

# Cardiovascular System

## THE REAL CULPRIT

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# CAUSATION

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## CAUSATION

- ▶ Were you ever mesmerized by crime movies or novels?
  - ▶ Who Done It?
  - ▶ 25 best WhoDunIt movies! “Clue,” “Blow Out”
  - ▶ Alfred Hitchcock movies
  - ▶ Escape Rooms
  - ▶ We all want to know, who is the killer?
- ▶ REAL LIFE, #1 killer is cardiovascular disease!
- ▶ Would it be pertinent to know WHO DONE IT?

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## CAUSATION

- ▶ What is the first number patient ask about in a test? “What is my cholesterol”
- ▶ GENERAL NARRATIVE for decades is that high cholesterol, especially LDL is causative factor for CVD
- ▶ Most recent popular voices, Dr. Peter Attia:  
“There is no ambiguity; LDL and ApoB are CAUSALLY related to atherosclerosis”

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## Whodunit, REAL LIFE STORY

- ▶ Journalist Lee Strobel is given a story lead about a police officer who was shot by a “gang banger.” The officer (Judd Lormand) tells Lee he wants to see the assailant put away for good.
- ▶ He begins investigating and discovers that the assailant, James Dixon, has a long list of arrests, including a violent crime.
- ▶ There is a gun found in the bushes near where the shooting took place. A bullet was fired from the gun, and the gun belonged to Dixon.
- ▶ Lee writes the story. Dixon pleads guilty and is sent to prison.
- ▶ In prison, Dixon is brutally beaten by gang members because Lee wrote that Dixon was a gang informant. The guards in the prison look away because Dixon shot a police officer.

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## Whodunit, REAL LIFE STORY

- ▶ In a stunning REVERSAL of events Lee discovers something. The pen that the officer carried was a pen gun, which held a spent casing that was the same caliber of bullet Dixon was accused of using on the officer.
- ▶ Having a pen gun was illegal for anyone to carry, especially the officer.
- ▶ At the hospital, Lee confesses his wrong to Dixon – an innocent man who was convicted, sent to prison and beaten unmercifully.

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## CAUSATION?



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## SCIENCE – DOGMA OR SKEPTICISM?

### NASA CSI OFFICIAL PAGE

#### Why Must Scientists Be Skeptics?

- ▶ Skepticism is the act of suspending judgment (the opposite of jumping to conclusions) when evaluating an explanation or claims. It allows scientists to consider all possibilities and systematically question all information in the course of an investigation.
- ▶ Why is maintaining a skeptical outlook so important? Skepticism helps scientists to remain objective when performing scientific inquiry and research. It forces them to examine claims (their own and those of others) to be certain that there is sufficient evidence to back them up. Skeptics do not doubt every claim, only those backed by insufficient evidence or by data that have been improperly collected, are not relevant or cannot support the rationale being made.

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## Cholesterol/Dyslipidemia

- The over focus on cholesterol as the **sole** cause of heart disease is one of the greatest scams in history.
- BMJ 19 COHORT STUDIES 68,000 show high LDL = longevity

Cholesterol is essential for:

- Cell membrane integrity.
- Substrate for all adrenal/gonadal hormones
- To utilize Vitamin D
- To make Bile salts fat/mineral absorption
- To Make myelin sheath, memory, neurotransmitters
- Innate Immune system..

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## Cholesterol/Dyslipidemia

- ❑ Statin drugs are marketed to the public and given like candy;
- ❑ There has been a debate whether they should be added to drinking water.
- ❑ The number of individuals in the general population who reported taking any statin climbed from 31 million (12%) in 2008–2009 to 92 million (35%) in 2018–2019, representing a 197% increase

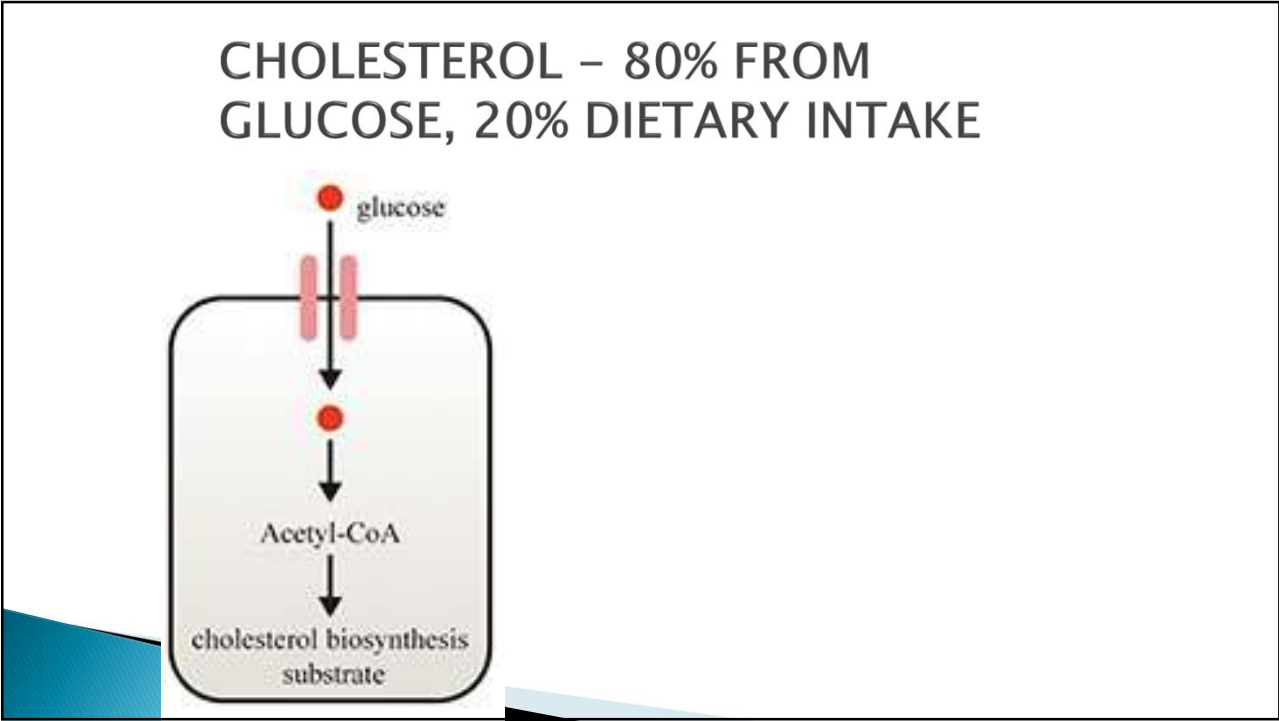
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## Cholesterol/Dyslipidemia

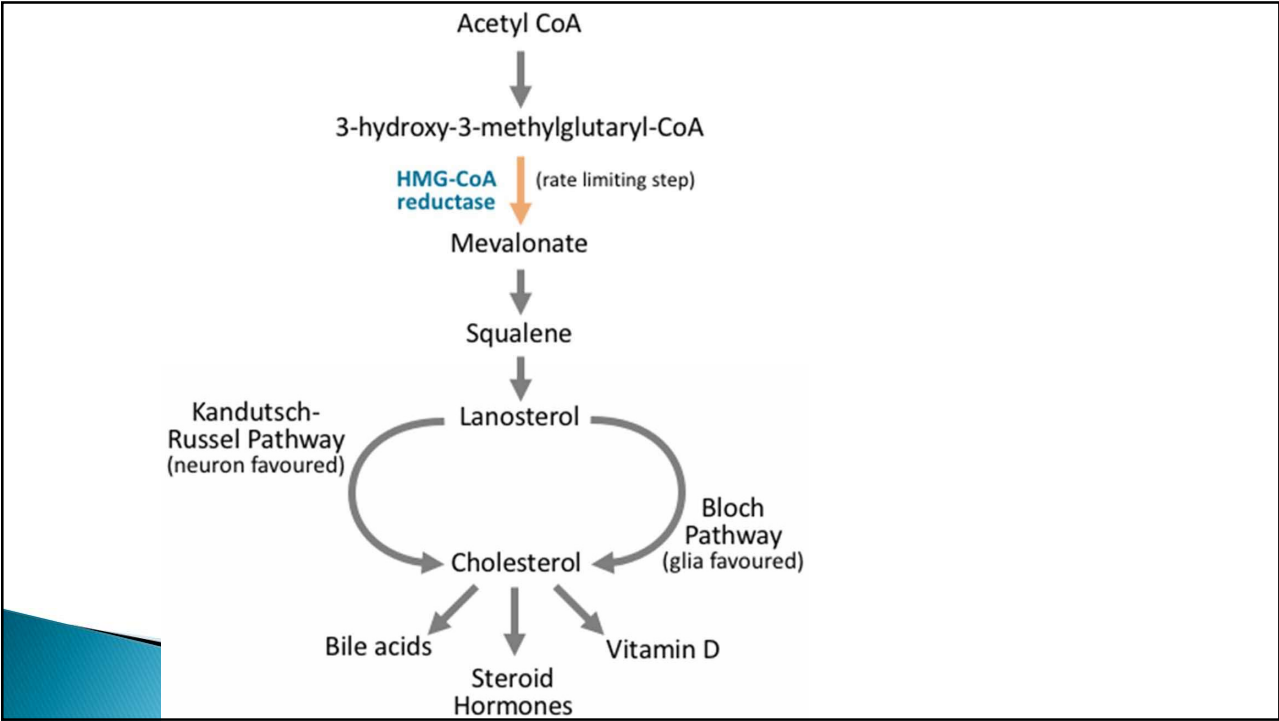
### Statin drugs can cause:

- Muscle weakness,
- Sexual dysfunction,
- Reduced thyroid function by inhibiting the conversion of T4 to T3,
- Memory reduction,
- Reduced immunity

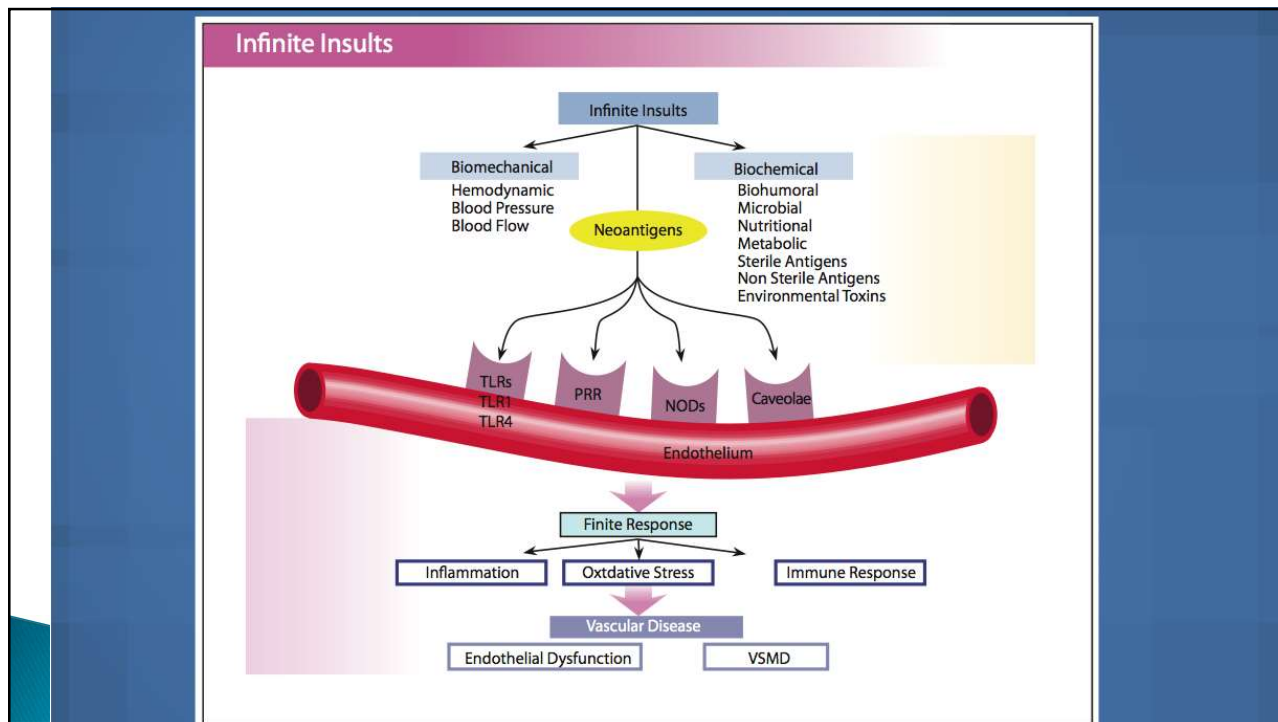
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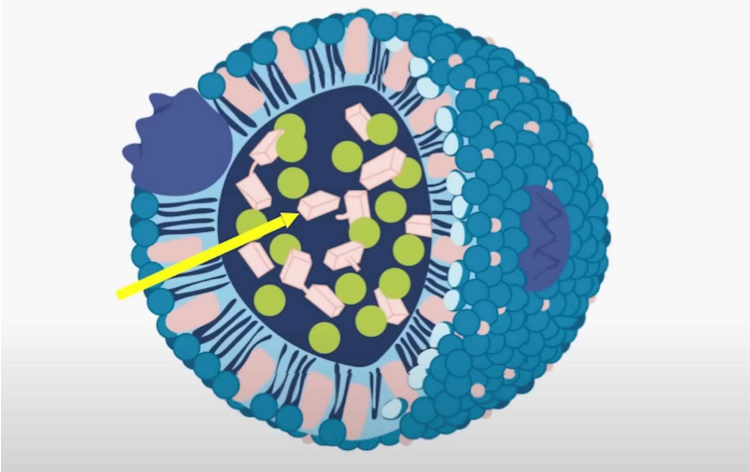
2 MAIN FACTORS

- STRUCTURAL DAMAGE
- NITRIC OXIDE

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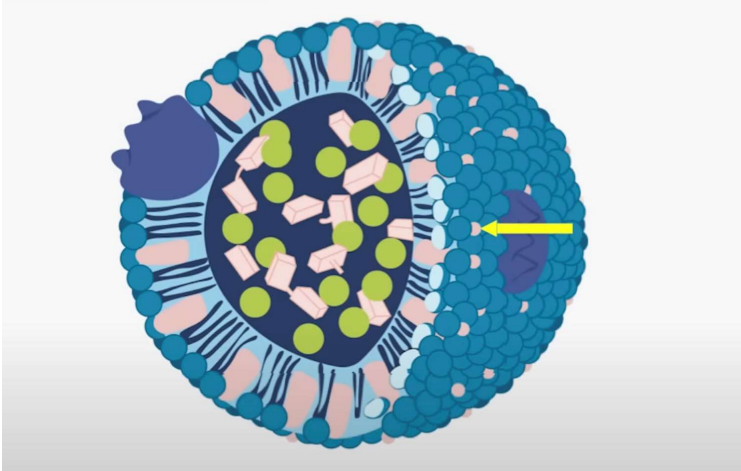


# CHOLESTEROL and LDL not the same



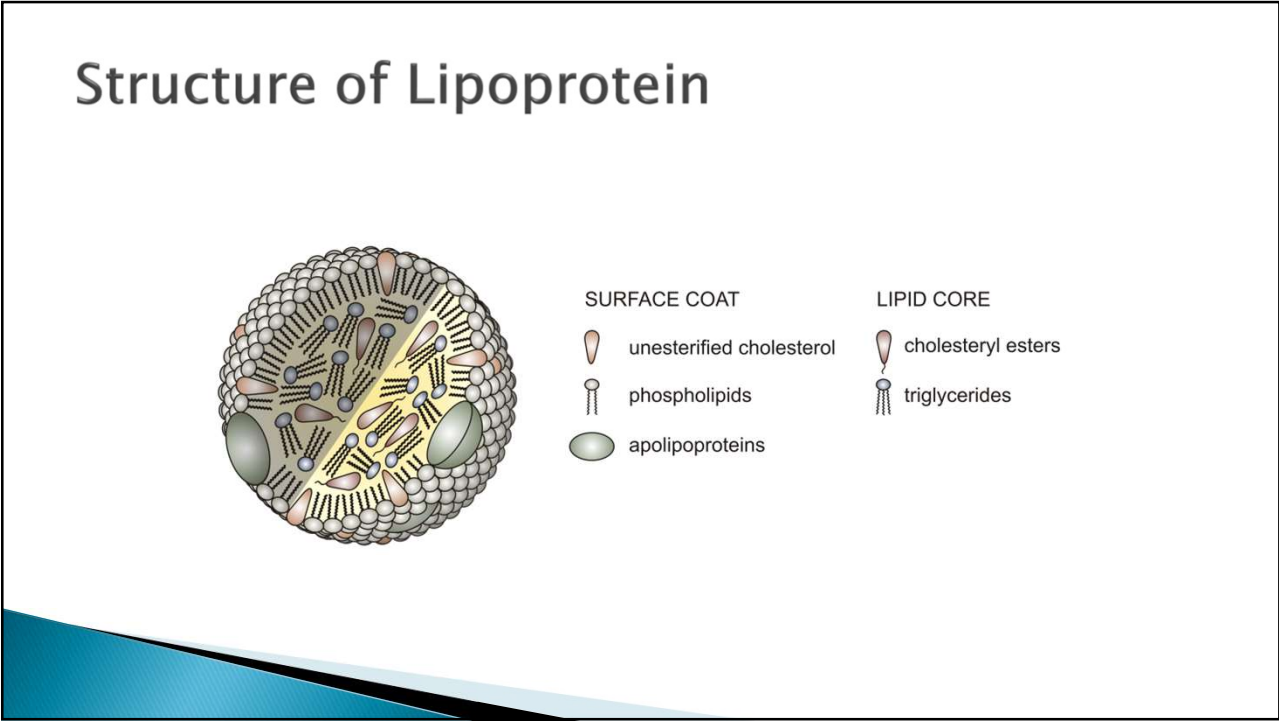
A cross-sectional diagram of a lipoprotein particle. The core contains numerous small green circles representing hydrophobic lipids, including cholesterol. A yellow arrow points from the left towards this central core. The surface of the particle is a monolayer of phospholipids, with their hydrophilic heads facing outward and hydrophobic tails facing inward towards the core. Two large purple structures, likely apolipoproteins, are embedded in the surface.

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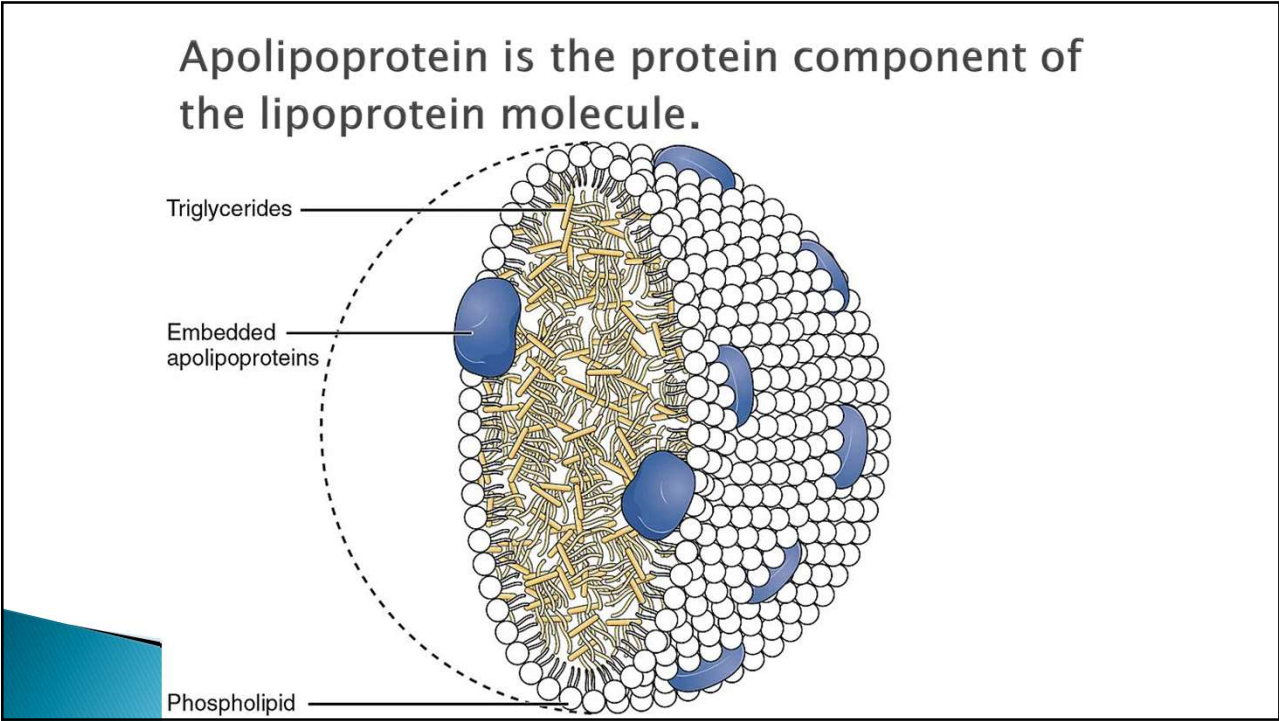


A cross-sectional diagram of a lipoprotein particle, identical to the one in slide 17. A yellow arrow points from the right towards the surface of the particle, specifically towards one of the large purple apolipoprotein structures.

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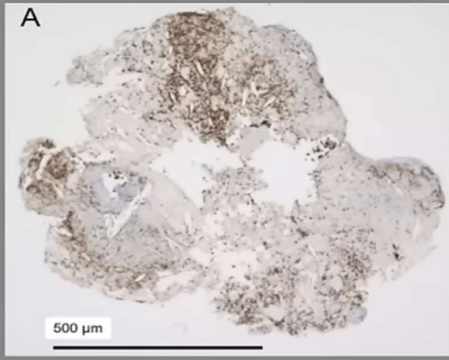


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# GLYCOPHERIN A



A

500 μm

Okamoto H, Kume T, Yamada R, Koyama T, Tamada T, Imai K, Neishi Y, Uemura S. Prevalence and Clinical Significance of Layered Plaque in Patients With Stable Angina Pectoris - Evaluation With Histopathology and Optical Coherence Tomography. *Circ J.* 2019 Nov 25;83(12):2452-2459. doi: 10.1253/circj.CJ-19-0640. Epub 2019 Oct 22. PMID: 31645508

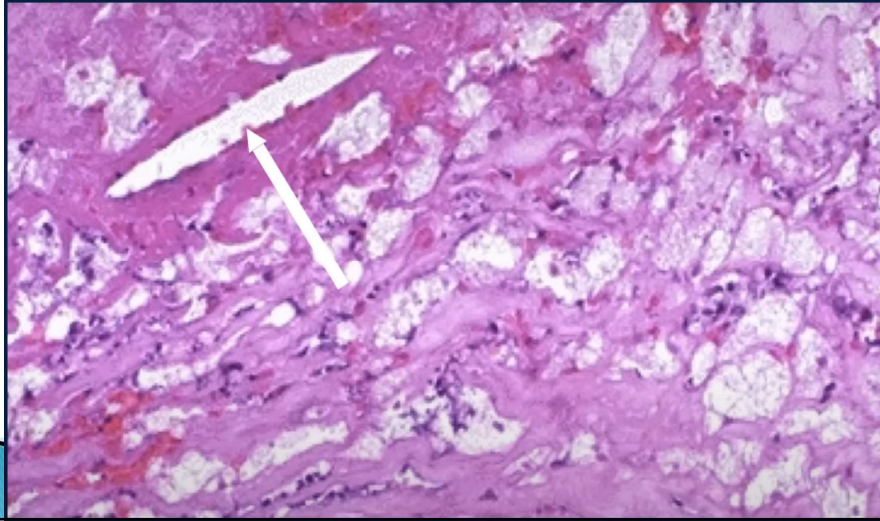
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# BLOOD CLOT



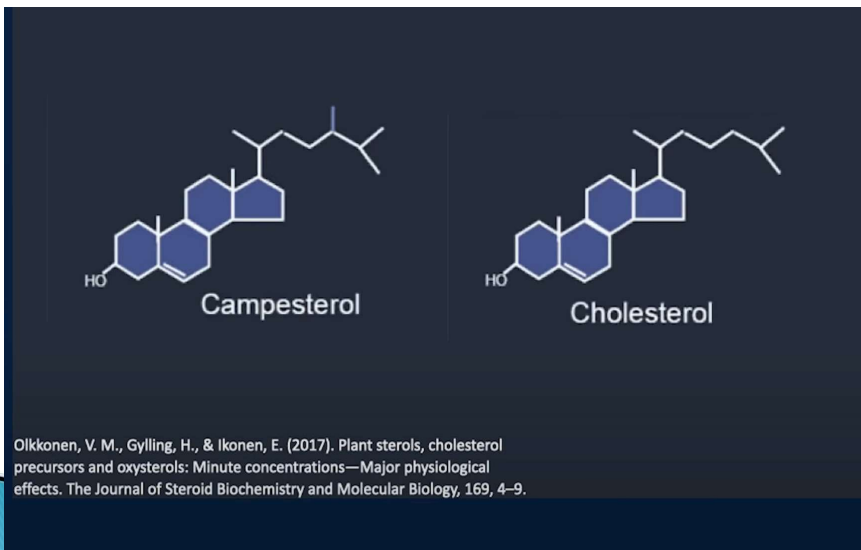
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## CRYSTALIZATION... IS IT REALLY CHOLESTEROL?



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## CAMPESTEROL VIRTUALLY IDENTICAL TO CHOLESTEROL

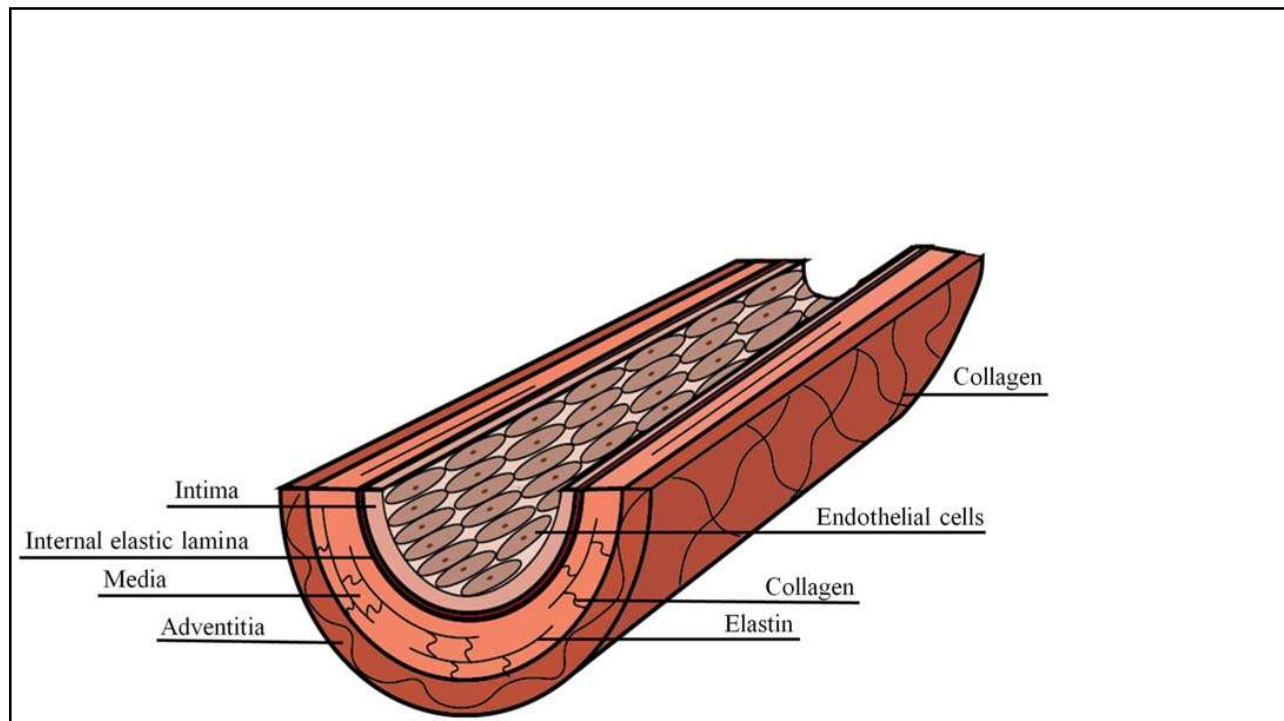


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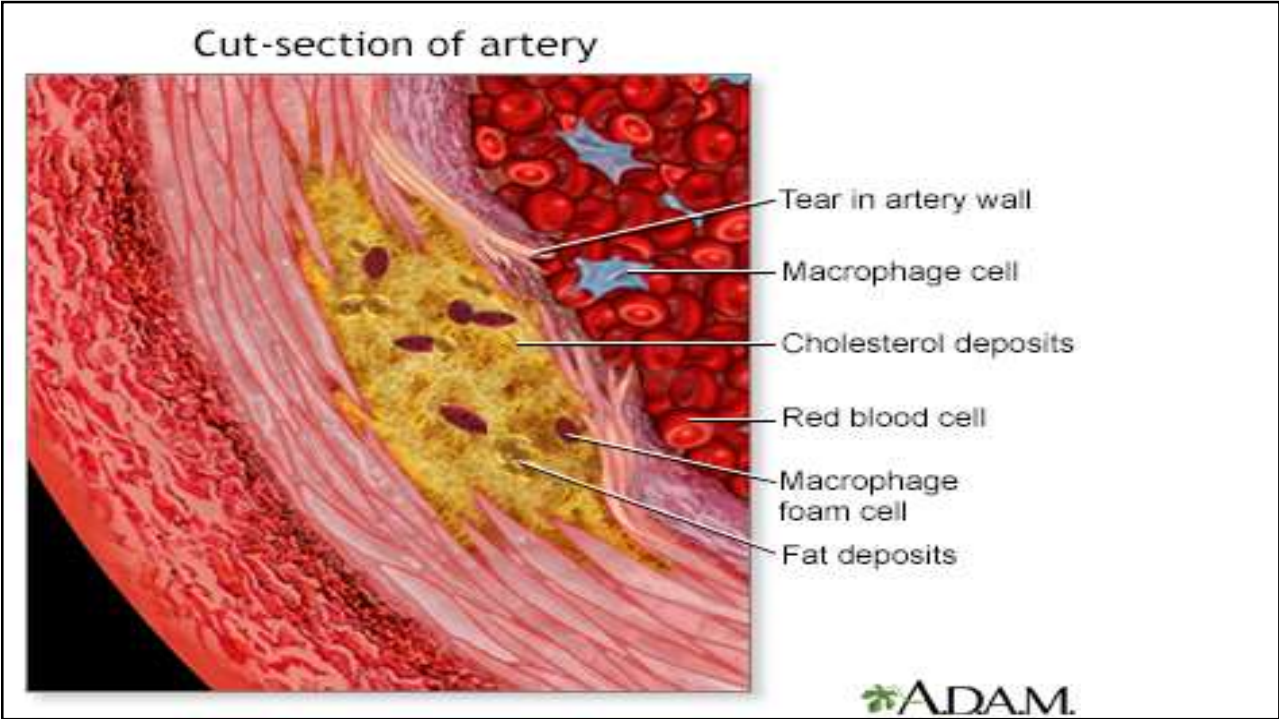
## VITAMIN C – ESSENTIAL FOR COLLAGEN IS IT A VITAMIN?

- ▶ MISSING ENDOGENOUS FACTOR
- ▶ Why did humans stop producing vitamin C?
- ▶ In all cases so far studied, the inability to synthesize vitamin C is due to mutations in the **L-gulonolactone oxidase (GLO) gene** which codes for the enzyme responsible for catalyzing the last step of vitamin C biosynthesis.
- ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3145266/#:~:text=In%20all%20cases%20so%20far,step%20of%20vitamin%20C%20biosynthesis.>

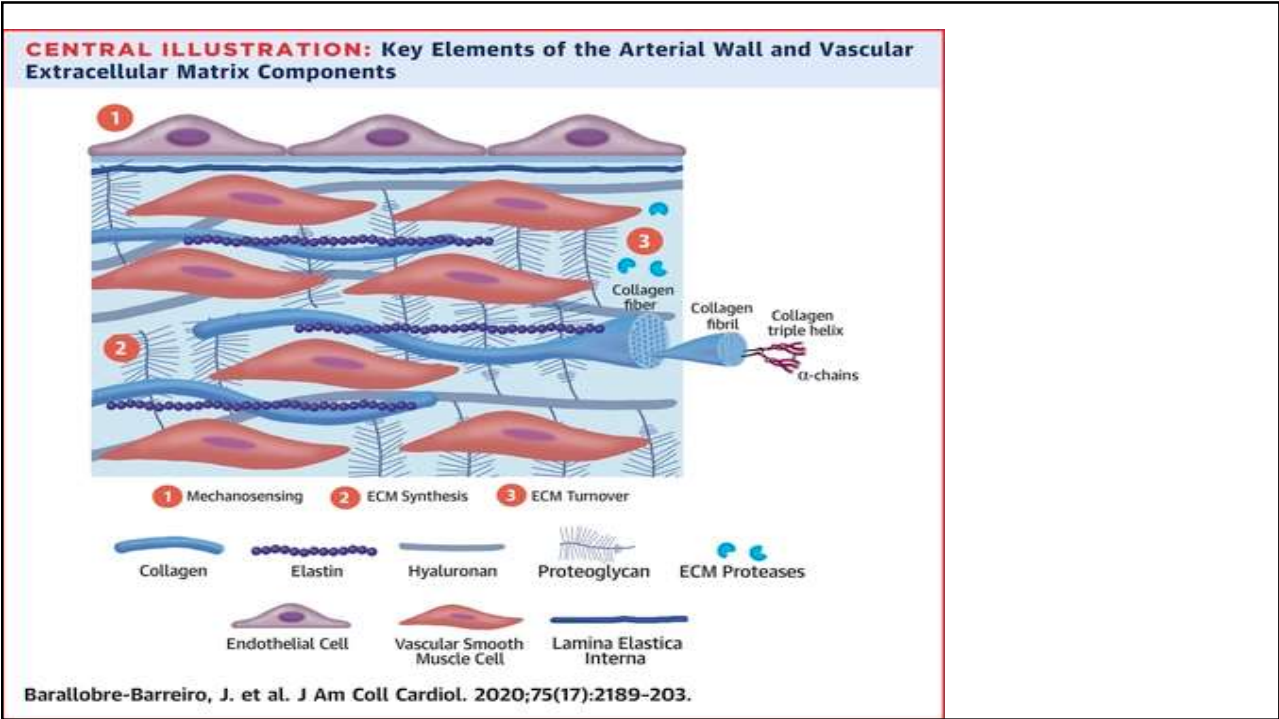
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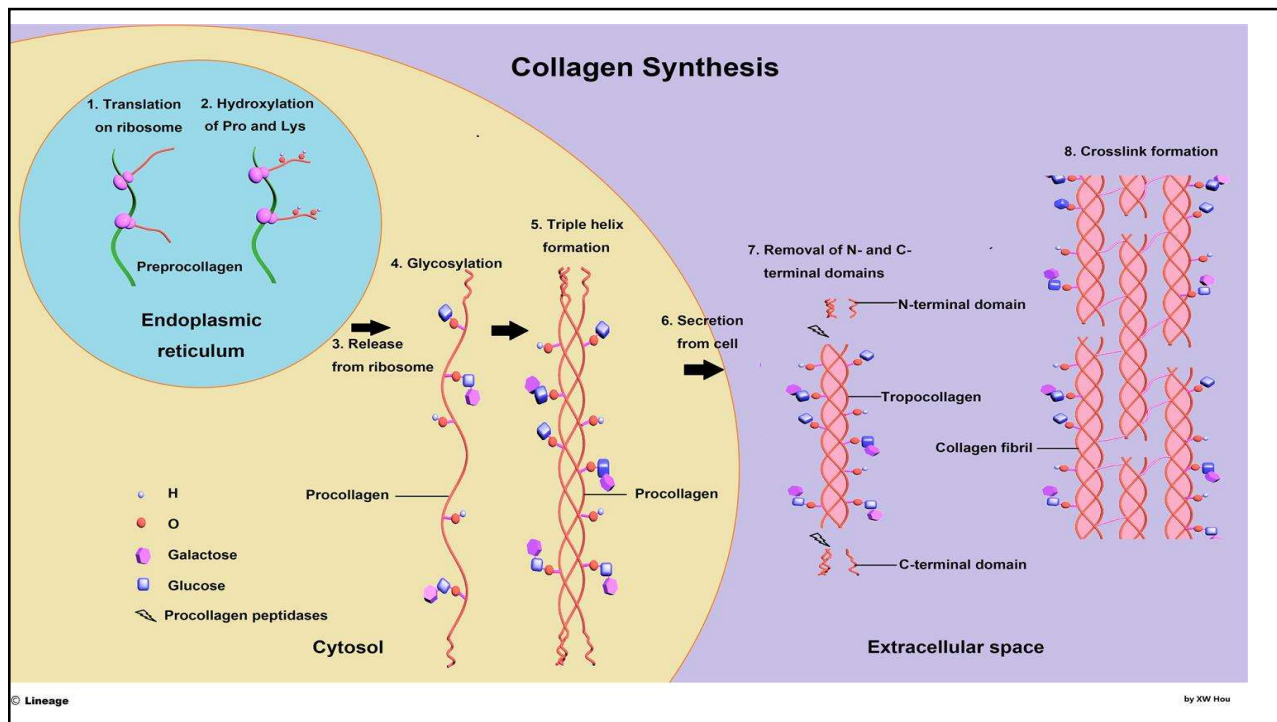
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## The role of Vitamin C in fibrosis as illustrated for collagen synthesis and epigenetics

D. A. Seijkens, R.A. Bank  
University of Groningen, Groningen, June 2015

**Abstract**

In this review, the role of vitamin C in fibrosis is reviewed, illustrated for collagen synthesis and epigenetics. Vitamin C is essential for the human diet to prevent scurvy. This due to impairment of several collagen-associated enzymes in absence of vitamin C. Fibrosis is a disease known for excessive collagen accumulation, but in order to effectively synthesize collagen, vitamin C is needed. Recent studies have also elucidated an important new role for vitamin C. It enhances specific epigenetics modifying enzymes and has also been reported to play a role in the induction and enhancement of pluripotent stem cells. Because of all these roles vitamin C has, it should be considered to be added to culture media when studying fibrosis. Researchers should consider the concentration of vitamin C in the investigated tissue in vivo. Vitamin C could also have several possible therapeutic purposes in the future, these should however be further investigated, especially for fibrosis.

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## COLLAGEN – YOUNG vs OLD/DAMAGED



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## STUDIES

- ▶ Normal large arteries also contain collagen, elastin, fibronectin, and small amounts of osteopontin, thrombospondin, and tenascin.
- ▶ **6-year follow-up indicated that Vitamin C supplementation reduced the slope of the mean carotid artery intima-media thickness progression.**
- ▶ Most studies, no amounts or small 500mg
- ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7761826/> 2020
- ▶ Vitamin C - evidence suggests it may help protect arteries against damage. Some studies suggest that vitamin C can slow down the progression of atherosclerosis (hardening of the arteries).  
[https://www.mountsinai.org/health-library/supplement/vitamin-c-ascorbic-acid#:~:text=Vitamin%20C%20doesn't%20lower,\(hardening%20of%20the%20arteries\).](https://www.mountsinai.org/health-library/supplement/vitamin-c-ascorbic-acid#:~:text=Vitamin%20C%20doesn't%20lower,(hardening%20of%20the%20arteries).)
- ▶ Vitamin C **inhibits the calcification** process in human vascular smooth muscle cells. Am. J Cardiovascular Dis 2020
- ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7364280/>

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## PIONEERS IN VITAMIN C RESEARCH

- ▶ Dr. Linus Pauling
- ▶ Dr. Matthias Rath ‘Why Animals Don’t get Heart Attack’

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### Pauling’s Therapy – Reversal of Heart Disease

- ▶ Vitamin C: Take as much as you can take without experiencing diarrhea. This is called “bowel tolerance”.
- ▶ L-Proline: 3 grams twice per day
- ▶ L-Lysine: 3 grams twice each day (acts to release lipoprotein(a) from plaque formation and prevent further deposition of same).
- ▶ Co-enzyme Q10: 90–180 mg. twice per day (strengthens the heart muscle).
- ▶ L-Carnitine: 3 grams twice per day (also strengthens the heart muscle).
- ▶ Niacin: Decreases production of lipoprotein(a) in the liver.
- ▶ Vitamin E: 800–2400 IU per day. Magnesium: 400–1,000 mg daily.
- ▶ Hydrolyzed collagen: research has shown that the daily intake of 10,000 mg supports the production of collagen in the repair of the lining of arteries.

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## 2. NITRIC OXIDE

### ▶ Nitric oxide functions:

- ▶ Inhibits activation, adhesion aggregation of platelets
- ▶ Decreased leukocyte adhesivity
- ▶ Causes vasorelaxation in smooth muscle cells
- ▶ Enhances oxygen delivery

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## NITRIC OXIDE

- ▶ NO - gas, signaling molecule,
- ▶ NO diminishes with age, making blood vessels BRITTLE... Erosion of arterial structure
- ▶ The first sign and symptom is usually erectile dysfunction
- ▶ VASODILATION
- ▶ Smooth muscle relaxation, controls blood flow, circulation to every organ and cell.
- ▶ Diabetes, hypertension
- ▶ Cognitive Decline, Alzheimer's

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## NITRIC OXIDE SOLUTION?

### MOUTH

- ▶ HUMMING
- ▶ Flouride
- ▶ MOUTHWASH
- ▶ Oral microbiome
  
- ▶ ADULT ENT Pro
- ▶ CHILDREN's ENT-Pro

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## NITRIC OXIDE SOLUTION?

- ▶ NITRITES AND NITRATES IN FOOD
- ▶ Used as additives to improve food quality and protect against microbial contamination and chemical changes.
- ▶ Extracts from cruciferous vegetables is an interesting strategy to overcome this challenge due to their high nitrate content.
- ▶ <https://www.sciencedirect.com/science/article/abs/pii/S2214799320301119>

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## NITRIC OXIDE SOLUTION?

- ▶ NO half life only 1.8 ms
- ▶ SULPHURIC COMPONENTS can extend it by hours
- ▶ CoQ Zyme 100 Plus
- ▶ NAC
- ▶ Taurine
- ▶ NitroGreens
- ▶ MSM

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## MSM

- ▶ Expression of inducible NOS (iNOS) occurs in conditions of inflammation, and produces large amounts of NO. In pathological conditions iNOS is regarded as a harmful enzyme and is proposed to be a major contributor to diseases of the cardiovascular system such as atherosclerosis.
- ▶ MSM can also diminish the expression of inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2) through suppression of NF- $\kappa$ B; thus lessening the production of vasodilating agents such as nitric oxide (NO) and prostanoids [86]. NO not only modulates vascular tone [92] but also regulates mast cell activation [93]; therefore, MSM may indirectly have an inhibitory role on mast cell mediation of inflammation. With the reduction in cytokines and vasodilating agents, flux and recruitment of immune cells to sites of local inflammation are inhibited.
- ▶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5372953/>

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## GRAND SUPPORTING NUTRIENTS

- ▶ BIO C PLUS 3 tid with food
- ▶ CoQ Zyme 100 Plus 1-2 daily with food
- ▶ Bio Cyanidins 2 bid any time
- ▶ NitroGreens 1-2 scoops a day
- ▶ ADULT ENT PRO 1-2 daily
- ▶ GlucoResolve 1 tid with food
- ▶ NAC 1 bid empty stomach
- ▶ Taurine 1-2 before bedtime
- ▶ HYDROLYZED COLLAGEN PROTEIN 2 scoops daily
- ▶ Kapparest 2 bid anytime

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## CASE STUDIES

- ▶ MY MOM
- ▶ FRIEND, COLLABORATION WITH Dr. Mark Houston

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