designs for health® Australia

GI Map Seminar

Presentation slides

Dr Oscar Coetzee

Dr. Oscar Coetzee

- **Associate Professor**
- **Director, (Doctoral of Health Sciences)** Nutrition Track: University of Bridgeport
- **Board Certified Clinical Nutritionist** – 20 years clinical experience
- **Advisory Board:** "Designs for Health" Nutraceuticals

Specializations

- Metabolic Syndrome/Diabetes
- Sports Performance Enhancement
- Weight Loss Resistance – Lipedema
- Intestinal Permeability

Major Causes of Nutrient Deficiencies in Modern Society – Evidence Based

Why do we need to supplement intervention?

1. Proton Pump Inhibitor Use
2. Bariatric Surgery
3. Environmental Toxicity – Glyphosate

Glyphosate has been approved for use in Australia for more than 40 years and is the active ingredient in about 500 herbicide products

4. Celiac Disease - Non/Celiac Gluten Sensitivity

J Clin Biochem Nutr. 2018 Jan;62(1):100-106. doi: 10.3164/jcbn.17-75. Epub 2017 Dec 12.

The influence of long-term use of proton pump inhibitors on the gut microbiota: an age-sex-matched case-control study.

Takagi T[1,2], Naito Y[1], Inoue R[3], Kashiwagi S[1], Uchiyama K[1], Mizushima K[1], Tsuchiya S[1], Okayama T[1], Dohi O[1], Yoshida N[1], Kamada K[1], Ishikawa T[1], Handa O[1], Konishi H[1], Okuda K[1], Tsujimoto Y[1], Omoto Y[4], Itoh Y[1]

Author information

Abstract

Proton pump inhibitors (PPIs) are widely used to treat gastro-esophageal reflux and prevent gastric ulcers, and have been considered as low risk. However, recent studies have identified possible associations between PPI use and gut microbiota, suggesting that PPIs use increases the risk of enteric infections, including Clostridium difficile infection. To investigate gut microbiota in Japanese PPIs users, we conducted 16S metagenomics analysis of fecal samples collected from PPI users and healthy adults. In total, 38 PPI users and 38 PPI non-users (as control subjects) matched by age and sex were recruited and fecal samples were obtained to analyze the gut microbiome using 16S rRNA gene sequencing. There were significant differences in the microbial structure between PPI non-users and PPI users. In contrast, the analysis of α-diversity revealed no significant differences between PPI non-users and PPI users. When comparing in genus level between these two groups, the genera Streptococcus was significantly abundant and the genera Faecalibacterium was significantly decreased in PPI users. Our findings indicate a probable association between PPI use and the alteration of microbiota. These alterations might provide a mechanism by which PPIs predispose enteric infection such as Clostridium difficile infection.

KEYWORDS: 16S rRNA; gut microbiota; proton pump inhibitors (PPIs)

PMID: 29371761 PMCID: PMC5773837 DOI: 10.3164/jcbn.17-75

Int J Pharm Pract. 2018 Dec;26(6):569-574. doi: 10.1111/ijpp.12456. Epub 2018 Jan 31.

Proton pump inhibitor-induced hypomagnesaemia and hypocalcaemia: case review.

Author information

Abstract

Proton pump inhibitor (PPI)-induced hypomagnesaemia is a rare but serious adverse effect of a widely prescribed medication. It has become an increasingly recognised complication since 2006, with the U.S. Food and Drug Administration issuing a warning for this risk with regards to long-term PPI use. We present the case of PPI-associated hypomagnesaemia and hypocalcaemia. A 91 year old male presented with tetany from severe hypomagnesaemia and hypocalcaemia. This condition occurred in the context of 18 months of PPI use, and resolved following cessation of PPI therapy and the replenishment of magnesium and calcium stores. Monitoring of magnesium, calcium and potassium levels is crucial in patients prescribed PPIs long-term, especially the elderly patient.

KEYWORDS: PPI; hypomagnesaemia

[illegible]

Iron Deficiency Anemia Due to the Long-term Use of a Proton Pump Inhibitor.

Imai R, Higuchi T, Morimoto M, Koyamada R, Okada S.

Author information

Abstract

A 52-year-old man who had been taking omeprazole, a proton pump inhibitor (PPI), for 25 years developed iron deficiency anemia. An evaluation of the entire gastrointestinal tract did not reveal any possible causes of gastrointestinal blood loss. The cause of the iron deficiency was considered to be a reduction in gastrointestinal iron absorption in association with the reduced secretion of gastric acid due to PPI use. This case demonstrates that long-term PPI use for as long as 25 years may cause iron deficiency anemia and should be considered in the differential diagnosis of iron deficiency anemia in long-term PPI users.

KEYWORDS: iron deficiency anemia; long-term use; proton pump inhibitor

[illegible]

[illegible]

Adverse effects of proton pump inhibitor use in older adults: a review of the evidence.

Maes ML, Fixen DR, Linnebur SA.

Author information

Abstract

Proton-pump inhibitors (PPIs) are a widely prescribed class of medications used to treat acid-related disorders and use has significantly increased over the last few decades. PPIs are often inappropriately prescribed and since they have been on the market, a number of post-marketing studies have been published demonstrating associations between longer duration of PPI therapy and a number of adverse effects that are a concern in older adults. The objective of this review is to discuss the existing literature of potential adverse effects with long-term PPI use in older adults and to summarize the implications in clinical practice. A PubMed search was conducted to identify studies evaluating the potential long-term adverse effects of PPI therapy in older adults, and publications were selected based on relevant criteria. PPIs have been associated with an increased risk of a number of adverse effects including osteoporotic-related fractures, Clostridium difficile infection, community-acquired pneumonia, vitamin B12 deficiency, kidney disease, and dementia, demonstrated by a number of case-control, cohort studies, and meta-analyses. Older adults should be periodically evaluated for the need for continued use of PPI therapy given the number of potential adverse effects associated with long-term use.

KEYWORDS: Clostridium difficile; aged; bone fractures; dementia; kidney diseases; long-term adverse effects; osteoporosis; pneumonia; proton-pump inhibitors; vitamin B 12 deficiency

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Saudi J Gastroenterol. 2017 Jul-Aug;23(4):223-233. doi: 10.4103/sjg.SJG_571_16.

Effect of long-term proton pump inhibitor administration on gastric mucosal atrophy: A meta-analysis.

Li Z, Gu Z, Li L, Wang Z, Xu H, He X, Peng J.

Author information

Abstract

BACKGROUND/AIMS: Proton pump inhibitors (PPIs) are widely used for the treatment of acid-related gastrointestinal diseases. Recently, some studies have reported that PPIs can alter the gastric mucosal architecture; however, the relationship remains controversial. This meta-analysis study was designed to quantify the association between long-term PPI administration and gastric atrophy.

MATERIALS AND METHODS: A PubMed search was conducted to identify studies using the keywords proton pump inhibitors or PPI and gastric atrophy or atrophic gastritis; the timeframe of publication searched was up to May 2016. Heterogeneity among studies was tested with the Q test; odds ratios (OR) and 95% confidence intervals (CI) were calculated. P values were calculated by Q tests and regarded as statistically significant when <0.05.

RESULTS: We identified 13 studies that included 1465 patients under long-term PPI therapy and 1603 controls, with a total gastric atrophy rate of 14.50%. There was a higher presence of gastric atrophy (18.84%, statistically significant) in PPI group compared to the control group (13.29%) (OR: 1.55, 95% CI: 1.00-2.41).

CONCLUSIONS: The pooled data suggest that long-term PPI use is associated with increased rates of gastric atrophy. Large-scale multicenter studies should be conducted to further investigate the relationship between acid suppressants and precancerous diseases.

PMID: 28721975 PubMed Central PMCID: PMC5541679 DOI: 10.4103/sjg.SJG_571_16

Format: Abstract

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Aliment Pharmacol Ther. 2016 Feb;43(3):374-84. doi: 10.1111/apt.13492. Epub 2016 Feb 29.

A comparison of the gut microbiome between long-term users and non-users of proton pump inhibitors.

Clooney AG, Bernstein CN, Leslie WD, Vagianos K, Sargent M, Laserna-Mendieta EJ, Claesson MJ, Targownik LE.

Author information

Abstract

BACKGROUND: Proton pump inhibitor (PPI) use is associated with an increased risk of Clostridium difficile infection (CDI), though the mechanism is unclear. PPI induced alterations to the gut microbiome may facilitate the emergence of CDI, though the effects of PPIs on gut microbiota are not well characterised. [Correction added on 10 March 2016, after first online publication: microflora has been changed to microbiota throughout the article.]

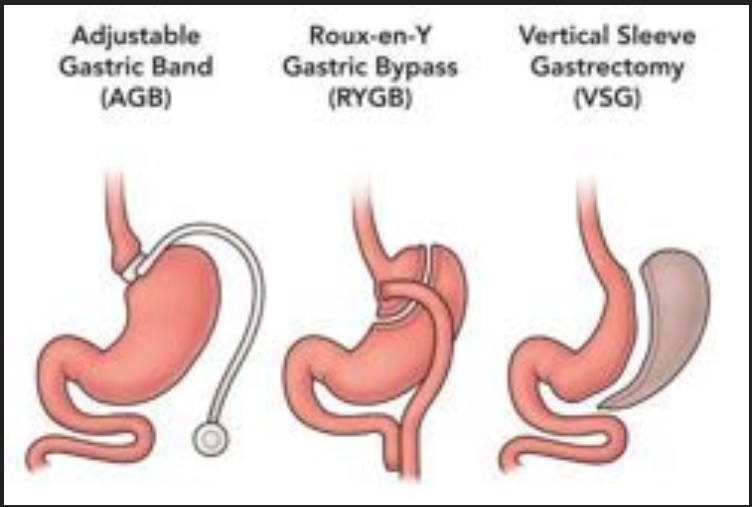
AIM: To compare the faecal microbiomes of long-term PPI users to those with no history of PPI use.

METHODS: We used a population-based database to identify individuals with ≥5 years of continuous PPI use along with non-PPI using controls. Stool samples were subjected to microbiological analysis, with hierarchical clustering at genus level, along with alpha and beta diversity measures comparing the two groups. Metadata was accounted for using quantile regression to eliminate potential confounding variables in taxonomic abundance comparisons.

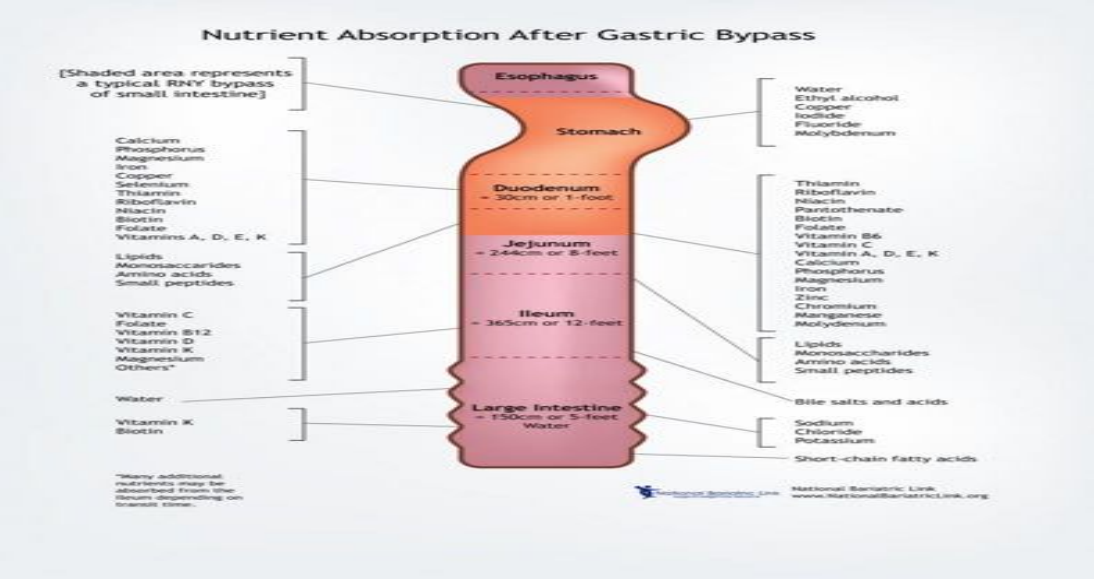
RESULTS: Sixty-one subjects (32 PPI, 29 controls) were analysed. While no significant differences in alpha diversity were found between the PPI users and controls, a moderate shift of the PPI users away from the non-PPI user cluster in the beta diversity was observed. After controlling for pertinent confounders, we discovered a decrease in Bacteroidetes and an increase in Firmicutes at the phylum level. We also performed species classifications and found Holdemania filiformis and Pseudoflavonifractor capillosus to be increased and decreased in the PPI cohort, respectively.

CONCLUSIONS: Long-term PPIs use has an effect on the gut microbiome. The alteration in the ratio of Firmicutes to Bacteroidetes may predispose to the development of CDI.

Gastric Surgery



Absorption after surgery



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Vitamin D and intestinal calcium transport after bariatric surgery.

Author information

Abstract

Bariatric surgery is a highly effective treatment for obesity, but it may have detrimental effects on the skeleton. Skeletal effects are multifactorial but mediated in part by nutrient malabsorption. While there is increasing interest in non-nutritional mechanisms such as changes in fat-derived and gut-derived hormones, nutritional factors are modifiable and thus represent potential opportunities to prevent and treat skeletal complications. This review begins with a discussion of normal intestinal calcium transport, including recent advances in our understanding of its regulation by vitamin D, and areas of continued uncertainty. Human and animal studies of vitamin D and intestinal calcium transport after bariatric surgery are then summarized. In humans, even with optimized 25-hydroxyvitamin D levels and recommended calcium intake, fractional calcium absorption decreased dramatically after Roux-en-Y gastric bypass (RYGB). In rats, intestinal calcium absorption was lower after RYGB than after sham surgery, despite elevated 1,25-dihydroxyvitamin D levels and intestinal gene expression evidence of vitamin D responsiveness. Such studies have the potential to shed new light on the physiology of vitamin D and intestinal calcium transport. Moreover, understanding the effects of bariatric surgery on these processes may improve the clinical care of bariatric surgery patients.

KEYWORDS: Bariatric surgery; Calcium; Gastric bypass; Malabsorption; Sleeve gastrectomy; Vitamin D

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SERUM VITAMIN B12, IRON AND FOLIC ACID DEFICIENCIES IN OBESE INDIVIDUALS SUBMITTED TO DIFFERENT BARIATRIC TECHNIQUES.

(Article in English, Portuguese)

Author information

Abstract

BACKGROUND:: Different surgical techniques to combat obesity combine malabsorption with restrictive procedures and can lead to metabolic problems, such as micronutrient deficiencies.

AIM:: Assess vitamin B12, iron and folic acid deficiencies associated with the lifestyle of obese individuals having been submitted to different bariatric techniques.

METHODS:: A retrospective analysis was performed using the electronic charts of patients submitted to bariatric surgery involving adjustable gastric banding and Roux-en-Y gastric bypass at the São João Hospital Center in the city of Porto, Portugal, between 2008 and 2010. The following data were collected: surgical technique, sex, age, marital status, serum concentrations of vitamin B12, iron and folic acid and postoperative lifestyle. A 5% significance level was used for the statistical analysis ($p<0.05$).

RESULTS:: Among 286 individuals evaluated, females accounted for 80.8% of the overall sample (both techniques). Gastric banding was performed more (68.9%), but greater nutrient deficiencies were found following gastric bypass. Iron was the most prevalent deficiency (21.3%), followed by vitamin B12 (16.9%) and folic acid (4.5%). Mild to moderate alcohol intake, adherence to the diet and the use of multivitamins reduced the frequency, but did not avoid micronutrient deficiency.

CONCLUSION:: Vitamin B12, iron and folic acid deficiencies were found in the first and second year following the two bariatric techniques analyzed and were more frequent among individuals submitted to gastric bypass.

TECH & SCIENCE

GLYPHOSATE NOW THE MOST-USED AGRICULTURAL CHEMICAL EVER

BY DOUGLAS MAIN ON 2/2/16 AT 6:53 PM

Glyphosate, the main ingredient in Monsanto's herbicide Roundup, has become the most used agricultural chemical of all time.

CHARLES PLATIAU / REUTERS

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- Alleged Gang Rape of Teen Shocks, Angers Brazilians
- Bee Pollen Full of Pesticides Like Mosquito Repellent
- Trump Denies Existence of California Drought

Newsweek Magazine February 2

Glyphosate:

1964 – **Descaling Agent** – US patent: 3, 160, 632
Fe, Cu, Zn, Ca, Mg, Co, Mn, Mo, Se

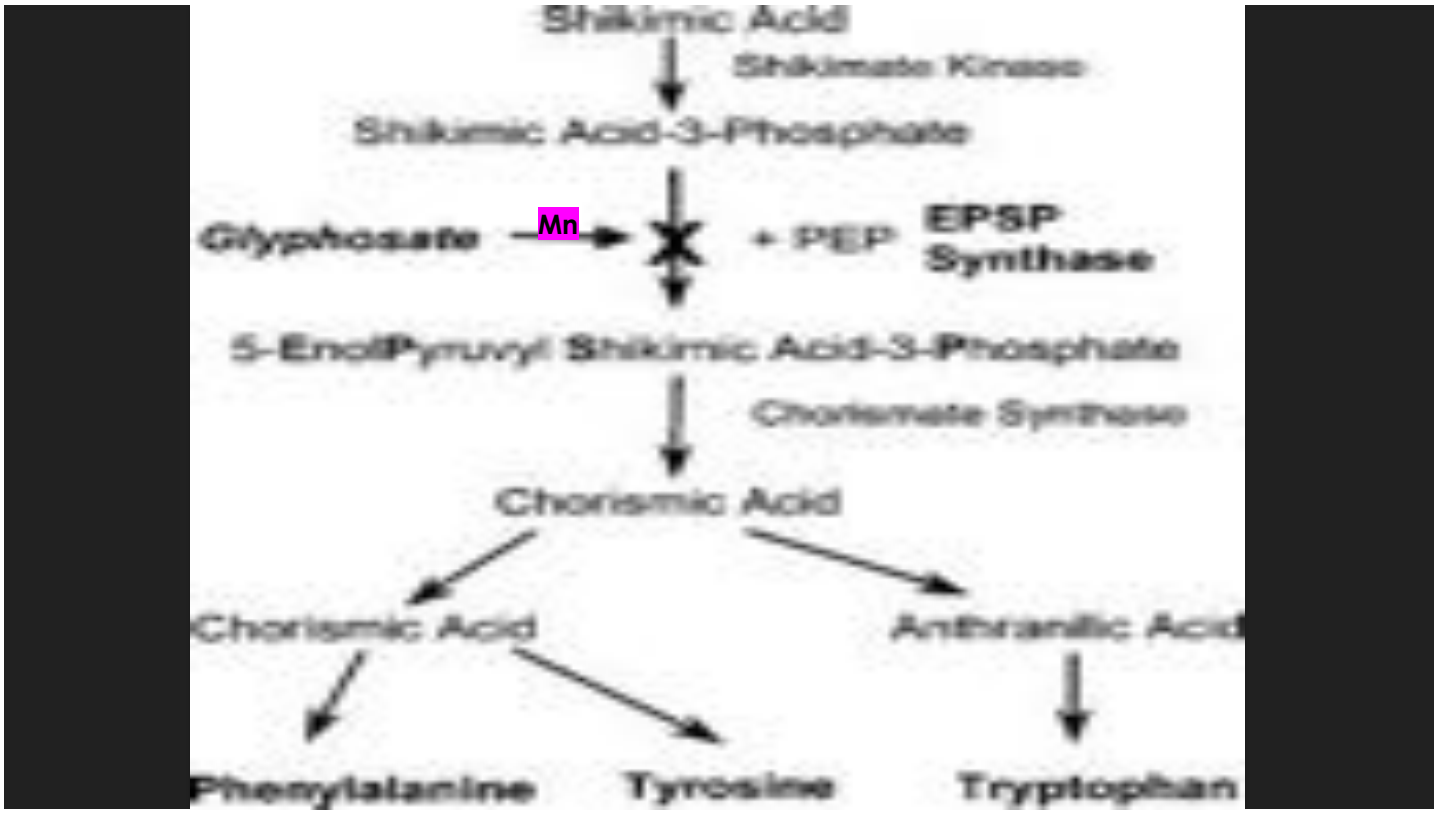
1969 – **Herbicide** – US patent: 3, 455, 675

1996 – **Roundup Ready GMO Crops** – US patent:

2005 – **Desiccant**

2010 – **Antibiotic** – US patent: 7, 771, 736


DID YOU KNOW?
RealFarmacy.com
Fresh News and Information
MONSANTO ENCOURAGES FARMERS TO APPLY ROUNDUP ON MANY CROPS INCLUDING WHEAT, BARLEY, OATS, CANOLA, FLAX, PEAS, LENTILS, AND BEANS JUST BEFORE THEY ARE HARVESTED FOR YOU TO EAT!
IT'S NOT THE GLUTEN, IT'S THE GLYPHOSATE.


Shikimic Acid
Shikimate Kinase
Shikimic Acid-3-Phosphate
Glyphosate
Mn
+ PEP
EPSP Synthase
5-EnolPyruvyl Shikimic Acid-3-Phosphate
Chorismate Synthase
Chorismic Acid
Chorismic Acid
Anthranilic Acid
Phenylalanine
Tyrosine
Tryptophan

Glyphosate:

Glyphosate, patented as **an antimicrobial** (Monsanto Technology LLC, 2010), has been shown to disrupt gut bacteria in animals, preferentially **killing beneficial forms** and causing an **overgrowth of pathogens**.

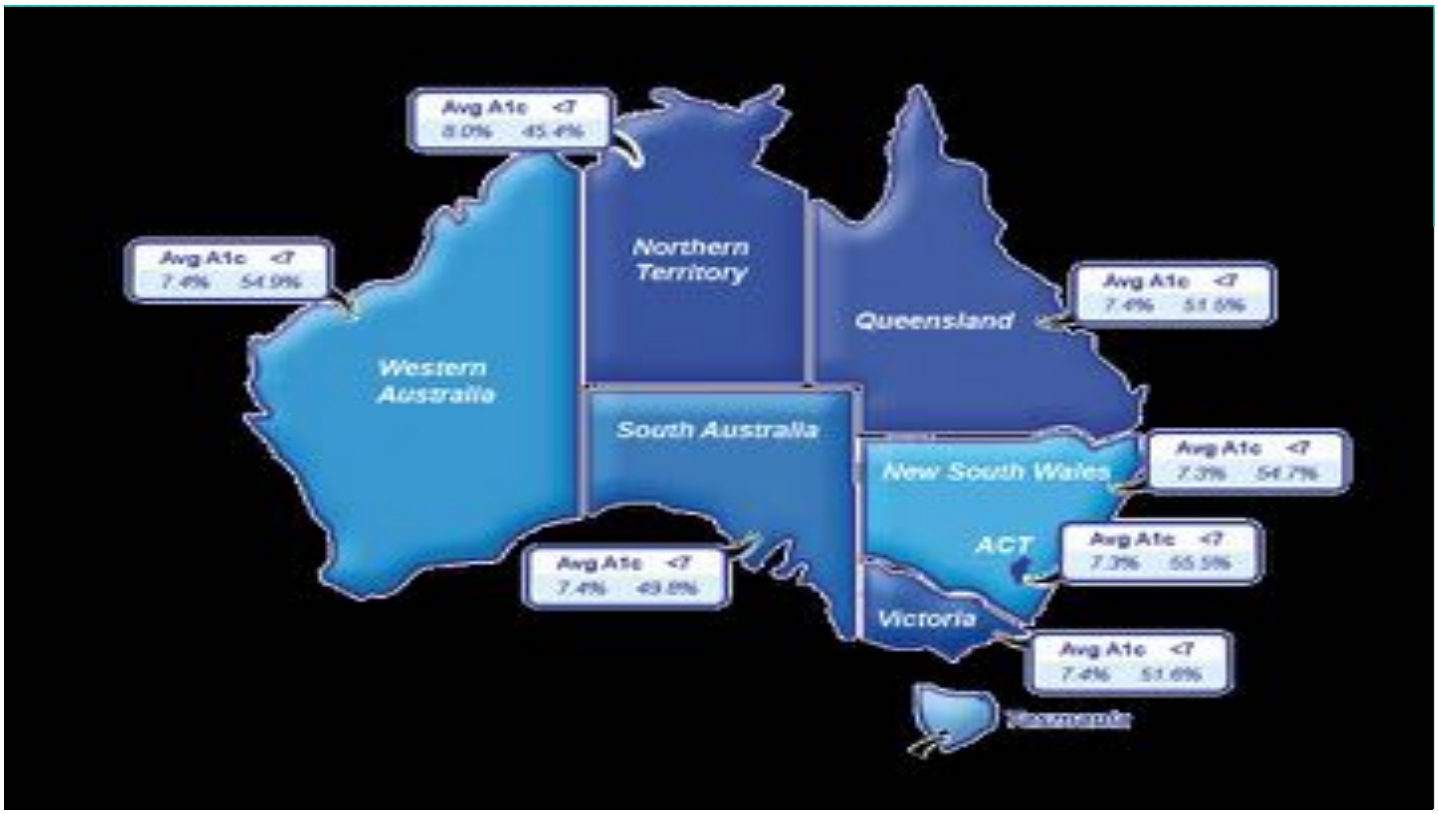
Glyphosate **disrupts the balance of gut bacteria** in poultry (Shehata *et al.*, 2013), increasing the ratio of pathogenic bacteria to other commensal microbes. **Salmonella and Clostridium** are **highly resistant to glyphosate**, whereas Enterococcus, Bifidobacterium, and Lactobacillus are especially susceptible.

Glyphosate:

(Senapati *et al.*, 2009).

The authors also observed:

"Disruption of mucosal folds and **disarray of microvilli structure**" in the intestinal wall, along with an exaggerated secretion of mucin throughout the alimentary tract. These features are **highly reminiscent of celiac disease**



Diabetes in Australia

Current diabetes health in Australia

Only around half of the Australian population with diabetes is reaching the glycemic target of HbA1c <7%. Those individuals not reaching the <7% target would be at higher risk of diabetic complications (Michaelides *et al.*, 2008).

In 2010, the **Mapping Glycemic Control Across Australia (MGCAA)** project was established to track HbA1c levels across Australia.

Data on nearly 400,000 people with diabetes in 2010 show that only around half of the Australian population with diabetes is reaching the glycemic target of HbA1c <7%. Those individuals not reaching the <7% target are at higher risk of diabetic complications. The percentage of the population that reaches glycemic targets increases with age.

Only around 36% of those aged <40 years meet the target in contrast to 61% of those >80 years (Michaelides *et al.*, 2008).

There was also some regional variation, with the average HbA1c being highest at 8.0% in the Northern Territory, with the states and the Australian Capital Territory having average levels of 7.3-7.5%.

Cost-Effectiveness of Lifestyle Modification or Metformin: DPP

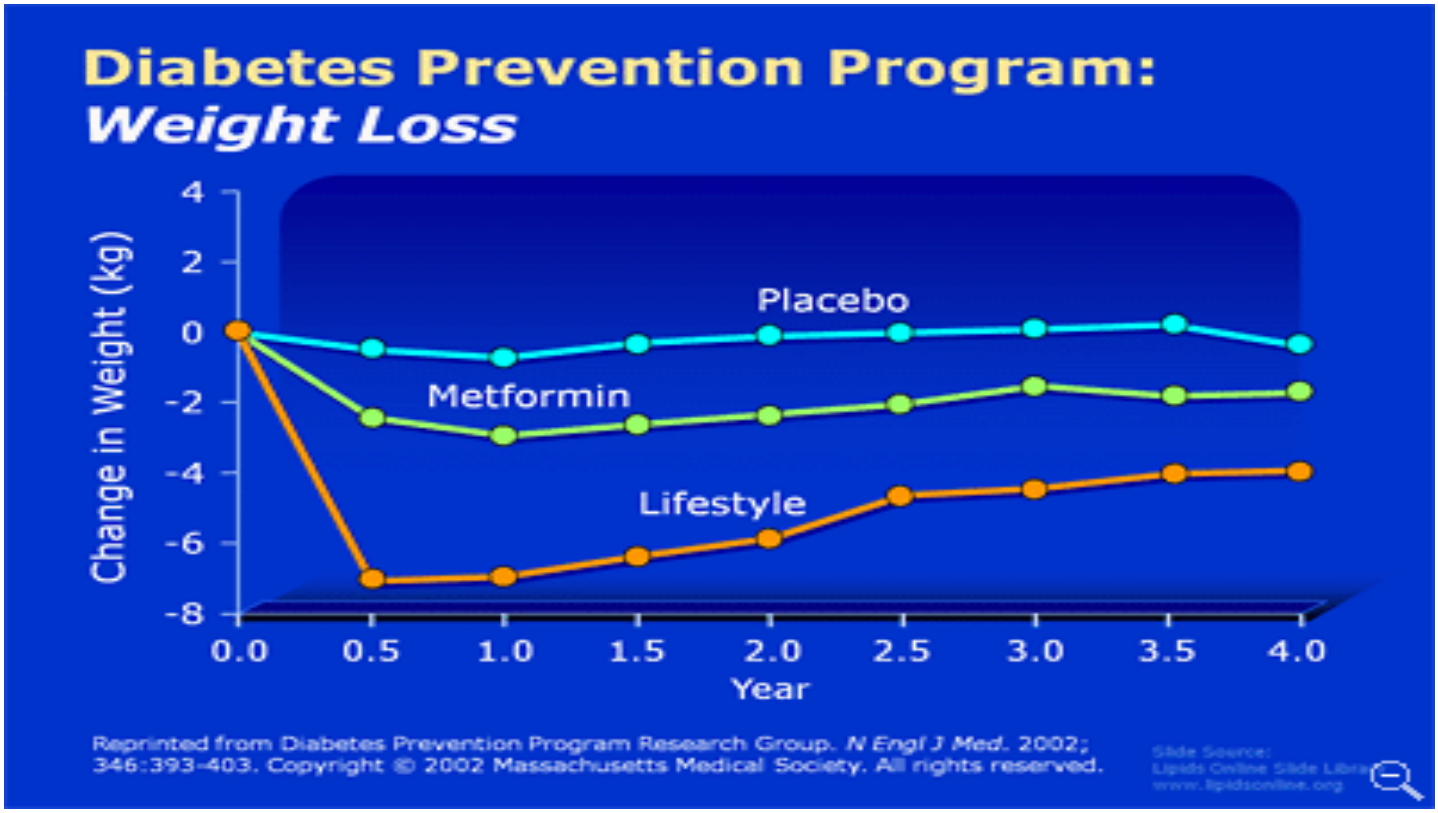
- Active interventions (vs placebo) would:

	Intensive Lifestyle	Metformin
Delay onset of type 2 diabetes by	11.1 years	3.4 years
Reduce incidence of type 2 diabetes by	20%	8%
Increase life expectancy by	0.5 years	0.2 years
Cost per QALY	$1,124	$31,286

QALY = Quality Adjusted Life Years

American Diabetes Association.

Herman WH, et al for the Diabetes Prevention Program Research Group. *Ann Intern Med.* 2005:142:323-332.



ACTIVE INGREDIENTS PER SOFT CAPSULE

Berberis aristata (Indian barberry) extract	500mg
Equiv. to minimum dry root	2.5g
Standardised to berberine	250mg

EXCIPIENT INGREDIENTS:
Purified water
Gamma-tocopherol
Gelatin
Glycerol
Annatto
Tocofersolan
Medium chain triglycerides
Lecithin (sunflower)

DOES NOT CONTAIN:
Gluten, dairy, lactose, or nuts

DIRECTIONS FOR USE:
Take 2 capsules 3 times per day or professionally prescribed

STORE BELOW 25 °C IN A DRY PLACE AWAY FROM SUNLIGHT

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Phytomedicine. 2019 Nov 15;60:25-34. doi: 10.1016/j.phymed.2018.09.212. Epub 2018 Sep 28.

Efficacy and safety of berberine for dyslipidaemias: A systematic review and meta-analysis of randomized clinical trials.

Author information

Abstract

BACKGROUND: In recent years, berberine has become widely used as an effective alternative to treat dyslipidaemias; much clinical evidence has emerged. It is important to systematically and critically evaluate the existing evidence.

PURPOSE: This study aims to evaluate the efficacy and safety of berberine in patients with dyslipidaemias.

STUDY DESIGN: A systematic review and meta-analysis of randomized clinical trials.

METHODS: Five electronic databases were searched up to Apr 15, 2018 to identify randomized controlled trials (RCTs) of berberine in treatment of dyslipidaemias. The outcomes were lipid profile parameters and adverse events. Study selection, data collection, risk of bias assessment, data analyses and interpretations were conducted according to the Cochrane handbook.

RESULTS: Sixteen trials with total of 2147 participants were judged to be eligible and were included in the meta-analysis. The included trials were assessed to be of high clinical heterogeneity. The methodological quality of the majority of the trials was generally low in terms of random sequence generation, allocation concealment, blinding and incomplete outcome data. Thus, selection bias, performance bias, detection bias, attrition bias and confounding bias might exist. Meta-analysis showed that berberine significantly reduced levels of total cholesterol (TC) (MD = -0.47 mmol/l 95% CI [-0.64, -0.31], p < 0.00001), low-density lipoprotein cholesterol (LDL-C) (MD = -0.38 mmol/l 95% CI [-0.53, -0.22], p < 0.00001) and triglycerides (TG) (MD = -0.28 mmol/l 95% CI [-0.46, -0.10], p = 0.002). Berberine also increased the level of high-density lipoprotein cholesterol (HDL-C) when used alone (MD = 0.05 mmol/l 95% CI [0.03, 0.12], p = 0.001). No significant differences were found between groups in terms of incidence of adverse events (RR = 0.64 95% CI [0.31, 1.30], p = 0.22). No severe adverse effects were reported in either group.

CONCLUSION: Berberine improves lipid profiles in dyslipidaemias with satisfactory safety. Nevertheless, these findings should be interpreted with caution because of the high clinical heterogeneity and high risk of bias in the included trials. Rigorous clinical trials should be carried out to provide more reliable evidence.

Berb-Evail™

Benefits:

- Helps maintain/support healthy blood sugar/glucose
- Helps to reduce Insulin resistance and hyperinsulinemia
- Improves liver condition in Non-alcoholic fatty liver disease
- Helps in the maintenance of healthy blood lipids/blood fats
- Powerful antimicrobial, antiviral and antiparasitic agent

Berb-Evail™

- Berberine exerts its effects independently of the **mechanisms of metformin and other common hypoglycaemic agents**, so the compound may be used alone or in conjunction with conventional pharmaceutical drugs.
- In fact, berberine has been shown to be as effective as the popular drug metformin in lowering fasting blood glucose and **haemoglobin A1c (HbA1c), LDL-C, triglycerides, and fasting insulin**
- In a separate study on newly diagnosed type-2 diabetics with dyslipidaemia, berberine supplementation resulted in favourable changes to fasting blood glucose and insulin levels, triglycerides, **uric acid**, total cholesterol, LDL-C, HbA1c, and blood glucose and plasma insulin after a glucose loading test.

Berb-Evail™

- In study subjects with **chronic hepatitis**, berberine supplementation resulted in decreased enzyme markers for liver damage **(ALT and AST)**, as well as decreased gamma-glutamyl transferase **(GGT)** in subjects without liver damage.
- In diabetics using insulin, the addition of berberine resulted **in increased fasting** and postprandial **C-peptide levels**, which suggests that long-term use of berberine might improve endogenous insulin secretion in patients who fail to respond, or who respond poorly, to oral hypoglycaemic agents
- **Reduces** the accumulation of **lipid droplets**. This suggests berberine might be especially useful in cases of overweight or obese diabetics, where the potential for **additional weight gain and oedema associated** with conventional pharmaceuticals would be undesirable.

Berb-Evail™

- Inhibition of intestinal carbohydrate-digesting enzymes. may be helpful for pre-diabetic patients and others presenting with early indicators of carbohydrate intolerance or metabolic syndrome that has not yet progressed to overt diabetes.
- Additional effects of berberine are achieved via **inhibition of dipeptidyl peptidase IV** (DPP IV). Which stimulate post-prandial insulin secretion.
- Exerts blood glucose lowering effects by **stimulating glycolysis via inhibition of mitochondrial glucose oxidation** (specifically at complex I of the electron transport chain).
- Berberine increases **phosphorylation of AMP-kinase** (AMPK), which occurs naturally in response to **physical exercise, fasting, and caloric restriction**. In this sense, berberine may be thought of as a "calorie restriction mimetic," which again mirrors the effects of metformin.

Berb-Evail™

- Exert favourable effects on **blood lipids and non- alcoholic fatty liver**. It upregulates the expression of LDL receptor mRNA and **increases liver expression of LDL receptors**, allowing for more effective clearance of LDLs from the bloodstream.
- In **rats fed a fatty liver-inducing diet**, supplemental berberine resulted in decreased total body weight, visceral adiposity, total cholesterol, LDL-C and triglycerides, while also **reducing serum ALT and AST**, which suggests a protective effect for liver function.
- Has direct effects upon the methylation status of genes involved in deposition of triglycerides in the liver, it **reduces fibrosis** in chemically induced liver damage. Key player in glycaemic control.

Berb-Evail™

- **Evail™ technology** is our proprietary, all-natural formulation, developed by Designs for Health and used in the manufacturing process to improve the absorption and delivery of fat-soluble nutrients.
- This process uses a **proprietary blend of MCT oils**, non-soy (sunflower) derived lecithin, and **gamma tocopherol vitamin E**, without the use of potentially harmful surfactants.
- Antimicrobial action of berberine include Candida, Salmonella, Clostridium to name a few.

HA1C	6.9	5.6	5.6
Cholesterol	266	125	174
Triglycerides	410	213	228
LDL	160	55	93
VLDL	68	35	48
HDL	38	35	33
Chol/HDL	7	4	5
Vital signs			
Blood pressure	138/90	125/75	116/66
Height	5'1"	5'1"	5'1"
Weight (pounds)	143.2	136.4	135.8
BMI	27.91	23.99	22.89

ACTIVE INGREDIENTS PER SOFT CAPSULE

Ubiquinol (activated Coenzyme Q10)	150mg

EXCIPIENT INGREDIENTS:
Purified Water
Gamma-Tocopherol
Gelatin
Glycerol
Annatto
Tocofersolan
Medium chain triglycerides
Lecithin (sunflower)
Tocopherol
Modified Food Starch
Silicon Dioxide

DOES NOT CONTAIN:
Gluten, dairy, lactose, or nuts

DIRECTIONS FOR USE:
Take 1 capsule per day or as directed by your healthcare professional

STORE BELOW 25 °C IN A DRY PLACE AWAY FROM SUNLIGHT

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Effect of Coenzyme Q10 Supplementation on Serum of High Sensitivity c-reactive Protein Level in Patients with Cardiovascular Diseases: A Systematic Review and Meta-analysis of Randomized Controlled Trials.

Author information

Abstract

Possible effects of coenzyme Q10 (CoQ10) supplement on the serum level of high-sensitivity C-reactive protein (hs-CRP) in cardiovascular diseases (CVDs) remains unclear.

OBJECTIVE: Therefore, this meta-analysis was conducted to investigate its effects on the serum hs-CRP level in patients with CVDs. A comprehensive search was conducted on the EMBASE, MEDLINE, and PubMed Central databases for pertinent papers in English up to November 2016. All randomized controlled trials (RCTs) that studied the effects of supplementation with CoQ10 on the serum of hs-CRP level in cardiovascular patients were included. We used random-effects models (the DerSimonian-Laird method) to estimate the pooled effect of selected studies and the I^2 test to assess the between-study heterogeneity. The subgroup analyses were carried out according to the baseline serum hs-CRP, quality assessment score, supplementation dosage, and duration of intervention. Of 205 studies, five trials were eligible for inclusion in this study with 158 participants in the intervention and 143 participants in the placebo group. Results of the pooled analysis revealed that the CoQ10 supplementation had no significant effect on the serum level of hs-CRP compared with the placebo group (MD: 0.120; 95% = -0.944, 1.185; $P = 0.825$). Moreover, the subgroup analyses showed the baseline serum hs-CRP, quality assessment score, and duration of intervention can be sources of heterogeneity. The results of this study demonstrated that the beneficial effect of CoQ10 supplementation for patients with CVDs is observed in those who received this supplement for more than 12 weeks and with the baseline serum hs-CRP >3 mg/L.

KEYWORDS: C-reactive protein; Cardiovascular diseases; ubiquinone

Int J Endocrinol. 2015;2015:645639. doi: 10.1155/2015/645639. Epub 2015 Jun 15.

Effectiveness of Coenzyme Q10 Supplementation for Type 2 Diabetes Mellitus: A Systematic Review and Meta-Analysis.

Zhang XH[1,2], Yang JQ[1], Zeng LT[1], Wu XH[3], Huang HY[1]

Author information

Abstract

OBJECTIVE: To evaluate the effectiveness and safety of coenzyme Q10 for patients with type 2 diabetes mellitus (T2DM).

METHODS: Data from randomized controlled trials were obtained to assess the effects of coenzyme Q10 versus placebo or western medicine on patients with T2DM. The study's registration number is CRD42015000474. The primary outcomes included glycosylated hemoglobin, fasting blood glucose, and fasting insulin.

RESULT: Thirteen trials involving 768 patients were included. Compared with the control group, coenzyme Q10 may decrease the HbA1c (WMD -0.29; 95% CI -0.54, -0.03; $P = 0.03$) and the fasting blood glucose (WMD -11.21; 95% CI -18.99, -3.43; $P = 0.005$). For fasting insulin, there is also not strong evidence that confirms which one is better because there was no statistical difference (WMD -0.40; 95% CI -2.54, 1.57; $P = 0.68$).

CONCLUSION: Based on current evidence, coenzyme Q10 may assist glycemic control, decrease TG, and improve HDL-C in patients with T2DM.

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Eur J Clin Invest. 2015 Jul;45(7):745-54. doi: 10.1111/eci.12461. Epub 2015 Jun 15.

The role of mitochondria in statin-induced myopathy.

Apostolopoulou M[1,2], Corsini A[3,4], Roden M[1,2,5]

Author information

Abstract

BACKGROUND: Statins inhibit hydroxymethylglutaryl-coenzyme A reductase, decrease plasma low-density lipoprotein cholesterol and reduce cardiovascular morbidity and mortality. They can also exert adverse effects, mostly affecting skeletal muscle, ranging from mild myalgia to rhabdomyolysis.

MATERIALS AND METHODS: Based on a PubMed search until December 2014, this review summarizes studies on statin effects on muscle mitochondrial morphology and function in the context of myopathy.

RESULTS: Possible mechanisms of statin-induced myopathy include lower cholesterol synthesis and production of prenylated proteins, reduced dolichols and increased atrogin-1 expression. Statin-treated patients frequently feature decreased muscle coenzyme Q10 (CoQ10) contents, suggesting that statins might impair mitochondrial function. In cell cultures, statins diminish muscle oxygen consumption, promote mitochondrial permeability transient pore opening and generate apoptotic proteins. Animal models confirm the statin-induced decrease in muscle CoQ10, but reveal no changes in mitochondrial enzyme activities. Human studies yield contradictory results, with decreased CoQ10, elevated lipids, decreased enzyme activities in muscle and impaired maximal oxygen uptake in several but not all studies. Some patients are susceptible to statin-induced myopathy due to variations in genes encoding proteins involved in statin uptake and biotransformation such as the solute carrier organic anion transporter family member 1B1 (SLCO1B1) or cytochrome P450 (CYP2D6, CYP3A4, CYP3A5). Carriers for carnitine palmitoyltransferase II deficiency and McArdle disease also present with higher prevalence of statin-induced myopathy.

CONCLUSIONS: Despite the widespread use of statins, the pathogenesis of statin-induced myopathy remains unclear, requiring prospective randomized controlled trials with intensive phenotyping also for identifying strategies for its risk assessment, prevention and treatment.

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Intern Med J. 2015 Apr;45(4):451-3. doi: 10.1111/imj.12712.

Potential role of coenzyme Q10 in facilitating recovery from statin-induced rhabdomyolysis.

Wang LW, Jabbour A, Hayward CS, Furlong TJ, Gregg L, Macdonald PS, Keogh AM.

Author information

Abstract

Rhabdomyolysis is a rare, but serious complication of statin therapy, and represents the most severe end of the spectrum of statin-induced myotoxicity. We report a case where coenzyme Q10 facilitated recovery from statin-induced rhabdomyolysis and acute renal failure, which had initially persisted despite statin cessation and haemodialysis. This observation is biologically plausible due to the recognised importance of coenzyme Q10 in mitochondrial bioenergetics within myocytes, and the fact that statins inhibit farnesyl pyrophosphate production, a biochemical step crucial for coenzyme Q10 synthesis. Coenzyme Q10 is generally well tolerated, and may potentially benefit patients with statin-induced rhabdomyolysis.

KEYWORDS: coenzyme Q10; lipid; renal failure; rhabdomyolysis; statin

PMID: 25827912 DOI: 10.1111/imj.12712

[Indexed for MEDLINE]

Ubiq-Evail™

Benefits:

- Supports heart health
- Supports energy production
- Maintenance of healthy LDL levels
- Reduces oxidative stress

Ubiq-Evail™

- Coenzyme Q10 (CoQ10) is a fat-soluble, high molecular weight compound **produced by the body for the basic functioning of cells.**
- It plays a central role in **cellular energy metabolism** that produces adenosine triphosphate (ATP), the energy currency for muscle contraction and other cellular processes.
- Organs with high energy demands, such as the **heart and liver**, have the highest concentrations of CoQ10.
- CoQ10 is produced in the body and can be obtained in small amounts through certain dietary sources (fish such as **salmon and tuna; organ meats such as liver**).

Ubiq-Evail™

- **CoQ10 exists in both ubiquinone and ubiquinol forms**
- In the mitochondrial electron transport system CoQ10 is converted to **ubiquinol (reduced form)** when it accepts electrons and to **ubiquinone (oxidized form)** when it donates electrons.
- In its **ubiquinol form**, CoQ10 functions as a **potent antioxidant** serving as a primary scavenger of free radicals.
- Ubiquinol is the **only known lipid-soluble antioxidant** present in all membranes that can be synthesized endogenously (from within).

Ubiq-Evail™

Ubiquinone or Ubiquinol?

- The **body requires both**, ubiquinone and ubiquinol. Most healthy individuals are able to convert ubiquinone to ubiquinol.
- It has been shown **that 80-95% of circulating CoQ10** following oral ingestion of a ubiquinone supplement is in the form **of ubiquinol**.
- The **conversion of ubiquinone to ubiquinol** may **diminish with age**.
- CoQ10 levels in the retina may **decline by 40% with age**.
- **Plasma ubiquinol** is also **decreased** with certain **illnesses**, as seen in congestive heart failure (CHF).

Ubiq-Evail™

Ubiq-Evail - Stabilized Reduced CoQ10

- In the past, the **ubiquinol form of CoQ10** was **not available** in a supplement.
- The only way to increase ubiquinol levels was to **convert it from ubiquinone** within the body.
- Advanced technology has allowed scientists to create a stabilization process by which ubiquinol remains in its reduced form outside of the body.
- **Ubiq-Evail uses Kaneka ubiquinol**, the world's leading supplier of ubiquinol. Combining Kaneka ubiquinol with our Evail technology makes this product a standout.

Ubiq-Evail™

Who Should Take Ubiq-Evail

Supplementation with Ubiq-Evail is ideal for those who cannot efficiently convert ubiquinone into ubiquinol, and may help support the following:

- Older individuals over 50 years
- Hyperlipidaemia, including those on statin therapy (statin drugs are known to lower CoQ10 levels)
- Liver disease
- Mitochondrial disorders
- Congestive heart failure
- The natural ageing process
- Genetic CoQ10 deficiencies
- Exercise intolerance

ACTIVE INGREDIENTS PER 1ml (2 PUMPS) SERVE:

Glutathione (reduced)	100mg

EXCIPIENT INGREDIENTS:

Sunflower lecithin
Purified Water
Glycerol
Ethanol
Tocofersolan
Lemon oil
Peppermint oil

DOES NOT CONTAIN:

Gluten, dairy, lactose, or nuts

DIRECTIONS FOR USE:

Take 1ml (2 pumps) in mouth once daily or as directed by your healthcare professional. Hold in mouth for 30 seconds before swallowing.

STORE AT 2°C TO 8°C REFRIGERATE, DO NOT FREEZE

Liposomal Glutathione

Glutathione (GSH) is a (sulfur-containing) molecule synthesized inside every cell in the human body. It is composed of the amino acids glutamine, cysteine and glycine, and is found in the highest levels in the liver, eyes, spleen, pancreas and kidneys.

Glutathione is the **single most protective antioxidant produced by the body** and is therefore the most important, as it protects cells against oxidative stress from dietary and environmental free radicals

It protects vulnerable DNA from damage, while also serving as a key **factor in healthy detoxification.**

Glutathione is instrumental in liver detoxification reactions, via phase II conjugation with glutathione, itself, as well as serving as a **source of sulfur for sulfation reactions**.

Liposomal Glutathione

- Glutathione is especially **supportive during viral infections**.
- Neurological and **neurodegenerative disorders**, type 2 diabetes, cancer, heart attack and stroke.
- **Reduces with age**
- Inadequate protein intake, digestive dysfunction, lifestyle factors, or conditions affecting proper function of the **stomach**

Liposomal GSH

Liposomal Technology

- Oral glutathione has **challenges** regarding ideal **absorption**
- **Intravenous** glutathione administration is the most effective at raising blood levels of GSH. Current research shows **that IV glutathione is not** the best way **to increase intracellular levels** of GSH in most cells.
- Liposomal delivery **bypasses degradation in the GI tract** and is uniquely effective for reaching and interacting with target tissues
- An *in vitro* model of Parkinson's disease using cultured rat neurons showed that **liposomal GSH was 100-times more potent** than non-liposomal GSH at restoring depleted intracellular glutathione levels.
- In humans, **HIV-infected patients** who supplemented with oral liposomal glutathione showed improved immune response against the organism that causes tuberculosis.

Liposomal GSH

What are liposomes?

- Liposomes are **spheres made of phospholipids**—the primary building blocks of cell membranes.
- **Liposomes bond** easily with cell membranes to **facilitate intracellular delivery** of their nutrient cargo.
- Thanks to this enhanced delivery and absorption, nutrients delivered in liposomal form at **lower doses** may have equal or **greater efficacy** than higher doses provided in forms that are less bioavailable.

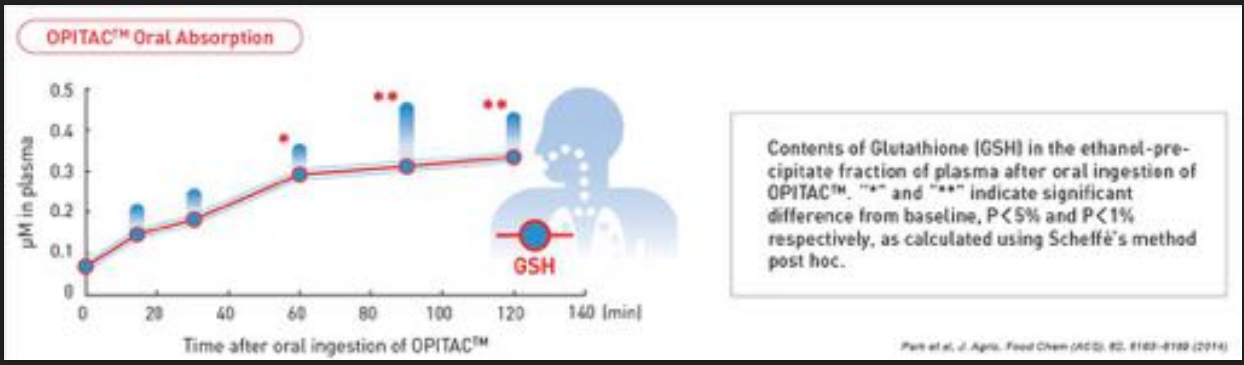
Liposomal GSH

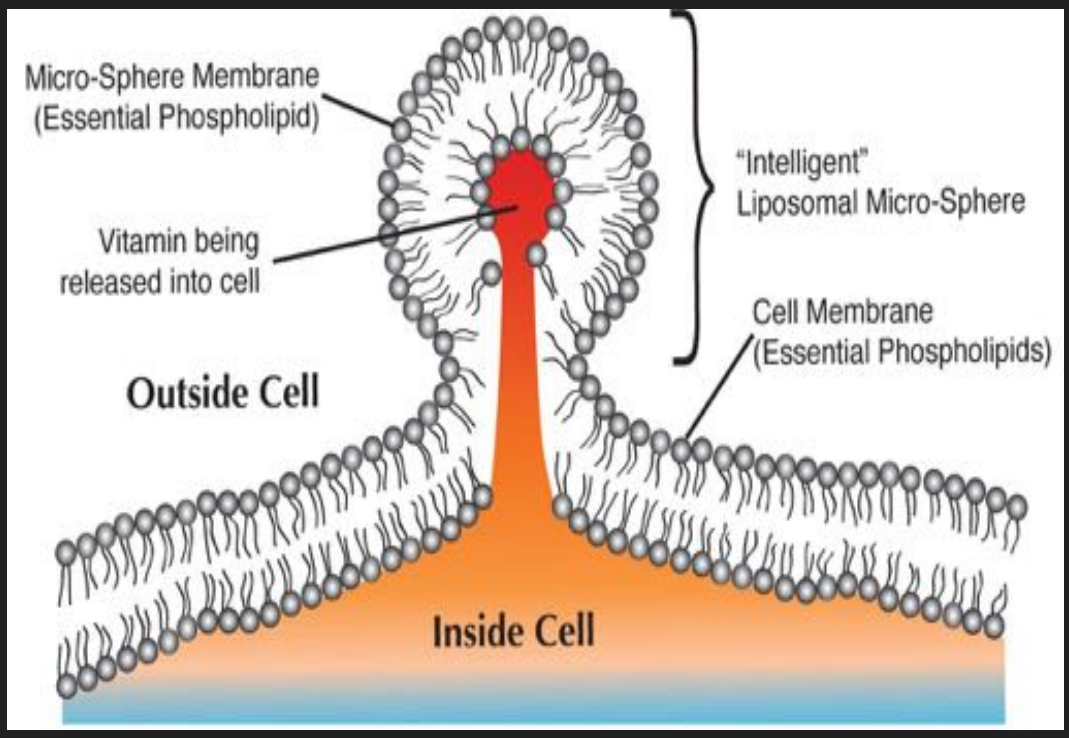
- Designs for Health's Liposomal Glutathione employs liposome particles that are **50-100nm** in size, in contrast to **200- 600nm particles** that are more commonly available from other manufacturers.
- The **smaller sized particles result in increased oral and cellular uptake** and faster transmucosal absorption in the mouth.
- In fact, it is recommended to hold the product in the **mouth for 60 seconds** before swallowing to take advantage of this effective route of absorption.
- Additionally, clearance of these particles from the bloodstream (via the liver and spleen) is inversely related to size: the smallest particles circulate the longest, increasing the likelihood of absorption at their target tissues. Note that the **phospholipids** used in this product are derived from **sunflower lecithin** (soy-free, non-GMO material).

Liposomal GSH

OPITAC™ KOHJIN's Glutathione Reduced

QUICKSILVER SCIENTIFIC





Liposomal Glutathione

Benefits of Liposomal Delivery

- Superior absorption and intracellular delivery of nutrients
- Phospholipid structure allows for effective delivery of compounds with different solubilities carried within the same particle (e.g., water- and lipid-soluble compounds)
- **Liposomes penetrate the blood-brain barrier**, an obstacle for other various formulations
- While there is an opportunity for quick absorption in the mouth, **liposomes also survive the acidic environment of the stomach**, ensuring intestinal uptake and delivery to the lymphatic system
- Liquid liposomal formulations are convenient for those who prefer to **swallow fewer pills**; also allow for easy dosing

Published in final edited form as:
Nucleosides Nucleotides Nucleic Acids. 2008 June ; 27(6): 608–619. doi:10.1080/15257770802138558.

URIC ACID: THE OXIDANT–ANTIOXIDANT PARADOX

Yuri Y. Sautin and Richard J. Johnson
Division of Nephrology, Hypertension and Transplantation, Department of Medicine, University of Florida, Gainesville, Florida, USA

Abstract

Uric acid, despite being a major antioxidant in the human plasma, both correlates and predicts development of obesity, hypertension, and cardiovascular disease, conditions associated with oxidative stress. While one explanation for this paradox could be that a rise in uric acid represents an attempted protective response by the host, we review the evidence that uric acid may function either as an antioxidant (primarily in plasma) or pro-oxidant (primarily within the cell). We suggest that it is the pro-oxidative effects of uric acid that occur in cardiovascular disease and may have a contributory role in the pathogenesis of these conditions.

Uric Acid and GSH Case Studies

Uric acid, despite being a major antioxidant in the human plasma, both correlates and predicts development of obesity, hypertension, and cardiovascular disease, conditions associated with oxidative stress.

Uric acid may function either as an **antioxidant (primarily in plasma)** or **pro-oxidant (primarily within the cell).**

GSH antidote to UA?

ACTIVE INGREDIENTS PER 5mLs (1 TEASPOON)

Sodium ascorbate	1.275g
Equivalent to vitamin C	1g

EXCIPIENT INGREDIENTS:

Sunflower lecithin
Purified water
Glycerol
Ethanol
Lemon oil

DOES NOT CONTAIN:

Gluten, dairy, lactose, or nuts

DIRECTIONS FOR USE:

Take 1 teaspoon (5ml) daily or as directed by your healthcare professional. Hold in mouth for 30 seconds before swallowing. Take on an empty stomach.

STORE BELOW 25 ºC - REFRIGERATE AFTER OPENING

Liposomal Vitamin C

- Vitamin C levels may help individuals maintain a positive mental outlook and mount a healthy response to everyday stress.
- The **adrenal glands** contain one of the **highest concentrations** of vitamin C in the body (in both the cortex and medulla)
- Anti-oxidant and **immune modulator**
- Amino acids proline and lysine convert into hydroxyproline and hydroxylysine, key components for synthesis of **collagen**—
- Vitamin C in cardiovascular health, and explains why **easy bruising and bleeding** are signs of vitamin C deficiency.

Liposomal Vit. C

- Requirement for **biosynthesis of carnitine** (from the amino acid lysine), which is needed for enzymatic transport of fatty acids into the mitochondria for subsequent oxidation and generation of ATP.
- Vitamin C is a potent neutralizer of free radicals and **helps to recycle vitamin E and glutathione**
- **Fe absorption**
- Designs for Health's Liposomal Vitamin C employs liposome particles that are **50-100nm** in size, in contrast to **200-600nm particles** that are more commonly available from other manufacturers.

ACTIVE INGREDIENTS PER HARD CAPSULE

Colecalciferol (vit D 1000IU)	25 micrograms
Menaquinone 7 (vit K2)	50 micrograms
Phytomenadione (Vit K1)	500 micrograms

EXCIPIENT INGREDIENTS:

Microcrystalline cellulose, leucine, hypromellose, purified water, beeswax yellow, candelilla wax, corn starch, gelatin, surose, D-I-alpha tocopherol, silicon dioxide

DOES NOT CONTAIN:

Gluten, dairy, lactose, seeds or nuts

DIRECTIONS FOR USE:

Take 1 capsule per day or as directed by your healthcare professional

STORE BELOW 25 °C IN A DRY PLACE AWAY FROM SUNLIGHT

Vitamin D Supreme

Vitamin D Supreme provides a clinically useful dose of vitamin D3, 1000 IU per veggie cap, and vitamin K in both K1 and the MK-7 form of K2, which is highly bioavailable. Both of these forms of vitamin K are important to our health:

MenaQ7™ Vitamin K2 as MK-7

Vitamin D Supreme

- **Vitamin K1** (the naturally occurring form of vitamin K in **vegetables**) and vitamin **K2 as MK-7**, which is a product of **fermentation** and has the special property of metabolizing slowly throughout the day.
- Most holistically oriented health care practitioners are aiming for vitamin D blood levels of between **50 - 100 ng/mL** as optimal.
- **Vitamins D and K** are essential for **optimal bone and arterial health** and for maintaining the immune system in proper balance. We now know how important vitamin K is for directing the transport of calcium into bone and teeth for optimal strength.

MenaQ7™ Vitamin K2 as MK-7

Vitamin D Supreme

- **Increasing** the amount of **vitamin D**, via supplementation, in the presence of **inadequate levels of vitamin K**, can increase the **risk of calcium deposition in arteries and soft tissue** and have a very negative effect on artery elasticity.

MenaQ7™
Vitamin K2 as MK-7

Published in final edited form as:
J Clin Virol. 2011 March ; 50(3): 194–200. doi:10.1016/j.jcv.2010.12.006.

Vitamin D and the anti-viral state

Jeremy A. Beard[b], **Allison Bearden**[a,b], and **Rob Striker**[a,b,*]
[a]W. S. Middleton Memorial Veterans Administration Hospital, 53705, USA
[b]University of Wisconsin-Madison, Department of Medicine, 53706, USA

Abstract

Vitamin D has long been recognized as essential to the skeletal system. Newer evidence suggests that it also plays a major role regulating the immune system, perhaps including immune responses to viral infection. Interventional and observational epidemiological studies provide evidence that vitamin D deficiency may confer increased risk of influenza and respiratory tract infection. Vitamin D deficiency is also prevalent among patients with HIV infection. Cell culture experiments support the thesis that vitamin D has direct anti-viral effects particularly against enveloped viruses. Though vitamin D's anti-viral mechanism has not been fully established, it may be linked to vitamin D's ability to up-regulate the anti-microbial peptides LL-37 and human beta defensin 2. Additional studies are necessary to fully elucidate the efficacy and mechanism of vitamin D as an anti-viral agent.

Vitamin D - Supreme

- **Vitamin D suppresses Th-1 cell proliferation** leading to lowered production of **interferon gamma and interleukin-2**. Lower levels of circulating cytokines leads to less antigen presentation by dendritic cells, in addition to less T lymphocyte recruitment and proliferation.
- Expression of **Th-2 associated cytokines, including interleukin-4** are increased by Vit. D. Overall, vitamin D polarizes the adaptive immune system away from Th-1 and toward Th-2 responses.

Vitamin D Supreme

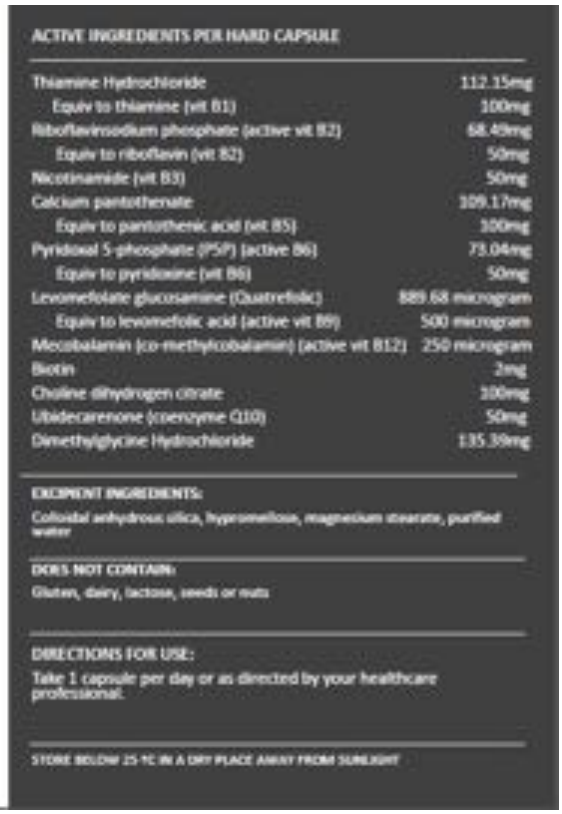
White Blood Cells and Vitamin D

- **White blood cells carry a vitamin D receptor** that allows the immune system to guard against infection.
- The WBCs, including dendritic cells and macrophages, each requiring vitamin D to perform their jobs.
- The Linus Pauling Institute states that in specific cases, **macrophages may produce an enzyme that is needed to make the active form of vitamin D** to enable the macrophages to function properly.

Vitamin D Supreme

Cathelicidin

- In the event of **vitamin D deficiency, the antimicrobial peptide cathelicidin is low**.
- **Cathelicidin is produced by WBCs to attack microbial invaders**. A 2008 study in the "Journal of Allergy and Clinical Immunology" supplemented 14 subjects with 4,000 international units of vitamin D daily over three weeks and found that the **white blood cells produced more cathelicidin**.



ACTIVE INGREDIENTS PER HARD CAPSULE

Thiamine Hydrochloride	112.15mg
Equiv to thiamine (vit B1)	100mg
Riboflavin sodium phosphate (active vit B2)	68.49mg
Equiv to riboflavin (vit B2)	50mg
Nicotinamide (vit B3)	50mg
Calcium pantothenate	109.17mg
Equiv to pantothenic acid (vit B5)	100mg
Pyridoxal 5-phosphate (P5P) (active B6)	73.04mg
Equiv to pyridoxine (vit B6)	50mg
Levomefolate glucosamine (Quatrefolic)	889.68 microgram
Equiv to levomefolic acid (active vit B9)	500 microgram
Mecobalamin (co-methylcobalamin) (active vit B12)	250 microgram
Biotin	2mg
Choline dihydrogen citrate	100mg
Ubidecarenone (coenzyme Q10)	50mg
Dimethylglycine Hydrochloride	135.39mg

EXCIPIENT INGREDIENTS:

Colloidal anhydrous silica, hypromellose, magnesium stearate, purified water

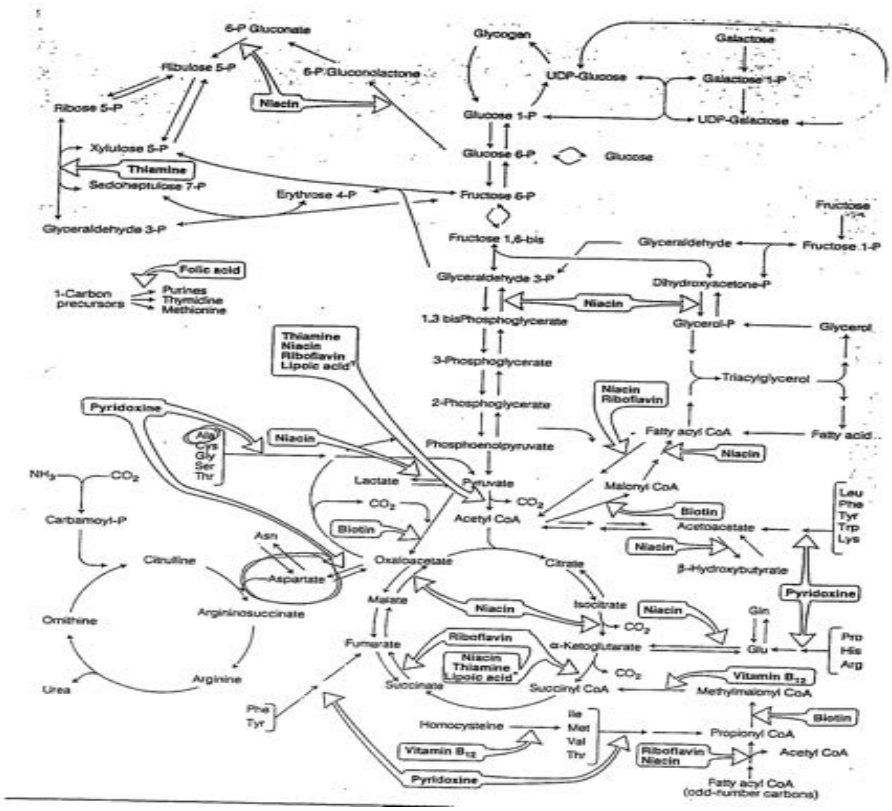
DOES NOT CONTAIN:

Gluten, dairy, lactose, seeds or nuts

DIRECTIONS FOR USE:

Take 1 capsule per day or as directed by your healthcare professional.

STORE BELOW 25 °C IN A DRY PLACE AWAY FROM SUNLIGHT



B-Supreme

Comprehensive B vitamin formula featuring Quatrefolic® and Coenzyme Q10

Benefits:

- Helps to reduce symptoms of stress and enhance energy levels.
- Helps to maintain and support energy production in cells
- Helps to convert food into energy
- Contains most bioavailable active forms of B vitamins

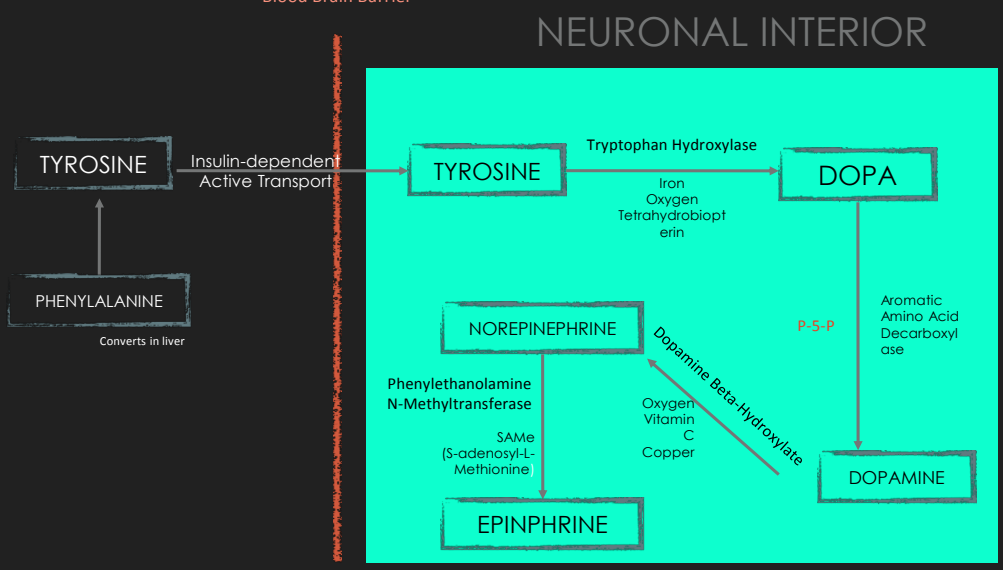
B-Supreme

Dimethylglycine DMG: The Building Block
DMG is a derivative of the simplest of amino acids: **glycine**.

- Glycine is a primary constituent of **collagen**, making up over one third of the total amino acids in this key structural component of blood vessels, skin, bones, cartilage, tendons, ligaments, and other connective tissue.
- Glycine may be especially supportive of liver health after **alcohol- induced damage** and other forms of liver injury.
- Glycine is a **well-known inhibitory neurotransmitter** and is often included in combination products to combat stress and anxiety.

Symptoms of Vitamin B Deficiency	Symptoms of Neuropsychiatric Disorders
fears	morbid fears
fatigue	severe fatigue
depression	depression
paranola	paranola
confusion	confusion
hostility	anger
rage	suicidal tendencies
anxiety	anxiety

Catecholamine Synthesis



B-Supreme

Choline: Healthy Brain Function
Choline is a substance found in every cell of the body and is especially vital to brain health.

Choline is related to folate and other vitamins in the B vitamin complex family. In a similar fashion to B vitamins, choline supports energy levels, as well as helping to maintain a healthy metabolism.

Choline is central to the process of methylation, is used in **neurotransmitter synthesis** creating DNA, and in detoxification processes.

Many individuals fail to obtain adequate amounts of choline and endogenous synthesis (from phosphatidylethanolamine) is limited. Aging, **genetic polymorphisms and estrogen deficiency** may increase the demand for choline.

Folate

Folate: For Wellness

- Folates are essential cofactors in one carbon metabolism and their deficiency is associated with health risks such as **neural tube defects**, cancers and **hyperhomocysteinaemia**.
- "Folic acid" and "folate" are often used interchangeably.
- It seems that since the mandatory folic acid fortification of all wheat flour used in bread making in Australia in 2009, many diets are over-fortified with folic acid.
- The appearance of unmetabolized folic acid in the bloodstream following intake of as low as **400 micrograms per day of folic acid** from fortified foods or supplements caused many scientists to be concerned with the potential health risk of unmetabolized folic acid since it is thought to **aggravate pre-existing cancers**.

B-Supreme

Quatrefolic® is a patented form of Folate which has been clinically proven to be the most soluble and bioavailable form compared with all other forms of folate.

Quatrefolic® contains levomefolate glucosamine which is a form of biologically active folate, 5-methyltetrahydrofolate (5-MTHF).

Quatrefolic® has been proven to successfully pass through the GI tract, ensuring higher folate uptake.

Quatrefolic®
The 4th generation folate

Thiamin

Thiamin (Vitamin B1): Nerve, Muscle and Brain Health

- Vitamin B1 is needed for energy production, heart function, and the health of the brain and nervous system. B1 also helps remove lead from the body. **Fifty milligrams of B1** was given to sixty women for two months, and increased levels of B1 made these women feel more clearheaded, composed and energetic. Fifty milligrams of B1 per day improved **mental wellness in epileptics**.

Riboflavin

Riboflavin (Vitamin B2): Antioxidant

- Vitamin B2, also known as riboflavin, is another B vitamin that helps the body turn food into energy. B2 is also a powerful antioxidant. Patients with **low thyroid function** may have an increased need for vitamin B2, particularly in the activated form known as riboflavin- 5-phosphate. Taking riboflavin imparts a yellow colour to the urine which is harmless.

Pantothenic Acid

Pantothenic Acid: For Stress and Wound Healing

- Pantothenic acid, previously known as vitamin B5, is a member of the B complex family that helps **immune function**, energy generation, and the body's production of stress hormones.

B12

Vitamin B12: A Must Supplement for Strict Vegetarians

- Methylcobalamin, the most bio-available form of Vitamin B12, has been used in this formula.
- Methylcobalamin also acts as a co-enzyme for **the conversion of homocysteine to methionine.** Methionine then acts as a methyl-donor to a great number of reactions that need a methyl group, including the **synthesis of myelin, serotonin, dopamine, noradrenalin, DNA and phospholipids**.

ACTIVE INGREDIENTS PER 5 GRAMS ORAL POWDER

Magnesium (as orotate dihydrate)	101mg
Magnesium (as amino acid chelate)	122mg
Magnesium (as glycerophosphate)	127mg
Total magnesium	350mg
Thiamin hydrochloride (vit B1)	33.64mg
Equiv thiamin	30mg
Riboflavin sodium phosphate (active vit B2)	41.1mg
Equiv riboflavin	30mg
Nicotinamide (vit B3)	30mg
Phridoxal 5 – phosphate (activated vit B6)	73.04mg
Equiv pyridoxine (vit B6)	150mg
Levomefolate glucosamine (Quatrefolic) (vit B9)	266.9 micrograms
Equiv Levomefolic acid (activated vit B12)	150 microgram
Mecobalamin	150 mg
Taurine	600mg
Acetyl Levocarnitine hydrochloride	117.95mg
Equiv to Acetyl Levocaritine	100mg
Glutamine	500mg

EXCIPIENT INGREDIENTS:
Steviol glycoside, citric acid, natural orange flavor

DOES NOT CONTAIN:
Gluten, dairy, lactose, seeds or nuts

DIRECTIONS FOR USE:
Mix 5 grams (1 rounded teaspoon) into a glass of water, or as directed by your healthcare professional

STORE BELOW 25 °C IN A DRY PLACE AWAY FROM SUNLIGHT

Tri-Mag Supreme Powder

- **Overview:**
- This highly absorbable and bioavailable blend of three key forms of magnesium:

Magnesium amino acid chelate, magnesium glycerophosphate and magnesium orotate.

This product provides 350mg of magnesium in each serving. Due to this unique blend it should not cause any of the unfavorable gastrointestinal symptoms that are sometimes associated with magnesium supplementation.

Magnesium Glycerophosphate

- Magnesium glycerophosphate (MgGy) is a combined source of magnesium and phosphorus. It has a high magnesium content, 12.5%, higher than other organic salts such as lactate, gluconate, and citrate.
- Studies have demonstrated that glycerophosphate anion can be employed as a reliable phosphorus source for both cell growth and recombinant protein production.
- Glycerophosphate is a key intermediate in the synthesis of phospholipids. Phospholipids are the main constituent of biological membranes.
- Phospholipids are involved in stabilising proteins within the membrane, facilitating the active conformational structure of proteins, and as cofactors in enzymatic reactions. Phospholipids are essential for the absorption, transport and storage of lipids.

Magnesium Amino Acid Chelate

- A highly absorbable form of elemental magnesium chelated to an amino acid.
- The amino acid chelate is absorbed via dipeptide channels, bypassing the usual active transport and passive diffusion routes for intestinal ion absorption, where magnesium would otherwise compete with other minerals.
- The magnesium-amino acid complex protects magnesium from binding to dietary phytates and tannins, therefore enhancing its bioavailability.
- This unique form of magnesium has been shown to be effective for individuals with the greatest impairments in magnesium absorption, including those with inflammatory bowel conditions, among whom the prevalence of overt magnesium deficiency may be as high as 86%.

Magnesium Orotate

- Magnesium Orotate (MO) is a magnesium salt of orotic acid (OA) is poorly soluble in water and hence does not bind to gastric acid or does it exhibit laxative effects upon oral administration in contrast to easily dissociable Mg salts.
- OA acts as a transporter that carries magnesium into the cells and is shown to improve the energy status of injured myocardium by stimulating the synthesis of glycogen and ATP.
- MO is also indicated for the treatment of Mg depletion as convincingly shown in animal experiments and in coronary heart patients undergoing e.g. aortocoronary bypass surgery.

ACTIVE INGREDIENTS PER HARD CAPSULE

Magnesium (from amino acid chelate)	140mg
Magnesium (from orotate)	5mg
Magnesium (from glycerophosphate)	5mg
Total magnesium 150mg	

EXCIPIENT INGREDIENTS:
Magnesium stearate
Hypromellose
Purified water

DOES NOT CONTAIN:
Gluten, dairy, lactose, seeds or nuts

DIRECTIONS FOR USE:
Take 1 capsule per day or as directed by your healthcare professional

STORE BELOW 25 °C IN A DRY PLACE AWAY FROM SUNLIGHT

GIVOMAG™

- GIVOMAG™ is a highly bioavailable source of magnesium. GIVOMAG™ is magnesium bound by a glycerophosphate anion. This forms a chelate, which means that the magnesium is bound at two points instead of forming just one bond. This is important because this type of bond protects magnesium throughout digestion.
- Typically, when magnesium reaches the GI tract, it pulls water into the intestines. This is due to the nature of the magnesium cation: on its own, it can hydrate itself up to 400 times its own dehydrated radius. The hydrated molecule is then too large to pass through the intestine into the bloodstream. This phenomenon happens when magnesium is unbound from its side molecule. Chelated magnesium compounds are more stable throughout the GI tract and avoids this hydration. This allows magnesium to become absorbed, instead of passing through the body as waste

Tri-Mag Supreme Night Powder

Lavender (Lavendula angustifolia)

Native to the Mediterranean, lavender has an extensive anecdotal history of anxiolytic benefit that has recently been supported by clinical efficacy studies. The 2 primary terpenoid constituents of lavender essential oil, linalool and linalyl acetate, may produce an anxiolytic and increased parasympathetic tone.

Lavender has been shown to aid with nervousness, anxiety, depression, headache, indigestion and sleeplessness.

Tri-Mag Supreme Night Powder

- Sour cherries (also called tart cherries) are loaded with nutrients including vitamin C, polyphenols, flavonoids, melatonin and pro- and anthocyanidins, that possess strong antioxidant and anti-inflammatory properties.
- A recent study in healthy adults found that after seven days of ingest of sour cherry juice urinary melatonin levels increased and an improvement of sleep quality and duration occurred.

Tri-Mag Supreme Night Powder

California Poppy (Eschscholzia Californica)

- California poppy has potent physical and psychological nervine properties.
- Preliminary studies suggest that California poppy can induce sleep and prolong sleep time and has spasmolytic, sedative and anxiolytic activity.
- It also helps not calm ad soothe the mind and therefore assists in times of distress, nervous exhaustion and may treat bed wetting.

ACTIVE INGREDIENTS PER SOFT CAPSULE

Concentrated fish Omega-3 triglycerides	1.25g
Equiv to eicosapentaenoic acid (EPA)	668mg
Equiv to docosahexaenoic acid (DHA)	260mg
Lipase	25mg

EXCIPIENT INGREDIENTS:
Gelatin
Glycerol
Annatto
Purified water
Gamma-Tocopherol
Natural lemon oil

DOES NOT CONTAIN:
Gluten, dairy, lactose, seeds or nuts

DIRECTIONS FOR USE:
Take 1 to 2 capsule per day or as directed by your healthcare professional

STORE BELOW 25 °C IN A DRY PLACE AWAY FROM SUNLIGHT

Fatty Acid Abnormalities in Children with Autism Parallel a Rodent Model of Autism

Open

Molecular Psychiatry (2011), 1–25

www.nature.com/mp

ORIGINAL ARTICLE

Mitochondrial dysfunction in autism spectrum disorders: a systematic review and meta-analysis

DA Rossignol[1] and RE Frye[2]

	Studies	*Total N*	*Overall prevalence*
General ASD population			
Mitochondrial disease in ASD	3	536	5.0% (3.2%, 6.9%)
Elevated lactate	6	479	31.1% (27.0%, 35.3%)
Elevated pyruvate	2	110	13.6% (7.2%, 20.1%)
Elevated lactate/pyruvate ratio	1	192	27.6% (21.2%, 33.9%)
Elevated alanine	1	36	8.3% (0.0%, 20.1%)
Low total carnitine	1	30	90.0% (81.0%, 99.0%)
Elevated creatine kinase	1	47	46.8% (32.4%, 61.2%)
Elevated ammonia	1	80	35.0% (24.5%, 45.5%)
Elevated AST	1	147	45.6% (37.5%, 53.7%)*
Elevated ALT	1	87	7.0% (0.5%, 13.5%)

OmegAvail TG1000™

Overview:

- OmegAvail TG1000™ is a high potent sustainable fish oil, containing an impressive 1,000 mg omega-3 oils (EPA, DHA, DPA and other omega-3s) per soft gel, making it an ideal choice for therapeutic dosing. As with all Designs for Health fish oil products, OmegAvail TG1000™ contains the triglyceride (TG) form for superior absorption and bioavailability.

OmegAvail TG1000™

Benefits:

OmegAvail TG1000™ uses the latest innovation in EPA/DHA technology to insure purity and absorption

- **Exceptional freshness** – freshly caught fish are quickly processed within hours, resulting in exceptionally fresh raw fish oil
- **Cold extraction** – process used for the refining of the EPA & DHA fatty acids
- **Minimally processed** – produced to the highest standards of purity and quality
- **Molecular distillation** – removes fishy odour and taste to ensure purity
- **Filtration** – removes **PCBs, chlorinated organopollutants and heavy metals**

OmegAvail TG1000™

Why the triglyceride (TG) form of fish oils?

- Naturally occurring form in foods and in the body
- Research indicates that it is up **to100% more bioavailable than the ethyl ester (EE) form**
- Easier to assimilate for individuals with **digestion and absorption**
- **Less** prone to **oxidation and production of free radicals**
- **No post digestion** production of alcohol in the gut or blood stream as in the EE form
- Less susceptible **to increasing free fatty acids in the blood**, which may increase blood glucose

OmegAvail TG1000™

Why the Addition of Lipase?

- We have added **lipase as a digestive aid**. Lipase is an enzyme needed for the breakdown of lipids.
- **Lipase** is primarily produced in the pancreas but is **also produced in the mouth** and stomach. While most healthy individuals produce sufficient amounts of pancreatic lipase, everyone can benefit from its inclusion as it relates to better digestion of fish oils.

OmegAvail TG1000™

EXECPTIONAL QUALITY

- **Sustainable Alaskan-caught fish** – 100% sourced from certified sustainable US-caught Alaskan fish [Wild Alaska Pollock (Theragra cholcogramma)] from the Bering Sea and processed in the US.
- **Care for the ecosystem** – Fisheries are managed through a holistic approach that respects and evaluates the impact on the entire Bering Sea ecosystem.
- **Certified by MSC raw materials** – OmegAvail TG1000™ uses refined omega-3 fish oil concentrate that carries the prestigious ecolabel certification from the Marine Stewardship Council (MSC), the world's leading certification and ecolabelling program for sustainable seafood.

AlaskOmega®

ACTIVE INGREDIENTS PER HARD CAPSULE

Ascorbic acid	250mg
d-alpha-Tocopheryl acid succinate (vitE)	165.3mg
Zinc (as citrate dihydrate)	40mg
Copper (as gluconate)	1mg
Tagetes erecta (Mexican marigold extract)	25mg
Equiv dry flower minimum	750mg
Stand to lutein	5mg
Zeaxanthin	1mg
Betacarotene	3mg
Vaccinium myrtillus (bilberry) extract	72mg
Equiv dry fruit minimum	7.2mg
Stand to anthocyanosides	18mg
Crocus sativus (Saffron extract)	10mg
Equiv to dry dry stigma minimum	200mg

EXCIPIENT INGREDIENTS:

Colloidal anhydrous silica, Magnesium stearate, Hypromellose, Purified water, Maltodextrin, Acacia, Gelatin, Sucrose, Soy Oil, Ascorbyl Palmitate, Mixed Tocopherols , silicon dioxide

DOES NOT CONTAIN:

Gluten, dairy, lactose, seeds or nuts

DIRECTIONS FOR USE:

Take 1 capsule per day with food or as directed by your healthcare professional

STORE BELOW 25 ºC IN A DRY PLACE AWAY FROM SUNLIGHT

OcuForce™

OcuForce™ may be helpful for:

- Macular degeneration
- Glaucoma
- Cataracts
- Poor night vision
- Retinopathy
- Preventing vision decline
- Ocular fatigue

OcuForce™

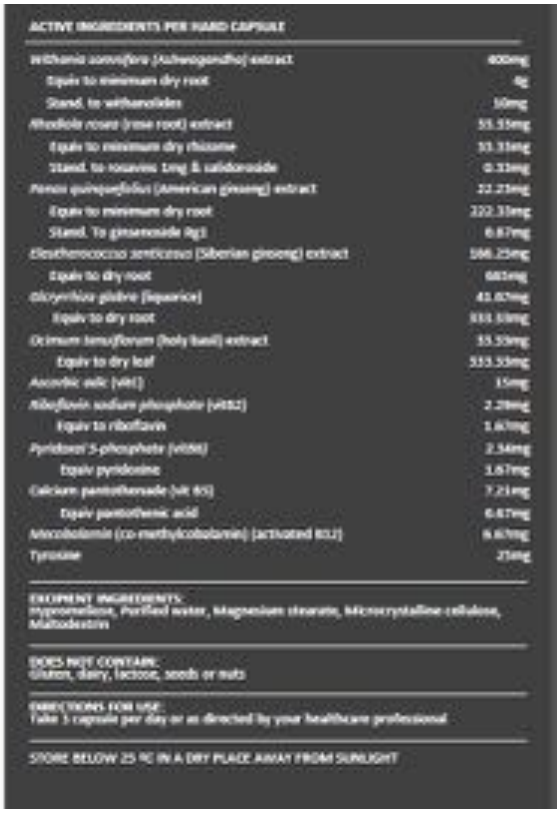
- OcuForce™ is a comprehensive formulation containing a vast array of eye-supportive nutrients, **including lutein, zeaxanthin, bilberry, saffron, beta carotene, copper, and zinc.** This product does not contain synthetic carotenoids, as research shows that natural carotenoids offer a superior spectrum of benefits.

OcuForce™

- Out of all the natural carotenoids in OcuForceTM, **lutein** is the most important for the protection of the retina. Lutein, a yellow carotenoid found in foods such as corn, egg yolks, kale, spinach and broccoli, **protects the retina from the free radical damage** it undergoes constantly. The lutein used in OcuForceTM is naturally derived from marigolds.
- **Lutein Antioxidant Supplementation Trial (LAST)**, The study also demonstrated the reversing effects of 10 mg of lutein supplementation along with vitamin C, vitamin E, and other antioxidants on the symptoms and pathology of dry AMD **(Age related macular degeneration)**

OcuForce™

- The **bilberry** used in OcuForceTM is a standardized to anthocyanidins. Clinical evidence shows that **bilberry helps with glaucoma, cataracts, retinopathy, diabetes mellitus, and arthritis.**
- In addition, it improves **impaired night vision, and diabetic and hypertensive retinopathy.**
- The therapeutic effects of bilberry are associated with the **antioxidant activity of its anthocyanins**, their ability to increase blood supply to the retina.



Overtraining

The sympathetic, or Basedowian, form is characterized by increased sympathetic tone in the resting state, while in the parasympathetic, or Addisonoid, form the parasympathetic tone dominates in the resting state as well as during exercise. The main characteristics of the sympathetic form of overtraining are:

- increased resting heart rate;
- slow recovery after exercise;
- poor appetite, weight loss;
- mental instability, mood swings and irritability;
- increased blood pressure in the resting state;
- menstrual irregularities, oligomenorrhoea or amenorrhoea in females;
- disturbed sleep: difficulties in falling asleep and early wakening;
- increased resting diastolic and systolic blood pressure.

AdrenoForce

Overview:

- Adrenostore is a combination of standardised **adaptogenic herbs** and nutrients which are known to contribute to rejuvenating the adrenal glands.
- This product is designed to help support healthy cortisol levels, hypothalamic and pituitary function (HPTA axis), and **catecholamine production** (dopamine, norepinephrine and epinephrine.

AdrenoForce

Holy Basil (Ocimum Teuiflorum)

- **Holy Basil** has been used in Ayurvedic medicine for thousands of years for its diverse healing properties.
- Holy Basil reduces the negative effects of stress by lowering **cortisol production in the adrenal cortex.**
- The urosolic acid in **Holy Basil inhibits COX-2**, an inflammatory enzyme.
- Holy Basil is found to contain eugenol and linolenic acid which are both found to exhibit analgesic, anti-inflammatory, antispasmodic activity by inhibiting both the lipoxygenase and cyclooxygenase pathways of arachidonic acid metabolism.

AdrenoForce

Siberian Ginseng (Eleutherococcus Senticocus)

- The main **active phytochemical**, eleutherosides, are thought to be responsible for the increase in catecholamines (dopamine, norepinephrine, epinephrine).
- **Eleutherococcus** has demonstrated stress-relieving effects on the HPA axis, **reducing excessive corticotropin release** and optimizing adrenal response.
- Eleutherococcus may act directly on the hypothalamus to regulate hormones, including mineralocorticoids, glucocorticoids, and reproductive hormones.

AdrenoForce

American Ginseng (Panax Quinquefolius)

- Native to Northern America, American Ginseng contain distinctive phytochemicals that show promising cognitive enhancing properties in preclinical studies.
- **Ginsenosides stimulate** immune system and have a **sedating and relaxing effect**. Its main action is as a nervine tonic and relaxant to the whole body, with an affinity for the brain.

AdrenoForce

Ashwagandha (Withania Somnifera)

- Ashwagandha is compared well to the Ginseng family in its **adaptogenic properties**.
- Ayurveda which indicate clinical use of Ashwagandha in the prevention and treatment of many stress induced diseases like arteriosclerosis, premature ageing, arthritis, diabetes, hypertension and malignancy.

AdrenoForce

Rhodiola Rosea

A number of studies revealed that rosavins, a phenylpropanoid, and salidrosides, phenylethanol derivatives, **exhibit neuroprotective activities**, including:

- anti-Alzheimer's disease,
- anti-Parkinson's disease,
- anti-Huntington's disease,
- anti-stroke,
- **anti-depressive effects**,
- and anti-traumatic brain injury;
- it is also useful for improving cognitive function, **treating addiction**, and preventing epilepsy.

AdrenoForce

Glycyrrhiza Glabra (Liquorice)

- Research has found that liquorice can help to modify or even increase the **body's levels of cortisol.**
- Studies have found that the that glycyrrhizic acid found in licorice root can modify the production of cortisol in the body by inhibiting the enzymes that break cortisol down into cortisone, thus rendering it inactive.
- *This can be particularly useful for those people* ***with low cortisol levels due to adrenal fatigue.***

ACTIVE INGREDIENTS PER SOFT CAPSULE

Curcuma longa extract (Sabinsa C3 Complex)	400mg
Equiv to minimum dry rhizome	26mg
Standardised to curcuminoids	380mg
Curcuma longa essential oil	320mg
Equiv to dry rhizome	6.4g

EXCIPIENT INGREDIENTS:
Medium chain triglycerides
Tocofersolan
Gelatin
Glycerol
Annatto
Purified water
Gamma tocopherol
Sunflower lecithin

DOES NOT CONTAIN:
Gluten, dairy, lactose, seeds or nuts

DIRECTIONS FOR USE:
Take 1 to 2 capsule per day or as directed by your healthcare professional

STORE BELOW 25 °C IN A DRY PLACE AWAY FROM SUNLIGHT

Hepatol Int. 2018 Nov 16. doi: 10.1007/s12072-018-9910-x. [Epub ahead of print]

The effects of curcumin on the metabolic parameters of non-alcoholic fatty liver disease: a meta-analysis of randomized controlled trials.

Wei G[1], Liu N[2], Tantai X[1], Xing X[1], Xiao C[1], Chen L[1], Wang J[2]

Author information

Abstract

AIMS: Evidence indicates that curcumin seems to improve outcomes in non-alcoholic fatty liver disease (NAFLD). A meta-analysis was performed to evaluate the effects of curcumin inNAFLD.

METHODS: We searched PubMed, EMBASE, and the Cochrane Library from inception through March 2018 to identify randomized controlled trials (RCTs) evaluating the role of curcumin inNAFLD. The mean difference (MD) and 95% confidence interval (CI) were calculated.

RESULTS: Four RCTs with a total of 229 NAFLD patients were included. Curcumin was more likely to lower LDL-C, triglycerides, FBS, HOMA-IR, weight and AST levels compared with placebo, and the difference was statistically significant [MD = - 27.02, 95% CI (- 52.30, - 1.74); MD = - 33.20, 95% CI (- 42.30, - 24.09); MD = - 5.63, 95% CI (- 10.36, - 0.90); MD = - 0.53, 95% CI (- 1.00, - 0.05); MD = - 2.27, 95% CI (- 3.11, - 1.44); MD = - 7.43, 95% CI (- 11.31, - 3.54), respectively]. However, the beneficial effect of curcumin did not achieve statistical significance in lowering total cholesterol, HDL-C, HbA1c, ALT or insulin levels [MD = - 30.47,95% CI (- 60.89, - 0.06); MD = - 0.98, 95% CI (- 2.88, 0.92); MD = - 0.41, 95% CI (- 1.41, 0.59); MD = - 6.02, 95% CI (- 15.61, 3.57); MD = - 0.92, 95% CI (- 2.33, 0.49)].

CONCLUSIONS: Curcumin is effective in lowering LDL-C, triglycerides, FBS, HOMA-IR, weight, and AST levels in NAFLD patients, and it is well tolerated. Further RCTs are required to confirm our findings.

Phytother Res. 2018 Nov 7. doi: 10.1002/ptr.6236. [Epub ahead of print]

The effects of curcumin-containing supplements on biomarkers of inflammation and oxidative stress: A systematic review and meta-analysis of randomized controlled trials.

Tabrizi R[1], Vakili S[2], Akbari M[1], Mirhosseini N[3], Lankarani KB[1], Rahimi M[4], Mobini M[5], Jafarnejad S[6], Vahedpoor Z[7], Asemi Z[8]

Author information

Abstract

Besides other benefits, curcumin is getting more recognized for its antioxidant and anti-inflammatory properties, highlighting the importance of curcumin application for chronic disease prevention. This systematic review and meta-analysis of randomized controlled trials (RCTs) was conducted to assess the influence of curcumin-containing supplements on biomarkers of inflammation and oxidative stress. MEDLINE, EMBASE, Web of Science, and Cochrane Central Register of Controlled Trials were searched till January 2018 for eligible studies. The selected studies were evaluated for their quality using the Cochrane risk of bias tool and relevant data were extracted from included studies. Data were pooled using the inverse variance method and expressed as standardized mean difference (SMD) with 95% confidence intervals (95% CI). Fifteen RCTs were included in the final analysis. The meta-analysis indicated that curcumin supplementation significantly decreased interleukin 6 (IL-6) (SMD -2.08; 95% CI [-3.90, -0.25]; p = 0.02), high-sensitivity C-reactive protein (hs-CRP) (SMD -0.65; 95% CI [-1.20, -0.10], p = 0.02), and malondialdehyde (MDA) concentrations (SMD -3.14; 95% CI [-4.76, -1.53], p < 0.001). Though, curcumin supplementation had no significant effect on tumor necrosis factor-alpha (SMD -1.62; 95% CI [-3.60, 0.36]; p = 0.10) and superoxide dismutase levels (SMD 0.34; 95% CI [-1.06, 1.74], p = 0.63). Overall, this meta-analysis suggests that taking curcumin-containing supplements may exert anti-inflammatory and antioxidant properties through a significant reduction in IL-6, hs-CRP, and MDA levels.

KEYWORDS: curcumin; inflammation; meta-analysis; oxidative stress

PMID: 30402990 DOI: 10.1002/ptr.6236

Format: Abstract

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Nutrients. 2018 Jul 16;10(7). pii: E908. doi: 10.3390/nu10070908.

Curcumin for the Management of Periodontitis and Early ACPA-Positive Rheumatoid Arthritis: Killing Two Birds with One Stone.

Asteriou E[1], Dreosti-Loukides A[2], Mavropoulos A[3], Katsiari C[4], Sakkas LI[4], Bogdanos DP[4].

Author information

Abstract

We propose curcumin as a preventive measure to avoid/manage periodontitis (PD), and as a natural immunosuppressant for rheumatoid arthritis (RA). PD, mainly caused by *Porphyromonas gingivalis* forming biofilm and leading to tooth decay, is a major public health issue and a risk factor for the development of RA in humans. *P. gingivalis* is able to trigger experimental autoimmune arthritis in animal models and in humans can induce citrullinated peptides, which not only are a source of anti-citrullinated antibodies (ACPAs), but also participate in autoreactive responses and disease development. Curcumin appears to have efficient anti-bacterial activity against *P. gingivalis* infection and biofilm formation. In addition to antibacterial, anti-oxidant, and anti-inflammatory action, curcumin exerts unique immunosuppressant properties via the inhibition of Th17 pro-inflammatory responses and promotion of regulatory T cells, thus suppressing autoimmunity. We introduce curcumin as a natural product for the management of both PD and RA-related autoreactivity, possibly also as a preventive measure in early RA or individuals at high risk to develop RA.

KEYWORDS: autoantibody; gingivitis; infection; periodontitis; rheumatic diseases; rheumatoid arthritis

PMID: 30012973 PMCID: PMC6073415 DOI: 10.3390/nu10070908

[Indexed for MEDLINE] Free PMC Article

ACTIVE INGREDIENTS PER HARD CAPSULE

Andrographis paniculata (Andrographis) extract	166.67mg
Equiv. to dry leaf minimum	8.33g
Stand. to andrographolide	40.67mg
Echinacea purpurea (echinacea) extract	83.33mg
Equiv. to dry root and rhizome	500mg
Astragalus membranaceus (astragalus) extract	33.33mg
Equiv. to dry root	333mg
Sambucus nigra (elderberry) extract	9.52mg
Equiv. to fresh fruit	333.33mg
Cordyceps sinensis (cordyceps) extract	16.67mg
Equiv. to dry fruiting	50mg
Lentinula edodes (shiitake) fruiting body powder	16.67mg
Grifola frondosa (maitake) fruiting body powder	16.67mg
Ganoderma lucidum (reishi) mushroom) fruiting powder	16.67mg
Lactic arabinogalactan	33.33mg
Lauric acid	33.33mg
Zinc (from amino acid chelate)	15mg

EXCIPIENT INGREDIENTS:
Magnesium stearate, hypromellose, purified water, maltodextrin

DOES NOT CONTAIN:
Gluten, dairy, lactose, seeds or nuts

DIRECTIONS FOR USE:
Take 3 capsules per day, or professionally prescribed

STORE BELOW 25 °C IN A DRY PLACE AWAY FROM SUNLIGHT

PubMed.gov
US National Library of Medicine
National Institutes of Health

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Yale J Biol Med. 2014 Dec 12;87(4):423-37. eCollection 2014 Dec.

Healthy bodies, toxic medicines: college students and the rhetorics of flu vaccination.

Lawrence HT[1]

Author information

Abstract

This article examines flu vaccination beliefs and practices produced during a survey of undergraduate students in Spring 2012 (IRB#10-732). This research uses the methods of rhetorical analysis - or the study of persuasive features and arguments used in language - to examine statements respondents made regarding flu and flu vaccine. In these responses, students generated unique categories of arguments about the perceived dangers of flu vaccination, including the assertion that vaccines cause disease (including illnesses and conditions other than flu), that vaccines are toxic medicines, and that vaccines carry unknown, population-wide risks that are inadequately acknowledged. This study provides insight into vaccination beliefs and rationales among a population at risk of flu (college students) and suggests that further study of this population may yield important keys to addressing flu vaccine concerns as expressed by college students. Rhetorical analysis also offers a useful set of methods to understanding vaccination beliefs and practices, adding to existing methods of study and analysis of vaccination practices and beliefs in medicine and public health.

KEYWORDS: flu vaccine; influenza; rhetoric; vaccination

PMID: 25506277 PMCID: PMC4267930

Immunitone Plus™

Immunitone Plus™ is a comprehensive herbal formula that is designed to support healthy immune system function. It contains **herbs that support normal natural killer (NK) cell activity and the balance of cytokines.** Immunitone Plus™ is suitable for long term use and for all age groups.

Benefits:

- Helps enhance and support a **healthy immune system**
- May reduce the **occurrence of colds and flus**
- Reduces the **severity of common cold symptoms**

Immunitone Plus™

- **Echinacea (*Echinacea purpurea*) -** Recent studies show Echinacea-treated groups showed a significant augmentation of their **primary and secondary IgG response to the antigen**, during the first 2 weeks of treatment.
- **Astragalus Extract (*Astragalus membranaceus*) -** promotes the **activity of NK cells**." "Astragalus has demonstrated a wide range of immune potentiating effects and has proven efficacious as an adjunct cancer therapy.
- **Elderberry Extract (*Sambucus nigra*) -** Elderberry extract seems to offer an efficient, safe and cost-effective **treatment for influenza**."

Immunitone Plus™

- **Cordyceps Mushroom (*Cordyceps sinensis*) - IL-6 production by the activation of macrophages**, antibacterial, antiviral, properties as well is also touted as an antioxidant, and supportive to the immune system.
- **Shiitake Mushroom (*Lentinula edodes*) -** "The production of **IL-2 and TNF-alpha** may induce Th1 immune responses
- **Maitake Mushroom (*Grifola frondosa*) immunomodulatory**, lipid-lowering, antitumor, AIDS, and hypercholesterolemia, functional mushrooms deserve further serious investigation."
- **Reishi Mushroom (*Ganoderma lucidum*) -** "Reishi treatment showed positive results on **hepatitis** antibacterial, antibacterial, anti-candida, immune modulating, anti-inflammatory, antioxidant, and anti-tumour properties.

Immunitone Plus™

- **Andrographis (*Andrographis paniculata*) -** treatment of **acute upper respiratory tract infections** and also relieves the inflammatory symptoms of **sinusitis**.
- **Larch Tree (*Arabinogalactan*) - enhancing beneficial gut micro flora**, specifically increasing anaerobes such as **Bifidobacteria and Lactobacillus**. stimulate **natural killer (NK)** and **inhibit the metastasis of tumor cells to the liver**.
- **Lauric Acid - G**roup A **streptococci and staphylococci**.

PROFESSIONAL 15 PPM STRENGTH

Recommended Use: As a dietary supplement, take 5 mL (approx. one teaspoon) orally per day, or as directed by your health care practitioner.

Supplement Facts

Serving Size 5 mL (approx. 1 teaspoon)
Servings Per Container about 95

Amount Per Serving		% Daily Value
Purified Silver	75 mcg	*

*Daily Value not established.

Other Ingredients: Purified water.

This product is manufactured using SilverSol Technology®.

Manufactured in a GMP CERTIFIED Facility

5865 Shiloh Rd, Ste 101
Alpharetta GA 30005
877-485-5336

Collected: 7/27/2018
DOB: 1/30/2006

Received: 7/30/2018
Completed: 8/9/2018

Before

Pathogens

Bacterial Pathogens	Result		Normal
Campylobacter	<dl		<1.00e3
C. difficile, Toxin A	1.41e3	High	<1.00e3
C. difficile, Toxin B	3.44e3	High	<1.00e3

Parasites

Protozoa	Result		Normal
Blastocystis hominis	1.69e6	High	<2.00e3
Chilomastix mesnili	<dl		<1.00e5
Cyclospora spp.	6.95e7	High	<5.00e4
Dientamoeba fragilis	5.60e6	High	<1.00e5
Endolimax nana	<dl		<1.00e4
Entamoeba coli	4.08e8	High	<5.00e6
Pentatrichomonas hominis	4.74e6	High	<1.00e2

After

Pathogens

Bacterial Pathogens	Result		Normal
Campylobacter	<dl		<1.00e3
C. difficile, Toxin A	<dl		<1.00e3
C. difficile, Toxin B	<dl		<1.00e3
Enterohemorrhagic E. coli	<dl		<1.00e3

Parasites

Protozoa	Result		Normal
Blastocystis hominis	<dl		<2.00e3
Chilomastix mesnili	5.12e6	High	<1.00e5
Cyclospora spp.	<dl		<5.00e4
Dientamoeba fragilis	<dl		<1.00e5
Endolimax nana	<dl		<1.00e4
Entamoeba coli	<dl		<5.00e6
Pentatrichomonas hominis	<dl		<1.00e2