

LIVER TOXICITY



*Look after the liver
you have - you are the
only one who can*

What is liver toxicity? ^{1, 2}

Liver toxicity is the harmful effect that occurs when a toxic (poisonous) chemical is swallowed, inhaled, injected or absorbed. Toxic chemicals include therapeutic medications, traditional herbs, gas fumes, nutraceuticals, supplements, or drugs. Liver toxicity causes gradual or sudden liver damage.¹

It is estimated that liver toxicity accounts for between 6% and 70% of reported cases of adverse and fatal drug reactions globally ². However, this figure is dose-dependent on the offending drug and the cause of liver damage.

What exactly is your liver? ³

- The second largest organ in your body (after the skin)
- A meaty structure that sits mainly behind the rib cage
- Weighs approximately 1.5kg
- Reddish brown in colour and has a rubbery texture
- Your body's "purification factory"
- Normally you can't feel it because it's protected by the rib cage

The liver is the only organ that has a remarkable capacity to repair and regenerate itself back to its original size and restore full liver function, even after severe damage caused by disease or injury.

*Liver damage can occur
before symptoms appear*

Why your liver is so important ^{3, 4}

As your body's "purification factory", the liver:

- Filters-out toxins
- Regulates and cleanses a litre and a half of blood per minute of virtually every foreign substance entering your system
- Makes new proteins needed to strengthen the immune system
- Helps the body to resist and fight infection
- Processes many of the drugs in your system

How drugs cause liver damage ¹

The liver recognises any foreign chemical in the body as toxic. As a result, the liver cells, called hepatocytes, start working strenuously to remove the perceived threat from your system. When the liver becomes overwhelmingly strained and overworked, it can throw your entire system off balance and can severely compromise your overall health.¹



*The liver is your body's
purification factory*

Signs and symptoms ^{4, 5}

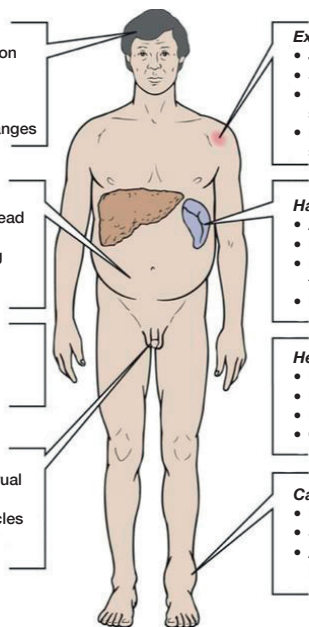
Early symptoms include generalised itching, loss of appetite, fatigue, feeling sick (nausea), diarrhoea, and feeling unwell. Early symptoms are usually overlooked, as they can be very similar to other common ailments (hangover after excessive consumption of alcohol, or biliousness and indigestion after consuming junk food).

- Neurological**
- Brain dysfunction
 - Intellectual impairment
 - Confusion
 - Personality changes

- Digestive**
- Breath of the dead
 - Vomiting blood
 - Rectal bleeding
 - Wasting and malnutrition

- Lymphatic**
- Swollen glands
 - Lymph node enlargement

- Reproductive**
- Missing menstrual periods
 - Shrunken testicles
 - Male breasts
 - Impotence



- External covering**
- Jaundice
 - Spider veins
 - Reddening of the skin and palms
 - Red or purplish spots

- Haematologic**
- Anaemia
 - Low blood count
 - Bleeding and bruising tendencies
 - Enlarged spleen

- Hepatic**
- Liver enlargement
 - Fatty liver
 - Fibrosis
 - Cirrhosis

- Cardiovascular**
- Fluid retention
 - Swollen extremities
 - Abdominal fluid build up

Diagnosis and treatment

Diagnosis includes a liver function test or blood tests to see if certain liver enzymes that circulate in the bloodstream have increased. It is critically important that you and your doctor monitor your liver enzymes regularly if you are starting or you are already taking chronic medication.

Why Liv.52® liver support therapy?



When taking chronic medications, your liver requires support to function optimally. Liv.52® is a poly-herbal liver tonic specially formulated for the prevention, treatment and management of liver disorders. Over 276 clinical research papers support its tried and tested efficacy and multiple therapeutic benefits.

Give your liver the support it needs to function optimally

Are you at risk? ^{4, 5}

Risk factors may include:

- Certain medications
- Overdosing on medication, exceeding prescribed treatment dosage, or ignoring direction of use (pain killers such as paracetamol, ibuprofen, codeine)
- Use or experimentation with injectable drugs or illicit drugs
- Pre-existing medical conditions e.g. liver disease, HIV/AIDS, malnutrition, fasting or dieting
- Past blood transfusions
- Sexual activity
- Direct contact with infected persons (Hepatitis, TB)
- Smoking
- Alcohol consumption
- Occupational exposure to blood products (through accidental needle prick)
- Exposure to toxic chemicals (polluted industrial areas, poor sanitation, sewerage contamination, infection and disease outbreaks)
- Family history of liver disease
- Working in or travelling to places of high endemicity without immunization (malaria)

Liv.52® proven therapeutic benefits

- **Liver-protective & regenerative** against the harmful side-effects of medications, drugs & chemicals
- **Herbal antioxidants** that support detox-cleansing functions, improve appetite, & the digestive processes
- **Filters**, inactivates and removes toxic metabolites (by-products) of medications, alcohol & drugs

Liv.52® is indicated for

- **Liver disease** e.g. jaundice, cirrhosis, hepatitis, steatosis
- **Drug-induced hepatotoxicity & liver damage** e.g. alcohol, nicotine, medications
- **Adjuvant to hepatotoxic drugs** e.g. Antiretroviral (ARV's), Tuberculosis (TB), Hemodialysis, Chemotherapy, radiation therapy, cholesterol-lowering statins
- **Anorexia (loss of appetite)** e.g. pregnancy, children, malnutrition, medications

Please note: This is an informational leaflet only and should not be used for diagnosis. For more information on liver disease, consult your healthcare professional.

References: 1. Ki Tae Suk, Dong Joon Kim. Drug-induced liver injury: present and future. *Clinical and Molecular Hepatology* 2012; 18(3) 249-257. 2. The global burden of disease, 2004 update. World Health Organization. 3. Steven K Herrine. *Liver Structure and Function*. Merck manuals. Last full review/revision May 2016. 4. Christian Nordqvist (2016). What is Liver Diseases? *Medical News Today*. 5. Nilesh Mehta (2016). *Drug-Induced Hepatotoxicity*. Medscape



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