

# Non-Alcoholic Fatty Liver Disease (NAFLD)

The reason for this accumulation of fat is a result of the way the liver processes simple carbohydrates most notably fructose. Fructose is, in many ways, remarkably similar to alcohol in the damage that it can do to your body and your liver. Unlike glucose, which can be used by virtually every cell in your body, fructose can only be metabolized by your liver, because your liver is the only organ that has the transporter for it. Since nearly all fructose gets shuttled to your liver, fructose ends up taxing and damaging your liver in the same way alcohol and other toxins do. In fact, fructose is virtually identical to alcohol regarding the metabolic havoc it wreaks.

In an earlier TM we talked about the dangers of fructose based on Dr. Johnson work in Colorado, below. Dr. Johnson emphasizes that increased levels of fructose have been associated with increases in uric acid. He feels increased uric acid is also a precursor for hypertension. He believes the levels should be 3.0 - 5.5; and if levels exceed that threshold, there is an increased risk for diabetes, obesity, hypertension, and kidney disease. Dr. Lustig, Professor of Pediatrics in the Division of Endocrinology at the University of California goes a step further by saying, "fructose is a "chronic, dose-dependent liver toxin." And just like alcohol, fructose is metabolized directly into fat not cellular energy, like glucose".

So excess sugar, particularly fructose will have a deleterious effect on our liver. Knowing that alcohol, caffeine, trans fats, pain relievers like acetaminophen, pesticides, herbicides, and heavy metals also take a toll on the liver, it behooves us as wellness clinicians to look for early warning signs that the liver needs a vacation, i.e., some foods and nutrients to help flush or release collected toxins.

The following functional signs indicate the physiology of the liver is compromised and is in the process of storing fat in the liver.

1. **Elevated Uric Acid:** over 5.5 indicate and excess of fructose.
2. **Increased Insulin:** over 10. This is a major indicator of insulin resistance. The Liver is one of the first organs to be affected and triglycerides will increase.
3. **Elevated Triglycerides:** over 50% of the cholesterol, so if your cholesterol is 220 Triglycerides should not exceed 110.
4. **Triglyceride / HDL Ratio:** this ratio should ideally be below 2. The farther above 2.0 the ratio is the greater the chance for fatty liver and increased risk of cardiovascular disease.
5. **Reduced Albumin below 4.0:** the liver makes albumin. Low levels of albumin therefore suggest an underperforming liver.
6. **Decreased SGPT levels:** levels below 10 suggest a need for B6 as in B6 Phosphate 50mg tid.
7. **Increased SGPT:** over 20 for women or 30 for men. Many of the Medical Doctors who consider themselves functional doctors have adopted a tighter upper range.
8. **Elevated total cholesterol:** over 220.

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9. **Elevated Homocysteine:** 10 or higher indicate a need for Folate, B12 and B6 which are all needed for methylation which is essential for liver detoxification.

Consider the following supplements from Biotics Research:

1. **Wheat-free Inositol**, 3 grams daily or **Balanced B8** 1 tsp.
2. **Beta Plus**, 2 tid: use 1 with each meal the first day, 2 with each meal the second day, 3 with each meal the third day and then recycle back to one with each meal.
3. **Phosphatidylcholine**, 2-3 capsules tid.
4. **Optimal EFAs**, 2 tid: healthy oils like found in Optimal EFAs will displace hydrogenated oil.
5. **Cytozyme-LV**, 2 tablets tid: a neonatal (from an animal 1-3 days old) of liver bovine tissue in its anabolic form to provide forms of DNA and supportive nutrients in micro amounts to rebuild and repair tissue.
6. **Methylation Factors:** 1/2 tablet of 5-MTHF, the biologically active form of folate. If SGPT/ALT is under 10, add B6 phosphate 2 tid
7. **Chlorella**, 2 tid to rid the body of chemicals which are causing chemical overload i.e., glyphosate.
8. **BioDoph-7 Plus**, 2 at bedtime to replace healthy bacteria and support the microbiome.

As the diet is changed from a higher simple carbohydrate to one containing more protein and healthy fats if gas and bloating occur especially within 30 minutes of a meal add **Betaine Plus HP** to support healthy digestion of proteins.

## Dietary changes:

- Cut out ALL high fructose corn syrup from your diet.
- Reduce or eliminate starch. Get rid of white, processed flour.
- Increase, vegetables, nuts, and seeds.
- Increase healthy oils like olive oil, macadamia nut oil, avocados, coconut butter, and fish oil.
- Improve your metabolism through exercise.
- Limit fruit until Uric Acid is within range and avoid all fruit drinks. Eat the whole fruit with its natural fiber.
- Eat detoxifying liver-repairing foods. Focus on the broccoli family Kale, collards, cabbage, Brussels sprouts, broccoli, arugula, daikon radish, garlic, and onions.

## In a private conversation Dr. Alex Vasquez added the following for unresponsive cases:

Screen for iron overload with ferritin, avoid alcohol, address bacterial overgrowth with berberine and other supplements, multivitamin as Promultiplus, eat organic foods and avoid pesticides, lose fat and exercise more, consider Silymarin and Curcumin.