




Preventing Cardiovascular Disease

Total Fitness And Wellness



1. Define *cardiovascular disease* and describe the prevalence of this condition worldwide.

Learning Outcomes

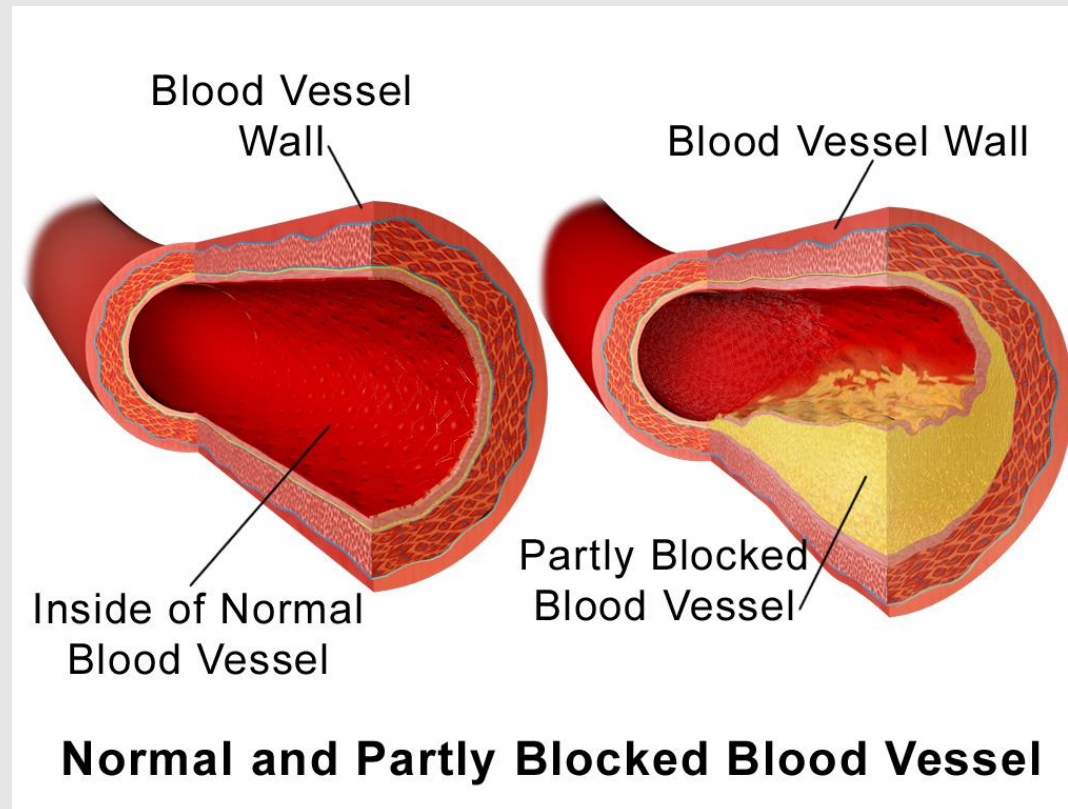
Cardiovascular Disease (CVD)

- Any disease that affects the heart or blood vessels
- #1 cause of death in USA
- #2 cause of death in Canada

WHAT HAPPENS DURING A **HEART** ATTACK?



Types of Cardiovascular Disease



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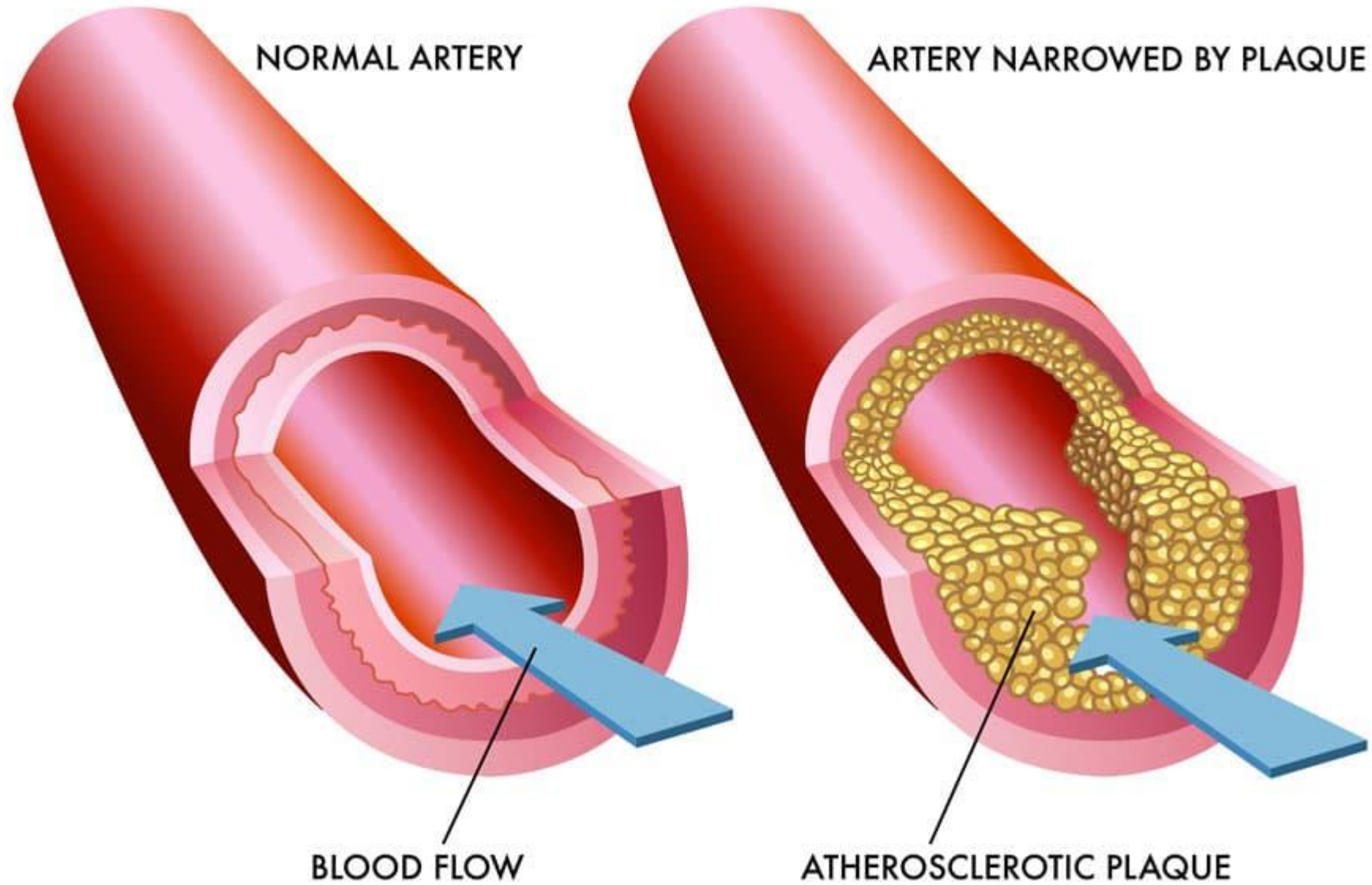
Types of Cardiovascular Diseases Cont...

- Arteriosclerosis: Group of diseases characterized by a narrowing, or “hardening,” of the arteries
- Eventually prevents blood flow to vital organs

Types of Cardiovascular Diseases Cont...

- Atherosclerosis: type of arteriosclerosis that results in arterial blockage due to buildup of fatty deposit (*atherosclerotic plaque*) inside the blood vessel.

ATHEROSCLEROSIS

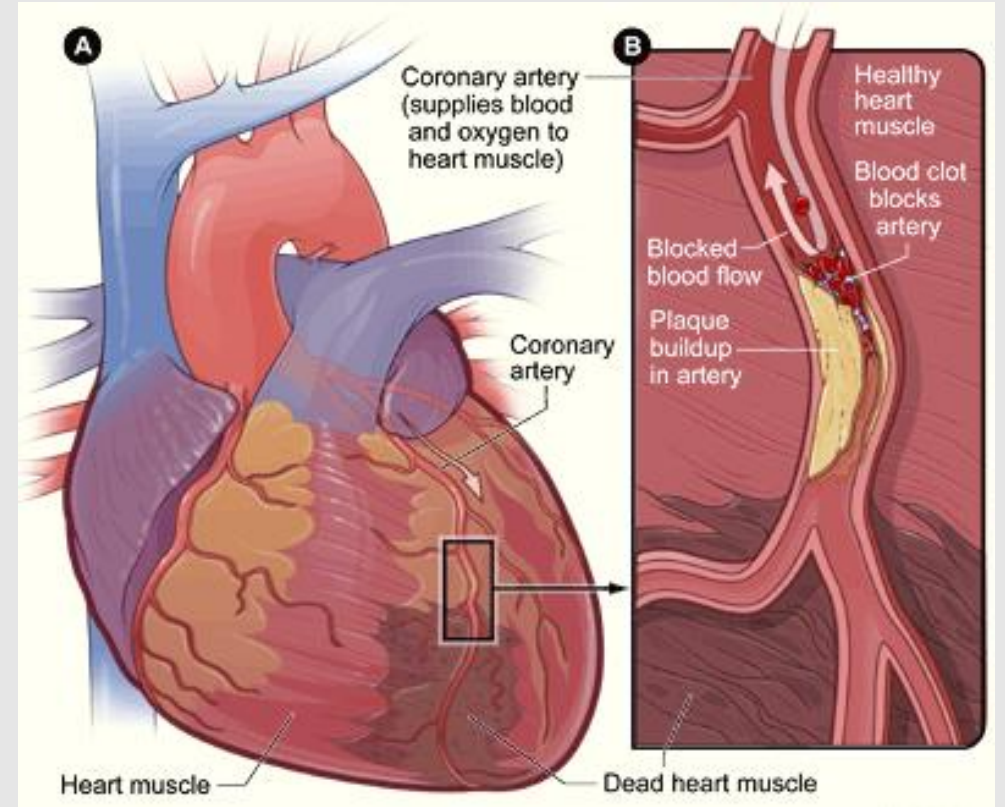


Types of Cardiovascular Diseases Cont...

- Coronary Heart Disease (CHD): disease that results from atherosclerotic plaque blocking one or more coronary arteries (blood vessels supplying the heart); also called *coronary artery disease*.

Types of Cardiovascular Diseases Cont...

- Heart attack (myocardial infarction): Stoppage of blood flow to the heart, resulting in the death of heart cells.



Types of Cardiovascular Diseases Cont...

- Stroke: brain damage that occurs when the blood supply to the brain is reduced for a prolonged period of time
 - Usually due to atherosclerosis – blockage of arteries leading to the brain
 - Sometimes can occur due to a blood clot or when a blood vessel in the brain ruptures

What is a STROKE?

F

ace



A

rms



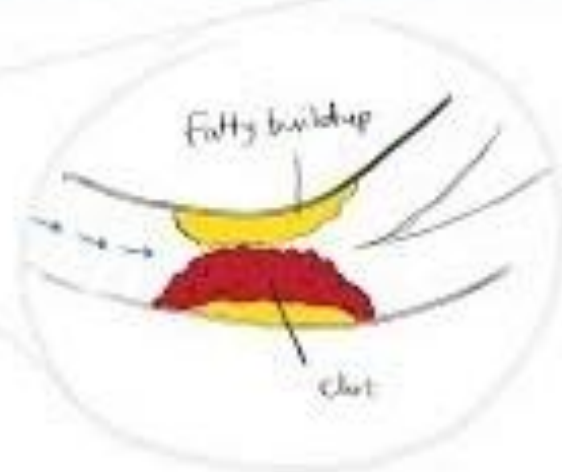
S

peech



T

ime

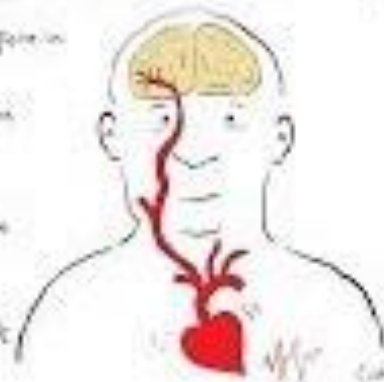


clots can form in

- brain

- neck

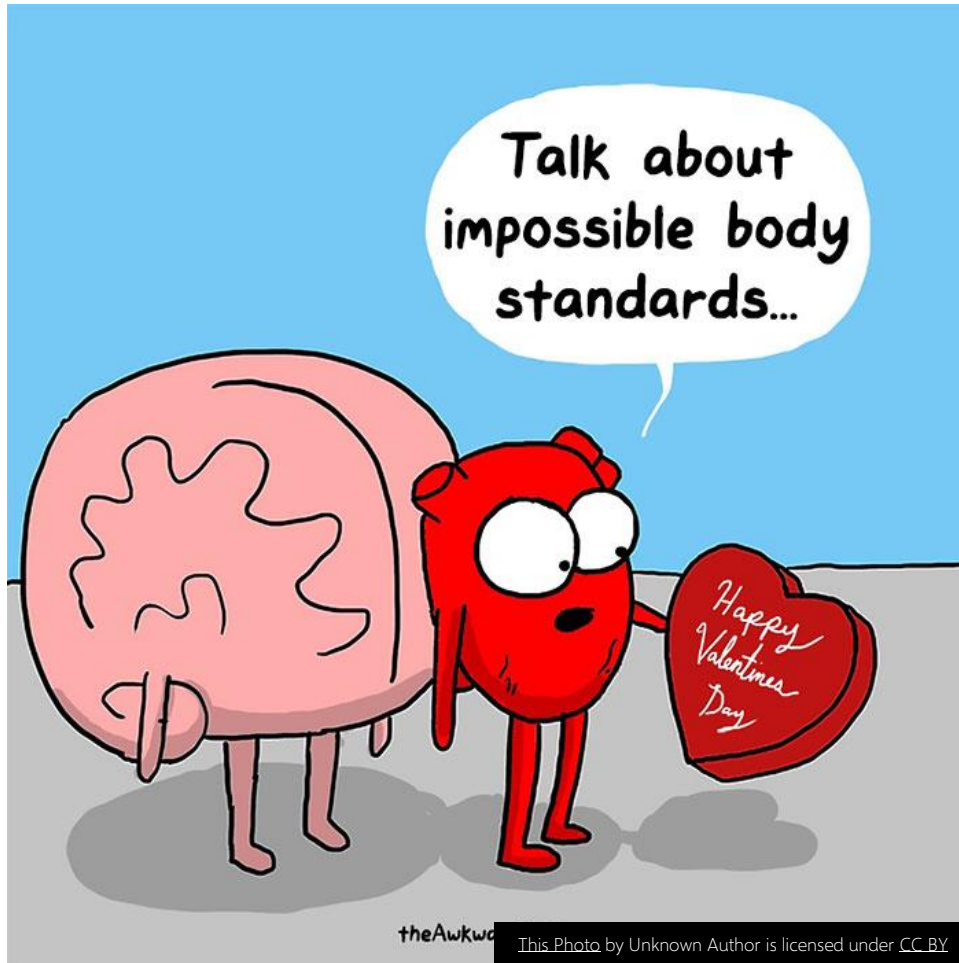
- heart



AP
(and clots)

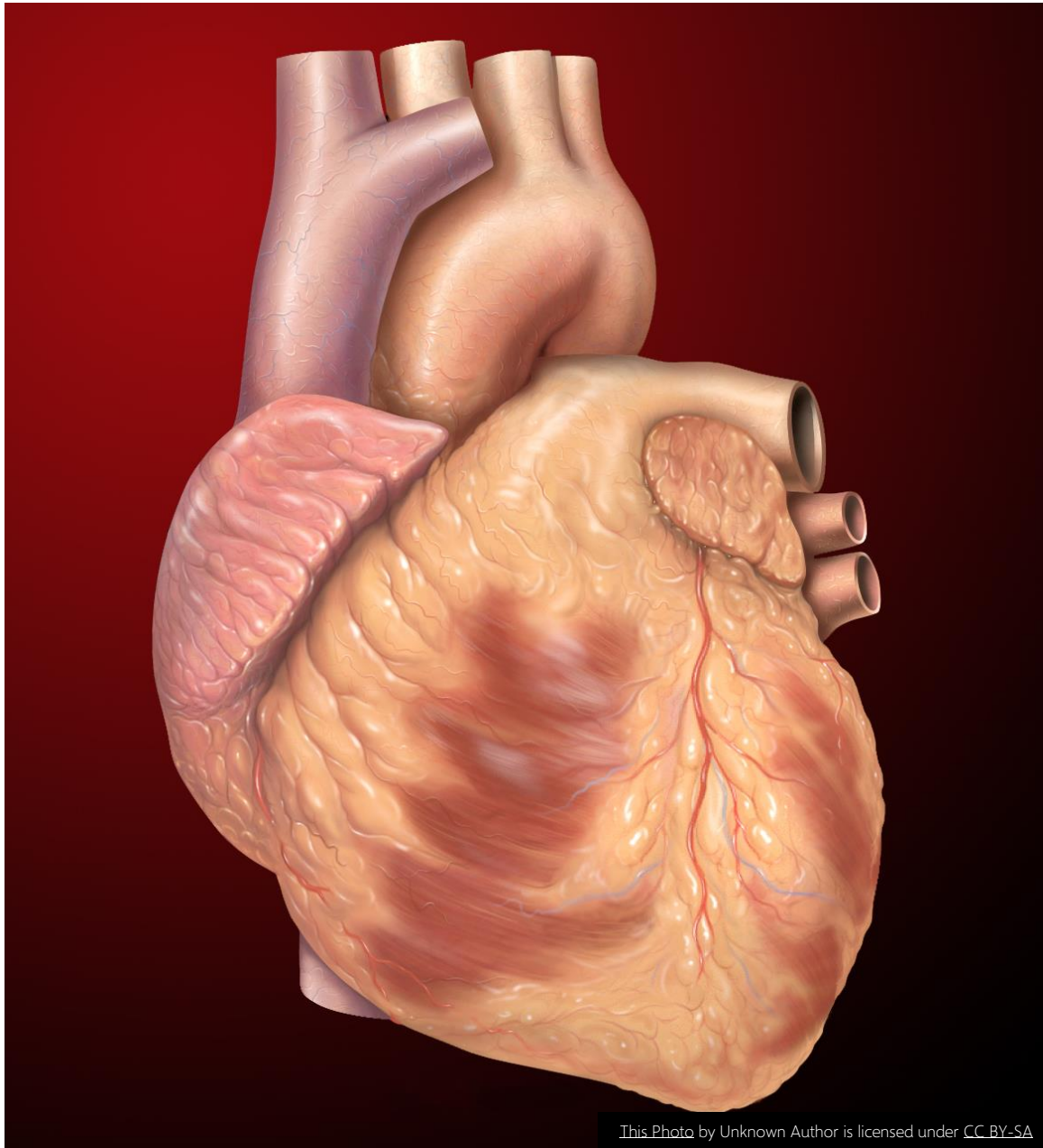
Types of Cardiovascular Diseases Cont...

- Hypertension: abnormally high blood pressure
- Blood pressure is measured in millimeters of mercury (mm Hg) – expressed as the systolic blood pressure (blood pressure when your heart contracts)
 - Diastolic blood pressure is the pressure when your heart relaxes
 - Hypertension = resting blood pressure over 140 mm Hg systolic, and diastolic pressure of 90 mm Hg or higher



What Risk Factors Are Associated with Coronary Heart Disease?

- Concept 2: List the major (primary) and contributory (secondary) risk factors for coronary heart disease and identify those risk factors that can be modified.



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Risk Factors

- Primary Risk Factors: Major risk factors. Directly related to the development of Cardiovascular Heart Disease (CHD) and stroke.
- Secondary Risk Factors: Contributory risk factors. Increase the risk of CHD, but their direct contribution to the disease process has not been precisely determined.



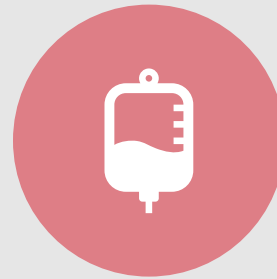
Major Risk Factors

- Smoking
 - Twice the risk of a non-smoker
 - Biggest risk factor for sudden death due to cardiac arrest, a heart attack, or irregular heartbeats (arrhythmias)
 - Promotes development of atherosclerosis in peripheral blood vessels (such as in the arms and legs)
 - More likely to die within an hour after the attack
 - Second hand smoking can be as dangerous to your health as direct inhalation

Major Risk Factors – Smoking Continued



Nicotine = ↑ heart rate
and blood pressure



↑ stickiness of platelets
= ↑ risk of clotting &
risk of attack



Nicotine ↑ cholesterol,
= promoting fat
deposits in arterial walls



Women who take birth
control + smoke =
even higher risk of CHD

Major Risk Factors - Hypertension

- Disease and a risk factor
- High blood pressure
- ↑ sodium (from processed & fast foods)
= ↑ blood pressure



Major Risk Factors - High Blood Cholesterol

- Cholesterol is not soluble in blood – it is combined with proteins in the liver so it can be transported in the bloodstream
- ↑ Low-density lipoprotein (LDL) = ↑ CHD
- ↑ High-density lipoprotein (HDL) = ↓ CHD

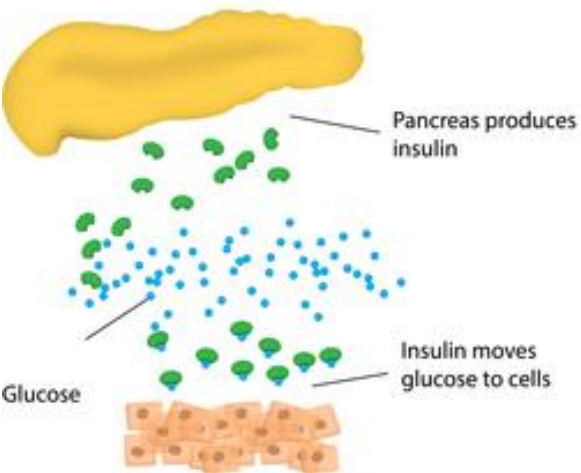


Major Risk Factors - Physical Inactivity

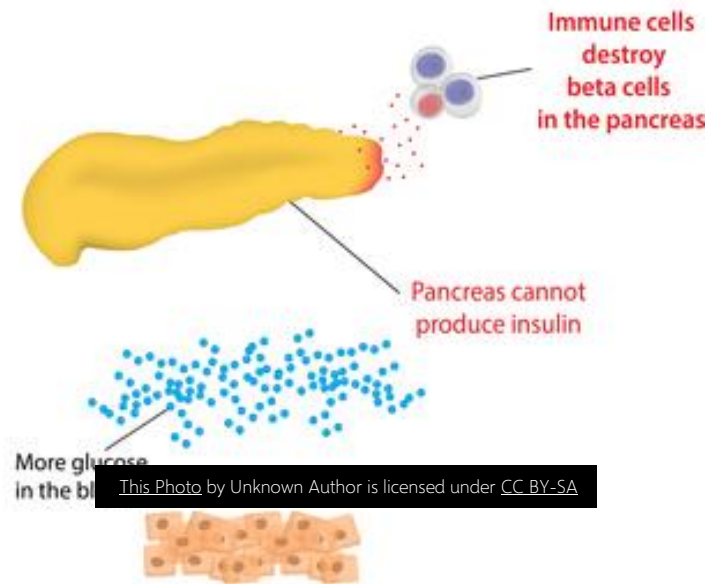
- \uparrow Exercise = \downarrow CHD
- Exact mechanism that reduces this risk is not known

Type 1 Diabetes

Healthy



Diabetic



Major Risk Factor – Diabetes

- Results in elevated blood sugar (ex. Glucose) levels because the body cannot use blood glucose as a fuel source
- Occurs most often in middle age
- Common in people who are overweight
- About 68% of people with diabetes die from cardiovascular disease
- Could be because of inactive lifestyle, unfavorable blood cholesterol levels, and/or suffer from hypertension

Major Risk Factor – Overweight and Obesity

- Waist-to-hip circumference ratios greater than 1.0 for men and 0.9 for women indicate significant risk for development of CHD
- Hypertension – possibly because of high sodium intake



Major Risk Factor – Heredity/Gender/Increasing Age

- Children with parents of CHD are more likely to develop CHD than are children of parents who do not have CHD
- Up until age 55 men have a greater risk of developing CHD and stroke than women
 - Women are “protected” by estrogen – which may elevate HDL cholesterol
 - After menopause, CHD risk increases much more than men’s risk
- ↑ age = ↑ buildup of arterial plaque
- More than 80% of people who die of CHD are age 65 or older
- Most people who get strokes are over 55



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Contributory Risk Factors

- Stress = ↑ hypertension = ↑ blood cholesterol profile
 - Stress = induces the release of hormones that elevate blood pressure
- Alcohol Consumption = ↑ consumption = ↑ blood pressure, heart failure and stroke, high triglycerides, cancer, and liver disease
- Diet: can control and reduce many risk factors that lead to CHD





How Can You Reduce Your Risk of Heart Disease?

Concept 3: Outline a plan for reducing your risk for developing cardiovascular disease.



How Can You Reduce Your Risk of Heart Disease?

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- Recent study reveals that more than half of college-age students 18-24 years have at least one major CHD risk factor, and nearly $\frac{1}{4}$ have advanced atherosclerotic lesions (plaque buildup in arteries)
- Reducing Risk Factors
 - Don't smoke – as soon as you quit, CHD risk begins to decline
- Lower Your Blood Pressure – medication, exercise, healthy diet low in sodium
- Reduce Blood Cholesterol Levels – decreasing intake of cholesterol (meat and dairy products)
- Be Physically Active – risk of death from CHD decreases as the total physical activity energy expenditure increases from 500 to 3500 kilocalories per week.
 - Regular vigorous exercise is better, 3 or more days per week
- Reduce Your Stress Level
 - Relaxation techniques
 - If angry or hostile easily – meet with a counselor or therapist trained in anger management

https://www.ted.com/talks/alyson_mcgregor_why_medicine_often_has_dangerous_side_effects_for_women#t-913285