

UltraClear™ RENEW

Helps to support liver function

Environmental pollutants (toxicants) are ubiquitous in our environment. 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 process, allowing some of these substances to accumulate in tissues. Diets lacking the necessary nutrients to support a healthy metabolic process may lead to a buildup of free radicals in the body. The accumulation of toxins is associated with a number of health concerns, such as fatigue, waking up feeling unrefreshed, difficulty concentrating, mood disturbances, and gastrointestinal disturbances.¹⁻⁴

The UltraClear RENEW powder is formulated to deliver advanced, specialized nutritional support for liver function, with additional antioxidant support to help fight, protect, and reduce the cell damage caused by free radicals. This novel formula is designed to complement a diet that is strategically structured to reduce the impact of processed foods and excess simple sugars by providing an array of macro- and micronutrients and phytonutrients that support all 3 phases of the metabolic process.

Why UltraClear RENEW?

- Provided in a base of 12 g of proprietary vegan pea/rice protein and 2.5 grams of added amino acids
- Features hops polyphenols-rice protein complex; broccoli standardized to sulforaphane glucosinolate and active myrosinase (Brassinase™[†]); encapsulated dry melon juice concentrate (SOD B Extramel™^{††}) that provides superoxide dismutase (SOD); prune skin extract; and ellagic acid to promote healthy cellular activities
- Delivers N-acetyl-L-cysteine, green tea catechins, beta-carotene, and vitamins A, C, and E to provide antioxidant protection
- Features isomalto-oligosaccharides (IMO), designed to support intestinal health

[†]Brassinase is a trademark of VDF FutureCeuticals, Inc. Used under license.

^{††}SOD B Extramel is a trademark of Bionov. Used under license.



For complete supplement facts and information, visit www.metagenics.com/ca

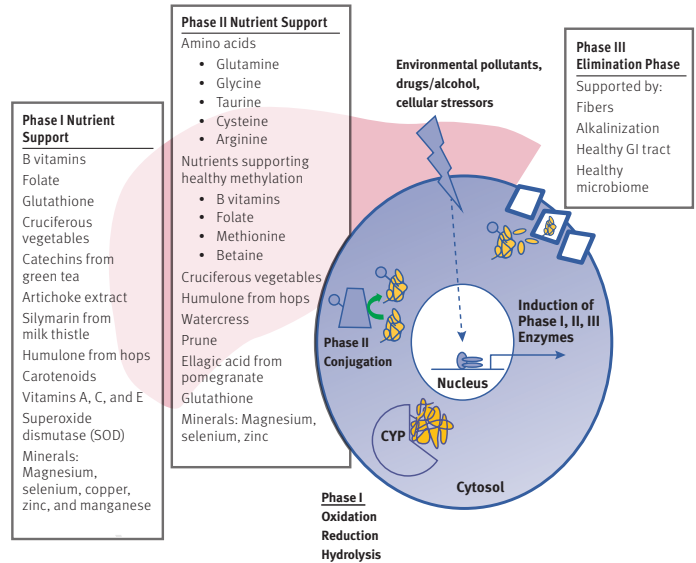
Scientific Rationale

Several nutrients have been shown to support the metabolic process and protect against free radicals (Figure 1).⁵⁻¹⁷

Phase I nutritional support includes antioxidants and some key nutrients and metabolites [such as NADH, NADPH (niacin, nicotinamide), flavin (riboflavin), and iron] while Phase II calls for significant, specific nutritional support.¹⁶ Phase I is not dependent on high nutritional demands and can remain active under fasting or poor nutritional status. In this case, Phase I can accelerate while Phase II activity may slow down due to nutritional insufficiencies, which may lead to accumulation of harmful intermediate molecules produced by Phase I reactions.¹⁶ Excess activity of Phase I, without coordinated Phase II activity as is the case with fasting or poor nutrition, can lead to an overload of potentially harmful reactive toxic intermediates. Hence, proper nutritional support for Phase II is essential along with enhancement of the body's antioxidant capacity.

The inclusion of fiber in the diet is important to facilitate elimination. Choosing organic food sources is desirable, as it has been shown to decrease levels of circulating pesticides.¹⁵

Several studies have demonstrated that nutritional support for the body's metabolic functions can lead to meaningful, positive clinical outcomes. For example, an elimination diet and nutritional may improve measures of Phase I and Phase II clearance.^{16,17}



(Figure 1)

References:

- Kamel F and Hoppin JA. *Environ Health Perspect.* 2004;112(9):950-958.
- Hussain J, et al. *Pediatr Clin North Am.* 2007;54(1):47-62.
- Winneke G. Developmental aspects of environmental neurotoxicology: lessons from lead and polychlorinated biphenyls. *J Neurol Sci.* 2011;308(1-2):9-15.
- Mapesa JO, et al. An exposome perspective to environmental enteric dysfunction. *Environ Health Perspect.* 2015; <http://dx.doi.org/10.1289/ehp.1510459>.
- Krajka-Kuzniak V, et al. Xanthohumol induces phase II enzymes via Nrf2 in human hepatocytes in vitro. *Toxicology in Vitro.* 2013;27:149-156.
- Atwell LL, et al. 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.
- Cramer JM, et al. 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.
- Chen HL, et al. Effects of isomalto-oligosaccharides on bowel functions and indicators of nutritional status in constipated elderly men. *J Am Coll Nutr.* 2001;20(1):44-49.
- Hodges RE and Minich DM. Modulation of metabolic detoxification pathways using foods and food-derived components: a scientific review with clinical application. *J Nutr Metab.* 2015;2015:1-23.
- Ahmed S, et al. Ellagic acid ameliorates nickel induced biochemical alterations: diminution of oxidative stress. *Hum Exp Toxicol.* 1999;18:691-698.
- Xiong Y, et al. *Neurotraum.* 1999;11:1067-1082.
- Demura S, et al. 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.
- Batra N, et al. The effect of zinc supplementation on the effects of lead on the rat testis. *Reprod Toxicol.* 1998;12(5):535-540.
- Cao J and 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.
- 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.
- Liska D, et al. Detoxification and biotransformational imbalances. *Explore.* 2006;2(2):122-140.
- Bland JS, Barrager E, Reedy RG, Bland K. *Alt Ther Health Med.* 1995;1(5):62-71.



Talk to your healthcare provider today
about **UltraClear RENEW** or call:
800.268.6200 CANADA
www.metagenics.com/ca