OMEGA-3 FATTY ACID

- **INTRODUCTION:** Omega-3 fatty acids, otherwise named n-3 fatty acids, are polyunsaturated fatty acids which are characterized by the first double bond at the third position counted from the methyl end of the molecule. This implies that the body needs them but cannot synthesize them by itself.

- **SOURCES:**
  - Kidney beans
  - Walnuts
  - Flaxseeds
  - Chia seeds
  - Hemp seeds
  - FISH

- **EFFECTIVE TO TREAT:**
  - Reducing low-density lipoprotein-cholesterol
  - Heart disease
• Hypertriglyceridemia
• Dyslipidemia

➢ **Dosages:**

• **For Healthy Adults**-
  - Minimum of 250–500 mg combined EPA and DHA.

• **For Heart disease**-
  - 850-mg dose of combined EPA and DHA every day for 3.5 years.

• **For Depression and anxiety**-
  - 200–2,200 mg per day
  
  - In cases of mental disorders, a supplement with higher amounts of EPA than DHA

• **Cancer**-
  - High intake of omega-3 fatty acids has been linked to a reduced risk of breast, may relieve
Several health conditions. An effective dosage ranges from 200–4,000 mg.

- **For children-**
  - 50–100 mg per day of combined EPA and DHA.

- **Pregnant women-**
  - 200 mg of DHA during pregnancy.

**Mechanism of action:-**

Mediate anti-inflammatory effects

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Increased levels of EPA or DHA

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Decrease the levels of PGE2 and 4 series-LT
  *(Desaturation enzymes)*

Produce 3-series prostaglandins and thromboxanes & 5-series leukotrienes

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EPA and DHA also give rise to resolvins and related lipid signalling molecules
Inhibit transendothelial migration of neutrophils and inhibit TNF and IL-1β production.

EPA and DHA in reducing triglyceride levels include inhibition of acyl-CoA:1,2-diacylglycerol acyltransferase

Increased mitochondrial and peroxisomal-beta-oxidation in the liver

Decreased lipogenesis in the liver

Increased plasma lipoprotein lipase activity

- **What omega 3 fatty acid dose to body:-**
  
  Omega 3 part of cell membranes

  Affect the function of the cell receptors in these membranes

  Provide the starting point for making hormones

  Regulate blood clotting, contraction and relaxation