



Eat Well, Live Well Lesson 10: The Truth about Eggs

Getting Started:

1. Review lesson plan before each session.
2. Copy handouts.
 - a. *How Much Cholesterol am I Eating?*
 - b. *Egg Products Storage Chart*
 - c. Recipes (4)
3. Gather supplies needed for lesson and activities.

Supplies Needed:

1. Handouts for participants.
2. Supplies for activity.
3. Ingredients for a specific recipe you chose to prepare.

Beginning the Lesson:

1. Introduce yourself and the organization you represent.
2. Summarize the lesson by reading the objectives.
3. Let the group know the lesson will be informal and they can ask questions any time.

Note to Educator:

If you or your clients want more information on cholesterol, refer to the *Blood Cholesterol and Your Health* lesson, part of the *Eat Well, Live Well* series. This lesson gives general information about blood cholesterol and ways to help maintain a healthy cholesterol level.

Objectives: The participants will:

1. Understand what types of food contain cholesterol and how to identify foods that contain less cholesterol.
2. Learn nutritional information about eggs and understand how to fit eggs into a healthy diet.
3. Know how to modify a diet to help maintain healthy cholesterol levels.



Script

Introduction:

More and more people are concerned with their health and diet these days. *What do you think is the reason?* Unfortunately, more and more people are developing chronic diseases, such as heart disease, stroke, and diabetes. People are becoming aware that what they eat influences the development of many of these diseases. Nearly *two-thirds to three-quarters* of people over the age of 65 have either heart disease or hardening of their arteries. One major contributing factor to heart disease is high blood cholesterol. Doctors agree that a diet low in saturated fats, trans-fats, and cholesterol help prevent high blood cholesterol.

So, what can we do to lower blood cholesterol? We can start by lowering the amount of cholesterol we eat! Even if you have high cholesterol now, it's never too late to change!

What foods raise blood cholesterol?

Cholesterol is found only in foods from animals, such as meat, fish, poultry, egg yolks, butter, cheese and other dairy products made from whole milk. Saturated fats are also found in foods from animals, especially meat, lard, poultry fat, butter, cheeses and other whole-milk products. Trans-fats are used in commercial baking goods and stick margarines made with partially hydrogenated vegetable oils. Decrease or avoid foods that have in their ingredient label words such as "hydrogenated fat" or "hydrogenated vegetable oil."

What is the Truth about EGGS?

How many of you have heard that you should not eat any eggs because they have too much cholesterol? How many of you have heard the opposite - that eggs are good for you and you should eat plenty of them?

Over the years, there has been a lot of confusion about eggs and our health. Eggs are high in protein, B vitamins, iron and other nutrients. Egg yolks are very high in cholesterol. But, even foods with no cholesterol can increase our blood cholesterol. This is because some types of fats increase blood cholesterol – these fats are called "saturated fats" and "trans-fats" or "trans-fatty acids." In fact, saturated and trans-fats in foods may increase blood cholesterol as much or more than just eating cholesterol. This led some people to think it was OK to eat lots of eggs and other high cholesterol foods.

So – what is the truth about eggs?? The American Heart Association still recommends that people limit their dietary cholesterol to 300 mg. One large egg has about 213 mg of cholesterol, which is about 71% of the daily-recommended limit. For example, if you ate one scrambled egg



for breakfast, drank 2 cups of coffee with a tablespoon each of half-and-half, then for lunch ate a turkey sandwich, made of 4 oz of lean turkey meat and one tablespoon of regular mayonnaise, and for dinner, had a 6 oz serving of broiled pork chops, you would have consumed over 400 mg of cholesterol that day. This is way over the recommended 300 mg limit. And this doesn't include any pie or snacks!

Eating an egg might mean you skip the meat at the next meal and choose a vegetarian dish. It's okay to eat an egg occasionally, but you need to know how to keep your daily cholesterol intake below 300 mg. Limiting yourself to 3 to 4 eggs per week makes it easier to keep dietary cholesterol below 300 mg each day. Egg whites and cholesterol-free egg substitutes do not contain any cholesterol. Try using two egg whites or ¼ cup egg substitute in place of one whole egg in cooking and baking.

One exception: If your blood cholesterol is already high (over 240 mg/dL), or if you have high blood pressure or diabetes, your daily limit should be 200 mg. One large egg would exceed this limit; instead, consider eating small eggs, which contain less cholesterol (157 mg).

When planning a heart-healthy diet, keep in mind the amount of cholesterol you eat. Refer to the handout that lists the amount of cholesterol in each food. It is important to make choices based on the foods you eat for the entire day, which should also be low in saturated fats, and high in fruits, vegetables, whole grains, low-fat dairy products, lean meats, poultry and fish.

Egg Safety:

It is also important to store and cook eggs properly to prevent foodborne illness – also known as “food poisoning.” Unbroken fresh shell eggs may contain a bacteria called *Salmonella Enteritidis*, which can cause foodborne illness. Because of this dangerous bacteria, avoid eating raw or undercooked egg yolks, whites, or products containing them (such as eggnog made with raw eggs). Older adults and people with chronic diseases are particularly vulnerable to *Salmonella* infections because of their weakened immune systems. Proper refrigeration, cooking and handling should prevent most egg safety problems.

How do I safely store eggs?

At the store, choose Grade A or AA eggs with clean, uncracked shells. Make sure they have been refrigerated in the store because bacteria can multiply quickly at room temperature. And remember, don't wash the eggs! A protective coating of a tasteless, natural mineral oil is put on the eggs after they are washed and sanitized. Washing the eggs would remove this protective barrier and would allow bacteria to enter the egg.



Take eggs straight home and store them immediately in a refrigerator set at 40 degrees or slightly below. Place them in the coldest part of the refrigerator and not the door. Use raw shell eggs within 3 to 5 weeks. You can safely store hard-cooked eggs for 1 week and leftover yolks and whites for 2 days. Eggs should not be frozen in their shells. You can beat egg yolks and whites together and freeze them or freeze egg whites by themselves. Use frozen eggs within a year. Look at your *Egg Products Storage Chart* handout for storage times on other egg products.

How do I cook eggs safely?

It is very important for older adults and those with poor immune systems to thoroughly cook eggs. Many cooking methods can be used including poaching, hard cooking, scrambling, frying, and baking. Eggs should be cooked thoroughly until the yolks are firm (including scrambled eggs!). Casseroles and other egg dishes should be cooked to 160 degrees, when measured with a food thermometer.

Don't keep eggs—including Easter eggs—out of the refrigerator more than 2 hours. Serve cooked eggs and egg dishes immediately after cooking, or place in refrigerator at once for later use. Use within 3 to 4 days.

What are Pasteurized Eggs?

Pasteurized eggs are heated for a period of time to destroy bacteria, but the process does not cook the eggs. They are more expensive than unpasteurized eggs, but are a good alternative for use in raw or partially cooked egg recipes (such as eggnog). You can use pasteurized eggs in egg dishes and for baked items just like regular eggs. Look for the stamp on the egg shell that indicates they have been pasteurized.

How can I use Eggs Substitutes?

Egg substitutes account for 25% of egg use in the United States. Liquid egg substitutes are packaged and sold as refrigerated or frozen food items. Most people use egg substitutes to cut back on cholesterol and fat in their diets. Since these substitutes are usually cholesterol-free, they are made using egg whites only, with other ingredients added to replace the yolk. Some of these additional ingredients may include skim milk, tofu (from soy), starch, and artificial colors and flavorings. You can use egg substitutes in baking, cooking, and making omelets or scrambled eggs. Egg substitutes are also pasteurized, but to be safe, it is best to cook the dish to 160 degrees.

In a recipe that calls for one egg, use $\frac{1}{4}$ cup of egg substitute. Some popular brands of egg substitutes are *Better 'N Eggs* and *Egg Beaters*. Many supermarkets offer generic brands of egg



substitutes for a cheaper price. The brand name egg substitutes generally range from \$2.00-4.00 and generic brands range from \$1.00-2.00.

What should my blood cholesterol be?

We're not going to talk much about blood cholesterol levels today. If anyone would like a handout about healthy blood cholesterol called "*Blood Cholesterol Goals*," then please let me know. We can talk more about blood cholesterol at another time if you would like (Note to educator: this would be the lesson called "*Blood Cholesterol and Your Health*" lesson, part of the *Eat Well, Live Well* series. This lesson gives general information about blood cholesterol and ways to help maintain a healthy cholesterol level.)

Review:

Okay, before we look at the next handout, let's review what we've just learned about cholesterol in our diet.

1. What kinds of foods are high in cholesterol? *Foods from animals, such as meat, fish, poultry, egg yolks, butter, cheese and other dairy products made from whole milk*
2. Are eggs healthy to eat? *Its okay to eat an egg occasionally, but you need to be aware of how to change your diet so that you can keep your daily cholesterol intake below 300 mg.*

Activity 1: How much cholesterol am I eating?

Now we are going to take a look at how much cholesterol is in our own diets. Take out the list you wrote of the typical foods you eat during one day. Now, look at your handout, "*How much Cholesterol am I Eating?*" Fill out the number of servings of each food you eat during a **typical** day. Now multiply this number by the "Cholesterol per serving" of each food to calculate "Total Cholesterol" you eat from each food. Add up the numbers in the "Total Cholesterol" column to find out your daily total cholesterol intake. If your daily intake is greater than 300 mg, then substitute high-cholesterol food items with foods lower in cholesterol. Write down these lower-cholesterol foods as your "Cholesterol Goals." Add these new numbers together to make sure you get less than 300 mg per day or 200 mg per day if you are at high risk for heart disease.



References:

Cholesterol. American Heart Association. June 7, 2004.

<http://www.americanheart.org/presenter.jhtml?identifier=4488>

Eggs. American Heart Association. June 7, 2004.

<http://www.americanheart.org/presenter.jhtml?identifier=4547>

Egg and Egg Product Safety. USDA Food Safety and Inspection Service. June 10, 2004.

<http://www.fsis.usda.gov/OA/pubs/eggfacts.PDF>

Fact Sheet: Cholesterol Screening Coverage Under Medicare. American Heart Association. June 7, 2004. <http://www.americanheart.org/downloadable/heart/1016219114867cholesterol.pdf>

National Institutes of Health. NIH News. 2004. **Update on Cholesterol Guidelines: More-Intensive Treatment Options for Higher Risk Patients.** *National Heart, Lung, and Blood Institute, American College of Cardiology, and American Heart Association Endorse Report.* Available online: <<http://www.nih.gov/news/pr/jul2004/nhlbi-12.htm>>.

The Food Stamp program provides nutrition assistance to people with low income. It can help buy nutritious foods for a better diet. To find out more, contact your local food stamp office, food bank or senior center.

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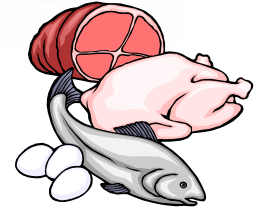
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How much Cholesterol am I Eating?*



Everyone should eat less than 300 mg of cholesterol each day.
People at high risk for heart disease should eat less 200 mg cholesterol daily.

Food Item	Serving Size	Servings I eat	Cholesterol per Serving	Total Cholesterol	Goal Cholesterol
Eggs					
Large egg	1 egg		215 mg		
Small egg	1 egg		155 mg		
Meat, Poultry & Seafood					
Pork & beef, lean	3 ½ oz		60 mg		
Chicken breast, no skin	3 ½ oz		60 mg		
Chicken liver	3 ½ oz		555 mg		
Fish	3 ½ oz		50 mg		
Tuna, canned in water	½ cup		25 mg		
Dairy Products					
Cheese, regular	1 oz		30 mg		
Cheese, lowfat	1 oz		15 mg		
Ice cream	1 cup		40 mg		
Frozen yogurt	1 cup		10 mg		
Cream	2 Tbsp		25 mg		
Milk, whole	1 cup		15 mg		
Milk, 2%	1 cup		10 mg		
Milk, skim, not fat	1 cup		0 mg		
Fats & oils					
Butter	1 tsp		10 mg		
Margarine	1 tsp		0 mg		
Vegetable oils	1 Tbsp		0 mg		
Fruits & Vegetables					
	all		0 mg		
Daily Total *					



Blood Cholesterol Goals*

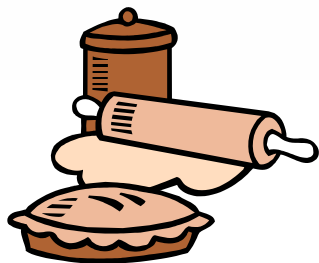
Ask your Doctor to Help Set Your Goals

	Total blood cholesterol should be less than:	LDL cholesterol should be less than:	HDL cholesterol should be more than:
Healthy people	200	130	45
People with diabetes	200	100	45
People who have had a heart attack	200	100	35
Very high risk people with many risk factors, such as those who have had a heart attack and have diabetes, high blood pressure, and/or other risk factors	200	70	Ask your doctor

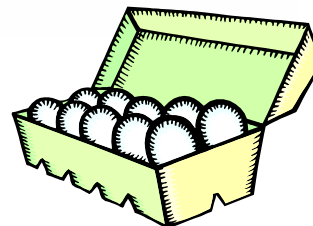
***Units are mg/dl**

This information is from National Institutes of Health. NIH News. 2004. **Update on Cholesterol Guidelines: More-Intensive Treatment Options for Higher Risk Patients.** *National Heart, Lung, and Blood Institute, American College of Cardiology, and American Heart Association Endorse Report.* Available online:

<<http://www.nih.gov/news/pr/jul2004/nhlbi-12.htm>>.



Egg Products Storage Chart



Product	Refrigerator	Freezer
Raw eggs in shell	3 to 5 weeks	Do not freeze
Raw egg whites	2 to 4 days	12 months
Raw egg yolks	2 to 4 days	Yolks do not freeze well
Hard-cooked eggs	1 week	Do not freeze
Casseroles with eggs	3 to 4 days	2 to 3 months (baked)
Quiche	3 to 4 days	1 to 2 months (baked)
Liquid egg substitutes:		
Unopened	10 days	Do not freeze
Opened	3 days	Do not freeze
Frozen egg substitutes:		
Unopened	After thawing, 7 days, or refer to "Use-By" date	12 months
Opened	After thawing, 3 days, or refer to "Use-By" date	Do not refreeze
Eggnog:		
Commercial	3 to 5 days	6 months
homemade	2 to 4 days	Do not freeze
Pies		
Pumpkin or pecan	3 to 4 days	1 to 2 months (baked)
Custard or chiffon	3 to 4 days	Do not freeze



Spanish-Style Scrambled Eggs

If you like eggs with a peppy personality, this recipe is perfect for a jumpstart of flavor in the morning. Wrap the warm mixture in a tortilla to enjoy it for breakfast, lunch or dinner.

Non-stick vegetable spray

1 small ripe tomato, finely chopped

1 green onion, finely chopped

Egg substitute equivalent to 6 eggs (1 ½ cup), or whites of 6 large eggs

1 tablespoon low-sodium salsa or picante sauce

Freshly ground pepper to taste

Fresh cilantro or parsley sprigs (optional)

1. Spray a large nonstick skillet with non-stick vegetable spray. Add tomato and onion and sauté until onion is soft, 1 to 2 minutes. Reduce heat to low.
2. In a bowl, combine egg substitute, salsa and pepper. Beat until frothy. Add egg mixture to skillet. Cook over low heat, stirring occasionally, until almost set.
3. Add cilantro and stir until eggs are fully set. Serves 3.

Nutrition Facts per serving**Serving Size: about ½ cup of eggs**

Total calories

50

Total Fat

0 g

Total Carbohydrate

0 g

Cholesterol

0 mg

This is an adapted recipe from the American Heart association,
<http://www.americanheart.org/presenter.jhtml?identifier=3001094>





Low-Fat Carrot & Raisin Muffins

1 cup oatmeal, regular or instant	½ cup brown sugar
½ cup oat bran	¼ cup raisins
1 cup flour	½ cup cholesterol-free egg substitute
1 Tbsp baking powder	1 cup fat-free milk
1 tsp cinnamon	1 carrot, shredded
¾ tsp ground ginger	

1. Combine dry ingredients in large bowl. Set aside.
2. In a separate bowl, mix the raisins, egg substitute, milk and shredded carrot. Pour over dry ingredients and mix by hand until just moistened. Divide batter evenly in 12 muffin-pan cups coated with cooking spray.
3. Bake at 400 degrees about 20 minutes or until nicely browned.

Nutrition Facts per serving:	Serving Size: one muffin
Total Calories	130
Total Fat	1 g
Total Carbohydrate	28 g
Cholesterol	0 mg

This recipe is adapted from Morningstar Farms, at <http://kellogg.marketlocator.com/kelloggs/us/kelloggs.nsf/recipehome.html?openpage>





Guiltless Deviled Eggs

12 eggs	½ tsp Splenda
¼ cup light mayonnaise	½ tsp sea salt
1 tsp yellow or Dijon mustard	¼ tsp white pepper (or black pepper)
½ tsp apple cider vinegar	1/8 tsp paprika

1. Put the eggs in a pan of cool water until covered. Bring to a rapid boil, and remove from heat. Let the eggs stand for 15 minutes. Run cold water over eggs until cooled. Remove and peel immediately.
2. Halve the eggs, and place two of yolks into a bowl (discard the other 10 yolks). Chop 8 egg white halves (4 whole egg whites) and mash them with the remaining yolks. Mix in all other ingredients except paprika.
3. Pipe the filling into the whites and sprinkle with paprika. Makes 16 appetizers.

Nutritional Facts per serving:	Serving Size: 1 custard cup
Total calories	32
Total Fat	2 g
Total Carbohydrate	0 g
Cholesterol	26 mg

This recipe was adapted from Great Party Recipes, at <http://www.greatpartyrecipes.com/deviledegsrecipe.html>





The Truth about Eggs Post-Test

Date:	Name:
County:	Age:

Please Circle your answers:

- Cholesterol is found in these foods (circle all that apply):
 - Skinless chicken breast
 - Eggs
 - Vegetables
 - Cheddar cheese
- The cholesterol intake of the average adult should be (circle one):
 - Around 500 mg
 - Less than 300 mg
 - It doesn't matter
- Instead of eating one large egg, a better choice would be (circle all that apply):
 - $\frac{1}{4}$ cup egg substitute
 - one small egg
 - two egg whites
 - two egg yolks
- I learned something from this lesson:

No Yes