

Benha University  
Faculty of Science  
Department of Zoology



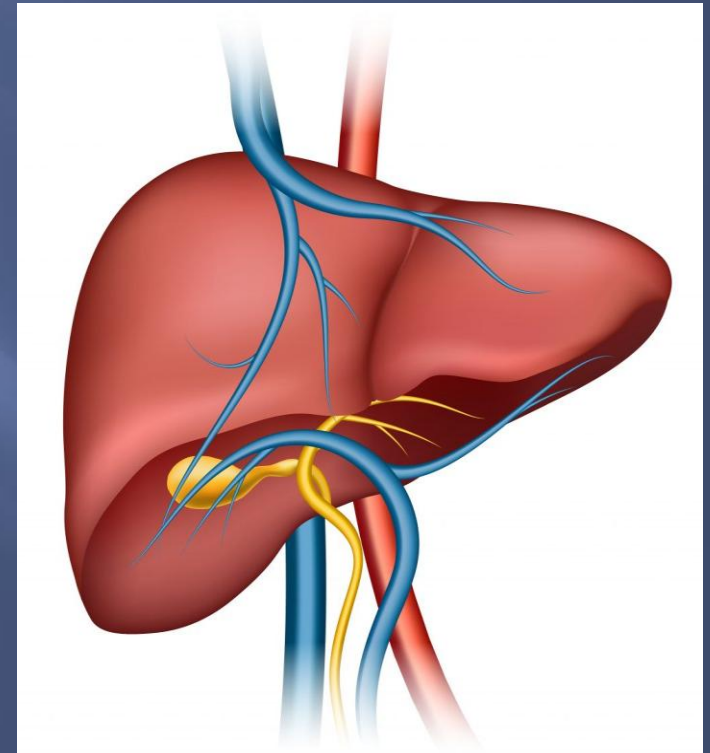
# HEALTHY NUTRITION Uni 152

## Lecture 6

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# THERAPEUTIC NUTRITION FOR LIVER PATIENTS

- Largest glandular organ in the body
- Accessory organ of the digestive system
- Weighs about 1.5 kg
- Reddish-brown color
- Divided into four lobes of unequal size
- **Located** in the right abdominal cavity under the diaphragm.



## **Liver functions**

- 1. Plays a major role in the metabolism of carbohydrates, proteins and fats.**
- 2. Produces blood plasma proteins, lipoproteins, cholesterol, bile and bile salts.**
- 3. Converts toxic substances and hormones into non-toxic compounds that are excreted from the body.**
- 4. Converts ammonia to urea and converts carotene to vitamin A and vitamin D to its active form.**
- 5. Stores blood.**
- 6. Stores some minerals such as iron, copper and fat-soluble vitamins.**

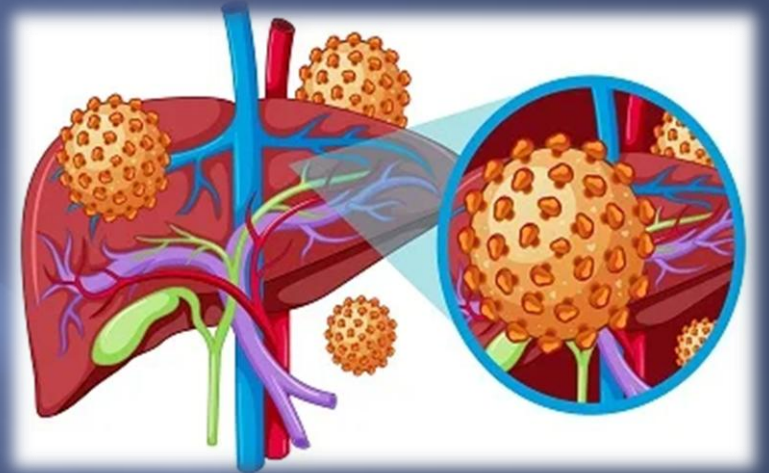
# ACUTE HEPATITIS

## Causes:

- Viral or bacterial infection
- Alcohol consumption
- Exposure to toxins

## Symptoms:

- Severe loss of appetite
- Nausea and upper abdominal pain
- Yellowing of skin and eyes (jaundice)
- Dark red urine



## Nutritional Care

- **High protein and carbohydrate diet**
- **Limited fat intake due to impaired bile production**
- **Strict avoidance of alcohol**
- **Energy: 35-45 kcal per kg of ideal body weight to prevent muscle and tissue breakdown for energy**
- **Protein: 0.8 - 1 g per kg of body weight to prevent muscle loss and support liver recovery**

# Checkpoint

**Which of the following is NOT a function of the liver?**

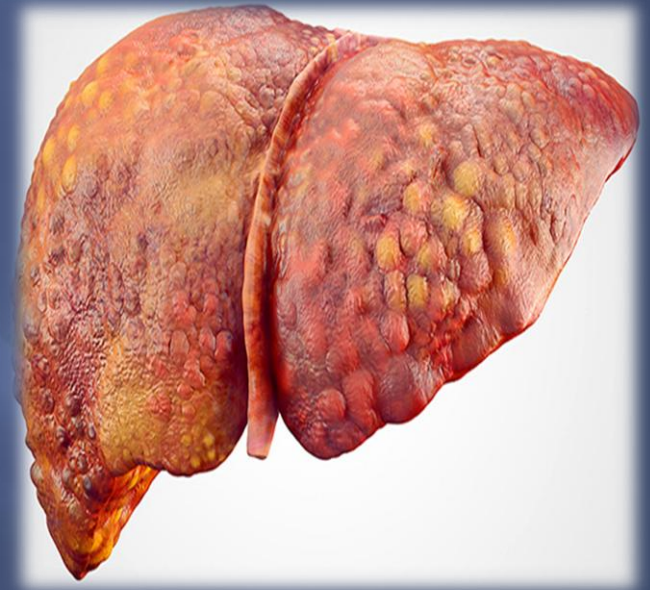
- A) Conversion of ammonia to urea
- B) Production of bile and bile salts
- C) Secretion of digestive enzymes into the stomach
- D) Storage of iron and fat-soluble vitamins

**..... should be given in limited amounts in patients with acute hepatitis.**

- A) Carbohydrates
- B) Proteins
- C) Fats
- D) Vitamins

# LIVER CIRRHOSIS

- **Definition:** Transformation of liver cells into fibrous tissue
- **Impact:** Impairs liver function and blood circulation
- **Causes:**
  - Acute hepatitis
  - Schistosomiasis
  - Liver cancer
  - Alcohol or toxins



## Nutritional Care

- **Energy:** High-energy diet to prevent protein breakdown for energy
- **Protein:** 0.8 - 1 g per kg of body weight  
In hepatic coma: Reduce but not below 50 g/day  
Branched-chain amino acids are preferred over aromatic amino acids
- **Vegetables:** Dietary fiber helps remove harmful nitrogenous waste
- **Fats:** should be limited as patients may have difficulty tolerating them
- **Vitamins & Minerals:** Additional doses of vitamins and minerals should be taken



# LIVER FAILURE

• **Definition:** The liver fails to perform its vital functions due to cirrhosis, hepatitis, or liver cancer. Leads to accumulation of nitrogenous waste, affecting the brain.

• **Symptoms:**

- Delirium, confusion, personality changes
- Hand tremors
- Loss of consciousness & coma

# Nutritional Care

## Goals:

- ✓ Prevent hypoglycemia
- ✓ Maintain fluid & electrolyte balance
- ✓ Support brain function

## Nutrient Guidelines:

**Protein:** Adjusted based on blood ammonia levels

**Carbohydrates:** Main energy source to prevent blood sugar drop

**Fats:** Limited only if steatorrhea is present

**Vitamins & Minerals:** Minerals and water-soluble vitamins (especially folic acid, vitamin B12, and thiamine) should be provided. Fat-soluble vitamins must be given in water-soluble form.

**Fluids:** Carefully monitored to prevent fluid overload & ascites

# Checkpoint

**Liver cirrhosis is characterized by.....**

- A) Accumulation of nitrogenous substances in the brain
- B) Transformation of liver cells into fibrous tissue
- C) Increased bile production
- D) Rapid glucose metabolism

**In liver failure, dietary fat intake is typically.....**

- A) Completely restricted
- B) Determined based on tolerance and the presence of steatorrhea
- C) Increased to compensate for protein loss
- D) Set at a fixed percentage of total calories



# مع تمنياتى لكم بالنجاح والتوفيق

لمزيد من المعلومات

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