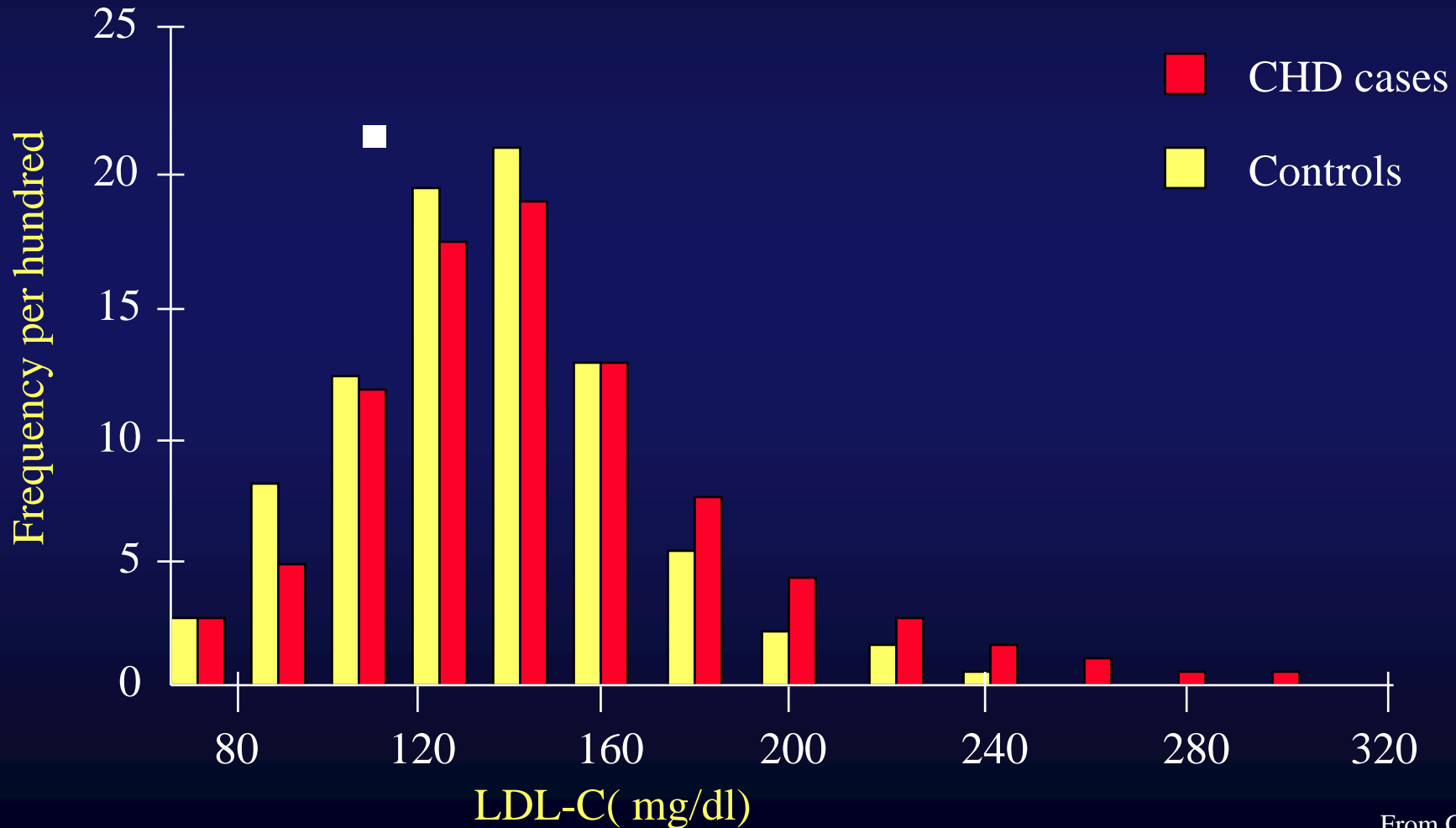
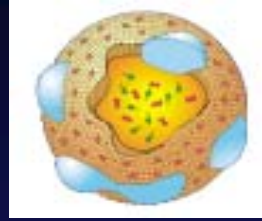


■ Beyond LDL cholesterol

Triglyceride, Small dense LDL
and Inflammation

LDL cholesterol distribution





Atherogenic dyslipidemia

Metabolic syndrome

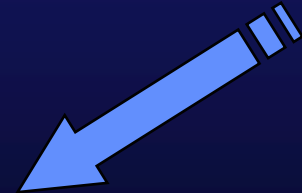
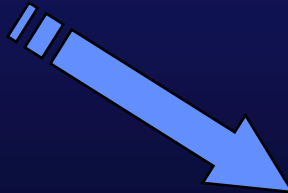
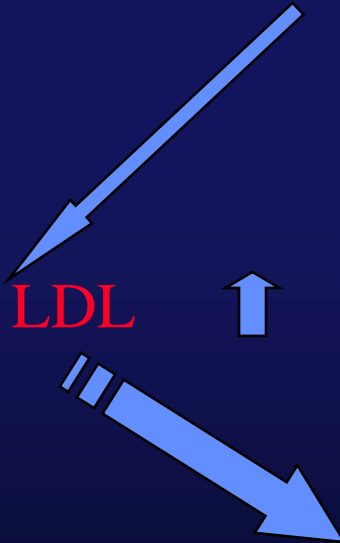
Diabetes Mellitus

Familial Combined Hyperlipidemia

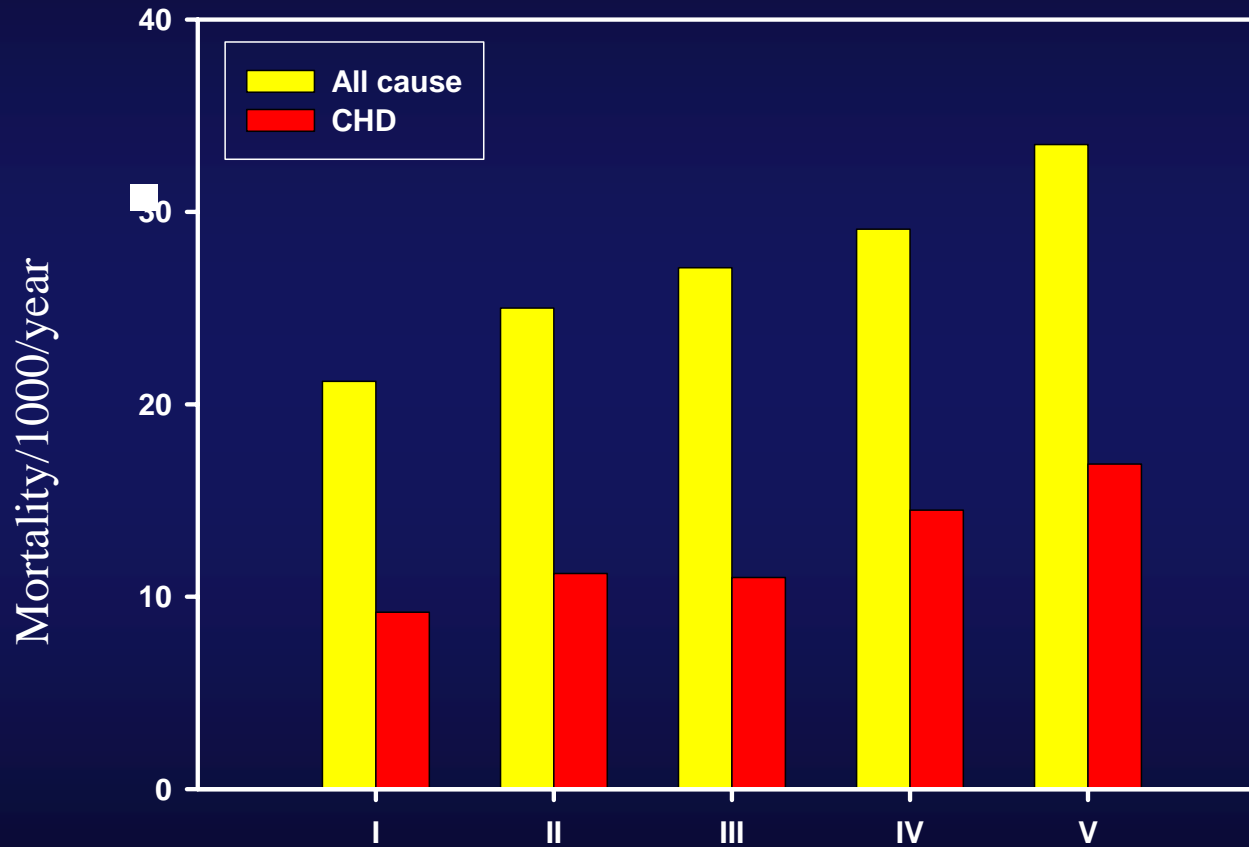
Small, dense LDL

Cardioprotective HDL

Coronary Heart Disease

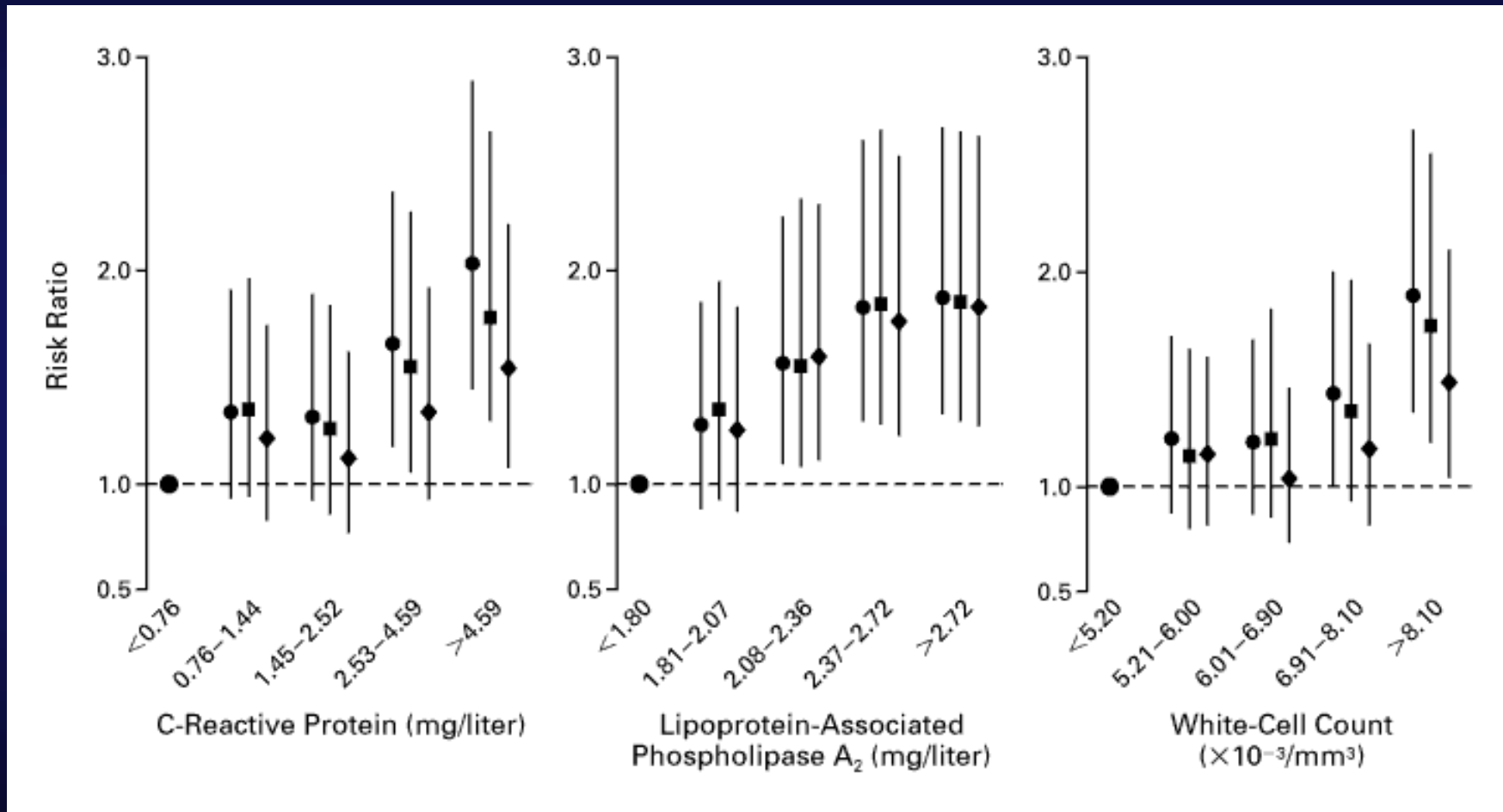


TG and mortality in CHD

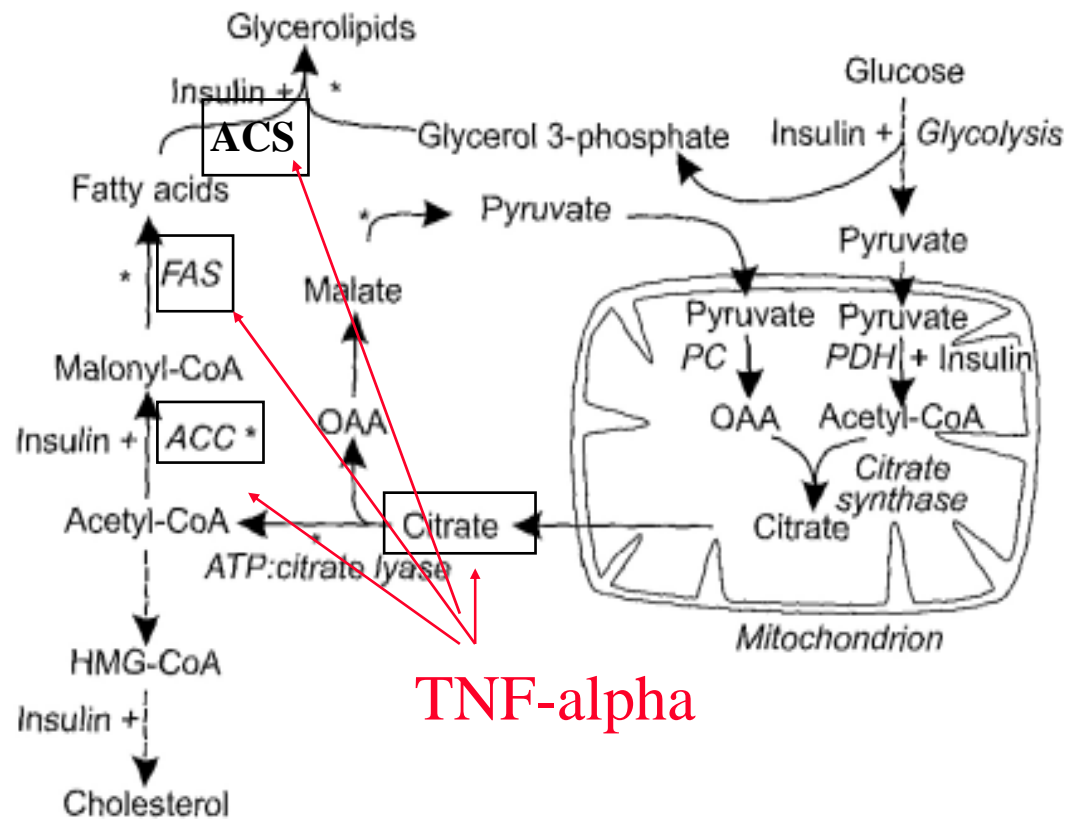


Age adjusted all cause and CHD mortality per 1000 persons in male
TG I<94.3, II 94.3~124.4, III 124.4~160.7, IV 160.7~217, V>217 mg/dl

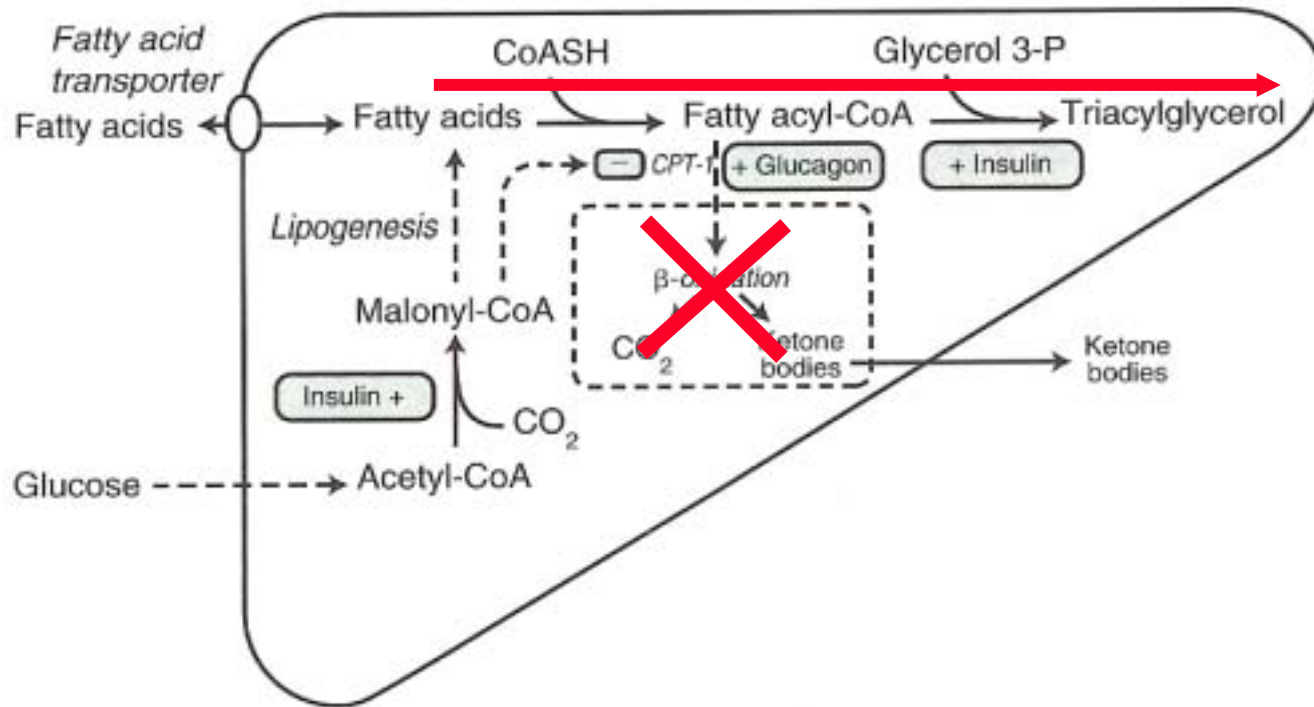
CHD and inflammation markers



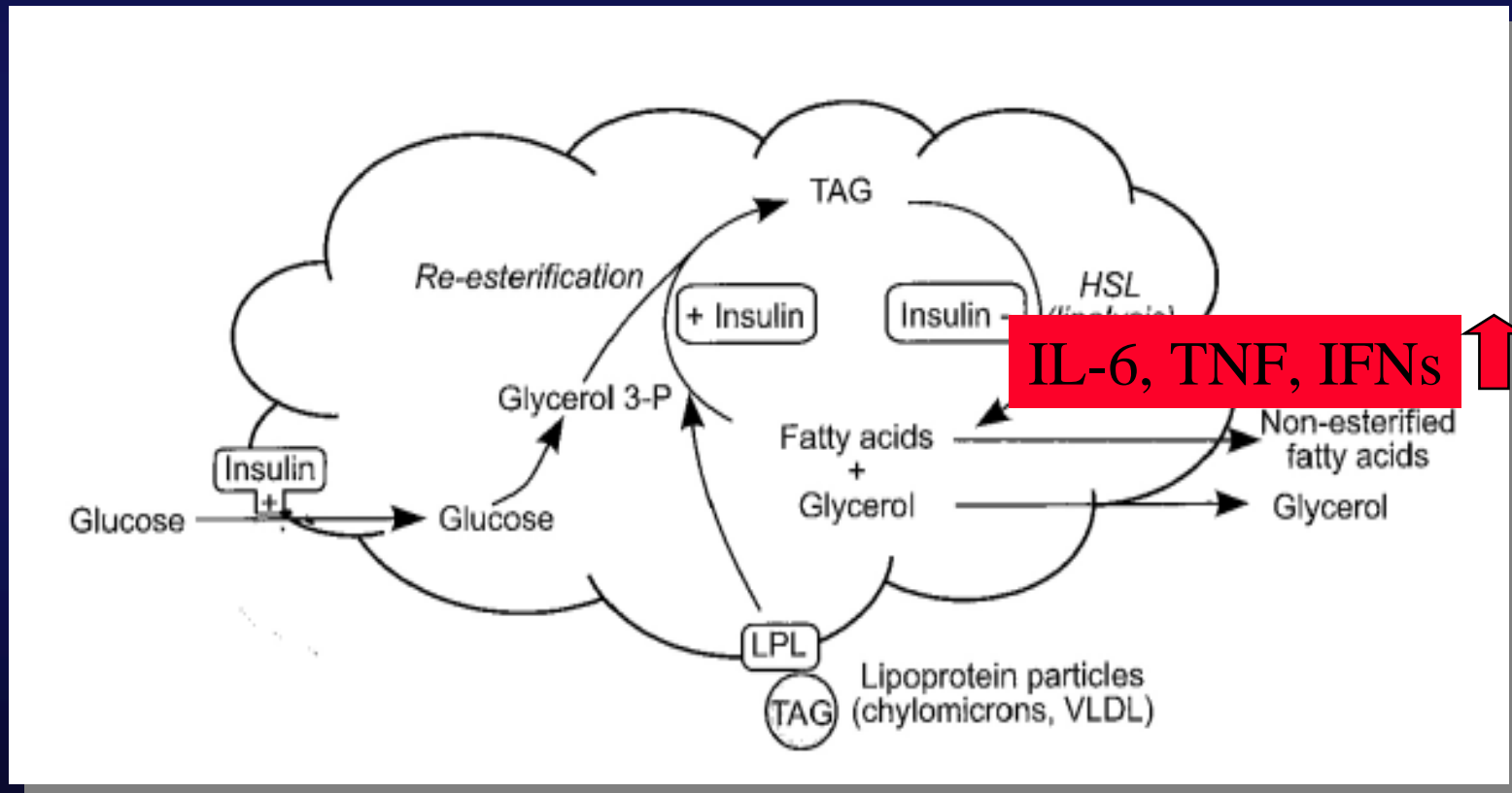
Inflammation and TG



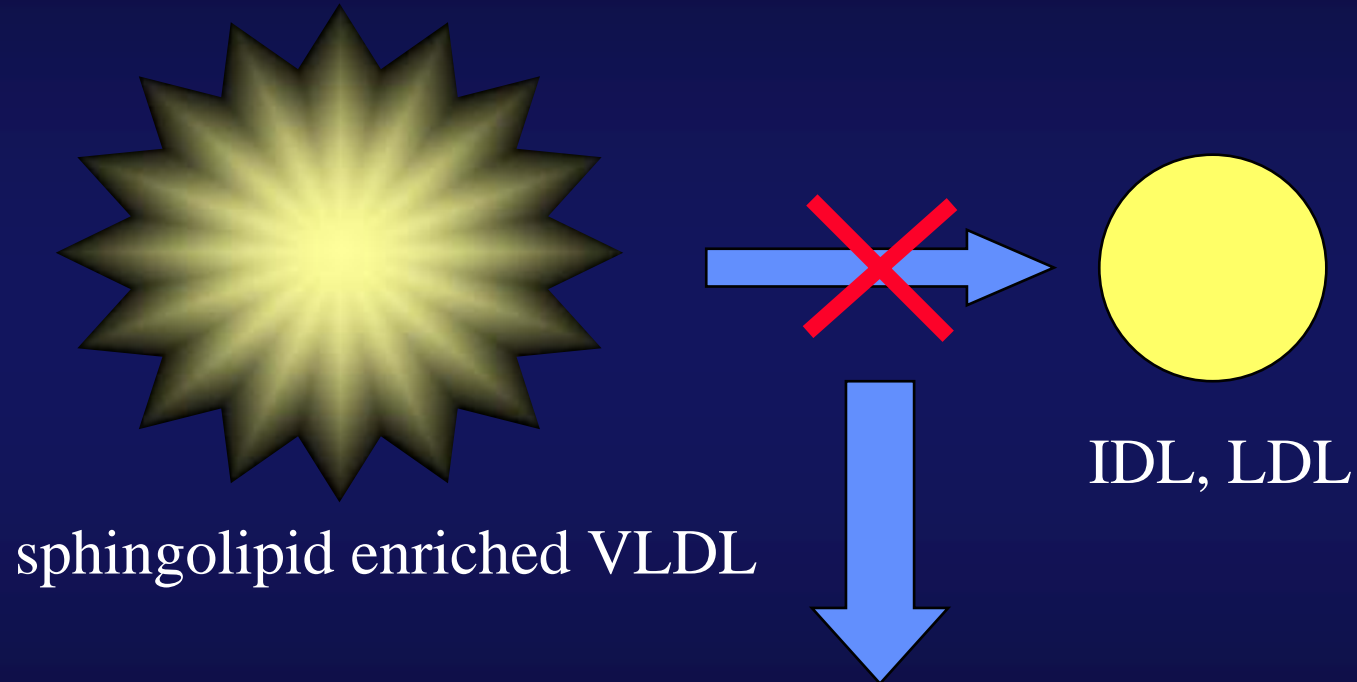
Inflammation and TG



Inflammation and TG

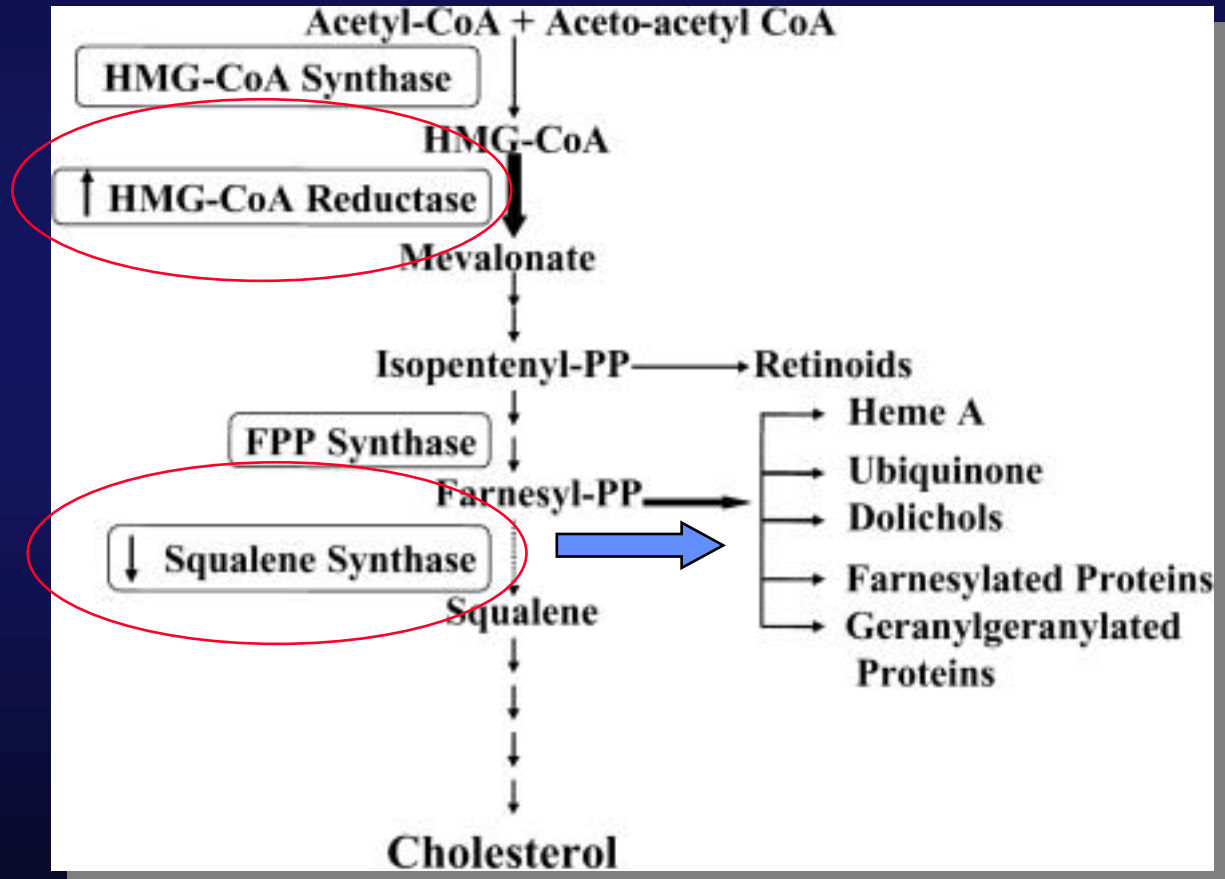


Inflammation and VLDL metabolism

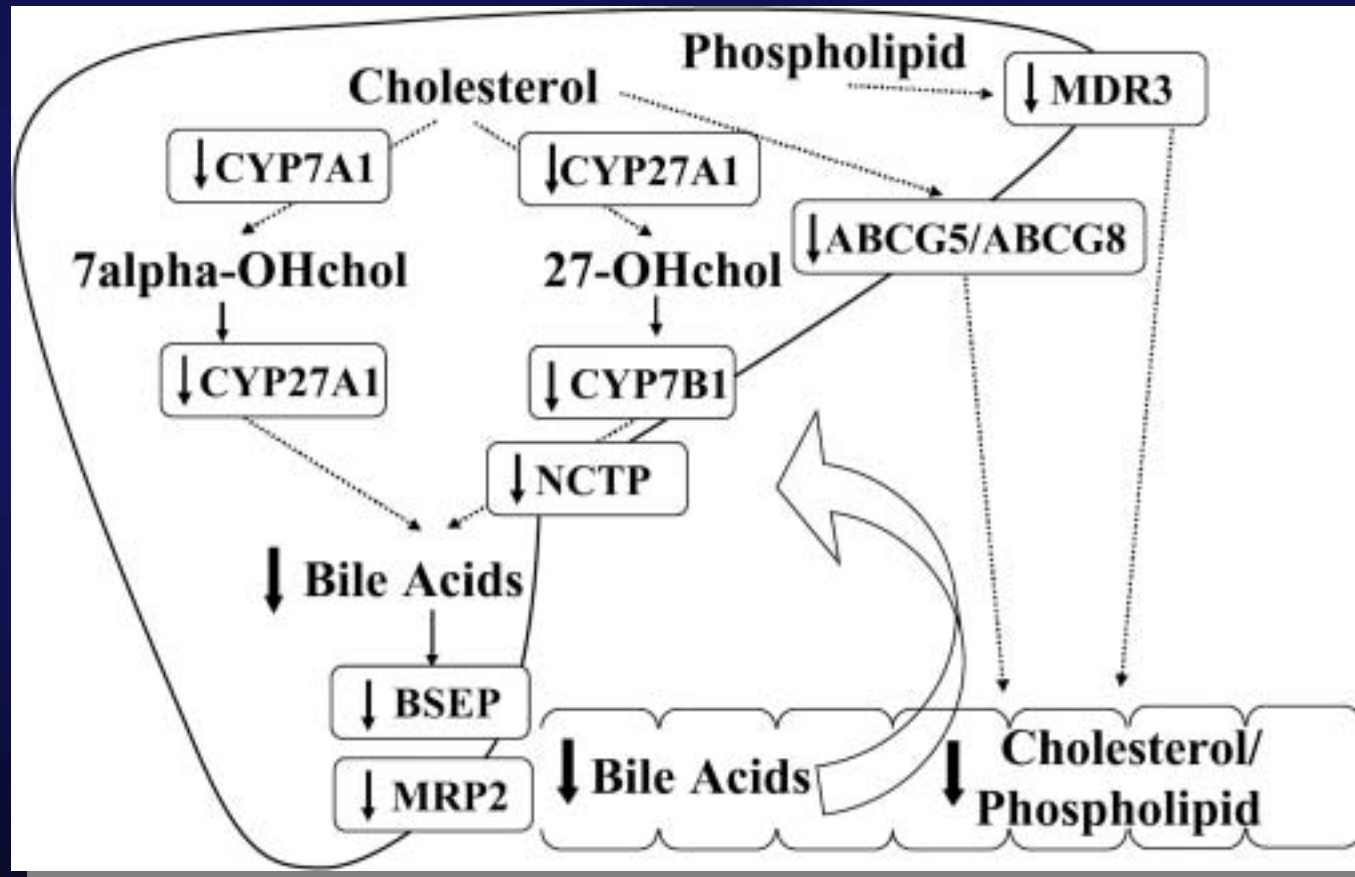


Atherogenic TG rich remnant particle

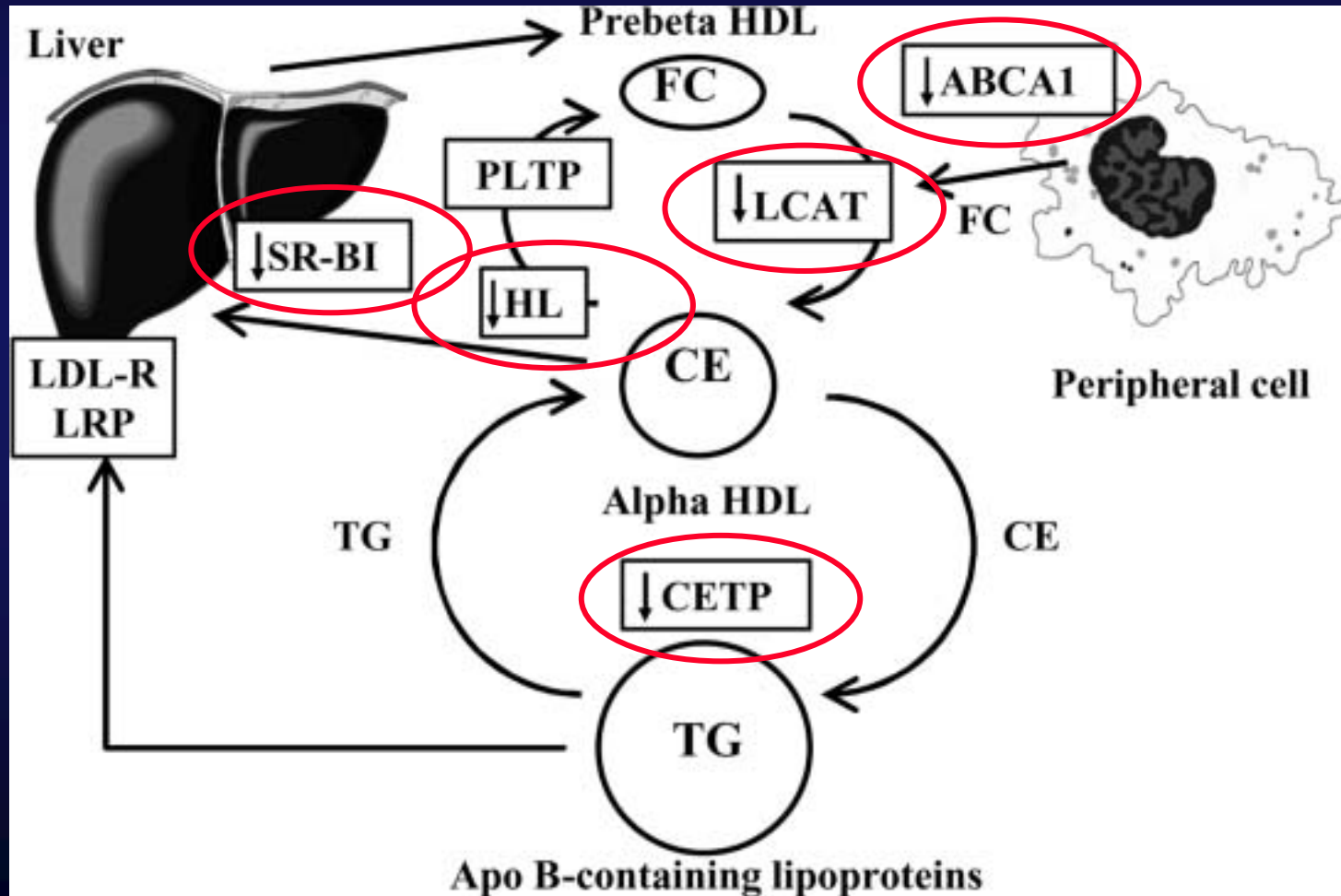
Inflammation and cholesterol



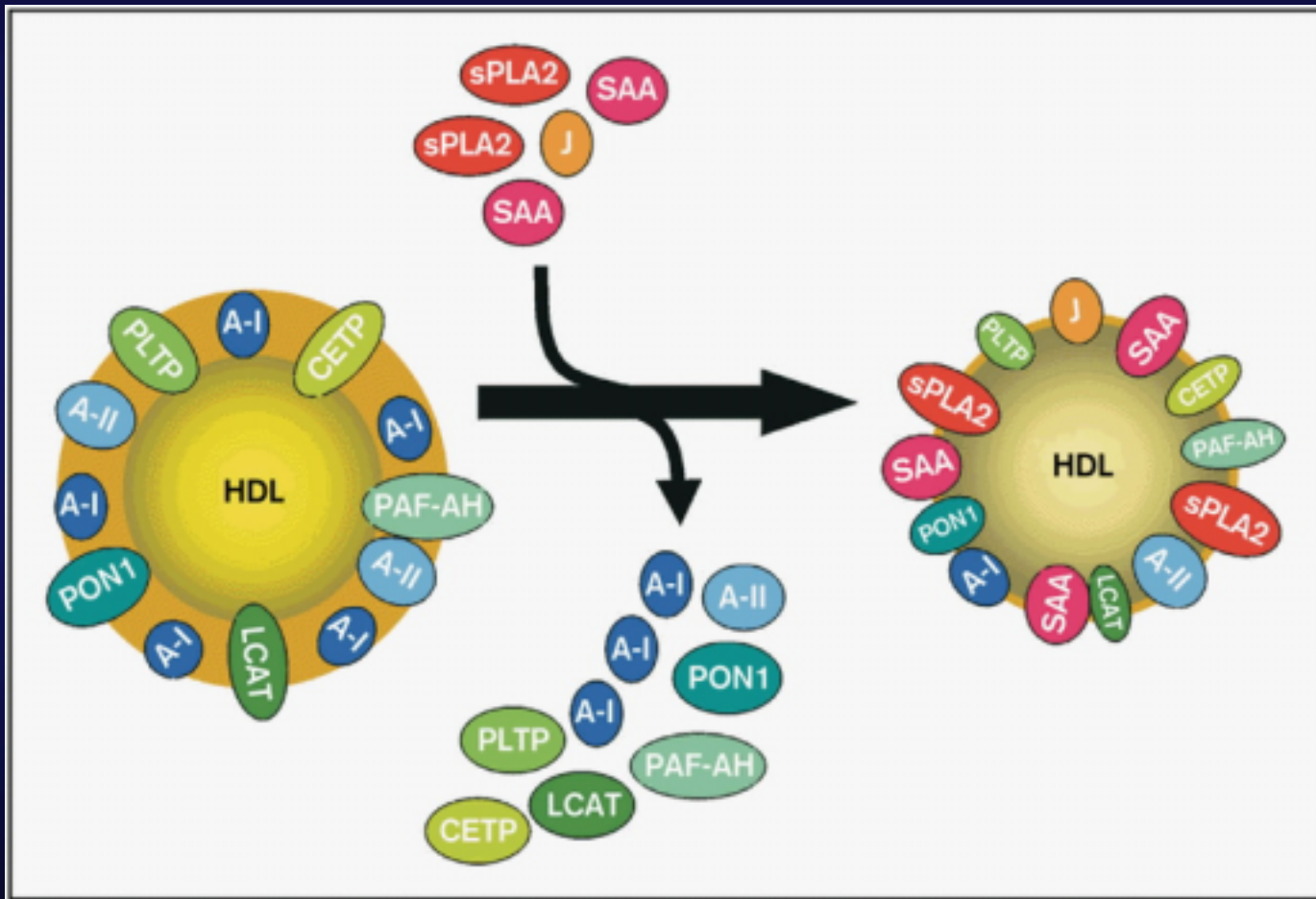
Inflammation and bile



Inflammation and HDL



Impact of inflammation on HDLc

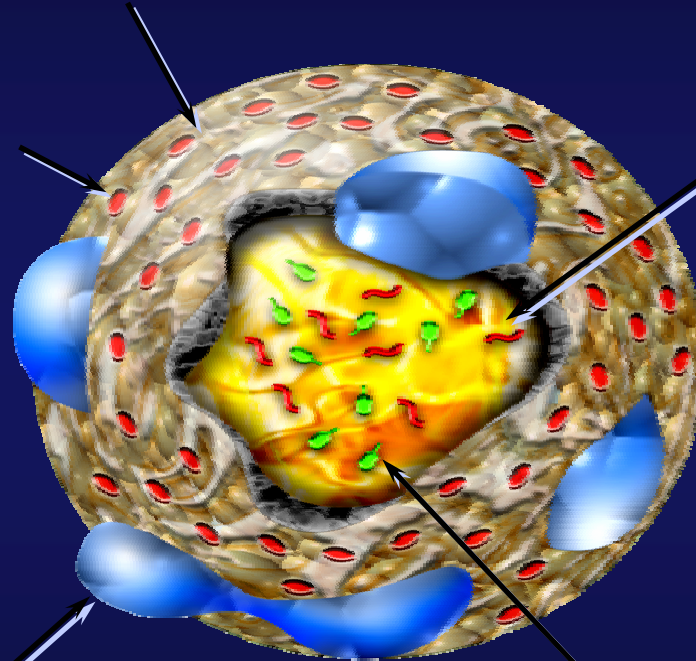


Structure of Lipoproteins

Free cholesterol

Phospholipid

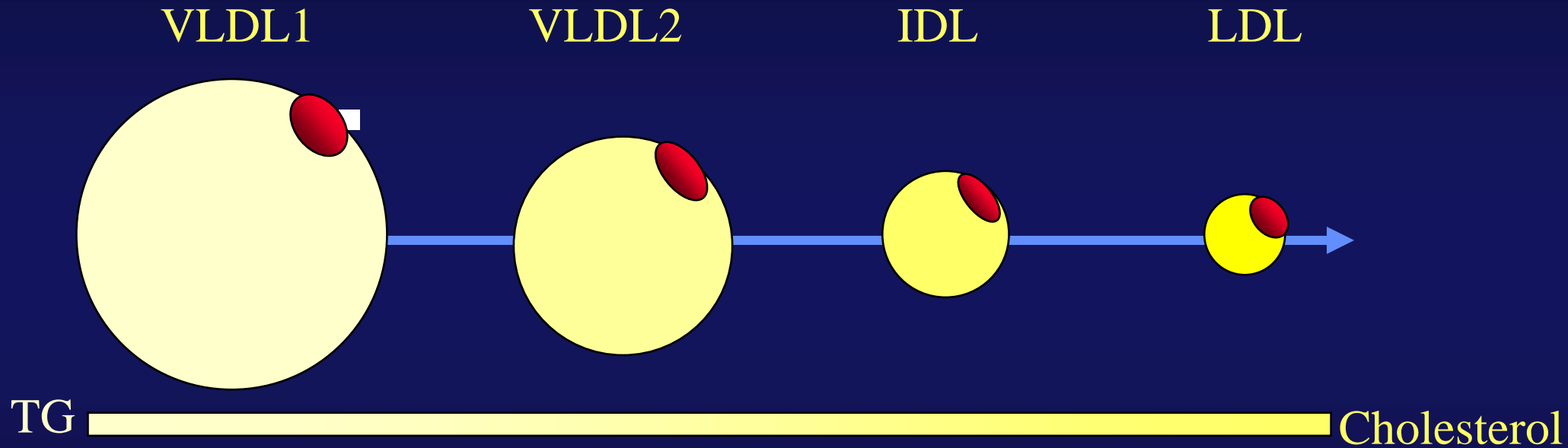
Triglyceride



Apolipoprotein

Cholesteryl ester

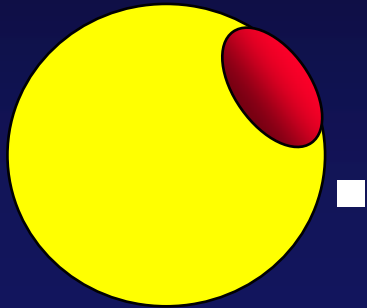
Apo B100 Lipoproteins



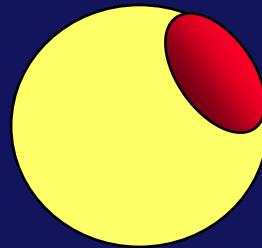
$$\text{Total cholesterol} = \text{VLDLc} + \text{IDLc} + \text{LDLc} + \text{HDLc}$$

$$\text{Total TG} = \text{VLDLtg} + \text{IDLtg} + \text{LDLtg} + \text{HDLtg}$$

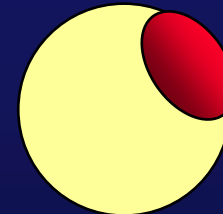
3 kinds of LDL



Large, buoyant LDL
LDL1

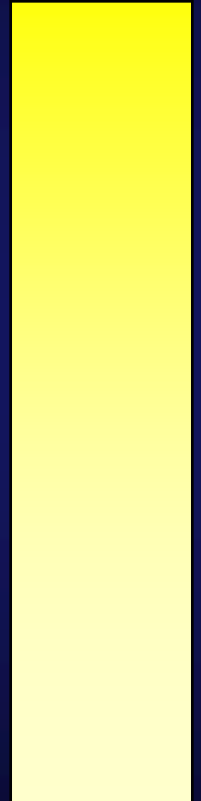


Intermediate LDL
LDL2



Small, dense LDL
LDL3

cholesterol



triglyceride

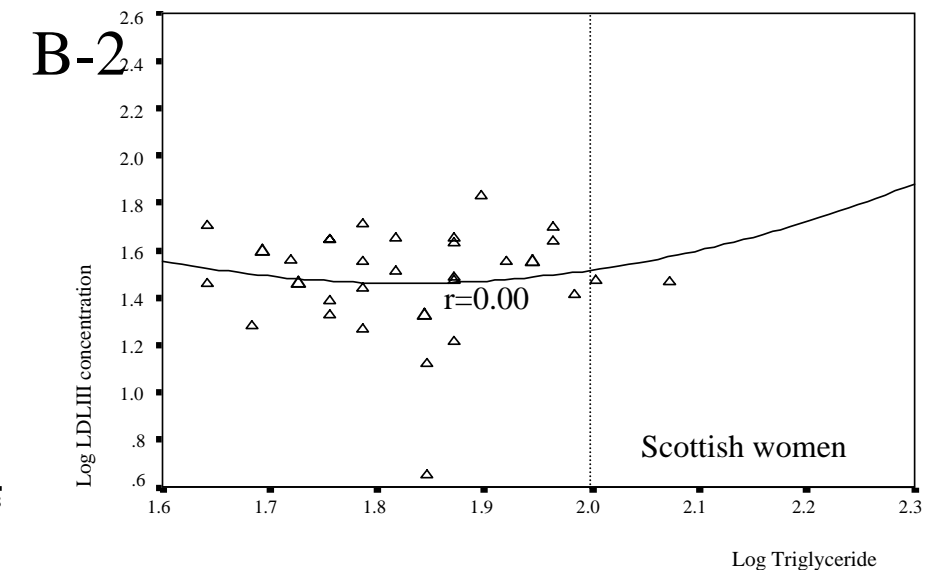
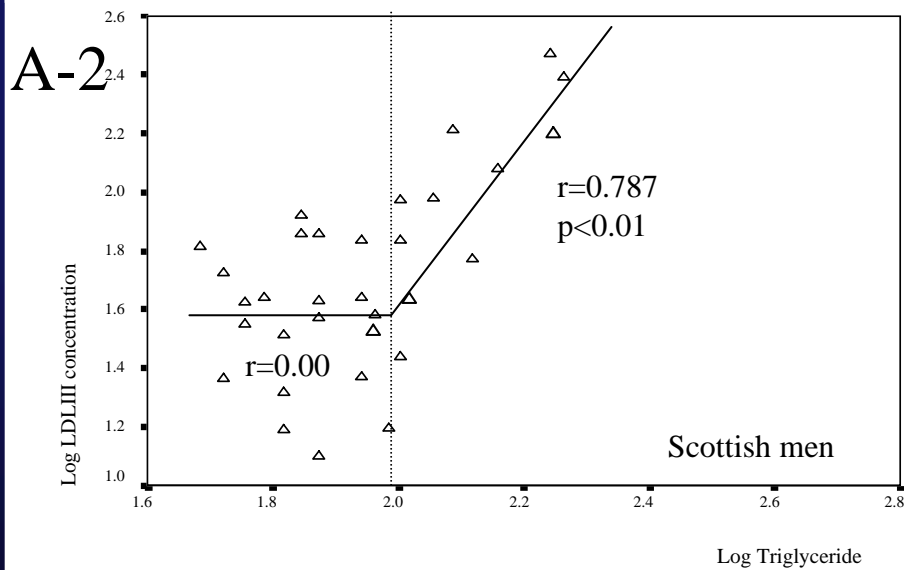
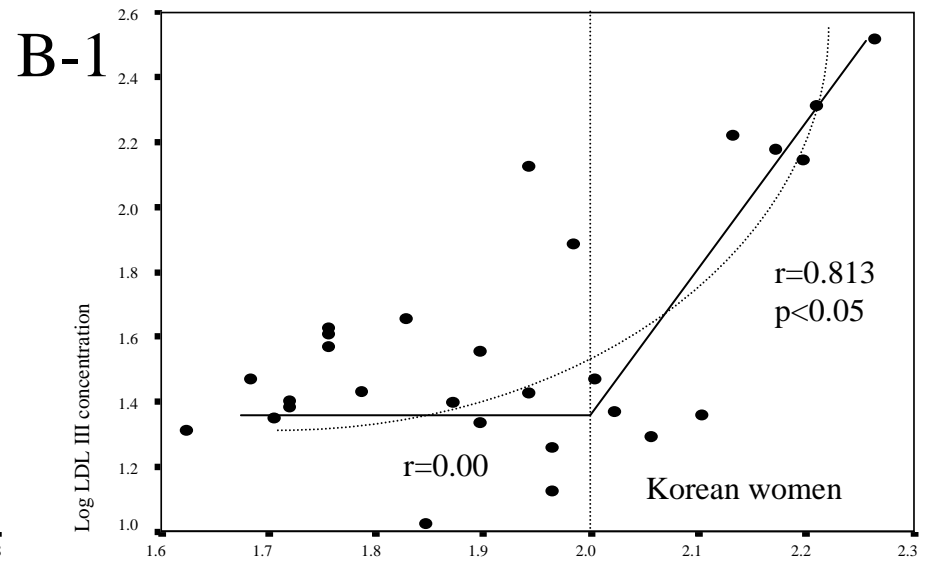
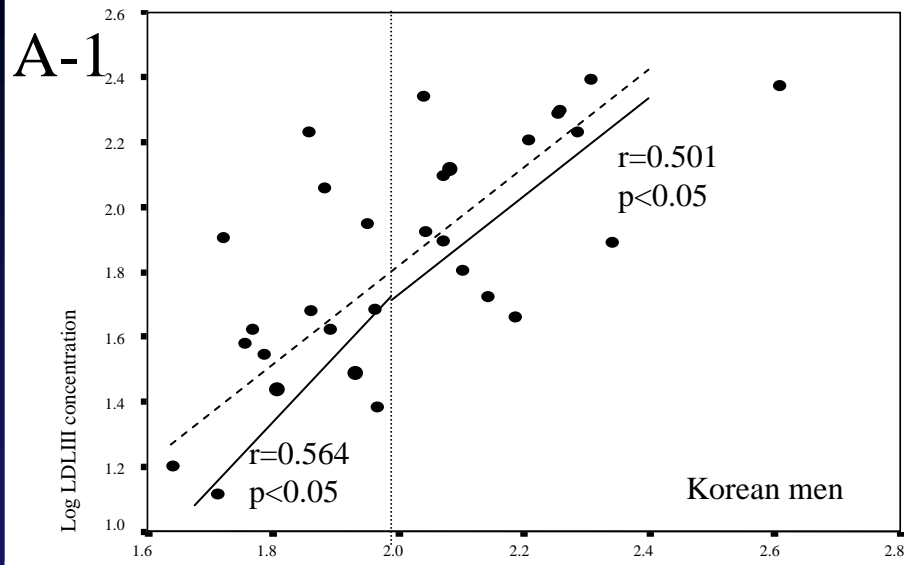
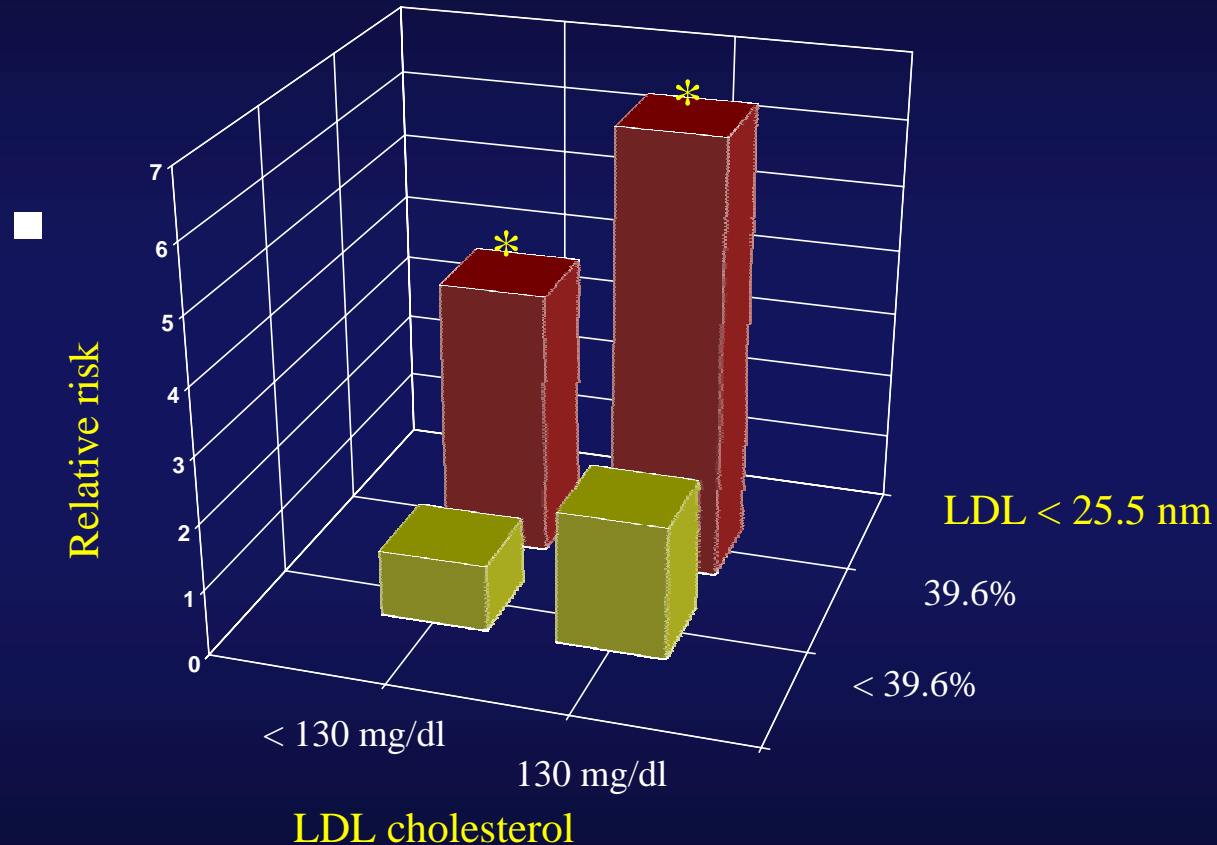


Fig. 2. Scattergrams of log LDL III concentration versus log triglyceride concentration in Korean and Scottish population. Broken line of the Korean population were drawn from total population of men and women from this study.

Small dense LDL and CHD

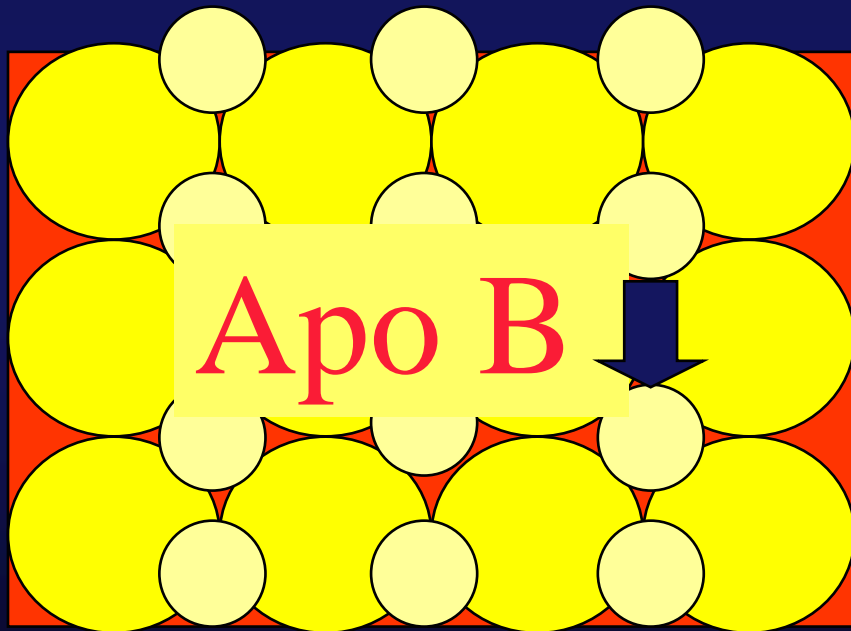
-LDL cholesterol-



Relative risk and p level according to baseline plasma LDL cholesterol and proportion of LDL < 25.5 nm. Relative risks were adjusted for age, BMI, systolic blood pressure, type II DM, medication use at baseline, family history of IHD, and smoking habits.

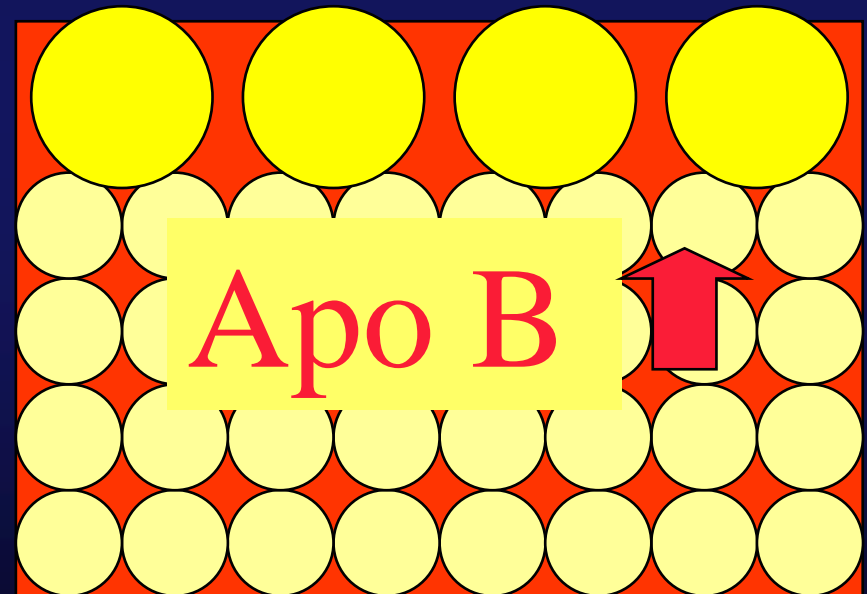
Myth of LDL cholesterol

LDLc = 140 mg/dl, TG=90 mg/dl



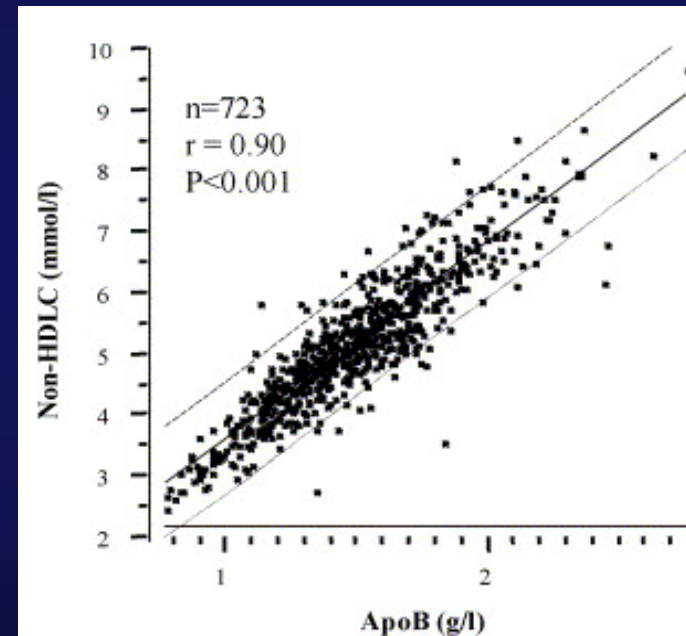
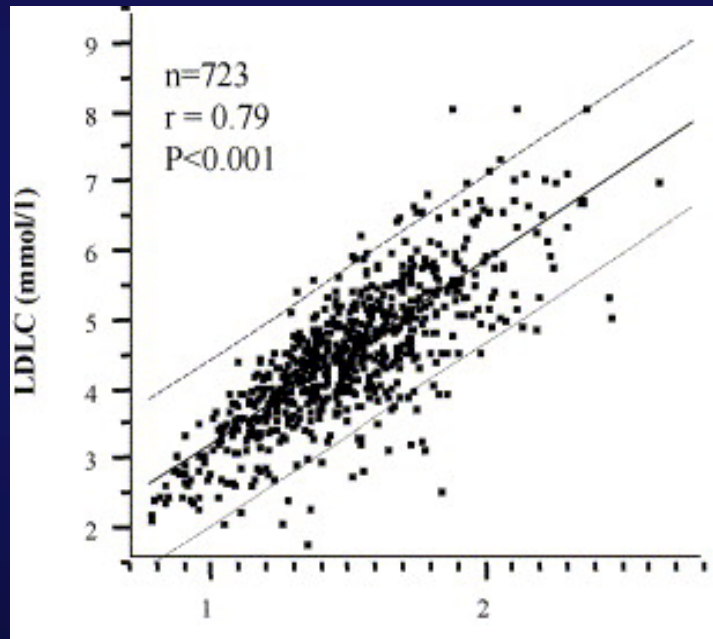
LDL particle number =24
Small dense LDL = 12

LDLc = 100 mg/dl, TG=150 mg/dl

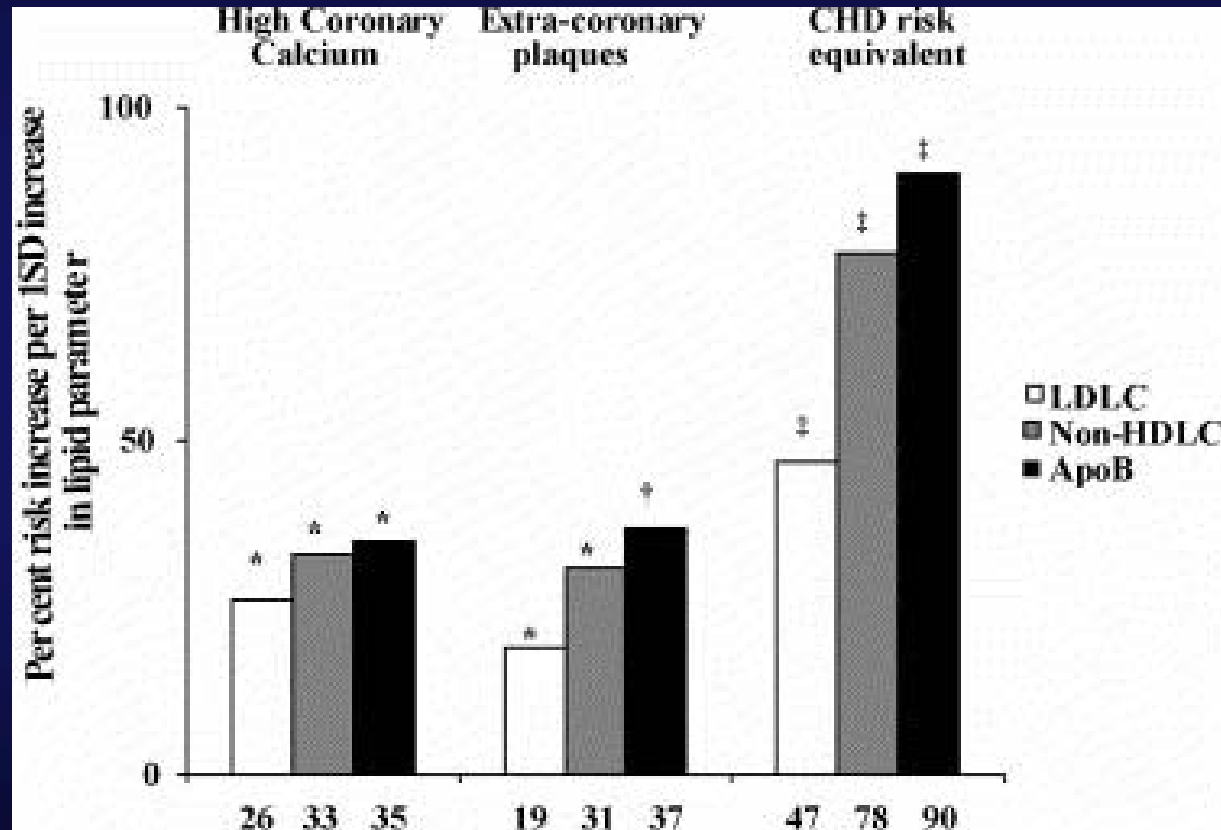


LDL particle number =36
Small dense LDL = 32

ApoB vs LDLc and non-HDLc



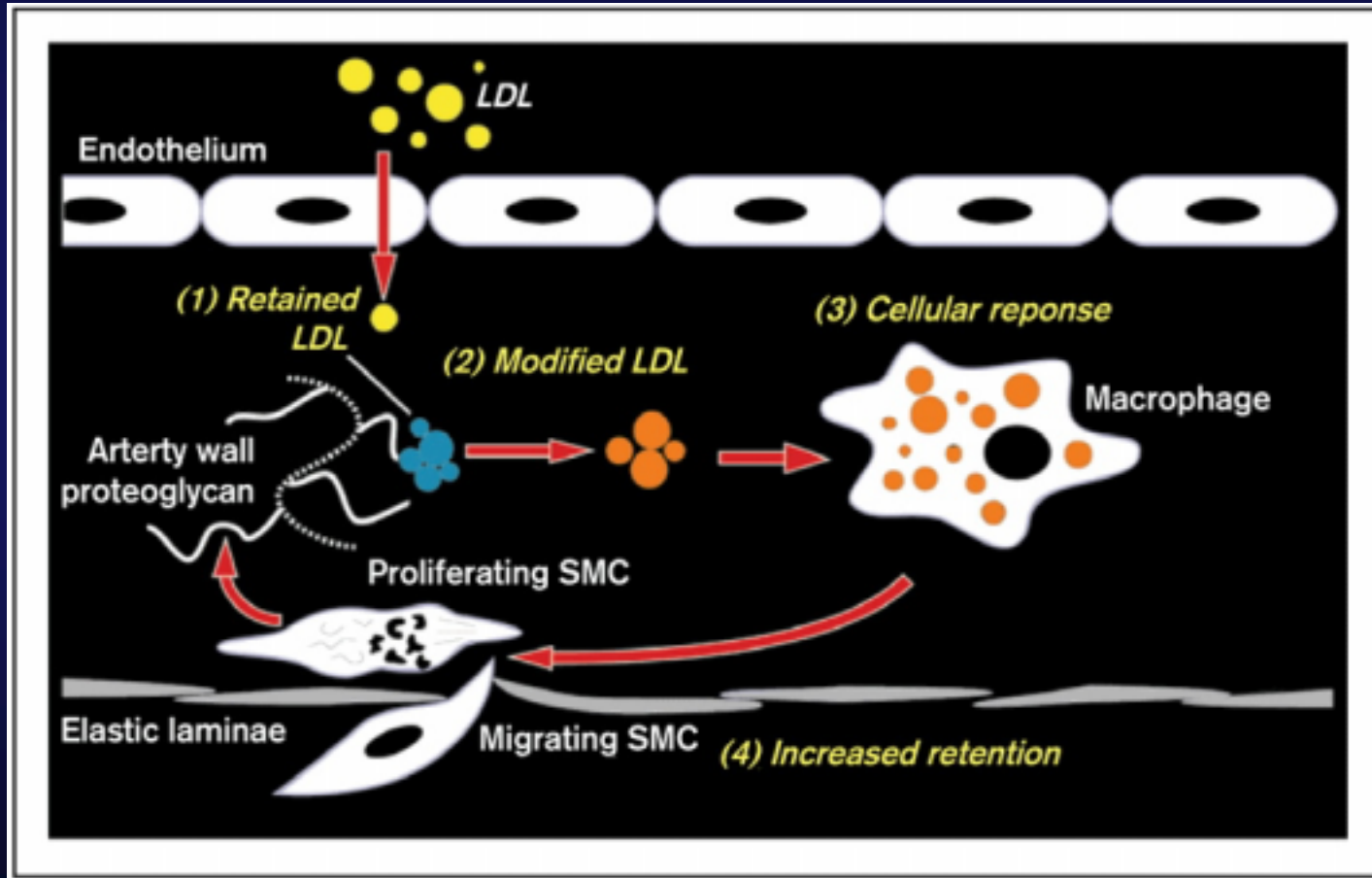
ApoB vs LDLc and non-HDLc



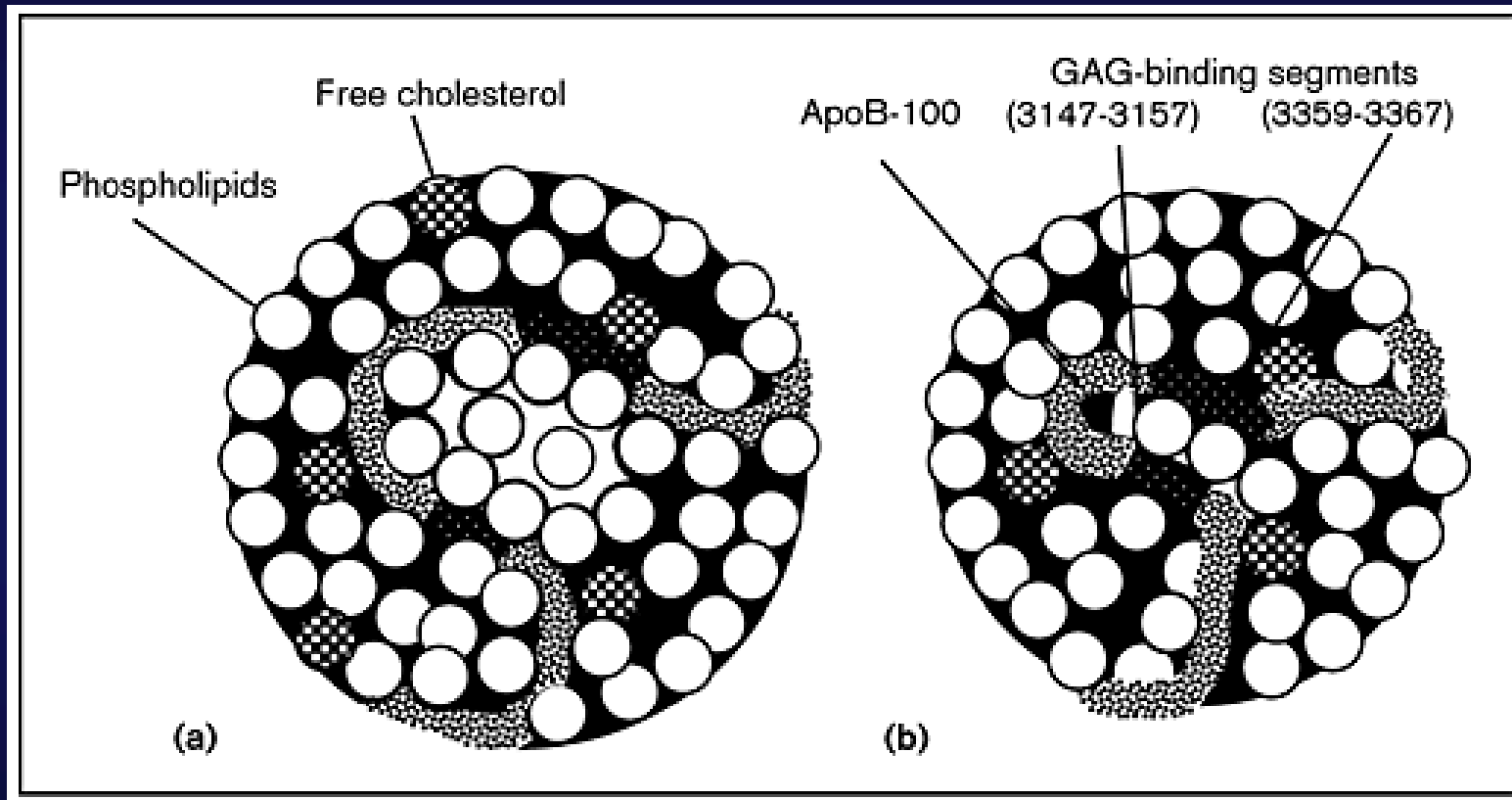
INTERHEART study

- ApoB/A1 ratio
- Smoking
- Job Stress
- Hypertension
- Abdominal obesity
- DM

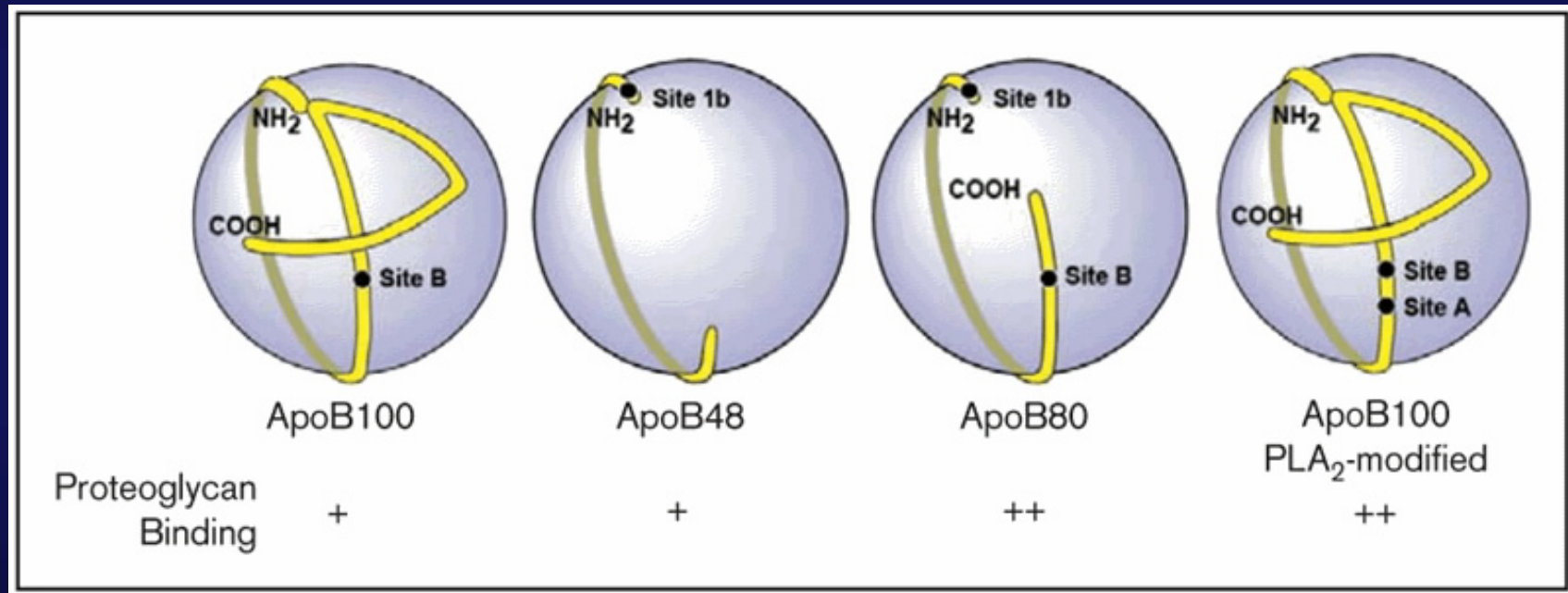
Lipoproteins and atherosclerosis



Phospholipase A2 and small, dense LDL

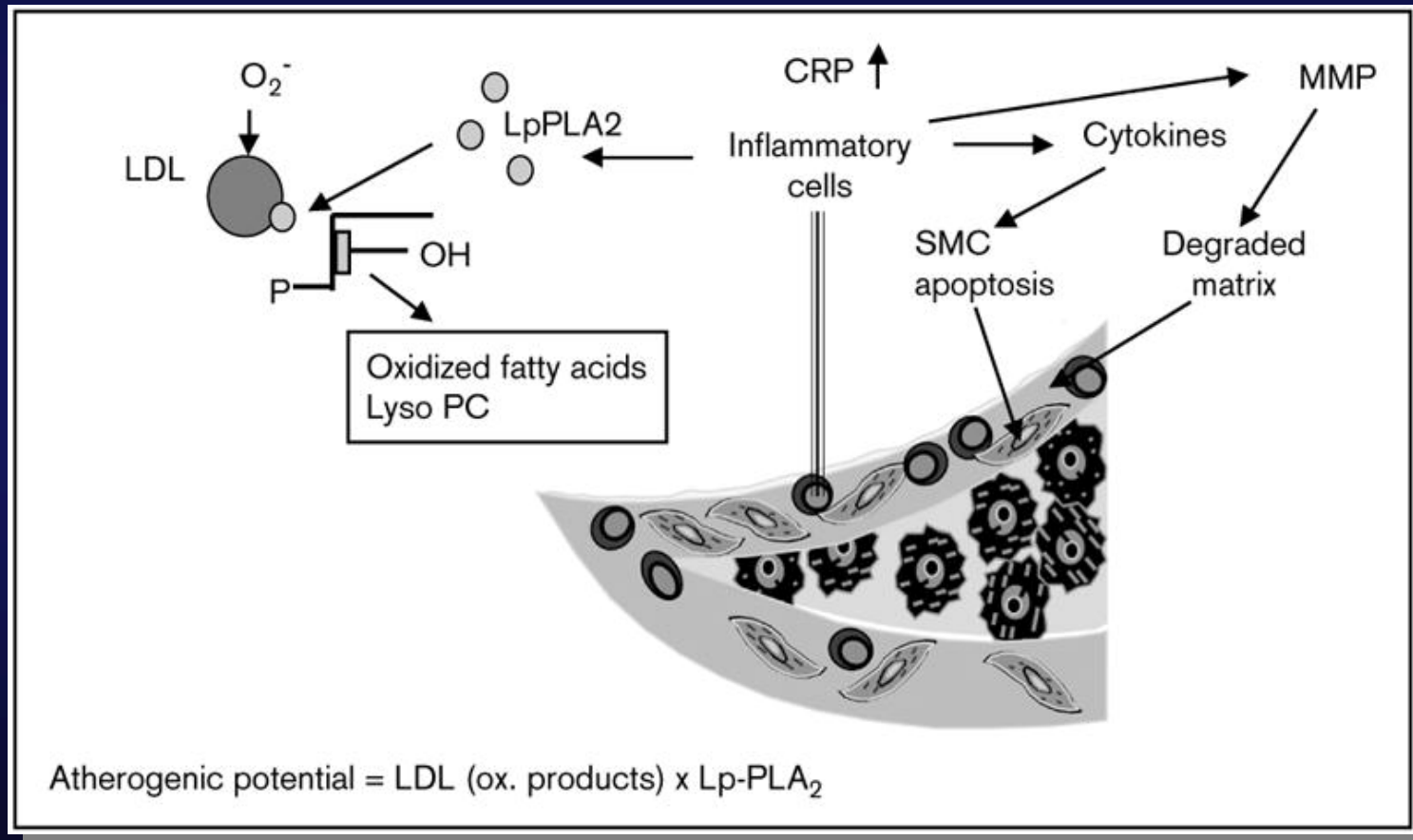


LDL and proteoglycan binding sites

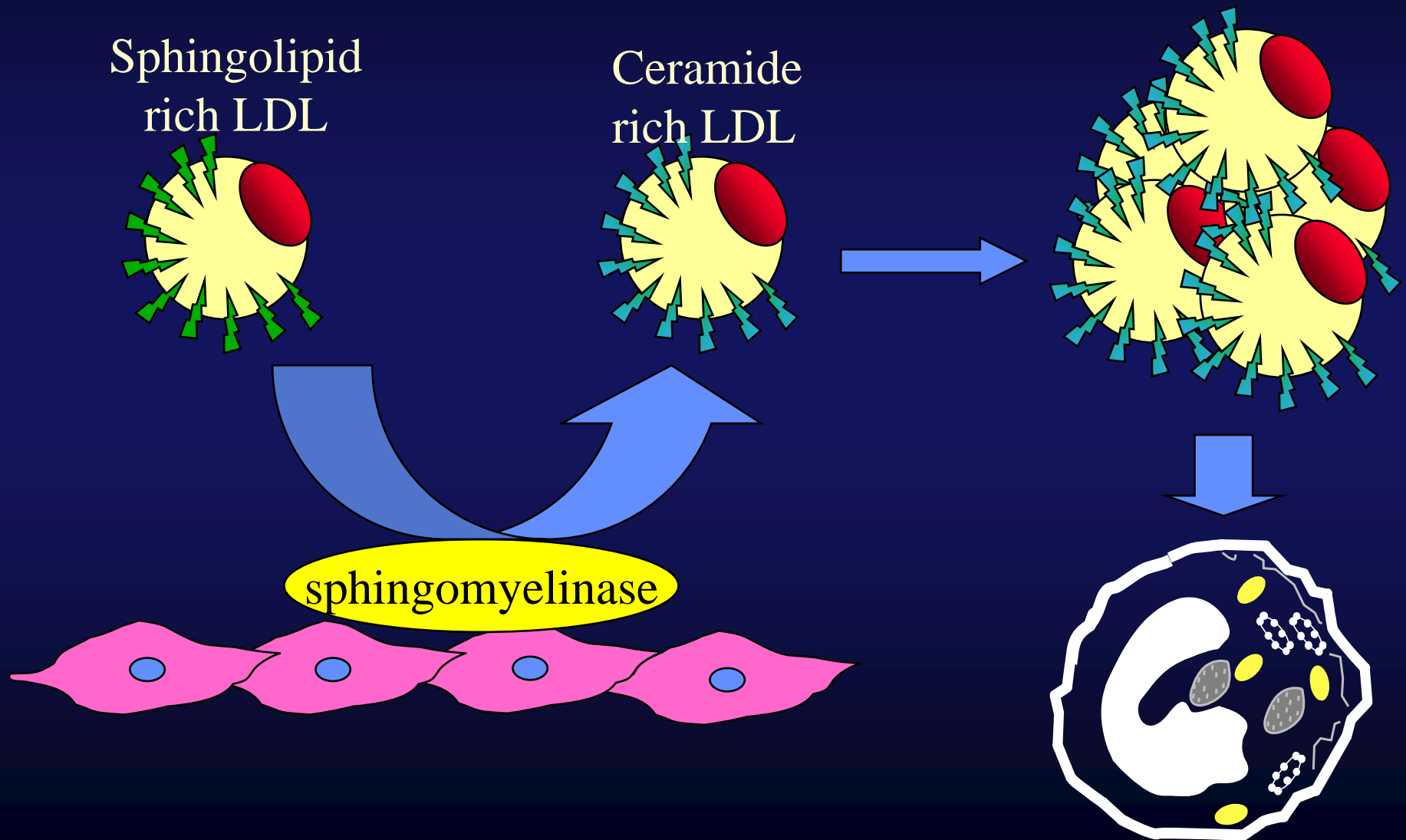


Link

-Inflammation and Oxidation-



LDL and sphingolipids



Atherosclerosis

– Lipoprotein vs Inflammation–

