

# FirstLine Therapy Clear Change® Program

## Safe and Effective Metabolic Detoxification Program

In the United States, tens of thousands of chemicals—many of which are toxic—are used by industries to make products such as automobiles, clothing, and pharmaceuticals.<sup>1</sup> In 2012 alone, the Environmental Protection Agency (EPA) Toxin Release Inventory (TRI) reported that 3.63 billion pounds of chemicals were disposed of or released to air, water, or land.<sup>1</sup> The sheer volume to which humans are exposed to these toxicants and biological toxins on a daily basis can overburden the body's natural metabolic detoxification capacity. Long-term exposure to toxins is associated with a number of challenges, such as fatigue, waking up feeling unrefreshed, difficulty concentrating, mood disturbances, and gastrointestinal disturbances.\*<sup>2-4</sup>

Research has shown that certain nutritional ingredients including xanthohumol, broccoli, isomalto-oligosaccharides, green tea catechins, ellagic acid, N-acetyl-L-cysteine, L-ornithine, and zinc can support the body's detoxification function and help facilitate the removal of undesirable compounds from the body.\*<sup>5-14</sup>

The Clear Change Program—which includes these targeted ingredients—is designed to enhance the body's natural metabolic detoxification process while providing adequate fuel for both cleansing and other daily activities.\* Metagenics offers value-priced bundles for 10-day and 28-day programs that include a low-allergy-potential menu plan, targeted nutritional support, moderate exercise recommendations, and tips for stress management.

### Why Clear Change?

- Choice of UltraClear Plus®, UltraClear Plus® pH, or UltraClear® RENEW nutritional powder mix for metabolic detoxification support\*
- All UltraClear formulas deliver advanced, specialized nutritional support for Phase I and II detoxification\*
- UltraClear RENEW and UltraClear Plus pH also benefit Phase III detoxification by nutritionally supporting alkalization and excretion\*
- All UltraClear formulas are designed to complement a diet that is strategically structured to reduce the impact of processed foods and excess simple sugar by providing an array of nutrients that support the 3 phases of detoxification\*



For complete supplement facts information, visit [www.metagenics.com](http://www.metagenics.com)

- AdvaClear® dietary supplement supports balanced metabolic detoxification activity and provides antioxidant protection\*
- Free blender cup, comprehensive program guide, and program diary
- Online support options include a free webinar, additional recipes, FAQs, and daily motivational

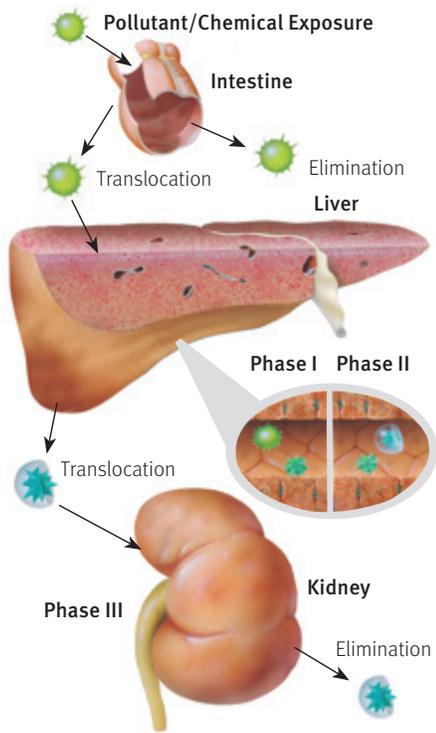


Figure 1. Three Phases of Metabolic Detoxification

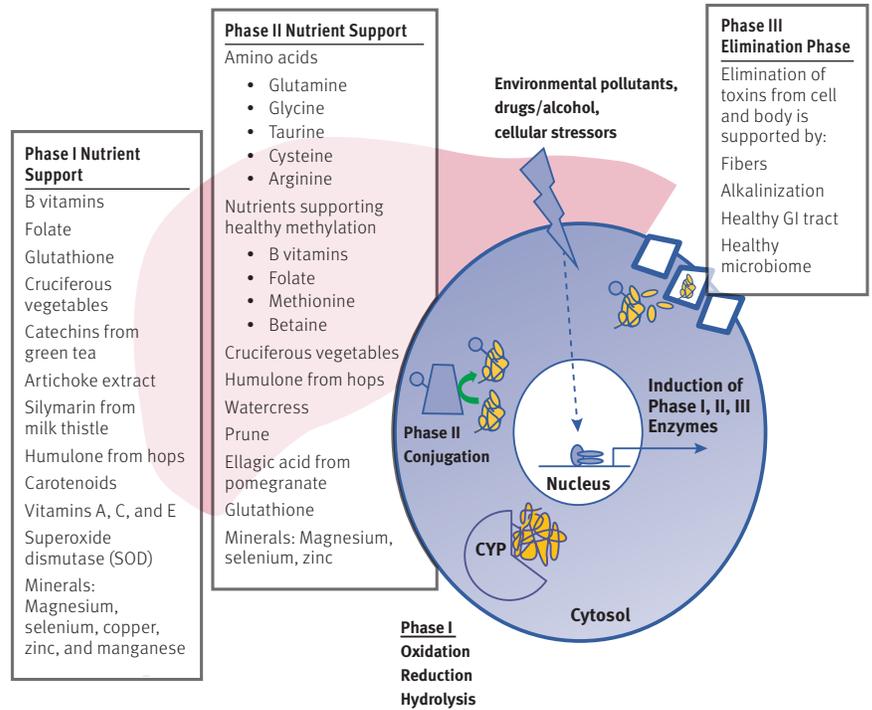


Figure 2. Phases of Detoxification and Associated Nutrients and Foods That Support the Process

## Scientific Rationale

Metabolic detoxification consists of 3 main phases (Figure 1):

- Phase I (functionalization)—Cytochrome P450 enzymes in the liver break down harmful substances, generating highly reactive molecules and free radicals
- Phase II (conjugation)—Large molecules are conjugated with newly modified substances, producing more water-soluble, less harmful substances
- Phase III (elimination phase)—Proteins transporters export conjugated substances from the cell for eventual elimination. Toxins are mainly eliminated from the body via urine, feces, and sweat

### References:

1. United States Environmental Protection Agency. 2012 Toxic Release Inventory National Analysis Overview. [http://www.epa.gov/sites/production/files/2014-01/documents/complete\\_2012\\_tri\\_na\\_overview\\_document.pdf](http://www.epa.gov/sites/production/files/2014-01/documents/complete_2012_tri_na_overview_document.pdf). Accessed January 22, 2016.
2. Kamel F and Hoppin JA. *Environ Health Perspect*. 2004;112(9):950-958.
3. Winneke G. Developmental aspects of environmental neurotoxicology: lessons from lead and polychlorinated biphenyls. *J Neurol Sci*. 2011;308(1-2):9-15.
4. Mapesa JO, et al. An exposome perspective to environmental enteric dysfunction. *Environ Health Perspect*. 2015; <http://dx.doi.org/10.1289/ehp.1510459>.
5. Krajka-Kuzniak V, Paluszczak J, Baer-Dubowska W. Xanthohumol induces phase II enzymes via Nrf2 in human hepatocytes in vitro. *Toxicology in Vitro*. 27;2013:149-156.
6. Atwell LL, Hsu A, Wong CP. Absorption and chemopreventive targets of sulforaphane in humans following consumption of broccoli sprouts or a myrosinase-treated broccoli sprout extract. *Mol Nutr Food Res*. 2015;59(3):424-433.
7. Cramer JM, Teran-Garcia M, Jeffery EH. Enhancing sulforaphane absorption and excretion in healthy men through the combined consumption of fresh broccoli sprouts and a glucoraphanin-rich powder. *Br J Nutr*. 2012;107:1333-1338.
8. Chen HL, Lu Y, Lin J, Ko L. Effects of isomaltoligosaccharides on bowel functions and indicators of nutritional status in constipated elderly men. *J Am Coll Nutr*. 2001;20(1):44-49.
9. Hodges RE, Minich DM. Modulation of metabolic detoxification pathways using foods and food-derived components: a scientific review with clinical application. *J Nutr Metabol*. 2015;2015:1-23.
10. Ahmed S, Rahman A, Saleem M, Athar M, Sultana S. Ellagic acid ameliorates nickel induced biochemical alterations: diminution of oxidative stress. *Hum Exp Toxicol*. 1999;18:691-698.
11. Xiong Y, Peterson PL, Lee CP. Effect of N-acetylcysteine on mitochondrial functions following traumatic brain injury in rats. *J Neurotrauma*. 1999;11:1067-1082.
12. Demura S, Yamada T, Yamaji S, Komatsu M, Morishita K. The effect of L-ornithine hydrochloride ingestion on performance during incremental exhaustive ergometer bicycle exercise and ammonia metabolism during and after exercise. *Eur J Clin Nutr*. 2010;64:1166-1171.
13. Batra N, Nehru B, Bansal MP. The effect of zinc supplementation on the effects of lead on the rat testis. *Reprod Toxicol*. 1998;12(5):535-540.
14. Cao J, Cousins RJ. Metallothionein mRNA in monocytes and peripheral blood mononuclear cells and in cells from dried blood spots increases after zinc supplementation of men. *J Nutr*. 2000;130:2180-2187.
15. Sutton P, et al. Toxic environmental chemicals: the role of reproductive health professionals in preventing harmful exposures. *Am J Obstet Gynecol*. 2012;207(3):164-173.

\* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.



Talk to your healthcare provider today about **FirstLine Therapy Clear Change Program**.

[www.clearchangeprogram.com](http://www.clearchangeprogram.com)