AL-MUSTAQBAL UNIVERSITY
كلية التقنيات الصحية والطبية
COLLEGE OF HEALTH AND MEDICAL TECHNIQUES
قسم تقنيات الكلية الصناعية
kidney dialysis techniques Department

Lecture 4
Practical

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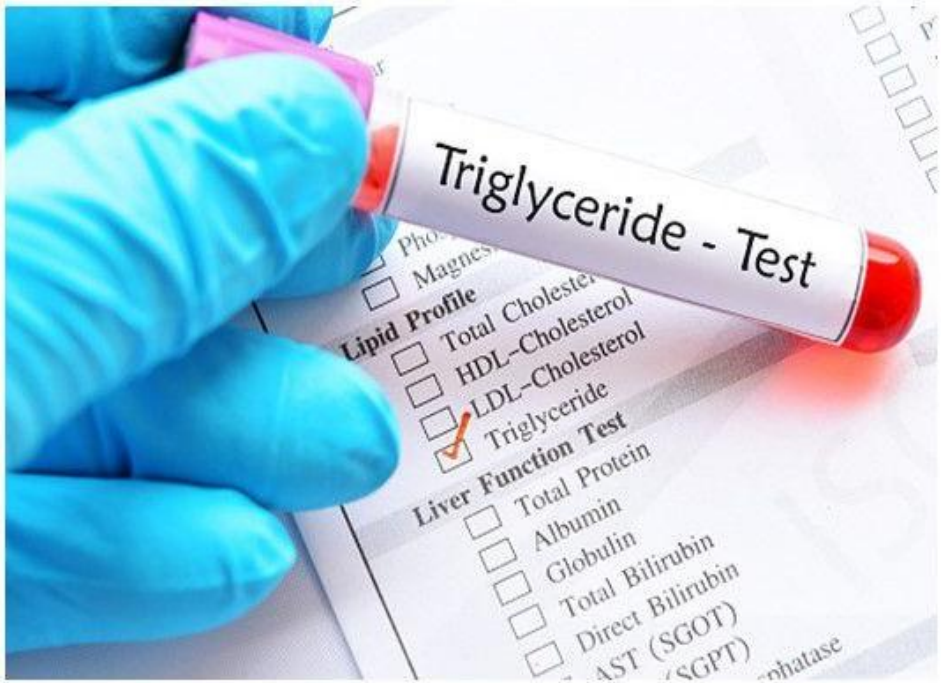
Objectives

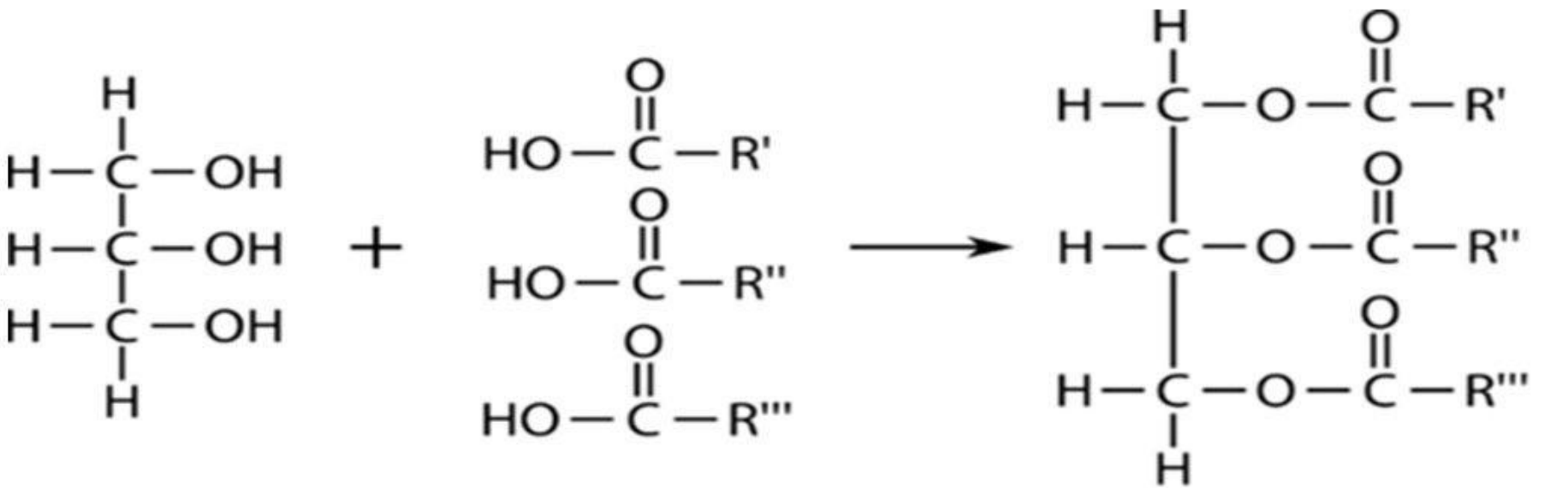
- What is Triglycerides (TG)?
- Chemical equation of Triglycerides.
- Serum Triglycerides test.
- Clinical significant.
- Procedure.
- Calculation.
- Reference values.

What is Cholesterol?

- **Triglycerides** are a common type of fat that accounts for about 95 per cent of all dietary fats. Both animal and vegetable fats contain triglycerides. Once digested, triglycerides circulate in the bloodstream to be used as energy by the cells. Any leftovers are stored in body fat to fuel the body between meals.



Chemical structure of Triglycerides



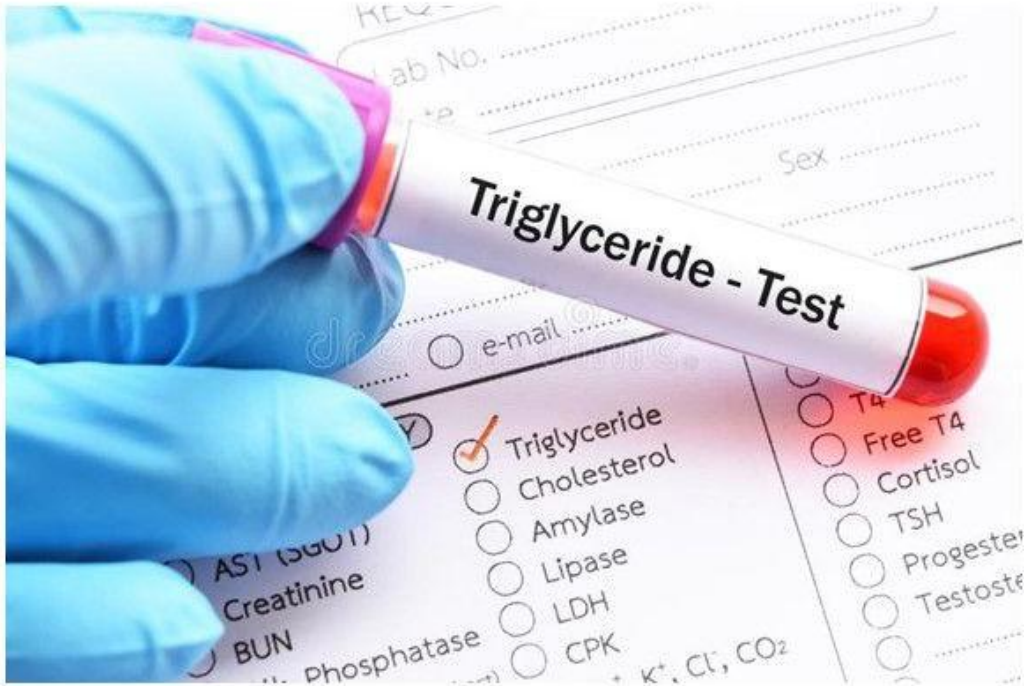
Triglycerides vs. cholesterol

Triglycerides and cholesterol are both made in the liver and consumed from food. They both circulate in the blood. Although there are similarities, they have different functions:

- **Triglycerides** are a type of fat or lipid that store unused calories.
- **Cholesterol** is a lipoprotein used to build cells, produce certain hormones, and generate vitamin D .

Serum Triglycerides test

- The triglycerides level test helps measure the amount of triglycerides in the blood. The results of this test help the doctors to determine the risk of developing heart disease. Another name for this test is a triacylglycerol test.



Clinical significant

Hypertriglyceridemia	Hypotriglyceridemia
Atherosclerosis	Hyperthyroidism
Heart diseases	Malabsorption syndrome
Nephrotic syndrome	
Diabetes mellitus	
Obstructive Jaundice	

Procedure

1- Bring reagents and samples to room temperature.

2- Pipette into labelled tubes:

	Blank	Standard	Sample
Reagent (ml)	1.0	1.0	1.0
Standard (µl)	--	10	--
Sample (serum) (µl)	--	--	10

3- Mix and let the tubes stand 10 minutes at room temperature or 5 minutes at 37ºC.

4- Read the absorbance (A) of the samples and the standard at 500 nm against the reagent blank.

Calculation

- ***Serum or plasma***: $\text{C sample} = \frac{Abs\ \text{sample}}{\text{Abs standard}} \times \text{C standard}$

  $= \text{mg/dl}$

- C_{sample} = concentration of sample (unknown)
- $C_{st.}$ = concentration of standard (200 mg/dl)
- Abs $_{sample}$ = absorbance of the sample
- Abs $_{st.}$ = absorbance of standard

Triglyceride ranges for adults

Normal	Less than 150 mg/dL
Borderline high	150-199 mg/dL
High	200-499 mg/dL
Very high	500 mg/dL or higher

Source: National Institutes of Health


THANK YOU