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<https://www.linkedin.com/in/purnellmedicalillustration>

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Hepatocellular Carcinoma (HCC) Liver Cancer



What does the liver do?

The liver has four (4) lobes. It has many functions:

- (i) stores glycogen, vitamins and minerals,
- (ii) produces and excretes bile,
- (iii) metabolizes carbohydrates, fats and proteins,
- (iv) excretes bilirubin, cholesterol, hormones and drugs,
- (v) purifies and detoxifies the blood
- (vi) activates enzymes, and
- (vii) synthesizes plasma proteins.

What is hepatocellular carcinoma?

- ✓ In children, it is called hepatoblastoma
- ✓ It is a primary liver cancer, a common tumour world-wide
- ✓ Third leading cancer death worldwide, the second leading cause of cancer death in men.

Main types of primary liver cancer

- ✓ Hepatocellular carcinoma 75-85%
- ✓ Intrahepatic cholangiocarcinoma (iCC) 10-15%
- ✓ Combined HCC-cholangiocarcinoma (cHCC-CC) 1-5%

Causes

- ✓ Hepatitis B and C (chronic hepatitis)
- ✓ Alcoholic liver disease
- ✓ Metabolic Associated Steatotic Hepatitis (MASH)
- ✓ Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD)

Signs and Symptoms

May not experience any signs or symptoms in the early stages.

- ✓ Pain in the RUQ
- ✓ Lump on right side below ribs
- ✓ Nausea, Vomiting
- ✓ Loss of appetite
- ✓ Feeling full after a small meal
- ✓ Unexplained weight loss
- ✓ Ascites (abdominal swelling)
- ✓ Swelling in the legs and feet
- ✓ Fatigue, weakness
- ✓ Itching
- ✓ Easy bruising or bleeding
- ✓ Jaundice of eyes and skin
- ✓ Confusion, personality changes

Prevention

- ✓ Vaccination for Hepatitis B
- ✓ Prevent spread of Hepatitis C
- ✓ Alcohol consumption less than 2 drinks per week
- ✓ Exercise or physical activity
- ✓ No smoking
- ✓ Nutritional (well-balanced) diet

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Treatment

Discuss options with your physician

- ✓ Surveillance
- ✓ Surgery
- ✓ Resection
- ✓ Transplantation
- ✓ Chemoembolization
- ✓ Radioembolization
- ✓ Chemotherapy
- ✓ Targeted therapy
- ✓ Immunotherapy
- ✓ Radiation
- ✓ Ablation
- ✓ Histotripsy

Clinical trials

- ✓ CAPTUR website (Canadian)
 - <https://clinicaltrials.gov/ct2/show/NCT03297606>
- ✓ Website for clinical trials world wide
 - <https://www.clinicaltrials.gov>

Staging and Prognosis

- ✓ 5 stages
- ✓ Staging based on the Barcelona Clinic Liver Cancer (BCLC) system
- ✓ Prognosis is dependent on stage, health of individual and response of cancer to treatment: no specific Canadian statistics available

Risk Factors

- ✓ Hepatitis B and C
- ✓ Chronic inflammation in chronic hepatitis C
- ✓ NAFLD in the absence of history of alcohol
- ✓ Alcohol ingestion (30% of all cases)
- ✓ Aflatoxins
- ✓ Iron overload
- ✓ Glycogen storage disease
- ✓ Wilson disease
- ✓ Alpha one antitrypsin (AAT) disease
- ✓ Hypercitrullinemia
- ✓ Alagille syndrome
- ✓ Acute intermittent porphyrias

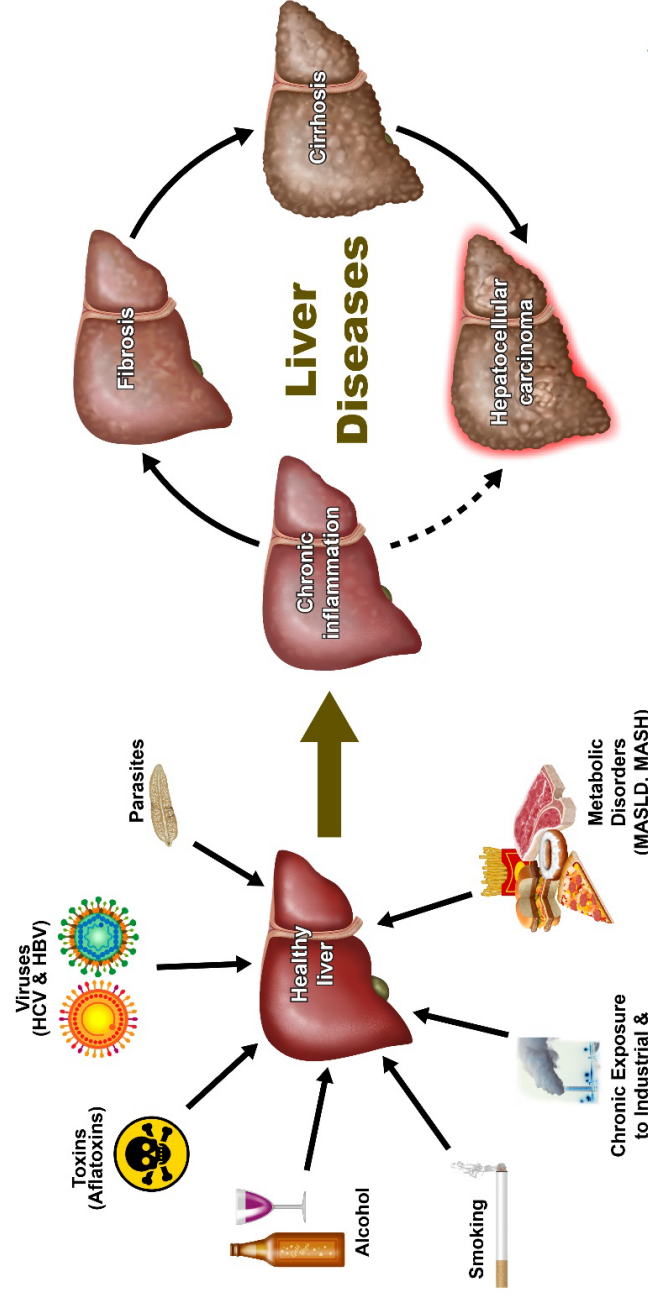
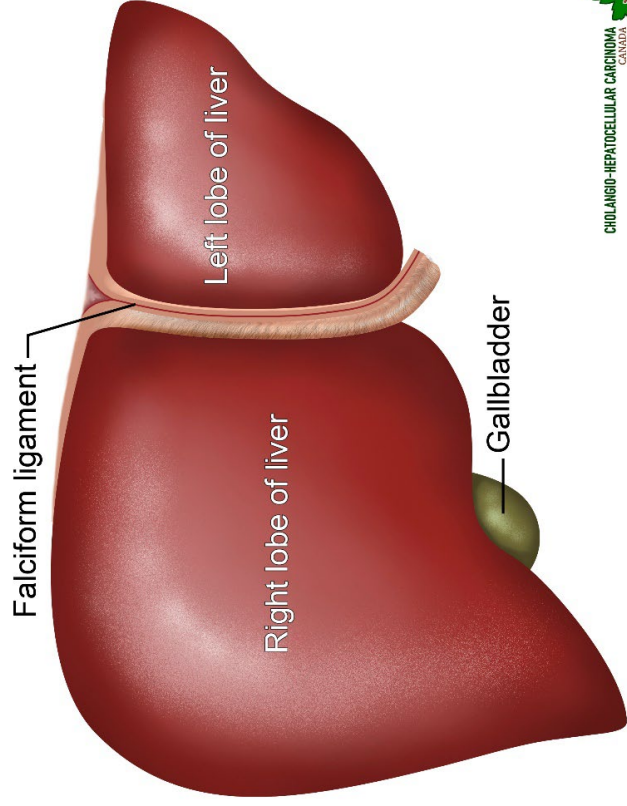
Factors Linked with HCC

- ✓ Obesity
- ✓ Diabetes
- ✓ Smoking

Diagnosis

- ✓ Ultrasound
- ✓ CT (computed tomography) scan
- ✓ MRI (magnetic resonance imaging)
- ✓ Biomarkers:
 - AFP (alpha feta-protein)
 - AFP-L3
 - DCP
 - Golgi protein 73 (GP73)
 - Osteopontin (OPN)
 - CA19-9

The Liver



NOTE: NAFLD and NASH are now called MASLD and MASH