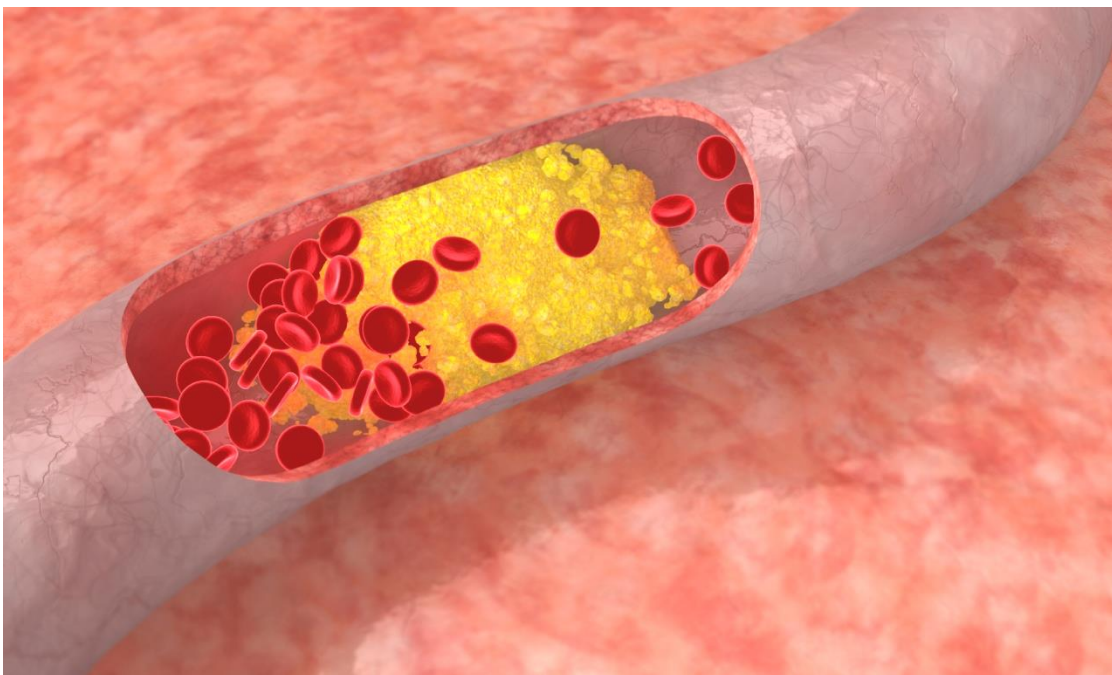


Understanding Cholesterol



by Ron Borkowicz, Ph.D.

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Cholesterol

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Suggestions For Using This Mini-Unit

This resource was developed by a National Teacher of the Year who taught at the middle school, high school and university levels. One of the primary goals when developing this resource was to **make everything easier for the teacher**. All of the research and time-consuming work is already done. The only thing that a teacher needs to do is decide on the level of difficulty for the students and make copies at the copy machine. A description of each component follows.

Article: Cholesterol

In addition to describing the health problems brought about by excess cholesterol, this article provides recommendations that can help the readers to lower their blood cholesterol level. The information is presented in a manner which is easy for the students to understand.

Many teachers who have been using these Mini-Units for their students have found another use for the articles. They make copies of the article (along with one of the puzzles) and distribute them to the staff as part of their Worksite Wellness program.

Educational Puzzles

There are four levels of Crossword puzzles and five levels of Word Search puzzles. The puzzles are arranged with Level One being the easiest to complete and the highest level being the most difficult.

The puzzles are an entertaining way to introduce the students to the vocabulary terms that will be included in a lesson and help to reinforce reading, spelling and comprehension skills. They can also be given to students who finish their classroom work early or to study hall students who say that they have “nothing to do.” All of the puzzles come with an Answer Key.

Tests and Review Questions

Because each Mini-Unit is designed for multiple grade levels, there are several levels of Tests and Review Questions. Like the Educational Puzzles, the higher the level, the more difficult the material. **In addition to using as standard assignments, Review Questions can be used as alternate work for homebound students, for non-participants in gym class, for make-up work due to an absence, for extra credit, etc.** All of the Tests and Review Questions come with an Answer Key.

Worksheets

The three Worksheets levels are similar to the Tests and Review Questions but are arranged to be easier for the students to complete. Each Worksheet is arranged so that the questions are in the same order as the information presented in the article. This is especially useful if using the Worksheets as explained in the Teacher Lesson Plan. All of the Worksheets come with an Answer Key.

Teacher Lesson Plan

This Lesson Plan can be used by the classroom teacher for a daily class or it can be set aside for a substitute teacher who is not familiar with the topic.



Understanding Cholesterol

Tired of all the misinformation that television advertisers provide when promoting their products? Some ads make it sound like using their product will keep you healthy forever. When it comes to cholesterol, here are the facts.

What is cholesterol?

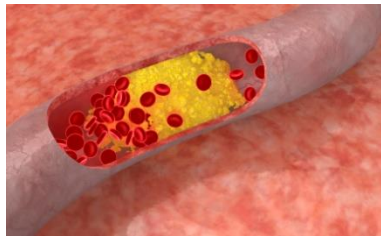
Cholesterol is a waxy, fat-like substance which is an essential ingredient of the human body. It is a building block of the outer cell membrane. Without cholesterol....well, think of Jell-O in a microwave oven. It is also a principal ingredient in the digestive juice bile, in the sex hormones, and in the fatty sheath that insulates nerves.

How do we get cholesterol?

The liver makes most of the cholesterol we need. Also, certain foods increase the amount of cholesterol in our body. They include fats, red meats and dairy products. These foods can be what changes cholesterol from our body's friend to its deadly enemy.

Types of cholesterol

The cholesterol we eat combines with a protein to form a lipoprotein. This allows the cholesterol to circulate freely in the blood. To make things simple, blood cholesterol can be divided into two categories, LDL and HDL. LDL is commonly referred to as the "bad" cholesterol whereas HDL is considered the "good" cholesterol.

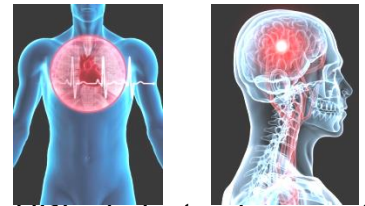


When there is too much cholesterol in your bloodstream, the LDL can build up on the walls of your arteries. Along with fats like triglycerides, it forms a growing "plaque" that can reduce blood flow, a process called atherosclerosis.

Cholesterol Dangers

The coronary arteries supply the heart with a constant supply of oxygen and nutrients. If the plaque

blocks a coronary artery, the result can be a heart attack. If the plaque blocks an artery to the brain, the result can be a stroke. Hence, a higher level of LDL in the bloodstream increases your chance of a heart attack or stroke.



HDL cholesterol seems to have the opposite effect. Higher HDL levels are associated with a lower risk of a heart attack or stroke. Some people think of HDL as a Pac-Man character that gobbles up LDL. Although it doesn't act like a packman, HDL is believed to take excess LDL from the bloodstream to the liver where it is degraded.

Most experts agree that an adult's blood cholesterol level should be below 200 mg/dl. Eating less than 300 mg of cholesterol per day helps toward that goal. A more precise indicator of cardiovascular disease is the

HDL ratio – the total cholesterol divided by the HDL cholesterol. A man’s HDL ratio should not be above 4. A woman’s HDL ratio should not be above 3 ½. Because a safe HDL ratio for each individual can be influenced by other risk factors, you need to discuss this issue with your doctor.

Reading food labels

True or False: If the label on the food we eat indicates that the food is free from cholesterol, our LDL level will stay low. False, some foods are cholesterol-free but contain saturated fat.

Saturated fat raises your LDL cholesterol level more than anything else in your diet. Another type of fat called trans fat also raises your LDL level but it only makes up a small fraction of the American diet.

To help lower your cholesterol, you should eat foods with soluble fiber such as whole grain cereals, fruits and beans.



Besides these foods, physical activity can help to lower your LDL. In addition to lowering LDL, aerobic exercise also raises HDL. Reducing excess weight is another way to lower your LDL and raise your HDL.

We all want the magic bullet or the easy answer that will allow us to eat whatever we want and still remain healthy. Although it may not be easy to accept, the simple truth is that the magic bullet comes in the form of a phrase – Moderation and Common Sense.

Helpful Websites

Center for Disease Control

<http://www.cdc.gov/cholesterol/>

Medline Plus

<http://www.nlm.nih.gov/medlineplus/cholesterol.html>

National Institutes of Health

http://www.heart.org/HEARTORG/Conditions/Cholesterol/Cholesterol_UCM_001089_SubHomePage.jsp

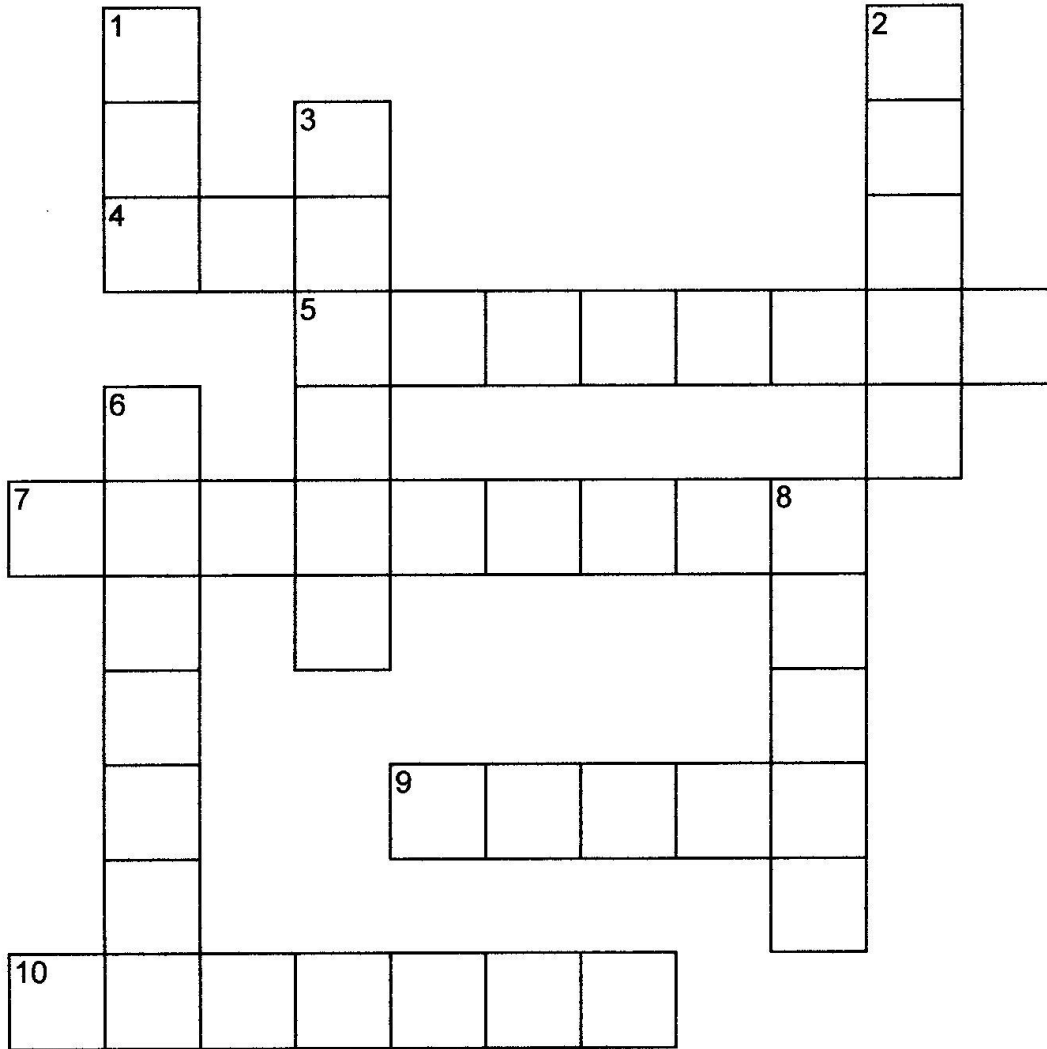
National Heart, Lung and Blood Institute

<http://www.nhlbi.nih.gov/health/health-topics/topics/hbc/>

NOTICE: Although the above websites have been operational for years, as you know, that could change tomorrow. If that is the case, simply Google the organization for a revised address.

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Cholesterol - Level One



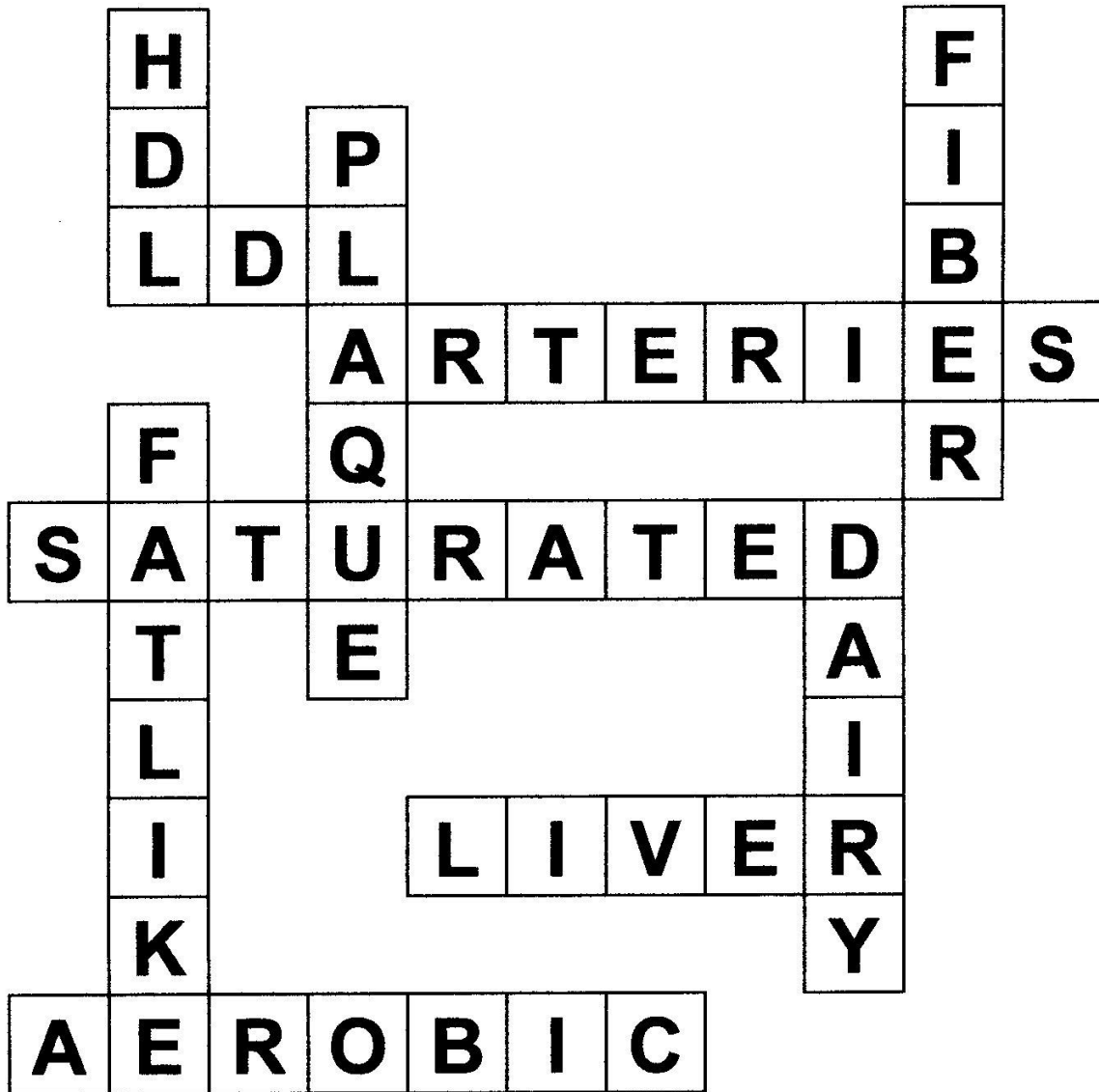
Across

- 4** The bad cholesterol is commonly called _____.
- 5** The blood vessels that get blocked by cholesterol are the _____.
- 7** _____ fat raises your cholesterol more than anything else.
- 9** Most of the body's cholesterol is made by the _____.
- 10** _____ exercise raises the good cholesterol and lowers the bad cholesterol.

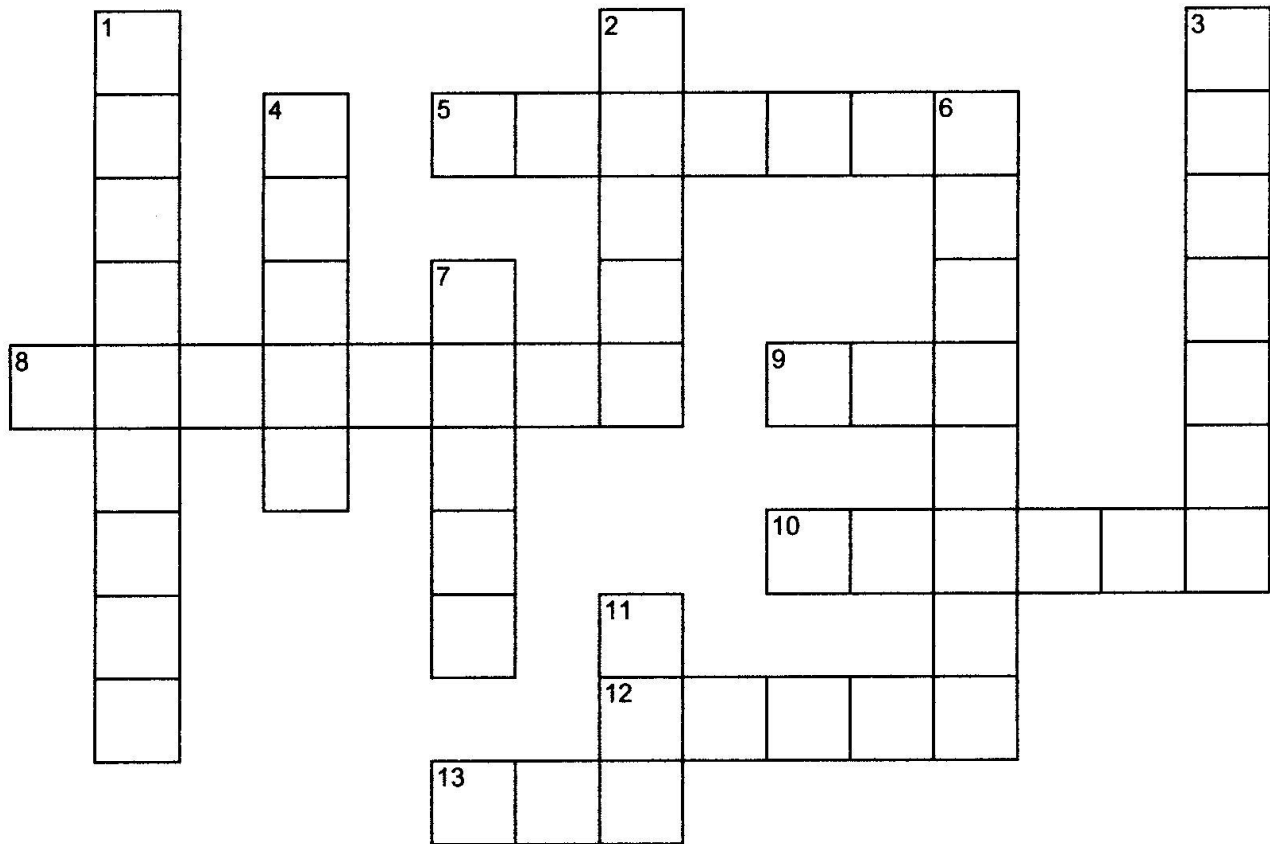
Down

- 1** The good cholesterol is commonly called _____.
- 2** To lower your cholesterol, you should eat foods with soluble _____.
- 3** The material that blocks blood flow is called _____.
- 6** Cholesterol is a waxy _____ substance.
- 8** Foods that are high in cholesterol include _____ products.

Cholesterol - Level One Solution



Cholesterol - Level Two



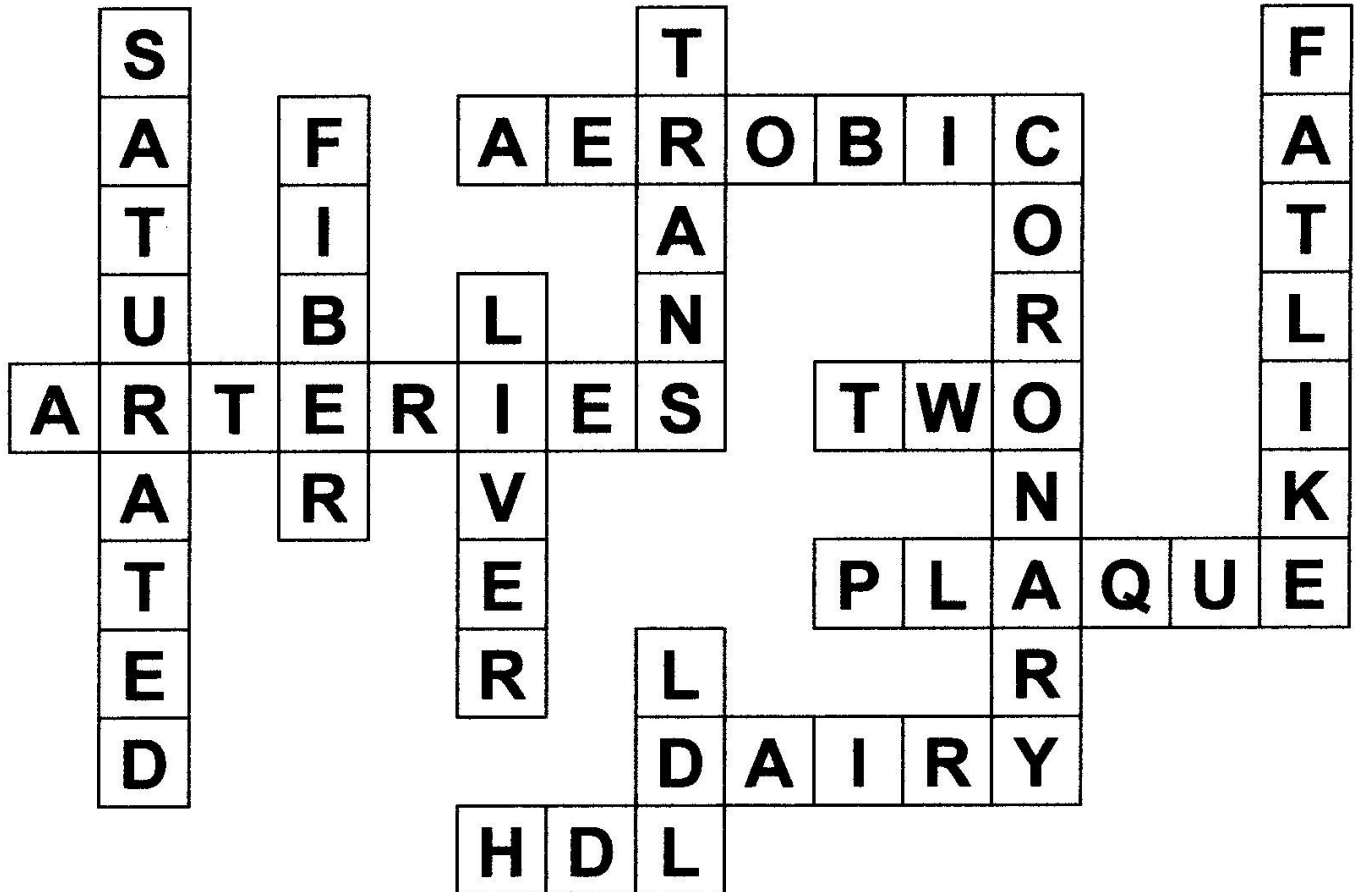
Across

- 5** _____ exercise raises the good cholesterol and lowers the bad cholesterol.
- 8** The blood vessels that get blocked by cholesterol are the _____.
- 9** Most experts agree that an adult's blood cholesterol level should be below _____ hundred mg/dl.
- 10** The material that blocks blood flow is called _____.
- 12** Foods that are high in cholesterol include _____ products.
- 13** The good cholesterol is commonly called _____.

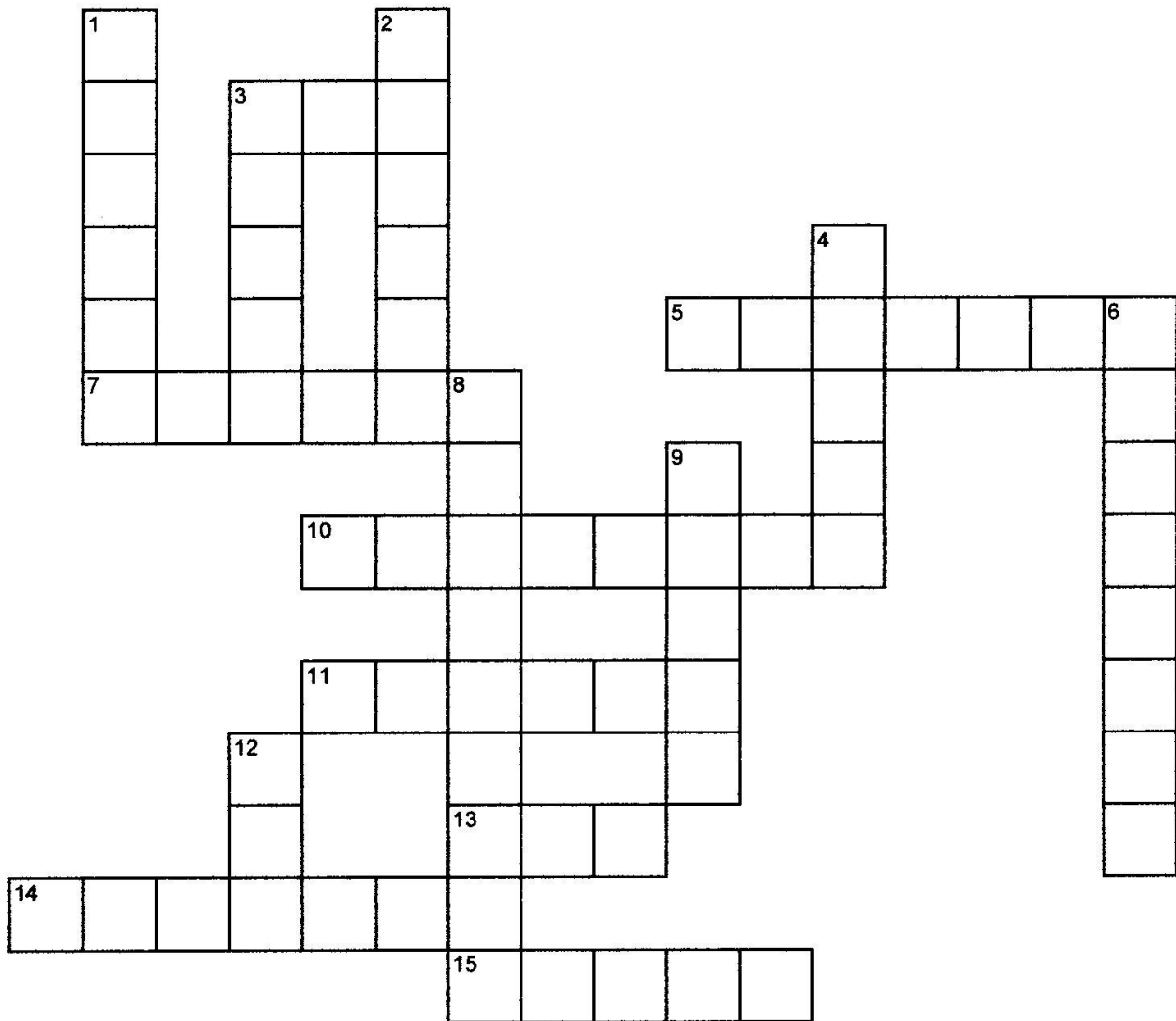
Down

- 1** _____ fat raises your cholesterol more than anything else.
- 2** Another type of fat that raises your cholesterol level is _____ fat.
- 3** Cholesterol is a waxy _____ substance.
- 4** To lower your cholesterol, you should eat foods with soluble _____.
- 6** The blood vessels that supply nutrients to the heart are called _____ blood vessels.
- 7** Most of the body's cholesterol is made by the _____.
- 11** The bad cholesterol is commonly called _____.

Cholesterol - Level Two Solution



Cholesterol - Level Three



Across

- 3 The bad cholesterol is commonly called _____.
- 5 _____ exercise raises the good cholesterol and lowers the bad cholesterol.
- 7 Cholesterol helps make up the sheath that insulates _____.
- 10 The blood vessels that get blocked by cholesterol are the _____.
- 11 A blocked blood vessel going to the brain can result in a _____.
- 13 Most experts agree that an adult's blood cholesterol level should be below _____ hundred mg/dl.
- 14 Cholesterol is a waxy _____ substance.
- 15 Foods that are high in cholesterol include _____ products.

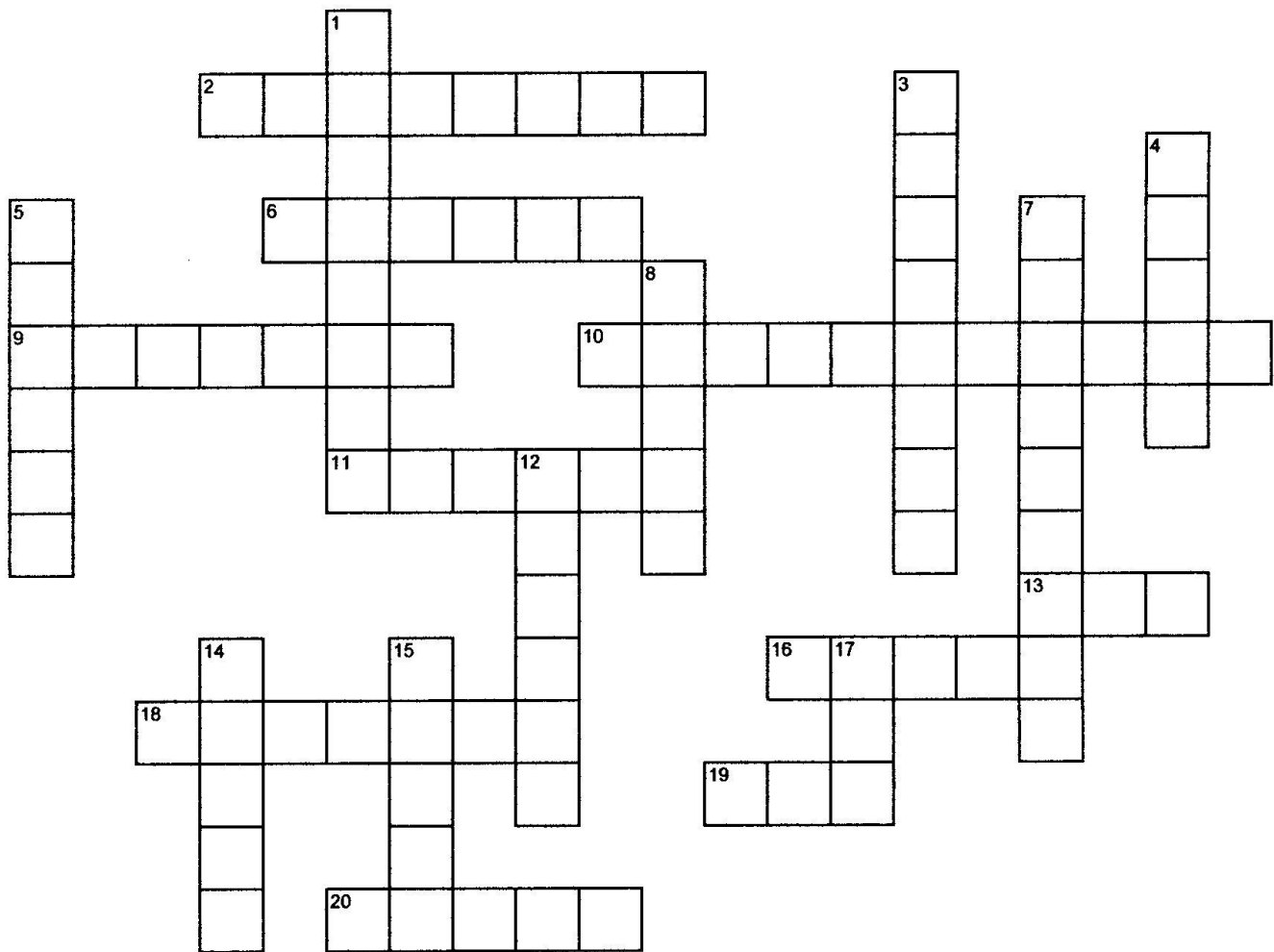
Down

- 1 Besides nutrients, the heart's blood vessels also provide _____.
- 2 The material that blocks blood flow is called _____.
- 3 Most of the body's cholesterol is made by the _____.
- 4 Another type of fat that raises your cholesterol level is _____ fat.
- 6 The blood vessels that supply nutrients to the heart are called _____ blood vessels.
- 8 _____ fat raises your cholesterol more than anything else.
- 9 To lower your cholesterol, you should eat foods with soluble _____.
- 12 The good cholesterol is commonly called _____.

Cholesterol - Level Three Solution



Cholesterol - Level Four



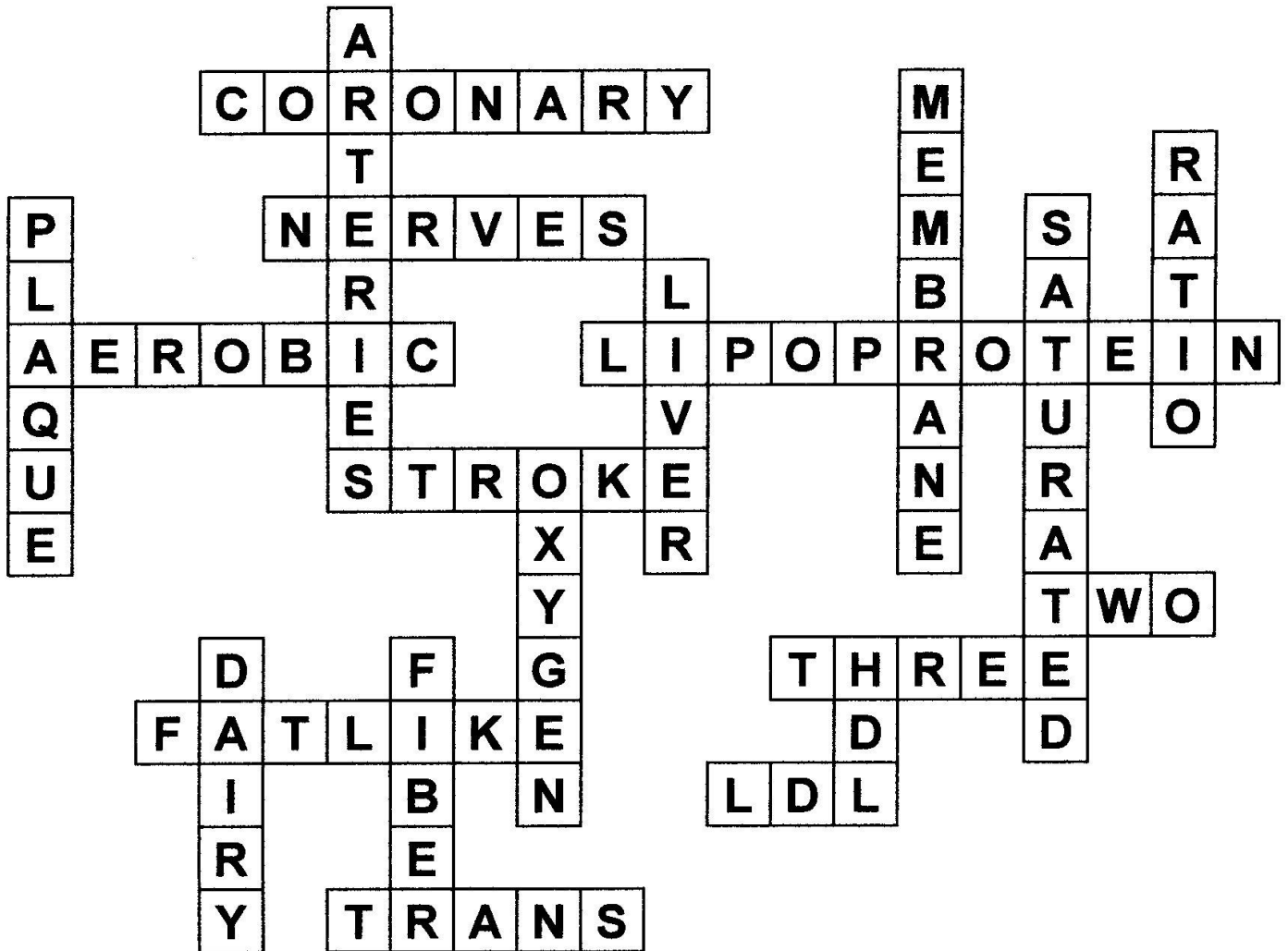
Across

- 2** The blood vessels that supply nutrients to the heart are called _____ blood vessels.
- 6** Cholesterol helps make up the sheath that insulates _____.
- 9** _____ exercise raises the good cholesterol and lowers the bad cholesterol.
- 10** Cholesterol combines with a protein to form a _____.
- 11** A blocked blood vessel going to the brain can result in a _____.
- 13** Most experts agree that an adult's blood cholesterol level should be below _____ hundred mg/dl.
- 16** We should not eat more than _____ hundred mg. of cholesterol per day.
- 18** Cholesterol is a waxy _____ substance.
- 19** The bad cholesterol is commonly called _____.
- 20** Another type of fat that raises your cholesterol level is _____ fat.

Down

- 1** The blood vessels that get blocked by cholesterol are the _____.
- 3** Cholesterol is a building block of the outer cell _____.
- 4** An indicator of cardiovascular disease is the HDL _____.
- 5** The material that blocks blood flow is called _____.
- 7** _____ fat raises your cholesterol more than anything else.
- 8** Most of the body's cholesterol is made by the _____.
- 12** Besides nutrients, the heart's blood vessels also provide _____.
- 14** Foods that are high in cholesterol include _____ products.
- 15** To lower your cholesterol, you should eat foods with soluble _____.
- 17** The good cholesterol is commonly called _____.

Cholesterol - Level Four Solution



Cholesterol - Level One



K B L O O D F L O W Z M P L A Q U E V B K C X H T F
 Z N T C M Z K F R G L O W D E N S I T Y D T F J F N
 J H E A R T A T T A C K D P B H E A L T H K C R M Q
 R I S K F A C T O R Y K T H D L R A T I O X H F N T
 L D A I R Y P R O D U C T S V K L T B N W H Z Q N Y
 H I G H D E N S I T Y L T J O B E S I T Y N L L L G
 T X C Q G Y N D B L O O D C H O L E S T E R O L R Y
 N R K R N Q P G M C H O L E S T E R O L M N R B N Z
 M G D F A T S G P Z G F H Z P L M M C O R O N A R Y
 Y T C B L O O D T E S T T V K A R T E R I E S J P F
 T R A N S F A T F A T L I K E S U B S T A N C E N W
 R H K L I F E S T Y L E S A T U R A T E D F A T M
 W A X Y S U B S T A N C E M E D I C A T I O N J R X
 R M M B P H Y S I C A L A C T I V I T Y Q P R Y P K
 Y J E X C E S S W E I G H T O V E R W E I G H T K T
 F K R B W R D C B R C T H D L Y T P G K D V L H L D
 X R E D M E A T S K K V Y N U T R I E N T S K J Q N
 W F G J B T L I V E R R T R I G L Y C E R I D E S B
 R T Z L R A T H E R O S C L E R O S I S N T D I E T
 V K W W G T E X E R C I S E Z J N X L L H H W K Q G
 X H M W L D L Z J B J T T S E D E N T A R Y D R L X
 G W H R W D T G P C N B U I L D I N G B L O C K B P
 R M Q V B L W Z Y M B G P R E V E N T I O N N R Z C
 T J T M N J B D W M D D I S E A S E M Y N P N L G H
 R N H Y K T L I P O P R O T E I N B C K T R K Z R P
 Z M N G R R N L W K F C E L L M E M B R A N E L G H

Atherosclerosis
 Arteries
 Blood cholesterol
 Blood flow
 Blood test
 Building block
 Cell membrane
 Cholesterol
 Coronary
 Dairy products

Diet
 Disease
 Excess weight
 Exercise
 Fatlike substance
 Fats
 HDL
 HDL ratio
 Health
 Heart attack

High density
 LDL
 Lifestyle
 Lipoprotein
 Liver
 Low density
 Medication
 Nutrients
 Obesity
 Overweight

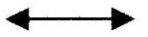
Physical activity
 Plaque
 Prevention
 Red meats
 Risk factor
 Saturated fat
 Sedentary
 Trans fat
 Triglycerides
 Waxy substance

Cholesterol - Level One Solution



K B L O O D F L O W Z M P L A Q U E V B K C X H T F
Z N T C M Z K F R G L O W D E N S I T Y D T F J F N
J H E A R T A T T A C K D P B H E A L T H K C R M Q
R I S K F A C T O R Y K T H D L R A T I O X H F N T
L D A I R Y P R O D U C T S V K L T B N W H Z Q N Y
H I G H D E N S I T Y L T J O B E S I T Y N L L L G
T X C Q G Y N D B L O O D C H O L E S T E R O L R Y
N R K R N Q P G M C H O L E S T E R O L M N R B N Z
M G D F A T S G P Z G F H Z P L M M C O R O N A R Y
Y T C B L O O D T E S T T V K A R T E R I E S J P F
T R A N S F A T F A T L I K E S U B S T A N C E N W
R H K L I F E S T Y L E S A T U R A T E D F A T M
W A X Y S U B S T A N C E M E D I C A T I O N J R X
R M M B P H Y S I C A L A C T I V I T Y Q P R Y P K
Y J E X C E S S W E I G H T O V E R W E I G H T K T
F K R B W R D C B R C T H D L Y T P G K D V L H L D
X R E D M E A T S K K V Y N U T R I E N T S K J Q N
W F G J B T L I V E R R T R I G L Y C E R I D E S B
R T Z L R A T H E R O S C L E R O S I S N T D I E T
V K W W G T E X E R C I S E Z J N X L L H H W K Q G
X H M W L D L Z J B J T T S E D E N T A R Y D R L X
G W H R W D T G P C N B U I L D I N G B L O C K B P
R M Q V B L W Z Y M B G P R E V E N T I O N N R Z C
T J T M N J B D W M D D I S E A S E M Y N P N L G H
R N H Y K T L I P O P R O T E I N B C K T R K Z R P
Z M N G R R N L W K F C E L L M E M B R A N E L G H

Cholesterol - Level Two



K P G T M M N W R F A T L I K E S U B S T A N C E
 D J K F N I E T O R P O P I L M C T P C Y W L G R
 T K C B L H R T Z G M E D I C A T I O N G X Z L D
 D P K D R L S T C U D O R P Y R I A D T Z T H F M
 Q D B G R L Q J S T A F Y T I S N E D W O L G T K
 S T N E I R T U N P H Y S I C A L A C T I V I T Y
 C K C A T T A T R A E H L B G Q C T A F S N A R T
 G H E A L T H R K J X W T L O R E T S E L O H C G
 F F K K C O L B G N I D L I U B W T K X M T Y M C
 K H D L C J M R □ T A F D E T A R U T A S M T M Q
 W F J N C T S T A E M D E R K B L O O D T E S T R
 Z S E I R E T R A L Y B M N P L H E S A E S I D G
 O B E S I T Y K K L I F E S T Y L E R Z N P G M M
 T Z B M D C O R O N A R Y M W N W F P L W C R N K
 W R I S K F A C T O R T R I G L Y C E R I D E S B
 P E C N A T S B U S Y X A W K L D L C Y Q Y Y Y M
 B M H V R B G L I V E R N R M Y E S I C R E X E K
 Q O I T A R L D H C M T P X M T H G I E W R E V O
 W O L F D O O L B K W S E D E N T A R Y W P V C C
 M B L O O D C H O L E S T E R O L R K V V T M X N
 A T H E R O S C L E R O S I S D R K H P M Z G H L
 P H I G H D E N S I T Y L R Z P R E V E N T I O N
 M L F X M L E X C E S S W E I G H T R R D B F G R
 G N H C T X D Z C E L L M E M B R A N E T N Z B B
 E U Q A L P V J B R L F N C M L D I E T K M L T T

Atherosclerosis
 Arteries
 Blood cholesterol
 Blood flow
 Blood test
 Building block
 Cell membrane
 Cholesterol
 Coronary
 Dairy products

Diet
 Disease
 Excess weight
 Exercise
 Fatlike substance
 Fats
 HDL
 HDL ratio
 Health
 Heart attack

High density
 LDL
 Lifestyle
 Lipoprotein
 Liver
 Low density
 Medication
 Nutrients
 Obesity
 Overweight

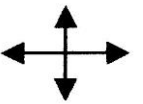
Physical activity
 Plaque
 Prevention
 Red meats
 Risk factor
 Saturated fat
 Sedentary
 Trans fat
 Triglycerides
 Waxy substance

Cholesterol - Level Two Solution



K P G T M M N W R F A T L I K E S U B S T A N C E
D J K F N I E T O R P O P I L M C T P C Y W L G R
T K C B L H R T Z G M E D I C A T I O N G X Z L D
D P K D R L S T C U D O R P Y R I A D T Z T H F M
Q D B G R L Q J S T A F Y T I S N E D W O L G T K
S T N E I R T U N P H Y S I C A L A C T I V I T Y
C K C A T T A T R A E H L B G Q C T A F S N A R T
G H E A L T H R K J X W T L O R E T S E L O H C G
F F K K C O L B G N I D L I U B W T K X M T Y M C
K H D L C J M R T A F D E T A R U T A S M T M Q
W F J N C T S T A E M D E R K B L O O D T E S T R
Z S E I R E T R A L Y B M N P L H E S A E S I D G
O B E S I T Y K K L I F E S T Y L E R Z N P G M M
T Z B M D C O R O N A R Y M W N W F P L W C R N K
W R I S K F A C T O R T R I G L Y C E R I D E S B
P E C N A T S B U S Y X A W K L D L C Y Q Y Y Y M
B M H V R B G L I V E R N R M Y E S I C R E X E K
Q O I T A R L D H C M T P X M T H G I E W R E V O
W O L F D O O L B K W S E D E N T A R Y W P V C C
M B L O O D C H O L E S T E R O L R K V V T M X N
A T H E R O S C L E R O S I S D R K H P M Z G H L
P H I G H D E N S I T Y L R Z P R E V E N T I O N
M L F X M L E X C E S S W E I G H T R R D B F G R
G N H C T X D Z C E L L M E M B R A N E T N Z B B
E U Q A L P V J B R L F N C M L D I E T K M L T T

Cholesterol - Level Three



V R X P L O R E T S E L O H C W B D N P Z N T F Y N
 B H L N L H D L R A T I O J B P L T B F K T M Y R P
 L E B J R E D M E A T S Q R P H O D P B R Y T L F D
 T A P T J J C R T M M F K K C Y O L J T Y T L I G L
 S L S E D I R E C Y L G I R T S D W K L T T J F L T
 E T O V E R W E I G H T J Q K I C T C R I F V E M Y
 T H M T L D L N R K P K T D L C H D Y E S A E S I D
 D Z T R L O W D E N S I T Y T A O T L L E T J T V Y
 O E R I C X Q C J X Y S T A F L L H V Z B L N Y G T
 O C Q S R Y K N H B C L L L L A E G W N O I S L N I
 L N G K K T A R T E R I E S Y C S I F F N K I E R S
 B A C F M K T R A N S F A T R T T E P T O E S M E N
 D T D A N Q W M H Z L P Z T A I E W C K I S O E V E
 K S B C W L R K C Q K N T F N V R S E W T U R D I D
 L B B T K G Y L N D T R G Y O I O S L L N B E I L H
 N U F O G W O L F D O O L B R T L E L Y E S L C R G
 F S H R R F J J R D B T W R O Y T C M R V T C A D I
 D Y N J M P R M R K Z F N X C J W X E A E A S T L H
 E X E R C I S E L L N Z L T K N M E M T R N O I C H
 F A L L W M Q E U Q A L P Z T N L R B N P C R O Q N
 X W N D D A I R Y P R O D U C T S T R E R E E N G C
 C K J H T B U I L D I N G B L O C K A D N B H G F L
 Y T □ T A F D E T A R U T A S L K D N E N P T T T T
 Q N G M L B S T N E I R T U N X L I E S R Z A B Y J
 K R N I E T O R P O P I L P V V B E X H L M N K H D
 K L Y L R Y Y G K W Z K C A T T A T R A E H N K N L

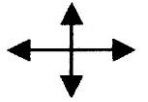
Atherosclerosis
 Arteries
 Blood cholesterol
 Blood flow
 Blood test
 Building block
 Cell membrane
 Cholesterol
 Coronary
 Dairy products

Diet
 Disease
 Excess weight
 Exercise
 Fatlike substance
 Fats
 HDL
 HDL ratio
 Health
 Heart attack

High density
 LDL
 Lifestyle
 Lipoprotein
 Liver
 Low density
 Medication
 Nutrients
 Obesity
 Overweight

Physical activity
 Plaque
 Prevention
 Red meats
 Risk factor
 Saturated fat
 Sedentary
 Trans fat
 Triglycerides
 Waxy substance

Cholesterol - Level Three Solution



V R X P L O R E T S E L O H C W B D N P Z N T F Y N
 B H L N L H D L R A T I O J B P L T B F K T M Y R P
 L E B J R E D M E A T S Q R P H O D P B R Y T L F D
T A P T J J C R T M M F K K C Y O L J T Y T L I G L
 S L S E D I R E C Y L G I R T S D W K L T T J F L T
 E T O V E R W E I G H T J Q K I C T C R I F V E M Y
 T H M T L D L N R K P K T D L C H D Y E S A E S I D
 D Z T R L O W D E N S I T Y T A O T L L E T J T V Y
 O E R I C X Q C J X Y S T A F L L H V Z B L N Y G T
 O C Q S R Y K N H B C L L L L A E G W N O I S L N I
 L N G K K T A R T E R I E S Y C S I F F N K I E R S
B A C F M K T R A N S F A T R T T E P T O E S M E N
 D T D A N Q W M H Z L P Z T A I E W C K I S O E V E
 K S B C W L R K C Q K N T F N V R S E W T U R D I D
 L B B T K G Y L N D T R G Y O I O S L L N B E I L H
 N U F O G W O L F D O O L B R T L E L Y E S L C R G
 F S H R R F J J R D B T W R O Y T C M R V T C A D I
 D Y N J M P R M R K Z F N X C J W X E A E A S T L H
E X E R C I S E L L N Z L T K N M E M T R N O I C H
 F A L L W M Q E U Q A L P Z T N L R B N P C R O Q N
 X W N D D A I R Y P R O D U C T S T R E R E E N G C
 C K J H T B U I L D I N G B L O C K A D N B H G F L
 Y T T A F D E T A R U T A S L K D N E N P T T T T
 Q N G M L B S T N E I R T U N X L I E S R Z A B Y J
 K R N I E T O R P O P I L P V V B E X H L M N K H D
 K L Y L R Y Y G K W Z K C A T T A T R A E H N K N L

Cholesterol - Level Four



E X R G D D N D N T F K K R T P K N X Q N J H L D N L B
 K S T M Z N M G R Z M T I H □ W O C K Z F M T G R D W Z
 W W A B K X J A G P V S G T A I F X A A E S W B H F B P
 F H K E N Q N Q M Q K I A X T T T A T T E X T D S L D W
 H Q R M S S J K K F E F Y N T M N L R T T M E I P D Q H
 Z C G N F I R T A W D S E V E C I I D T T A S R X F X V
 K H N A T F D C S E U V L D E K G O T K E O T N C R L T
 G B T T N R T S T B E L I L E L O G Y N R R L R R I F F
 B B V V R O E A S R F C L S Y L N M N E B J I F A V S M
 G Y Q T R C R T P B A M U C B M M V L L V M M E W E D E
 M N Y T X U A V T T E B E P H X N C O Z P R R Z S J H H
 Y K M E T N G X I M S R L V T L S O G H T M C T L X R N
 N N B A C C M O B T I O X O C O D Q Y S C X T J M M P N
 N V S E T W N R A D R H V N R C C S N X T R F L R K N D
 Z B P Q R C A N E M E M F E H E I N L W Z N T T W Y P R
 D M U W K N C S L A H G H O R C T W I O O Q E J K Y N L
 T A N I E E D W L R Y T L G A W G S Y E W L D I N T N R
 N W I C L I Z T Q T A E C L R L E T E Y T D F L R X D C
 M R H R E D H B I H S B A K I Z I I P L R O E D Q T M C
 H K R T Y W I S E T D C R F L S V Y G N O A R N O T U X
 N K M E N P E N E U T L E T N R R Y R H J H T P S O M N
 K L L Q D B R R G I Q S R E W A T K M H T N C N O I L N
 L W M D O M O O V B T A D A N K P M D P L K Z D E P T B
 H M X Z L L E I D Y L H L O T N H B K V N W R Q H D I Y
 N F K T M N T A L U G O R P V I T M W N V E P T S L E L
 M G D V X Y F E T I C O C K P H O F T D V B M R R T N S
 T R K B J T Y L H S C T M K F K H R B I D M J K L T A X
 N R N R H W L D L T G M S N H H X T L L G J L X T M N F

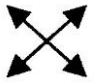
Atherosclerosis
 Arteries
 Blood cholesterol
 Blood flow
 Blood test
 Building block
 Cell membrane
 Cholesterol
 Coronary
 Dairy products

Diet
 Disease
 Excess weight
 Exercise
 Fatlike substance
 Fats
 HDL
 HDL ratio
 Health
 Heart attack

High density
 LDL
 Lifestyle
 Lipoprotein
 Liver
 Low density
 Medication
 Nutrients
 Obesity
 Overweight

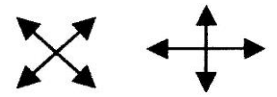
Physical activity
 Plaque
 Prevention
 Red meats
 Risk factor
 Saturated fat
 Sedentary
 Trans fat
 Triglycerides
 Waxy substance

Cholesterol - Level Four Solution



E X R G D D N D N T F K K R T P K N X Q N J H L D N L B
K S T M Z N M G R Z M T I H W O C K Z F M T G R D W Z
W W A B K X J A G P V S G T A I F X A A E S W B H F B P
F H K E N Q N Q M Q K I A X T T T A T T E X T D S L D W
H Q R M S S J K K F E F Y N T M N L R T T M E I P D Q H
Z C G N F I R T A W D S E V E C I I D T T A S R X F X V
K H N A T F D C S E U V L D E K G O T K E O T N C R L T
G B T T N R T S T B E L I L E L O G Y N R R L R R I F F
B B V V R O E A S R F C L S Y L N M N E B J I F A V S M
G Y Q T R C R T P B A M U C B M M V L L V M M E W E D E
M N Y T X U A V T T E B E P H X N C O Z P R R Z S J H H
Y K M E T N G X I M S R L V T L S O G H T M C T L X R N
N N B A C C M O B T I O X O C O D Q Y S C X T J M M P N
N V S E T W N R A D R H V N R C C S N X T R F L R K N D
Z B P Q R C A N E M E M F E H E I N L W Z N T T W Y P R
D M U W K N C S L A H G H O R C T W I O O Q E J K Y N L
T A N I E E D W L R Y T L G A W G S Y E W L D I N T N R
N W I C L I Z T Q T A E C L R L E T E Y T D F L R X D C
M R H R E D H B I H S B A K I Z I I P L R O E D Q T M C
H K R T Y W I S E T D C R F L S V Y G N O A R N O T U X
N K M E N P E N E U T L E T N R R Y R H J H T P S O M N
K L L Q D B R R G I Q S R E W A T K M H T N C N O I L N
L W M D O M O O V B T A D A N K P M D P L K Z D E P T B
H M X Z L L E I D Y L H L O T N H B K V N W R Q H D I Y
N F K T M N T A L U G O R P V I T M W N V E P T S L E L
M G D V X Y F E T I C O C K P H O F T D V B M R R T N S
T R K B J T Y L H S C T M K F K H R B I D M J K L T A X
N R N R H W L D L T G M S N H H X T L L G J L X T M N F

Cholesterol - Level Five



Y N I E T O R P O P I L N K C Z V H L T E T N K R Q B
 T N S Q J S A T U R A T E D F A T □ R T X G T N L X H
 I Z N E C N A T S B U S E K I L T A F K C B P B N N M
 V N R R D W L N M K C L K O V N N H N O E H T J Q K L
 I B F T L E M O F R I M V L R S E V B B S H E A L T H
 T J L Y M H N Y R F J E R M F X M U N E S L Q N L N P
 C F Q O T K M T E E R N S A E W I L M S W C T J V K F
 A R X M O Q M S A W T T T R Y L Q Y G I E L N B P T Y
 L R N M X D T W E R C S C Y D Y P J K T I N R K R G L
 A J R M D Y F I R U Y I E I B K R B M Y G Y N Z E S N
 C K C K L L G L D R S C N L L V G B N Y H M K Q V I L
 I Z C E F H M O O E L G O W O D G Z L R T L V Y E S E
 S P V D T P R T T W B I N N O H Q D D A X T L T N O C
 Y R R J K P C L L L T L T U D W C H L N N K D I T R N
 H Q J T Y A N M O A G M M N T H G T L O V L H S I E A
 P R Y R F N F C R X T N T K E R I Z R R K Z V N O L T
 G H I K D K K L Q L O T V N S N I G F O V V G E N C S
 R A S M M K D H M I L R P J T M N E H C X D H D L S B
 D I Q K W H T R T D I E T J X K N L N D T Z T W R O U
 R L Q L X Z D A M R N S X B D L D D S T E Z R O N R S
 R B L O O D C H O L E S T E R O L J I T S N N L J E Y
 R T V D R I K V J I N Z N V R K J G L S A C S L K H X
 Q W Y R D T R X R T X G H L B N T K Z F E E K I T T A
 S W L E N H N E E N A R B M E M L L E C N A M H T A W
 V T M P K J T T V N C M E U Q A L P L D K T S D H Y L
 B R A Z H R S E D I R E C Y L G I R T R L R X E E R N
 K H K F A R T K Q D L M H E A R T A T T A C K L J R H

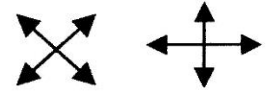
Atherosclerosis
 Arteries
 Blood cholesterol
 Blood flow
 Blood test
 Building block
 Cell membrane
 Cholesterol
 Coronary
 Dairy products

Diet
 Disease
 Excess weight
 Exercise
 Fatlike substance
 Fats
 HDL
 HDL ratio
 Health
 Heart attack

High density
 LDL
 Lifestyle
 Lipoprotein
 Liver
 Low density
 Medication
 Nutrients
 Obesity
 Overweight

Physical activity
 Plaque
 Prevention
 Red meats
 Risk factor
 Saturated fat
 Sedentary
 Trans fat
 Triglycerides
 Waxy substance

Cholesterol - Level Five Solution



A 20x20 grid of letters with words highlighted in blue. The words are:

- NIETORPOPI L
- SATURATED FAT
- HEALTH
- WATER
- HEART
- DIET
- BLOOD CHOLESTEROL
- ENARBEMMLEC
- EUQALP
- SEDIRECYLGIRT
- HEARTATTACK

True or False Test - Level One

Cholesterol

Directions: For the following statements, circle the **T** if the statement is true and circle the **F** if the statement is false.

- T F 1. Saturated fat raises your cholesterol more than anything else.
- T F 2. To lower your cholesterol, you should eat foods with less fiber.
- T F 3. Cholesterol is a waxy Fatlike substance.
- T F 4. Most of the body's cholesterol is made by the heart.
- T F 5. Foods that are high in cholesterol include dairy products.
- T F 6. The material that blocks blood flow is called plaque.
- T F 7. Aerobic exercise raises the good cholesterol and lowers the bad cholesterol.
- T F 8. The blood vessels that get blocked by cholesterol are the veins.
- T F 9. A blocked blood vessel going to the brain can result in a heart attack.
- T F 10. Besides nutrients, the heart's blood vessels also provide oxygen.

Completion Test or Questions for Review - Level One

Cholesterol

Directions: From the information included in the article you read, complete each statement with the best answer.

1. _____ fat raises your cholesterol more than anything else.
2. The bad cholesterol is commonly called _____.
3. To lower your cholesterol, you should eat foods with soluble _____.
4. Cholesterol is a waxy _____ substance.
5. Most of the body's cholesterol is made by the _____.
6. The good cholesterol is commonly called _____.
7. Foods that are high in cholesterol include _____ products.
8. The material that blocks blood flow is called _____.
9. _____ exercise raises the good cholesterol and lowers the bad cholesterol.
10. The blood vessels that get blocked by cholesterol are the _____.

Name

class

grade

Completion Test or Questions for Review - Level Two

Cholesterol

Directions: From the information included in the article you read, complete each statement with the best answer.

1. _____ fat raises your cholesterol more than anything else.
2. The bad cholesterol is commonly called _____.
3. To lower your cholesterol, you should eat foods with soluble _____.
4. Cholesterol is a waxy _____ substance.
5. Most of the body's cholesterol is made by the _____.
6. The good cholesterol is commonly called _____.
7. Foods that are high in cholesterol include _____ products.
8. The material that blocks blood flow is called _____.
9. _____ exercise raises the good cholesterol and lowers the bad cholesterol.
10. The blood vessels that get blocked by cholesterol are the _____.
11. The blood vessels that supply nutrients to the heart are called _____ blood vessels.
12. Most experts agree that an adult's blood cholesterol level should be below _____ hundred mg/dl.
13. Another type of fat that raises your cholesterol level is _____ fat.
14. A blocked blood vessel going to the brain can result in a _____.
15. Besides nutrients, the heart's blood vessels also provide _____.

Completion Test or Questions for Review - Level Three**Cholesterol**

Directions: From the information included in the article you read, complete each statement with the best answer.

1. _____ fat raises your cholesterol more than anything else.
2. The bad cholesterol is commonly called _____.
3. To lower your cholesterol, you should eat foods with soluble _____.
4. Cholesterol is a waxy _____ substance.
5. Most of the body's cholesterol is made by the _____.
6. The good cholesterol is commonly called _____.
7. Foods that are high in cholesterol include _____ products.
8. The material that blocks blood flow is called _____.
9. _____ exercise raises the good cholesterol and lowers the bad cholesterol.
10. The blood vessels that get blocked by cholesterol are the _____.
11. The blood vessels that supply nutrients to the heart are called _____ blood vessels.
12. Most experts agree that an adult's blood cholesterol level should be below _____ hundred mg/dl.
13. Another type of fat that raises your cholesterol level is _____ fat.
14. A blocked blood vessel going to the brain can result in a _____.
15. Besides nutrients, the heart's blood vessels also provide _____.
16. Cholesterol helps make up the sheath that insulates _____.
17. Cholesterol is a building block of the outer cell _____.
18. We should not eat more than _____ hundred mg. of cholesterol per day.
19. An indicator of cardiovascular disease is the HDL _____.
20. Cholesterol combines with a protein to form a _____.

Cholesterol

Answer Key - True or False Test - Level One

1. Saturated fat raises your cholesterol more than anything else. **True**
2. To lower your cholesterol, you should eat foods with less fiber. **False** (To lower your cholesterol, you should eat foods with **more** fiber)
3. Cholesterol is a waxy fatlike substance. **True**
4. Most of the body's cholesterol is made by the heart. **False** (Most of the body's cholesterol is made by the **liver**)
5. Foods that are high in cholesterol include dairy products. **True**
6. The material that blocks blood flow is called plaque. **True**
7. Aerobic exercise raises the good cholesterol and lowers the bad cholesterol. **True**
8. The blood vessels that get blocked by cholesterol are the veins. **False** (The blood vessels that get blocked by cholesterol are the **arteries**)
9. A blocked blood vessel going to the brain can result in a heart attack. **False** (A blocked blood vessel going to the brain can result in a **stroke**)
10. Besides nutrients, the heart's blood vessels also provide oxygen. **True**

Cholesterol

Answer Key - Tests and Review Questions

(Note: This solution applies to all three levels)

1. **Saturated** fat raises your cholesterol more than anything else.
2. The bad cholesterol is commonly called **LDL**.
3. To lower your cholesterol, you should eat foods with soluble **Fiber**.
4. Cholesterol is a waxy **Fatlike** substance.
5. Most of the body's cholesterol is made by the **Liver**.
6. The good cholesterol is commonly called **HDL**.
7. Foods that are high in cholesterol include **Dairy** products.
8. The material that blocks blood flow is called **Plaque**.
9. **Aerobic** exercise raises the good cholesterol and lowers the bad cholesterol.
10. The blood vessels that get blocked by cholesterol are the **Arteries**.
11. The blood vessels that supply nutrients to the heart are called **Coronary** blood vessels.
12. Most experts agree that an adult's blood cholesterol level should be below **Two** hundred mg/dl.
13. Another type of fat that raises your cholesterol level is **Trans** fat.
14. A blocked blood vessel going to the brain can result in a **Stroke**.
15. Besides nutrients, the heart's blood vessels also provide **Oxygen**.
16. Cholesterol helps make up the sheath that insulates **Nerves**.
17. Cholesterol is a building block of the outer cell **Membrane**.
18. We should not eat more than **Three** hundred mg. of cholesterol per day.
19. An indicator of cardiovascular disease is the HDL **Ratio**.
20. Cholesterol combines with a protein to form a **Lipoprotein**.

Teacher Lesson Plan

For health classes, for rainy gym days, for substitute teachers, and even for study hall students who say that they have nothing to do

Directions

- Print enough copies of the article so that all of the students in the class have their own copy.
- Each Worksheet is arranged so that the questions are in the same order as the information presented in the article. Select the Worksheet level that is most appropriate for your students and then print enough copies so that all of the students in the class have their own copy.
- If having the questions in the same order as the information presented in the article is too easy for your group of students, you can substitute one of the Test-Review Questions levels for the Worksheet.
- After completing one of the above-mentioned tasks, have the students complete one of the crossword puzzles, one of the word search puzzles, or both puzzles.
- If any of the above-mentioned choices is too difficult for your particular group of students, another option is to allow two students to work together on one of these tasks.

NOTE: Feedback from teachers already using these resources state that staff members really like receiving the health and wellness articles if they are accompanied by a crossword puzzle. For members of the staff, the Level Four crossword puzzle is recommended.

Name

class

grade

Worksheet - Level One

Cholesterol

Directions: From the information included in the article you read, complete each statement with the best answer.

1. Cholesterol is a waxy _____ substance.
2. Foods that are high in cholesterol include _____ products.
3. The bad cholesterol is commonly called _____.
4. The good cholesterol is commonly called _____.
5. The blood vessels that get blocked by cholesterol are the _____.
6. The material that blocks blood flow is called _____.
7. Besides nutrients, the heart's blood vessels also provide _____.
8. A blocked blood vessel going to the brain can result in a _____.
9. _____ fat raises your cholesterol more than anything else.
10. _____ exercise raises the good cholesterol and lowers the bad cholesterol.

Name _____

class _____

grade _____

Worksheet - Level Two

Cholesterol

Directions: From the information included in the article you read, complete each statement with the best answer.

1. Cholesterol is a waxy _____ substance.
2. Cholesterol helps make up the sheath that insulates _____.
3. Most of the body's cholesterol is made by the _____.
4. Foods that are high in cholesterol include _____ products.
5. The bad cholesterol is commonly called _____.
6. The good cholesterol is commonly called _____.
7. The blood vessels that get blocked by cholesterol are the _____.
8. The material that blocks blood flow is called _____.
9. Besides nutrients, the heart's blood vessels also provide _____.
10. A blocked blood vessel going to the brain can result in a _____.
11. Most experts agree that an adult's blood cholesterol level should be below _____ hundred mg/dl.
12. We should not eat more than _____ hundred mg. of cholesterol per day.
13. _____ fat raises your cholesterol more than anything else.
14. To lower your cholesterol, you should eat foods with soluble _____.
15. _____ exercise raises the good cholesterol and lowers the bad cholesterol.

Worksheet - Level Three

Cholesterol

Directions: From the information included in the article you read, complete each statement with the best answer.

1. Cholesterol is a waxy _____ substance.
2. Cholesterol is a building block of the outer cell _____.
3. Cholesterol helps make up the sheath that insulates _____.
4. Most of the body's cholesterol is made by the _____.
5. Foods that are high in cholesterol include _____ products.
6. Cholesterol combines with a protein to form a _____.
7. The bad cholesterol is commonly called _____.
8. The good cholesterol is commonly called _____.
9. The blood vessels that get blocked by cholesterol are the _____.
10. The material that blocks blood flow is called _____.
11. The blood vessels that supply nutrients to the heart are called _____ blood vessels.
12. Besides nutrients, the heart's blood vessels also provide _____.
13. A blocked blood vessel going to the brain can result in a _____.
14. Most experts agree that an adult's blood cholesterol level should be below _____ hundred mg/dl.
15. We should not eat more than _____ hundred mg. of cholesterol per day.
16. An indicator of cardiovascular disease is the HDL _____.
17. _____ fat raises your cholesterol more than anything else.
18. Another type of fat that raises your cholesterol level is _____ fat.
19. To lower your cholesterol, you should eat foods with soluble _____.
20. _____ exercise raises the good cholesterol and lowers the bad cholesterol.

Cholesterol

Worksheet Answer Key - Level One

1. Cholesterol is a waxy **Fat-Like** substance.
2. Foods that are high in cholesterol include **Dairy** products.
3. The bad cholesterol is commonly called **LDL**.
4. The good cholesterol is commonly called **HDL**.
5. The blood vessels that get blocked by cholesterol are the **Arteries**.
6. The material that blocks blood flow is called **Plaque**.
7. Besides nutrients, the heart's blood vessels also provide **Oxygen**.
8. A blocked blood vessel going to the brain can result in a **Stroke**.
9. **Saturated** fat raises your cholesterol more than anything else.
10. **Aerobic** exercise raises the good cholesterol and lowers the bad cholesterol.

Cholesterol

Worksheet Answer Key - Level Two

1. Cholesterol is a waxy **Fat-Like** substance.
2. Cholesterol helps make up the sheath that insulates **Nerves**.
3. Most of the body's cholesterol is made by the **Liver**.
4. Foods that are high in cholesterol include **Dairy** products.
5. The bad cholesterol is commonly called **LDL**.
6. The good cholesterol is commonly called **HDL**.
7. The blood vessels that get blocked by cholesterol are the **Arteries**.
8. The material that blocks blood flow is called **Plaque**.
9. Besides nutrients, the heart's blood vessels also provide **Oxygen**.
10. A blocked blood vessel going to the brain can result in a **Stroke**.
11. Most experts agree that an adult's blood cholesterol level should be below **Two** hundred mg/dl.
12. We should not eat more than **Three** hundred mg. of cholesterol per day.
13. **Saturated** fat raises your cholesterol more than anything else.
14. To lower your cholesterol, you should eat foods with soluble **Fiber**.
15. **Aerobic** exercise raises the good cholesterol and lowers the bad cholesterol.

Cholesterol

Worksheet Answer Key - Level Three

1. Cholesterol is a waxy **Fat-Like** substance.
2. Cholesterol is a building block of the outer cell **Membrane**.
3. Cholesterol helps make up the sheath that insulates **Nerves**.
4. Most of the body's cholesterol is made by the **Liver**.
5. Foods that are high in cholesterol include **Dairy** products.
6. Cholesterol combines with a protein to form a **Lipoprotein**.
7. The bad cholesterol is commonly called **LDL**.
8. The good cholesterol is commonly called **HDL**.
9. The blood vessels that get blocked by cholesterol are the **Arteries**.
10. The material that blocks blood flow is called **Plaque**.
11. The blood vessels that supply nutrients to the heart are called **Coronary** blood vessels.
12. Besides nutrients, the heart's blood vessels also provide **Oxygen**.
13. A blocked blood vessel going to the brain can result in a **Stroke**.
14. Most experts agree that an adult's blood cholesterol level should be below **Two** hundred mg/dl.
15. We should not eat more than **Three** hundred mg. of cholesterol per day.
16. An indicator of cardiovascular disease is the HDL **Ratio**.
17. **Saturated** fat raises your cholesterol more than anything else.
18. Another type of fat that raises your cholesterol level is **Trans** fat.
19. To lower your cholesterol, you should eat foods with soluble **Fiber**.
20. **Aerobic** exercise raises the good cholesterol and lowers the bad cholesterol.