Learn and Live

**Preventing Heart Disease and Stroke**

Heart Disease & Stroke Statistics
2023 Update

The **2023 Statistical Update** is a major source for monitoring cardiovascular health, risk factors, and disease in the US and global population. It is published annually in *Circulation* and can be accessed for free at **AHAjournals.org/StatUpdate**

Undiagnosed

Diagnosed

Prediabetes

9.7M   29.3M   115.9M
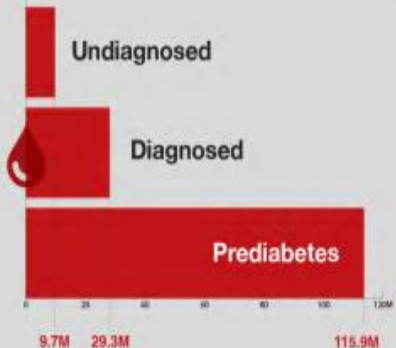
9.7 million
adults have undiagnosed diabetes

29.3 million
adults have diagnosed diabetes

115.9 million
adults have prediabetes
(based on 2017-2020 data)

25.5%
of US adults have high LDL-C (≥130 mg/dL)
(according to 2017-2020 data)

224.4
per 100,000
The age-adjusted US death rate attributable to CVD *(based on 2020 data)*

239.8
per 100,000
The age-adjusted global death rate attributable to CVD *(based on 2020 data)*

On average, someone in the US dies of CVD every **34 seconds**
2544 US deaths from CVD each day *(based on 2020 data)*

On average, someone in the US dies of a stroke every **3 minutes and 17 seconds**
439 US deaths from stroke each day *(based on 2020 data)*

122.4 million, or 47%
of US adults are estimated to have hypertension.
(based on 2017-2020 data)

On average, **1 in 4 adults** in the United States reported achieving adequate leisure-time aerobic and muscle-strengthening activities to meet the physical activity guidelines.
(based on 2018 data)

1 in 7 male adults in the United States are current smokers.
(based on 2020 data)

1 in 9 female adults in the United States are current smokers.
(based on 2020 data)

1 in 9 high school students in the United States used e-cigarettes in the past 30 days.
(based on 2021 data)

Every **1 h/night decrease in sleep** below the 7-8 h/night recommended duration is associated with **6% higher risk of total CVD.**

Every **1 h/night increase in sleep** duration above 7-8 h/night is associated with **12% higher risk of total CVD.**

In 2017, Alzheimer disease and Alzheimer disease–related dementia affected **2.9 million** people in the United States.
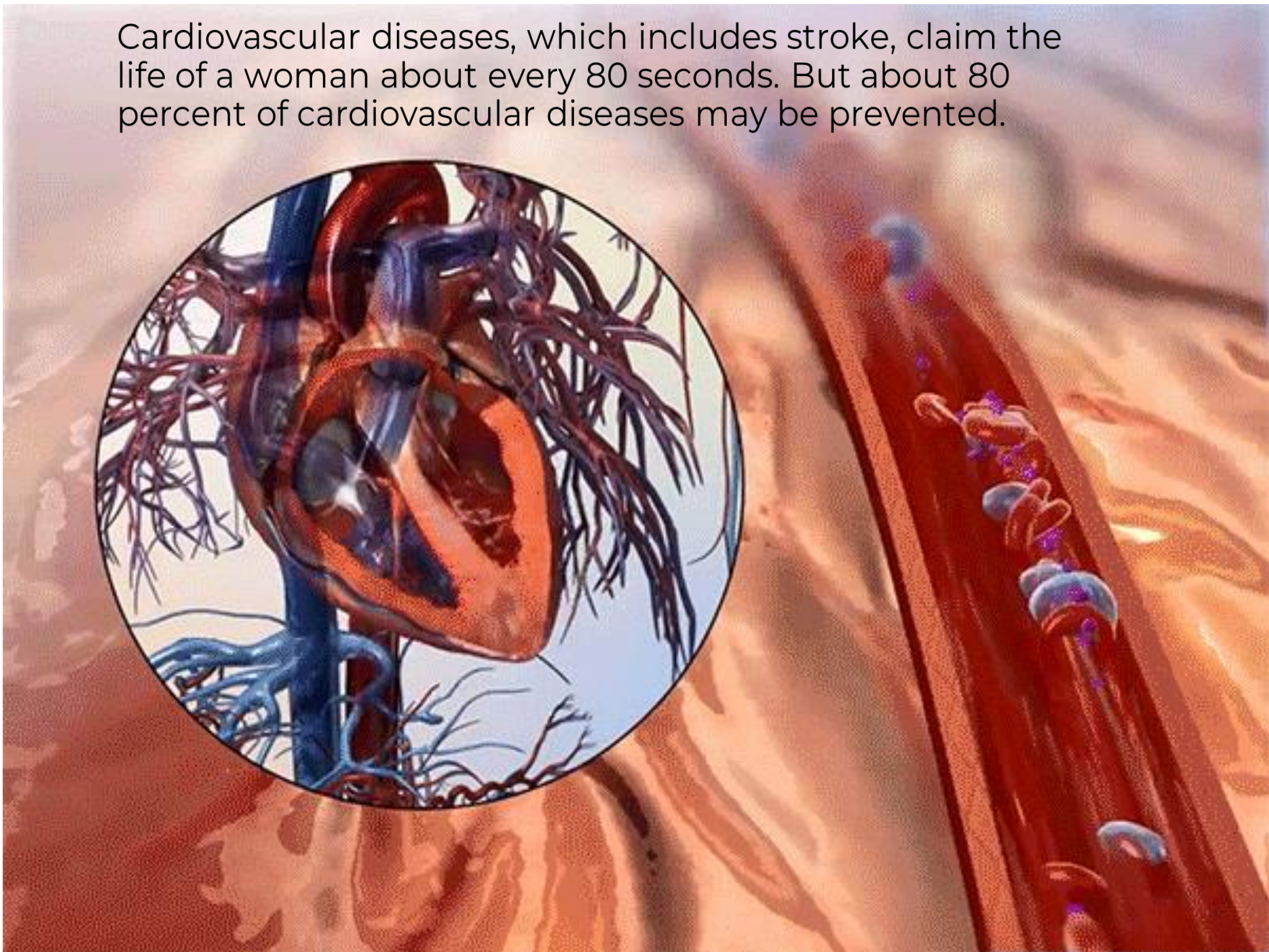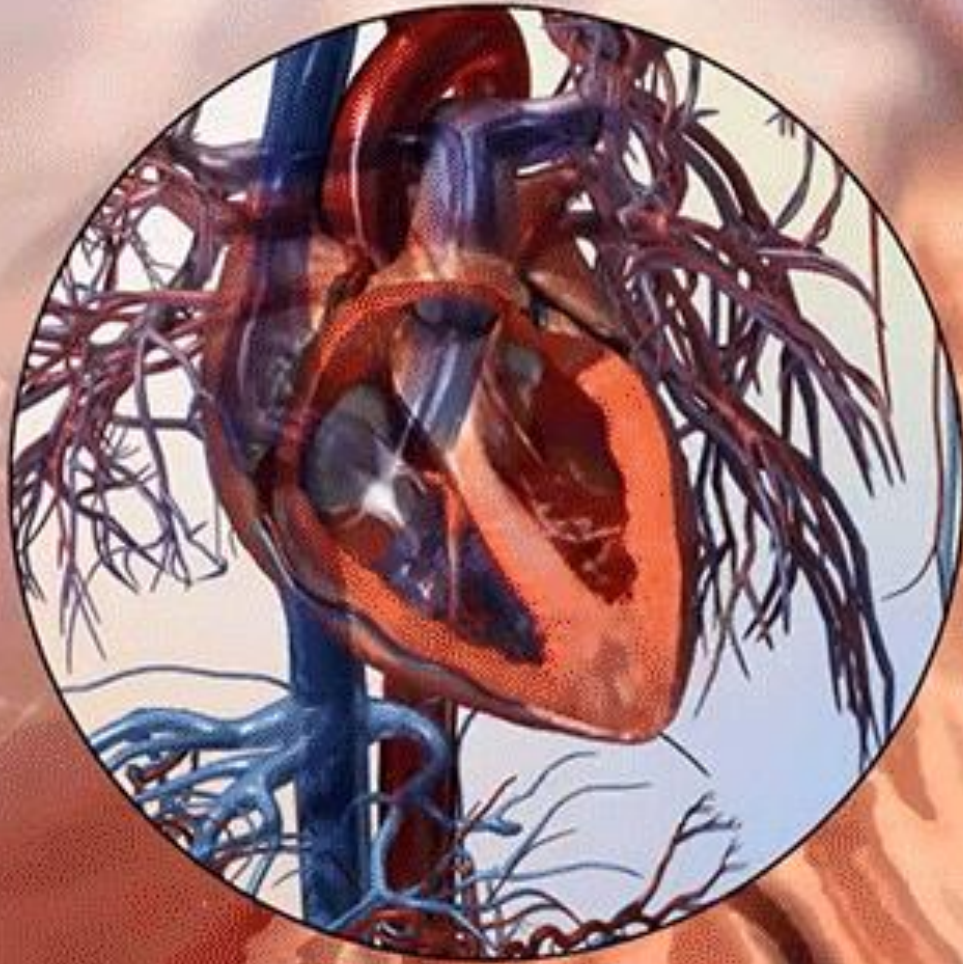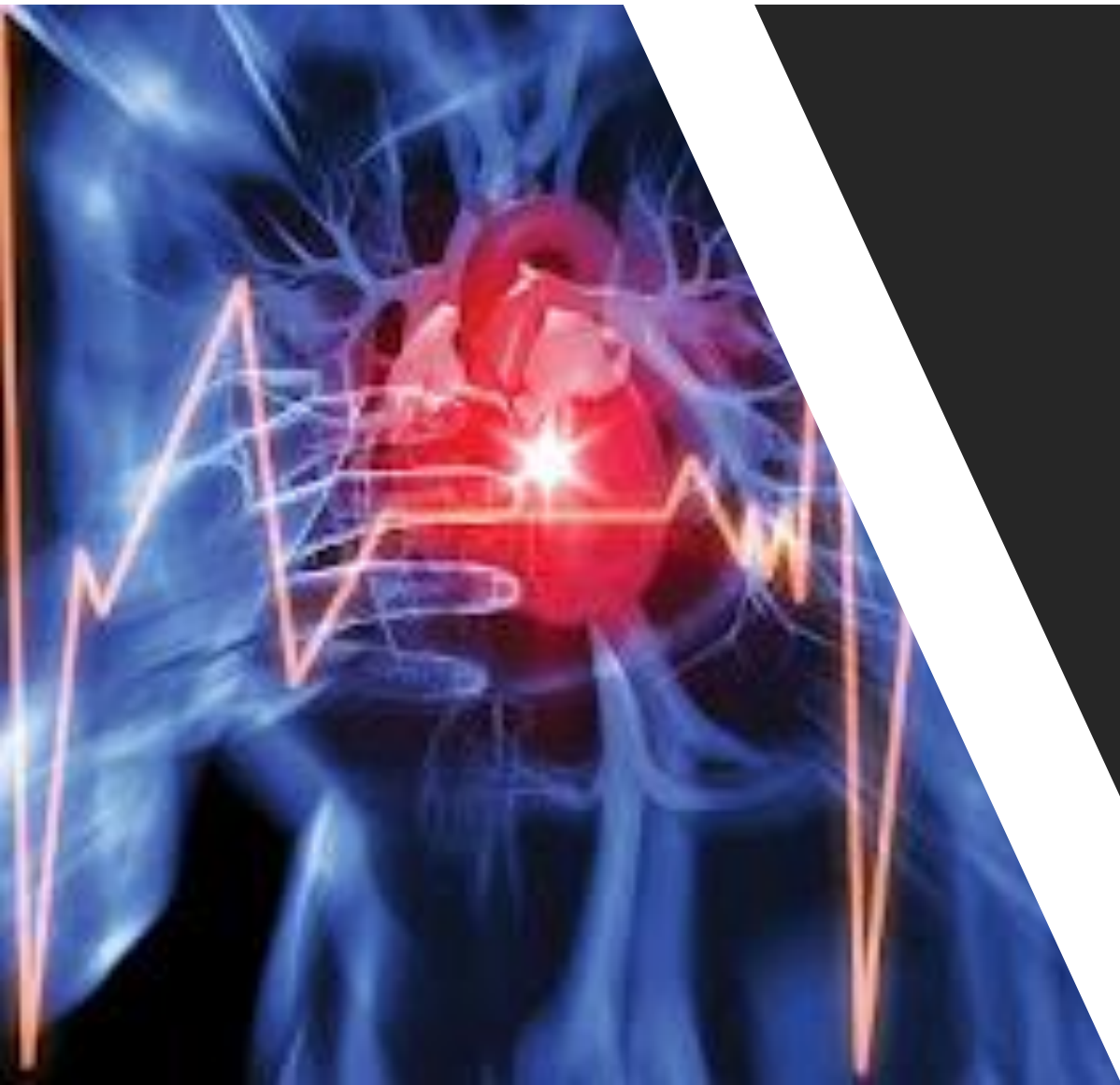
Less than 10% of US adults met the guidelines for whole grain, whole fruit, and nonstarchy vegetable consumption each day in 2017-2018.

Cardiovascular diseases, which includes stroke, claim the life of a woman about every 80 seconds. But about 80 percent of cardiovascular diseases may be prevented.

Can you have a heart attack and not know it?

Symptoms of a Silent Heart Attack

Just like the name implies, a silent heart attack is a heart attack that has either:

- no symptoms,

- minimal symptoms or

- unrecognized symptoms

But **it is like any other heart attack** where blood flow to a section of the heart is temporarily blocked and can cause scarring and damage to the heart muscle."

Silent Heart Attack

"People who have these so-called silent heart attacks are more likely to have non-specific and subtle symptoms, such as:

- indigestion or

- a case of the flu, or

- they may think that they strained a muscle in their chest or their upper back.

- It also may not be discomfort in the chest, it may be in the jaw or the upper back or arms,".

Risk Factors for a Silent Heart Attack in Women

The risk factors for a silent heart attack are the same as those for a recognized heart attack, and:

- include <u>high blood pressure</u>
- <u>high cholesterol</u>
- smoking
- <u>family history of heart disease</u>
- obesity
- age

How to Prevent a Silent Heart Attack

- know their risk factors,

- be aware of your blood pressure and cholesterol,

- exercise regularly and

- avoid smoking to decrease their risk of a heart attack.

- Above all, listen to your bodies, and if something isn't right, talk to a doctor.

The more a woman knows about heart disease, the better chance she has of beating it.

HEART ATTACK SYMPTOMS:
MEN VS. WOMEN

By American Heart Association News

The most common symptom of a heart attack for both men and women is chest pain. But women may experience less obvious warning signs.

MEN

- Nausea or vomiting
- Jaw, neck or back pain
- Squeezing chest pressure or pain
- Shortness of breath

WOMEN

- Nausea or vomiting
- Jaw, neck or **upper** back pain
- Chest pain, **but not always**
- Pain or pressure in the **lower chest** or **upper abdomen**
- Shortness of breath
- **Fainting**
- **Indigestion**
- **Extreme fatigue**

CARDIAC ARREST VS. HEART ATTACK

People often use these terms interchangeably, but they are not the same.

WHAT IS CARDIAC ARREST?

CARDIAC ARREST occurs when the heart malfunctions and stops beating unexpectedly.

Cardiac arrest is triggered by an electrical malfunction in the heart that causes an irregular heartbeat (arrhythmia). With its pumping action disrupted, the heart cannot pump blood to the brain, lungs and other organs.

Cardiac arrest is an "ELECTRICAL" problem.

WHAT HAPPENS

Seconds later, a person becomes unresponsive, is not breathing or is only gasping. **Death occurs within minutes if the victim does not receive treatment.**

WHAT TO DO

Cardiac arrest can be reversible in some victims if it's treated within a few minutes. First, call your local emergency number and start CPR right away. Then, if an Automated External Defibrillator (AED) is available, use it as soon as possible. If two people are available to help, one should begin CPR immediately while the other calls your local emergency number and finds an AED.

CARDIAC ARREST is a LEADING CAUSE OF DEATH.

Cardiac arrest affects thousands of people annually with about three quarters of them occurring in the home.

Fast action can save lives.

WHAT IS A HEART ATTACK?

A **HEART ATTACK** occurs when blood flow to the heart is blocked.

A blocked artery prevents oxygen-rich blood from reaching a section of the heart. If the blocked artery is not reopened quickly, the part of the heart normally nourished by that artery begins to die.

A heart attack is a "CIRCULATION" problem.

Blocked Artery

Arrhythmia

WHAT HAPPENS

Symptoms of a heart attack may be immediate and may include intense discomfort in the chest or other areas of the upper body, shortness of breath, cold sweats, and/or nausea/vomiting. More often, though, symptoms start slowly and persist for hours, days or weeks before a heart attack. Unlike with cardiac arrest, the heart usually does not stop beating during a heart attack. **The longer the person goes without treatment, the greater the damage.**

The heart attack symptoms in women can be different than men (shortness of breath, nausea/vomiting, and back or jaw pain).
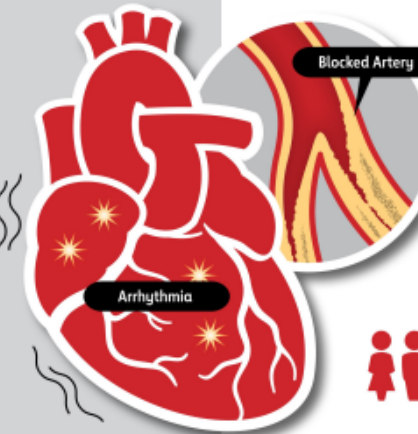
WHAT TO DO

Even if you're not sure it's a heart attack, call your local emergency number. Every minute matters! It's best to call your local emergency number to get to the emergency room right away. Emergency medical services (EMS) staff can begin treatment when they arrive—up to an hour sooner than if someone gets to the hospital by car. EMS staff are also trained to revive someone whose heart has stopped. Patients with chest pain who arrive by ambulance usually receive faster treatment at the hospital, too.
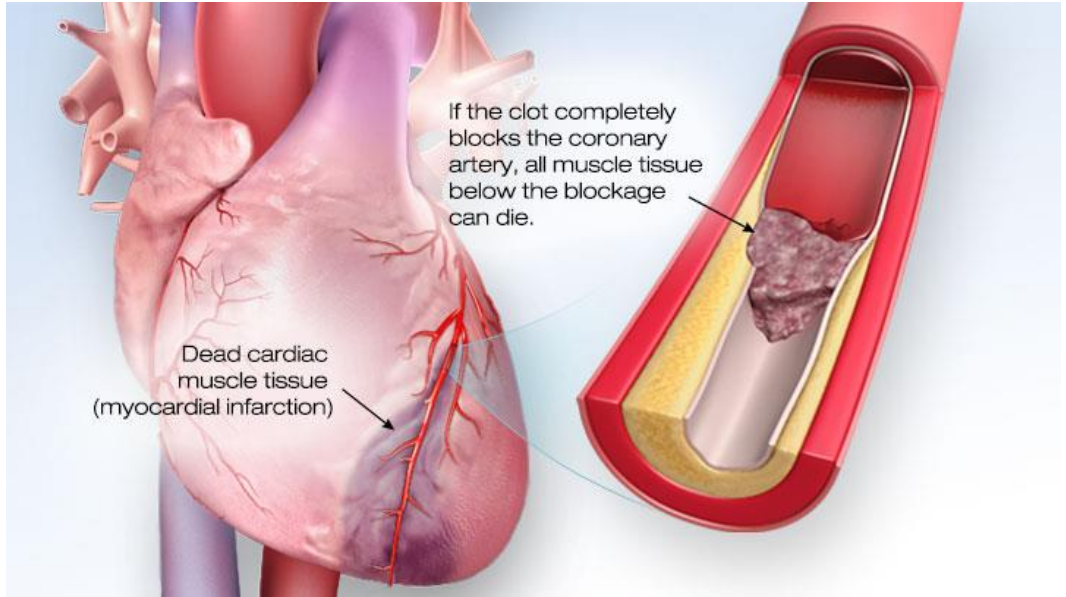
WHAT IS THE LINK?

Most heart attacks do not lead to cardiac arrest. But when cardiac arrest occurs, heart attack is a common cause. Other conditions may also disrupt the heart's rhythm and lead to cardiac arrest.

Fatty deposits called plaque build up in the walls of the coronary arteries.

If the plaque becomes unstable and ruptures, the clotting process, called thrombosis, starts inside the artery.

As thrombosis continues, blood supply to the heart muscle is reduced. And muscle tissue can start to die.

If the clot completely blocks the coronary artery, all muscle tissue below the blockage can die.

Dead cardiac muscle tissue (myocardial infarction)

Risk Factors That Can Be Managed

You can control or treat these risk factors with lifestyle changes and your healthcare provider's help:

- High blood pressure

- Smoking

- High blood cholesterol

- Lack of regular activity

- Obesity or overweight

- Diabetes

Risk Factors You Can't Control

You can't change these risk factors:

- Age
- Gender
- Heredity (family health history)
- Race
- Previous stroke or heart attack

Coronary calcification is a marker for coronary atherosclerosis (hardening of plaque).

The more calcium buildup the more likely is that there is obstructive coronary disease.

	Lesions	Volume[mm³]	EquivMass[mg]	Score	Comment
LM	0	0 mm³		0	
LAD	10	798.50 mm³		975.30	
CX	2	356.60 mm³		410.70	
RCA	5	795.80 mm³		925.90	
Ca	0	0 mm³		0	
Total	17	1950.90 mm³		2311.90	

U1	0	0 mm³		0	
U2	0	0 mm³		0	

Reference Norms of Calcium Score

No Identifiable Calcification	Minimal Identifiable Calcification	Mild Calcification	Moderate Calcification	Significant Calcification
0	1-10	11-100	101-400	401 and above

(Following Mayo Clin Proc. 1999;74(3):243-252)

Right coronary artery

Aortic arch

Left main coronary artery

Left circumflex artery

Thoracic aorta behind the heart

Marginal branch of left circumflex artery

Left anterior descending artery

Posterior descending artery

Marginal branch of right coronary artery

Coronary arteries supply blood and oxygen to the muscles of the heart.
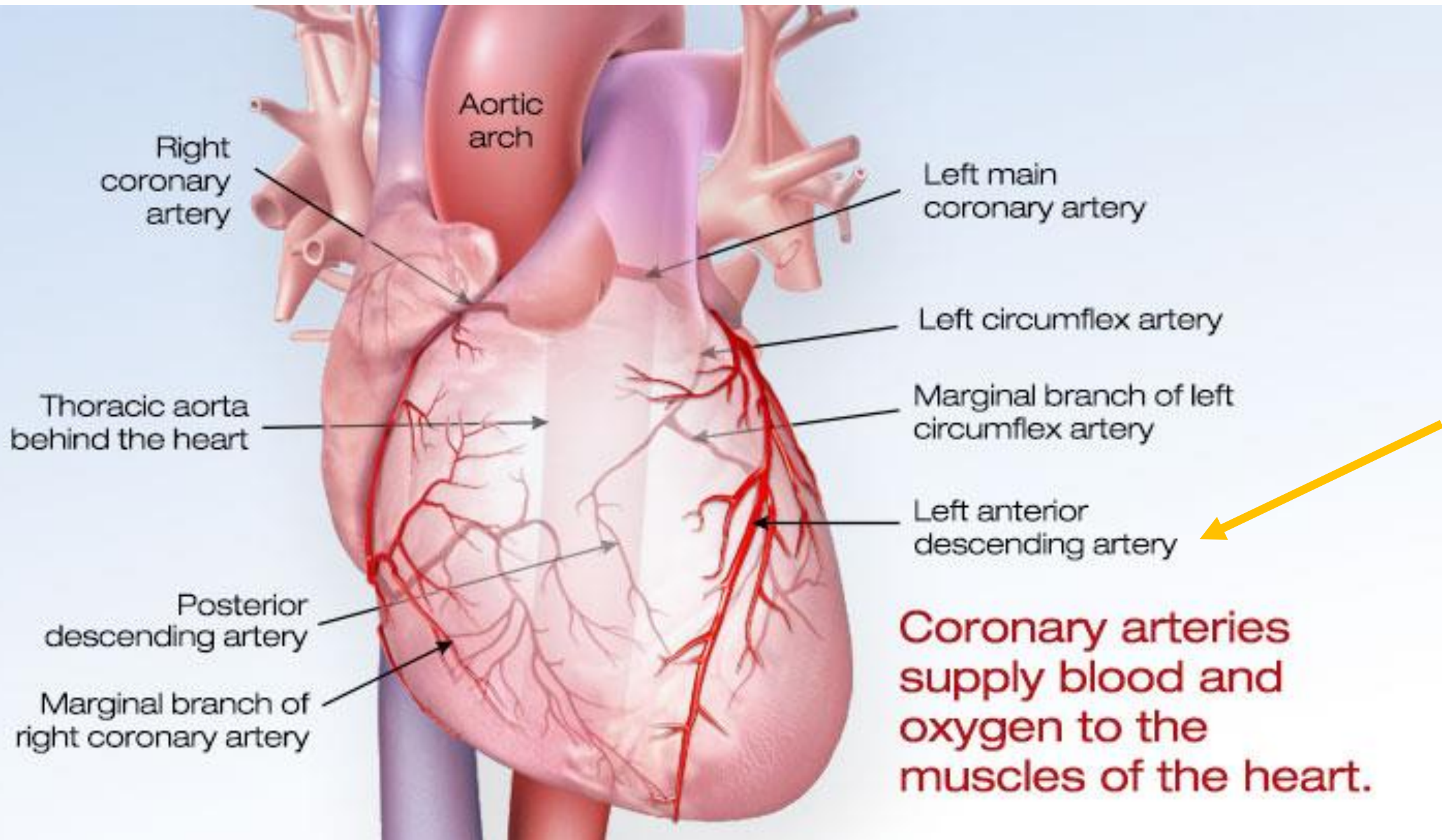
What is a Stroke?
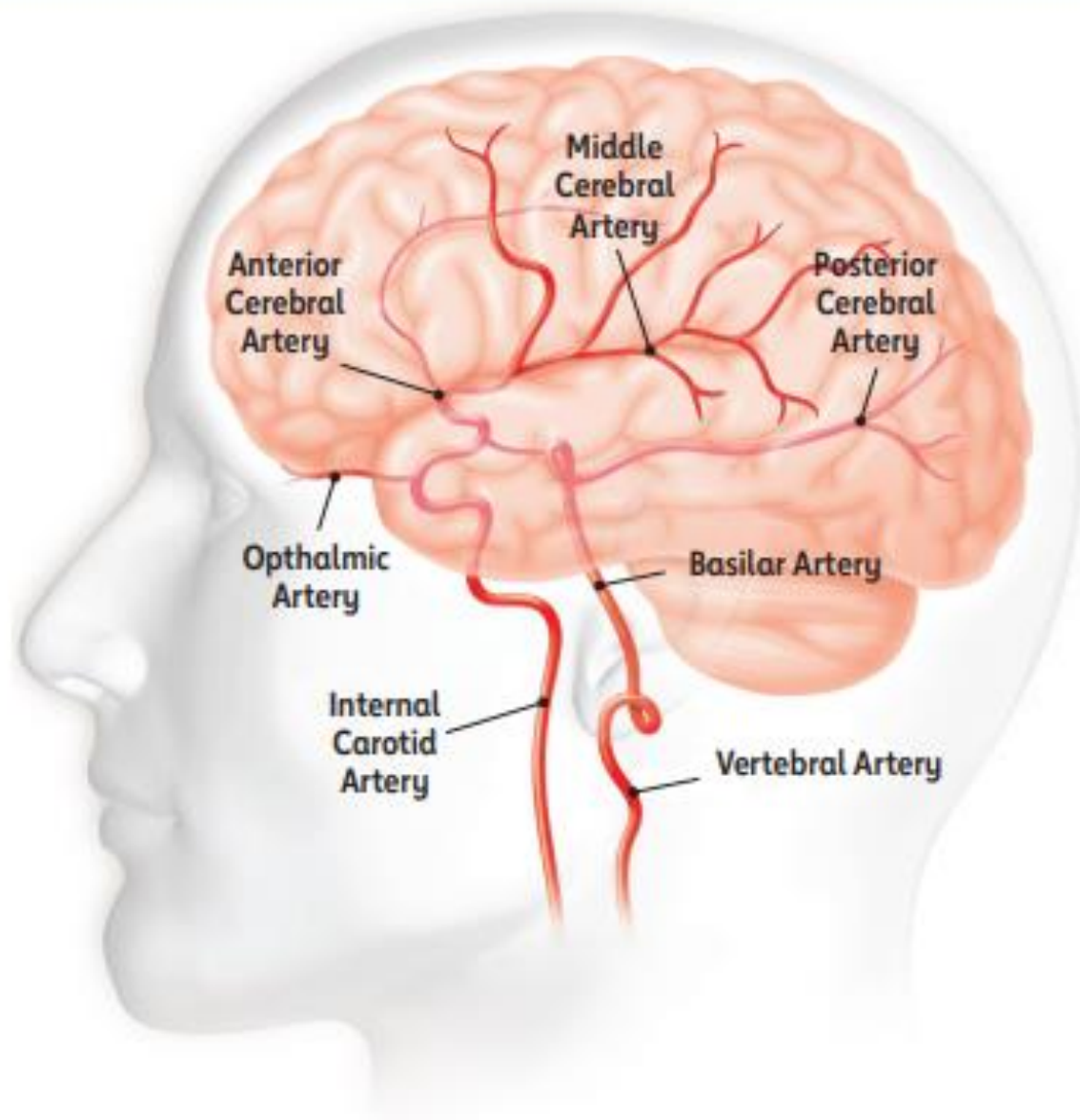
Blood Flow in Normal and Blocked Arteries

NORMAL ARTERY

Blood flows easily through a clear artery.
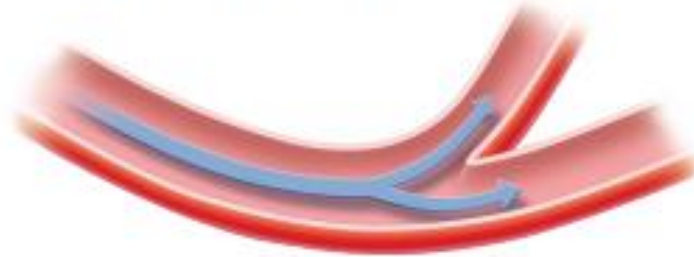
BLOCKAGE

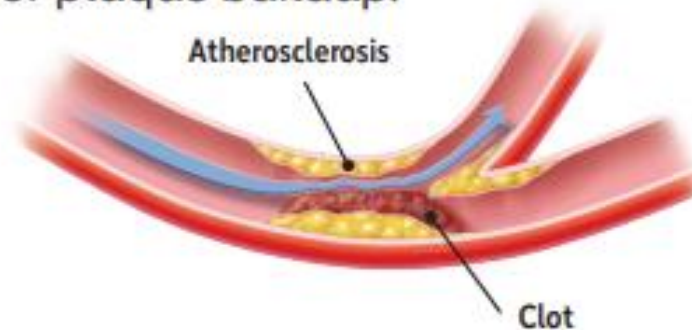An artery can become blocked by **plaque** (a fatty substance in the wall of the artery) or a **blood clot**, which reduces blood flow to the brain and causes a stroke. This picture shows **atherosclerosis**, a hardening of the arteries. Atherosclerosis is caused partly by cholesterol or plaque buildup.

Atherosclerosis

Clot

CLOT DISSOLVES

A transient ischemic attack or TIA has the same signs and symptoms of a stroke, but they only last a short time. The plaque or blood clot breaks up and blood flow is restored to the brain and there is no permanent damage. A TIA is serious and needs to be evaluated by a health care provider.

Blood Flow to the Brain

Area at Risk

Lodged Blood Clot

Ischemic Stroke

Blood Clot

Cardiovascular System
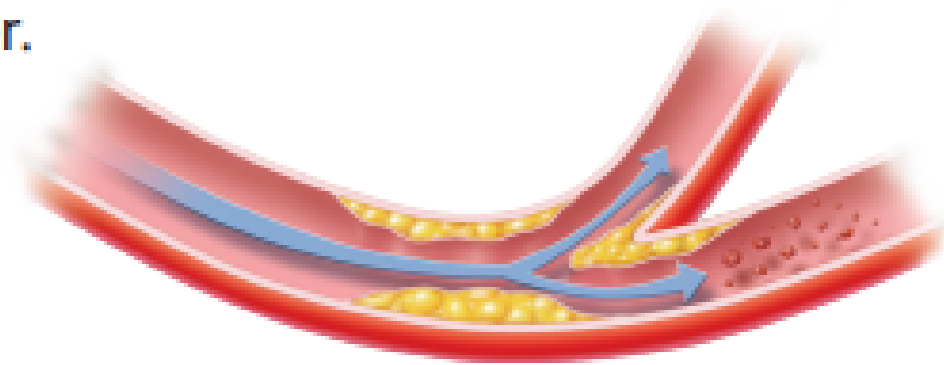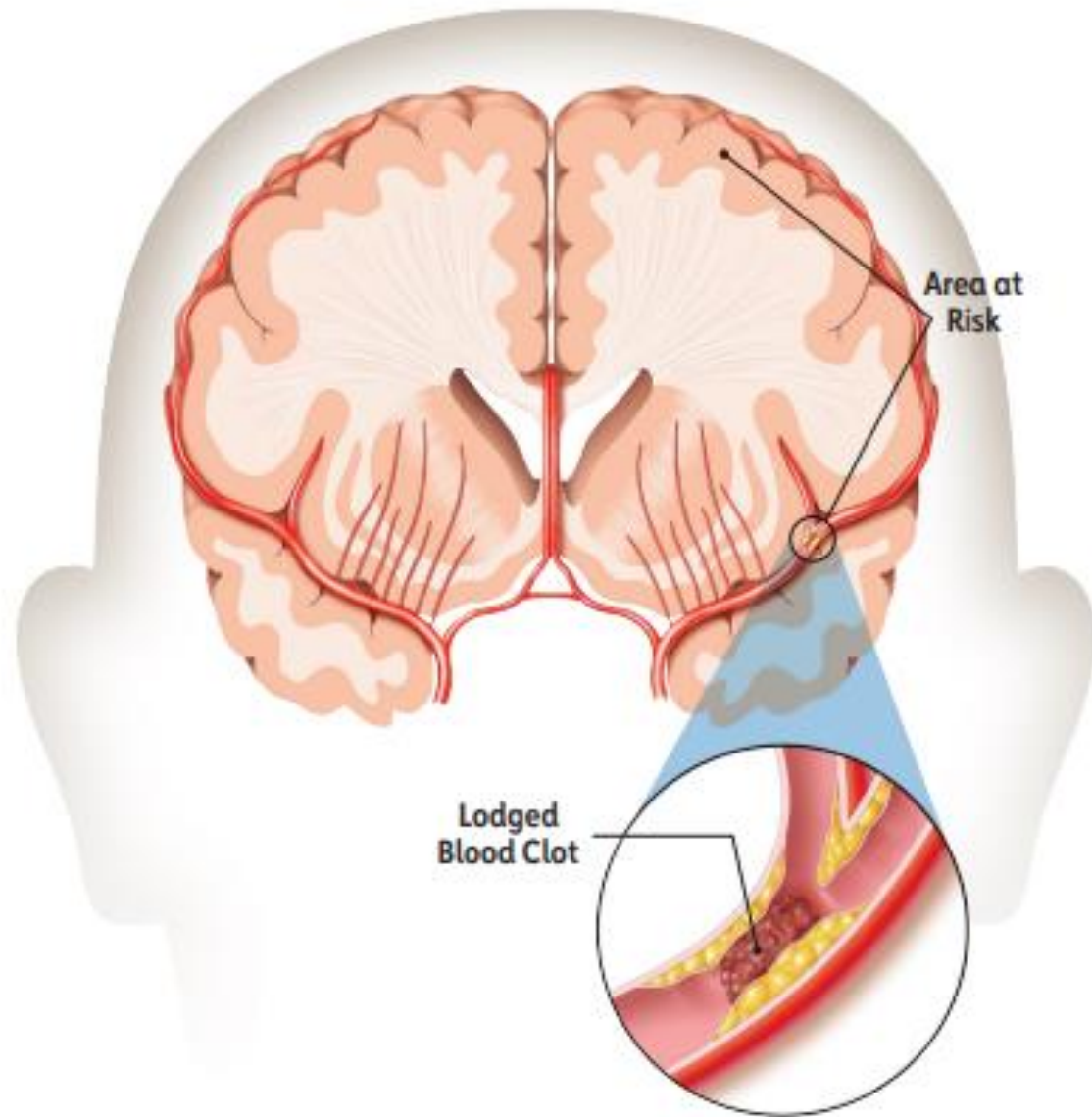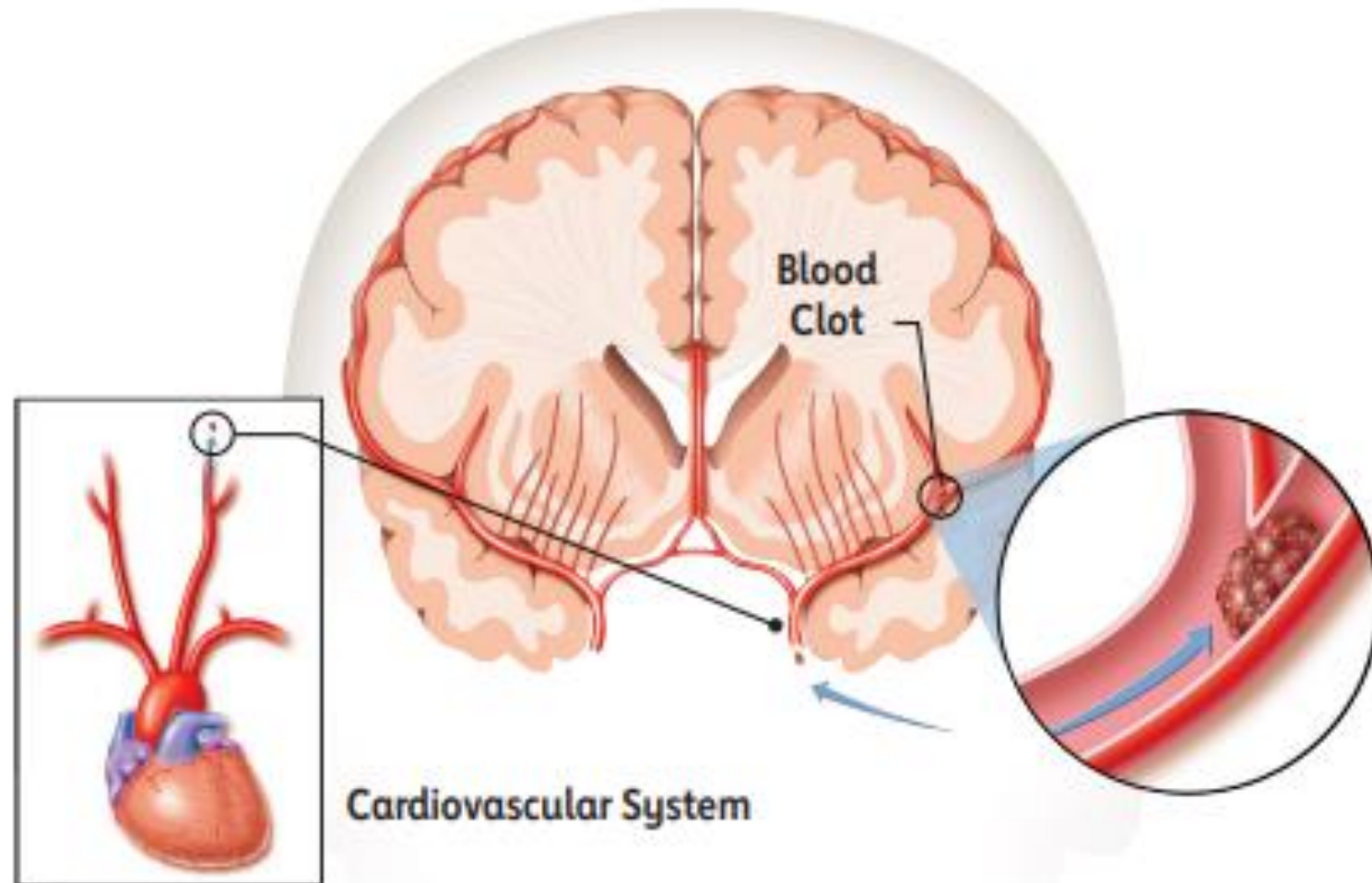
Transient Ischemic Attack (TIA)

Cerebral Hemorrhage

Intracerebral Hemorrhage

Cerebral Hemorrhage

Middle Cerebral Artery

Internal Carotid Artery

Normal Vessel

Bulging Vessel

Burst Vessel
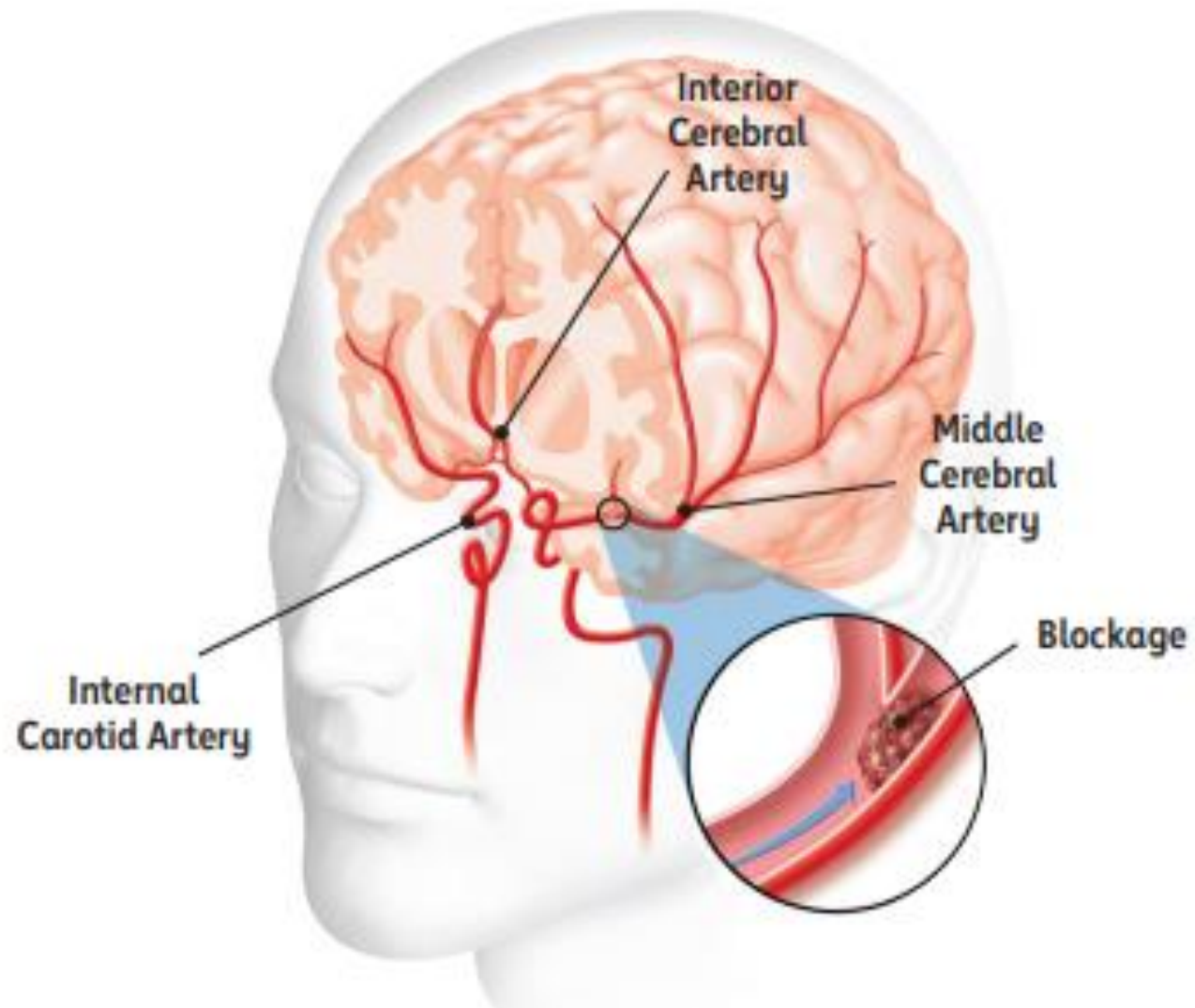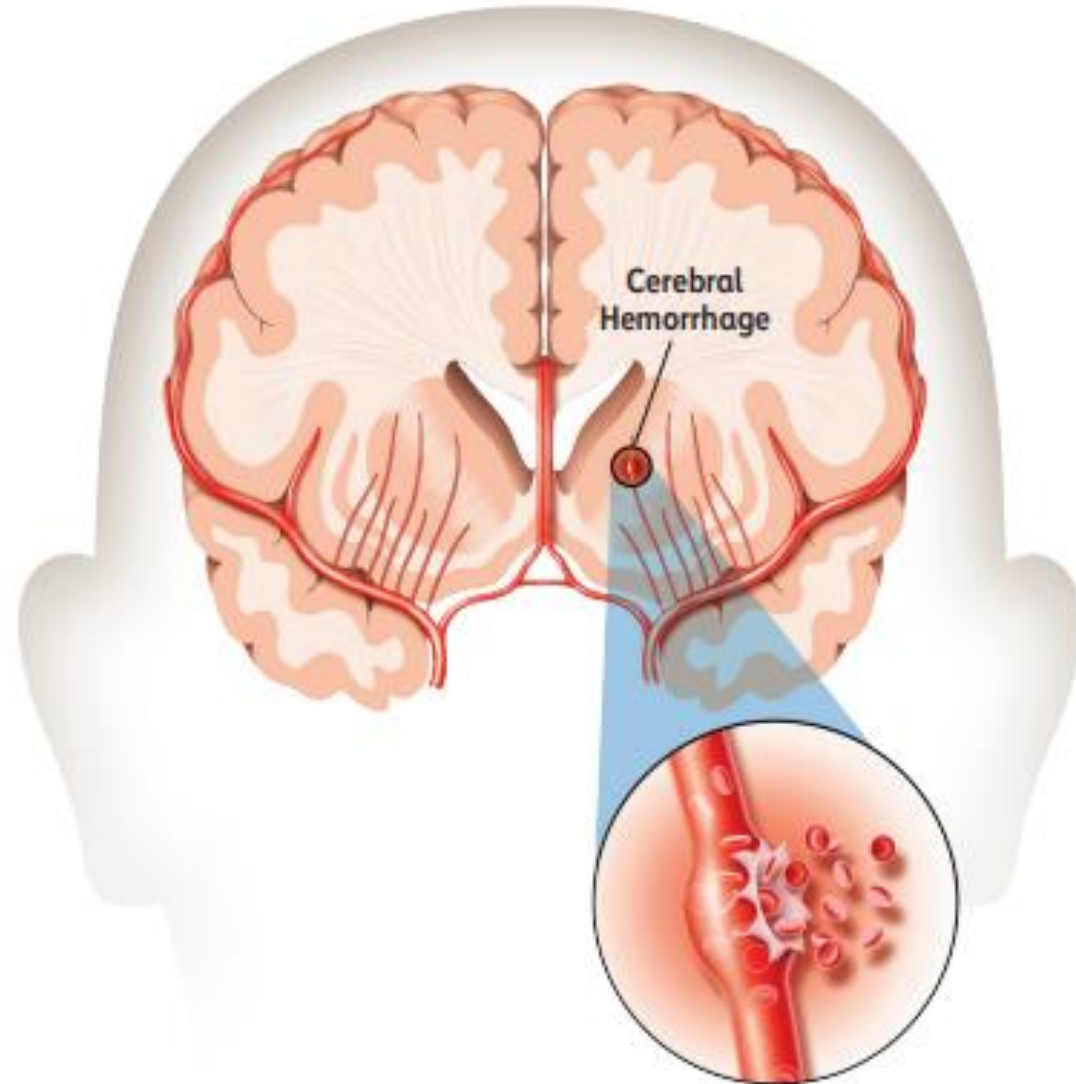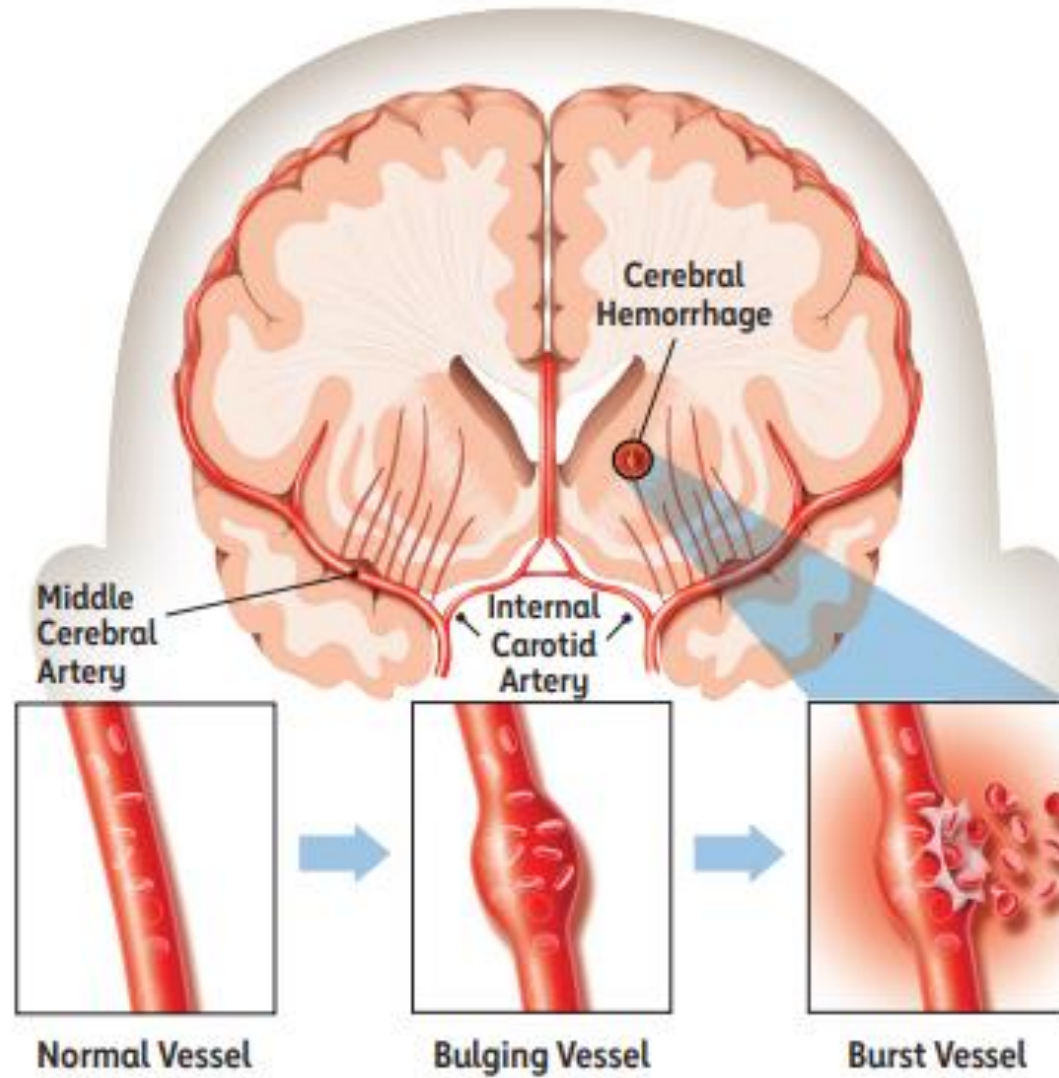
Subarachnoid Hemorrhage

Subarachnoid Space

Middle Cerebral Artery

Saccular Aneurysm

Subarachnoid Space (in Blue) Between Skull and Brain (enlarged view)

Aneurysm

Middle Cerebral Artery

Aneurysm

Saccular Aneurysm
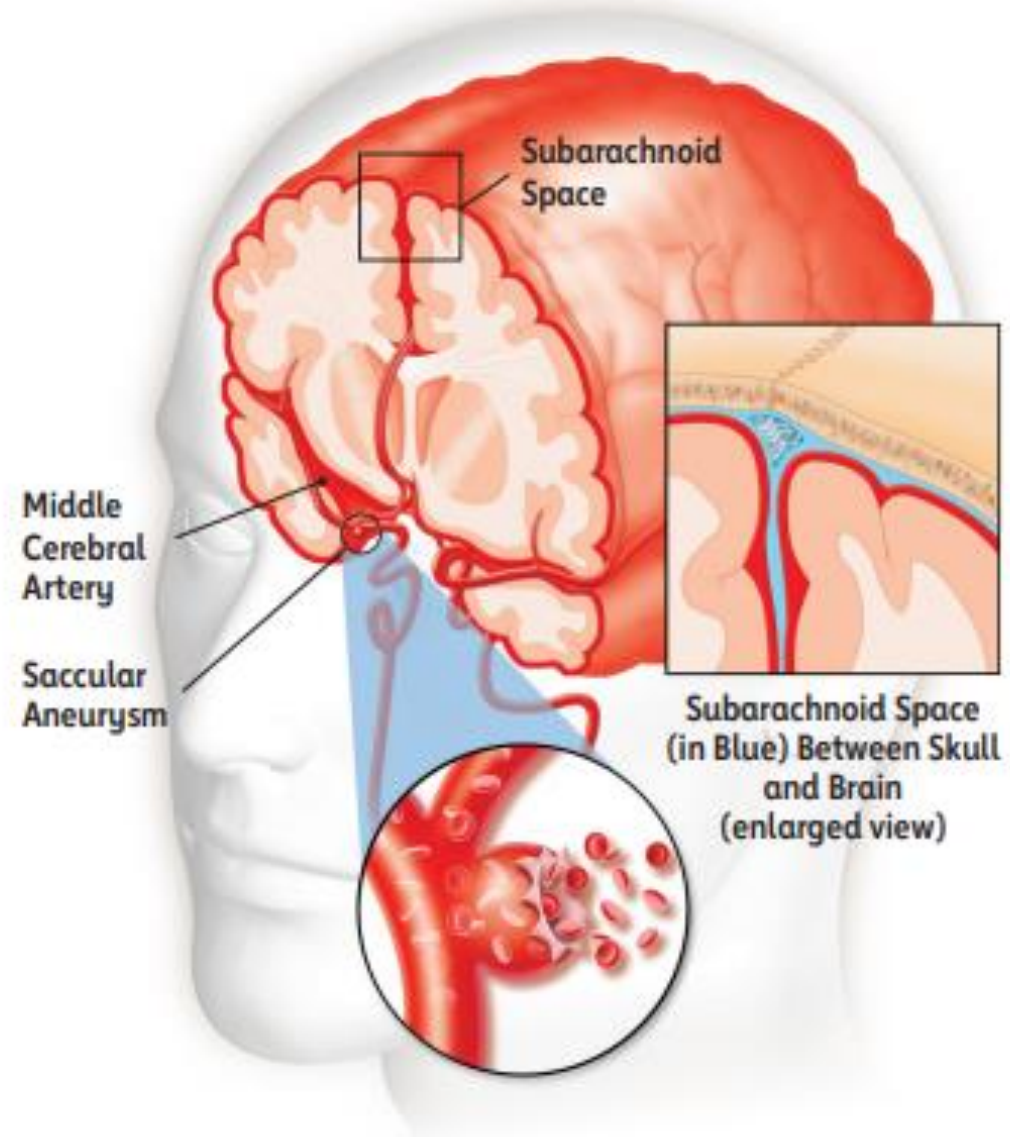
Ruptured Saccular Aneurysm
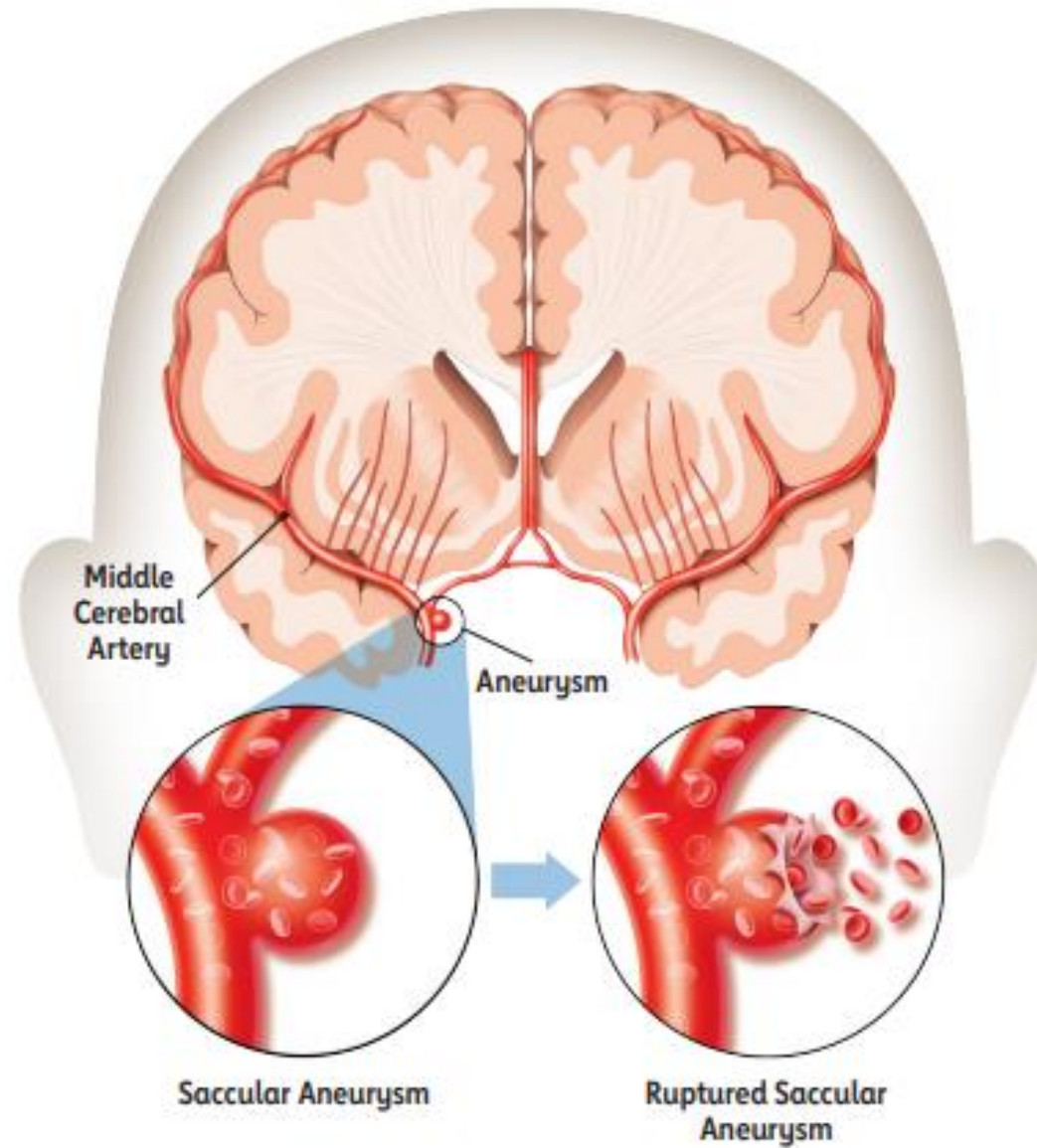
How a Stroke Affects You
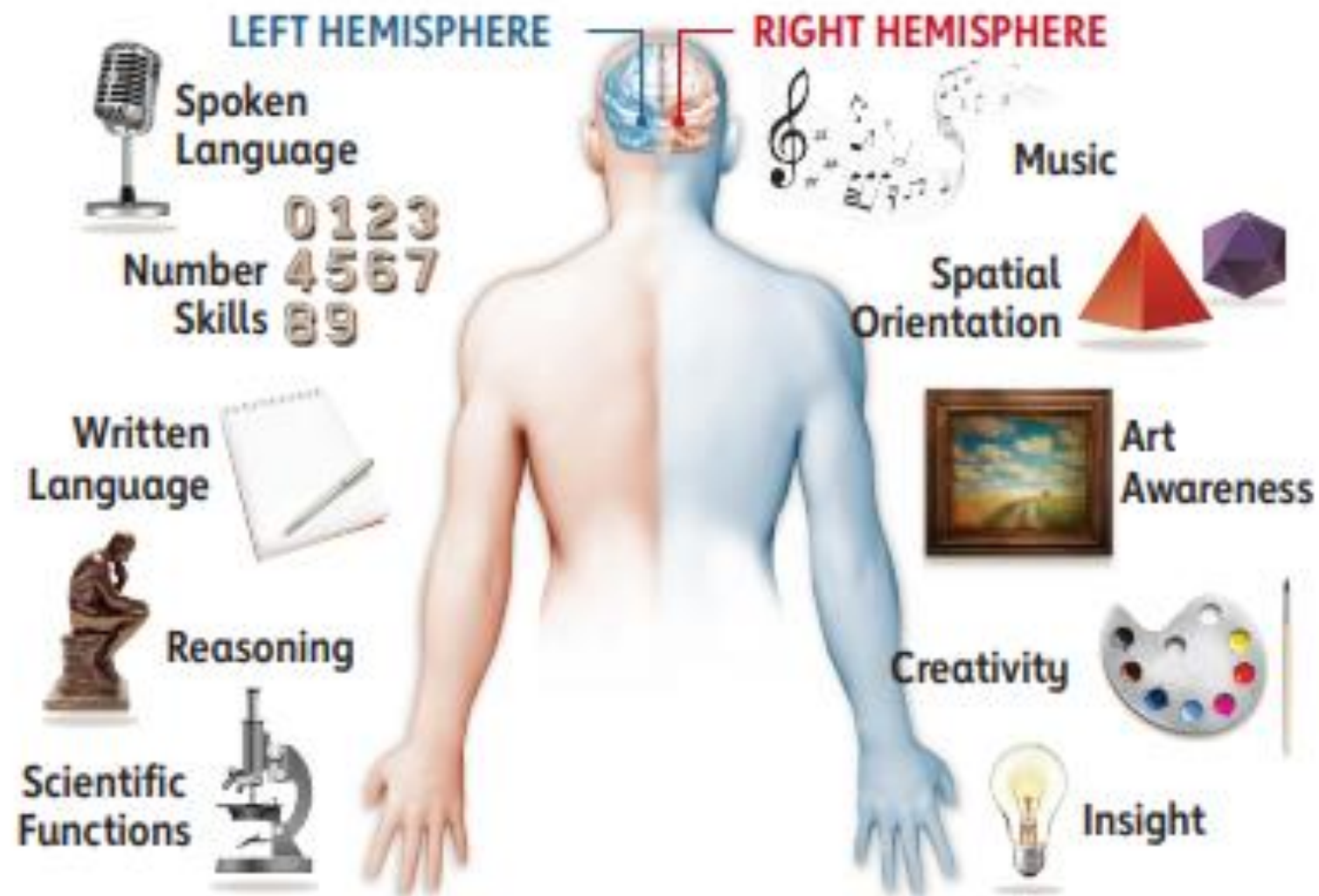
Moving and Sensing Things

Some Effects of Stroke

After a stroke, you may have emotional and physical changes. Depending on the amount of brain damaged and the part of your brain that was affected, you might have problems with:

seeing	sleeping
having seizures	controlling your bladder or bowels
moving parts of your body	pain
fatigue	thinking
memory	depression

SPOT A STROKE™
F.A.S.T.

FACE
Drooping

ARM
Weakness

SPEECH
Difficulty

TIME
to Call 911

Learn about more signs of stroke at
stroke.org

Stroke Symptoms

Beyond F.A.S.T., other symptoms you should know include:

- **Sudden numbness** or weakness of face, arm or leg, especially on one side of the body

- **Sudden confusion**, trouble speaking or understanding speech

- **Sudden trouble seeing** in one or both eyes

- **Sudden trouble walking**, dizziness or loss of balance or coordination

- **Sudden severe headache** with no known cause

Life's Essential 8

1. **Get Active**

2. **Eat Better:** Choose foods that are low in saturated fat, trans fat, cholesterol, and salt.

3. **Lose Weight:** And keep your weight under control.

4. **Stop Smoking:** And avoid other people's tobacco smoke.

5. **Control Cholesterol**

6. **Control Blood Pressure:** And treat high blood pressure if you have it.

7. **Reduce Blood Sugar:** And control your blood sugar if you have diabetes.

8. **Get Adequate Sleep:** Most adults need 7-9 hours of sleep each night. Children require more and varies depending on their age.

Life's Essential 8™

"People should reduce use of mobile devices or TV viewing before sleep to improve sleep regularity and maximize cardiometabolic benefits."

American Heart Association.

8 STEPS TO PREVENT HEART DISEASE AND STROKE

These key factors can help you live a longer, healthier life and reduce your risk of heart disease and stroke. They're part of an overall healthy lifestyle and prevention approach you can build with your health care team (doctors, nurses, pharmacists and other professionals).

1. Know your risk

heart.org/ccccalculator

- If you're 40-75 years old and have never had a heart attack or stroke, use our Check. Change. Control. Calculator™ to estimate your risk of a cardiovascular event in the next 10 years.
- Certain factors can increase your risk, such as smoking, kidney disease or family history. Many risk factors can be improved with lifestyle changes.

2. Eat a healthy diet

heart.org/eatsmart

- Center your eating plan around vegetables, fruits, whole grains, legumes, nuts, plant-based proteins, lean animal proteins and fish.
- Limit sweetened drinks, refined carbohydrates, added sugars, processed meats, sodium and saturated fats. Avoid trans fat.

3. Be physically active

heart.org/movemore

- Adults should aim for at least 150 minutes of moderate-intensity aerobic activity or 75 minutes of vigorous activity each week.
- If you're already active, increase your intensity for more benefits.
- If you're not active now, get started by sitting less and moving more.

4. Watch your weight

heart.org/weight

- If you're overweight, lose weight by eating fewer calories and moving more.
- Check your body mass index (BMI) online or talk to your team about a healthy weight for you.

5. Live tobacco-free

heart.org/tobacco

- Don't smoke, vape or use tobacco products.
- If you don't think you can quit for good on your own, ask for help.
- Avoid secondhand smoke, too.

6. Manage conditions

heart.org/conditions

- Work closely with your health care team if you have high blood pressure (hypertension), high cholesterol, diabetes or other conditions that put you at greater risk.
- Many conditions can be prevented or managed by eating better, getting active, losing weight and not smoking.

7. Take your medicine

- Your doctor may prescribe statins or other medications to help control blood sugar, cholesterol, and blood pressure. Take all medications as directed.
- Don't take daily aspirin unless your doctor tells you to.

8. Be a team player

- Your health care team can help you build a prevention plan that works for you.
- Make decisions together. Ask questions.
- Talk about challenges in your life that may affect your health – like stress, sleep, mental health, family situations, tobacco use, food access, social support and more.

Take charge of your health.

Start today at **heart.org/prevention.**

What Is Cholesterol and Triglycerides?

- Cholesterol is a fatty substance found in the bloodstream and in all your body's cells. It's made by the liver and is needed for the body to function normally.

- The body is generally able to make all the cholesterol it needs to keep healthy.

- Triglycerides, which are produced in the liver, are another type of fat found in the blood and in food.

LDL
(BAD)
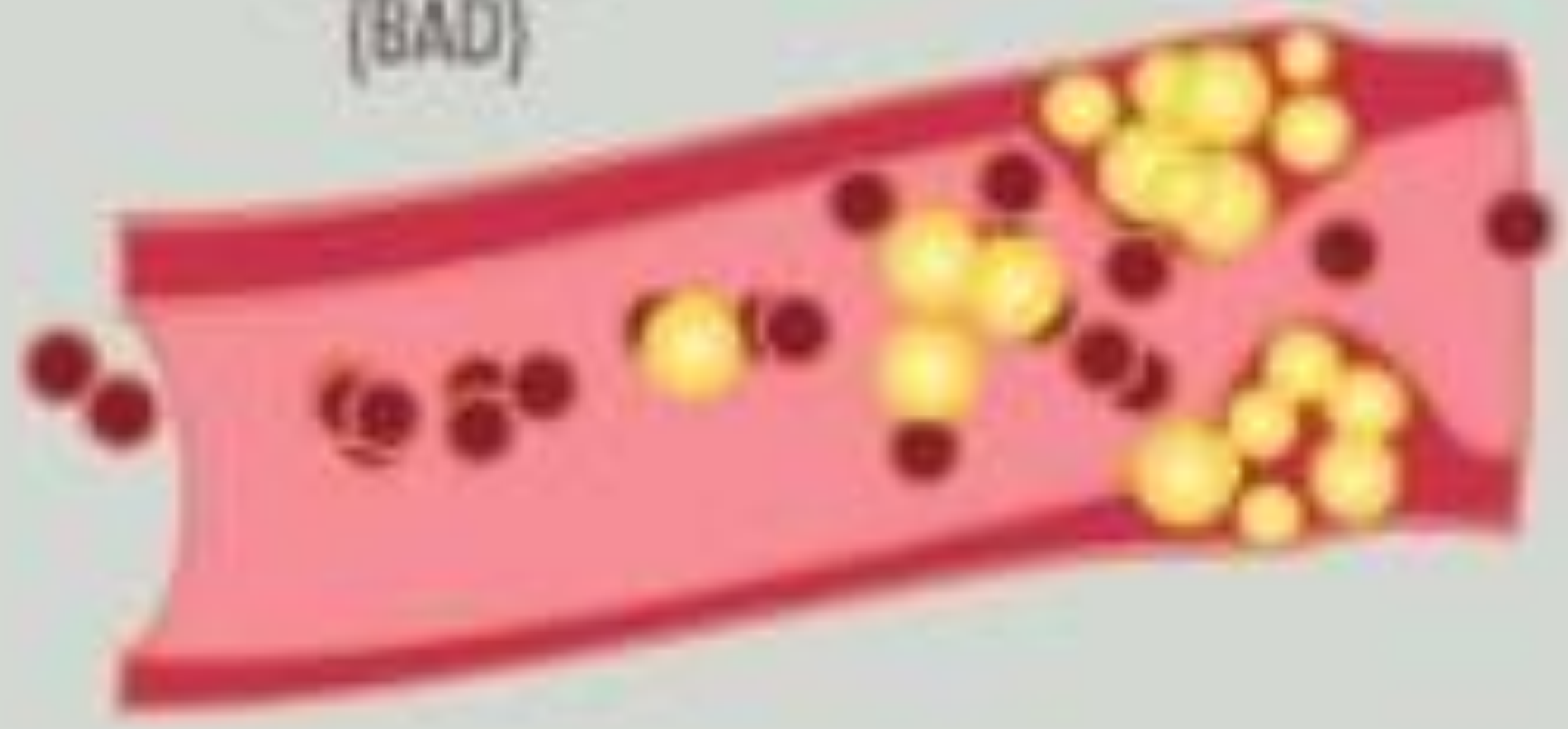
- Inactivity*

- Obesity*

- Diet*

- Age

- Family history

What Causes High Blood Cholesterol?

Intima

Media

Adventitia

Normal
Artery Wall
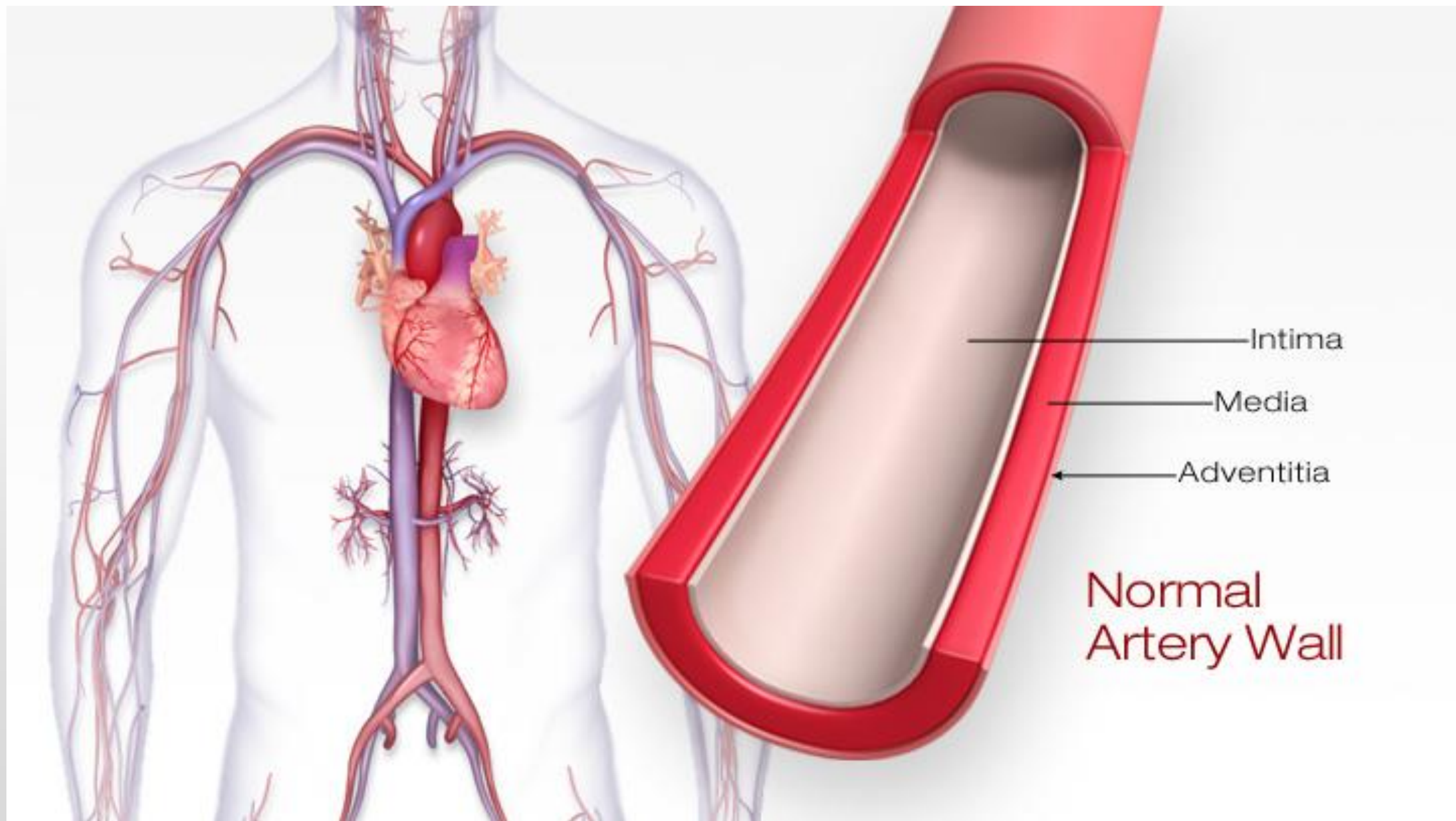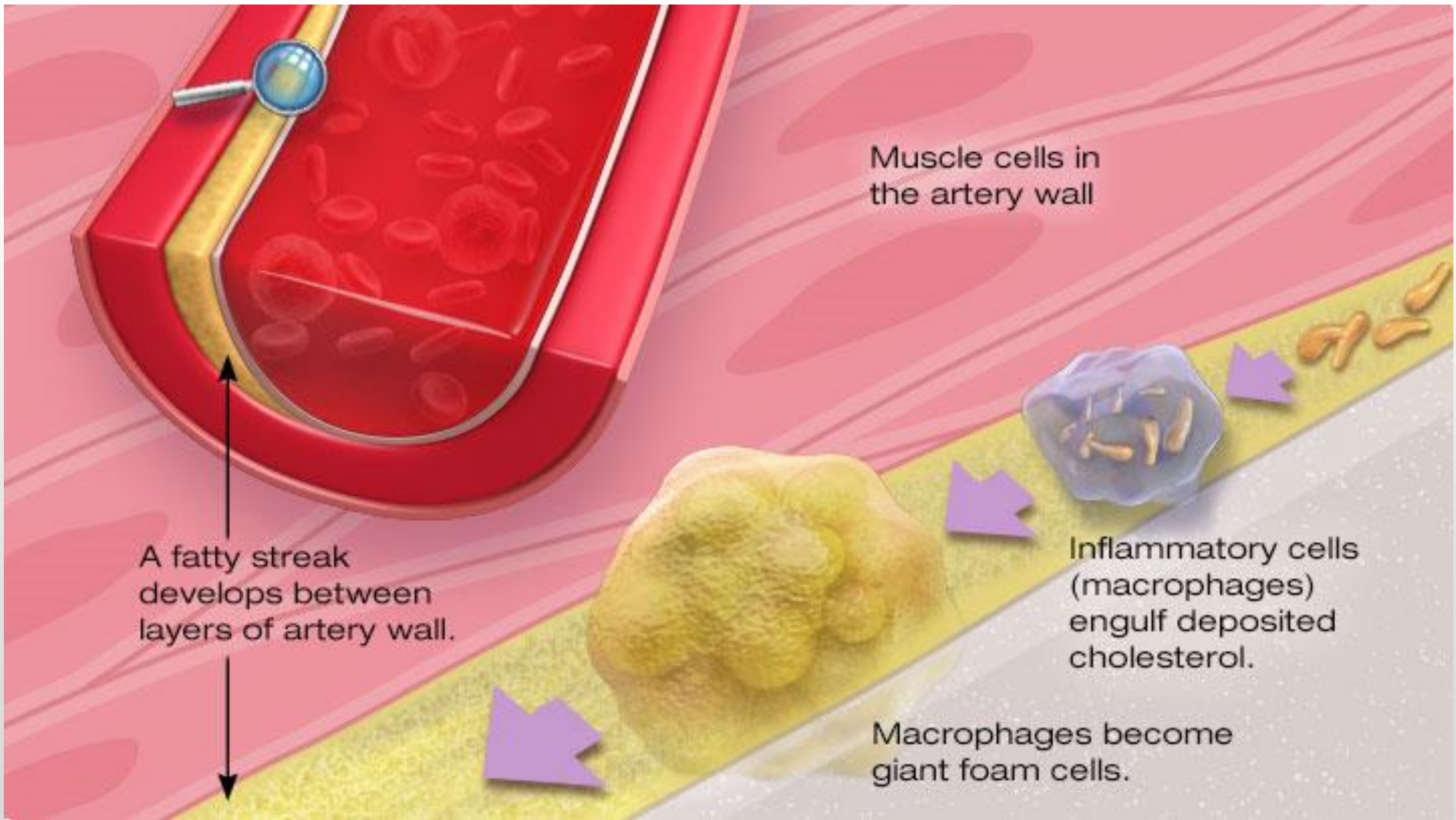
Muscle cells in the artery wall

A fatty streak develops between layers of artery wall.

Inflammatory cells (macrophages) engulf deposited cholesterol.

Macrophages become giant foam cells.

Family History and Cholesterol

- Cholesterol is a waxy substance that comes from your body or from certain foods.

- High cholesterol is associated with heart disease and can have a genetic component.

- The different types of cholesterol are:

  - **Dietary cholesterol:** Comes from animal sources such as poultry, meat or dairy

  - **LDL (low-density lipoprotein) cholesterol:** Considered the bad cholesterol because it can cause atherosclerosis, which is clogging of the arteries

  - **HDL (high-density lipoprotein) cholesterol:** Considered good cholesterol because it removes LDL from your body

  - **Serum cholesterol:** The total amount of cholesterol in the bloodstream

FAMILIAL HYPERCHOLESTEROLEMIA (FH)

- Those who have familial hypercholesterolemia (FH) inherit a defect in how the body recycles LDL (bad) cholesterol.

- FH causes LDL levels in the blood to remain extremely high (more than 190 milligrams per deciliter).
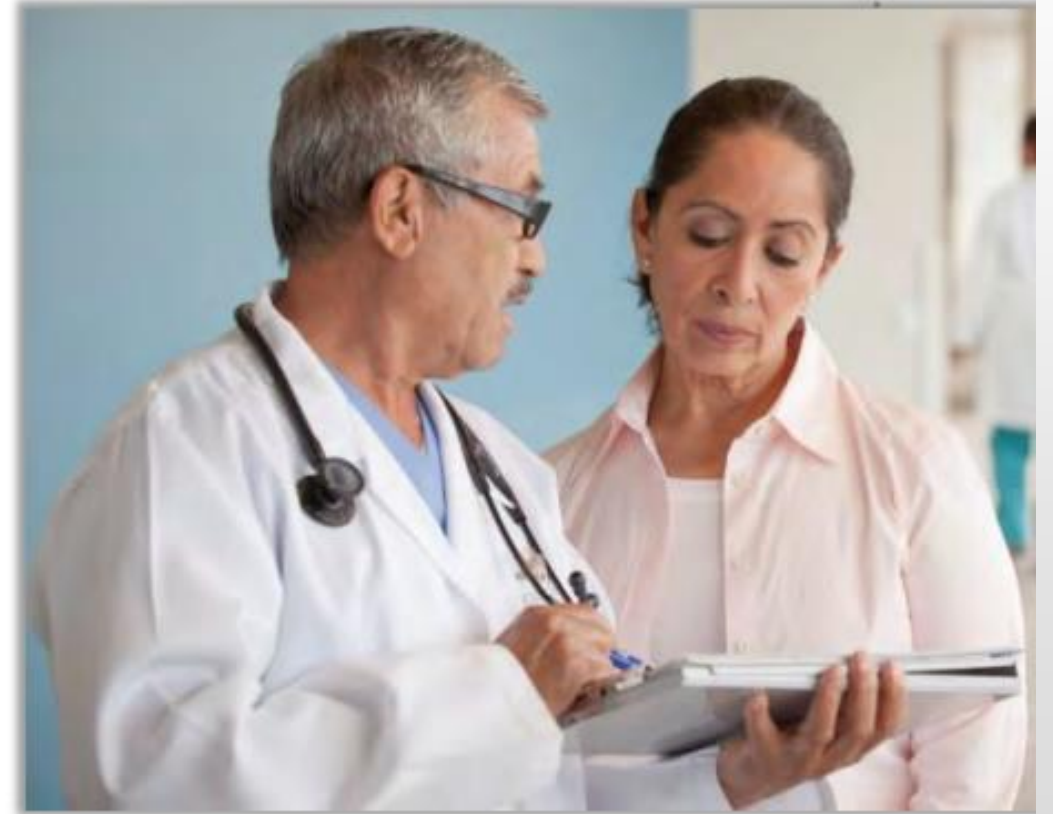
FAMILIAL HYPERCHOLESTEROLEMIA EFFECTS

1 in 250 adults (834K people) have been diagnosed with the FH genetic mutation.

Men with FH

- Develop coronary heart disease **20 years earlier**.

- Half of men with untreated FH have a heart attack or angina before age 50.

Women with FH

- Develop heart disease **30 years earlier**.

- About 30% of women with the condition have a heart attack before age 60.

- Total Cholesterol
  - Less than 200 mg/dL Desirable
  - 200–239 mg/dL Borderline high
  - 240 mg/dL and above High

- LDL Cholesterol
  - Less than 100 mg/dL Optimal (ideal)
  - 100–129 mg/dL Near optimal/above optimal
  - 130–159 mg/dL Borderline high
  - 160–189 mg/dL High
  - 190 mg/dL and above Very high

- HDL Cholesterol
  - Less than 40 mg/dL Major heart disease risk factor
  - 60 mg/dL and above Gives some protection against heart disease

Cholesterol Classifications

Changing unhealthy behaviors is very important for those who have risks factors.

The good news is that people can prevent or lower their risk for heart disease and stroke by choosing _healthy lifestyle habits and behaviors_, such as:

- eating healthy foods,
- becoming more physically active,
- keeping or reaching a healthy body weight,
- and not using tobacco.

#HEARTMONTH

CHALLENGE YOURSELF TO EAT MORE COLOR

RED & PINK	ORANGE & YELLOW	GREEN	WHITE	BLUE & PURPLE
Beets	Acorn Squash	Asparagus	Bananas	Blackberries
Raspberries	Apricots	Broccoli	Cauliflower	Blueberries
Red Apples	Cantaloupe	Collard Greens	Mushrooms	Eggplant
Red Bell Peppers	Carrots	Green Beans	Onion	Figs
Strawberries	Oranges	Green Bell Peppers	Parsnips	Grape Juice
Tomatoes	Peaches	Kale	Potatoes	Plums
Watermelon	Sweet Potatoes	Spinach	Turnips	Red Cabbage

COMMUNITY NEED

But, *most* of us don't eat enough fruits and vegetables to meet our body's needs:

- **About 75%** of the U.S. population has an eating pattern that is low in fruits and vegetables.

- **Only 1 in ten** adults meets the recommendations for fruit and vegetable consumption.

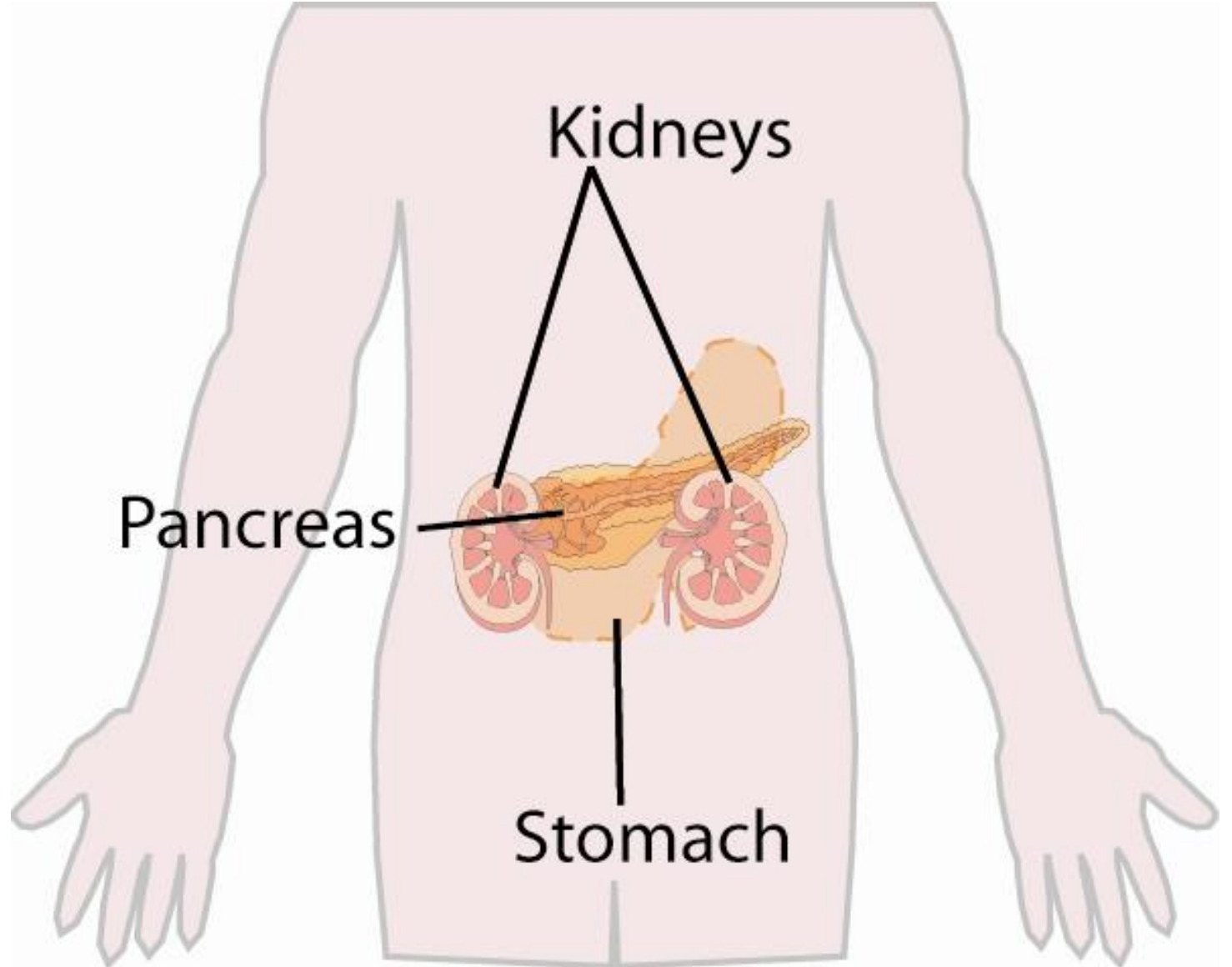- Men and younger adults eat the fewest fruits and vegetables.

Diabetes and High Blood Pressure

What is Diabetes?

Diabetes is a disease in which the body does not produce or properly use insulin.

GLUCOSE TRANSMITTERS

POINT 1: It's Time to Rethink Your Drink

Sugary drinks are the single largest source of added sugars in the American diet.

Sugary drinks are a major contributor to the increasing rates of heart disease and diabetes. They also may influence cognitive functioning.

HEALTH IMPACT FROM SUGARY DRINKS

People who regularly drink sugary drinks, like sweetened teas, energy drinks and soda, **are at increased risk of:**

- Heart disease
- Type 2 diabetes
- Excessive weight gain
- Obesity
- Tooth decay

AHA'S SUGAR RECOMMENDATIONS

Daily Sugar Limits for Adults

For Women:

100 calories or
6 teaspoons/25 grams (or less)

For Men:

150 calories or
9 teaspoons/36 grams (or less)

AHA'S SUGAR RECOMMENDATIONS

Daily Sugar Limits for Children

For Children, over age 2:

Less than 6 teaspoons

Children should drink no more than one 8-ounce sugary drink a week.

TOO MUCH SUGAR

Most Americans consume nearly 20 teaspoons of added sugars every day.

1 teaspoon of sugar = 1 sugar packet = 1 sugar cube

That's more than TRIPLE the recommended daily limit for women and DOUBLE for men!

TOO MUCH SUGAR

10 teaspoons
of added sugar in an
**average 12-ounce can
of soda**

14 teaspoons
of added sugar in an
**average 16-ounce
energy drink**

16 teaspoons
of added sugar in an
**average 20-ounce
bottle of cola**

SUGAR OVERLOAD

Americans consume about 34 pounds of added sugar every year just from sugary drinks.

Every week children are having up to **10 times** more sugary drinks than the AHA recommends.

Nearly **50 percent** of children ages 2 to 5 have at least one sugary drink daily.

CHECK THE NUTRITION FACTS LABEL

Look for added sugars under "Total Sugars".

Added sugars go by sneaky names:

- Sucrose
- Glucose
- Maltose
- Dextrose
- High Fructose Corn Syrup

POINT 1: Sodium and Your Health

Sodium and Your Body

- **Your body needs some sodium to work properly.**

- **Too much sodium causes your body to hold onto water.** This puts an extra burden on your heart and blood vessels.

- Most of the sodium we consume is in the form of **salt**.

Too much sodium also puts you at risk for:

- Enlarged heart muscle
- Headaches
- Kidney disease
- Osteoporosis

- Stroke
- Heart failure
- Kidney stones
- Stomach cancer

Did You Know?

- **Nine out of 10 Americans** consume too much sodium.

- Sodium added to food outside the home accounts for **more than two-thirds of total sodium intake** in the U.S.

- **More than 70% of sodium** consumed is from processed, packaged and restaurant foods.
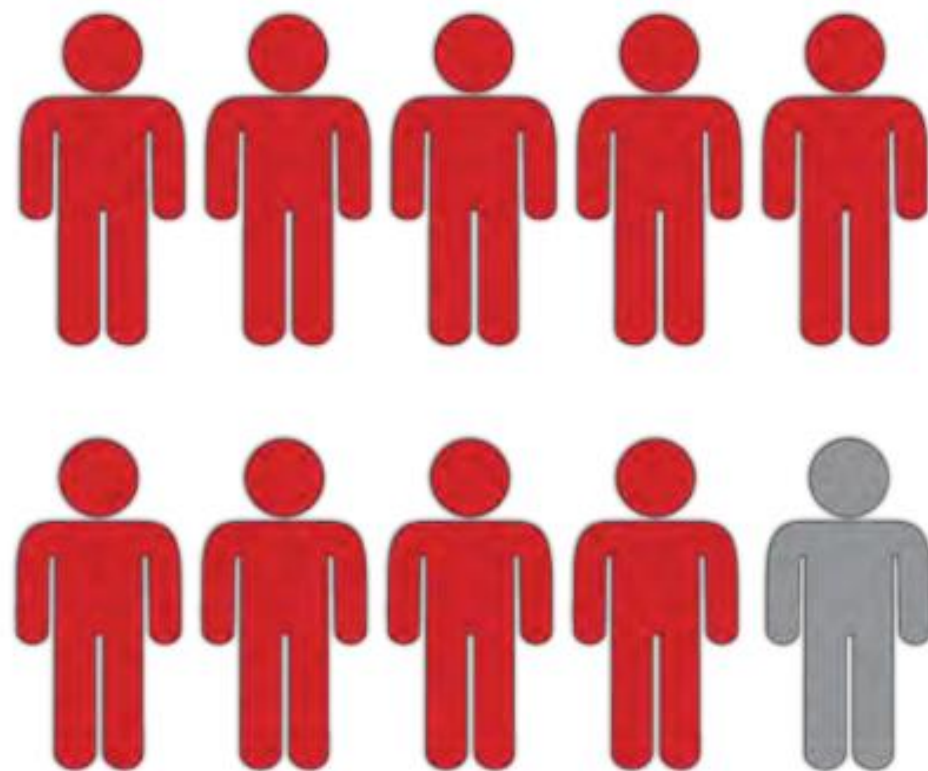
How Much is Too Much?

- Most adults consume **more than 3,400 milligrams** (mg) of sodium a day.

- **The American Heart Association recommends no more than 2,300 mg a day**, moving toward an ideal limit of no more than 1,500 mg per day for most adults.

- Even cutting back by 1,000 mg a day can improve blood pressure and heart health.
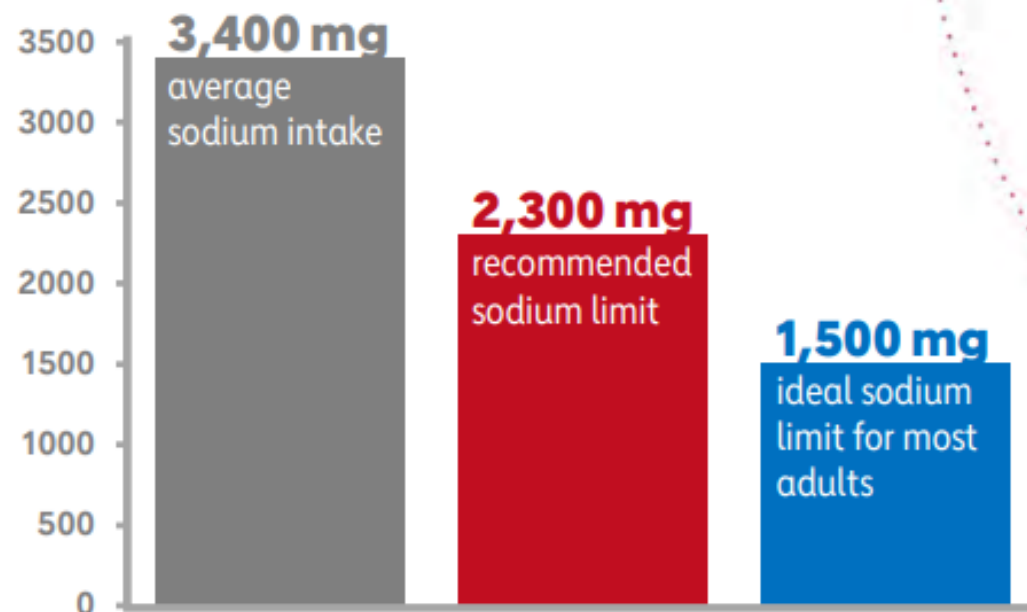
What's the Difference Between Salt and Sodium?

SODIUM	SALT
• Sodium is a mineral that's essential for life.	• Table salt is about 40% sodium and 60% chloride.
• Sodium helps your body work.	• Salt and sodium are commonly used interchangeably.
• It helps to control your body's fluid balance.	• To find out the amount of "salt" in a food, check the "sodium" content on the label.
• Sodium also helps send nerve impulses and affects muscle function.	

Did you know?

These six popular foods can add high levels of sodium to your diet.
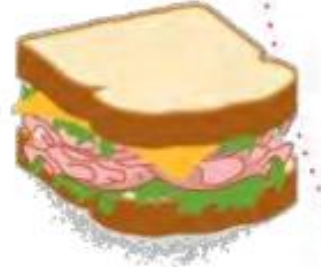
- Breads and rolls

- Pizza

- Sandwiches

- Cold cuts and cured meats

- Soup

- Burritos and tacos

BREADS & ROLLS

PIZZA

SANDWICHES

COLD CUTS & CURED MEATS

SOUP

BURRITOS & TACOS

WHERE DOES THE SODIUM WE EAT COME FROM?

Most of the sodium we eat comes from packaged, processed and restaurant foods.

- **Processed foods** are packaged in boxes, cans, or bags.

- **Packaged foods** are ready to eat, convenience items such as prepared meals, gravy mixes, canned soups, and cake mixes.

- **Restaurants** often rely on some processed foods in their food prep.

15%
Occurs naturally

10%
Added while cooking

70%
Comes from processed & restaurant foods
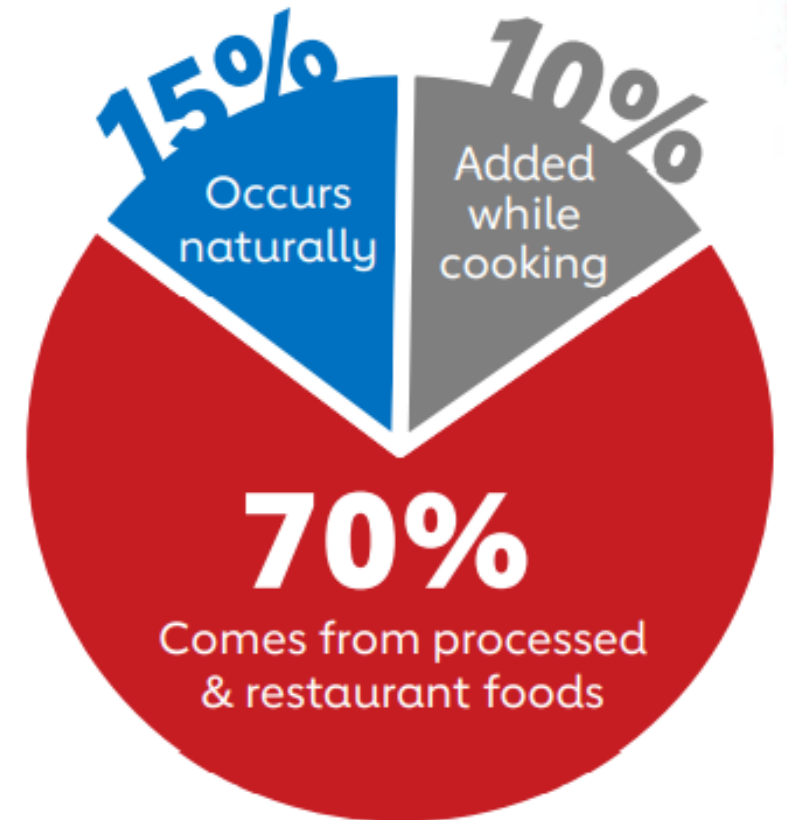
HIDDEN SOURCES OF SODIUM

Ingredients such as:

- Monosodium glutamate (MSG)
- Sodium bicarbonate
- Sodium nitrate
- Sodium citrate
- Sodium glutamate
- Sodium lactate
- Sodium phosphate

Baking soda and baking powder also contain sodium.

HEALTHY DIET TIPS

Follow an overall heart-healthy diet that emphasizes:

- Variety of fruits and vegetables

- Whole-grains

- Low-fat dairy products

- Skinless poultry and fish

- Nuts and legumes

- Non-tropical vegetable oils

- Limiting saturated fat, trans fat, sodium, red meat, sweets and sugary drinks

What Is High Blood Pressure?

High blood pressure means that the heart **must pump harder** than normal for blood to get to all parts of the body.

What Causes High Blood Pressure?

Factors that contribute to high blood pressure are:

- Salt in the diet*
- Being overweight or obese*
- Lack of physical activity*
- Heavy alcohol consumption*
- Race
- Age
- Gender
- Smoking*
- Diabetes*
- Family history

Weight Loss | ADA (diabetes.org)

BLOOD PRESSURE MEASUREMENT INSTRUCTIONS

American Heart Association.

DON'T SMOKE, EXERCISE, DRINK CAFFEINATED BEVERAGES OR ALCOHOL WITHIN 30 MINUTES OF MEASUREMENT.

REST IN A CHAIR FOR AT LEAST 5 MINUTES WITH YOUR LEFT ARM RESTING COMFORTABLY ON A FLAT SURFACE AT HEART LEVEL. SIT CALMLY AND DON'T TALK.

MAKE SURE YOU'RE RELAXED. SIT STILL IN A CHAIR WITH YOUR FEET FLAT ON THE FLOOR WITH YOUR BACK STRAIGHT AND SUPPORTED.

TAKE AT LEAST TWO READINGS 1 MIN. APART IN MORNING BEFORE TAKING MEDICATIONS, AND IN EVENING BEFORE DINNER. RECORD ALL RESULTS.

USE PROPERLY CALIBRATED AND VALIDATED INSTRUMENT. CHECK THE CUFF SIZE AND FIT.

PLACE THE BOTTOM OF THE CUFF ABOVE THE BEND OF THE ELBOW.

American Heart Association recommended blood pressure levels

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120-129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130-139	or	80-89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

BLOOD PRESSURE HIGHER THAN 180/120 mm Hg IS A CRISIS. *

* Wait a few minutes and take blood pressure again. If it's still high, contact your doctor immediately.

LEARN MORE AT
HEART.ORG/HBP

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AMA | MAPBP™

Using a wrist cuff to measure blood pressure*
Self-measured blood pressure

* When an upper arm cuff cannot be used, validated wrist devices can be used for blood pressure estimation.[1]

Correct forearm position
for wrist blood pressure measurement

1. Apply the wrist device
2. Keep elbow on table or desk with forearm bent
3. Place the wrist at heart level
4. Keep arm relaxed and hand resting against your body
5. Measure wrist blood pressure without moving arm from seated position
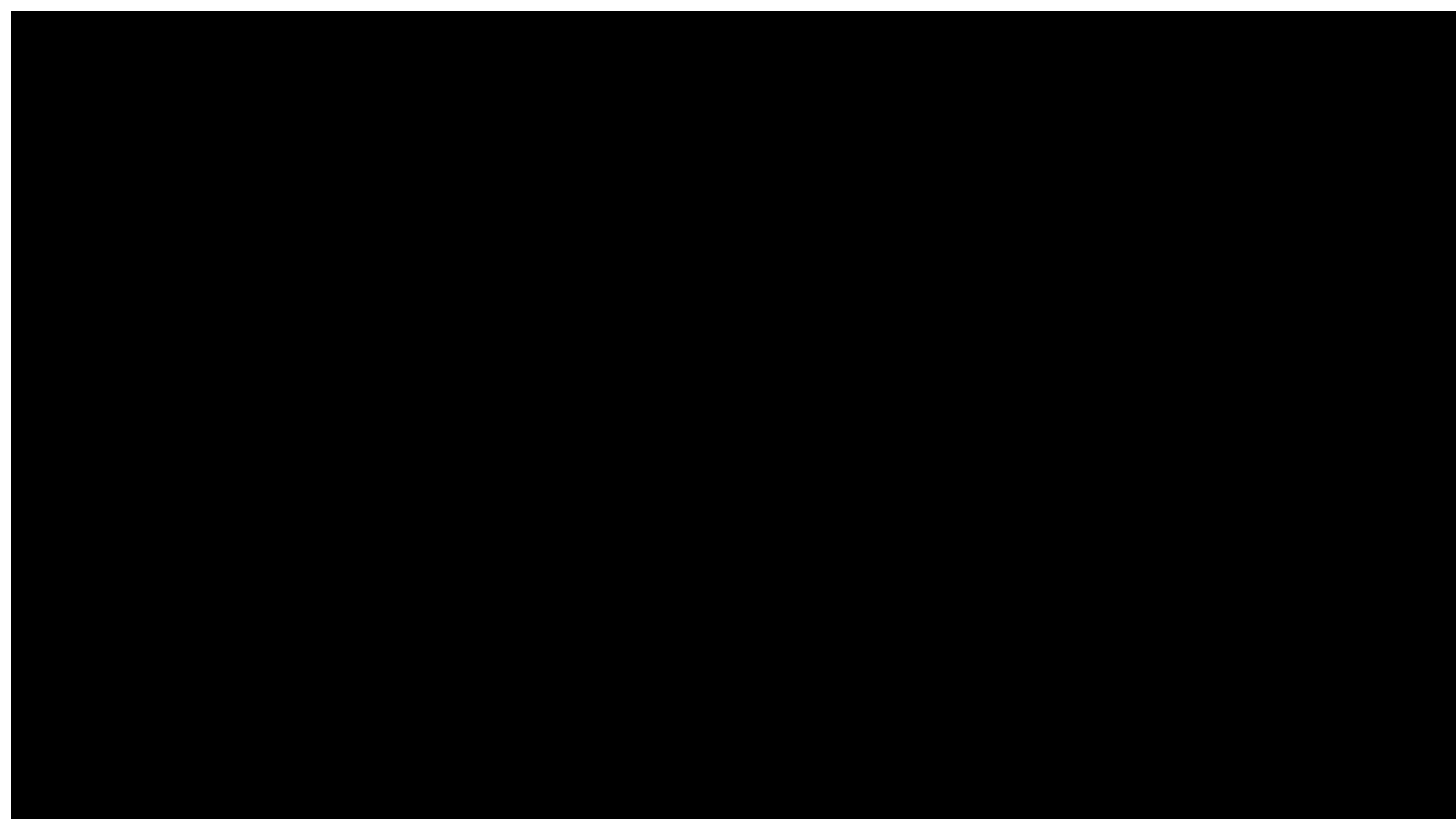
Incorrect forearm position[2]

Wrist higher than heart level

Forearm in horizontal position

Forearm vertical and close to the body

Blood Pressure Categories

American Heart Association.

| BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
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HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

heart.org/bplevels

What Are the Signs of High Blood Pressure?

- Tiredness
- Confusion
- Nausea or upset stomach
- Vision problems or trouble seeing
- Nosebleeds
- More than normal sweating
- Headache

- Dizziness
- Skin that is flushed or red, or skin that is pale or white
- Anxiety or nervousness
- Palpitations (strong, fast, or obviously irregular heartbeat)
- Ringing or buzzing in ears
- Impotence

Why Is High Blood Pressure Harmful?

- High blood pressure causes the heart to **work harder** than normal.

- High blood pressure increases the risk of heart attacks, strokes, kidney damage, **eye damage**, heart failure, and atherosclerosis.
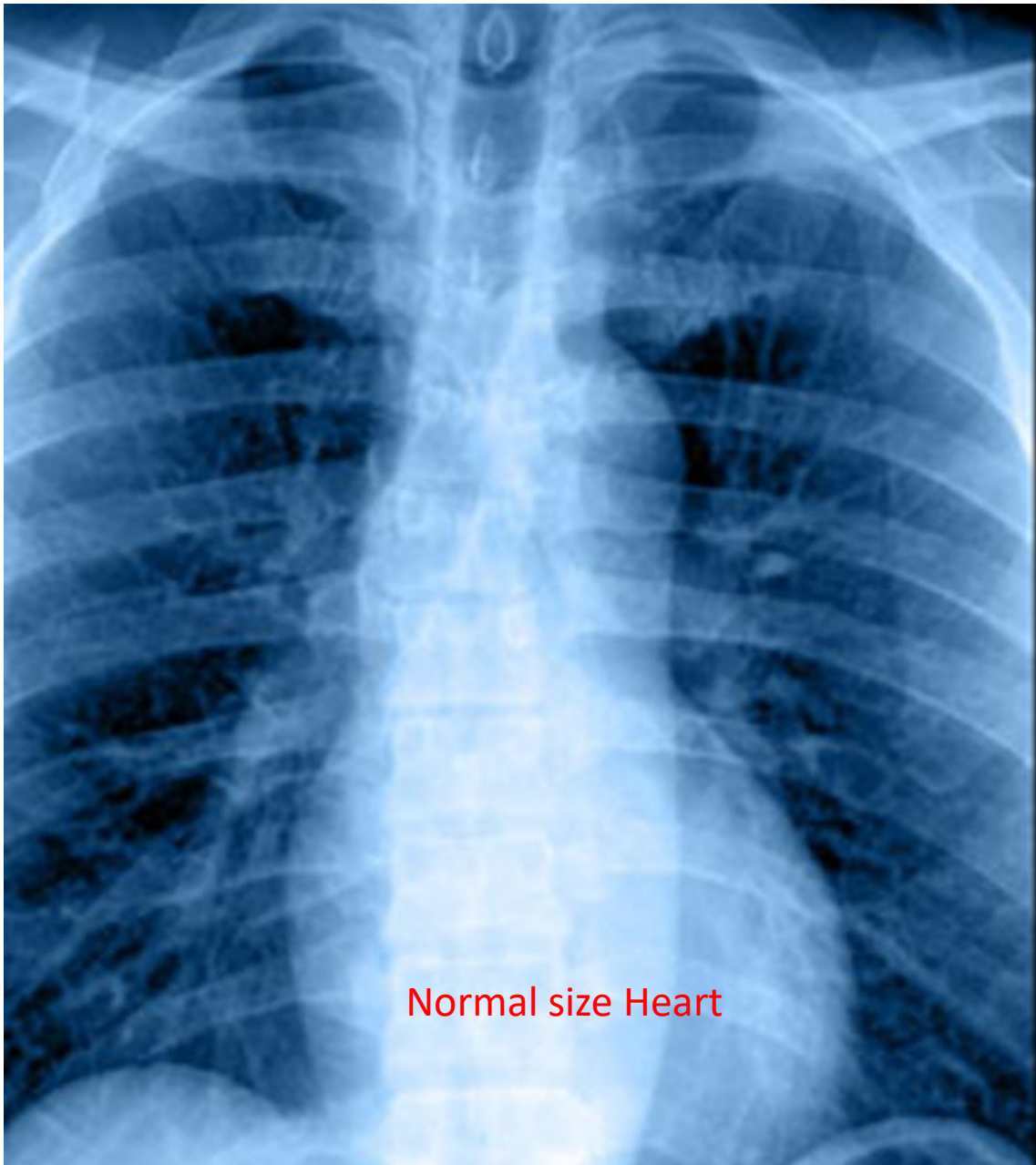
Normal size Heart
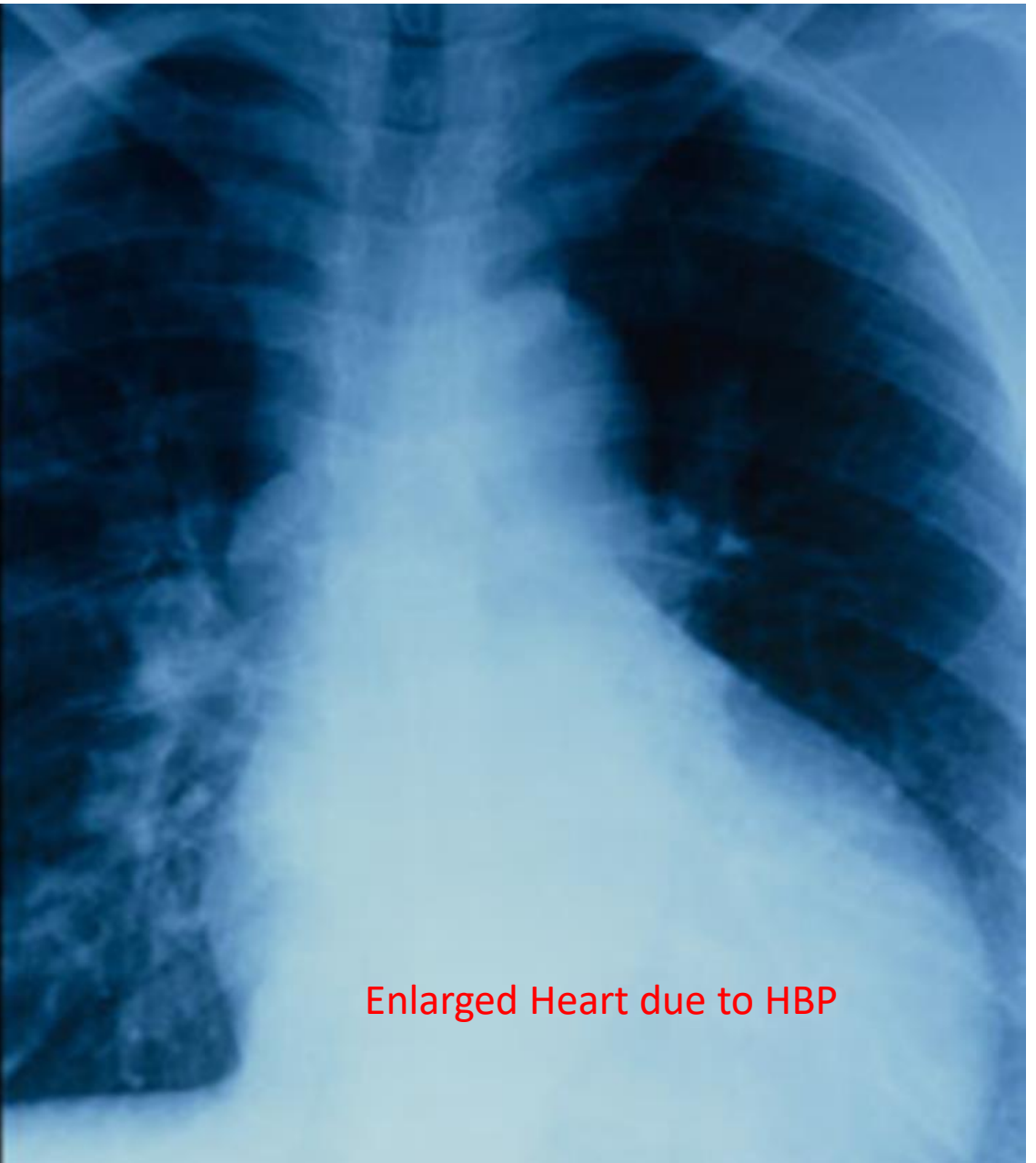
Enlarged Heart due to HBP

Consequences of High Blood Pressure

High blood pressure is often the first domino in a chain or "domino effect" leading to devastating consequences, like:
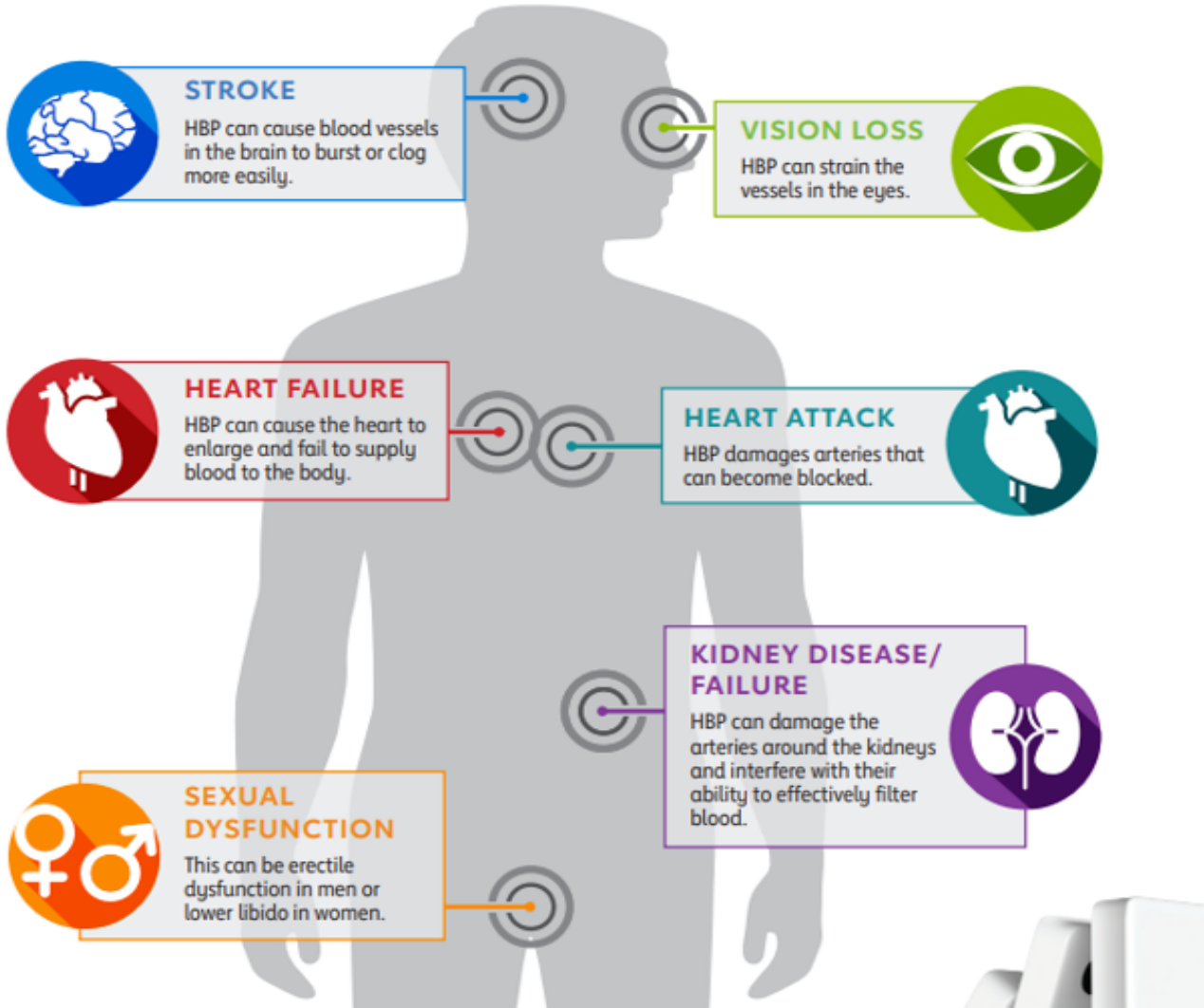
STROKE
HBP can cause blood vessels in the brain to burst or clog more easily.

VISION LOSS
HBP can strain the vessels in the eyes.

HEART FAILURE
HBP can cause the heart to enlarge and fail to supply blood to the body.

HEART ATTACK
HBP damages arteries that can become blocked.

KIDNEY DISEASE/FAILURE
HBP can damage the arteries around the kidneys and interfere with their ability to effectively filter blood.

SEXUAL DYSFUNCTION
This can be erectile dysfunction in men or lower libido in women.

WARNING!

Control your Blood Pressure to avoid complications

Table 1. Current Estimate and Projections of Prevalent Populations with Vision Problems

	Current Estimates	Projections		
	2010	2014	2032	2050
Cataract	24,409,978	25,666,427	38,477,608	45,620,606
Diabetic Retinopathy	7,685,237	8,084,767	10,938,504	13,190,538
Impaired	2,907,691	3,058,852	5,073,572	7,301,814
Glaucoma	2,719,379	2,858,572	4,275,758	5,526,347
AMD*	2,069,403	2,176,985	3,387,560	4,425,989
Blind	1,288,275	1,355,248	2,161,164	3,088,249

*Age-related macular degeneration

Source: Wittenborn, John S. & Rein, David B. *The Future of Vision: Forecasting the Prevalence and Cost of Vision Problems.* NORC at the University of Chicago. Prepared for Prevent Blindness, Chicago, IL. June 11, 2014.

http://forecasting.preventblindness.org.

Is Vision Loss Part of Getting Older?

Vision can change as we age.

Vision loss and blindness are not a normal part of aging.
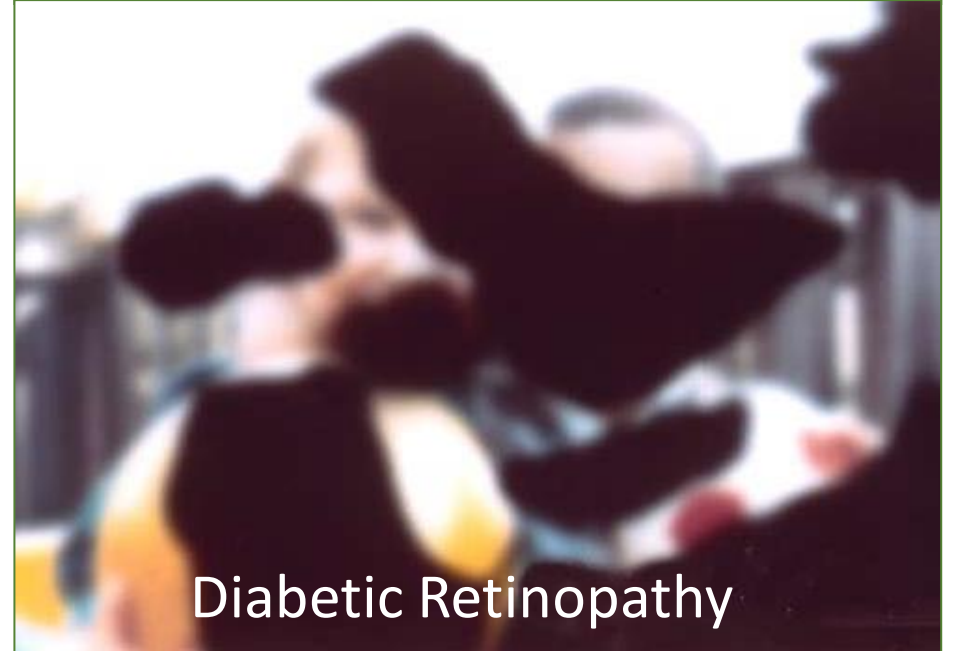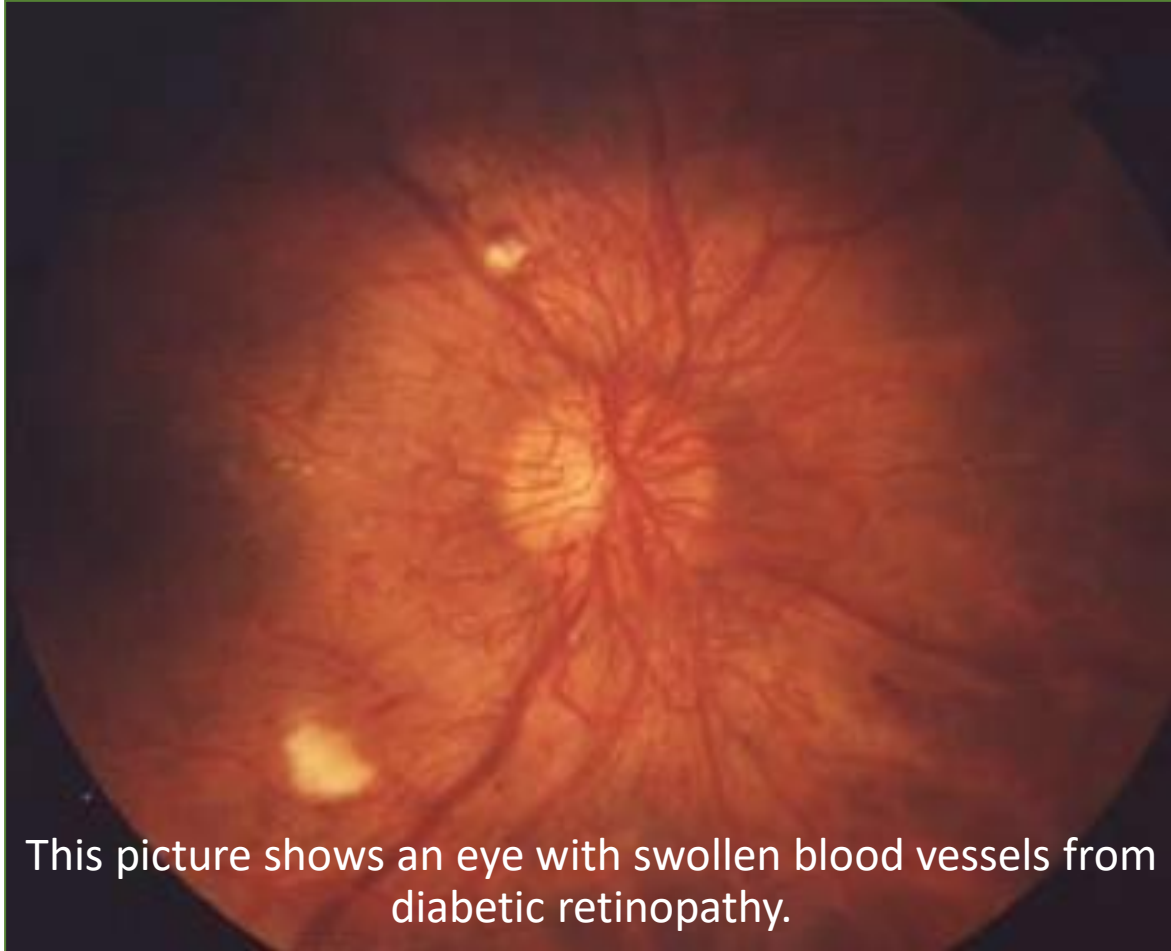
What Vision Changes Are Normal?

- Focusing on objects up close is harder to do.

- Noticing declining sensitivity.

- Needing more light to see well.

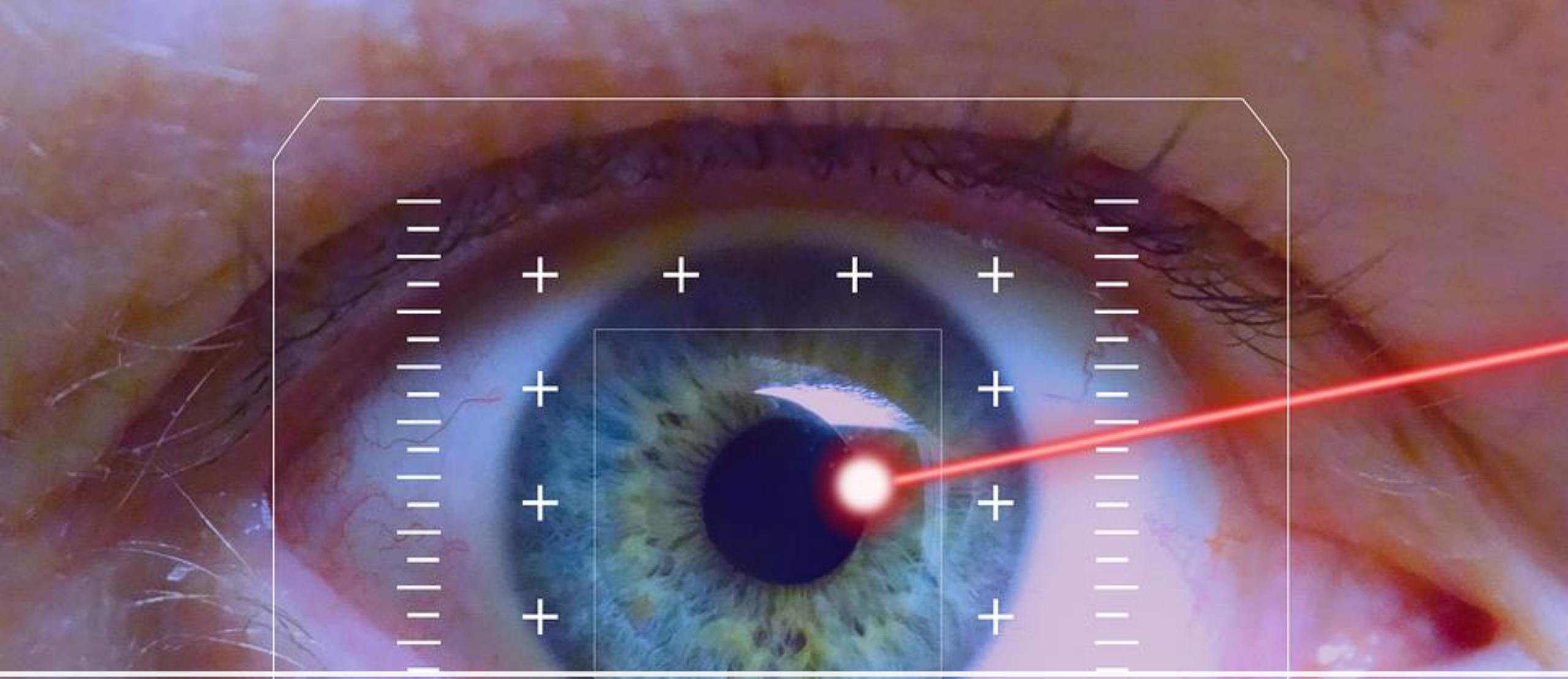- Needing more time to adjust to changing levels of light.

Vision is wonderful, but it could be lost if a person has diabetes.
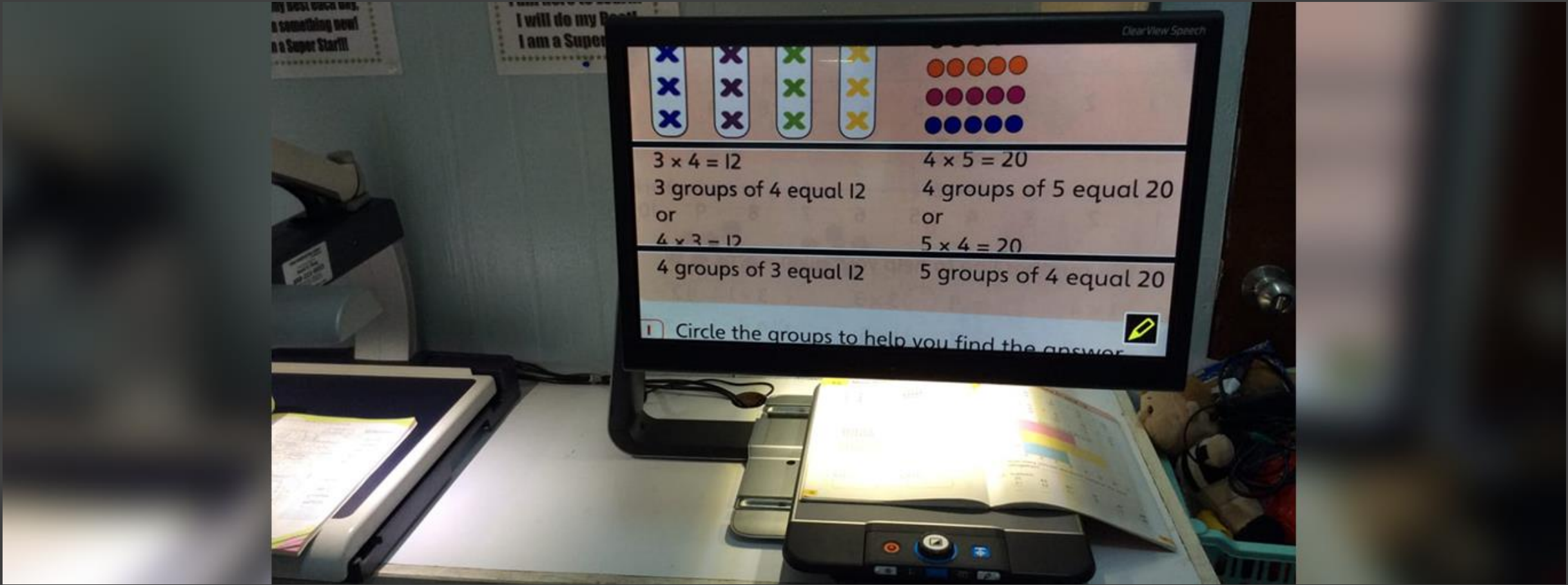
Diabetic Retinopathy

This picture shows an eye with swollen blood vessels from diabetic retinopathy.

Normal Vision

Diabetic Retinopathy

How is diabetic retinopathy treated?

What Is Low Vision?

Vision that is **not corrected** by eyeglasses, contact lenses, medication, or surgery.

Low vision may make everyday tasks **difficult** to do.

What Causes Low Vision?

Sometimes vision loss occurs because of eye injuries or birth defects.

Most people develop low vision because of the following:

- Age-related macular degeneration
- Cataract
- Diabetic eye disease
- Glaucoma

Signs of Low Vision

Even with regular glasses or contact lenses, a person has difficulty with the following:

- Recognizing familiar faces
- Reading
- Cooking
- Picking out and matching the color of your clothes
- Reading street signs

Examples of low vision devices:
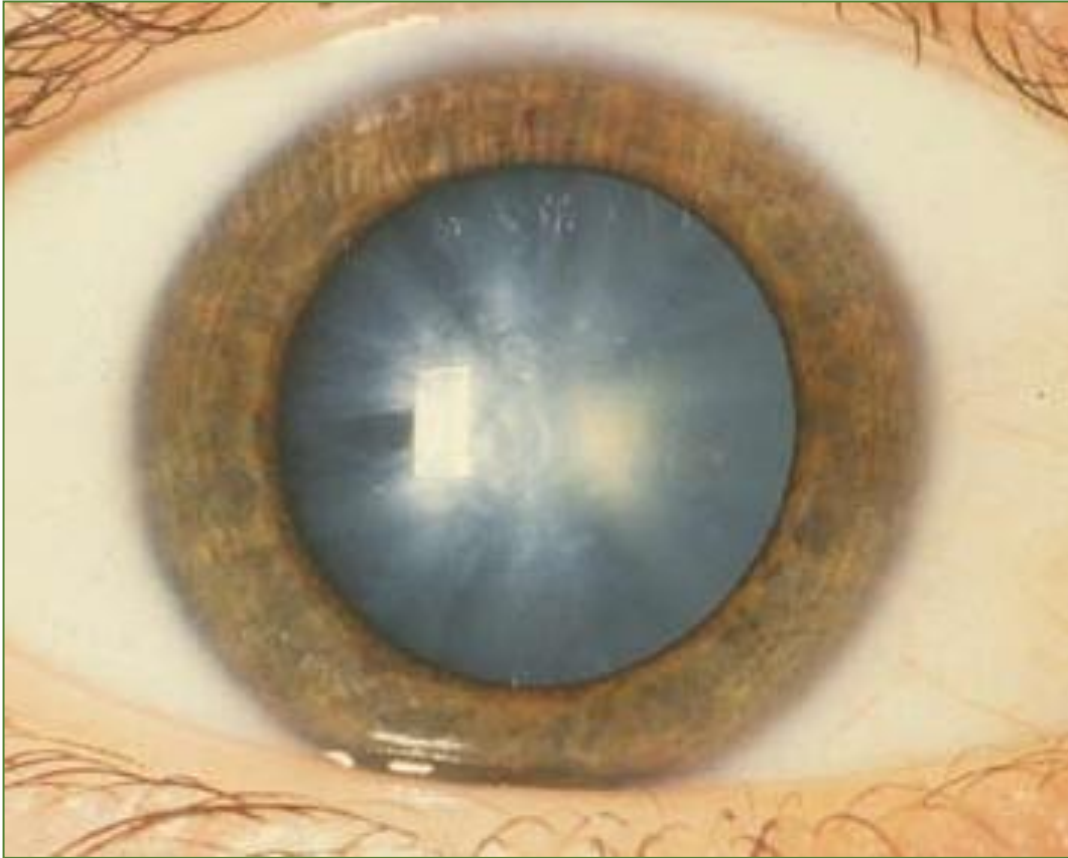
Glasses with high powered lenses

Other devices

Special software for computers

© Lighthouse International, Peter Vidor

Telescopic lenses

Diabetes and Cataract

A cataract is a clouding of the lens. People with cataract see through a haze.
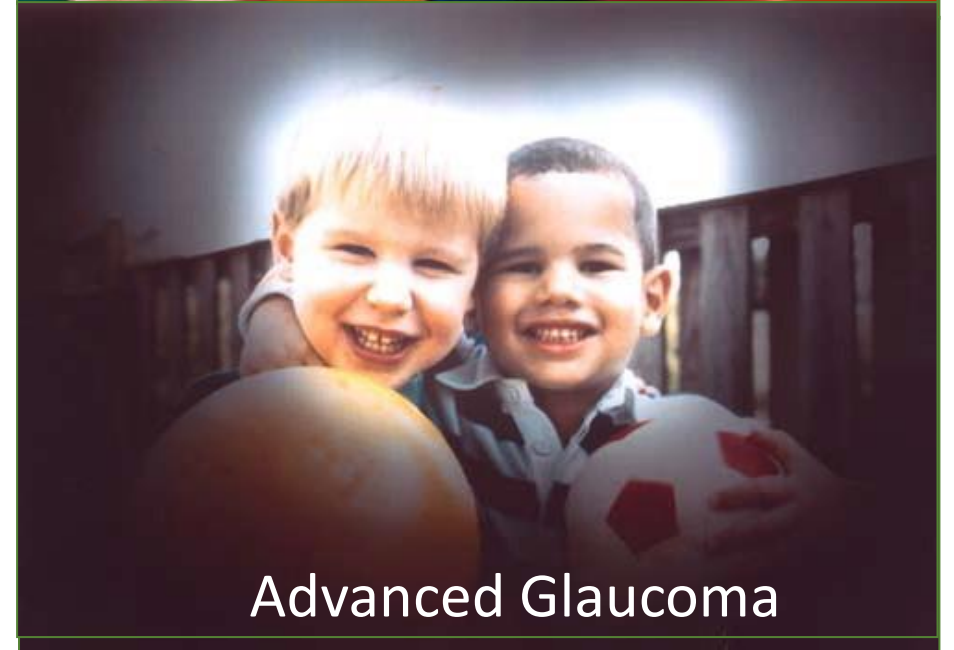

Normal Vision

Cataract

Diabetes and Glaucoma

Glaucoma is a group of diseases that can damage the optic nerve and result in vision loss and blindness.

Normal Vision

Advanced Glaucoma

The Eye Health Team

Health professionals who are part of an eye health team include:

- Certified diabetes educator
- <mark>Health promoter/CHW</mark>
- Nurse
- Ophthalmologist
- Optometrist
- Pharmacist
- Primary care provider
- Social worker

Keep your eyes healthy

There are lots of ways to keep your eyes healthy
- from wearing your sunglasses
- to eating eye-healthy foods, like salmon and kale

Protect your eyes

- Wear sunglasses

- Wear protective eyewear

- Give your eyes a rest

- If you wear contacts, take steps to prevent eye infections

Are You at Risk for Heart Disease?

Name: _____

Risk factors are traits or habits that make a person more likely to develop heart disease. Read this list of risk factors for heart disease. Check the ones you have.

Heart disease risk factors you can do something about:

✔ Check the ones that you have.

❑ Being overweight   ❑ Not sure

❑ High blood pressure   ❑ Not sure

❑ High blood cholesterol   ❑ Not sure

❑ Diabetes   ❑ Not sure

❑ Not being physically active

❑ Cigarette smoking
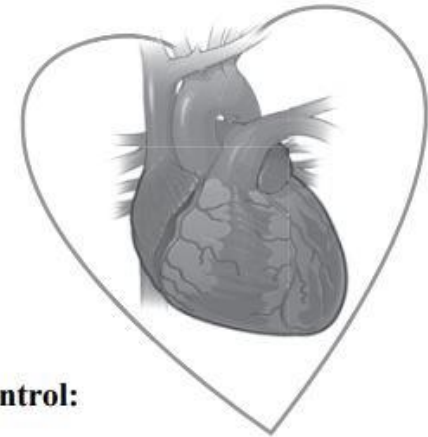
Heart disease risk factors you cannot control:

✔ Check the ones that you have.

❑ Age (45 years or older for men and 55 years or older for women)

❑ Family history—

- Father or brother with heart disease before age 55

- Mother or sister with heart disease before age 65

The more risk factors you have checked, the greater your risk for heart disease. Talk to your doctor about your risk.

Resources

- Heart.org
- Eye Health | ADA (diabetes.org)
- Exercise Can Slow or Prevent Vision Loss, Study Finds | National Eye Institute (nih.gov)
- Healthy Vision | National Eye Institute (nih.gov)
- High Blood Pressure | American Heart Association
- Burden of Vision Loss | CDC
- National Diabetes Statistics Report | Diabetes | CDC

Thanks