



IHC Cholesterol Presentation

Medication Education Project '22-'23



International
Health Collective



01 Introduction

What is High Cholesterol?



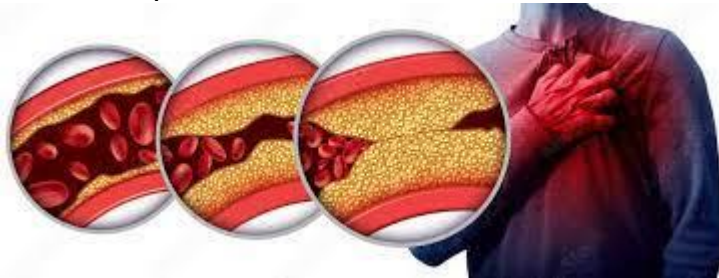
What is Cholesterol?

Cholesterol is a waxy, fatlike substance in your blood that your body needs to make strong cells and vitamins, and to help maintain cell shape and proper growth and cell function

Your body gets cholesterol in two ways:

- Liver makes blood cholesterol
- Eating animal products such as dairy, meat, poultry, and oils

Your body needs cholesterol to be able to take care of your cells. However, too much cholesterol building up in your bloodstream can cause health problem such as heart disease.



Long-Term Effects of High Cholesterol

Having high cholesterol can lead to long term physical and emotional health problems. High cholesterol is having a total cholesterol above 200 mg/dL.

Long term effects can include:

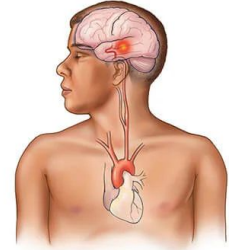
- Atherosclerosis
- High blood pressure
- Heart disease & weak heart
- Type 2 diabetes

High cholesterol diseases

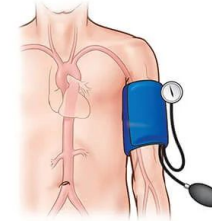
Peripheral artery disease (PAD)



Stroke



High blood pressure



Type 2 diabetes



Cleveland Clinic ©2022

Credit: Cleveland Clinic

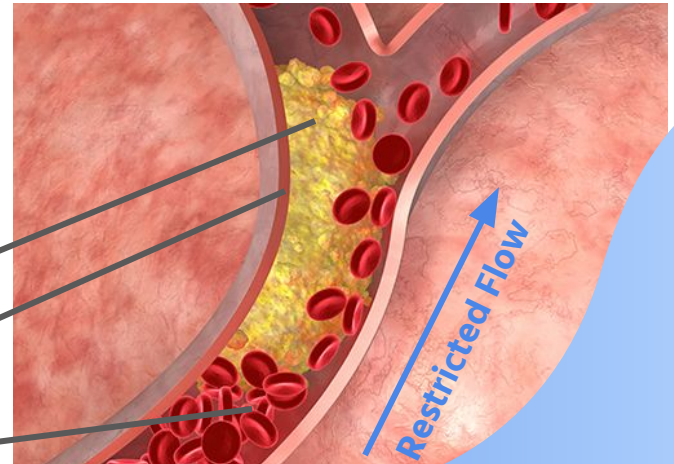
Effects of High Cholesterol: Atherosclerosis

- Cholesterol travels through the bloodstream in **“low density lipoproteins” (LDLs)**
- LDLs stick to walls of blood vessels – “atherosclerosis”
 - Build large clusters of fat on walls of blood vessels - “plaque”
- LDLs unstick from walls of blood vessels – block blood flow
 - Stroke
 - Heart Attack
 - Heart Disease

Plaque of LDLs

Blood Vessel

Red Blood Cells



Risk Factors of High Cholesterol

- **Poor diet**

- Eating too much saturated/trans fats can cause unhealthy cholesterol levels
- Saturated fats are found in fatty cuts of meat and full-fat dairy products
- Trans fats are often found in packaged snacks or desserts

- **Weight**

- Obesity or being overweight can raise levels of LDL cholesterol and lower levels of HDL cholesterol

- **Lack of physical activity**

- Exercise helps boost your body's HDL, or the "good" cholesterol

- **Smoking**

- Smoking cigarettes may lower your HDL levels, or the "good" cholesterol by damaging your blood vessels, making them more likely to collect fatty deposits

- **Alcohol consumption**

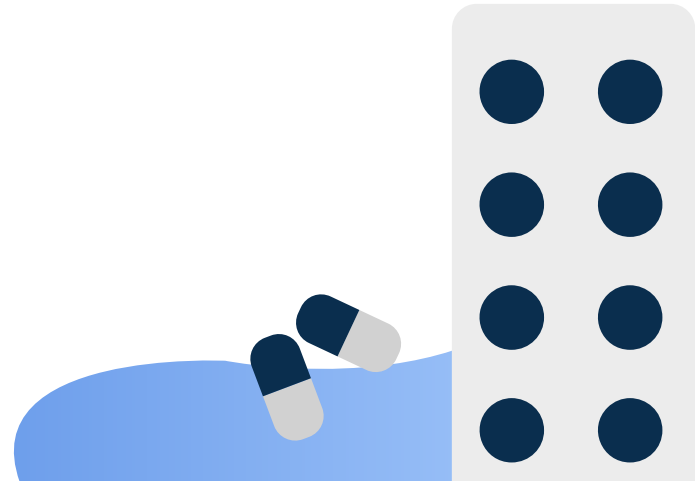
- **Age**

- Having high cholesterol is common in people over the age of 40
- As you age, your liver is less able to remove LDL cholesterol



02

Treatments



Diet & Lifestyle

- **Eat fresh, low-salt foods:** fruits, vegetables and whole grains
 - Sodium is often used as a preservative, so limit shelf-stable/processed food
 - Increase intake of omega-3 fatty acids, soluble fibers, and whey protein
- **Limit the amount of animal fats** and use good fats in moderation
 - Good (polyunsaturated or monounsaturated) fats are vegetable oils, nuts, seeds, and fish
 - Reduce saturated fats and trans fats
- Lose extra pounds and **maintain a healthy weight**
 - Regardless of weight, try to exercise every day for at least 30 minutes
 - Exercise can be cardio or weights (higher muscle mass raises basal metabolism)
- Drink **alcohol in moderation**, if at all
 - Alcohol impairs normal body functions, including those that remove LDLs from blood
- **Quit smoking**
 - Also lowers risk of heart disease

1. Mayo Clinic Staff, "High Cholesterol," Mayo Foundation for Medical Education and Research, <https://www.mayoclinic.org/diseases-conditions/high-blood-cholesterol/symptoms-causes/syc-20350800>

4. "Fats and Cholesterol," *Harvard School of Public Health*, <https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/fats-and-cholesterol/>

Atorvastatin/ Simvastatin/ Pravastatin

Lowers chance of stroke and heart attack in patients with heart disease

- Method:
 - Decreases amount of LDLs and other fatty substances in the bloodstream by converting them into HDLs (healthier), making plaque formation less likely
 - Inhibits the body's pathway from making its own cholesterol
- Treatment course:
 - 1 pill/day, indefinitely

5. MedlinePlus [internet], "Atorvastatin," *National Library of Medicine*, <https://medlineplus.gov/druginfo/meds/a600045.html>

6. MedlinePlus [internet], "Simvastatin," *National Library of Medicine*, <https://medlineplus.gov/druginfo/meds/a692030.html>

7. MedlinePlus [internet], "Pravastatin," *National Library of Medicine*, <https://medlineplus.gov/druginfo/meds/a692025.html>

Atorvastatin/ Simvastatin/ Pravastatin

- Side effects (possible, not probable):
 - Heartburn, headache, memory loss or forgetfulness, confusion, constipation, stomach pain, nausea, itchy or red skin
- Atorvastatin brand names: Lipitor[®], Caduet^{®*}, Liptruzet^{®*}
- Simvastatin brand names: Flolipid[®], Zocor[®], Juvisync^{®*}, Vytorin^{®*}, Simcor^{®*}
- Pravastatin brand names: Pravachol[®]

*Combination medications

5. MedlinePlus [internet], "Atorvastatin," *National Library of Medicine*, <https://medlineplus.gov/druginfo/meds/a600045.html>

6. MedlinePlus [internet], "Simvastatin," *National Library of Medicine*, <https://medlineplus.gov/druginfo/meds/a692030.html>

7. MedlinePlus [internet], "Pravastatin," *National Library of Medicine*, <https://medlineplus.gov/druginfo/meds/a692025.html>



Thank You
for
Listening!

References

1. Mayo Clinic Staff, "High Cholesterol," Mayo Foundation for Medical Education and Research,
<https://www.mayoclinic.org/diseases-conditions/high-blood-cholesterol/symptoms-causes/syc-20350800>
2. Wikipedia contributors, "Cholesterol," *Wikipedia, The Free Encyclopedia*,
<https://en.wikipedia.org/w/index.php?title=Cholesterol&oldid=1146468882>
3. "About Cholesterol," *Centers for Disease Control and Prevention*,
<https://www.cdc.gov/cholesterol/about.htm>
4. "Fats and Cholesterol," *Harvard School of Public Health*,
<https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/fats-and-cholesterol/>
5. MedlinePlus, "Atorvastatin," *National Library of Medicine*,
<https://medlineplus.gov/druginfo/meds/a600045.html>
6. MedlinePlus, "Simvastatin," *National Library of Medicine*,
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7. MedlinePlus, "Pravastatin," *National Library of Medicine*,
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