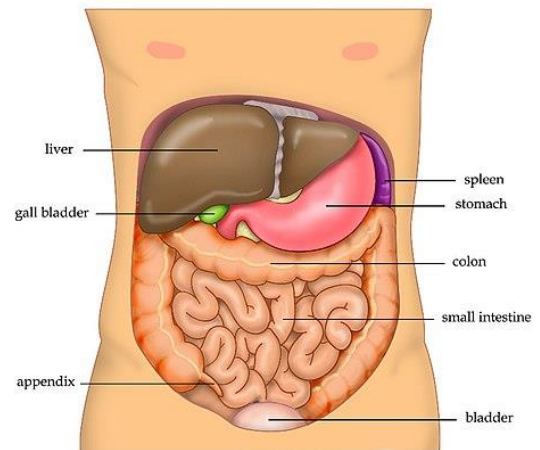


Liver Basics

by Lady Carla Davis, MPH
Specializing in Nutrition

The liver is a large-lobed, major organ found only in vertebrates. In the human body, it is in the upper right quadrant of the abdomen, to the right of the stomach, and below the diaphragm. The liver divides into two lobes above and four lobes below.

An adult's liver is the heaviest internal organ, weighing approximately 3.3 lbs. (1.5 kg). With a width of about 6 inches (15 cm), it is also the largest gland in the human body. The liver connects to two large blood vessels: the hepatic artery, which carries oxygen-rich blood from the aorta via the celiac artery and the portal vein, which carries digested nutrient-rich blood from the gastrointestinal tract, spleen, and pancreas.



The liver's primary function is to process digested food into nutrients for the body. It also secretes bile for the digestion of fats, synthesizes plasma proteins, stores glycogen, some minerals and vitamins, and neutralizes harmful substances in the blood. The liver is the only organ capable of regenerating itself.

Some of the biological functions the liver performs include:

- Synthesis of protein and biochemicals necessary for digestion and growth
- Storage of vitamins and some minerals
- Regulation glycogen storage
- Production of hormones
- Detoxification of organisms
- Decomposition of red blood cells
- Chemical reactions that play a vital role in carbohydrate, protein, amino acid, and lipid metabolism

Metabolism converts food energy into energy for cellular processes such as building blocks of proteins, lipids, nucleic acids, some carbohydrates, and metabolic waste elimination.

As an accessory digestive organ, the liver produces bile, an alkaline fluid containing cholesterol and bile acids that help break down fat. Bile passes into the gallbladder, a small pouch that sits just under the liver. From there, bile moves to the small intestine to help complete digestion.

Gall stones and gall bladder problems are symptoms of a severe vitamin E and omega-3 essential fatty acid (EFA) deficiency and the consumption of damaged fats and oils.

The liver's highly specialized **hepatocytes** regulate a wide variety of high-volume biochemical reactions, including the synthesis and breakdown of small and complex molecules, for at least 500 vital functions in combination with other systems and organs. The liver accounts for about 20% of resting total body oxygen consumption.

Bilirubin is a red-orange compound. In the normal catabolic pathway, it breaks down heme. This necessary process clears waste products produced from the destruction of aged or abnormal red blood cells. Heme removed from the hemoglobin molecule is excreted through bile and urine. **Stercobilin**, a breakdown by-product, creates the brown color of feces. **Urobilin** is another breakdown by-product that produces the straw-yellow color in urine.

The yellow color of healing bruises and skin in jaundice is from a high amount of bilirubin. **Jaundice** indicates abnormal **heme metabolism**, **liver dysfunction**, or **biliary-tract** obstruction. While it is rare in adults, it is common in newborn babies. I believe a vitamin E deficiency created from iron in prenatal supplements causes this type of jaundice because iron interferes with vitamin E absorption. This type of jaundice quickly clears up by applying natural vitamin E oil (from a vitamin capsule) to the mother's nipple before nursing the baby. Also, it is best to avoid supplements with synthetic iron ingredients.

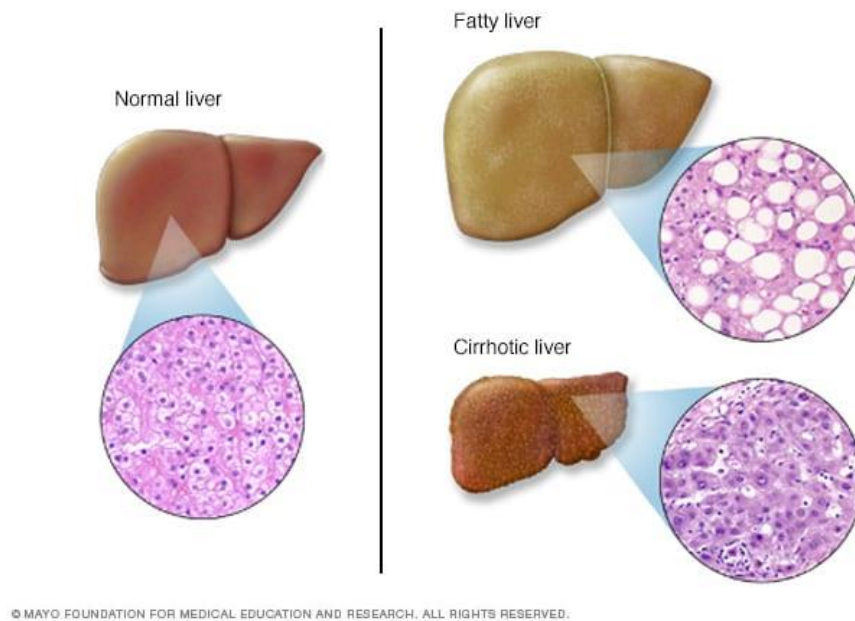
According to the Mayo Clinic and Johns Hopkins, signs of liver disease include:

- Yellowing of the eyes and skin (jaundice)
- Abdominal pain and swelling
- Fluid builds up in the belly (ascites)
- Swelling (edema) in the legs, ankles, and feet (edema and ascites may also result from the inability of the liver to make enough of specific blood proteins, such as albumin)
- Kidney failure
- Gallstones
- Itchy skin
- Dark urine color
- Pale stool color
- Chronic fatigue and weakness
- Nausea or vomiting
- Vomiting blood from bleeding blood vessels in the esophagus
- Loss of appetite
- Tendency to bruise easily
- Muscle and weight loss
- Type-two diabetes/insulin resistance (with cirrhosis or fatty liver, the body cannot use insulin properly, the pancreas cannot keep up with the need for insulin, blood sugar/glucose builds up and causes type-2 diabetes)
- Redness in the palms of the hands
- For women, cessation of periods that are unrelated to post-menopause.
- For men, loss of sex drive, breast enlargement (gynecomastia), or testicular atrophy
- Confusion, drowsiness, and slurred speech (hepatic encephalopathy)

Liver diseases include:

Non-alcoholic fatty liver disease (NAFLD), hepatitis, liver cancer, and cirrhosis.

NAFLD is the most common liver disorder worldwide and is present in approximately 25%



of the world's population.

The principal causes of cirrhosis are:

- Hepatitis B, C, and D
- Alcohol
- Nonalcoholic fatty-liver disease (from consumption of damaged fats/oils and toxic chemicals)
- Medication including methotrexate or isoniazid
- Drugs

In cirrhosis, scar tissue replaces healthy liver tissue, which prevents the liver from functioning normally.

Other causes of cirrhosis may include:

- Autoimmune disorders, where the body's infection-fighting/immune system attacks healthy tissue
- Blocked or damaged tubes (bile ducts) from the liver to the intestine
- Exposure to toxic chemicals
- Repeated episodes of heart failure with blood buildup in the liver
- Parasite infections
- High copper (in the diet or from exposure to synthetic estrogens)
- Infections (e.g., syphilis or brucellosis)

Inherited birth defects include:

- Alpha1-antitrypsin deficiency
- High blood galactose levels
- Glycogen storage diseases
- Cystic fibrosis
- Porphyria (a disorder in which certain chemicals build up in the blood)

- A hereditary buildup of too much copper (Wilson disease) or iron (hemochromatosis) in the body

Of all the body's organs, the liver is the most abused. Vaping, alcohol, tobacco, sugar, medications, and other drugs damage the liver. Also harmful to the liver is the consumption of trans-fats (hydrogenated oil) and highly processed omega-6 vegetable oils such as canola, corn, cottonseed, peanut, soy, safflower, sunflower, and margarine. These damaged fats/oils cause fatty-liver damage (cirrhosis) and type-two diabetes. GMOs in food also damage the liver. Tons of toxic chemicals sprayed on our food; in our environment (e.g., pesticides, herbicides such as glyphosate, etc.); and dumped into our drinking water (e.g., fluoride, lead, etc.) add insult to injury.

Recommended Reading and Sites

Toxic Legacy by Dr. Stephanie Seneff, PhD

What's Making Our Children Sick by Dr. Michelle Perro, MD, DHOM and Vincanne Adams, PhD

Our Stolen Future by Theo Colborn, Dianne Dumanoski, John Peterson Myers

Growing Life, by Dr. André Leu, D.Sc., BA Com., Grad Dip Ed.

Myths of Safe Pesticides by Dr. André Leu, D.Sc., BA Com., Grad Dip Ed.

Poisoning Our Children by Dr. André Leu, D.Sc., BA Com., Grad Dip Ed.

<https://www.organicconsumers.org>

<https://childrenshealthdefense.org>

<https://anh-usa.org/supporting-a-healthy-pregnancy-health-from-the-ground-up-2/>

<https://www.momsacrossamerica.com>

<https://www.responsibletechnology.org>

<https://www.youtube.com/c/GMOFreeUSA>

https://gmofreeusa.salsalabs.org/forkthesystem001_0d

Check Your Liver

Examination of your skin, tongue, eyes, and nails are four easy ways to check the health of your liver.

SKIN

Observe if your skin is sallow, yellowish, or oily. Has it lost its elasticity? Is it full of wrinkles? Do you have acne, pimples, moles, broken capillaries, rosacea, or skin cancers? Healthy skin is clear, smooth, neither oily nor dry, and free of wrinkles or sagging. It should also be a pinkish-flesh color with a nice texture and free of age spots or moles.

TONGUE

Check if your tongue is swollen or has cracks, patches, or scallops. Is it purple, gray, or coated? A healthy adult tongue is pinkish like a child's tongue, neither swollen nor enlarged, and free of cracks, scallops, or coatings.

EYES

Yellow in the whites (sclera) of your eyes or crevices/fissures in the liver area of the iris indicate liver disease. The sclera should be white and clear, and the iris liver area should be free of fissures or dark spots.

NAILS

Ridges, brittleness, loss of moons, purple or white color of the skin underneath, or abnormal growth of your nails could indicate anemia, mineral or vitamin deficiencies, liver or other health-related problems. Healthy nails are free of the above defects, flexible, and nicely shaped.

If you have any of the above symptoms, learn the liver basics. Nourish your liver with the Liver-Loving Foods and Herbs, sunshine vitamin D, and pure, structured spring water.

Anger is an emotion from a damaged liver. Angry people need a liver detox and a great deal of nourishment. A healthy liver produces a happy, healthy person. So, if you want your loved ones to be happy and healthy, feed them liver-loving foods and herbs shown below:

Liver-loving Nutrient-Rich Foods and Herbs

Organic Liver

Silymarin/Milk Thistle

Beet Root and Leaves

B Complex vitamins and Natural Vitamin A

Dandelion and other Bitter Greens

Artichoke

Lemon (Fresh Lemon Water)

Berries and other red, purple, or blue pigmented foods, high in Anthocyanins

Sulfur foods such as Asparagus, Broccoli, Brussel Sprouts, Garlic, Onions, Scallions,

Spring Onions, Radishes, Sour Kraut

Turmeric (Curcumin)

Sweet Potatoes, Pumpkin, and other orange or yellow foods

Essential Oils for Liver Health

Geranium

Frankincense

Helichrysum

Zendocrine Blend (tangerine, rosemary, geranium, juniper berry, coriander)

These nutrient-rich foods, herbs, and essential oils help cleanse, repair, nourish, and regenerate the liver. A healthy liver is also vital for cancer prevention and survival and maintaining a healthy immune system. Be kind and respectful to your liver! It is essential for over 500 body functions. You only have one liver that needs to last a whole lifetime.

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