

# Does Cholesterol Still Matter 1?

Presented By:

- Joel Kahn, MD, FACC

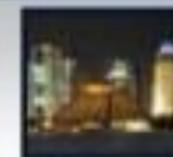
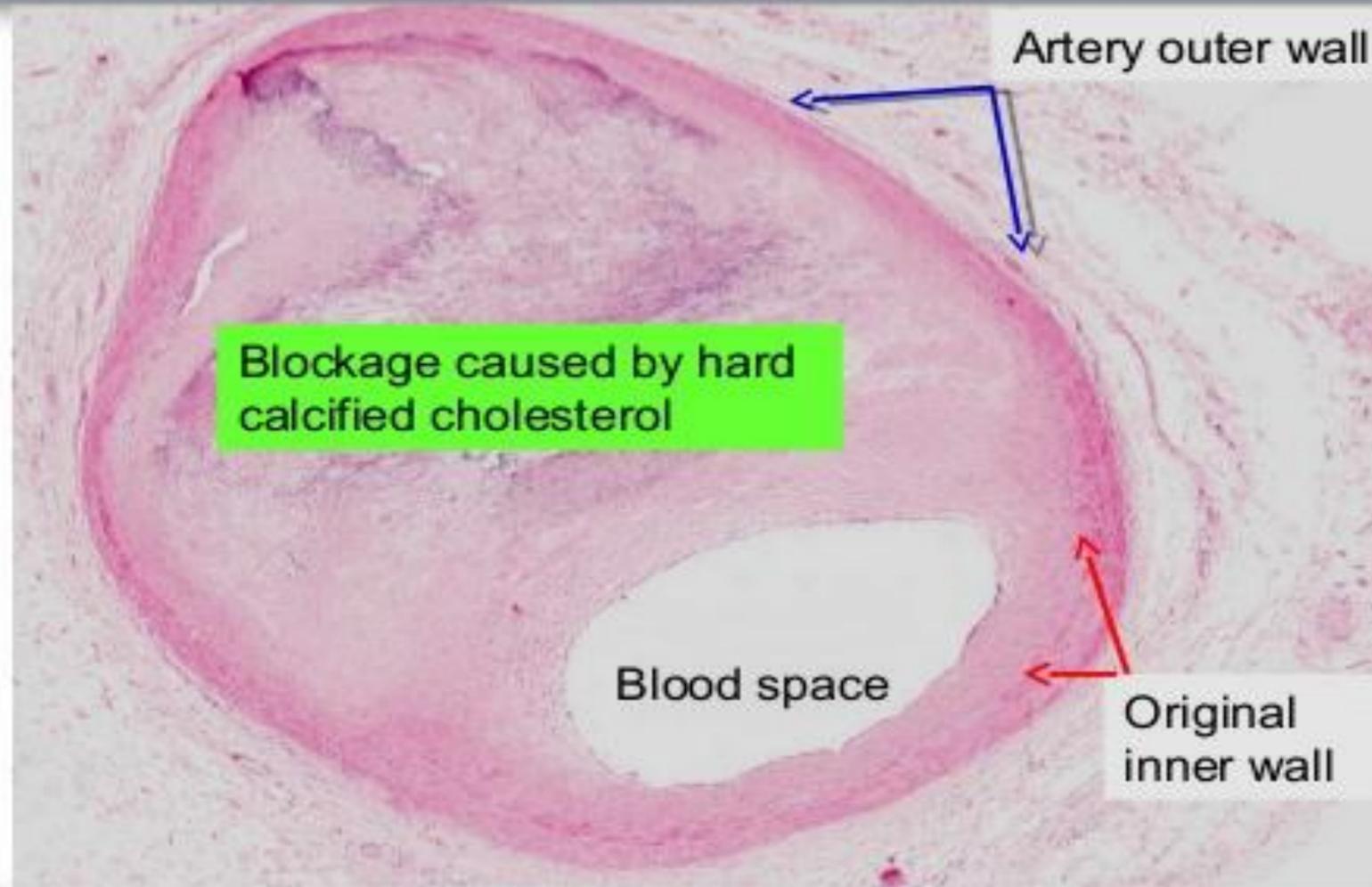
# NORMAL CORONARY ANGIOGRAM



# CORONARY ARTERY DISEASE



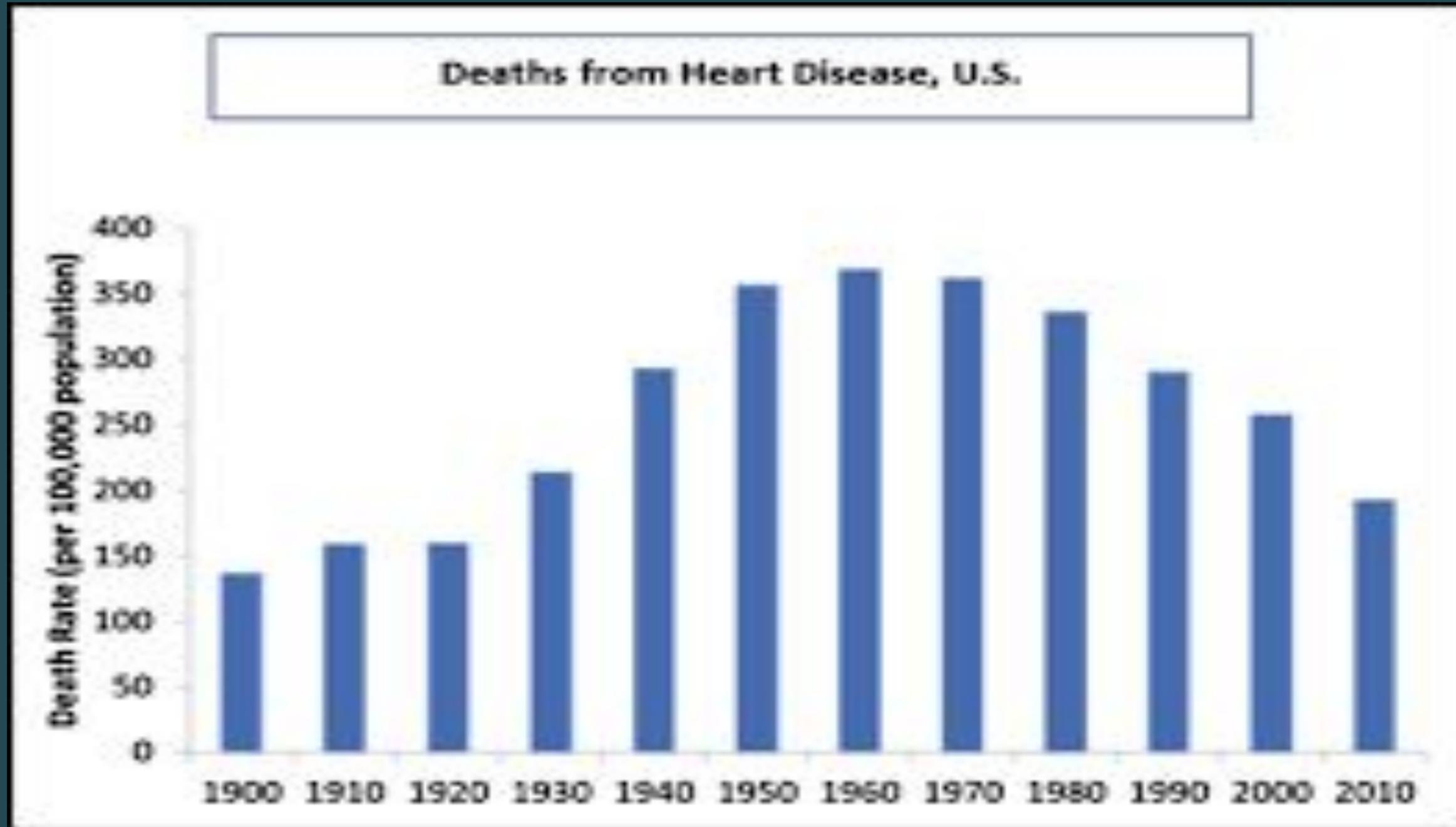
## A very poor coronary artery



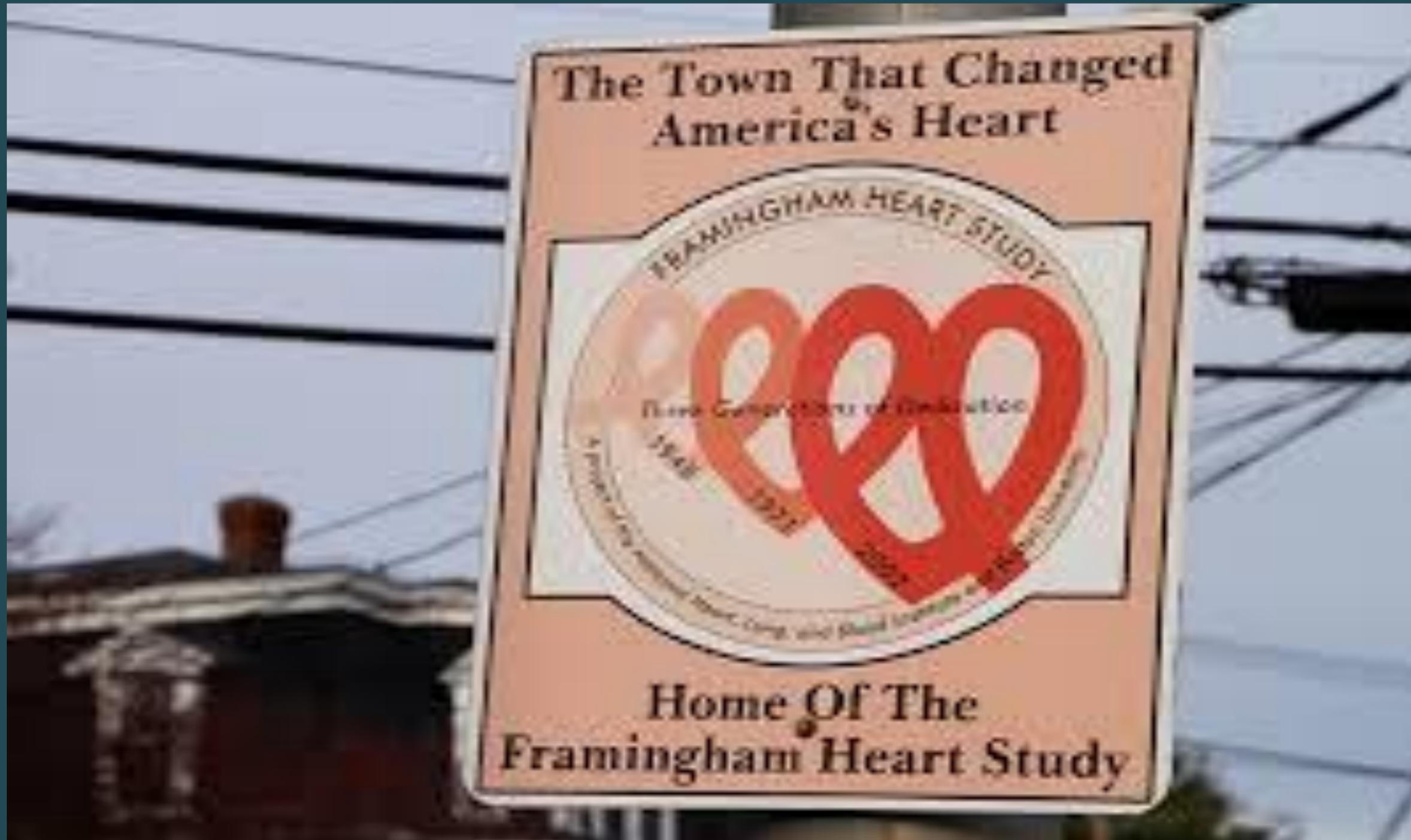
# WHY DO WE CLOG ARTERIES?



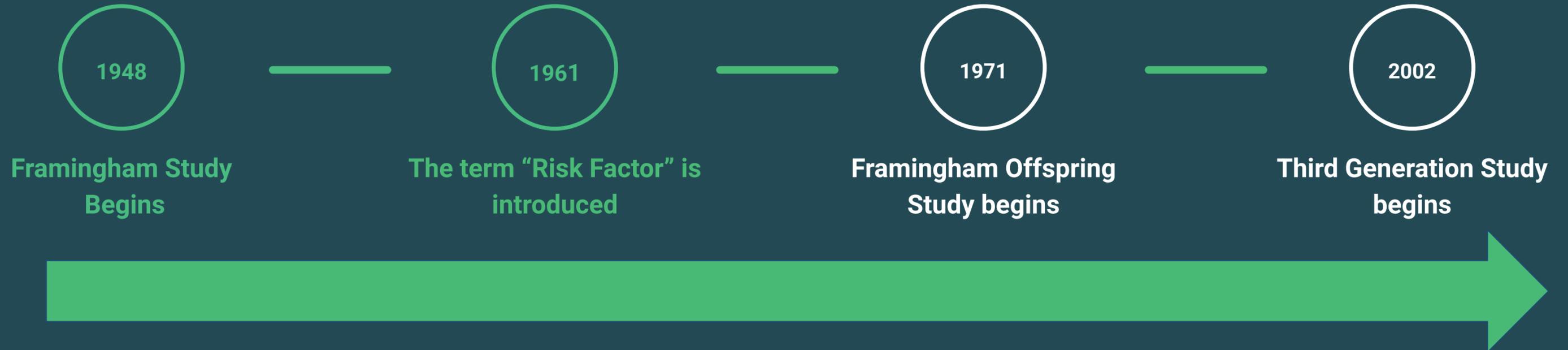
# THE RISE OF CHD



# FRAMINGHAM, MA



# FRAMINGHAM HEART STUDY

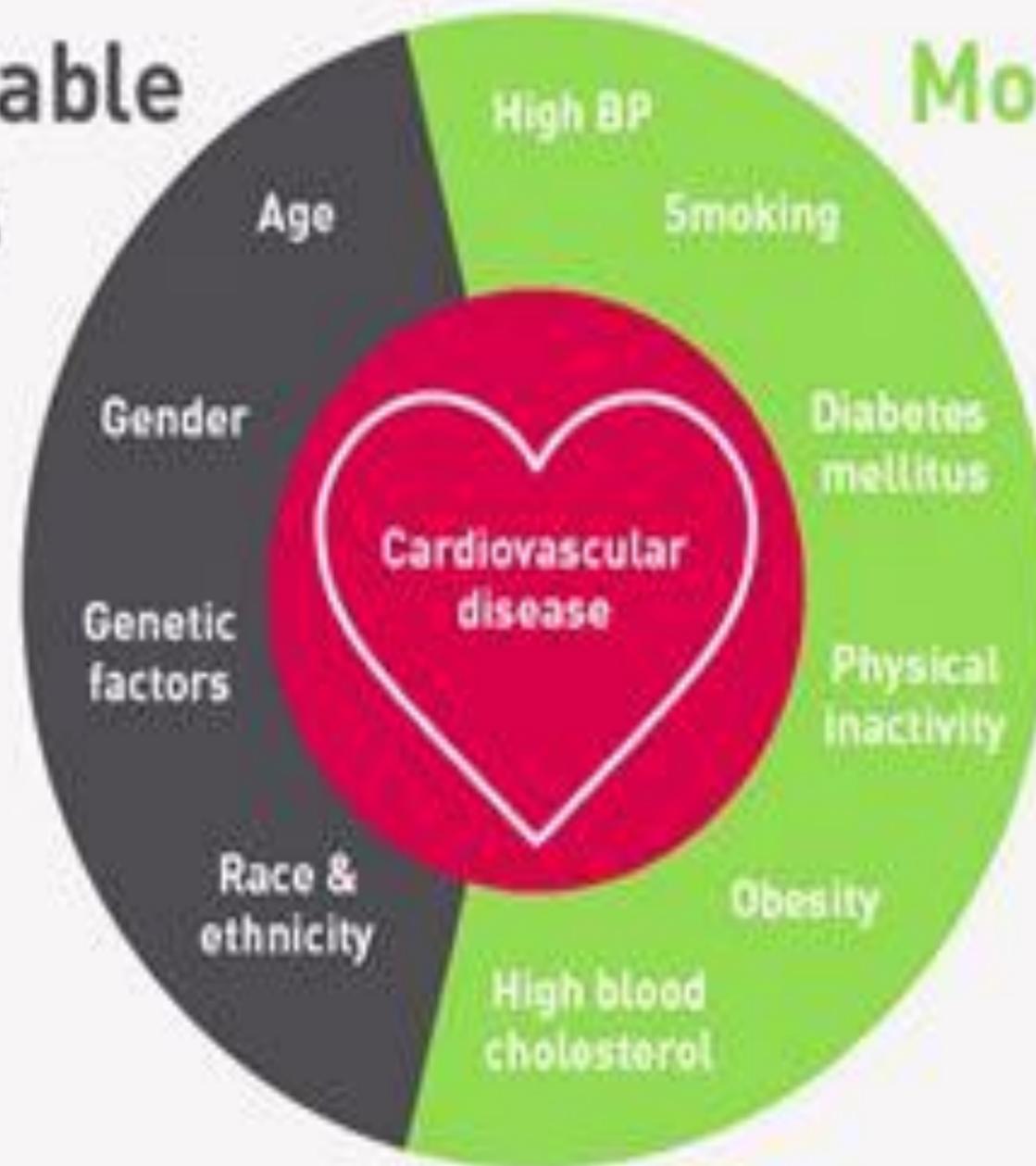


## Established Risk Factors for Coronary Artery Disease Identified by the Framingham Heart Study

Modifiable Risk Factors	Nonmodifiable Risk Factors
Hyperlipidemia	Age
Smoking	Sex
Diabetes	Family and/or personal history of coronary heart disease
Hypertension	
Physical inactivity	
Overweight/obesity	
Diet high in carbohydrate and fat	

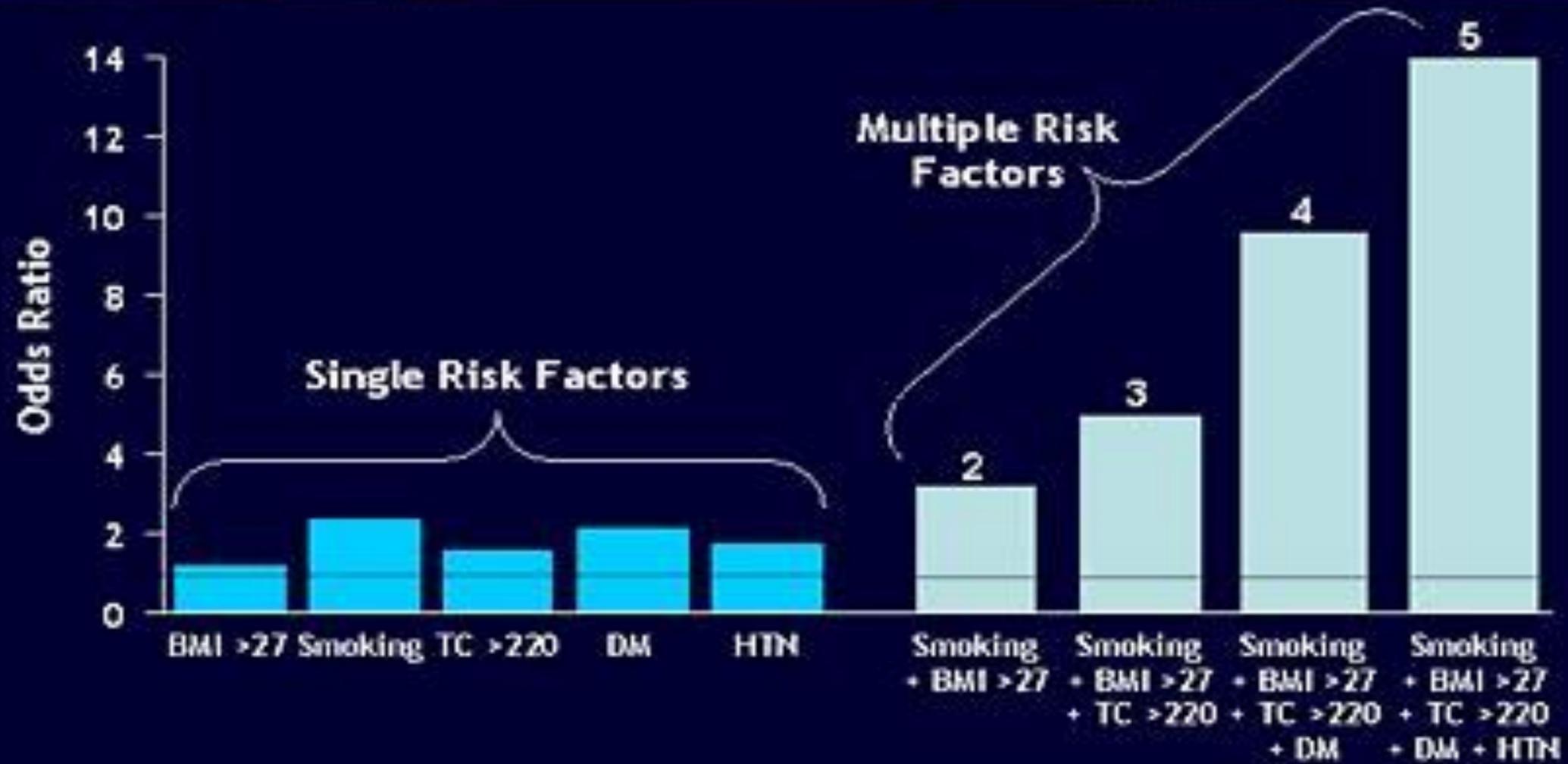
— SOURCE: O'DONNELL CJ, ELOSUA R. CARDIOVASCULAR RISK FACTORS. INSIGHTS FROM THE FRAMINGHAM HEART STUDY. *REV ESP CARDIOL*. 2008;61(3):299-310.

## Non-modifiable risk factors



## Modifiable risk factors

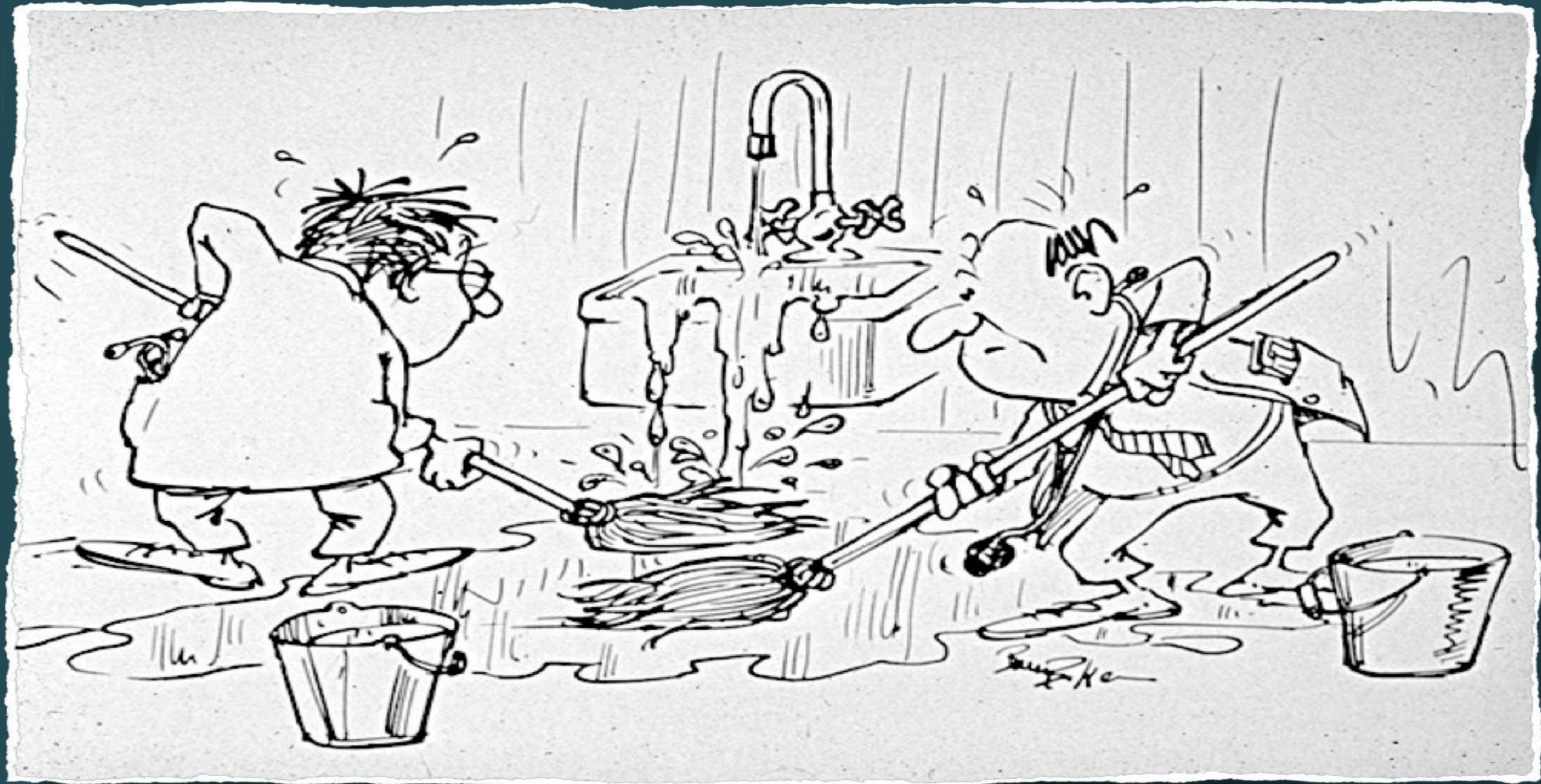
# Framingham Heart Study: Relative Risk of CHD for Multiple Risk Factors



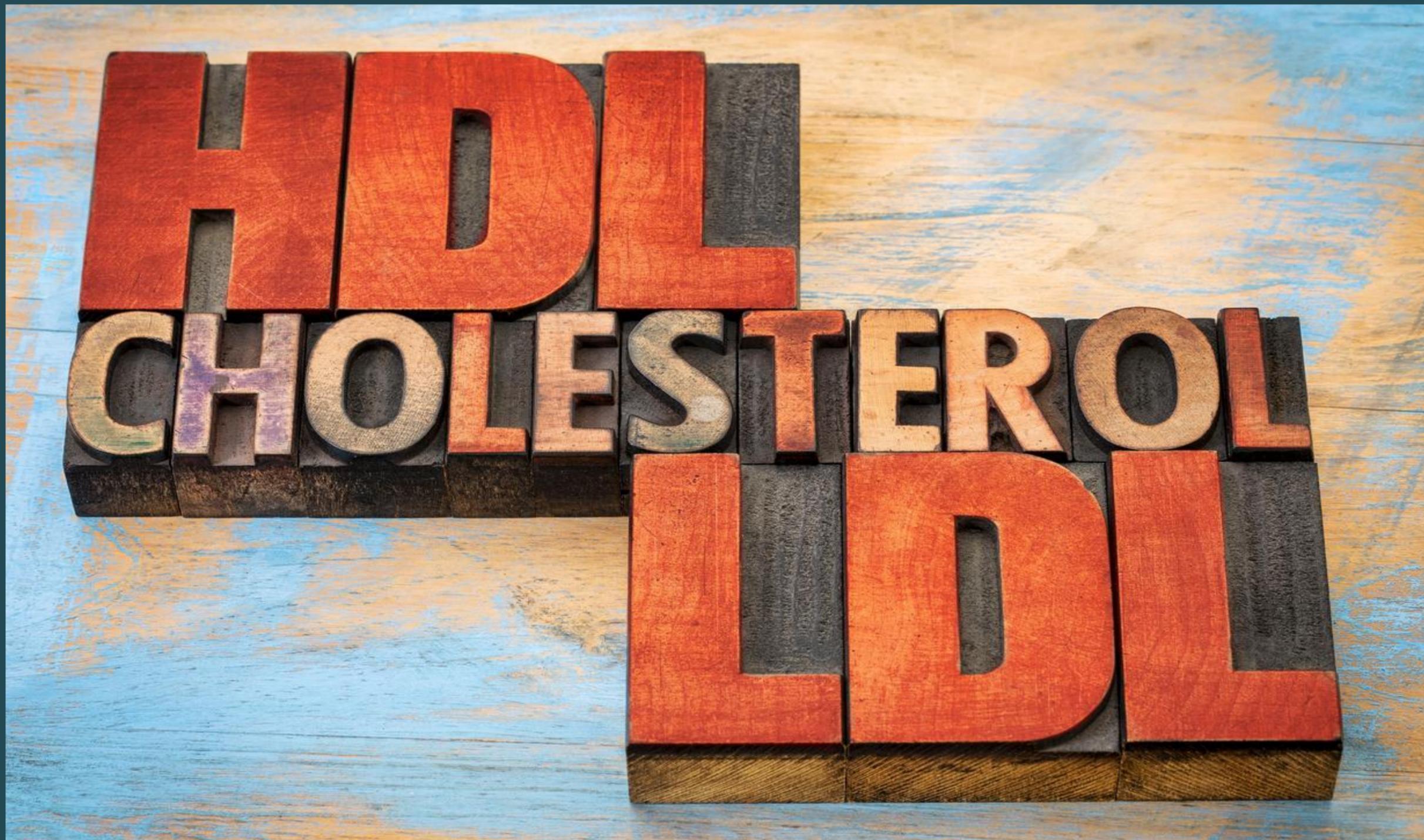
BMI = body mass index; TC = total cholesterol; DM = diabetes mellitus; HTN = hypertension.

Wilson PW et al. *Circulation*. 1998;97:1837-1847.

# CAN WE TURN OFF THE FAUCET?

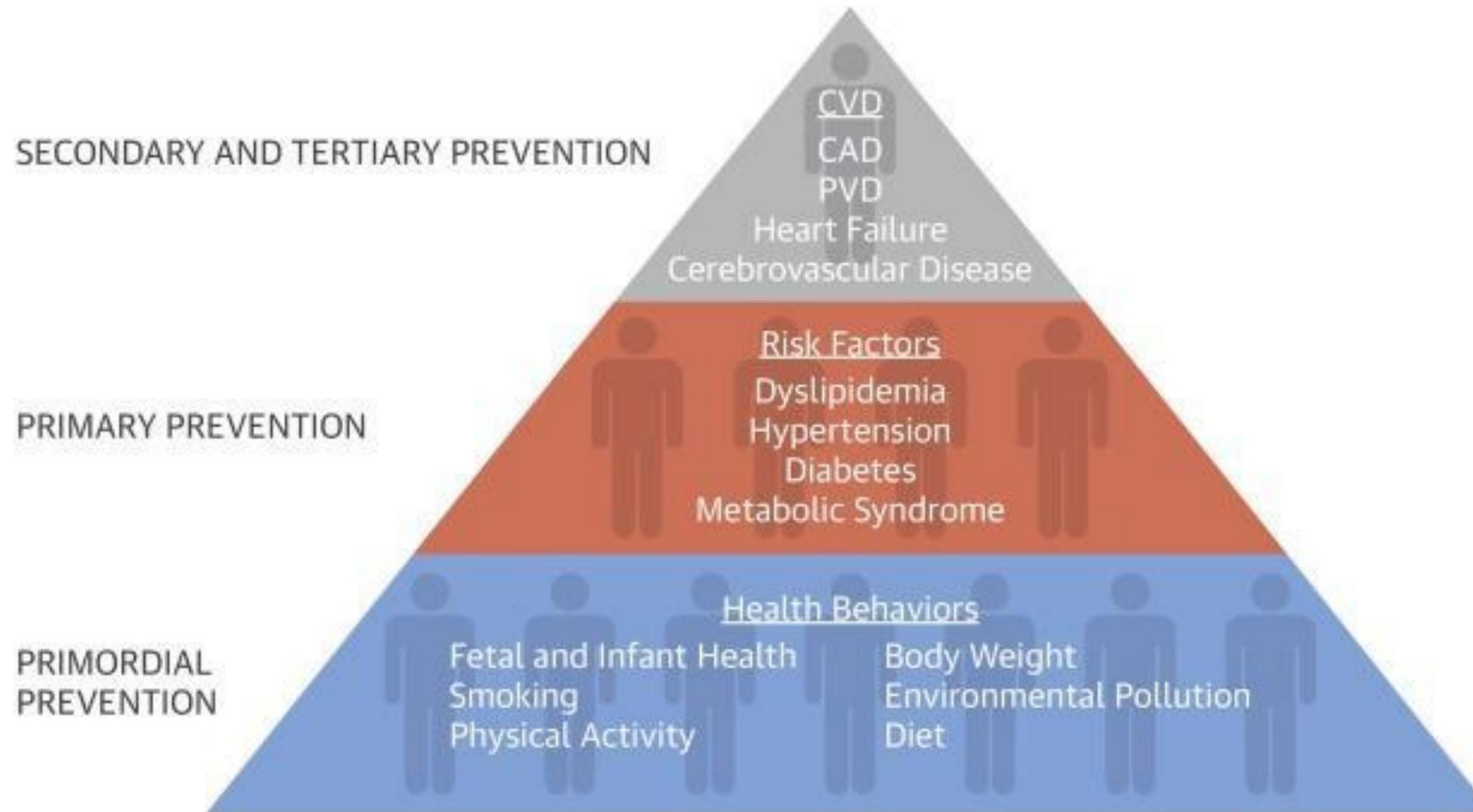


# CHOLESTEROL MATTERS



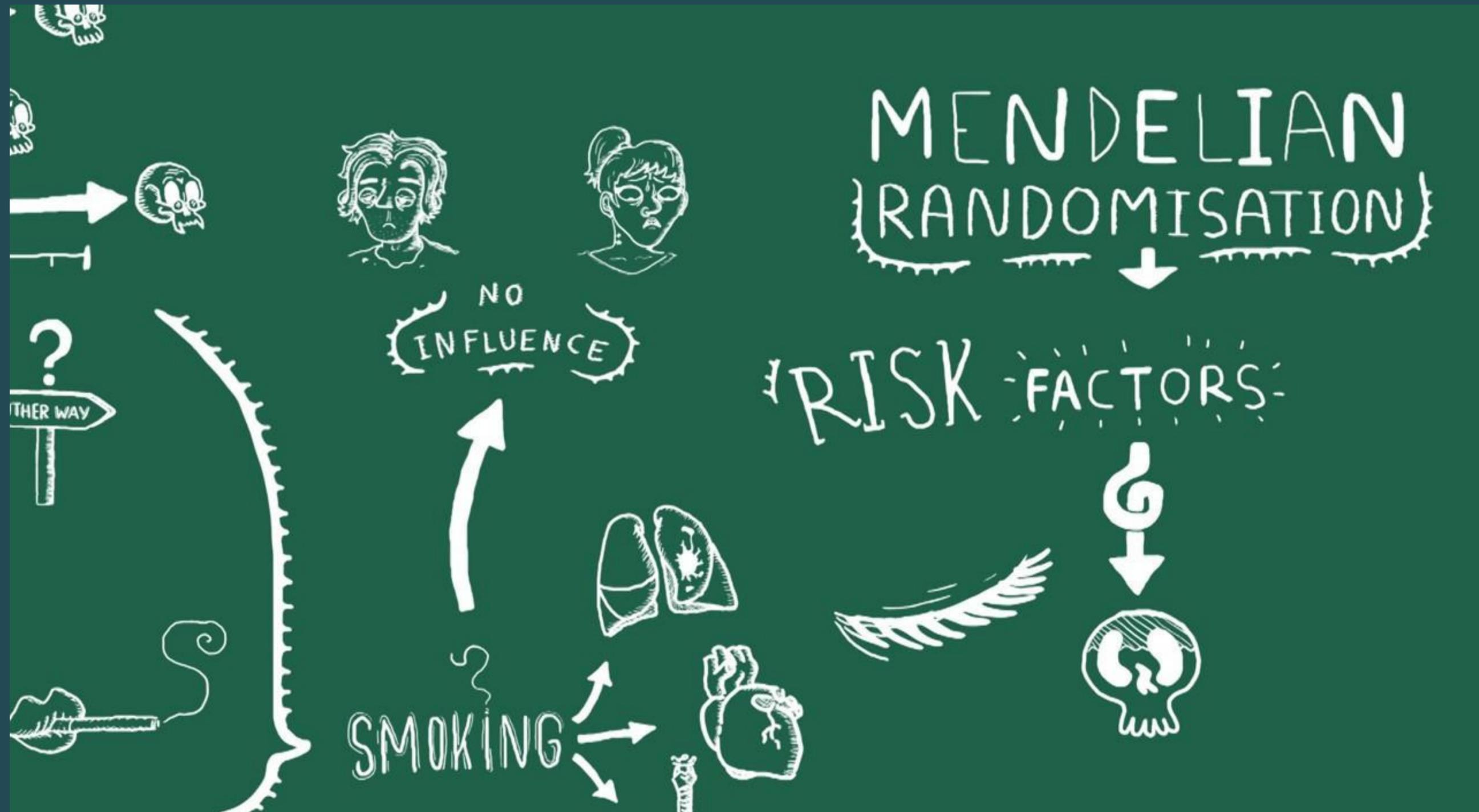
# CHOLESTEROL: A RISK FACTOR

## CENTRAL ILLUSTRATION: Cardiovascular Disease Prevention and Health Promotion



Hong, K.N. et al. J Am Coll Cardiol. 2017;70(17):2171-85.

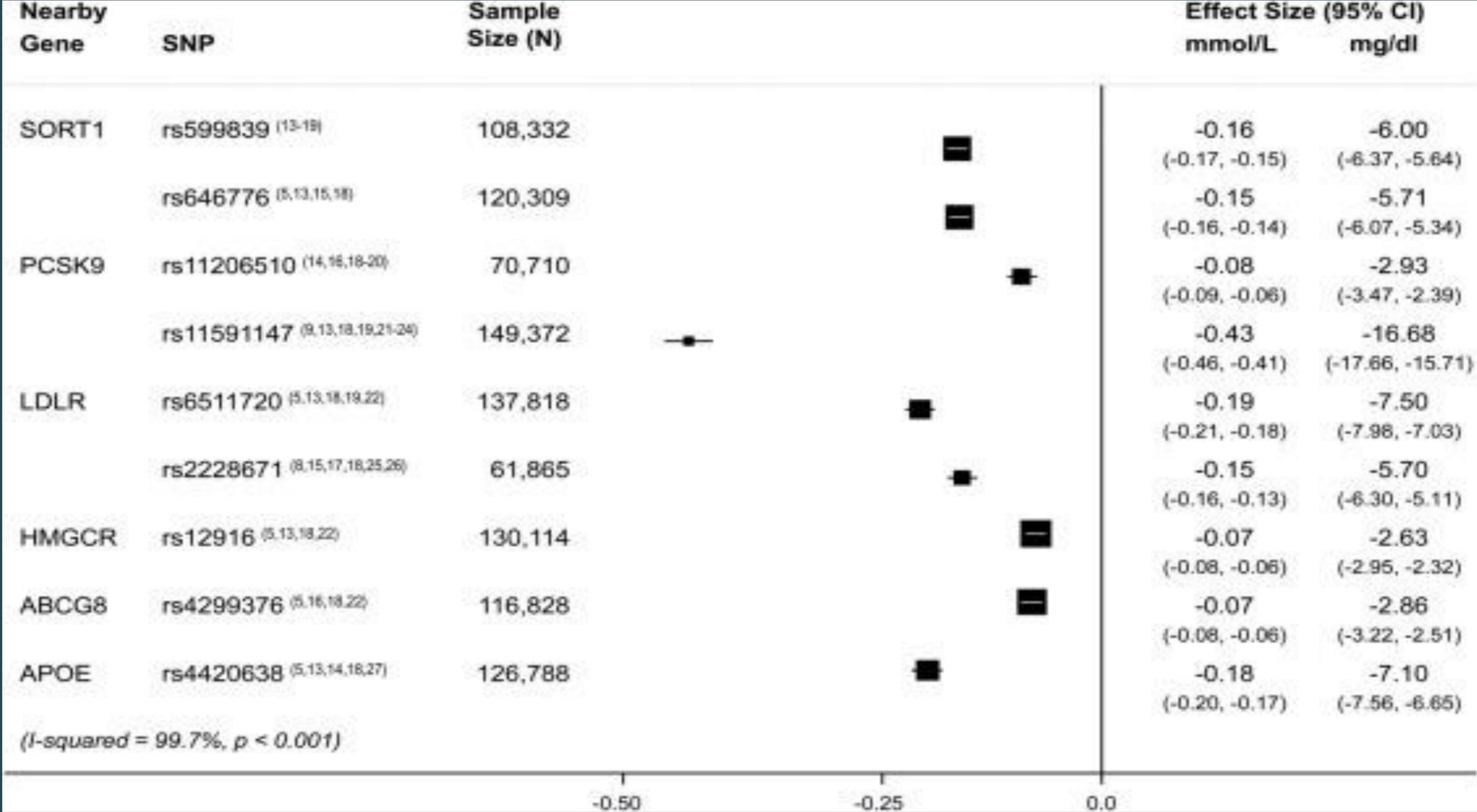
# MENDELIAN RANDOMIZATION



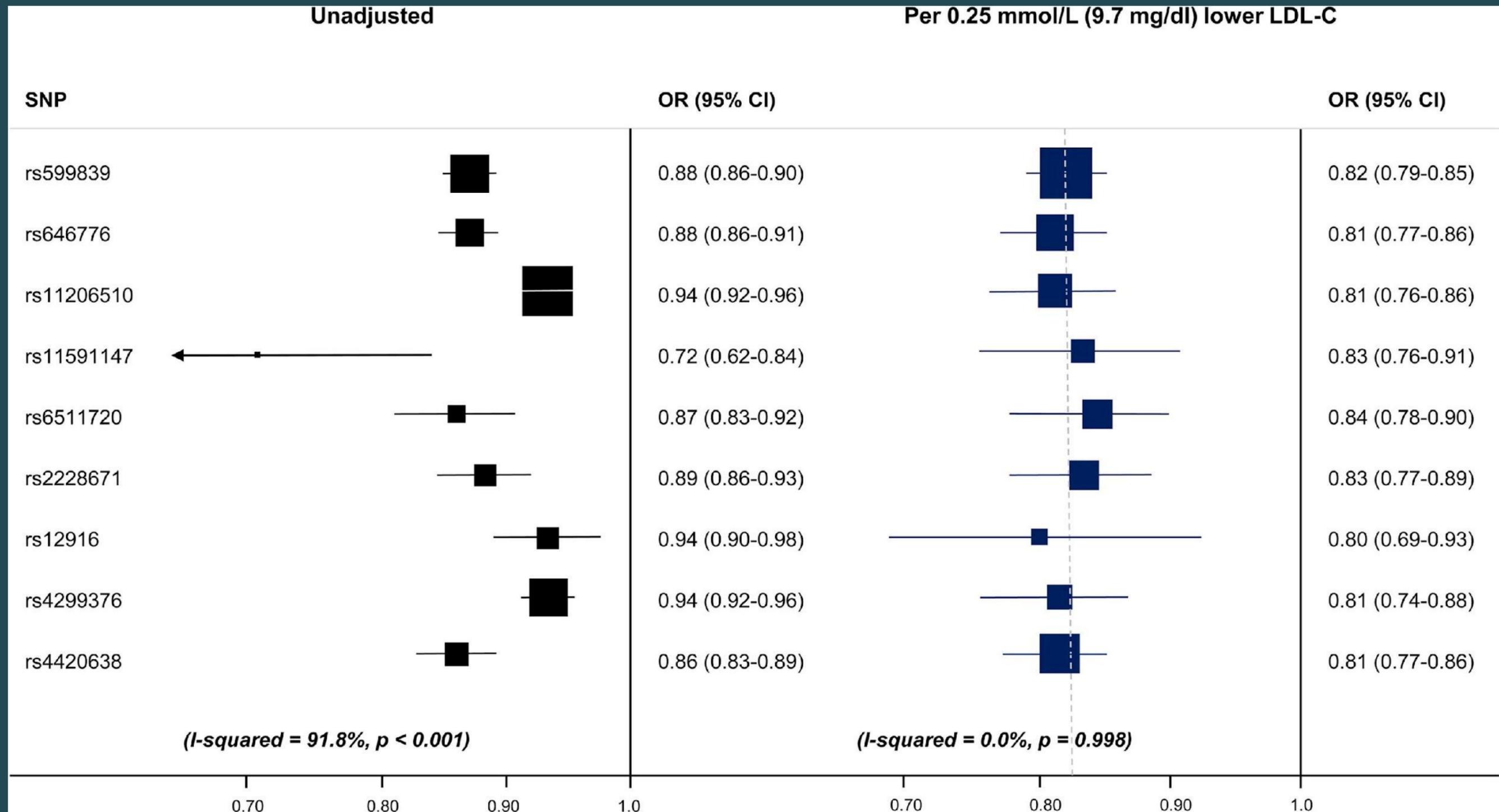
# Effect of Long-Term Exposure to Lower Low-Density Lipoprotein Cholesterol Beginning Early in Life on the Risk of Coronary Heart Disease: A Mendelian Randomization Analysis

B. A. Ference, MD, Wonsuk Yoo, PhD, Karolina Mirowska MD, Abhishek Mewada MD, Joel Kahn, MD, Luis Afonso MD, Kim Williams Sr MD, John Flack MD

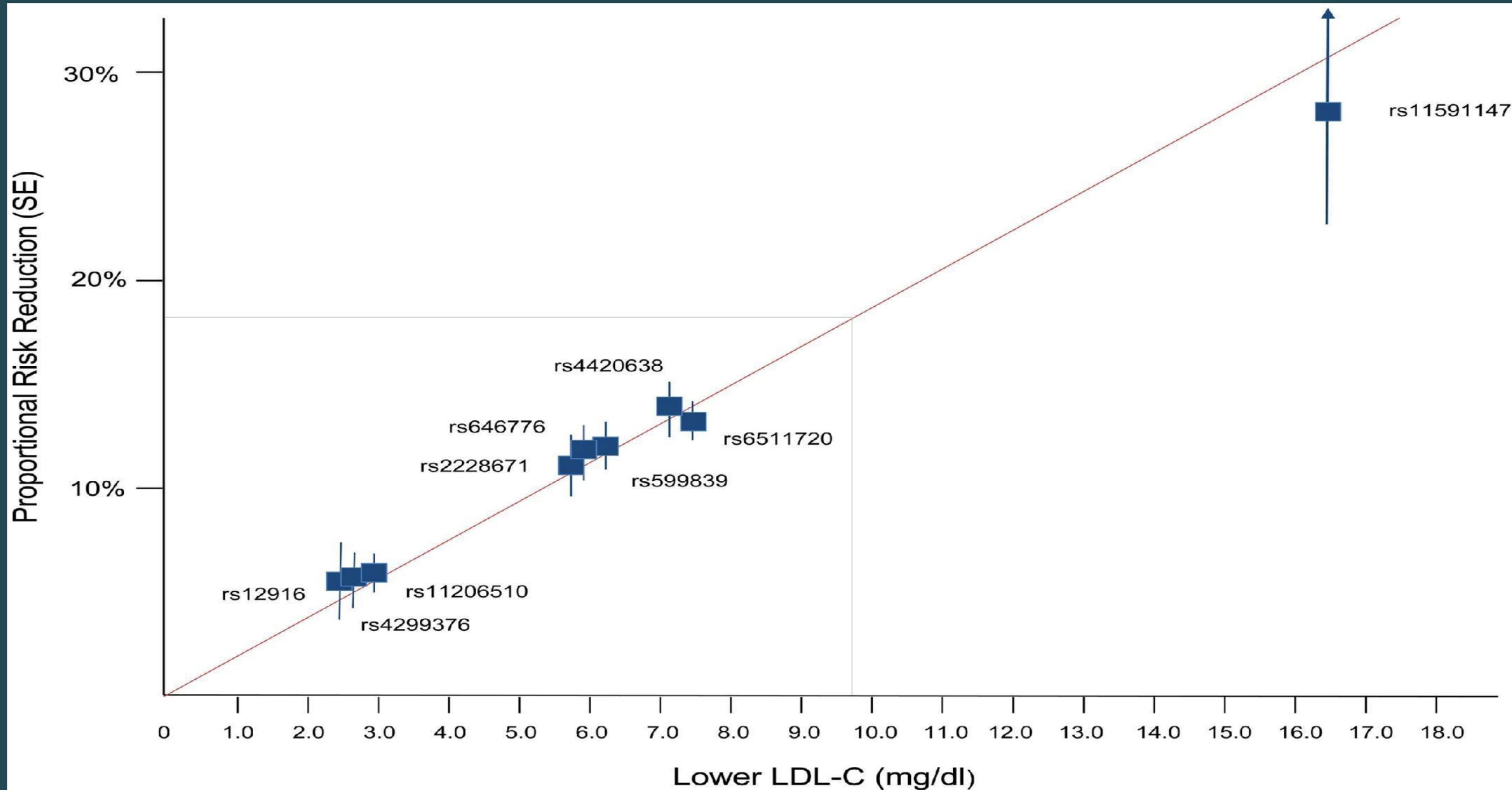
# ALLELES THAT LOWER LDL CHOLESTEROL LIFELONG



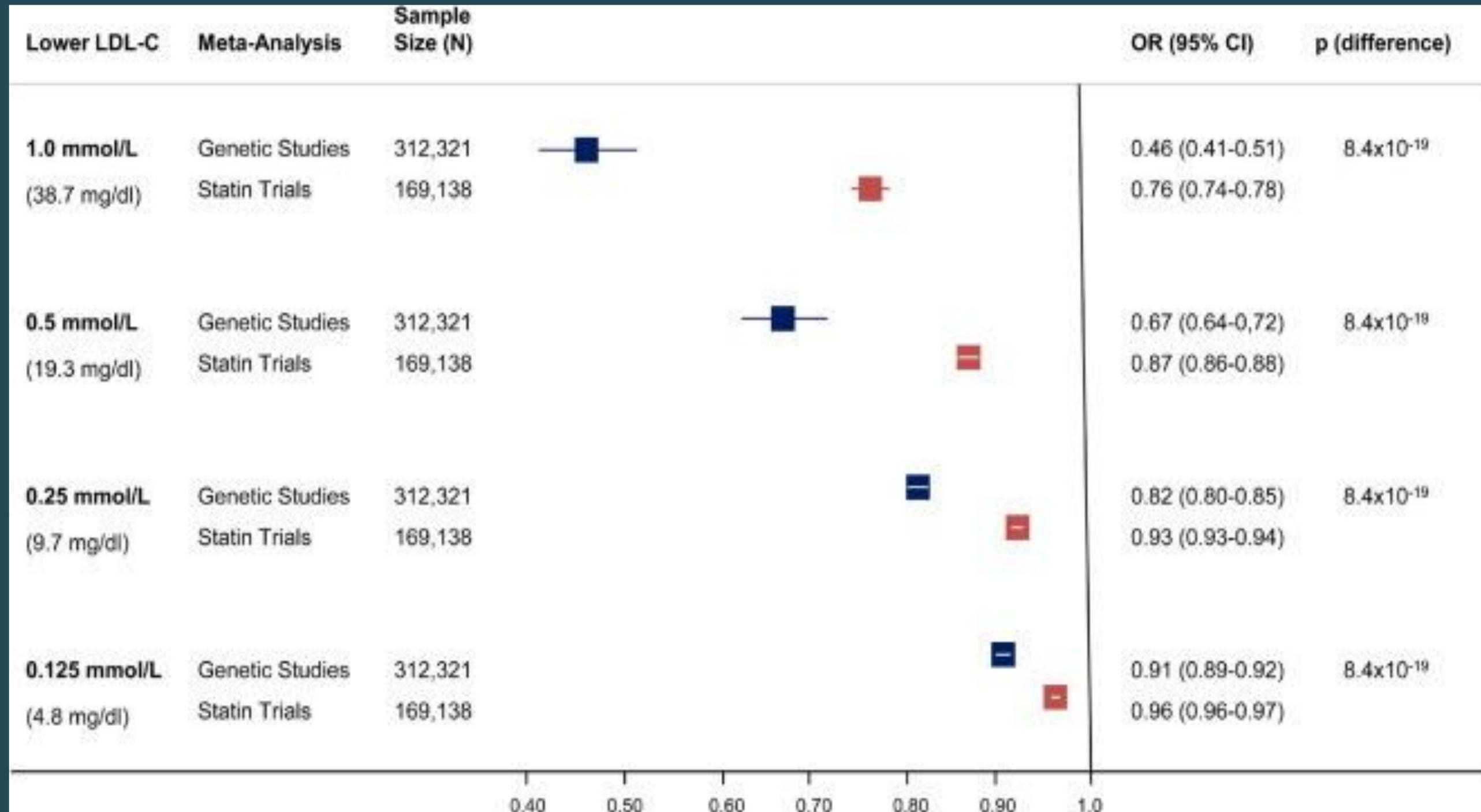
# Lower LDL for Life



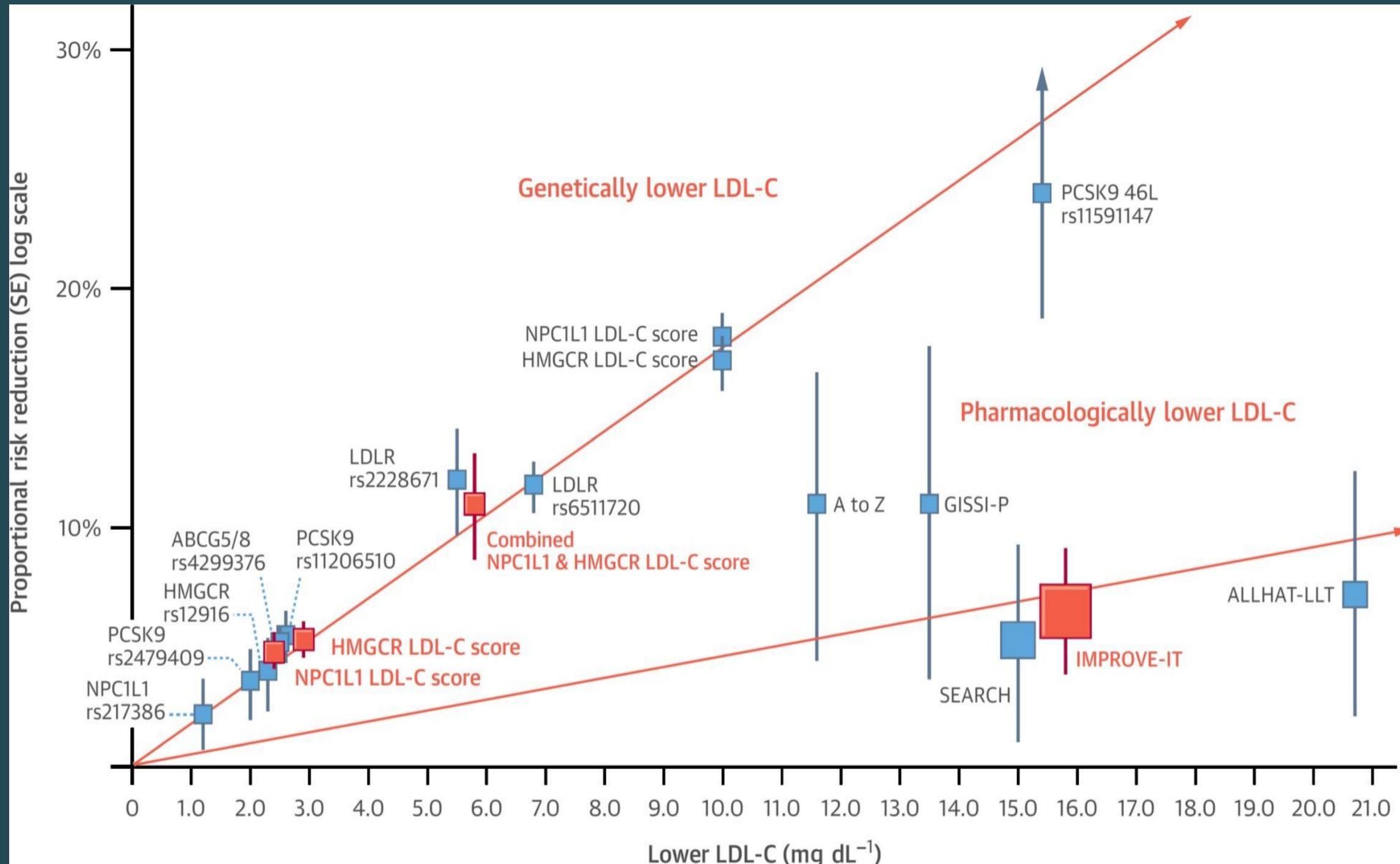
# LOWER LDL VS CHD RISK



# LDL LOWERING: GENETICS vs STATINS



# LDL LOWERING: GENETICS vs STATIN TRIALS



# LDL: LOWER AND LOWER

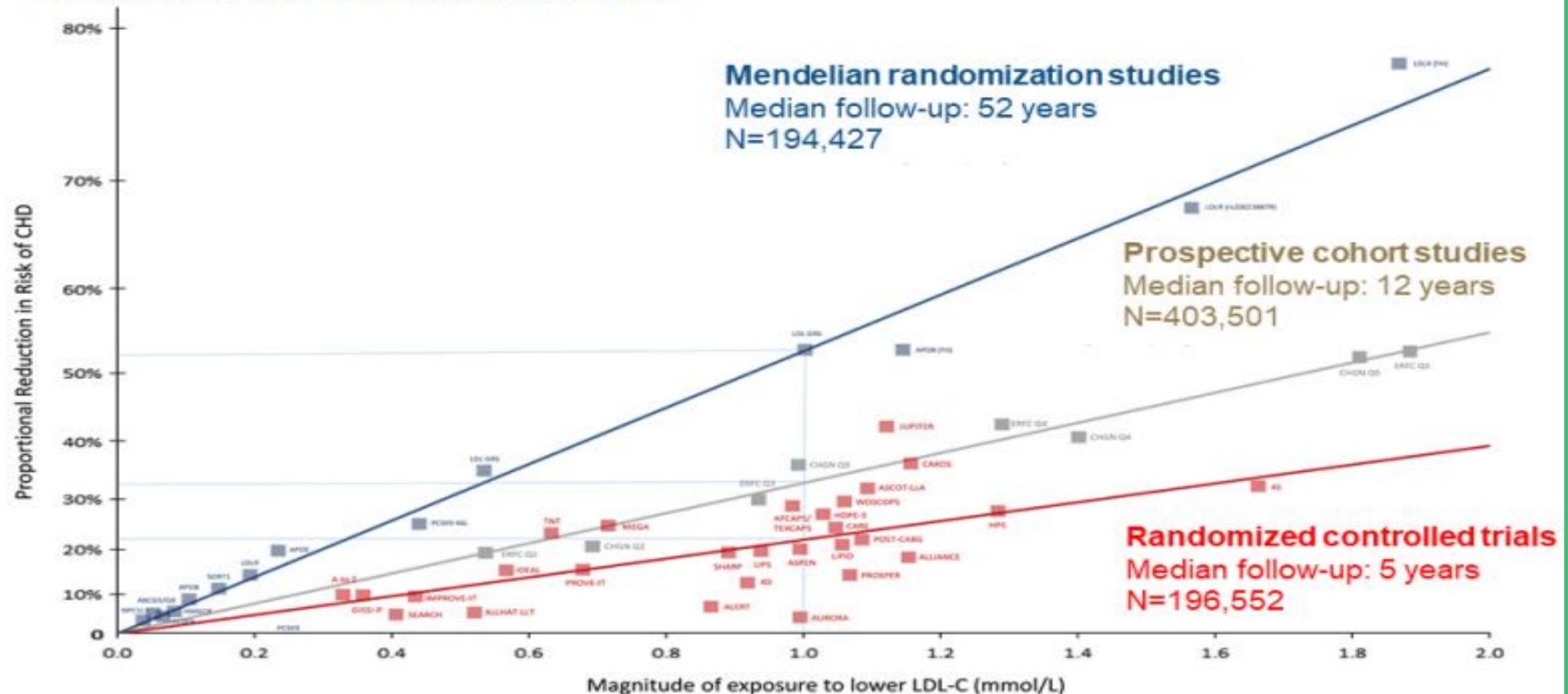


NEW!

2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk

# LDL is causal of atherosclerosis

Evidence from meta-analyses of Mendelian randomization studies, prospective cohort studies, and randomized controlled trials unequivocally establishes that LDL causes ASCVD.

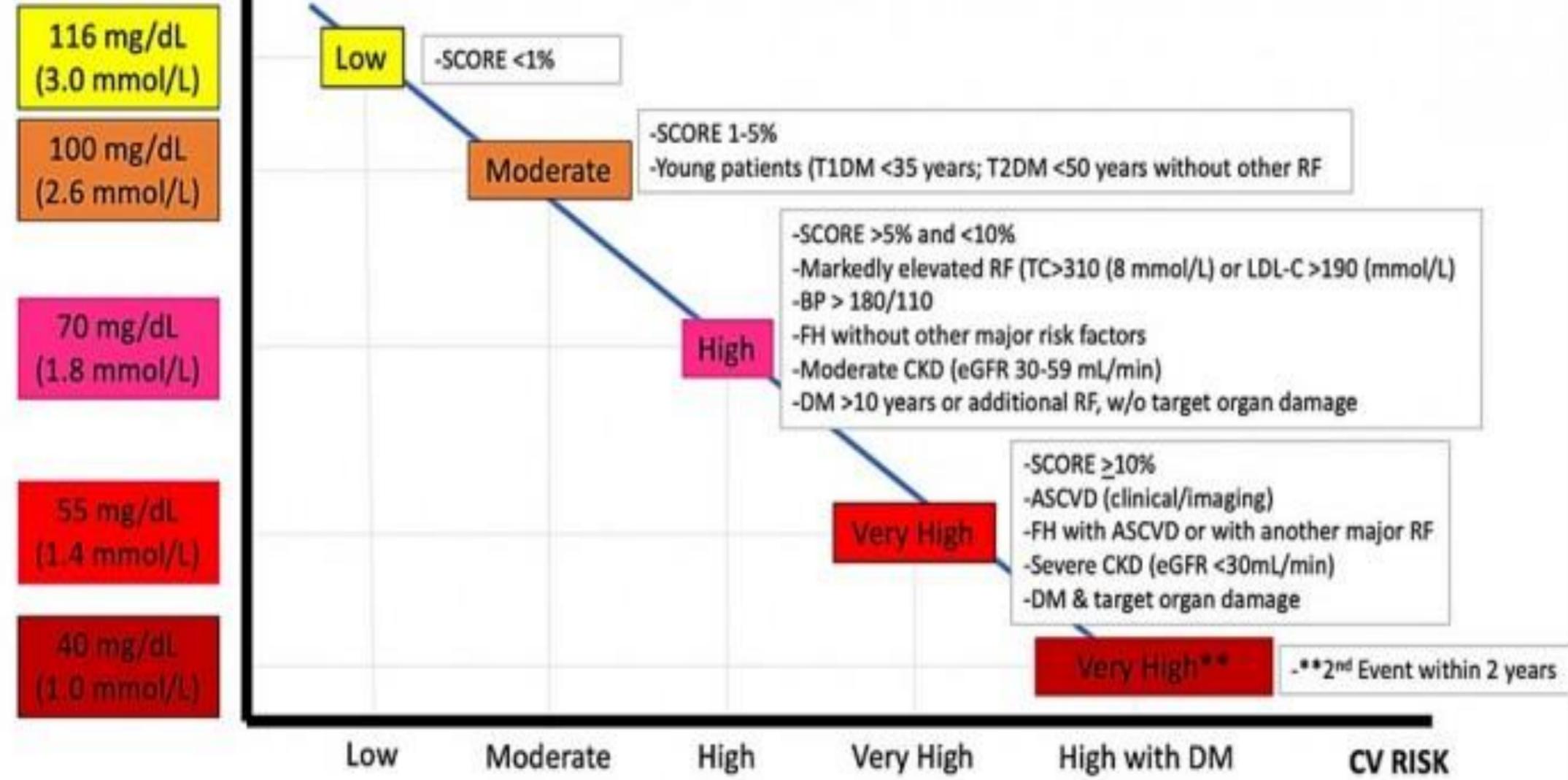


Ference BA *et al.*, Eur Heart J. 2017;38(32):2459-2472



## European Treatment goals for LDL-C across categories of total cardiovascular disease risk\*

LDL-C goal +  $\geq 50\%$  reduction from baseline



\*Adapted from slideset available on [www.escardio.org/guidelines](http://www.escardio.org/guidelines) which is from 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk

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CHECK YOUR  
CHOLESTEROL  
EARLY AND  
OFTEN IN LIFE

