



Detoxification of the Liver – What can this Achieve?

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Introduction

Involvement of all the detoxifying and regulatory processes is a precondition for the body's self-regulation, which maintains homeostasis and equilibrium in all its compartments.

In this the body's own detoxifying systems are very important. At the top of the list in this respect the liver must be mentioned, alongside the gut, kidneys, skin, lungs and lymphatic system.

The Liver

This is our most important metabolism and detoxification organ. At rest it accounts for around a quarter of the body's total energy turnover; the heart at rest uses only 7%, and the brain 9%.

The liver is responsible for ca. 500 functions in the human metabolism. These include, inter alia, the metabolism of carbohydrates, fats and proteins; the provisions of e.g. clotting factors, antibodies and hormones, to mention but a few. Via the portal venous system alone, the liver is fed with ca. 2,300 litres of blood a day. Under cover, it works around the clock with a high degree of sensitivity. As it is only the capsule that has a nerve supply, when the liver is overloaded we feel scarcely any pain for a long time. The problem expresses itself through other signs: fatigue and exhaustion are leading symptoms which indicate a weakness in the liver and call us to be vigilant.

We humans under-estimate the

danger that lurks in our modern civilisation. Day after day, night after night our detoxifying organ, the liver, must dispose of about 75,000 toxins. Nowadays, as shown by scientific studies, the taking of three orthodox medicines results in 42% side-effects; when taking five medicines, this even rises to 90%.

Since we are all exposed to these extra burdens nowadays, the question arises: can my body cope well enough?

In order to generally enable detoxification, the body must have an adequate water supply. Our organism should have daily access to two litres of non-carbonated water, e.g. for the production of digestive juices, for instance, the regulation of the blood's viscosity, blood pressure and the acid-alkaline balance, for detoxifying purposes and much more.

Significance of the Gut

Within the framework of its detoxifying functions, the liver experiences a distinct relief if the healthy regulatory function of the gut is intact. Sadly this organ is frequently weakened, however. But what is it that destabilises the intestinal system? Our modern diet, with its high proportion of short-chain carbohydrates in particular, industrially ready-made meals, fruit and vegetables that are short of vital nutrients – all this disturbs the balance of the gut. As well as this, there are the many mental and toxic stresses, plus chronic inflammations.

If you bear in mind that 75% of the population alone suffer from gluten intolerance, then this factor by itself has a sizeable influence on the health of the gut as we eat our daily bread. What are the consequences? Four to 70 hours later latent inflammations occur in the intestinal mucosa. However, every inflammation leaves scars behind, destabilisation of the intestinal flora and immune system follows, and the possible consequence of this is Leaky Gut syndrome. The burden on the liver steadily increases, since parts of the microbial and toxic contents of the gut are able to pass through the mucosa unimpeded.

Diagnosis of leaky gut syndrome:

- Blood test for zonulin
- Stool analysis for alpha-1-antitrypsin

Detoxification via the Liver

The liver's detoxification mechanism is non-specific and, inter alia, is tasked with transferring the fat-soluble toxins into a water-soluble form for elimination via the kidneys. In some cases intermediate products are formed during this process which are more toxic than the initial product.

This detoxification process in the liver proceeds in two phases (see tables 1 and 2, and bibliography 1).

From the tables we may see clearly the significance of the



B-vitamins and essential amino-acids alone for the correct progress of phases 1 and 2. Likewise it must be borne in mind that the taking of oral contraceptives results in disturbance within the B-vitamins, whilst proton pump inhibitors and also oral anti-diabetic drugs such as metformin have a negative influence particularly on the level of vitamin B12 (see bibliography 2).

The Position of Protein in the Metabolic Process

Within the human organism proteins occupy a key position. Tasks of repair and regeneration

make daily demands on the organism for an adequate supply of proteins (see bibliography 3).

For instance, every second the bone marrow produces 2.5 million red blood cells. On the other hand, every second between 10 million and 50 million cells are broken down and renewed. In each individual cell, because of its metabolic performance alone, 10,000 repairs are carried out every day. In a 360-day period, our skin is completely regenerated, as are the liver cells eight times a year.

Dietary proteins consist of an indigestible part as well as a diges-

tible part.

The former is not assimilated by the small intestine but is excreted again undigested. It has no nutritional value. The digestible portion of the dietary protein is split into its amino-acids in the small intestine, discharged and subsequently assimilated by the body.

Up to now proteins have been evaluated according to their digestibility or bio-availability. However, these concepts are antiquated, as they provide no information regarding the nutritional value of the protein, nor do they give information as to whether e.g. 95% of a particular dietary protein is digested and 5% is excreted in the stool as undigested.

The most important value is the percentage of net nitrogen usefulness (NNU). It indicates the quantity of nitrogen utilisation of a protein; this is the percentage of amino-acids from which new cells can be constructed.

Within the context of the protein metabolism, one part of the created amino-acids follows the anabolic working principle and the other the catabolic. What does that signify?

On the anabolic metabolic pathway the amino-acids that have been created are used in the liver to generate the body's own proteins. In this process no waste nitrogen is created and thus no energy either.

Detoxification Phase 1	
Phase 1: enzymatic steps	Phase 1: Modulators
Oxidation	Riboflavin (vit. B2)
Reduction	Niacin (vit. B3)
Hydrolysatation	Pyridoxin (vit. B6)
Hydration	Folic acid (vit. B9)
Dehalogenation	Cyanocobalamin (vit. B12)
	Glutathione
	Flavonoids
	Phospholipids
	Amino-acids

Table 1

Detoxification Phase 2	
Phase 2: enzymatic steps	Phase 2: Modulators
Sulphatisation	ATP
Glucuronidation	Glutathione
Glutathione conjugation	Glycine
Acetylation	Taurine
Methylation	Glutamine
Amino-acid conjugation	Arginine, ornithine
	Cysteine, methionine
	Methyl group donors

Table 2



Nevertheless: protein is the human being's greatest source of energy. The second metabolic pathway of digestible proteins serves to generate energy. By means of deamination/deamidation this catabolic pathway produces amino-nitrogen which, as a toxic metabolic waste product (ammonia), is broken down in the liver by carbamide biosynthesis and must be excreted via the kidneys. Furthermore, it produces energy by breaking down the carbon framework.

The nutritional value of a protein results from its net nitrogen usefulness (NNU) and its nitrogen waste. In this connection it is amazing that a hen's egg has an NNU of 48%, whilst the amount of nitrogen waste is only 52%. This means that it has a high NNU.

By way of contrast, red meats, e.g. beef, fish and poultry, have an NNU of 28-36%, with a nitrogen waste level of 72-64%, whilst soya has an NNU of only 17%, but a nitrogen waste level of 83%. This means that we need to consume more vegetable protein in order to obtain the same nutritional value as we would get from animal protein, admittedly with the result that we must accept a greater burden of ammonia.

This author works with MAP, Master Amino Acid Pattern, an extremely valuable food supplement product, which is absorbed immediately in 20 minutes by the small intestine and has an NNU of 99% and a nitrogen content of

only 1%. That is sensational. It brings about a metabolic relief with a high proportion of valuable essential amino-acids which are available to an unlimited extent for all metabolic and detoxifying processes.

Bile Acids

The production of bile acids in the liver is likewise of great importance with regard to the detoxification of the body. This is because, within the organism, bile acids carry out various metabolic functions. These include:

1. Digestion of fat
2. Regulation of cholesterol metabolism
3. Stimulation of intestinal peristalsis
4. Activation of lipase (pancreas)
5. Increasing the secretion of sodium and water from the large intestine
6. Transport of a large number of toxic substances, both endogenous (bilirubin) and exogenous.

Cholesterol has an immensely large task. It is a component of cell membranes and ensures their permeability. It is required for the biosynthesis of steroid hormones and vitamin D, and also of bile acids in the liver cells. In order for the bile acids to be formed in sufficient quantity and to flow away properly the cholesterol metabolism must be

intact.

Is that guaranteed on a daily basis, however? Is there a free, unhindered flow within the conveying biliary tract, or congestion that is not detectable by ultrasound? To what extent have the rage, anger and stress associated with tense life-styles (possibly) militated against a free flow over a long period of time?

Cleansing and Support of the Liver

A few days of intensive support and care for the liver can mean a great unburdening on all levels of our physical and emotional being. Disease requires that we regain the body's optimum ability to detoxify and regulate itself.

Prevention means taking care to ensure the smooth discharge of all functions. In everyday life it is almost impossible to meet this requirement. Even if only for a short while we must step aside and accept the guidance of experienced therapists.

A liver detox includes a wide-ranging programme and its aim is to support the metabolism with eliminative and regulatory measures, including colonic irrigation (colon hydrotherapy), neural therapy, auricular acupuncture, rich infusions of vitamins, trace elements, complex homeopathic remedies and TARAXAN SANUM® 3X.

Liver compresses of yarrow (cloths with the fresh herb from the ALPMED company CH-



3770 Zweisimmen), reflexology massage and biophoton irradiation of the liver improve the energy metabolism of the mitochondria – these are prerequisites of every regenerative process.

The bile stimulating medicine SANUGALL® is taken orally, 1 tablet 3 times a day.

In the space of a week, given rest and the realization that care of oneself is indispensable, substantial changes can take place.

“The human body – a miracle composed of opposites.

Simple, and yet so complex.

Able to take great strain, but also vulnerable.

Our body goes with us throughout our life; through it we experience ourselves and the world.

In the process, our body opens up infinite possibilities to us.

However, our body is not only a gift of God or of Nature, but also a personal task:

The result of our lifestyle.

Health is a fragile state!

Conception, birth, childhood, youth and maturity – up to old age.

The only lasting thing is constant change.

The body – a lifelong challenge and a visible mirror of our final

clock of life.” (see bibliography 4)

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