

**Review: Dr Sandra Cabot, *The Liver Cleansing Diet: Love Your Liver and Live Longer*, Women's Health Advisory Service, Camden, NSW, 1996 (2001 edn.)**

**Pages:** 187

### **Liver Logic**

This is a rewarding deep dive into the body's largest internal organ. It combines basic physiology, disease etiology, and nutrition to provide practical steps to a healthier liver.

Most would think the liver to be a mundane and boring organ, but upon closer inspection it really is the "general of the army" and if you are looking to improve your health then its health is paramount.

The second half of the book contains various recipes, however, being armed with the knowledge in the first part, and using common sense, it would not be necessary to adhere religiously to this to realise benefits.

“Till a dart strike through his **liver**; as a bird hasteth to the snare, and knoweth not that it is for his life.”

**Proverbs 7.23, Authorized Version**

\*\*\*

#### **I) Introduction to the Liver-Cleansing Diet (pp. 7-12)**

The liver is the supreme organ of the metabolism.

Liver patients usually have cirrhosis, chronic hepatitis, liver cancer, fatty livers, or organ failure.

The liver weighs up to 1.5kg and is the largest organ in the body.

Iridology and acupuncture pulse techniques have been used to monitor its function.

#### **II) Who Can Benefit From the LCD? (pp. 13-26)**

A BMI can be represented on a *nomogram*.

The LCD shifts from liver-toxic to liver-cleansing foods.

Liver disease is caused by alcohol excess, viral hepatitis, adverse drug reactions, autoimmune diseases like lupus, infections like malaria and tuberculosis, pesticides, insecticides, and organic solvents.

Shoe manufacturers, pest controllers, rubber workers, cabinet makers, hair dressers, dry cleaners, and painters frequently have liver disease.

The liver is a common starting site for cancers, not surprising as it bears the brunt of toxic foods and chemicals. Polycystic liver disease is a genetic defect which causes massive cyst growth.

Cirrhosis is severe liver scarring.

Fatty liver is caused by cells choking on globules of fat and disables fat metabolism causing patient obesity.

Blood tests can be used to detect bilirubin, bile acid, and liver enzyme serum levels. Enzymes will be high if liver cells are damaged or ruptured. These include alkaline phosphatase (ALK.PHOS), gamma glutamyl transpeptidase (gamma-GT), glutamic oxaloacetic transaminase (SGOT), and glutamic pyruvic transaminase (SGPT).

SGOT and SGPT are raised slightly in early disease stages.

Excessive alcohol raises gamma-GT.

Fat xanthomas can accumulate in the heart, kidneys, pancreas, lymph nodes and arteries (atherosclerosis).

Tests are done for albumin, prothrombin and other globulin proteins.

Chronic liver disease leads to jaundice and mental confusion.

The liver is the strategic organ.

Chemical imbalance in the bile causes gallstones.

The LCD can work in just four to twelve weeks.

Liver sinusoids contain the versatile Kupffer cells.

Hepatocytes work to break down all food proteins and other foods before depositing them into blood circulation.

The liver effectively protects the immune system from overload.

Coffee and alcohol should be avoided with headaches.

HRT causes the liver to make more proteins including increased clotting factors.

Liver function declines after 55, decreasing in size and blood flow which causes the cell size to increase as compensation.

### **III) What Are the Symptoms of an Unhappy Liver? (pp. 27-34)**

Minor problems manifest as a coated tongue and dark circles under the eyes.

Moderate dysfunction is indicated by a fasting cholesterol above 5.5mmol/L and triglycerides >2 mmol/L. Patients have foggy brain, are bloated, and bad breath.

Artificial flavours build up in the liver and often escape into the blood where they are integrated into body tissues. The body then produces antibodies against these invaders which is the genesis of autoimmune disease.

High blood pressure and fluid retention indicates liver damage as the liver breaks down aldosterone, which in excess causes Na or K retention. Blood fats are also higher making it sticky.

“Most of humanity dig their grave with their teeth.”

Hypoglycaemia causes wild blood sugar level fluctuations.

The liver pumps out bad fats through bile into the gallbladder then small intestine as stones. Gallbladder disease causes fatty food intolerance,

nausea, vomiting, and upper-abdominal pains which may radiate into the back and right shoulder.

A toxic liver creates excessive heat and alcohol intolerance.

The Chinese call the liver the “general of the army” and also that the heart stores the spirit.

A stagnant liver causes “gan ho”-type behaviour which is the source of the English “gung-ho”.

#### **IV) Liver Physiology and Function (pp. 35-44)**

Blood passes through the liver at 1.4L per minute.

It creates so much heat due to its high metabolic activity (which is why the body heats up after a meal).

The liver has two lobes separated by the Falciform ligament. The right lobe is six times greater than the left. It is the only organ with a dual blood supply; the hepatic artery brings freshly oxygenated blood from the heart and the portal vein comes from the stomach and intestine. Both veins enter via the *porta hepatis* before branching off further and further like a tree, ending up in tiny sinusoid spaces.

Sinusoids are lined with fat-storing cells, pit cells, and the amazing Kupffer cells (these look like an octopus). Kupffers can engulf dead cells, cancerous cells, bacteria, parasites, and artificial chemicals. After ingestion the contents are chewed up by enzymes.

Sinusoids empty into central and then hepatic veins back to the heart. This means that liver health is critical to blood cleanliness.

The liver produces yellow-green bile which deposit into tiny bile canaliculi. The gallbladder is a storage sac connected to the hepatic duct via the cystic duct. Bile contains water, salts, cholesterol, pigments, lecithin, lipids, and electrolytes. The salts and lecithin combine to form micelles. Too much bile cholesterol may precipitate out into stones.

Bile acids are cholic and chenodeoxycholic and combine with taurine and glycine. A bile salt is a bile acid with a Na or K ion replacing a H ion.

Damaged bile ducts or liver cells causes bile buildup which manifests as yellow skin and eyes, i.e. jaundice.

The liver:

-Regulates carbohydrate metabolism, turning glucose into glycogen for storage, and if carbohydrates are low it can manufacture them from fat or protein.

-Stores glycogen, vitamin A, D, B complexes, Fe, and Cu.

-Regulates protein mechanism by creating albumin, blood-clotting factors like prothrombin and fibrinogen, and sex hormone binding globulin (SHBG). It also makes HDL to transport cholesterol away from blood vessel walls.

-Detoxifies toxins either via Kupffer cells or chemistry, and metabolises  $\text{NH}_3$  into urea, which is created during protein digestion. The most important enzymatic system is cytochrome P-450 which is highly dependent upon vitamin C and taurine.

Severe liver disease manifests as stomach or bowel bleeding, deep red palms, or hand tremors. It can be caused by alcoholism, cancer, analgesic abuse, paracetamol, severe allergies, or hepatitis B or C infection.

Prior to 1986, blood products were not heat-treated to eradicate viruses.

Hep C can take ten years to manifest symptoms.

A liver specialist is a hepatologist.

Artificial livers of up to 500g can be grown from offcuts of only 30-60g. While small, the body can survive on them. A mechanical thick 20cm diameter disk of culture liver cells is another alternative which receives blood from a groin tube. These are meant for use in conjunction with the diseased liver to give it time to recuperate.

**V) The Twelve VITAL Principles to Improve Your Liver Function (pp. 45-65)**

1. Listen to your body (stop eating if the body says you are full).

2. Drink 8-12 glasses of filtered water a day (Alzheimer's incidence is higher in low-water drinkers).
3. Avoid large amounts of sugar which simply get converted into cholesterol and triglyceride fats.
4. Don't measure calories.
5. Avoid allergens. As people age HCl stomach production reduces.
6. Mind good intestinal bacteria.
7. Don't eat when stressed or anxious as blood flow moves away from the intestines at such times.
8. Ensure food has been organically grown.
9. Obtain protein from diverse sources.
10. Choose breads and spreads wisely.
11. Avoid constipation.
12. Avoid excess saturated fats. EFA deficiency causes flaky skin, eczema, hair loss, joint pains, memory loss and circulatory problems.

Linoleic (LA) and Gamma-Linoleic Acid (GLA) are unsaturated omega 6 EFAs found in flaxseed, hemp, sunflower, sesames, pumpkin seeds, walnuts, and evening primrose oil.

Another omega 6 EFA is Dihomogamma-Linoleic Acid (DGLA) which is found in human breast milk.

Arachidonic Acid (AA) is a nonessential fatty acid and is found in coconut and palm oils.

$\alpha$ -Linoleic Acid (LNA), Eicosapentaenoic Acid (EPA), and Docosahexaenoic Acid (DHA) are omega 3 EFAs. These are found in sardines, salmon, mackerel, almonds, and olive oil. They must be eaten fresh to be beneficial.

EFA's are very vulnerable to light, air and heat. The O<sub>2</sub> in air causes rapid oxidation into dangerous polymers and rancidity. Heat straightens out EFA molecules into a “trans-shape”.

Hydrogenation turns natural oils into unhealthy TFAs (“plastic fats”) which, because they are molecularly straight, can remain solid at room temperature.

100°C is the cooking temperature limit above which oxidation occurs. Addition of garlic and onions minimises free radical damage and ten minutes’ cooking is ample time when using oils.

Cholesterol cannot be broken down once made; only the liver can do this via bile excretion. Without dietary fibre, over 90% of cholesterol will be reabsorbed in the bowel and recycled back to the liver.

A ratio of total cholesterol to HDL should be under 3.5 (the lower the better).

B<sub>3</sub> in the form of niacin or nicotinic acid reduce death risk for heart attack survivors.

## **VI) Natural Therapies for Your Liver (pp. 66-76)**

Psyllium is derived from seed husks and is the best cholesterol-lowering fibre available.

Dandelion (*Taraxacum officinale*) and its root has been used for centuries as liver and biliary disease.

St Mary’s/Milk Thistle (*Silybum marianum*) is both liver-protective and liver-regenerative. It improves cytochrome P450 enzyme functions.

Slippery Elm Bark is a liver tonic.

High prolactin levels switch off the ovarian cycle. Pituitary gland tumours must first be ruled out if prolactin is high.

## **VII) The Philosophy of the Liver-Cleansing Diet (pp. 77-80)**

## **VIII) The Eight-Week Eating Plan (pp. 81-107)**

**IX) Recipes for the Liver-Cleansing Diet (pp. 108-187)**

Mushrooms are a good source of selenium.