

# Nutrition SENSE

UNIVERSITY OF MASSACHUSETTS – DINING SERVICES

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## We're on the web:

[www.umass.edu/diningservices/nutrition](http://www.umass.edu/diningservices/nutrition)

FEBRUARY

*quick tip*

Consume less than  
300mg of cholesterol  
each day.

DIETITIAN

*on duty*

Get free nutrition advice in the  
DCs at the following times!

5:30-7:30 pm

Jan. 30 – Franklin DC

Feb. 6 – Hampshire DC

Feb 13 – Worcester DC

Hillside Room

Feb 20 – Berkshire DC

*February is  
American Heart Month!*

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Be Smart. Eat Smart.



**Nutrition**  
UMASS AMHERST DINING SERVICES



## What is Cholesterol?

Cholesterol is a naturally occurring, fat-like substance in the body found in all cell membranes of animal tissues. Although it is necessary for the body's production of bile and steroid hormones, excess cholesterol in the blood can attach to artery walls, forming what is known as plaque. **Plaque** narrows the arteries which restricts healthy blood flow. In some cases, a plaque may become so thick that the artery is completely blocked. This can lead to a heart attack or stroke if the artery leads to the heart or brain. High levels of cholesterol in the blood, or hypercholesterolemia, greatly increase the risk of heart disease. There are usually no direct signs or symptoms of having high blood cholesterol; however cholesterol levels tend to increase with age.

### What Else Can Cause High Blood Cholesterol?

There are numerous risk factors for hypercholesterolemia. Some risk factors are things out of an individual's control (age), while others can be changed to lower an individual's risk. Following are the uncontrollable and controllable risk factors:

#### Uncontrollable Risk Factors

**GENETICS** A family history of hypercholesterolemia and/or diabetes increases risk for having high blood cholesterol.

**HORMONES** Women get a natural boost in their good cholesterol from their hormones until they reach menopause. After menopause, taking estrogen, when advised by a physician, can help maintain healthy good cholesterol levels.

## Controllable Risk Factors

**DIET** Consuming a diet high in cholesterol, trans fats, and saturated fats, raises blood cholesterol levels. It is recommended that individuals consume less than 300mg/day of cholesterol from foods.

**PHYSICAL ACTIVITY** Regular exercise lowers bad cholesterol and may increase levels of good cholesterol. This may help in lowering overall risk for heart disease. Physical inactivity may lead to being overweight, which increases risk for heart disease and hypercholesterolemia.

### What Makes "Good" Cholesterol Good?

Approximately one fourth to one third of blood cholesterol is carried by high-density lipoprotein (HDL). HDL cholesterol is known as "good" cholesterol, because high levels of HDL appear protective against heart disease while low levels increase the risk of heart disease. Medical experts hypothesize that HDL slows the buildup of plaque by carrying cholesterol away from the arteries and back to the liver. Here, it is passed from the body instead of remaining attached to the arterial wall.

### What's so "Bad" about LDL Cholesterol?

When too much low density lipoprotein (LDL) circulates in the blood, it can slowly build up in the inner walls of the arteries that feed the heart/brain. Together with other substances, it can form plaque (a thick, hard, waxy deposit) that can narrow the arteries and make them less flexible. This condition is known as atherosclerosis. If a clot forms and blocks an artery, a heart attack or stroke can result.

### How are Cholesterol Levels Determined?

A simple blood test indicates a person's total cholesterol level. The test also breaks down the amounts of HDL and LDL cholesterol in the blood. The following table shows how cholesterol levels are categorized and what levels of different types of cholesterol are considered healthy.

### What are the Two Types of Cholesterol?

In the body there are two different types of cholesterol:

- High-density lipoprotein (HDL) cholesterol or "good" cholesterol
- Low-density lipoprotein (LDL) cholesterol or "bad" cholesterol

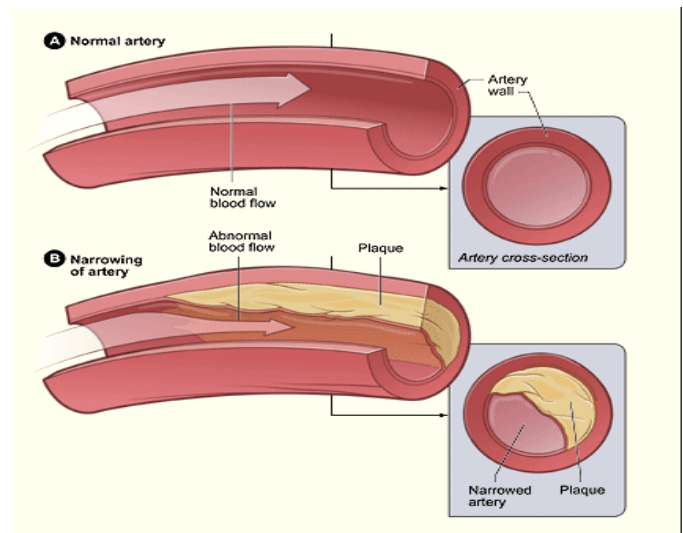


Image from [www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)

Total Cholesterol Level	Level of Risk for Coronary Heart Disease
<b>Less than 200 mg/dL</b>	-Desirable level (puts you at lower risk for coronary heart disease).
<b>200 to 239 mg/dL</b>	-Borderline high - A cholesterol level of 200 mg/dL or higher raises your risk of coronary heart disease.
<b>240 mg/dL and above</b>	-High blood cholesterol. -A person with this level has more than twice the risk of coronary heart disease as someone whose cholesterol is below 200 mg/dL.

Overall lower levels of total cholesterol are better!

HDL Cholesterol Level	Level of Risk for Coronary Heart Disease
Less than 40 mg/dL(men) Less than 50 mg/dL(women)	-Low HDL cholesterol (a major risk factor for heart disease)
60 mg/dL and above	-An HDL of 60 mg/dL and above is considered protective against heart disease.

Overall higher levels of HDL cholesterol are better!

LDL Cholesterol Level	Level of Risk for Coronary Heart Disease
Less than 100 mg/dL	Optimal
100 to 129 mg/dL	Near or above optimal
130 to 159 mg/dL	Borderline high
160 to 189 mg/dL	High
190 mg/dL and above	Very High

Overall lower levels of LDL cholesterol are better!

### What are Triglyceride Levels?

Another measurement often shown on cholesterol test results is the amount of triglycerides in the blood. Triglycerides are the most common type of fat the body produces. When an individual consumes more calories than his/her body needs and does not immediately use the calories, the extra energy is stored in the form of a triglyceride. The following table breaks down triglyceride (TG) levels in blood.

TG Level	Recommended Ranges
<b>Normal</b>	Less than 150 mg/dL
<b>Borderline-high</b>	150 to 199 mg/dL
<b>High</b>	200 to 499 mg/dL
<b>Very high</b>	500 mg/dL or higher
These are based on fasting plasma triglyceride levels.	

Table from American Heart Association Online <http://www.americanheart.org/presenter.jhtml?identifier=4778>

### Alcohol

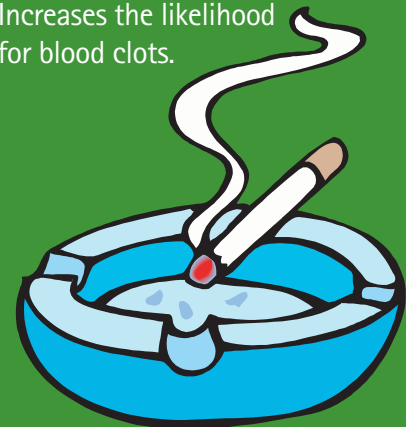
Moderate use of alcohol is associated with higher HDL cholesterol levels. People who consume moderate amounts of alcohol (one or two drinks per day for men and one drink per day for women) have a lower risk of heart disease than nondrinkers. Increased consumption of alcohol contributes to other health conditions such as alcoholism, high blood pressure, and obesity. The American Heart Association warns people against increasing their alcohol intake or beginning regular alcohol consumption. If you drink, do so in moderation.

### Physical Activity

- Increases HDL cholesterol which is associated with a lower risk of heart disease.
- Controls weight, diabetes and high blood pressure, all of which are major precursors of heart disease.
- Aerobic physical activity (running, swimming, or jogging) increases your heart rate and improves the condition of the heart and lungs.
- Physical inactivity is a major risk factor for heart disease.

### Tobacco Use

- A major preventable risk factor for heart disease.
- Lowers HDL cholesterol levels.
- Increases the likelihood for blood clots.



## Limit Intake of Saturated Fats and Cholesterol

Excessive saturated fat intake is the main cause of hypercholesterolemia. Limiting the amount of saturated fats you eat, therefore lowers your risk of high blood cholesterol. Saturated fats are mainly found in animal products, but may also be found in some plant foods.

**Animal Sources:** beef, lamb, pork, lard, butter, cream, cheeses, milk.

**Plant Sources:** coconut, coconut oil, palm oil and palm kernel oil (often called tropical oils), and cocoa butter.

## Trans Fats and Cholesterol

During food processing, unsaturated fats may undergo a chemical process called hydrogenation, which makes the end product more shelf-stable. This type of fat is known as a "trans" fat. These fats raise total cholesterol levels more than saturated fats. In particular, trans fats raise LDL "bad" cholesterol and lower HDL "good" cholesterol, which increases the risk of heart disease. The dining commons are eliminating trans fatty acids from food served on campus.

## How can I eat to be More Heart Healthy?

Choosing foods for better heart health is easy! Try the following substitutions the next time you go to the DC or eat out to limit saturated fats and cholesterol.

### INSTEAD OF:

Bagel and cream cheese

Sandwich with mayonnaise

Beef Burrito with sour cream

Hot Fudge Sundae

### TRY:

Whole grain toast and jam

Sandwich with hummus or guacamole

Bean burrito with non-fat plain yogurt

Sherbet or sorbet

Researched and compiled by Taylor Geer and Heather Morin, UMass Nutrition Majors, Class of 2008.

## How Much Cholesterol do Foods Contain?

FOOD	AMOUNT OF CHOLESTEROL (mg)
Egg (1 with yolk)	212
Shrimp (3.5 oz)	194
Whole Milk (1 c)	30
Skim Milk (1 c)	<5
Cheddar Cheese (1 oz)	33
Salmon (3.5 oz)	63
Lobster (3.5 oz)	71
Beef (ground) (3.5 oz)	78
Pork Chop (3.5 oz)	89
Chicken (3.5 oz)	85
Butter (1 tsp)	11
Tofu (1/2 c)	0

**Check the Label!** Check the food label of the dining commons recipes on the web: <http://umass.edu/diningservices/nutrition/nutrient-analysis> to check the saturated fats and cholesterol in one serving. How many servings are you going to eat at a meal? Add the roast pork nutrient analysis. Using the nutrient analysis that shows up on web site so they can see what it looks like. Please crop label. You can switch the check label/ how can I eat more healthy if you want to.

Roasted Herbed Pork Shoulder			
Amount/Serving	%DV*	Amount/Serving	%DV*
<b>Total Fat</b> 20.7g	32%	<b>Tot. Carb.</b> 1.8g	1%
<b>Sat. Fat</b> 5.6g	28%	<b>Dietary Fiber</b> 0.3g	1%
<b>Trans Fat</b> 0g		<b>Sugars</b> 0g	
<b>Cholesterol</b> 52.1mg	17%	<b>Protein</b> 13g	
<b>Sodium</b> 396.6mg	17%		
<small>*Percent Daily Values (DV) are based on a 2,000 calorie diet.</small>			
<small>Cals 8%      • Carb 1%      • Diet Fiber 1%      • Sugar</small> <small>Prot 21%      • Fat 32%      • Sat Fat 28%      • Trans Fat</small> <small>Sodium 17%      • Calcium 3%      • Iron 6%      • Vit A 9%</small> <small>Vit C 7%</small>			
<small>INGREDIENTS: Pork Shoulder, Pure Olive Oil, Fresh Cilantro, Chopped Garlic, Salt, Ground Black Pepper, Oregano Leaf</small>			



Go to our website:  
[www.umass.edu/diningservices/nutrition](http://www.umass.edu/diningservices/nutrition)  
 for more specifics to improve  
 your eating habits

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