LIVER

Function of the Liver

Detoxification of potentially toxic chemicals from inside and outside the body including drugs, alcohol, toxins from intestinal microbes. This is accomplished with antioxidant nutrients and enzymes such as glutathione. Liver detoxifies these by a complex series of chemical reactions.

The role of these various enzyme activities in the liver is to convert fat soluble toxins into water soluble substances that can be excreted in the urine or the bile depending on the particular characteristics of the end product.

- **Storage of sugar as 'glycogen' and regulation of blood sugar levels.**
- **Production and storage of proteins as well as the regulation of many substances involved in protein metabolism.**
- **Production of bile which aids in the digestion of fats.**
- **Production of blood proteins, clotting factors and substances important to the production of red blood cells (erythrocytes)**
- **Regulation of a number of hormones.**
- **Neutralization of 'free-radicals' by antioxidants. Free radicals are highly reactive oxygen molecules that can damage tissues.**
- **Storage of vitamins, mainly iron, copper, B12, vitamins A, D, E and K**
- **It plays an important role in digestion (breaking nutrients down)**
- **Involved with assimilation (building up body tissues).**
- **Red blood cells, which are responsible for carrying oxygen around the body, are recycled**

Many factors determine whether the liver performs its critical functions well. Too much pressure on the liver from overeating rich or poor-quality food, environmental stresses, overwork or emotional stress can cause liver overload, leading to a decreased ability to clear toxins and hormones and manufacture bile. Foods which contain high levels of antioxidants help to protect the liver and keep it healthy while other foods cleanse the liver.

Symptoms of dysfunctional liver:

- **Abnormal metabolism of fats (lipids) which can lead to**
- **High levels of fats in the blood stream (high LDL, low HDL cholesterol and elevated triglycerides.**
- **Arteries blocked with fat which can lead to high blood pressure, heart attack, stroke.**
- **Fatty liver and build up of fat in other body organs.**
- **Obesity, inability to lose weight.**
- **Sluggish metabolism.**

External signs may be:

- **coated tongue,**
- **bad breath,**
- **red palms and soles,**
- **flushed facial appearance or blood vessels (capillaries/veins);**
- **acne, rosacea;**
- **yellow conjunctiva on the eyes;**
- **red swollen itchy eyes;**
- **dark circles under eyes;**
- **brownish spots and blemishes on the skin;**
- **rashes, itchy skin**

Digestive Problems:

- **gallstones, gallbladder disease**
- **intolerance to fatty foods**
- **intolerance to alcohol**
- **indigestion**
- **reflux**
- **nausea**
- **abdominal bloating**
- **constipation**
- **irritable bowel syndrome**
- **hemorrhoids**

Nervous System:

- **Depression**
- **Mood changes such as anger, irritability**
- **Poor concentration, "foggy brain"**
- **Overheating**
- **Recurrent headaches associated with nausea**

Immune Dysfunction Problems:

- **Allergies, sinus problems, hayfever, asthma, dermatitis, hives**
- **Skin rashes, inflammations**
- **Chemical, food sensitivities**
- **Auto immune diseases**
- **Chronic Fatigue Syndrome, Fibromyalgia**
- **Recurrent viral, bacterial, parasitic infections**

Blood Sugar Problems:

- **Craving for sugar**
- **Hypoglycemia**
- **Mature onset diabetes**

Hormonal imbalance Problems

- **Intolerance to hormone replacement therapy (side effects)**
- **Menopausal symptoms such as hot flushes are more severe**
- **PMS may be more severe**

Best Foods for the Liver:

- **black cherry juice cleanses liver, laxative**
- **cranberries cleanses the liver, stimulates the liver**
- **shrimp works on kidney and liver meridian if tired. Eat every day for one week and do not eat in the summer because shrimp makes you warmer. Good after childbirth.**
- **the liver likes whole foods: complex carbos, unpasteurized honey, maple syrup, whole grains. Refined sugars, processed carbohydrates deplete B vitamins and chromium storage sites, causing endocrine impairment and subsequent blood sugar disorders. More energy is lost than is gained by eating them, leading to fatigue and uncontrollable cravings for more sugar, coffee, chocolate. Obviously diet plays a dominant role.**
- **Remove ALL alcohol, sugar, preservatives, processed foods,etc.**

- **Garlic, grapefruit, beet root and leaf, carrots, green tea, leafy greens, avocados, artichoke leaf, radishes, watercress, apples, cold pressed organic olive oil/hemp/flax oil, whole grains, cruciferous veggies, lemons & limes, walnuts, cabbage, turmeric, bitter greens and foods such as dandelion greens, mustard greens, chicory, bitter gourd. They also promote the production and flow of bile.**
- **Bitter herbs (dandelion, milk thistle, rue).**

Vitamins/Minerals:

- **Vitamin C chelates heavy metals. Garlic chelates heavy metals and is a good source of germanium and selenium if grown organically.**
- **Someone with liver congestion or disease may not be able to tolerate large amounts of vitamins A or D.**
- **For fatty liver: Inositol, Choline, Pangamic Acid are all lipotropic factors that promote transport of fatty acids from liver to tissues, accelerating utilization of fat in the liver.**
- **Liver meridian. Royal Jelly 1-2 X/day on empty stomach. Good for any liver disease.**
- **B complex is necessary for Phase 1 detoxification**
- **Digestive enzymes may help protein is adequately digested and glycine is available**
- **Essential fatty acids**
- **Reduced glutathione**
- **Selenium, zinc, magnesium, manganese**
- **Taurine/magnesium taurate**
- **Vit. E, beta carotene**
- **Inositol & Methionine which are lipotropic agents helping with the breakdown of fat in metabolism**

Herbal Help for the Liver:

Bitter things activate the liver to flush. When bitter herbs hit the 'bitter receptors" at the back of the tongue, it activates the vagus nerve which runs down to the liver, and activates the liver to flush. The vagus nerve also activates more digestion. The more bitter something is, the better for the liver.

- **Tea as liver tonic and blood purifier: Equal parts dandelion, blessed thistle, oregon grape and pipsissewa with fennel seed. 3 cups daily.**
- **Barberry, dandelion, yarrow, Milk Thistle (best in capsule or tincture form taken with water before meals) for liver regeneration.**
- **For Cleansing: Oregon Grape, Dandelion, Cheledonian.**
- **To stimulate bile: barberry, dandelion.**
- **To reduce bile: goldenseal, mugwort, vervain.**
- **Leopin is composed of liver extract, thiamine, B12 and fermented raw garlic.**
- **Combination to cleanse the liver: Dandelion root, dandelion leaf, milk thistle, burdock root.**
- **Sarsaparilla is another herb that helps cleanse the liver.**
- **Swedish Bitters combines 11 herbs benefiting those suffering from chronic metabolic problems, digestive difficulties and circulatory problems. Stimulates liver and gallbladder.**

<u>A good Liver/Gallbladder therapy:</u>

Combine:
3 bottles black radish juice (for gallbladder complaints, stones, inflamed obstructions of bile duct);
2 bottles dandelion juice (for restoring liver, helping assimilation of nutrients and stimulating peristaltic movement of bowel);
1 bottle fig syrup (for lazy bowel, sluggish intestinal activity) – prune juice may be used if you can't find fig syrup;
2 packages peppermint tea.
Repeat several times for best results and supplement with juice fasting days at regular intervals. A diet rich in raw, fresh vegetables and fruit, avoid animal proteins and fats and stimulants will

support treatment.

SLEEP TIMES

Get to bed by 11:00 at night. Between 1:00 - 3:00 am is when the liver is detoxifying while in a deep sleep. People who stay up late all the time have mood swings due to liver congestion.

LEMON WATER

In the morning you can drink 1/2-1 cup warm water with juice of ½ of a lemon juice. Helps let the toxins flush out.

RAISIN WATER TO CLEANSE LIVER

Drink raisin water 4 mornings in a row each month. In the evening, wash 150 grams of raisins (raisins should be darker colour, not too hard or soft, they should be whole and clean), add to 2 cups boiling water, let the raisins bubble for 20 minutes, then leave them to soak overnight. In the morning, strain the water from the raisins and heat the water up so it is warm (or hot). You should drink it on an empty stomach right after you wake up. Wait 30-35 minutes before eating breakfast.

LIVER DETOXIFICATION:

The liver performs 2 phases of Detoxification.

Phase One Liver Detoxification:

Phase One the liver detoxes chemicals and metals from food, water, air, which are converted into less harmful chemicals through many chemical reactions.

Liver uses oxygen and enzymes to burn toxins. This is called oxidation and makes the toxins more soluble in water so they can be more easily excreted from the body by the kidneys or liver. Most environmental toxins are fat soluble to start with, therefore difficult or impossible to eliminate without the liver's help.

Phase One is crucial but can be more dangerous than the compound being detoxified. Benzene is a dangerous organic solvent, is present in gasoline and cigarettes and a known carcinogen. Phase One enzymes oxidize benzene, producing benzene quinones, which are a source of increased toxicity. To complete the detoxification of benzene, your liver relies on Phase Two enzymes, which are described below.

The bottom line on Phase One detoxification is: you need it but you don't want Phase One activity to exceed the ability of your liver's Phase Two enzymes to finish the job, otherwise you're in trouble.

Increased Phase One Liver activity without a balancing increased in Phase Two activity can be caused by: Tobacco smoke, high alcohol intake, consumption of standard vegetable oils, eating char-broiled meats, consuming BHT.

Medications can also increase or decrease Phase One liver activity in ways that are highly specific to the drug and its duration of use. Intense scientific research is examining how nutrition can help facilitate the detox process. Foods can increase Phase One liver detoxing and at the same time balance it with an increase in Phase two detoxification. They are:

Cruciferous veggies such as cabbage, broccoli, brussels sprouts
Oranges, tangerines
Caraway seeds, dill seeds

A deficiency of zinc doesn't stop Phase One, but shifts the activity of Phase One enzymes in a direction that encourages the formation of cancer promoting chemicals. Zinc deficiency is quite common. Few foods are really rich in zinc, so supplementation is useful. Raw Pumpkin seeds are one food that is high in zinc.

Phase Two Liver Detoxification

To rid itself of toxins produced by Phase One, the liver performs a second phase, called conjugation. In this phase oxidized chemicals are combined with sulfur, specific amino acids or organic acids, then excreted in bile.

Phase 2 converts fat soluble toxic chemicals and transforms the toxins into water soluble chemicals so they can pass out through body fluids such as bile or urine.

This phase is inhibited by nutritional deficiency, toxic exposures, and medications such a acetaminophen (Tylenol), alcohol, low protein intake that depletes glutathione which is needed for acetaminophen detoxification.

Amino acids Cysteine and Methionine are important amino acids for Phase Two. They are the main dietary sources of sulfur found in meat, fish, poultry, eggs, dairy products. Vegetarian sources would be nuts, seeds, beans. The usual RDA of cysteine and methionine is 700-1000mg per day but is never fixed, because it fluctuates with the liver's burden of toxic compounds. The body's stores of these amino acids are depleted in the process of detoxification so the greater the toxic stress, the more the body demands.

Bioflavonoids are beneficial for stimulating Phase Two enzymes - abundant in fruit, vegetables and tea and are the active ingredient in many herbs. Bioflavonoid luteolin has antioxidant, anti-inflammatory and antimicrobial activities and is found in peppers, celery, carrots, rosemary, thyme, oregano, peppermint, olive oil.

A good example is MILK THISTLE which is an herbal folk remedy for the liver. The active ingredients are a group of bioflavonoids collectively called 'silymarin'. Milk thistle may offer protection from liver disease. Standard dose is 70-210mg three times a day.

Phase two helpers include:
Adequate protein intake
Alliums such as onions, scallions
Citrus fruit, grapefruit juice
Curcumin
SAMe
Milk Thistle
Cruciferous veggies such as cabbage, broccoli, brussel sprouts
Blue green algae
Bee pollen
Aspartic acid
Molybdenum
NAC, Taurine or Methionine
Sulfur containing amino acid foods: meat protein, eggs (if vegetarian do lentils, beans, whole grains)
Sulphur containing plants: garlic, onions
Vitamin B12
Glutamine, Glutamic acid, Glycine

Note: diet low in protein, low fat, can dramatically slow phase 2 detoxification. Aspiring and other non-steroidal, anti-inflammatory drugs including ibuprofen, Advil, Nuprin, also slow phase 2 detoxification.

CLEANSING DIET FOR THE LIVER:

1st day: upon arising drink 8 oz hot water with fresh lemons squeezed into it. From then on drink the juice for breakfast, lunch, dinner and whenever hungry. Also stewed tomatoes and tomato juice may be taken as it also a cleanser. Drink hot water and lemon or tomato juice whenever you feel like it. The more the better. Do not
worry about the following day, because it is the same procedure.
You will be hungry, so at bedtime of the second day take:

3 oz olive oil
2 oz castor oil
3 oz whip cream

Drink before bed and you may chew a little piece of lemon after, just for taste. It is easier than it sounds. At 3-4 am nature will call and you will pass lots of dark and ugly smelling waste. The next morning have a breakfast you desire and earned.

To make stewed tomatoes: take ripe tomatoes, cut out piece where stem is (this part is poisonous, not fit to eat). Cut in little pieces, add a little water, simmer slowly. You may add salt, onions, seasoning but no fat of any kind.

TOMATO CLEANSE:

Buy large cans of stewed tomatoes (make your own is better), do not add fat. Eat as much as you can, also drink tomato juice. It is amazing how hungry you become, so at bedtime of the second day, you will look forward to this cocktail:

3 oz olive oil
2 oz castor oil
3 oz whip cream
Stir.

Drink before bed when you are ready for sleep and relaxed. You may chew a little piece of lemon afterwards for taste. At 3-4 a.m. you will feel urged to have a bowel movement. Do not be surprised if it is dark and foul smelling.

A GOOD LIVER/GALL CLEANSE:

First do a parasite cleanse. Then a kidney cleanse. Dental work should be looked after, no metal in mouth, cavities taken care of. A toxic mouth puts a heavy load on the liver, burdening it immediately after cleansing.

Now you can go ahead with the flush - Best done on a day such as Saturday if you can rest the next day:

1/2 cup extra virgin olive oil
1 large grapefruit or 3 lemons (if using the lemon juice, do not blend the juice with the oil, drink a little oil, then a little juice, back and forth from two different cups.
4 tablespoons epsom salts
3 cups water (or 3 cups freshly pressed grapefruit or apple juice.
Optional: 20 drops Black Walnut tincture 4 capsules Ornithine (amino acid to help sleep)

1. Take no medicines, vitamins or pills that you don't absolutely need. Stop any programs such as parasite cleansing or kidney cleansing the day before.

2. For breakfast eat no fat eg. cook cereal with fruit, fruit juice, baked potato or vegetables, bread, preserves or honey - no butter, milk.

3. At 2pm is the cut off time - nothing to eat or drink after this. Get the mixture ready: 4 Tbsp Epsom salts in 3 cups water (or grapefruit juice or apple juice), put in jar (makes 4 servings of 3/4 cup each). Set in the refrigerator to get cold so it tastes better.

4. At 6pm drink 3/4 of a cup of the mixture. You may drink a few mouthfuls of water afterwards or rinse your mouth. Get the olive oil land grapefruit out to warm up.

5. At 8pm drink another 3/4 cup of the mixture. You have not eaten since 2pm but shouldn't feel hungry.

6. At 9:45 pm pour 1/2 cup olive oil into a sterilized pint jar (can sterilize it with boiling water prior to using it). Wash the grapefruit in hot water, dry it, cut it open and squeeze it by hand into the measuring cup, remove any pulp with a fork.
Have 1/2 - 3/4 cup of grapefruit juice. Add this to the olive oil. If you wish to add 20 drops Black Walnut Tincture to the mixture you may do so. Close the jar tight and shake hard until watery.

Visit the bathroom one or more times, even if you are late for the 10:00 drink. Don't be more than 15 minutes late.)

7. At 10 pm drink the oil and grapefruit mixture. Take 4 ornithine capsules with the first few sips if you can obtain them to help you sleep (take 8 if you suffer from insomnia). Drinking through a large plastic straw helps this go down easier. You can take a little honey in between sips if you need to. Drink while standing up. Get it all down within 5 minutes (15 min. if very elderly or weak).

It is important that you lie down immediately, don't even stop to clean up the kitchen. Lie flat on the back, head up high on the pillow. Lie still for at least 20 minutes, you may feel a train of stones traveling along the bile duct like marbles. There is no pain because the epsom salts opens the bile duct valves. Go to sleep (you may not get out the stones if you don't)

8. Next morning take the last dose of epsom salt mixture. If you feel nausea, wait till it is gone before drinking the mixture. Don't drink the potion before 6 am. (expect diarrhea in the morning)

9. Two hours later, take the final dose of epsom salt mixture. Go back to bed if you wish. Some find taking a second dose of the oil mixture (only 1/2 cup) and then going back to bed for 2 hours, then taking the final epsom salt dose to be even more effective).

10. After 2 more hours you may eat. Start with fruit juice. Half hour later eat fruit. One hour later eat regular food but keep it light. By supper you should feel recovered.

11. You will be able to see any gallstones in the toilet with the bowel movement. Most are made of cholesterol which is why they float, calcified stones and stones containing protein may sink. Green colouring is from the bile produced by the gallbladder. You can use a colander to catch all the stones if you wish.

12. Clarke says to count the stones. You need 2,000 stones before the liver is clean enough to rid you of allergies or bursitis or upper back pains permanently. The first cleanse may rid you of them for a few days, but as the stones from the rear travel forward, they give you the same symptoms again. You may repeat the cleanses at 2 week intervals. Do not cleanse when you are ill.

13. After the cleanse you may feel tender or ill for a couple of days. Clarke says this cleanse is very safe, done on over 500 cases with people even in their 80's and not one went to the hospital.

LIVER CLEANSING FAST

Materials needed:
Lemons (12-16 a day)
2-3 quarts distilled water daily
Honey to taste
Bottle of dietary fiber tablets (eg. bran tablets)
"Liver D-Tox" Homeopathic remedy 2-3 times a day
Also take dietary fiber or bowel tonics daily to bowel tolerance (just short of diarrhea)

1st Day: 1 1/2 cup freshly squeezed lemon juice mixed with 2 quarts of distilled water and a little honey. Sip during day.

2nd Day: Repeat the mixing of approximately 1 1/2 quarts of lemon juice distilled water-honey mixture and consume it during the day.

3rd Day: Repeat the mixing of approximately 1 1/2 quarts of lemon juice distilled water-honey mixture and consume it during the day.

This is the end of the detoxifying but the first week after this program is extremely important regarding the lasting benefits. The following suggestions as to eating should be observed:

4th/5th day:
Stop using the lemon juice distilled water-honey mixture but continue the use of 2 herb tablets morning

and evening. Also use 8 dietary fiber tablets morning and afternoon. Drink all you wish of tomato juice, carrot juice, grape juice (dilute the grape juice with about one-third spring water) or other vegetable or fruit juices. Eliminate citrus juices. Consume all the fresh spring water you wish.

6th/7th Day: Add raw fruits and vegetables to your regime, maintaining herb and dietary fiber tablet intake as before. Consume all the fresh juices that you wish.

8th Day: Add yogurt and/or cottage cheese, continue dietary fiber and herb tablets twice daily as before.

9th Day: Add lightly steamed vegetables to allowable food. Reduce dietary fiber tablet intake to 12 daily.

10th Day: If desired, add small portion of meat to one meal: seeds, nuts, or eggs are just as acceptable. Reduce dietary fiber tablets to 4 in morning, 4 in afternoon.

11th Day Forward: Follow good eating plan for the liver and digestion. Continue bowel tonics and fiber if you have any constipation. You should have 2-3 soft stools a day. Bowel tonics can be taken for years without difficulty. Lower bowel gas and foul odored stool are indications of increased need for dietary fiber.

APPLE JUICE DIET FOR LIVER:

First day:
8 am 1 glass (8 oz) apple juice (no sugar or chemicals)
10 am 12 pm 2 pm 4 pm 6 pm and 8 pm drink 2 glasses (8 oz) apple juice every 2 hours
No food is to be taken this day

Second day:
Same procedure as first day. No food this day either.

Third day:
6 am 1 glass (8 oz) apple juice
6:30 am 4 oz olive oil
You may wash the olive oil down with hot lemon juice or hot apple juice.
Return to bed for 2 hours.
Take hot vegetable broth at 9 am and a light lunch and dinner.
As a rule this diet starts to work around noon. In the fecal matter you will find little green pebbles or green mud. The old stagnant bile becomes dissolved and liquified through the malic acid of the apple juice and the oil moves the whole mess.
Dr. Hohensee uses this all over America. In Europe it is practiced in health spas and hospitals with equal results. It re-establishes the normal function of the liver, frees the liver-gallbladder tract from the old bile and debris.

LIVER FLUSH

This one should be done under practitioner's care. It is best preceded with one month of taking liver herbs and/or the 3 day detox fast.

In Morning:

a warm enema
1/2 hour later drink 8 ounces prune juice.
Then drink diluted apple juice (mixed 1/2 with distilled water) until 6:00 pm.
Don't take anything until 9:00 p.m.

At 9:00:

Measure out 1 to 1 1/2 cups pure extra virgin oil and 1 to 1 1/2 cups freshly squeezed lemon juice. Take 3 tablespoons of each. Wait 15 minutes and repeat until finished (takes about 3 hours). Try not to stop even if you become nauseated or vomit. Try to continue until you are finished as you are performing a thorough cleansing of toxins and mucus.

When ready to go to bed, sleep on your right side so that there is very little pressure on the liver.

If you wake up nauseated and feel you can't go on, and ONLY if you can't go on, take one tablespoon of pure gelatin, rinse your mouth with water and go back to sleep. This will completely stop the action of the cleanse.

Note: It works best if in the morning you do two enemas or a colonic.

FATTY LIVER

Gemmotherapy:

- **Fatty Liver disease: Juniperus – best of all remedies**
- **Corylus with Rosmarinus to breakdown fats in the liver**
- **Fraxinus to promote elimination of hepato-renal waste.**

Homeopathic – these are the most common ones that are used:

- **Lycopodium 200**
- **Chelidonium LM**
- **Carduus Mar LM**
- **Calcarea Carb 200**

Other:

- **Take Quercetin daily (if you get this from foods: blueberries, kale, onions etc)**
- **Lose weight if you are overweight**
- **Follow the Mediterranean Diet – see Anti-Inflammatory Diet**
- **Black coffee contains advantages, but don't add sugar or cream**
- **avoid all foods with added sugars**
- **reduce saturated fats (red meats, full fat diary)**
- **avoid cooking with fats - they can turn into trans fats.**
- **Best Herbs: Milk Thistle, Turmeric, Resveratrol, Green tea**
- **Take 800 IU Vit. E daily**
- **Include Omega 3 supplement or eat healthy fish twice a week.**
- **Only alcohol allowed is one 5 oz glass red wine with supper.**