



TRINITY COLLEGE FOR WOMEN NAMAKKAL

DEPARTMENT OF NUTRITION & DIETETICS

**ADVANCED DIETETICS
EVEN SEMESTER**

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LIVER

The liver is the largest organ in the body. It is located below the diaphragm in the right upper quadrant of the abdominal cavity. An adult's liver weighs approximately 3 pounds and extends approximately from the right 5th rib to the lower border of the rib cage.

FUNCTIONS OF LIVER

The liver is an essential organ of the body that performs over 500 vital functions. These include removing waste products and foreign substances from the bloodstream, regulating blood sugar levels, and creating essential nutrients. Here are some of its most important functions:

Albumin Production: Albumin is a protein that keeps fluids in the bloodstream from leaking into surrounding tissue. It also carries hormones, vitamins, and enzymes through the body.

Bile Production: Bile is a fluid that is critical to the digestion and absorption of fats in the small intestine.

Filters Blood: All the blood leaving the stomach and intestines passes through the liver, which removes toxins, byproducts, and other harmful substances.

Regulates Amino Acids: The production of proteins depend on amino acids. The liver makes sure amino acid levels in the bloodstream remain healthy.

Regulates Blood Clotting: Blood clotting coagulants are created using vitamin K, which can only be absorbed with the help of bile, a fluid the liver produces.

Resists Infections: As part of the filtering process, the liver also removes bacteria from the bloodstream.

Stores Vitamins and Minerals: The liver stores significant amounts of vitamins A, D, E, K, and B12, as well as iron and copper.

Processes Glucose: The liver removes excess glucose (sugar) from the bloodstream and stores it as glycogen. As needed, it can convert glycogen back into glucose.

AGENTS RESPONSIBLE FOR LIVER DAMAGE

Dietary deficiencies

Fatty changes in kwashiorkor due to low protein, severely low
?lipoprotein

High intake of fats or carbohydrates

Infective agents

Virus infections causes hepatitis A,B,C,D,E and G

Type- E is dangerous during pregnancy.

Hepatitis A and E virus contaminates through faecal-oral route
leading jaundice and liver enlargement

Hepatitis B, C, D and G virus cause homologous serum jaundice
with low blood or blood products of carrier, unsterilized needles

Yellow fever, typhoid, Weil's disease (spirochete) and amoebiasis

Toxic agents

Alcohol intake enhancing fatty acid synthesis

Decreasing fatty acid oxidation

Specific stimulation to triglycerides

Drugs and chemicals: Paracetamol and Oestrogen

Excess stores of iron, copper, galactose, glycogen leading to Cirrhosis

Three pathological changes may follow damage to the liver namely:

Fatty infiltration: It is the deposition of droplets of fat in the cells. This process is completely reversible, but if the damage is severe or long lasting it may be followed by necrosis or fibrosis.

Necrosis or death of the cells may be slight and only involve part of the lobule, e.g. ischaemia due to heart failure causes central necrosis around the hepatic vein, or it may be massive and cause widespread destruction of the organs.

Cirrhosis: Fibrosis, the end result of any liver damage which leads to necrosis and also occurs in the absence of obvious necrosis gives rise to the condition cirrhosis.

HEPATITIS

Inflammation of the liver which occurs due to viral infection is known as viral hepatitis. It is a multisystem disease involving the lymph nodes, spleen, gastro intestinal tract, bone marrow and pancreas in addition to the liver.

The virus may be hepatitis A, B, C, D, E or G virus. Hepatitis may also be caused by excessive alcohol consumption, drugs or toxins. In viral hepatitis, the virus may be transmitted through contaminated food or water or through infected blood used for transfusions or contaminated needles and syringes.

Hepatitis A: It is caused by a picornavirus and mainly transmitted by the fecal-oral route, often associated with ingestion of contaminated food. They do not produce chronic liver disease and get resolved within a few weeks. Hepatitis E also occurs through contaminated food and water. Antibodies are made by the immune system in the body that confer immunity against future infection. Adequate rest, remaining hydrated and abstinence to alcohol helps in speedy recovery.

Hepatitis B: It is caused by a hepadnavirus. Hepatitis B infection occurs through contact with blood and blood products or other body fluids, unsterilized needles/syringes etc. contact with a person who has been tested positive for hepatitis B Surface Antigen (HBSAG) can also cause infection. This can progress to chronic hepatitis, cirrhosis and liver cancer.

Hepatitis C: Type C hepatitis was previously referred to as "non-A, non-B hepatitis," because the causative virus had not been identified, but it was known to be neither hepatitis A nor hepatitis B. The hepatitis C virus (HCV) usually is spread by shared needles among drug abusers, blood transfusion, hemodialysis, and needle sticks and can also cross the placenta. Hepatitis C may lead to a chronic form of hepatitis culminating in cirrhosis.

THANK YOU

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