



HEART HEALTH

Cardiovascular disease is the term for several diseases which include high blood pressure, stroke, **Coronary Heart Disease (CHD)** and others. **For this lesson we will address CHD**, the leading cause of death in Americans—and Kentuckians. The best way to prevent CHD is through a healthy diet and other positive lifestyle behaviors.

Risk Factors

Recent studies have shown that Kentuckians have a high incidence of some risk factors:

- smoking
- obesity
- incidence of diabetes
- high blood pressure
- lack of physical activity
- lack of monitoring blood cholesterol levels
- low intake of vegetables and fruits



Obviously, we can control some of these factors; others, we cannot. These include age and family history.

All these risk factors in some way contribute to elevated **blood lipids**—mainly as **triglycerides** and **cholesterol**.

Blood Lipids

Blood lipids are fatty substances in the blood, including triglycerides, lipoproteins and cholesterol. Measuring blood lipids is the best predictor for risk of CHD. In general it is healthy to have:

- ☞ a total cholesterol level of 200 mg/dl or less;
- ☞ an HDL level of at least 25 percent of total cholesterol;
- ☞ triglyceride level of 200 mg/dl or less.

If your blood lipid levels are within normal range, you can follow dietary recommendations in this lesson to keep them normal. If your levels are abnormal, your physician and a registered dietitian should help you to bring them into normal range by dietary changes, exercise, medications, and control of contributing conditions or diseases. Lowering blood cholesterol by one percent can give you a two percent reduction in risk of CHD.

Dietary Factors

Most folks are aware that too much fat and cholesterol in their diets is not desirable for a healthy heart. Let's look at these in more depth and also consider other dietary components by following the Dietary Guidelines for Americans. The 2000 Dietary Guidelines for Americans have been updated to cover the ABC's for health.

A = Aim for fitness

B = Build a healthy base

C = Choose sensibly

The ten guidelines for achieving the ABC's are intended for healthy children (age 2 years and older) and adults of any age.

Three ways these Guidelines can help decrease your risk of CHD are by helping you:

- ☛ lose weight if overweight;
- ☛ control high blood pressure; and
- ☛ lower high levels of blood cholesterol.

Dietary Guidelines for Americans

A = Aim for Fitness

- ❶ Aim for a healthy weight.
- ❷ Be physically active each day.

B = Build a Healthy Base

- ❸ Let the Pyramid guide your food choices.
- ❹ Choose a variety of grains daily, especially whole grains.
- ❺ Choose a variety of fruits and vegetables daily.

- ❻ Keep food safe to eat.

C = Choose Sensibly

- ❼ Choose a diet that is low in saturated fat and cholesterol and moderate in total fat.
- ❽ Choose beverages and foods to moderate your intake of sugars.
- ❾ Choose and prepare foods with less salt.
- ❿ If you drink alcoholic beverages, do so in moderation.

Although all ten of these are important, we will focus on numbers ❹, ❺, and ❼. Here's a quick look at the others:

Guideline ❶ is important, since, being overweight can be a risk factor for CHD.

In addition, Guideline ❷ indicates, that a lack of physical activity can lead to CHD by contributing to the occurrence of conditions such as obesity, diabetes and high blood pressure.

Guideline ❸ tells us that different foods contain different nutrients and other healthful substances. No single food can supply all the nutrients in the amounts you need. To make sure that you get all the nutrients you need for health, build a healthy base by using the Food Guide Pyramid as a starting point.

Guideline ❻ tells us that foods that are safe from harmful bacteria, viruses, parasites, and chemical contaminants are vital for healthy eating.

Guideline ❸ tells us to be moderate in sugar

intake. Too much sugar contributes to elevated triglycerides in the blood.

Guideline ❾ tells us to be moderate in sodium use, which may help sodium sensitive people to control high blood pressure.

Guideline ❼: Choose a Diet Low in Fat, Saturated Fat and Cholesterol

Dietary Guideline ❼ tells us to have only 30 percent or fewer of our daily calories from fat. Only 10 percent or fewer of those calories should come from saturated fats, 10 percent from polyunsaturated fats, and 10 percent from monounsaturated fats. The recommendation for cholesterol is to take in no more 300 mg/day from foods.

Saturated Fats

Saturated fats are made of substances including saturated fatty acids (SFA— hereafter we will refer to saturated fats as SFA). SFA, one of the three types of fat we get from foods, is a type of fat that can raise blood cholesterol, increasing our risk for heart disease.

SFA is found naturally in some foods and also in foods processed by hydrogenation, which hardens the fat and makes it more saturated.

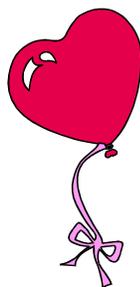
Polyunsaturated Fats

Polyunsaturated fats (PUFA) in general are not harmful to heart health and in fact, can be a positive factor when consumed in moderation.

One type of PUFA in the news is omega-3 fatty acids found in some fish. Although research has not proven that fish oils are needed for heart health, it could be healthy to add fish to your diet—up to three times a week. Those highest in such PUFA include some salmons, lake trout, Atlantic mackerel, and halibut. It is believed that fish oils may increase blood cholesterol but lower triglycerides. Taking fish oil supplements is not recommended for the general public.

Monounsaturated Fats

Monounsaturated fats (MUFA), like PUFA,



are not harmful to heart health when consumed in moderation. Some research suggests that MUFA may be protective against heart disease. This is why the Mediterranean diet, rich in olive oil, may be heart-healthy.

Trans-fatty Acids

Trans-fatty acids are found in animal and plant foods. Recent research suggests that trans-fatty acids may increase the risk for heart disease.

Sources of Fat

Most fats in foods are made of a mixture of SFA, PUFA, and MUFA.

SFA: Food fats that have a high amount of SFA are often solid at room temperature. Some examples:

- ➡ fats from animal sources such as beef, pork, lamb, and poultry skin;
- ➡ fats from whole milk as well as dairy foods made from it, such as butter, cheeses, some yogurts, ice cream;
- ➡ tropical oils, such as coconut and palm oils;
- ➡ other shortenings and margarines hardened through hydrogenation.

PUFA: Food fats with a high amount of PUFA are liquids or soft products and include:

- ➡ soybean, corn, sesame, sunflower and safflower oils.

MUFA: Food fats with a high amount of MUFA are liquids or soft products and include:

- ➡ olive, canola, and peanut oils.

Trans-fatty Acids: Food fats with a high amount of trans-fatty acids include:

- ➡ meats (from naturally occurring chemical changes);
- ➡ dairy products (from naturally occurring chemical changes);
- ➡ hydrogenated oils.

PUFA, MUFA, and trans-fatty acids all may be found in margarines and shortenings which have been partially hydrogenated. Choose liquid oils and margarines and shortenings with “liquid oil” as the first ingredient on the label.

Amount of Fat and Cholesterol

It’s important to be aware of the types of fat

in your diet, but we also need to watch the **amount of total fat** as the dietary guideline indicates. *Keep total calories from fat to 30 percent or less.* Keep in mind that each gram of fat, no matter which type, contains 9 calories. This is over twice as much as our other calorie sources; carbohydrates and proteins each provide about 4 calories per gram.

Cholesterol in foods comes from animal sources only. Additionally, it is produced by our bodies. Since we cannot control what the body makes, we should limit our dietary intake of cholesterol to no more than 300 mg.

Food sources of cholesterol are animal foods:

- ➡ meats, poultry, shellfish;
- ➡ whole milk as well as dairy foods made from it, such as butter, cheeses, some yogurts, ice cream;
- ➡ egg yolks.



Guideline ④: Choose a variety of grains daily, especially whole grains.

Guideline ⑤: Choose a variety of fruits and vegetables daily.

Dietary Guideline ④ and ⑤ focus on fiber in our diets. Dietary fiber, the part of plant foods we cannot digest, is found largely in fruits, vegetables, dried beans and peas, and whole-grain foods. There are two types of fiber in foods, **soluble and insoluble**.

Soluble fiber can contribute to heart health by lowering blood cholesterol. These fibers include pectin (found in oranges, bananas, carrots, apples); gum (found in oats); soy fiber and others found in oats, dried beans, and peas.

Insoluble fiber does not lower cholesterol, but helps the body in other ways, such as in good bowel function. It is found in wheat products such as breads and cereals, wheat bran, and vegetables such as beets, carrots, cabbage, cauliflower and apple skins.

Healthy adults need 20-35 grams of total fiber a day, with at least 30 percent (6-10 grams) from soluble fiber. Most Americans only consume half this much.

Vitamins

Following the Dietary Guidelines, including eating a variety of foods, can provide most vitamins and minerals needed.

B-Vitamins: Specific vitamins related to heart health include some B-vitamins. Vitamins B₆, B₁₂, and folic acid may play a role in preventing heart disease by keeping levels of homocysteine (an amino acid in the body) at the right level.

B-Vitamin	Recommended Daily Amount	Food Sources
B ₆	1.3-1.5mg	fruits & vegetables; grain foods; meats & fish
B ₁₂	2.4µg	dairy foods; meats, poultry & fish
Folic Acid	400µg	fortified ready-to-eat cereal; dark green leafy vegetables; liver; legumes; citrus fruit

Antioxidants: Research suggests there is a relationship of antioxidant vitamins to heart disease. Vitamins C, E and carotene (a form of vitamin A) help prevent the oxidation of lipoproteins. This oxidation contributes to CHD.

One should attempt to get these vitamins through the diet if possible. Food sources of vitamins A and C mainly are from the vegetables and fruits. Vitamin E is found in many foods and is especially high in milk and unsaturated vegetable oils.

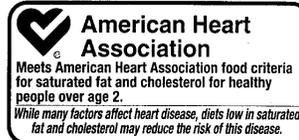
MUFA); Cholesterol; Dietary Fiber, including soluble fiber; and Vitamins B₆, B₁₂, and Folic Acid; Vitamins A, C, E.

Look for foods:

- ♥ lower in total fat;
- ♥ lower in SFA;
- ♥ higher in PUFA and MUFA;

- ♥ lower in cholesterol;
- ♥ higher in dietary fiber;
- ♥ higher in soluble fiber;
- ♥ higher in vitamins B₆, B₁₂ & folic acid.

Cheerios



Excellent source of folic acid.

Nutrition Facts

Serving Size 1 cup (30g)
Servings Per Container About 14

Amount Per Serving	Cheerios	with ½ cup skim milk
Calories	110	150
Calories from Fat	15	20
% Daily Value**		
Total Fat 2g [†]	3%	3%
Saturated Fat 0g	0%	3%
Polysaturated Fat 0.5g		
Monounsaturated Fat 0.5g		
Cholesterol 0mg	0%	1%
Sodium 280mg	12%	15%
Potassium 95mg	3%	9%
Total Carbohydrate 22g	7%	9%
Dietary Fiber 3g	11%	11%
Soluble Fiber 1g		
Sugars 1g		
Other Carbohydrate 18g		
Protein 3g		
Vitamin A	10%	15%
Vitamin C	10%	10%
Calcium	4%	20%
Iron	45%	45%
Vitamin D	10%	25%
Thiamin	25%	30%
Riboflavin	25%	35%
Niacin	25%	25%
Vitamin B ₆	25%	25%
Folic Acid	25%	25%
Vitamin B ₁₂	25%	35%
Phosphorus	10%	25%
Magnesium	8%	10%
Zinc	25%	30%
Copper	2%	2%

Look also for the following words on food labels:

- ♥ fat-free;
- ♥ low-fat;
- ♥ reduced fat;
- ♥ cholesterol-free;
- ♥ low-cholesterol;
- ♥ reduced cholesterol.

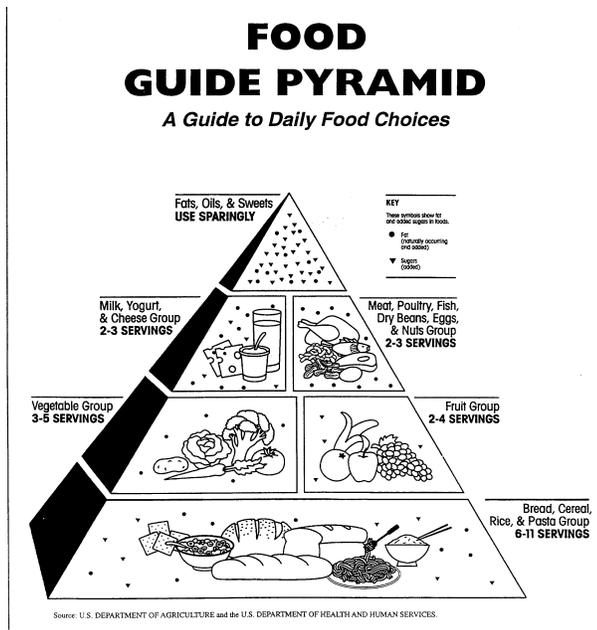
Look for terms:

- ♥ high in fiber;
- ♥ more fiber;
- ♥ added fiber.

Choosing Heart-Healthy Foods

Reading Labels can help you shop wisely for heart-healthy foods. Food labels provide several types of information, including several discussed in this lesson: Total Fat (SFA, PUFA,

Using the Food Guide Pyramid: Follow the Food Guide Pyramid for planning meals and snacks, grocery shopping, and preparing foods.



Following the Food Guide Pyramid:

- ▲ In the tip, use fewer fats; choose oils & soft margarines.
- ▲ In dairy and meat, make lean & low-fat choices. Choose dried beans often.
- ▲ In vegetables and fruits, try to get Five-A-Day, especially citrus fruits & green leafy vegetables.
- ▲ In the base, look for foods rich in soluble fiber; folic acid and other B-vitamins.

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