

# Fat, Cholesterol and Genetics 2019

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**Cardiovascular Health Across the Lifespan**  
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**McGill**

# Chylomicronemia

Triglycerides > 10 mmol/L (885 mg/dL)

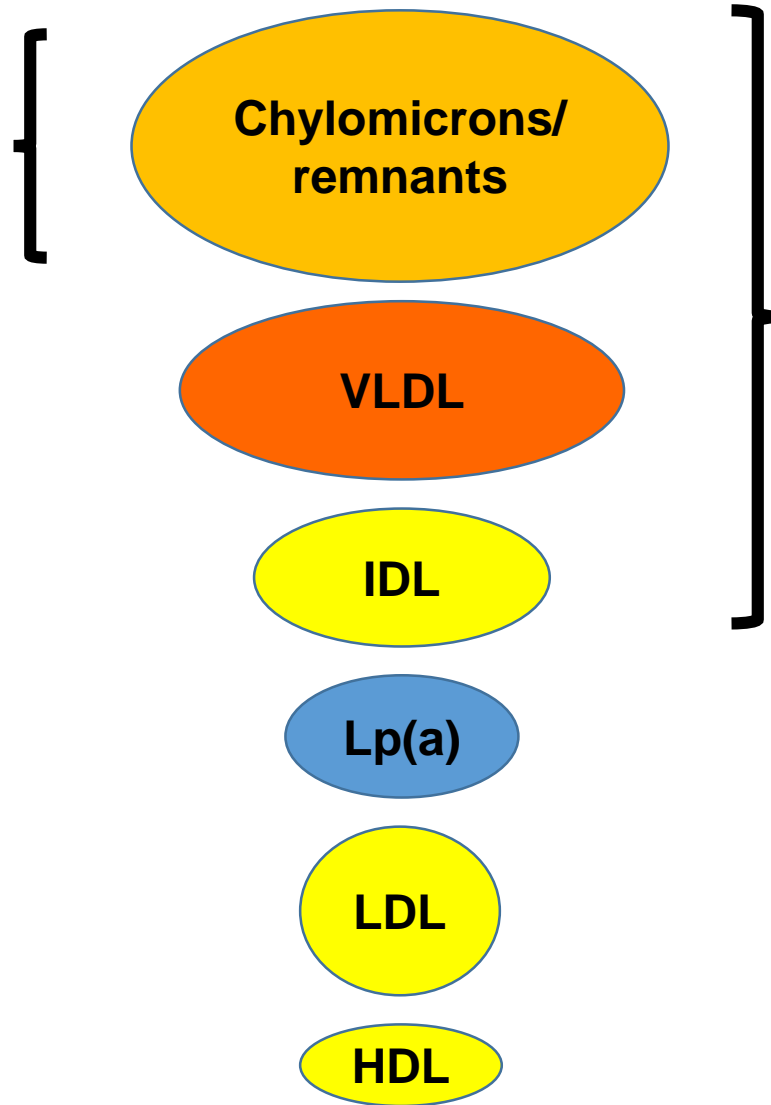
## Familial Chylomicronemia Syndrome (FCS)

(Type I Hyperlipidemia)

Orphan disease

- Prevalence: 1/10<sup>6</sup>
- LPL deficiency
- Rare (*GPIHBP1*
- *APOC2, APOA5, LMF1*)
- Young age
- Women > Men
- BMI normal
- Risk of pancreatitis ↑

- Labs:
- ApoB ↓



## Type V Hyperlipidemia

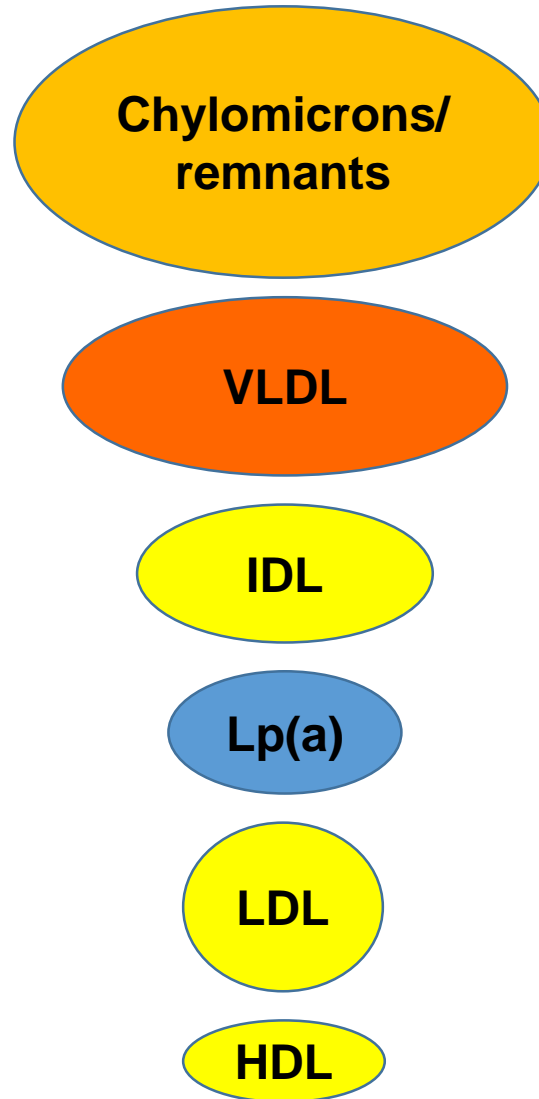
- Prevalence 1/600
- Polygenic
- Obesity, Met syn; BMI ↑
- Diabetes
- HTA
- Alcohol excess
- Risk of ASCVD ↑

- Labs:
- ApoB ↑
- Elevated transaminases



# Lp(a)

Lp(a) > 50 mg/dL

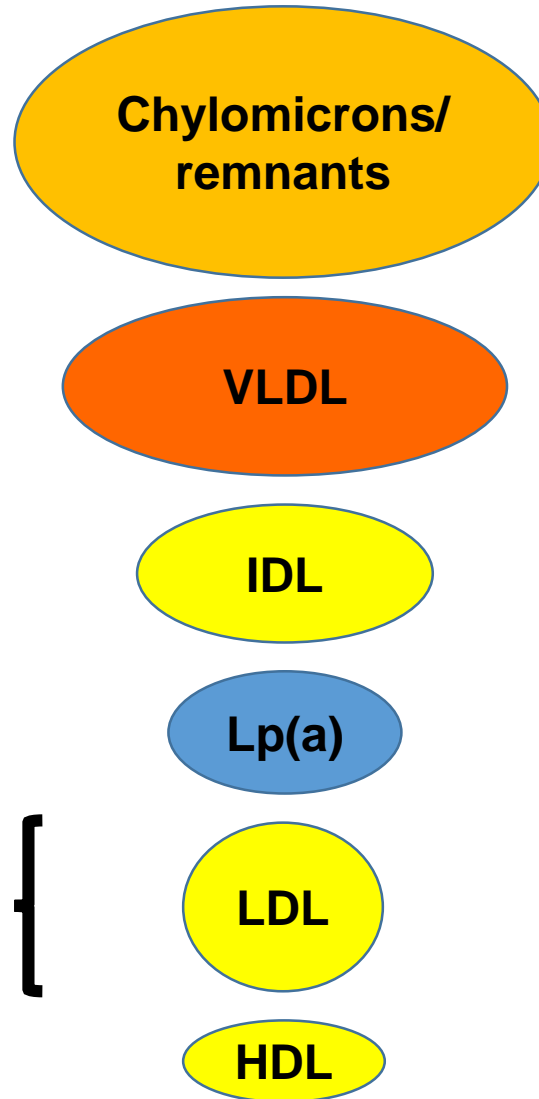


## Lp(a) Excess

- Prevalence: 1:5 ?
- Genetically determined (APOA gene polymorphisms)
- Risk of ASCVD ↑
- Treatment:
  - None accepted
  - Statins ineffective
  - PCSK9 ↓25-30%
  - asRNA

# LDL

LDL-C > 5.0 mmol/L



LDL-C > 5.0 mmol/L

- Prevalence: 0.05
- Familial Hypercholesterolemia
- 0.004
- Risk of ASCVD ↑
  
- Treatment:
  - Statins
  - Ezetimibe
  - PCSK9
  - PCSK9 asRNA

# US Guidelines 2018

Grundy SM, et al.  
2018 Cholesterol Clinical Practice Guidelines: Executive Summary

Figure 2. Primary Prevention

