



thrivous.com – support@thrivous.com – +1 801 658 9661 – 50 W Broadway 333 #73216, SLC UT 84101 USA

SUMMARY OF CLINICAL STUDIES

Product	Vitality Geroprotector
SKU	VITALITY
Barcode	866033000277
Formula	3
Date	14 October 2024

Label

Warning: Consult a physician before and during use of all dietary supplements.

Use: Take 2 capsules up to 4 times daily with meals, for a total of 2 to 8 capsules daily.

Storage: Keep cool and dry, away from children.

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**VITALITY
GEROPROTECTOR**

Formula 3

Supports Healthy Cell Function
and Metabolism for Better Aging*

**Dietary Supplement
60 CAPSULES**

Supplement Facts

Serving Size 2 Capsules
Servings Per Container 30

Amount Per Serving	% Daily Value
Selenium (from Selenomethionine) 50 mcg	91%
Chromium (from Chromium Picolinate) 200 mcg	571%
Nicotinamide Riboside Chloride 250 mg	†
Blueberry Fruit Extract 240 mg (Mirtoselect® 36% Anthocyanin)	†
Trans Resveratrol 125 mg	†
Dihydroberberine 100 mg	†
Coenzyme Q10 (as Ubiquinone) 50 mg	†

† Daily Value Not Established

Other Ingredients: Cellulose, Rice Flour, MCT Oil, Silicon Dioxide, Sodium Stearoyl Fumarate, Calcium Carbonate, Dicalcium Phosphate
THRIVOUS, PO BOX 4078 #73216, SLC UT 84110 USA

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Berberine to Support Healthy Blood Sugar and Metabolic Function

Berberine supplements may support healthy blood sugar levels and metabolic function, according to these clinical studies on humans:

- [Efficacy of Berberine in Patients with Non-Alcoholic Fatty Liver Disease.](#) In 2015, this study found that, “as compared with [lifestyle intervention], [Berberine] treatment plus [lifestyle intervention] resulted in a significant reduction of [hepatic fat content] ... paralleled with better improvement in body weight, [insulin resistance], and serum lipid profiles”. Participants used three doses of 500 mg for a total of 1500 mg daily for 16 weeks.
- [Effect of berberine administration on metabolic syndrome, insulin sensitivity, and insulin secretion.](#) In 2013, this study found that “administration of berberine leads to remission of metabolic syndrome and decreases in waist circumference, [systolic blood pressure], triglycerides, and total insulin secretion, with an increase in insulin sensitivity”. Participants used three doses of 500 mg for a total of 1500 mg daily for 3 months.
- [Treatment of type 2 diabetes and dyslipidemia with the natural plant alkaloid berberine.](#) In 2008, this study found that “fasting and postload plasma glucose decreased” with Berberine supplementation. Participants used two doses of 500 mg for a total of 1000 mg daily for 3 months.
- [Efficacy of berberine in patients with type 2 diabetes mellitus.](#) In 2008, this study

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found that “the hypoglycemic effect of berberine was similar to that of metformin,” and “berberine is a potent oral hypoglycemic agent with beneficial effects on lipid metabolism.” 84 participants used Metformin or three doses of 500 mg Berberine for a total of 1500 mg daily for three months.

This clinical study review confirms that Berberine supplements may support healthy blood sugar levels and metabolic function:

- [Berberine in the treatment of type 2 diabetes mellitus: a systemic review and meta-analysis.](#) In 2012, this review of 14 studies found that “compared with lifestyle modification with or without placebo, the cointervention of berberine and lifestyle modification showed significantly hypoglycaemic and antidyslipidemic response”. Participants generally used one to three doses of 500 mg for a total of 500 to 1500 mg daily for 8 to 24 weeks.

Dihydroberberine evidences five times greater bioavailability than common Berberine, according to this clinical study:

- [Transforming berberine into its intestine-absorbable form by the gut microbiota.](#) In 2015, this study found that “gut microbiota converts [Berberine] into its absorbable form of dihydroberberine (dhBBR), which has an intestinal absorption rate 5-fold that of [Berberine] in animals.”

Blueberry Anthocyanin to Support Healthy DNA and Genetic Function

Blueberry Anthocyanin supplements (dosage at 350 to 1400 mg Anthocyanin daily) may support healthy DNA and genetic function, according to these clinical studies on humans:

- [Effect Of A Wild Blueberry \(Vaccinium Angustifolium\) Drink Intervention On Markers Of Oxidative Stress, Inflammation And Endothelial Function In Humans With Cardiovascular Risk Factors.](#) In 2013, this study found that Blueberry “significantly reduced the levels of oxidized DNA bases and increased the resistance to oxidatively induced DNA damage”. Participants used 25 g (375 mg Anthocyanin) daily for 6 weeks.

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- [Modulation of Nrf2-dependent gene transcription by bilberry anthocyanins in vivo.](#) In 2013, this study found that acute Blueberry supplementation provided a “decrease in oxidative DNA damage”.
- [A Single Portion Of Blueberry \(Vaccinium Corymbosum L\) Improves Protection Against DNA Damage But Not Vascular Function In Healthy Male Volunteers.](#) In 2013, this study found that Blueberries “improve cell antioxidant defense against DNA damage”. Participants used 300 g (348 mg Anthocyanin) acutely.
- [Consumption Of Blueberries With A High-carbohydrate, Low-fat Breakfast Decreases Postprandial Serum Markers Of Oxidation.](#) In 2013, this study found that Blueberry “can provide statistically significant oxidative protection”. Participants used 75 g (968 mg Anthocyanin) daily for 3 weeks.
- [Bilberries reduce low-grade inflammation in individuals with features of metabolic syndrome.](#) In 2012, this study found that Blueberry “consumption may reduce low-grade inflammation”. Participants used 400 g (1381 mg Anthocyanin) daily for 2 months.
- [Effect Of New Zealand Blueberry Consumption On Recovery From Eccentric Exercise-induced Muscle Damage.](#) In 2012, this study found that Blueberry “accelerates recovery of muscle peak isometric strength ... [and] appears to involve an up-regulation of adaptive processes, i.e. endogenous antioxidant processes”. Participants used 1000 g (483 mg Anthocyanin) acutely.
- [Effect Of Blueberry Ingestion On Natural Killer Cell Counts, Oxidative Stress, And Inflammation Prior To And After 2.5 H Of Running.](#) In 2011, this study found that Blueberry “increases [natural killer] cell counts, and acute ingestion reduces oxidative stress and increases anti-inflammatory cytokines”. Participants used 250 g daily for 6 weeks.
- [Impact Of Multiple Genetic Polymorphisms On Effects Of A 4-week Blueberry Juice Intervention On Ex Vivo Induced Lymphocytic DNA Damage In Human Volunteers.](#) In 2007, this study found that Blueberry provided “20% protection ... against ... oxidative DNA damage”. Participants used 1000 ml daily for 4 weeks.

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- [The Effect Of Wild Blueberry \(Vaccinium Angustifolium\) Consumption On Postprandial Serum Antioxidant Status In Human Subjects.](#) In 2002, this study found that Blueberry “is associated with a diet-induced increase in ex vivo serum antioxidant status”. Participants used 100 g (1200 mg Anthocyanin) acutely.

Mirtoselect® evidences four times greater bioavailability than common Blueberry Anthocyanin extract, according to this clinical study:

- [The effect of a natural, standardized bilberry extract \(Mirtoselect®\) in dry eye: a randomized, double blinded, placebo-controlled trial.](#) In 2017, this study found that “relative bioavailability of Mirtoselect® compared to the highly purified anthocyanins-rich fraction, expressed as the ratio of the dosage adjusted-AUC values, resulted 4.”

Chromium to Support Healthy Blood Sugar and Metabolic Function

Chromium supplements may support healthy blood sugar levels and metabolic function, according to these clinical studies on humans:

- [Influence of chromium-enriched yeast on blood glucose and insulin variables, blood lipids, and markers of oxidative stress in subjects with type 2 diabetes mellitus.](#) In 2006, this study found that supplementation with Chromium “is safe and can result in improvements in blood glucose variables and oxidative stress.”
- [The influence of chromium chloride-containing milk to glycemic control of patients with type 2 diabetes mellitus: a randomized, double-blind, placebo-controlled trial.](#) In 2006, this study found that Chromium supplements “resulted in lowering of [fasting plasma glucose], fasting insulin, and improvement of metabolic control.”
- [Role of chromium supplementation in Indians with type 2 diabetes mellitus.](#) In 2002, this study found that “chromium supplementation seems to improve glycaemic control.”

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- [Elevated intakes of supplemental chromium improve glucose and insulin variables in individuals with type 2 diabetes.](#) In 1997, this study found that “supplemental chromium had significant beneficial effects on HbA1c, glucose, insulin, and cholesterol variables.”

Chromium picolinate may provide greater bioavailability than other forms of Chromium, according to this clinical study:

- [Comparison of acute absorption of commercially available chromium supplements.](#) In 2021, this study found that “based on an indirect measure of acute absorption, [Chromium Picolinate] was superior to three other [Chromium] complexes commonly sold as supplements.”

Coenzyme Q10 to Support Healthy Mitochondria and Cellular Function

Coenzyme Q10 supplements (dosage at 100 to 300 mg daily) may support healthy mitochondria and cellular function, according to these clinical studies on humans:

- [Can coenzyme q10 improve clinical and molecular parameters in fibromyalgia?](#) In 2013, this study found that Coenzyme Q10 supplementation resulted in “recovery of inflammation, antioxidant enzymes, mitochondrial biogenesis, and AMPK gene expression levels”. Participants used 300 mg daily for 40 days.
- [Increased oxidative stress and coenzyme Q10 deficiency in juvenile fibromyalgia: amelioration of hypercholesterolemia and fatigue by ubiquinol-10 supplementation.](#) In 2013, this study found that Coenzyme Q10 supplementation “improved chronic fatigue”. Participants used 100 mg daily for 12 weeks.
- [Oxidative stress correlates with headache symptoms in fibromyalgia: coenzyme Q₁₀ effect on clinical improvement.](#) In 2012, this study found that Coenzyme Q10 “restored biochemical parameters [related to oxidative stress and bioenergetic status in blood mononuclear cells] and induced a significant improvement in clinical and headache symptoms”. Participants used three doses of 100 mg for a total of 300 mg daily for 3 months.

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- [Oral coenzyme Q10 supplementation improves clinical symptoms and recovers pathologic alterations in blood mononuclear cells in a fibromyalgia patient.](#) In 2012, this study found that, “at the cellular level, CoQ10 treatment restored mitochondrial dysfunction and the mtDNA copy number, decreased oxidative stress, and increased mitochondrial biogenesis”.
- [Coenzyme Q10 improves seminal oxidative defense but does not affect on semen parameters in idiopathic oligoasthenoteratozoospermia: a randomized double-blind, placebo controlled trial.](#) In 2011, this study found that Coenzyme Q10 supplementation “is associated with alleviating oxidative stress”. Participants used 200 mg daily for 12 weeks.
- [Reversal of mitochondrial dysfunction by coenzyme Q10 supplement improves endothelial function in patients with ischaemic left ventricular systolic dysfunction: a randomized controlled trial.](#) In 2011, this study found that Coenzyme Q10 supplementation “improved mitochondrial function”. Participants used 300 mg daily for 8 weeks.
- [Effects of coenzyme Q10 supplementation on liver mitochondrial function and aerobic capacity in adolescent athletes.](#) In 2007, this study found that Coenzyme Q10 supplementation “can depress lipid peroxidation”. Participants used 100 mg daily for 1 month.

Coenzyme Q10 and Selenium to Promote Healthy Aging

The combination of Coenzyme Q10 and Selenium supplements may enhance healthy aging, according to these clinical studies on humans:

- [Selenoprotein P increases upon selenium and coenzyme Q10 supplementation and is associated with telomere length, quality of life and reduced inflammation and mortality.](#) In 2024, this study found that Selenium and Coenzyme Q10 supplementation over a period of four years were “facilitating systemic selenium bioavailability and resulting in the observed positive health effects.”
- [Selenium and coenzyme Q10 improve the systemic redox status while reducing](#)

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[cardiovascular mortality in elderly population-based individuals](#). In 2023, this study found that “supplementation with selenium and coenzyme Q10 ... [supported] a reduction in systemic oxidative stress.”

- [Effects of an Intervention with Selenium and Coenzyme Q10 on Five Selected Age-Related Biomarkers in Elderly Swedes Low in Selenium: Results That Point to an Anti-Ageing Effect-A Sub-Analysis of a Previous Prospective Double-Blind Placebo-Controlled Randomised Clinical Trial](#). In 2023, this study found that “supplementation with selenium/Q10 influenced the analysed biomarkers in ways indicating an anti-ageing effect.”
- [Selenium and Coenzyme Q10 Intervention Prevents Telomere Attrition, with Association to Reduced Cardiovascular Mortality-Sub-Study of a Randomized Clinical Trial](#). In 2022, this study found “preservation of [telomere length] after selenium and coenzyme Q10 supplementation.”

Selenomethionine evidences greater bioavailability and more consistent efficacy compared to other forms of Selenium, according to these clinical studies:

- [Organic selenium supplementation increased selenium concentrations in ewe and newborn lamb blood and in slaughter lamb meat compared to inorganic selenium supplementation](#). In 2008, this study found that “organic selenium supplementation [mostly selenomethionine] gave higher selenium concentration ... than inorganic selenium supplementation.”
- [The use of high-selenium yeast to raise selenium status: how does it measure up?](#) In 2004, this study found that the “major drawback to [Selenium-enriched yeast] is likely to be perceived as its variability with respect to its [Selenium] content.”

Nicotinamide Riboside to Support Healthy Metabolic Function

Nicotinamide Riboside supplements may support healthy metabolic function, according to these clinical studies on humans:

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- [Nicotinamide riboside supplementation alters body composition and skeletal muscle acetylcarnitine concentrations in healthy obese humans.](#) In 2020, this study found that Nicotinamide Riboside supplements “increased skeletal muscle NAD⁺ metabolites, affected skeletal muscle acetylcarnitine metabolism, and induced minor changes in body composition and sleeping metabolic rate.”
- [Safety and Metabolism of Long-term Administration of NIAGEN \(Nicotinamide Riboside Chloride\) in a Randomized, Double-Blind, Placebo-controlled Clinical Trial of Healthy Overweight Adults.](#) In 2019, this study found that Nicotinamide Riboside supplements “dose-dependently and significantly increased whole blood NAD⁺.”
- [Nicotinamide Riboside Augments the Aged Human Skeletal Muscle NAD⁺ Metabolome and Induces Transcriptomic and Anti-inflammatory Signatures.](#) In 2019, found that Nicotinamide Riboside “is available to aged human muscle and [identified] anti-inflammatory effects.”
- [Chronic nicotinamide riboside supplementation is well-tolerated and elevates NAD⁺ in healthy middle-aged and older adults.](#) In 2018, this study found that “chronic supplementation with the NAD⁺ precursor vitamin, nicotinamide riboside (NR), is well tolerated and effectively stimulates NAD⁺ metabolism in healthy middle-aged and older adults.”

Resveratrol to Support Healthy Blood Sugar and Metabolic Function

Resveratrol supplements may support healthy blood sugar levels and metabolic function, according to these meta-analyses of human studies:

- [The effects of resveratrol supplementation in patients with type 2 diabetes, metabolic syndrome, and nonalcoholic fatty liver disease: an umbrella review of meta-analyses of randomized controlled trials.](#) In 2021, this meta-analysis found that “there was a clinically important effect” on HbA1c.
- [Usefulness of resveratrol supplementation in decreasing cardiometabolic risk factors comparing subjects with metabolic syndrome and healthy subjects with or](#)

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[without obesity: meta-analysis using multinational, randomised, controlled trials.](#)

In 2020, this meta-analysis found that Resveratrol “supplementation seems to improve cardiometabolic health.”

- [Effects of resveratrol supplementation on risk factors of non-communicable diseases: A meta-analysis of randomized controlled trials.](#) In 2018, this meta-analysis found that Resveratrol supplements “exerted significant reductions in systolic blood pressure (SBP) and diastolic blood pressure (DBP) ... [and] trials with resveratrol intervention ≥ 3 months significantly reduced the low-density lipoprotein cholesterol (LDL-C), DBP, and glycated hemoglobin (HbA1c) values.”

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