

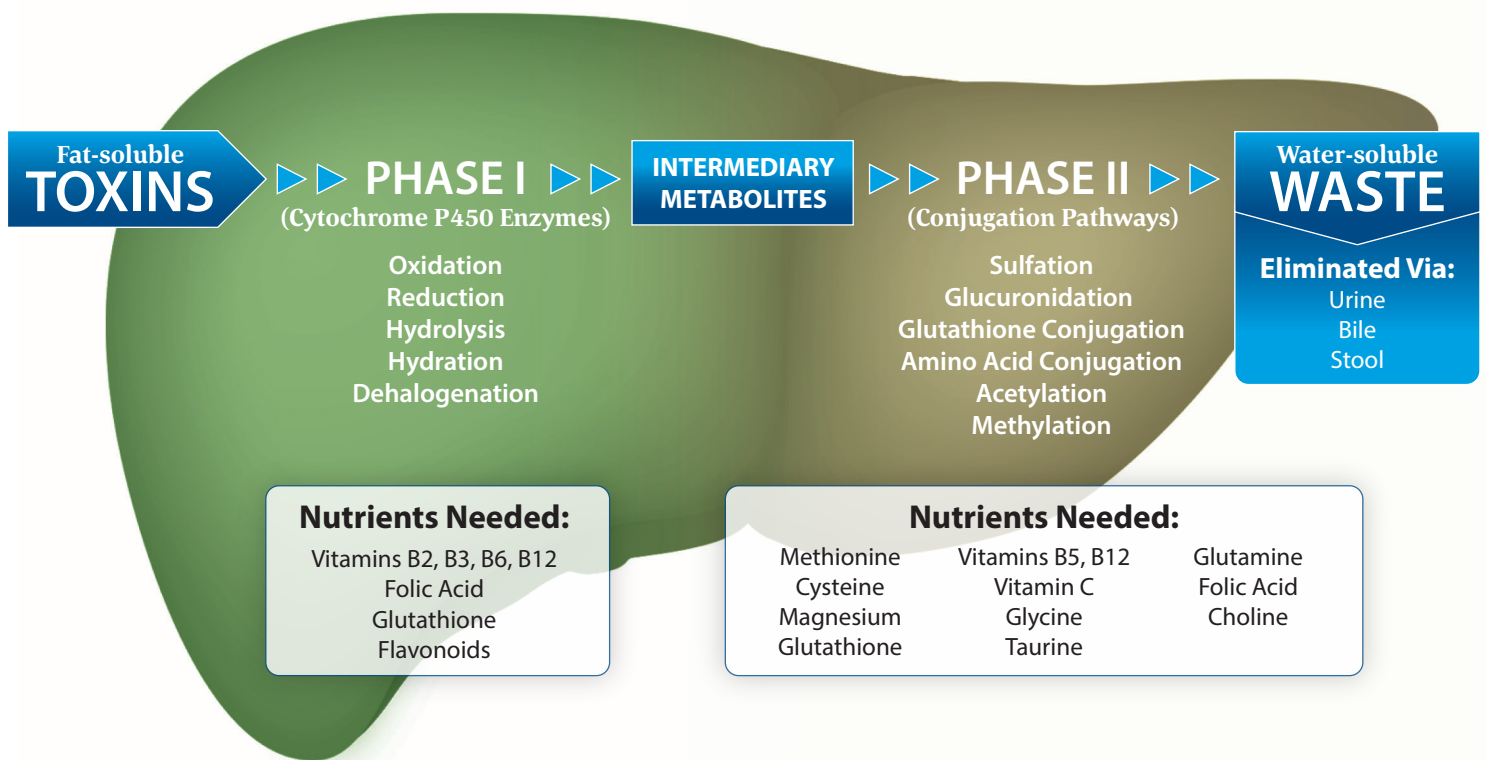
Patient Name:

Date:

Elimination and Detoxification

The liver is the body's primary detoxification organ, and works with the gastrointestinal tract to remove toxins encountered from the food we eat, as well as those produced by metabolic processes. When the GI tract is not functioning properly, additional burden is placed upon the liver. It is important to periodically restore the body's ability to eliminate toxins and maintain optimal liver function.

Most of the toxic compounds the body is exposed to are fat-soluble. Phase I of detoxification is responsible for converting these fat-soluble toxins to intermediary metabolites. These metabolites are often more harmful and reactive than the original toxins, and must be converted quickly via Phase II conjugation to water-soluble compounds that can be eliminated via stool or urine.



Phase II allows completion of the detoxification process:

- **Sulfation** conjugates toxins with sulfur-containing compounds. High-sulfur foods include cruciferous vegetables like broccoli, cauliflower and kale.
- **Glucuronidation** helps conjugate certain medications, food additives and preservatives, reproductive and adrenal hormones, and bilirubin.
- **Glutathione conjugation** helps convert toxins to water-soluble substances, especially heavy metals such as mercury and lead. Glutathione is the most versatile antioxidant in the body.
- **Acetylation** detoxifies environmental pollutants, such as tobacco smoke and exhaust fumes.
- **Amino acid conjugation** neutralizes and eliminates toxins by combining them with amino acids or protein from food sources.
- **Methylation** helps detoxify harmful estrogen metabolites, increases glutathione production, and repairs DNA damage.

Lifestyle Modifications

- ☐ **Identify and eliminate negative food sensitivities**
 - ☐ Gluten
 - ☐ Dairy
 - ☐ Soy
- ☐ **Increase fiber intake**
 - ☐ Increase fruit and vegetable consumption
- ☐ **Prepare and cook your own food**
 - ☐ Buy local, organic, seasonal produce
 - ☐ Limit sugar intake
 - ☐ Enjoy more meals with friends and family
- ☐ **Limit or avoid toxin exposure**
 - ☐ Lifestyle toxins
 - ☐ Environmental toxins
 - ☐ Internal toxins

Types of Toxins

Environmental Toxins

Pollution • Auto exhaust • Solvents (paint, cleaning products) • Heavy metals • Pesticides, herbicides, insecticides • Radiation • Inhalants

Lifestyle Toxins

Dietary choices (fast foods, fried foods) • Cosmetics • Nicotine • Alcohol • Caffeine • Prescription drugs • Over-the-counter drugs • Artificial food additives, colorings, preservatives • Meats containing hormones and antibiotics • Refined foods and sugars

Internal Toxins

Bacterial, yeast, fungal overgrowth • By-products of metabolic reactions (such as carbon dioxide and ammonia) • Undigested food • Stress • Unresolved trauma or abuse • Unhappy relationships

Additional Recommendations:

Nutrient Solutions

Protein, N-Acetyl Cysteine, Acetyl L-Carnitine	Milk Thistle, Dandelion, Artichoke	Multivitamin	Soluble and Insoluble Fiber
Remove oxidative stress and free radicals generated during both phases of detoxification Facilitate the excretion of toxins Support liver cell protection and regeneration	Upregulate cellular and liver detoxification Enhance the production of detoxification enzymes Protect the liver from toxin-induced free radical damage	Provide vitamins and minerals needed to support detoxification Enhance detoxification Include chelated minerals to enhance bioavailability	Help bind and eliminate toxins Improve bowel regularity and form Relieve constipation
Protein: 15 g, 2x/day N-Acetyl Cysteine: 125 mg, 2x/day Acetyl L-Carnitine: 125 mg, 2x/day	Milk Thistle: 130 mg, 2x/day Dandelion: 225 mg, 2x/day Artichoke: 145 mg, 2x/day	As recommended	25-38 g/day

Special Considerations for You:
