HDL- Cholesterol and Triglycerides

Presented By

Lecturer

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What is HDL?

- **It is a high density lipoprotein, which is one of the classes of lipoproteins that carry cholesterol in the blood.**
- **It consists of protein with a small amount of cholesterol**

Why is it beneficial?

- **It is beneficial because it removes excess cholesterol from tissues and carries it to the liver for disposal so decreasing the risk of atherosclerosis**

When it should be ordered?

- **It is ordered as a part of lipid profile test for those adults having one or more risk factors for heart disease**

- **Also for children and adolescents having risk factors for heart disease, those should have their first lipid profile between 2-10 years old**

- **It is ordered to evaluate the success of lifestyle changes such as diet, exercise or smoking cessation aimed at increasing HDL-C level**
- **A complete lipid profile requires fasting for 9-12 hr**
- **If the person is not fasting, only HDL-C and total cholesterol values are dependent**

Why HDL-C should not be measured when a person is ill?

- **Because cholesterol is temporarily low during:**
  - **Acute illness**
  - **Immediately following heart attack**
  - **During stress (from surgery, or an accident)**
- **The patient should wait at least 6 weeks after any illness**
- **In pregnancy, HDL-C may change therefore pregnant women should wait 6 weeks after baby born**

What does the test result mean?

- **If HDL-C is less than 40 mg/dl for men and less than 50 mg/dl for women, there is increased risk of heart disease**
- **Desirable HDL-C is 40-50 mg/dl for men and 50-59 mg/dl for women, average risk**
- **The healthiest level of HDL-C is 60 mg/dl or higher, less than average risk**

What is T.cholesterol/HDL-C ratio?

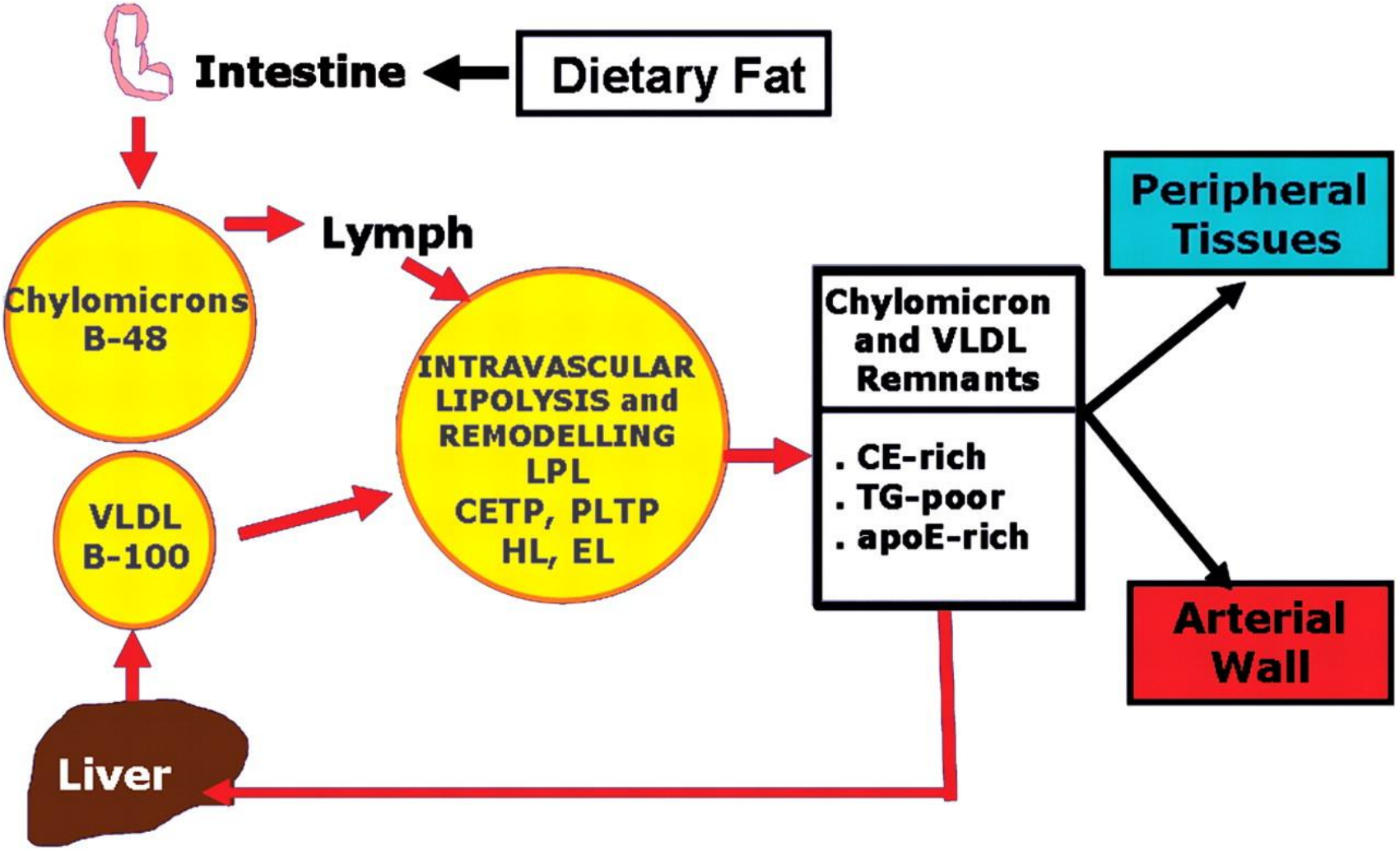
- **It is obtained by dividing T.cholesterol by HDL-C**
- **Example: T.cholesterol of 200 mg/dl and HDL-C of 50 mg/dl the ratio would be stated as 4 or 4:1**
- **A desirable ratio is below 5 (5:1)**
- **The optimum ratio is 3.5 (3.5:1)**


Triglycerides

What are triglycerides?

- **Triglycerides are one of the types of fats transported in the bloodstream**
- **Most of body's fat is stored in the tissues as TGs**
- **TGs in the blood are a mixture of TGs from dietary sources and TGs produced by the body as source of energy**

Metabolism of triglycerides:



What can hypertriglyceridemia cause?

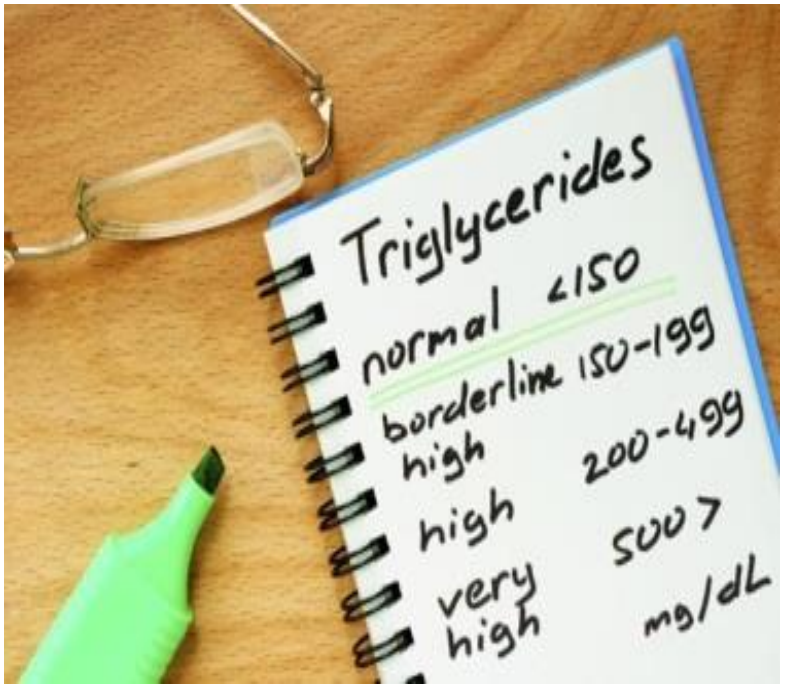
- It can lead to atherosclerosis since most of TG-containing lipoproteins that transport fat in the bloodstream also transport cholesterol which is a major contributor to atherosclerosis
- Elevated TGs along with elevated cholesterol is referred to as mixed hyperlipidemia

Triglycerides test:

- It is done by collecting a blood sample
- The patient must be fast for 12 hours
- It is a part of lipid profile test

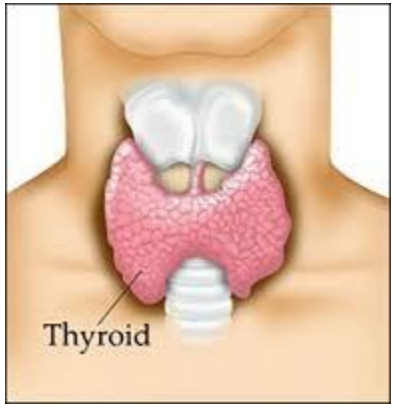
Reference values:

- **Normal: < 150 mg/dl**
- **Borderline to high: 150-199 mg/dl**
- **High: 200-499 mg/dl**
- **Very high: ≥ 500 mg/dl**



Causes of hypertriglyceridemia:

- **Diseases:**
  - **Diabetes mellitus**
  - **Kidney disease**
  - **Alcoholism**
  - **Hypothyroidism**
  - **Obesity**



- **Medications:**
  - **Birth control pills**
  - **Estrogens**
  - **Beta blockers**
  - **Immunosuppressants**

- **Familial (genetic) disorders of lipid metabolism**


THANK YOU