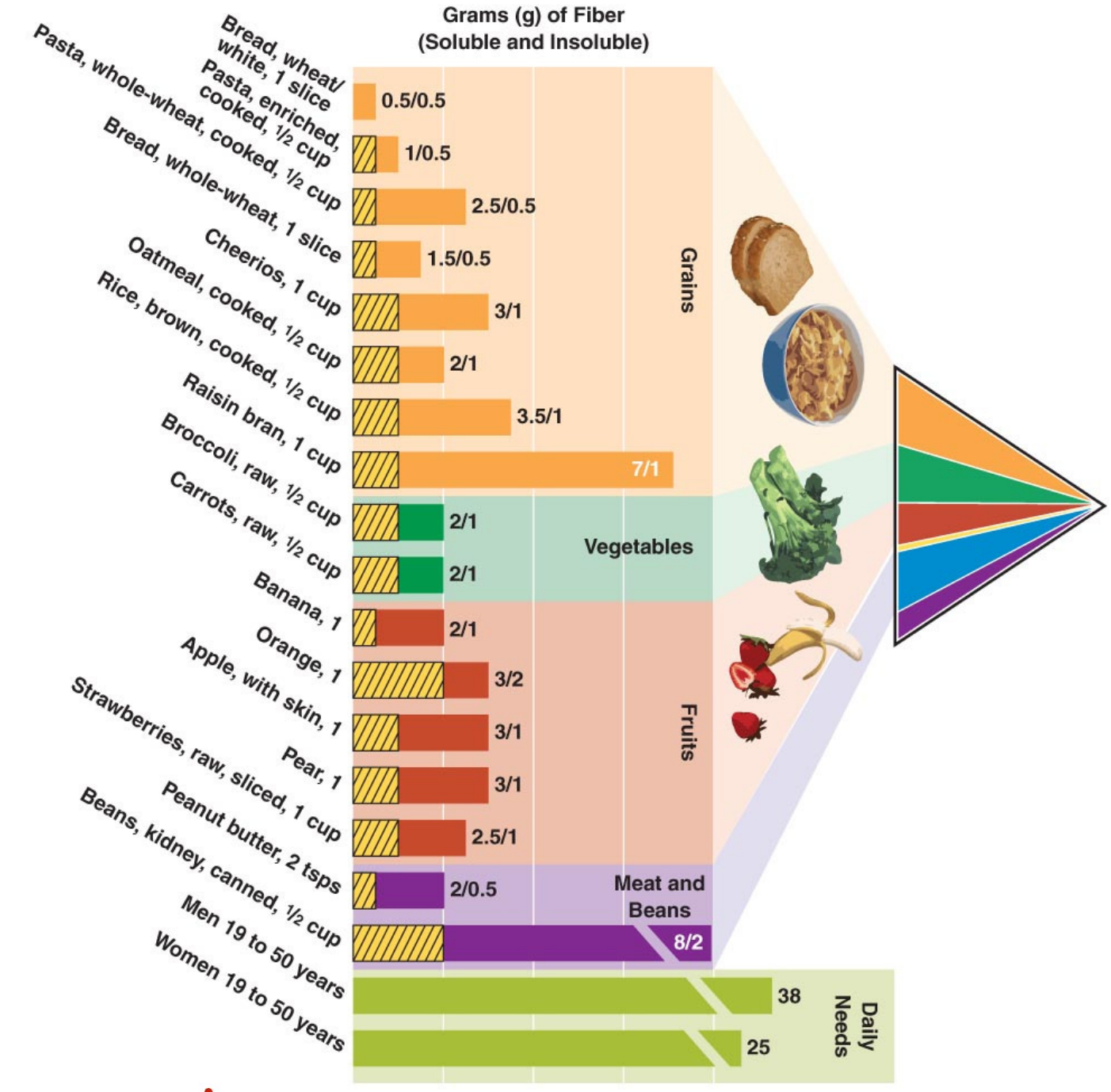
Source: Adapted from A. V. Chobanian, et al., "The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure," *Journal of the American Medical Association* 289 (2003): 2560–2572.

Lowers risk of:

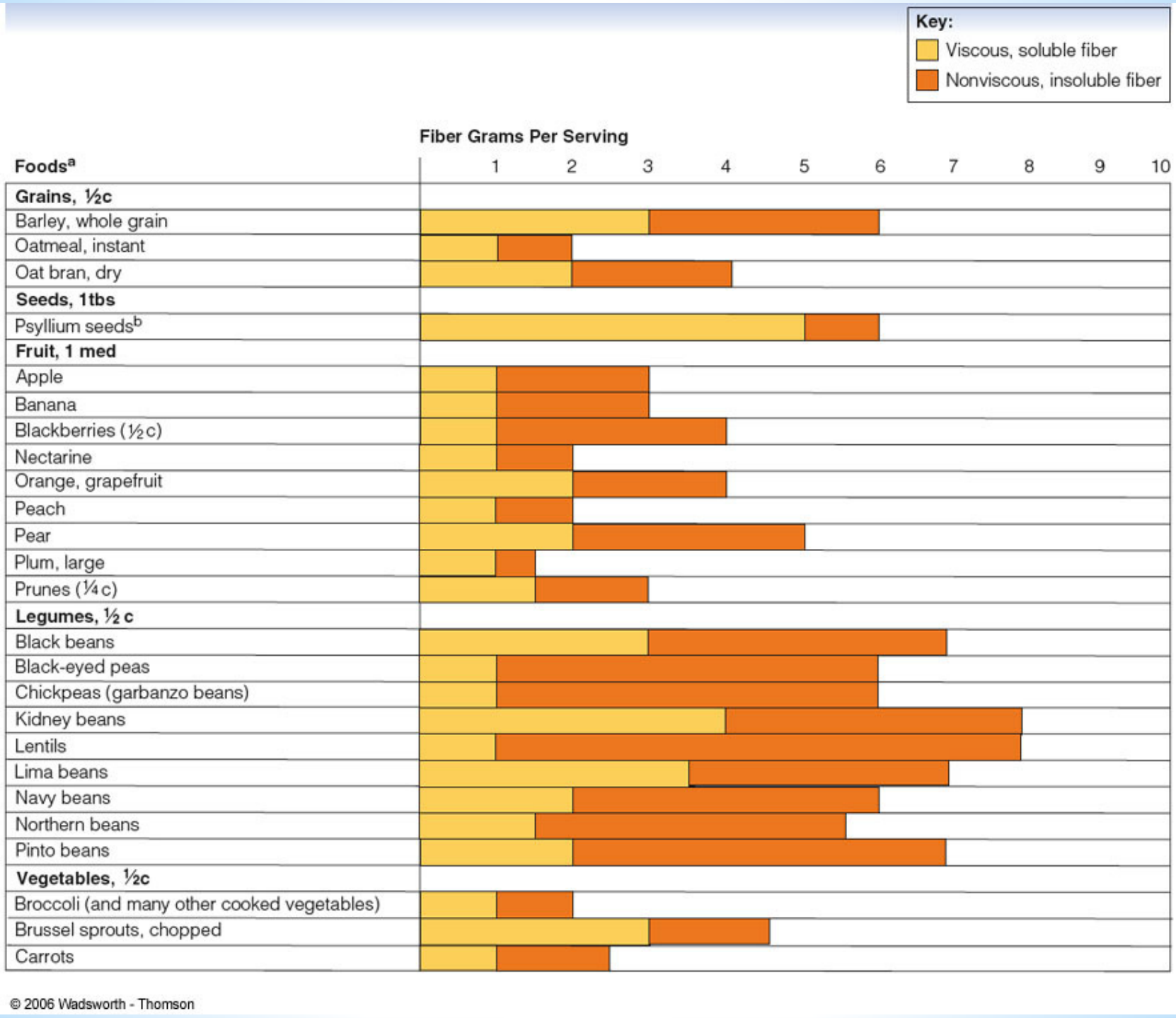
* Obesity
* Heart disease
* Diabetes
* Constipation, hemorrhoids
* Colorectal cancer
* Diverticulosis, diverticulitis

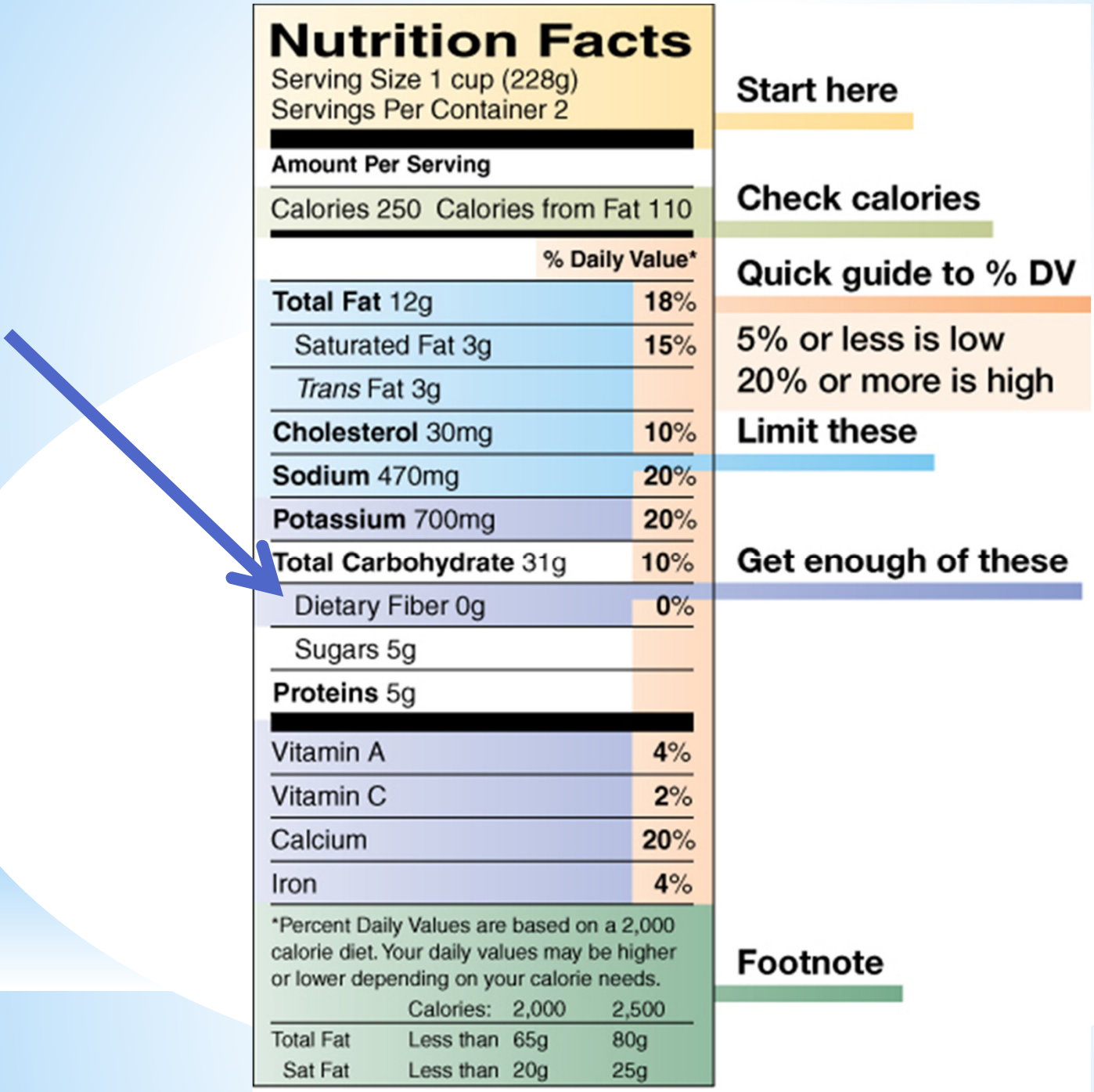


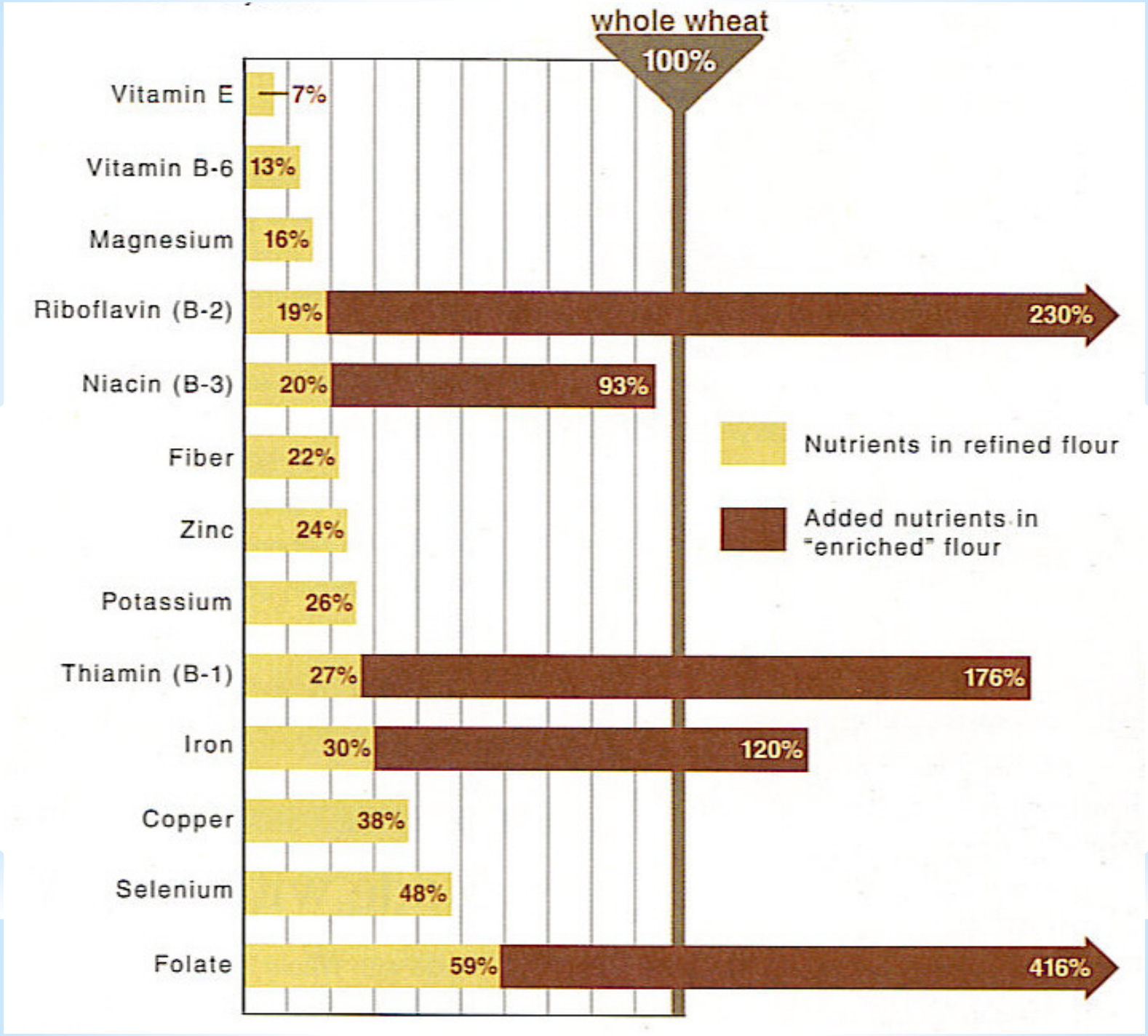
* Fiber's Importance


Grams (g) of Fiber
(Soluble and Insoluble)
Bread, wheat/ white, 1 slice
Pasta, enriched, cooked, ½ cup
Pasta, whole-wheat, cooked, ½ cup
Bread, whole-wheat, 1 slice
Cheerios, 1 cup
Oatmeal, cooked, ½ cup
Rice, brown, cooked, ½ cup
Raisin bran, 1 cup
Broccoli, raw, ½ cup
Carrots, raw, ½ cup
Banana, 1
Orange, 1
Apple, with skin, 1
Strawberries, raw, sliced, 1 cup
Pear, 1
Peanut butter, 2 tsps
Beans, kidney, canned, ½ cup
Men 19 to 50 years
Women 19 to 50 years
0.5/0.5
1/0.5
2.5/0.5
1.5/0.5
3/1
2/1
3.5/1
7/1
2/1
2/1
2/1
3/2
3/1
3/1
2.5/1
2/0.5
8/2
38
25
Grains
Vegetables
Fruits
Meat and Beans
Daily Needs

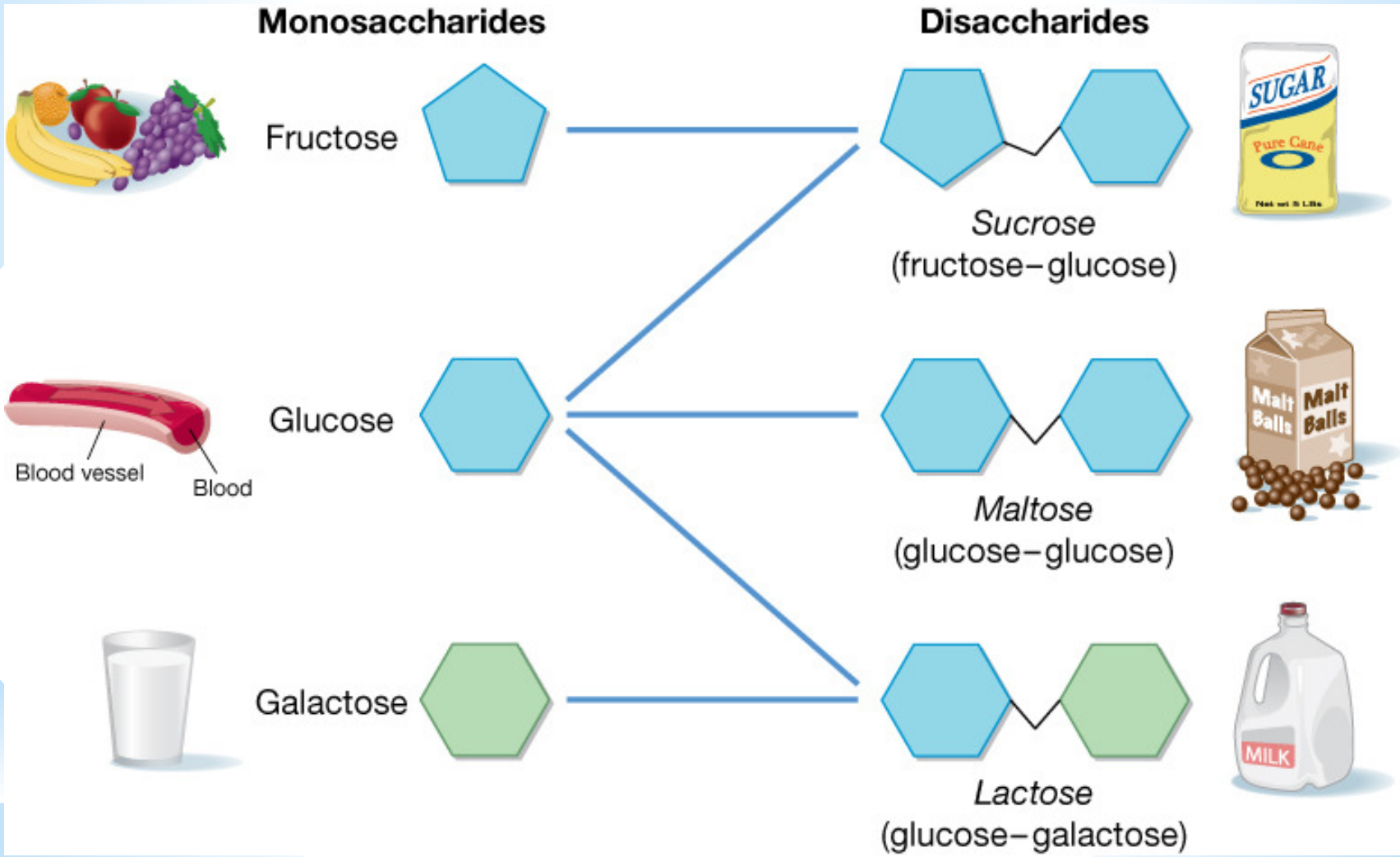
*Fiber




Nutrition Facts
Serving Size 1 cup (228g)
Servings Per Container 2
Amount Per Serving
Calories 250 Calories from Fat 110
% Daily Value*
Total Fat 12g 18%
Saturated Fat 3g 15%
Trans Fat 3g
Cholesterol 30mg 10%
Sodium 470mg 20%
Potassium 700mg 20%
Total Carbohydrate 31g 10%
Dietary Fiber 0g 0%
Sugars 5g
Proteins 5g
Vitamin A 4%
Vitamin C 2%
Calcium 20%
Iron 4%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.
Calories: 2,000 2,500
Total Fat Less than 65g 80g
Sat Fat Less than 20g 25g
Start here
Check calories
Quick guide to % DV
5% or less is low
20% or more is high
Limit these
Get enough of these
Footnote


whole wheat
100%
Vitamin E
7%
Vitamin B-6
13%
Magnesium
16%
Riboflavin (B-2)
19%
230%
Niacin (B-3)
20%
93%
Fiber
22%
Zinc
24%
Potassium
26%
Thiamin (B-1)
27%
176%
Iron
30%
120%
Copper
38%
Selenium
48%
Folate
59%
416%
Nutrients in refined flour
Added nutrients in "enriched" flour

*Sugar


Monosaccharides
Disaccharides
Fructose
Glucose
Galactose
Blood vessel
Blood
Sucrose
(fructose–glucose)
Maltose
(glucose–glucose)
Lactose
(glucose–galactose)
SUGAR
Pure Cane
Malt Balls
Malt Balls
MILK

*Sugar Substitutes

* Sugar alcohols: sorbitol, mannitol, xylitol
* Saccharin (Sweet'N Low): 200-700% sweeter
* Aspartame (Nutrasweet, Equal): 200% sweeter
* Sucralose (Splenda): 600% sweeter
* Acesulfame-K (Sunette): 200% sweeter
* Neotame: 7,000-13,000% sweeter
* Rebaudioside A (Truvia): 200% sweeter

*Alcohol

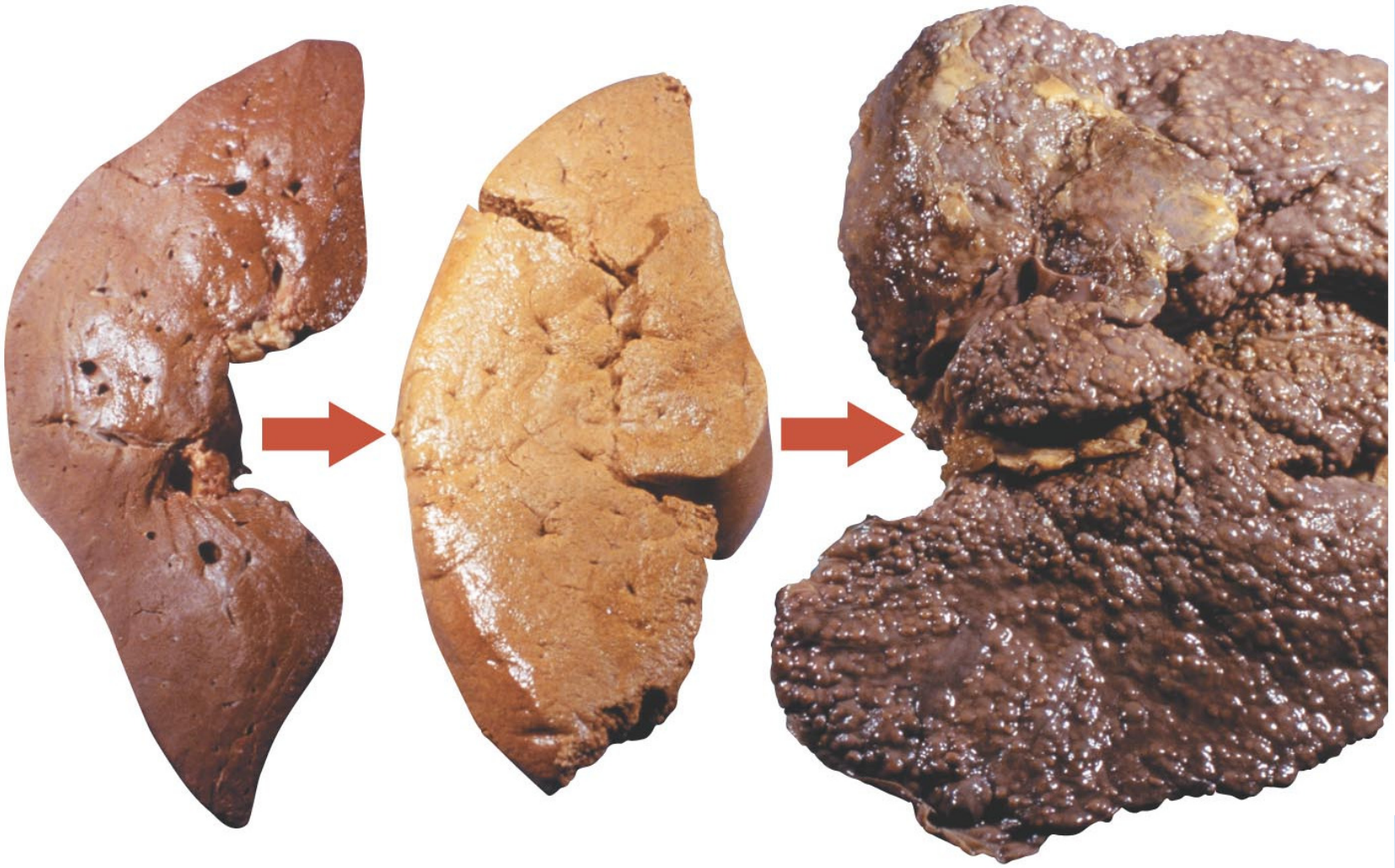
* Moderate consumption may reduce heart disease
  * Benefits only shown in women ≥55 years old and men ≥45 years old
* Moderate alcohol consumption
  * One drink a day for women
  * Two for men

* 12 oz beer
* 1 ½ oz liquor
* 5 oz wine

How Can Alcohol Be Harmful?

- Disrupts sleep
- Hangovers
- Diuretic; dehydration, electrolyte imbalances
- Hormone interactions
- Weight gain; increases abdominal fat
- Interfere with nutrient absorption
- Increase risk of esophagitis, esophageal/oral/throat cancers, gastritis, stomach ulcers, pancreatitis, hypertension, heart damage, alcohol liver disease

* Alcoholic Liver Disease Stages



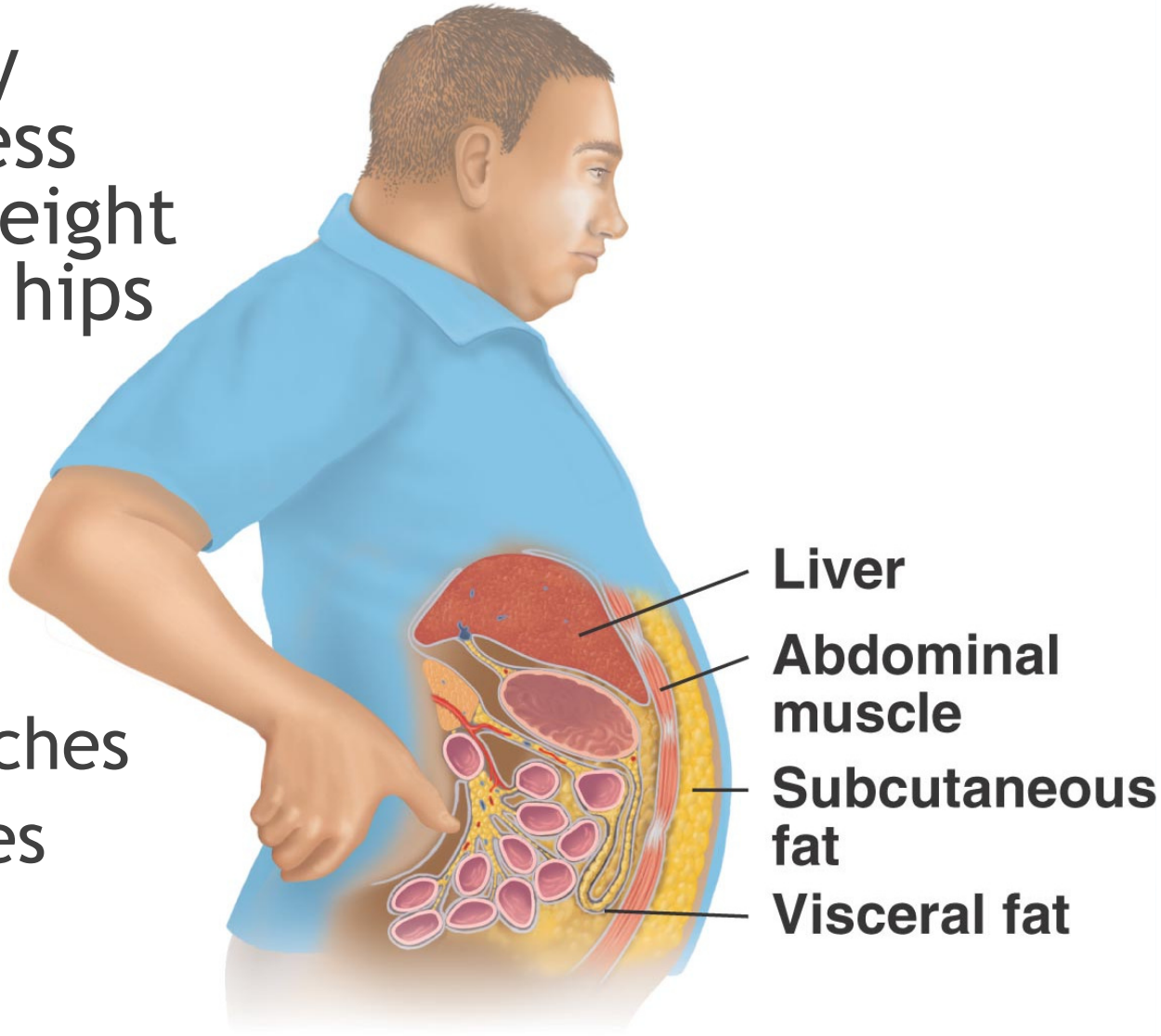
Normal liver

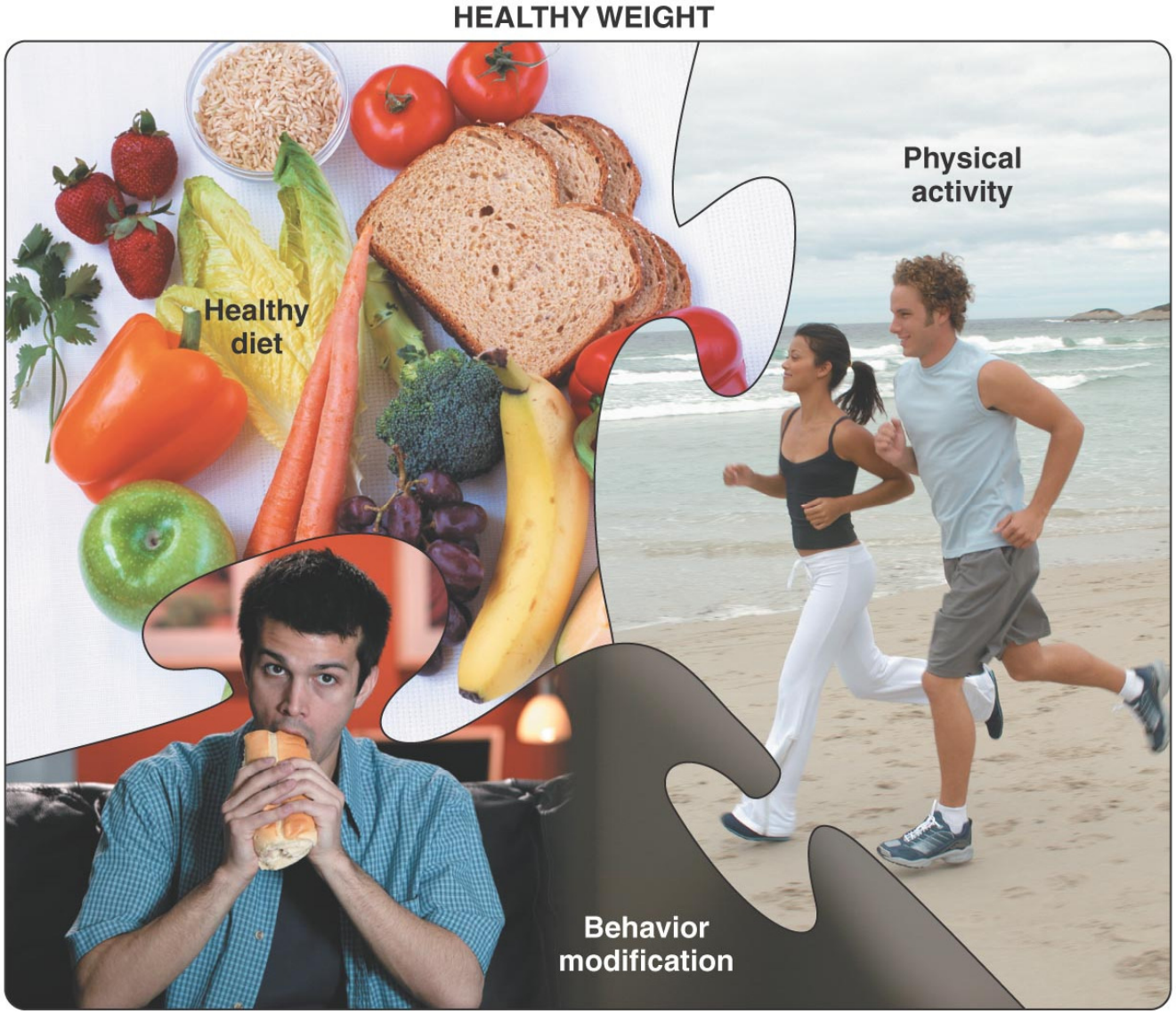
Fatty liver
A fatty liver can occur after just a few days of overconsumption.

Cirrhosis
By the cirrhosis stage, permanent damage is done and scar tissue has developed.

* Central obesity (visceral fat) less healthy than weight carried around hips and thighs

* Measure waist circumference
  * Women >35 inches
  * Men > 40 inches



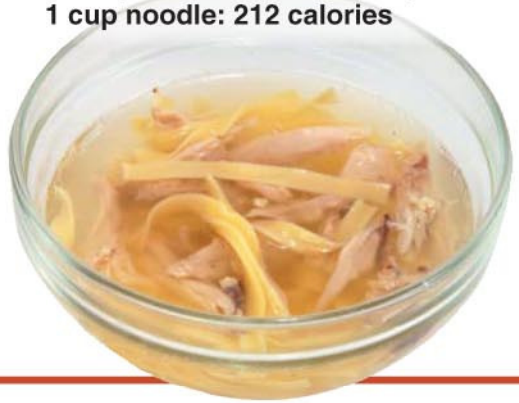


*Long-Term Weight Loss Puzzle

*Adding Volume to Your Meals

Change low-volume...

¾ cup chicken broth: 29 calories
½ cup chicken (white meat): 106 calories
1 cup noodle: 212 calories



347 total calories

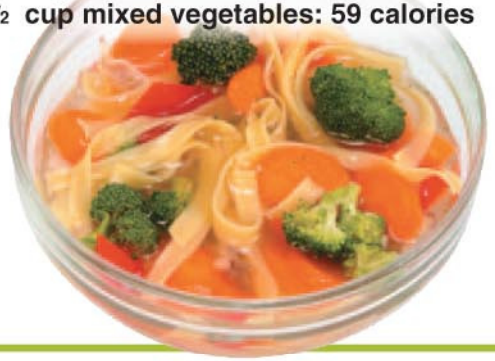
2 slices whole wheat bread: 138 calories
4 oz ham: 125 calories
2 oz American cheese: 213 calories

476 total calories

...to high volume

¾ cup chicken broth: 29 calories
½ cup chicken (white meat): 106 calories
½ cup noodles: 106 calories
½ cup mixed vegetables: 59 calories

300 total calories



2 slices whole wheat bread: 138 calories
2 oz ham: 63 calories
1 oz American cheese: 106 calories
2 slices tomato: 7 calories
2 leaves Romaine lettuce: 10 calories

324 total calories

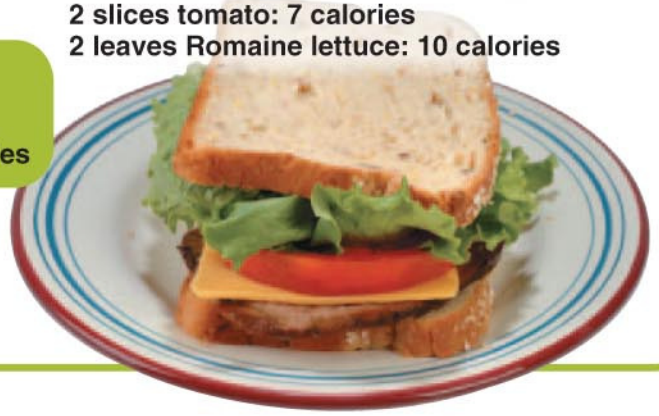


Table 10.3 The Energy Density of Foods

Low

These foods provide 0.7 to 1.5 calories per gram and are high in water and fiber. Examples include most vegetables and fruits—tomatoes, cantaloupe, strawberries, broccoli, cauliflower—as well as broth-based soups, fat-free yogurt, and cottage cheese.

Medium

These foods have 1.5 to 4 calories per gram and contain less water. They include bagels, hard-cooked eggs, dried fruits, lean sirloin steak, hummus, whole-wheat bread, and part-skim mozzarella cheese.

High

These foods provide 4 to 9 calories per gram, are low in moisture, and include chips, cookies, crackers, cakes, pastries, butter, oil, and bacon.

Source: Adapted from the Centers for Disease Control and Prevention, "Can Eating Fruits and Vegetables Help People to Manage Their Weight?" 2005. Available at www.cdc.gov/nccdphp/dnpa/nutrition/pdf/rtp_practitioner_10_07.pdf. Accessed March 2010.

*The Volume of Food You Eat

Low-volume, high-calorie

16 oz Dunkin Donuts Coffee Coolata® with cream: 350 calories

460 total calories

Dunkin Donuts chocolate chunk cookie: 110 calories

Pizza Hut Pepperoni Lover's® Pizza
2 slices, large pizza: 570 calories

890 total calories

Cheese breadstick
320 calories

High-volume, low-calorie

Pop Secret Snack popcorn, 94% fat free, butter: 110 calories

180 total calories

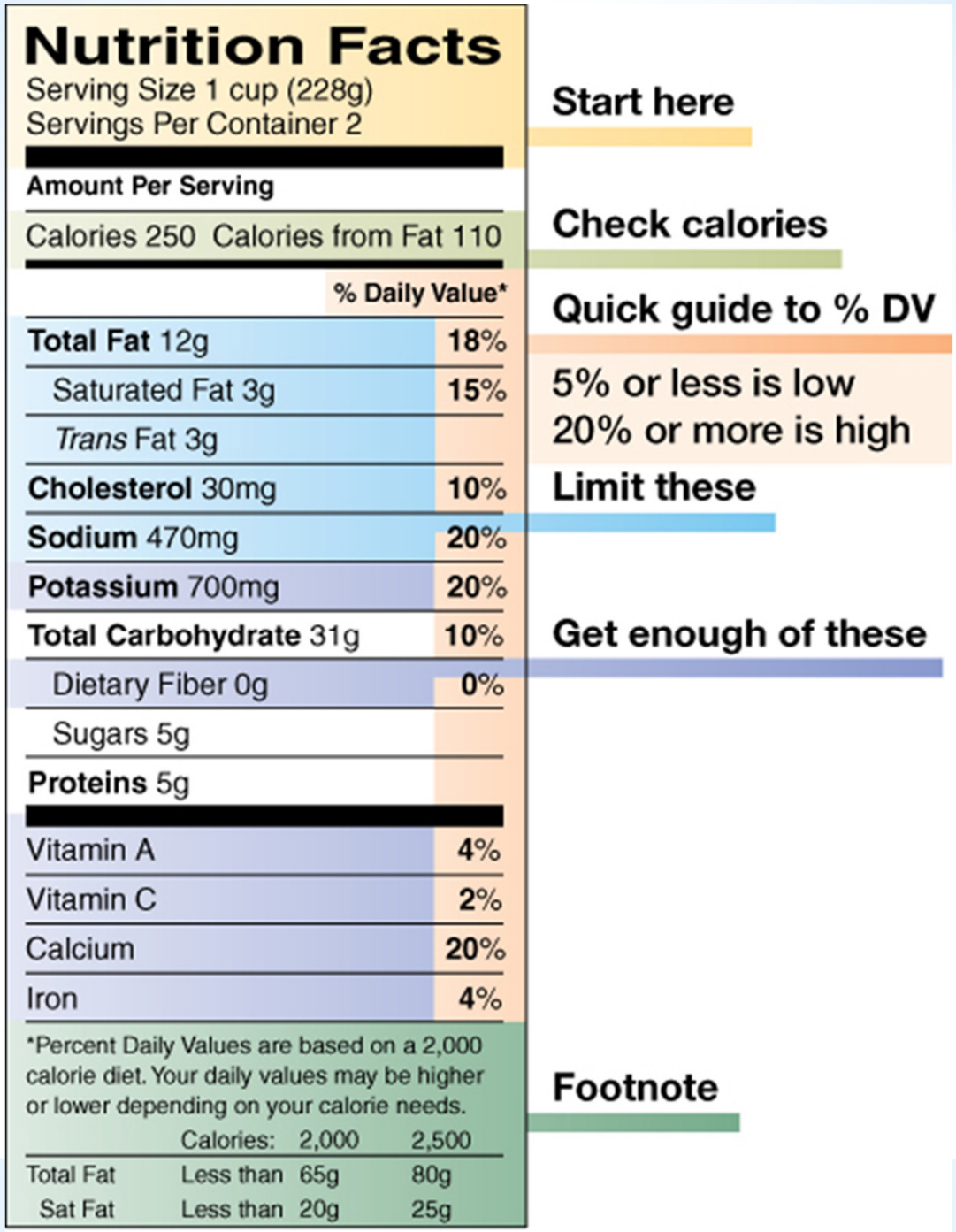
16 oz Dunkin Donuts Hot Latte Lite made with skim milk: 70 calories

Pizza Hut Veggie Lover's® Pizza
3 slices, large pizza: 610 calories

676 total calories

1 cup Romaine lettuce: 8 calories
½ cup cherry tomatoes: 13 calories
½ cup sliced cucumbers: 7 calories
1 tsp light ranch dressing: 38 calories

* Making Sense of Nutrition Facts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Dietary Fiber 0g 0%
Sugars 5g
Proteins 5g
Vitamin A 4%
Vitamin C 2%
Calcium 20%
Iron 4%
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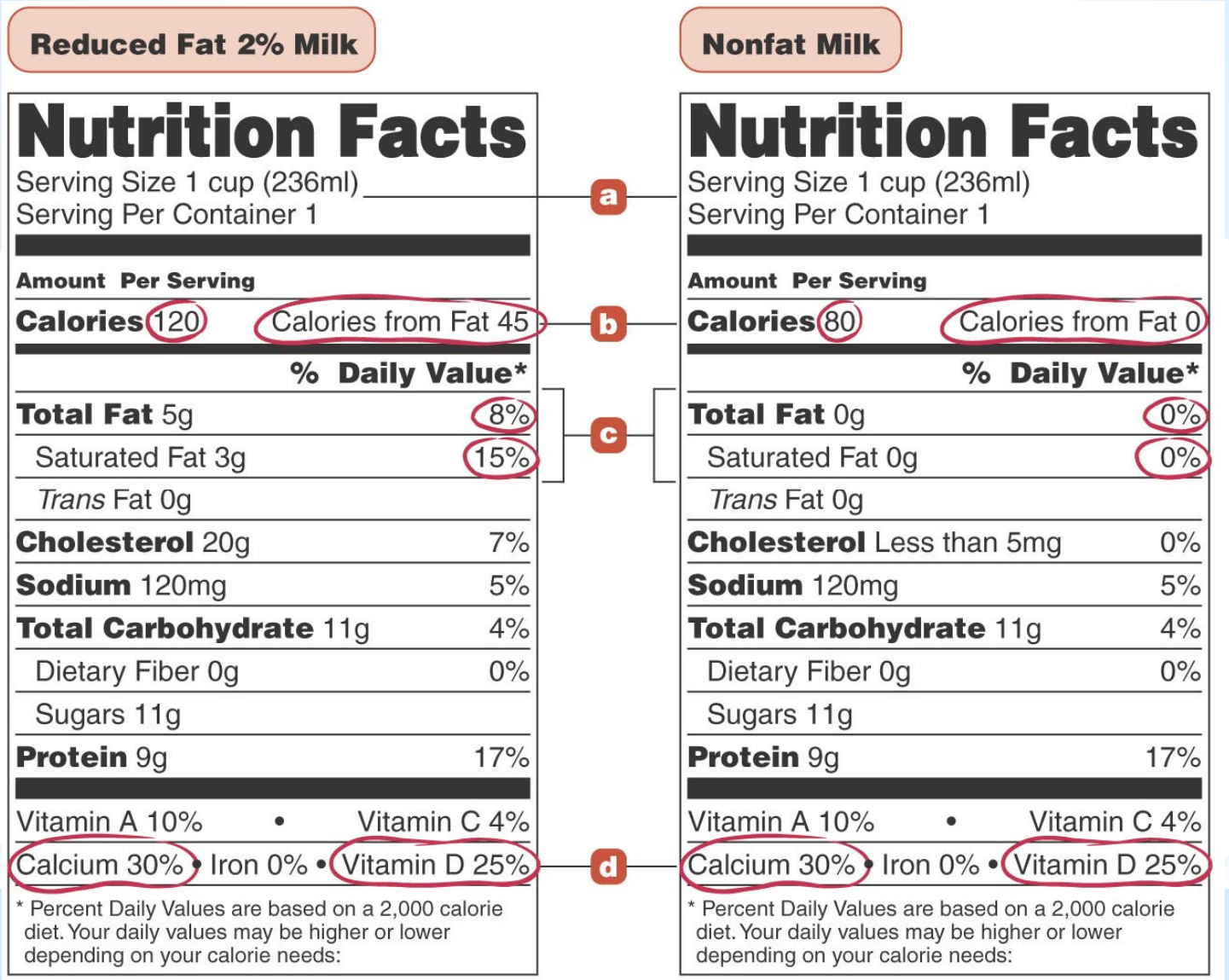
Sat Fat Less than 20g 25g
Start here
Check calories
Quick guide to % DV
5% or less is low
20% or more is high
Limit these
Get enough of these
Footnote

*Comparing Milk



Which is the Better Choice?

Questions???

Thank you!

*Compare the Alternatives (1 cup)

	Skim Milk	Almond Milk	Unsw. Alm Milk	Soy Milk	Rice Milk	Coconut Milk
Calories	83	60	30	100	120	80
Fat (g)	0	2.5	2.5	3.5	2.5	5
Sat Fat (g)	0	0	0	.5	0	5
Sodium (mg)	120	150	150	120	100	30
Carb (g)	11	8	1	8	23	7
Fiber (g)	0	1	1	1	0	0
Sugars (g)	11	7	0	6	10	6
Protein (g)	8.3	1	1	6	1	1
Calcium (mg)	306	450	450	450	300	450
Vit D (IU)	100	100	100	120	100	100

*Compare the Ingredients

Skim Milk	Grade A low fat milk, vitamin A palmitate, vitamin D3.
Almond Milk	All Natural Almondmilk (Filtered Water, Almonds), All Natural Evaporated Cane Juice, Calcium Carbonate, Sea Salt, Locust Bean Gum, Sunflower Lecithin, Gellan Gum, d-alpha-Tocopherol (Natural Vitamin E), Zinc Gluconate, Vitamin A Palmitate, Riboflavin (B2), Vitamin B12, Vitamin D2.
Unsweetened Almond Milk	All Natural Almondmilk (Filtered Water, Almonds), Calcium Carbonate, Sea Salt, Locust Bean Gum, Sunflower Lecithin, Gellan Gum, Natural Flavor, d-alpha-Tocopherol (Natural Vitamin E), Zinc Gluconate, Vitamin A Palmitate, Riboflavin (B2), Vitamin B12, Vitamin D2.
Soy Milk	All Natural Soymilk (Filtered Water, Whole Soybeans), All Natural Evaporated Cane Juice, Calcium Carbonate, Sea Salt, Natural Flavors, Carrageenan, Vitamin A Palmitate, Vitamin D2, Riboflavin (B2), Vitamin B12.
Rice Milk	Filtered Water, Organic Brown Rice (Partially Milled), Organic Expeller Pressed Safflower And/Or Canola Oil, Tricalcium Phosphate, Sea Salt, Vitamin A Palmitate, Vitamin D2, Vitamin B12.
Coconut Milk	All Natural Coconut Milk (Filtered Water, Coconut Cream), All Natural Evaporated Cane Juice, Calcium Carbonate, Natural Flavor, Guar Gum, Carrageenan, Cyanocobalamin (Vitamin B12), Vitamin A Palmitate, Vitamin D2.