

Eating for a Healthy Heart

Purpose

This section is intended to provide information on sodium, types of fats, fiber found in foods, and heart healthy food selections.

Objectives

At the end of this section, you will be able to:

- Identify three foods/oils for each fat category.
- Discuss how the two types of fiber work in the body.
- List three foods you currently eat from each of the two fiber groups.
- Identify three high-sodium foods you currently eat.
- Name one herb/spice you would like to try.

Outline

Types of blood fats/lipids	G-2
Types of dietary fats	G-6
Major sources of cholesterol and fats	G-9
Plant sterols and stanols	G-10
Limiting fats in your meal plan	G-10
Fiber in the diet	G-11
Sodium in the diet	G-14
Alternative seasonings	G-16



*The American Diabetes Association Recognizes this education service as meeting the National Standards for Diabetes Self-Management Education and Support.

These materials were adapted from Life with Diabetes: A Series of Teaching Outlines by the Michigan Diabetes Research and Training Center, 5th Edition. American Diabetes Association, 2014.

Types of blood fats/lipids

Total cholesterol level

- Certain amount is needed by the body
- Goal is 200 mg/dl (milligrams per deciliter) or less
- Fasting lipid profile recommended annually for people with diabetes

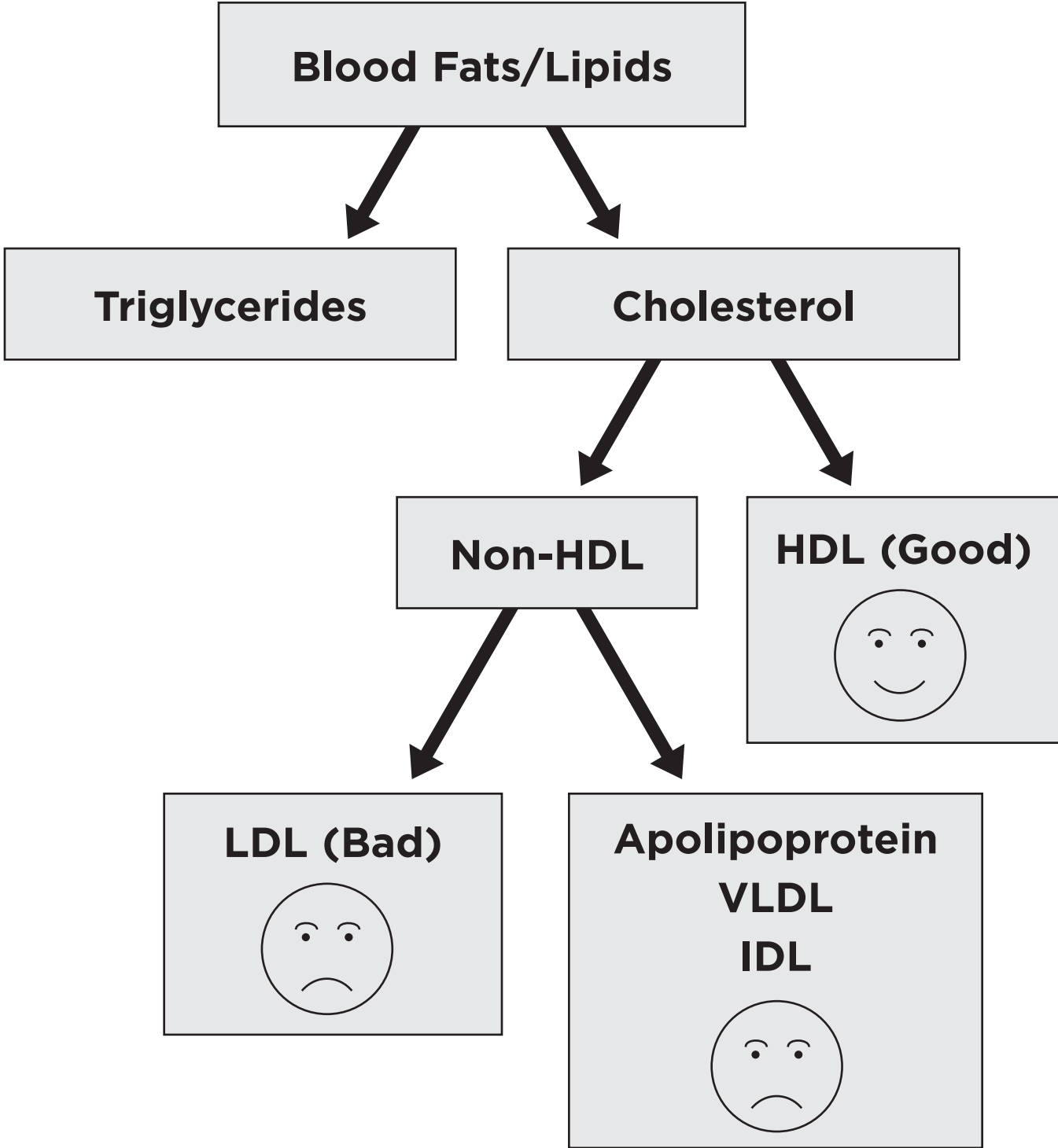
High density lipoproteins (HDL)

- Fat that helps remove cholesterol from the blood
- “Good” cholesterol
- Recommended level: for men – 40 mg/dl or more, for women – 50 mg/dl or more
- Levels above 60 mg/dl considered protective
- May increase with exercise and weight reduction

Non-HDL cholesterol

- Group of fats that can cause cardiovascular (heart) disease
- Includes LDL cholesterol, triglycerides, and other fat containing particles known as apolipoproteins (VLDL, IDL)
- Secondary indicator to determine risk for heart disease, especially when LDL cholesterol is near normal
- To calculate: Total cholesterol – HDL cholesterol = non-HDL cholesterol
- Recommended level: Less than 130 mg/dl

Type of blood fats/lipids



Low density lipoproteins (LDL)

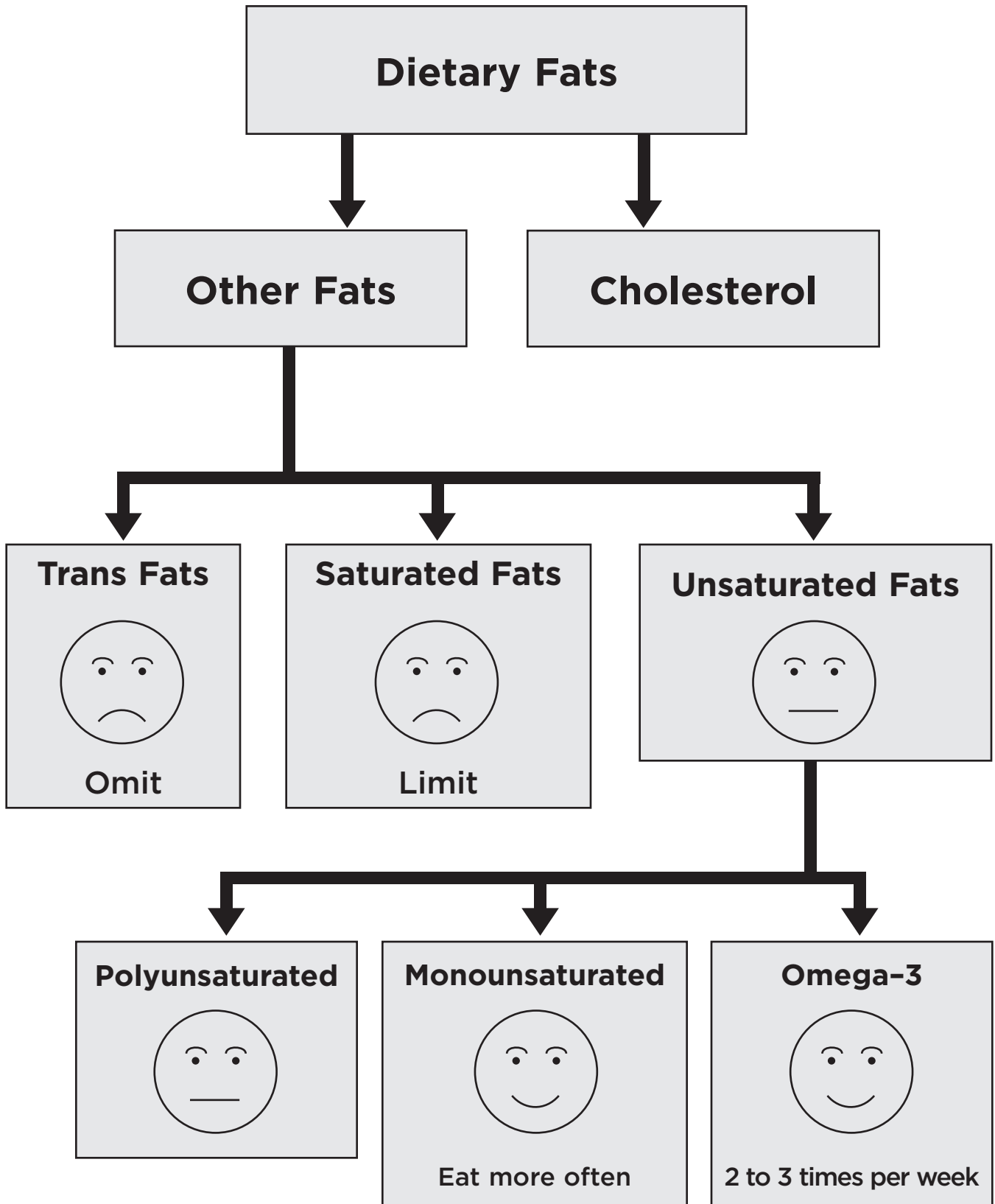
- Fat that builds up in your blood vessels
- Slows or blocks blood flow
- “Bad” or lousy cholesterol
- Primary indicator of heart disease in people with diabetes
- Recommended level for people with diabetes is 100 mg/dl or less
- LDL of 70 mg or less is recommended for those at very high risk
- LDL level affected by diet (especially saturated fat in the diet)

Apolipoproteins (VLDL, IDL)

- Includes very low density lipoproteins (VLDL) and intermediate density lipoproteins (IDL)
- Main carriers of triglycerides, also helps carry LDL
- When saturated with triglycerides becomes smaller in size
- Dense, small sized lipid; rich in triglycerides and LDL, makes it easier to block blood vessels

Triglycerides

- Most body fat stored as triglycerides
- High levels are linked to heart disease
- Tends to be high when blood glucose is high
- Tends to be high when HDL is low
- Recommended level is less than 150 mg/dl
- Levels easily affected by diet containing simple sugars, high-fat, and alcohol



Types of dietary fats

Other fats

- Provide texture and flavor to foods
- Provide a sense of fullness
- Transports fat-soluble vitamins (Vitamin A, D, E, and K) and provide essential fatty acids
- High in calories
- Contributes to excess weight
- Individual required amounts depend on weight, blood glucose, and blood lipid goals; dietitian can help determine your requirements
- For most people 50 to 70 grams daily is reasonable level
- Goal for most people is 25 to 35% of total calorie needs come from fats

Saturated fat

- Increases blood cholesterol levels
- Solid at room temperature
- Recommend limiting intake to 5 - 6% or less of total calories
- All animal products (meat and dairy) contain saturated fat; the amount of saturated fat depends on:
 - The amount of visible fat; select leaner cuts of meat
 - Whether poultry skin is on or removed; less saturated fat if poultry skin is removed
 - The total fat content of dairy products; the higher the total fat content, the higher the saturated fat content
- Some vegetable products are high in saturated fat (coconut oil and vegetable shortenings):
 - Many processed foods contain these types of fats
 - Check the nutrition facts label for the amount of saturated fat in a serving

Trans fats

As of June 2018, trans fats have been banned from food produced in the United States.

Unsaturated fat

- Lowers blood cholesterol
- Liquid at room temperature
- Either polyunsaturated or monounsaturated fats

Polyunsaturated fat lowers LDL cholesterol levels and provides linoleic acid, an essential fatty acid. Polyunsaturated fat is found in sunflower oil, corn oil, soybean oil, sesame oil, tub margarine, walnuts, and sesame seeds.

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Monounsaturated fat lowers LDL without lowering HDL and is found in olive oil, canola oil, and especially nuts, almonds, pecans, and cashews.

Omega 3 fatty acids

- Specific type of fatty acid
- Decreases blood clot formation
- Lowers triglyceride levels
- Improves health of the arteries
- Lowers blood pressure

Food sources of Omega 3 Fatty Acids: (2 to 3 servings a week)

- Fatty fish such as salmon, tuna, halibut, trout, sardines
- Canola oil
- Walnuts
- Flax seed or flax seed oil

Flax seed is available whole seed or ground. If you buy whole seed it must be ground (use coffee grinder) and used within 30 days. Store flax in the refrigerator, in an opaque container, to maintain freshness. Use 1 to 2 tablespoons of ground flax seeds daily. Add it to yogurt, cereal, cooked veggies, applesauce, or mix with water and drink.

To avoid constipation, drink plenty of water throughout the day. Never take medicine at the same time as high fiber foods, such as flaxseed, as they can affect its absorption.

Flaxseed oil can be purchased as a liquid or capsules and like flaxseed must be stored in the refrigerator. Flaxseed oil does not contain fiber.

Supplemental sources

- Check with your health care provider before using.
- Select gel capsules or those with an enteric coating.
- Take fish oil supplements with food.
- 1,000 mg daily of combined DHA and EPA is recommended.
- Check label as to number of capsules equal to 1,000 mg.
- The fewer the capsules in a serving, the more purified the DHA and EPA oils.



Fat recommendations

Daily Calories	Total Fat 25 - 35% calories grams/day	Saturated Fat 5 - 6% calories grams/day
1,200	33 - 47 g/d	9 g/d
1,400	39 - 54 g/d	11 g/d
1,600	44 - 62 g/d	12 g/d
1,800	50 - 70 g/d	14 g/d
2,000	56 - 78 g/d	16 g/d

Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container About 8

Amount Per Serving

Calories 230 Calories from Fat 72

% Daily Value*

Total Fat 8g **12%**

Saturated Fat 1g **5%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 160mg **7%**

Total Carbohydrate 37g **12%**

Dietary Fiber 4g **16%**

Sugars 1g

Protein 3g

Vitamin A 10%

Vitamin C 8%

Calcium 20%

Iron 45%

* Percent Daily Values are based on a 2,000 calorie diet.
Your daily value 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
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Nutrition Facts

8 servings per container
Serving size **2/3 cup (55g)**

Amount per serving

Calories **230**

% Daily Value*

Total Fat 8g **12%**

Saturated Fat 1g **5%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 160mg **7%**

Total Carbohydrate 37g **13%**

Dietary Fiber 4g **14%**

Total Sugars 12g

Includes 10g Added Sugars **20%**

Protein 3g

Vitamin D 2mcg 10%

Calcium 260mg 20%

Iron 8mg 45%

Potassium 235mg 6%

* The % Daily Value (DV) tells you how much a nutrient in
a serving of food contributes to a daily diet. 2,000 calories
a day is used for general nutrition advice.

Major sources of cholesterol and fats

Saturated Fat (Limit these)	Unsaturated Fat		
	Polyunsaturated Fats	Omega 3 Fatty Acids	Monounsaturated Fats (Eat more often)
Bacon and bacon grease	Safflower oil	Salmon	Avocados
Butter	Sunflower oil	Mackerel	Canola oil
Cocoa butter	Corn oil	Albacore tuna	Olive oil
Chocolate	Soybean oil	Herring	Peanut oil
Coconut oil	Sesame oil	Trout	Olives
Lard	Cottonseed oil	Sardines	Peanut butter
Meat fat	Margarine, tub	Walnuts	Almonds
Sausage	Mayonnaise	Canola oil	Cashews
Hot dogs	Salad dressings	Flaxseed	Hazelnuts
Bratwurst	Walnuts	Tofu	Macadamias
Prime rib	Sesame seeds	Soybeans	Peanuts
Palm oil			Pistachios
Solid shortening			Pecans
Sour cream			
Cream cheese			
Cheese			
Ice cream			
Egg yolks			
Whole milk			
2% milk			
Poultry with skin			

Plant sterols and stanols

Plant sterols and stanols are natural compounds found only in food. It is recommended we eat 2 grams daily. Because they have a chemical structure similar to cholesterol, they compete with it for absorption in the gut, thereby lowering your LDL cholesterol level.

Small amounts occur in:

- Vegetables
- Nuts
- Seeds
- Fruits
- Legumes
- Cereals

Foods with added plant sterols and stanols are available, check labels.

Examples include some brands of:

- Some margarines. Examples include Smart Balance® and Brummel & Brown® yogurt butter.
- Juices
- Yogurt
- Cooking oils
- Granola bars
- Salad dressings
- Milk

Limiting fats in your meal plan

To eat 25 to 35% of calories from fat.

- Choose lean meat, fish, or skinless poultry up to 4 to 6 ounces a day.
- Drink skim or 1% milk; choose fat-free dairy products.
- When buying commercially prepared snack foods, choose baked instead of fried products.
- Use small amounts of unsaturated oil for food preparation and cooking.
- Add more fruits, vegetables, and whole grain foods into your diet.

Fiber in the diet

- Fiber is the indigestible part of plants.
- Fiber provides bulk without calories.
- Fiber cannot be digested by humans and can not raise blood glucose levels.
- 20 to 38 grams of fiber is recommended daily.
- 14 grams of fiber is recommended for each 1,000 calories of food eaten.
- Gradually increase your fiber intake.
- Drink plenty of liquids; recommend 6 to 8 glasses daily (total 48 to 64 oz).

There are two types of fiber: soluble and insoluble.

Soluble fiber

- Helps reduce LDL cholesterol
- Slows passage of food through the digestive system
- Works like gelatin to absorb water from the gut
- Found in raw vegetables, barley, brown rice, fresh fruit like apples, or citrus fruit like oranges, dry beans and lentils, oatmeal, rye, and oat bran

Insoluble fiber

- Helps prevent constipation by increasing bulk
- Found in whole grain bread and cereals, wheat bran, fresh fruit, rutabaga, turnips, and cabbage family vegetables

Sources of fiber

Check the nutrition facts label for fiber content. A general recommendation is 14 grams of fiber per 1,000 calories of food or about 20 to 35 grams of fiber daily.

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Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	12%
Dietary Fiber 4g	16%
Sugars 1g	
Protein 3g	
Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%
* Percent Daily Values are based on a 2,000 calorie diet. Your daily value may be higher or lower depending on your calorie needs:	
	Calories 2,000 2,500
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Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
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Soluble Fiber (To help lower blood fats)	Insoluble Fiber (To help prevent constipation)
<ul style="list-style-type: none"> • Barley • Black beans • Black-eyed peas • Brown rice • Dried peas • Fruits (apricots, apples, blackberries, grapefruit, oranges, pineapple, strawberries) • Kidney beans • Lentils • Oat and rye crackers • Oat bran, rye, pumpernickel breads • Oat, oat bran, rice bran cereals • Pinto beans • Soy pasta • Vegetables (broccoli, parsnips, peas, potatoes, sweet potatoes) 	<ul style="list-style-type: none"> • Bran muffins • Cereal 100% bran • Dried beans • Fruit (apples, apricots, bananas, blackberries, blueberries, pears, raspberries) • Nuts • Rye bread • Seeds • Vegetables (asparagus, carrots, cauliflower, corn, peas) • Whole grain bread, bagels, buns • Whole grain crackers • Whole grain pasta

Sodium in the diet

- About half the people with diabetes have high blood pressure.
- High blood pressure increases your risk for heart and blood vessel disease.
- Reducing sodium (salt) may reduce your blood pressure.
- Sodium recommendations:
 - General recommendations for persons with diabetes are 2,300 mg or less per day.
 - If persons with diabetes also have high blood pressure, recommendations are 1,500 mg or less per day.
- Your daily minimum sodium need is 500 mg, but it is easy to meet your daily minimum requirement as sodium occurs naturally in food and water.
 - $\frac{1}{4}$ teaspoon of salt = 575 mg sodium
- A wide variety of salt substitutes and herbal blends are available; check your favorite grocery store.
- Salt substitutes contain potassium.
 - Check with your doctor or pharmacist before using a salt substitute.
 - Your doctor may limit your intake of potassium.
- Seasonings, spices, and herbs are an alternative to salt. "See the "Alternative Seasonings" table on G-16"



High-sodium foods

Seasonings/Sauces/Condiments	
Salt	Packaged seasoning mixes
Seasoned salts	Gravy mixes
Garlic salt	Meat/poultry coating
Onion salt	Olives
Celery salt	Pickles
Meat tenderizer	Soy sauce
MSG (monosodium glutamate)	Worcestershire sauce
Soups	
Bouillon cubes	Soup starters
Broth	Canned soup
Soup mixes	
Miscellaneous	
Ramen noodles	Boxed entrees/side dishes: potato, rice, pasta
Frozen entrees (TV dinners)	Chips: potato, corn, tortilla
Pork and beans	Pretzels
Meat and Substitutes	
Processed cheese	Cheese spreads
Bacon	Canadian bacon
Ham	Herring
Hot dogs, frankfurters	Sausages
Bratwurst	Corned beef
Luncheon meats	Salt pork
Smoked fish	Sardines
Vegetables	
Tomato juice	Vegetable juice
Sauerkraut	

Alternative seasonings

Herbs/Spices	Ways to use alternative seasonings
Basil	Egg, fish, tomato sauce, vegetables
Bay leaves	Soups, stews, boiled beef or pork
Caraway seeds	Roast pork, vegetables of the cabbage family, carrots, onions, celery
Celery powder	Soups, salads, deviled eggs
Curry powder	Chicken, lamb, eggs, rice
Dill	Salads, deviled eggs, chicken, fish
Fennel	Pork, poultry, seafood dishes
Garlic	Meats, stews, soups, salads
Nutmeg	Apple dishes, vegetables
Onion powder	Meat, soups, stews, casseroles
Oregano	Italian dishes, stews, soups
Paprika	For color; also aids browning of roast chicken or turkey
Parsley	Eggs, soups, stews, vegetables
Pepper, black	Salads, fish, meat, eggs, vegetables
Pepper, red	Meats, sauces, gravies, eggs, fish, vegetable dishes, stews (this is a strong spice)
Rosemary	Potatoes, peas, squash, lamb, veal, duck, pork, stews, salmon
Sage	Stuffing, poultry, pork, lamb, veal
Thyme	Italian dishes, meat, vegetables

