



L I V E R

a major
regulator of
health and
wellbeing

By

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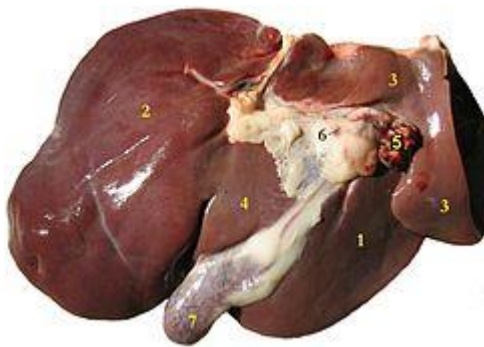
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What Is The Liver, And What Are Its Functions?

The liver is one of the major organs in our bodies, weighing in at about 2 kg for an average 80kg person. This makes it the second largest body organ - after the skin - with a multitude of functions affecting a range of other body systems, such as the digestive system, immune system and the cardiovascular system, as well as playing a vital role in our overall metabolism and being a major excretory system.



It is interesting to note that the male liver contains a significantly higher level of oxidative and less reductive enzymes than found in the female liver, which helps explain why generally speaking, various toxins such as alcohol, are less efficiently detoxified in women than men.⁽¹⁾

This tendency for poorer detox capacities in females, can be exacerbated by such substances as The Pill, which are known to further inhibit these oxidative enzymes.⁽¹⁾ Because the hormones found in The Pill are not exactly like the human form, this makes it harder for the liver to break them down and can result in a liver overload situation, which in some cases can then result in the body becoming allergic to a range of other substances.⁽²⁾

Functions of the liver

Today, in our modern, toxic society the liver is one of the most over-worked organ systems in our body, with several major, and countless minor functions to attend to. Some of the major functions include:-

- detoxifying vast quantities of often dangerous and poisonous substances generated both inside our bodies, as well as found outside of us, entering via our environment. There are several fascinating stages to this detoxification process, which we'll explore a little later on

- The liver plays a major role in the ability of our digestive system to break down and absorb food, especially through the production of bile, a bitter, yellowish-green fluid which is stored in our gall-bladders. This substance is a breakdown product of our red blood cells and helps to emulsify the fats in food, much like soap helps break down the grease and fat left on our dirty dishes. This bile also has another function, which is to help stimulate peristalsis, the rhythmic muscular contractions occurring in the intestines, which helps propel the intestinal contents along until the body finally evacuates the remaining toxic end-products of digestion, when we open our bowels
- The liver plays a vital role in the production and regulation of blood fats, such as the various cholesterols - HDL, LDL VLDL, as well as triglycerides. Cholesterol is an absolutely vital component involved in many of our normal and healthy body functions, but if the liver plays up, so too do the different cholesterols go out of balance, resulting in a range of problems, especially in the circulatory system. Ironically, the present drugs used to control cholesterol all too frequently actually damage the liver!
- The liver synthesizes a number of blood proteins such as albumin, which act as carrier molecules for nutrients and hormones
- The liver functions as a converter of food into stored energy, in the form of glycogen, which behaves like a form of energy "currency" used by the body. In this way the liver acts like a "bank," from which our bodies can either make an energy "currency withdrawal," or it can make a "currency deposit" into the liver, for future use by the body. Although the body primarily runs on glucose as its preferred fuel, the liver prefers its fuel in the form of free fatty acids. These come in many different sizes and shapes and are the primary building blocks found in all fats and oils
- The liver is also a major storage or concentration site for a wide range of vitamins such as the B-complex and Vitamin C, beta-carotene; lycopene; Vitamin D, E & K, as well as CoQ10, while various good minerals like cobalt, copper, manganese, iron are concentrated in the liver too. However, these good minerals, in excess, as well as some toxic minerals like aluminum, arsenic, cadmium, mercury and nickel can also result in damage to the liver
- And finally, another major role of the liver is to play a crucial part in our immune system's ability to function normally and in a balanced manner.

THE LIVER : IMMUNE SYSTEM CONNECTION

With the great advances in research regarding the immune system over the last 20 years, it has been discovered that the liver acts as a key factor determining the health and functionality of the immune system. The latter helps keep infections at bay as well as clearing the body on a daily basis of various abnormal or cancerous cells.⁽³⁾

The liver does this by filtering out or neutralizing a wide range of substances which regularly "leak" across the intestinal barrier. "Leaky Gut Syndrome" is a very common health problem in our modern society, due to the way we live, and has a direct impact on the health and functionality of our liver. Hence focusing on our intestines and what affects this body system, can have profound repercussions for the liver. If there is a disproportionately large amount of toxic substances leaking across from the intestines, this means that unless the liver has access to certain nutrient substances such as cysteine or B2, it subsequently has a harder time dealing with those waste by-products, produced in our muscles or cells as a consequence of their metabolic activities.

Cysteine for instance, is an important sulphur based amino acid. It is a component of the vital antioxidant glutathione, which helps the liver detoxify the harmful free radicals our body is constantly exposed to, such as alcohol, various medical drugs, the many dangerous substances in cigarette smoke, etc. Cysteine is also an important component of skin, hair and nails, providing elasticity to the skin particularly.

These type of nutrient substances therefore help to regenerate an over-burdened detox system. Where the detox system becomes so chronically overwhelmed, a health situation can sometimes occur called "Multiple Chemical Sensitivity Syndrome." This is an incapacitating condition causing intense and extreme symptoms when exposed to even tiny amounts of chemicals or substances.

THE LIVER : SKIN CONNECTION

The problem is that in such a liver-overload situation, not everything gets detoxified as it should, and now some of this poisonous material finds its way into the lymphatics, which act as a major part of our immune system, but also functions as a secondary garbage disposal unit. With time, these lymphatics inevitably become over-loaded, and now the body tries to dispose of these poisons by getting them to come out via the skin. But this in turn results in a plethora of

skin ailments, such as eczema, psoriasis, boils, pimples or the various acnes (simplex; vulgaris; rosacea).

However, although the originating point for such health issues is actually the gut, it is nevertheless the breakdown or overload of our liver which then results in these skin manifestations! Again, you can see how the liver acts a fulcrum point to so many of our body functions as well as the diseases manifesting from a breakdown of such functions.

SYMPTOMS FOUND IN LIVER DYSFUNCTION

Within the various natural therapeutic perspectives (be they Western, Ayurvedic or Traditional Chinese Medicine - TCM) of creating a model to allow us to better understand what causes ill-health, we constantly see a large number of symptoms which classically present themselves if the liver is "sick" or dysfunctional.

These include such ailments as headaches; migraines; arthralgias - both osteo and rheumatoid; poor concentration and memory; "woolly headedness;" visual disturbances such as spots or threads in our vision - "floaters;" kidney problems; fatigue; myalgias, or muscle aches; nausea; depression; mood swings; skin manifestations; bloating; excessive gas; constipation; poor nutrient status; anorexia; cholesterol problems; allergies; irritability, etc.

Think of the traffic congestion which occurs at Toll-Gates if there is too much traffic on the road at any one time. Similarly, the liver can become congested if it has to contend with more toxins than it can handle. Within the TCM model of health and ill-health, such congestion is seen to be clinically correlated with an interesting range of other symptoms, compared to the ones mentioned above, such as:-

- Abdominal distension
- Feeling of oppression in the chest
- Frequent sighing
- A feeling of "something stuck in the throat"
- Bitter taste in the mouth
- Belching
- Painful, irregular periods
- Sore breasts before periods
- Sour burps and "churning in the stomach."

In this, and the earlier list of symptoms discussed, some of these may originate from other malfunctioning areas of the body too, but the liver is often a fundamental component of many of these type of symptoms.

Kidney problems - mentioned above - are interesting, and not immediately understandable, until one realizes that the liver primarily changes the fat-soluble toxins into a more water-soluble format, which are then excreted via the kidneys. But if the liver isn't doing its job properly, this puts extra strain on the kidneys.

These types of interconnections only serve to highlight how every part of the body is connected to every other part, sooner or later! This is what natural therapists mean by an "wholistic" perspective on health.

When the body is explored through the lens of Energy concepts - as understood in the Ayurvedic and Traditional Chinese healing approaches - we find that the liver is found to be a major organ involved in the pain phenomena.⁽⁴⁾ This, therefore, gives another angle to pain management, beyond simply using analgesics, which ironically inevitably have to be detoxified by the liver, thus causing even more of a burden to this already over-loaded organ!

LIVER DETOX CYCLE PEAKS AT NIGHT

The body does a majority of its detoxification while we are asleep, and the liver reaches its peak in this activity between 1am and 3am. For this detox ability to be effective, the body needs to be asleep, not just resting.⁽⁵⁾ This helps explain why a lot of people who have liver dysfunction, tend to wake up at this time of the night, restlessly tossing and turning. This type of insomnia settles down again as the liver function is brought back to normal by the use of various natural products, such as a range of herbs and nutrients known to help liver function.

LIVER DETOX MECHANISMS

Let's now look at some of the mechanisms by which the liver carries out its detoxification role. The liver has two primary detox pathways, called Phase I and Phase II. Many of the toxins the body manufactures as by-products of its own metabolism, or that accumulate from our environment, are called "lipophilic" or fat-soluble. These are difficult to transport across cell membranes for direct excretion, so the liver has to do something to them first to prepare them for safe and efficient removal from the body.

During Phase I, the liver takes these toxins - and via a range of biochemical processes such as oxidation, reduction, hydrolysis, hydration and dehalogenation - it changes them from their original format into an "intermediary" substance. The type of nutrients needed by the body to help with this part of the detox process

include B2; B3; B6; B12; Folate; Glutathione; branched chain amino acids (such as leucine, isoleucine and glycine); flavonoids and phospholipids.

However, this "new" and *intermediary* toxin is actually - and ironically - many times more toxic than the original. Under normal circumstances, and where the liver is working efficiently, this is not a problem, because there is only an extremely brief moment during which this "new" super-toxic substance actually exists.

NUTRIENTS NEEDED FOR EFFICIENT LIVER DETOXIFICATION

Normally, Phase II immediately picks up on this intermediary toxin, and very rapidly changes it via what are called "conjugation reactions" into a much more benign and water-soluble substance. Here the liver usually adds a small molecule to the toxin, thereby making it more soluble in water. Nutrients needed for this step in the toxin's journey include Glutathione; Glycine; Cysteine; Glutamine; Methionine; Taurine; Arginine; N-Acetyl-Carnitine (NAC); B2; B5; B12; Folate; Vitamin C; Vitamin E; Selenium; Zinc; Molybdenum; Magnesium; Omega-3 Fatty Acids as well as various substances found in the broccoli/cabbage family or in Green tea.

Taurine for instance helps improve fat & protein metabolism in the liver. It is also a key component of bile, which is needed for the digestion of fats, the absorption of fat-soluble vitamins and helps maintain healthy cholesterol levels.

B5, or calcium pantothenate also plays a part in essential metabolic roles in the body, including those related to the production of adrenal hormones and energy. Hence it's a vital nutrient needed by our body for handling stress. Various lifestyle factors such as high intakes of alcohol and coffee have been found to increase the need for this nutrient by our system.

Aside from helping in Phase II detoxification, vitamin B12 has been found to provide symptomatic relief of irritable bowel syndrome. Glycine in turn, has other functions besides helping in Phase II; it is also involved in the production of DNA, phospholipids, collagen, as well as energy.

Broccoli, for instance, contains substances such as indole derivatives, flavonoids, and isothiocyanates capable of activating and modulating what are called the Cytochrome P450 enzymes. These represent a large family of enzymes found in the Phase I detox pathways, and therefore associated with liver detox ability.

These "conjugation" reactions, found in the Phase II detoxification pathway, therefore make it possible for the initial fat-soluble toxins to be solubilized so that they go into the serum, to the kidney, and finally excreted via the urine. Or the liver passes it directly into the bile and thence into the stool for evacuation later.

SKIN HEALTH & AGING – THE LIVER CONNECTION

The problem in our modern life is that we are quite deficient in many of these important minerals and nutrients, which are so essential for allowing the Phase I and II detox pathways to work efficiently. Any decreased detoxification ability generates massive amounts of free radicals, and has been found to be involved in the manifestation of various ill-health conditions such as chronic fatigue syndrome, increased rate of aging, dull, lifeless skin, and many more. This is especially so if the Cytochrome P450 system is compromised.

WHY IS OUR MODERN FOOD SO DEFICIENT IN NUTRIENTS?

Nowadays, there is a huge amount of refining that goes on in the "food" industry, resulting in a significant deficiency of nutrients and minerals as mentioned above. This may make the "foods" more storable, or allows them to be transformed into the range of items so fondly desired by our Western markets, but it does also remove valuable nutrients, many of which are needed in the Phase I and II detox pathways.

Modern farming practices have also led to soils which are relatively depleted of a vast range of micro-nutrients, all essential for the growing of healthy foods necessary for keeping us healthy. Hence, the importance of buying organic foods wherever you can. However, this is not always feasible or affordable.

Then there is the reality that most of us are under rather large amounts of stress, causing many of these crucial nutrients to become depleted, especially if this is an on-going life situation. Another layer to this scenario is the huge amount of toxins we constantly come in contact with from our environment and which need daily detoxification. This strains our nutrient reserves - even if we do eat "healthily" or organically.

DIET – A MINEFIELD OF CONTROVERSY

Thousands of diets have evolved over the years, each presenting themselves as the diet to cure all ills. Trying to wade through this multitude of options can be utterly

confusing and overwhelming to practitioners, let alone the average consumer out there, who only has a general knowledge of what is supposedly "healthy" food.

One of the basic tenants of natural therapies is to provide treatments that cater as much as possible for individual needs. To this end, a diet which you might like to investigate is the "Blood Type Diet," originated by the d'Adamo father and son team. When I first heard of this particular diet, and as a therapist who has seen a lot of diets come and go over all the years of being in practice, I instantly dismissed it as yet another fad diet.

However, when a number of friends, as well as clients started to come in and describing the major shifts in their often stubborn health issues - such as migraines, asthma, arthritis, skin rashes, overweight issues, chronic tiredness, and much more - I just had to sit up and take notice.

Now, many years later, and despite my initial utter scepticism, I can vouch for the fact that this dietary system has a lot to offer most people. Hence, out of all the diet choices available, the best one to check out and try for a month or three is this Blood Type Diet. Most people will find it does help them in a range of chronic health issues, and one area that is certainly helped by this diet is the liver.

MEASURING LIVER FUNCTION

At present, if we wanted to measure how effective the liver is functioning, medicine would do what they call a "Liver Function Test", or LFT's. However, this is a great misnomer, as it does not measure functionality at all! It only measures how much damage is occurring in the liver - and even on this level, the LFT's are a poor test.

So what do we mean by functionality? Think of a car; it may have 8 cylinders, but this particular car is having engine problems, and is only working on 4 out of the 8 cylinders. As you can imagine, the functionality of that car - or its performance - is not going to be too good. The same applies to a liver.

The problem starts however, when your doctor orders LFT tests, supposedly to see how well your liver is doing. Unfortunately, all it will measure is the occurrence of frank damage within those liver cells, to the extent that they are actually dying off. And even here, people with liver cirrhosis - slow liver death - can still have their LFT's come up as "O.K." This test definitely does not measure how *efficient* the liver is in its function.

To actually measure how many "cylinders" your liver is running on, as it were, other far more sensitive tests have been formulated, but strangely enough these are as yet not routinely available. More the pity! One such test is called the benzoate conversion test, which accurately measures just how effectively the liver can neutralize or detox this substance through the Phase II component of the detox system in the liver.

To measure the efficiency of the Phase I detox pathways, common old caffeine is used. In both cases, a very carefully measured amount of each substance is given to the person, and then samples of saliva or urine are collected over a set period of time, to see how much of these compounds have been neutralized by the liver.

EXPLAINING MANY CASES OF AUTO-IMMUNITY

Another aspect to a situation of liver over-load - especially from a "leaky," dysfunctional gut - is that this can drive our immune systems into what is called auto-immunity. Let's explore this a bit further. When the gut leaks a wide range of substances or toxins, medicine calls this "antigenic material." Normally, such material should be neutralized by the liver, and what the liver can't clear, finally gets discharged via the lymphatic system and skin.

However, while any of this un-neutralised antigenic material is "inappropriately" floating around the body, it can generate very powerful responses from the immune system. The latter sees such substances as "invaders," much as it would see various germs as invaders, in which case it would equally launch a powerful defensive action.

The trouble is that many of the "antigenic" substances leaking across our gut wall resemble various proteins and other substances found inside our body. Remember, a lot of the food we eat is from animal origin, also containing many of the proteins which are almost identical to our own. So when the immune system now orchestrates a defensive attack, it sometimes loses sight of what is "us", versus what is indeed "foreign."

Think of two buddies who, while walking home one night, get set upon by some hoodlums. In the fight and the confusion that breaks out, one of the friends ends up hitting the other friend by mistake. So too with our immune system if it becomes overwhelmed. When this happens, we get a situation called auto-immunity. Although the source of the foreign "antigenic material" originally came from the gut, it was inadequate liver function which resulted in a partial neutralization and elimination of such "leaked" material. This in turn, allowed the immune system to become confused, causing a wide range of auto-immune

diseases, such as systemic lupus erythematosus, or SLE; Hashimoto's thyroiditis; rheumatoid arthritis and many more.

NATURAL SUBSTANCES THAT CAN HELP ACTIVATE LIVER FUNCTION

Hence, to treat a wide range of such auto-immune problems, we need to go back to the liver as well as to the gut. And to help the liver, there are long lists of substances - such as glycine, cysteine, Taurine, the B-group vitamins, extracts from the broccoli or cabbage (brassica) family, as well as various herbs such as Aloe vera, Globe artichoke (*Cynara scolymus*), Dandelion (*Taraxacum officinale*), Milk thistle (*Silybum marianum*), and Picrorrhiza kurroa root - all validated by research to help this organ function more efficiently.

HOW DO THESE SUBSTANCES ACTUALLY HELP THE LIVER?

Let's look at some of these herbs more closely. Liver herbs for instance, work in various ways to enhance the detoxification pathways in the liver, especially the Cytochrome P450 system. Such herbs also help in stabilizing cell membranes - strengthening the "walls" of the "building" - i.e. the liver - which makes such "walls" more resistant to the "storms" of toxins or free radicals assaulting this "building."

This in turn means that there is less destruction and dying off of liver cells in their daily task of trying to neutralize the avalanche of toxins we expose ourselves too in our modern way of life.

As natural therapists, we are lucky to have access to a range of natural substances and herbs, known to be effective in helping these over-loaded livers deal more efficiently with our daily exposure to a wide array of toxins. For instance, such herbs help by increasing the synthesis of protein in the liver, thus enabling any damage occurring in this organ to be repaired more quickly and efficiently.

Research has shown⁽⁶⁾ that a wide range of herbs, such as Milk thistle, Dandelion, Globe artichoke or Picrorrhiza contain substances now known to help protect and repair liver cells as well as to enhance the liver detox pathways. And in that way, these herbs can help in a wide range of liver-damage diseases, such as hepatitis, cirrhosis and fatty liver.

Many liver herbs also contain what are called lipotropic agents, which influence fat metabolism, resulting in decreased fat deposition in the liver. Other substances in

these herbs have been found to enhance the micro-circulation of the liver, thereby influencing more efficient liver cell function.

THE MANY WONDERS OF GLOBE ARTICHOKE

Let's explore Globe artichoke as one example of these liver herbs. It is the same artichoke you can buy in the green grocer. However, what you buy there is only the flower-head of the plant, while what is used in various herbal medicines contains all parts of the plant - the flowers, leaves, stems and roots. In herbal medicine, this herb is called a "bitter tonic" which helps in the production and secretion of bile. It also has some diuretic action, helping the kidneys excrete many of those toxins broken down by the liver in its Phase II detox pathways we discussed earlier.

This herb has potent protective effects on the liver, as well as regenerative effects. It has also shown its value in helping to decrease raised cholesterol levels. Traditionally, it has been used in a wide range of health issues such as:

- Jaundice
- liver diseases such as hepatitis & fatty liver
- gallstones
- kidney stones
- poor digestion
- nausea
- loss of appetite
- chronic constipation
- arthritis, etc.

Another interesting herb is Picrorrhiza, a small herb from the mountain ranges of the Himalayas, which has a traditional history of use in a variety of viral diseases of the liver, auto-immune problems, toxic liver damage, poor immunity, asthma, vitiligo, and fevers. It is especially good at mopping up free radicals and boosting all aspects of the immune function, such as the T-lymphocytes, B-lymphocytes and Phagocytes. It has also shown its value in helping to decrease raised bilirubin levels - a marker of liver dysfunction.

Milk thistle is the herb you're probably more familiar with, and it too has a powerful liver protection action, by stabilizing the cell membranes. Its active constituents are the flavonolignans, including silybin, silydianin and silychristine, collectively known as silymarin.

Silybin is the component with the greatest degree of biological activity. Silymarin is found in the entire plant but is concentrated in the fruit and seeds. Silybum seeds also contain betaine (a proven liver protector) and essential fatty acids, which may contribute to silymarin's anti-inflammatory effect.

Milk thistle is traditionally used for the symptomatic relief of non-specific dyspepsia, as a liver tonic and helps maintain healthy liver function. It facilitates the restoration of liver damage due to the toxic overload of daily life, and this can be seen in the way it normalizes various liver enzymes such as AST, ALT and GGT - all indicators of liver damage. Milk thistle also has anti-oxidant action and can help clear jaundice.⁽⁷⁾ The conversion of the thyroid hormone T4 into T3 occurs to a great extent in the liver, and this conversion depends in large measure on the level of Glutathione in this organ. Milk thistle is good at increasing this anti-oxidant in the liver.

Peppermint is known in Columbia as "heirba buena" or the "good herb" and has been classified as a digestive aid. It also helps stimulate the stomach, cools indigestion symptoms such as heartburn, relieves flatulence, strengthens and soothes the bowels, and helps with cramping. Peppermint also stimulates secretion of saliva and warms the entire system.

Dandelion is an old, traditional herb, the root of which is rich in terpenoid and sterol bitter principles, especially taraxacin and taraxacerin. It also contains large amounts of polysaccharides, smaller amounts of pectin, resin and mucilage as well as flavonoids. It is seen as a liver tonic, helping in lack of appetite and aiding digestion.

STRESS – THE ULTIMATE HEALTH SABOTEUR

Stress is a major factor which certainly affects every body system. But where it impacts on the intestinal area, it creates an enhanced "leakiness" of the mucus lining, whose function it is to keep the toxic matter from passing through our intestines and into our internal environment. However, these mucus membranes also selectively allow nutrients from our food to be actively transported across into the blood, and thence to all areas of our body, thereby nourishing and regenerating the millions of cells we are composed of.

Therefore, stress has the dual effect of increasing the flood of toxic, antigenic material into our inner environment, while paradoxically also compromising nutrient absorption, resulting in malnutrition.

A large list of other factors, such as zinc & vitamin A deficiency, various gut infections (e.g. amoebae, giardia, candida, etc.), alcohol & coffee consumption, various drugs (e.g. the non-steroidal anti-inflammatories so commonly used in arthritis such as Brufen, Indocid, Naprosyn, etc) - these and other factors can all lead to enhanced gut "leakiness," and hence to a situation of over-loading the liver.

EVERYDAY SOURCES OF TOXINS

But the liver is already a very heavily over-worked organ, processing about 3 pints of blood *every minute*. This heavy work schedule is not only due to the wide range of functions it has to attend to in the body, but also because nowadays we live in such extraordinarily toxic environments. If this flood of daily poisonous material - found in our food, our water, our air, our personal-care products, exuding from the multitude of synthetic fabrics and materials so commonly used in our work and home environments today - if these were not neutralized, we would very rapidly get seriously ill and die.

It is often not realized just how many chemicals we are exposed to each moment of our day. We wake up in the morning after having slept 6-8 hours in a cloud of chemicals exuding out of the bed linen, from the various soaps and detergents we have used to wash them in, as well as the all too frequent foam rubber pillow we use nowadays. That fabric softener and after-rinse deodorant may feel and smell good to us, but these are chemicals which nevertheless assault our liver.

Next in our routine comes the bathroom, with further chemicals in our shampoo and conditioner, personal soap, underarm deodorants, toothpaste, make-up, eye-liners, hair-sprays, and more. And don't forget the *room* deodorant - a particularly potent and potentially toxic substance to the liver, as are the various cleaning agents we use so enthusiastically to make sure the shower cubicle is free of mould, or the toilet bowl is gleaming clean.

In the kitchen, we find a huge array of chemicals to further add to the liver load. Food and water stored in plastics, margarine with its soup of chemicals, bread containing a huge list of preservatives, moisturizers and anti-fungal chemicals. All great to help keep bread fresh, but not so good for our liver!

Most modern foods contain a wide range of further preservatives, food colorings, pesticide residues, as well as heavy metals like lead and mercury - in fish for instance. Then we inevitably heat up or cook our food in the microwave, which has been found to create further toxic by-products during the heating process.^(8,9,10)

On the way to work, you are sitting in a car exuding various PCB's and other plastics from the interior plastic upholstery, many of which are already known to be toxic to us. Open the window and we are inundated with car fumes; stop at the petrol station to tank up, and you get extra whiffs of toxic petrol fumes.

You finally arrive at work, only to sit in an air-conditioned building, often with no fresh air circulated from outside. Hence, there is a huge build-up of toxic fumes from printers, photocopiers, fax machines, as well as the carpets and upholstery, let alone the various chemical gases - like fire retardants - slowly wafting off your computer.

Do you get the picture? Each of these literally hundreds of thousands of chemicals we are exposed to daily, may on an individual level not be all that bad to contend with. What we are however starting to validate through research,^(11,12,13) is that when we are exposed to a "soup" of such toxins, this combination can turn out to be many times more toxic than having to deal with them one at a time. No wonder our livers are in such a mess in the Western world!

By going on this journey of discovery about the liver, and seeing the many ways its function impacts on a whole range of our body's glands and organs, it may now make sense as to why the liver is so deeply involved in such a huge number of seemingly unconnected symptoms. It may also have become clear why it is so vitally important to ensure that our liver is given as much help as possible to contend with the massive abuse it has to endure on a daily basis.

Through science, we now know more about how the liver works; how it gets damaged, as well as how a wide range of nutrients are known to help protect as well as regenerate liver cells.

Keep the liver healthy and happy, and you ensure that you feel healthy and happy too!

Interested In A Herbal Tea For Improving Liver function?

Herbs have long been used as healing agents for a wide range of health issues. Traditionally, specific herbs have also been used for enhancing liver function, as well as for the regeneration of damaged liver tissue.

You can find out more about such an herbal tea for improving liver and gut function; how to prepare it; its ingredients, and much, much more by [clicking here](#).

Once on that page, do ensure you scroll down to all this important information, which is not immediately obvious, but is located further down the page.

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