

How does atherosclerosis develop?

From risk factors to plaque and heart attack



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CARDIOLOGY

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1

Risk factors lead to higher ApoB particles

Lifestyle and genetic factors can increase the number of ApoB-containing particles (LDL, remnants and Lp(a)) in your blood.



2

Particles enter and become trapped in the artery wall

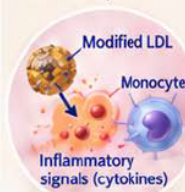
ApoB particles can pass through the inner lining of the artery (endothelium) and become trapped in the artery wall (intima).



3

Particles become modified and trigger inflammation

Once trapped, ApoB particles can become chemically modified, which triggers an inflammatory response and attracts immune cells (monocytes and T cells).



4

Macrophages take up lipids and become foam cells

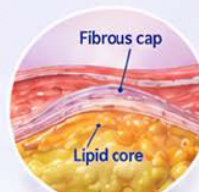
Immune cells take up the modified lipids and turn into foam cells, which leads to the earliest visible sign of atherosclerosis (a fatty streak).



5

A plaque develops and grows over time

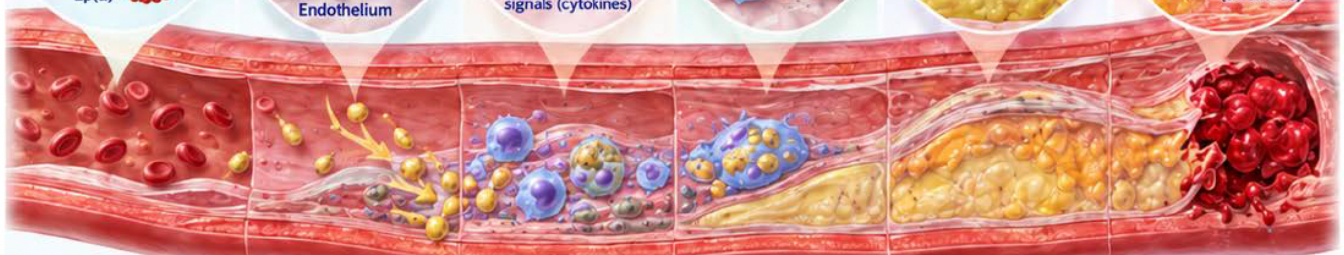
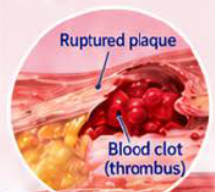
Ongoing inflammation and healing lead to a build-up of a plaque with a fatty core and a fibrous cap. The artery may gradually become narrower.



6

A plaque can rupture and cause a clot

If the plaque is vulnerable, the fibrous cap can rupture, leading to a blood clot (thrombus) that can suddenly block the artery and cause a heart attack or stroke.



Normal artery

ApoB particles enter the artery wall

Inflammation and immune cell activation

Fatty streak (early atherosclerosis)

Growing plaque with fibrous cap

Plaque rupture and blood clot (heart attack)

Key risk factors



High ApoB (LDL, remnants, Lp(a))



High blood pressure



Diabetes



Smoking



Physical inactivity



Unhealthy diet and weight

The good news

Atherosclerosis often develops over many years, and we can make a difference. By treating risk factors early and maintaining a healthy lifestyle, we can reduce the build-up of plaque and lower the risk of heart attack and stroke.



Know your risk. Take action. Protect your heart and brain.

Talk to your doctor about your individual risk factors and the best strategy for you.

Here for what matters

