

## Eating to Support Your Liver

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“Liver Detox”.....it’s a term that gets thrown around a lot at healthfood stores, and although some folks have a vague notion that it’s a good thing, most people don’t really know what it’s all about. At most healthfood stores (and probably on late-night TV, I don’t know), there are many different supplements for sale that supposedly help detox your liver.

Detoxification is a real term, and vital to our health. Although other parts of our body are involved, our livers do the bulk of the work. They are in charge of breaking down and *deactivating* chemicals that find their way into us, either through chemical exposure or in natural form. This is done in two distinct phases, referred to simply as “phase I” and “phase II” reactions. In phase I reactions, the compounds are converted into something more water-soluble, in order to make it easier to flush out of our bodies. Unfortunately, sometimes this makes the compound even MORE toxic than it started out. In phase II reactions, these compounds are further modified in order to make them less reactive and ready to move out of the system. All of these processes involve specific chemical components found in our diet that help the system to work. Having a good balance of these compounds allows for smooth function of our liver. Sometimes, phase I reactions get stimulated, but the chemicals needed for phase II reactions are missing in the diet---this leads to even MORE harmful chemicals building up in the system.

Some phase I reactions can be induced (increased) by chemicals found in cigarette smoke and charred meats, or from prescription medications, for instance. If your phase II reactions are working well, this may not be too much of a problem, but it’s all about balance. Imagine a conveyor belt in which one step is getting backed up; things will get clogged up quickly, just like in that “I Love Lucy” episode. Some phase II reactions can be induced by flavinoids, those compounds found in fruits in vegetables. For instance, resveritrol in grape skins induces phase II reactions while decreasing phase I reactions. This improved balance helps the body to deal with chemicals without forming more toxicity in the process. Chemicals in the Brassica family of plants (broccoli, cabbage, kale) induce multiple phase II reactions, allowing for faster detoxification.

Other cofactors are important as well. Without sulfur and methyl groups, the phase II reactions get slowed down. Sulfur compounds are abundant in onions, garlic, and scallions; methyl groups are found in B vitamins from whole grains and legumes.

Phase I reactions occur primarily at cell walls, rather than within the cells themselves. It has been shown that abnormal cell walls will impair these processes. Cell walls need “healthy fats” to function correctly---trans fats (commonly found in processed foods) lead to abnormal cell walls, while healthy fats from olive oil, walnuts, avocados and fish help your body make better cell walls.

There are a few substances that are particularly helpful in detoxification. Curcumin, found in the spice turmeric, has a positive reaction on both phase I and phase II reactions. D-limonene from citrus fruits and indole-3-carbinole from Brassica plants also have a positive impact on both phases of detoxification.

The next time you're told by a friend that you should "do a liver detox", just smile and take them to dinner. Have kale and onions sauteed in olive oil, along with brown rice (spiced with turmeric and sprinkled with lemon juice) and include red grapes for dessert. Now, isn't that better than drinking some nasty powder or taking a bunch of supplements? Works better, too!