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A Randomized Double-Blind Placebo-Controlled Trial*

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*Bioavailability and Antioxidant Effects of the Vemma Formula in Humans*

Vemma Team Members,

Knowing the value of scientific research, funding two clinical trials on the Vemma Nutrition Program™ was an important decision and the results are twofold. First of all, we now have clinical proof the key nutrients in the Vemma formula get readily absorbed in the body after just one dose. Secondly, we know that after consuming Vemma for 30 days, the body is in a much better position to help defend itself against health problems. The following clinical studies results give credence to the thousands of positive testimonials we've received from our consumers over the years on Vemma's ability to help overcome challenges, increase vitality, and improve well-being.\*

Before reviewing the highlights of each individual study, it's important to note the exacting level of protocol that went into them. They were led by Dr. Boxin Ou from Brunswick Laboratories, Norton, MA. Brunswick Labs is an independent laboratory which provides superior analytical services in the chemical sciences arena. They are known for their exceptional services and technical support to the nutraceutical and food industries. Both human studies were randomized, double-blind and placebo-controlled; a highly reliable method of gathering scientific evidence.

The first study, entitled *Effect of the Vemma Formula on Immune Function and C-Reactive Protein Response in Humans: A Randomized Double-Blind Placebo-Controlled Trial*, examined C-reactive protein response, immune-regulatory and liver bile duct-protective effects in the body. It involved 29 men and 30 women age 40 to 65. Subjects were randomly divided into two groups, the Vemma formula or a placebo (a liquid that looks and tastes like Vemma, but with no nutritional value) with approximately the same number of male and female participants in each group. The trial took place over the course of 30 days.

After baseline blood tests were completed, participants received a dose (2 ounces/59 mL) of either the Vemma formula or an identical inactive placebo each morning before breakfast. Blood samples were collected from each subject on day zero and after 30 days of taking the product. The researchers were looking for changes in the blood relating to C-reactive protein and immunity. C-reactive protein is an important blood marker because it can measure the risk of cardiovascular disease; the higher the level, the higher the risk. Immunity markers in the blood can show how well the body is able to fight disease.

Through blood analysis, researchers identified blood markers that enabled them to conclude that the consumption of the Vemma formula was beneficial to the subjects' overall health status due to a significant decrease in C-reactive protein and significant increase in immune system markers.\*

The second study, entitled *Bioavailability and Antioxidant Effects of the Vemma Formula in Humans*, was designed to determine the overall bioavailability (proportion which is absorbed and utilized by the body) of the Vemma Nutrition Program in the human body. This trial, which took place over a 24 hour period of time, involved 20 participants, 10 men and 10 women age 40 to 65. Subjects were randomly divided into two groups, placebo and the Vemma formula. Before the products were consumed, each participant's blood was measured. After the blood tests were completed, participants received either a single dose (2 ounces/59 mL) of the Vemma formula or a placebo before breakfast.

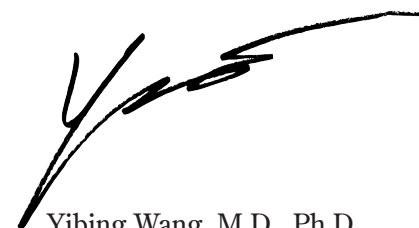
Blood samples were collected from each participant before and numerous times after taking the Vemma formula or placebo to track the presence of nutrients that would show a change in the antioxidant status of the blood. Antioxidants are known to scavenge free radicals (unstable oxygen molecules that can cause damage in the body) and thus help to prevent degenerative diseases such as cardiovascular disorders and cancer.

The noteworthy nutrients that showed up in the blood serum of the Vemma participants were Vitamins B<sub>2</sub>, B<sub>3</sub>, B<sub>5</sub>, ORAC (antioxidant levels) and alpha-mangostin, each reaching their maximum concentrations. ORAC materialized in the blood within one hour and maintained elevated saturation levels for six hours after intake. In the placebo group, no change in blood serum was observed. Based on these results, the researchers concluded that the Vemma Nutrition Program is extremely bioavailable, consequently helping to wage war against chronic disease and the aging process.

The best news of all was how participants responded to a survey at the end of the trial. According to their responses ALL of the participants in the first trial reported favorable results, most saying they felt a lot healthier.\* The level of satisfaction was much lower in the placebo group.

As with any scientific research, further studies would be helpful in determining the long-term benefits of taking Vemma, but these results coupled with an overwhelming number of positive testimonies gives the Vemma Nutrition Program a powerful competitive edge.

To your good health,



Yibing Wang, M.D., Ph.D.

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

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**Effect of the Vemma Formula on Immune Function and C-Reactive Protein Response in Humans: A Randomized Double-Blind Placebo-Controlled Trial**

Yu-Ping Tang, Pen-Gao Li and Boxin Ou  
Brunswick Laboratories, 50 Commerce Way, Norton, MA, USA

**ABSTRACT**

**OBJECTIVES:** To examine C-Reactive Protein (CRP) response, immune-regulatory and liver bile duct-protective effects of the Vemma formula found in the Vemma Nutrition Program in the human body. This program is a multivitamin/antioxidant liquid supplement containing a full spectrum of vitamins, plant-sourced minerals, mangosteen fruit and pericarp, aloe vera and green tea.

**DESIGN, SETTINGS, AND PATIENTS:** A randomized, double-blind, placebo-controlled clinical trial was conducted using 29 men and 30 women age 40 to 65. Participants were randomly divided into two groups, the Vemma formula or a placebo (a liquid that looks and tastes like Vemma, but with no active ingredients) with approximately the same number of male and female participants in each group. The duration of the trial was 30 days.

**INTERVENTION MEASURES:** When the baseline tests were completed, participants received a dose (2 ounces/59 mL) of either the Vemma formula or an identical inactive placebo each morning before breakfast. Full compliance was assured by onsite monitoring. Blood samples were collected from each subject before (Day 0) and after consumption (Day 30) of the test formula to determine the indices of interest.

**IMMUNE FUNCTION**

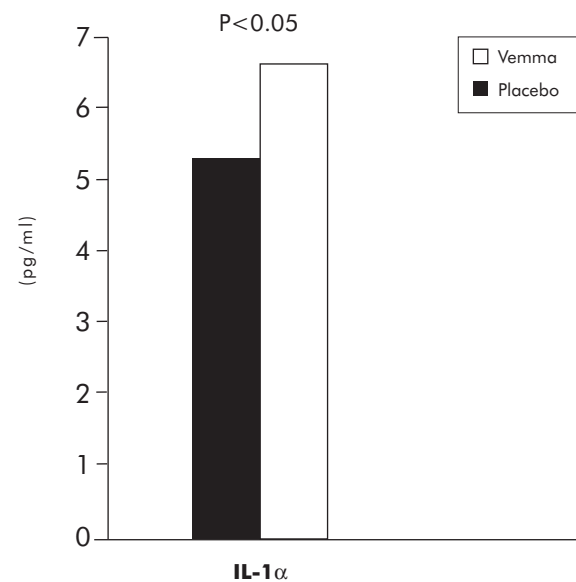
**RESULTS:** T Helper cell (Th cells), Interleukin -1 $\alpha$  (IL-1 $\alpha$ ), Complement 3 (C3), Complement 4 (C4), and C-Reactive Protein (CRP) all showed positive statistical significance in differences when compared to placebo after 30 days of Vemma consumption.

The increase in the percentage of the Th cells in the Vemma group was relatively greater than the control group. As a result, at the end of the study period, the percentage of Th cells in the Vemma group was statistically significantly higher than at the baseline. This indicates a significant increase in immune markers.

At the end of the study period the IL-1 $\alpha$  level in the Vemma group was statistically significantly higher than the control group, implying that the IL-1 $\alpha$  level was increased by Vemma during the trial. This again shows a significant increase in immune markers.

The increases in serum C3 and C4 concentrations were statistically significantly higher in the Vemma group than in the control at the end of the trial. The C3 and C4 systems are involved in defense against microorganisms, the processing of immune complexes and apoptotic (resulting from cell death) debris, and the development of an appropriate immune response.

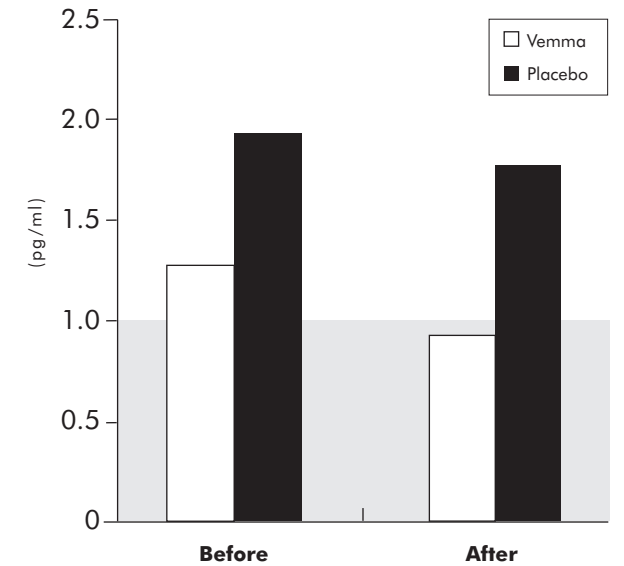
**Changes in Serum IL-1 $\alpha$  Concentration**



**C-REACTIVE PROTEIN RESPONSE**

In the present study, Vemma also decreased serum C-Reactive Protein (CRP), a general marker for inflammation, suggesting that consumption of the Vemma formula may be beneficial to the immunological system. Serum CRP concentration decreased in a statistically significant way after consumption of the Vemma formula, whereas no significant change was observed in the control group. CRP is one of the acute phase proteins that increases during systemic inflammation, which is a normal response to many physical states including fever, injury and infection. Our results showed the CRP level statistically and significantly decreased to a healthy level for the participants in the Vemma group, while the placebo group remained virtually unchanged.

**Serum CRP Concentration**



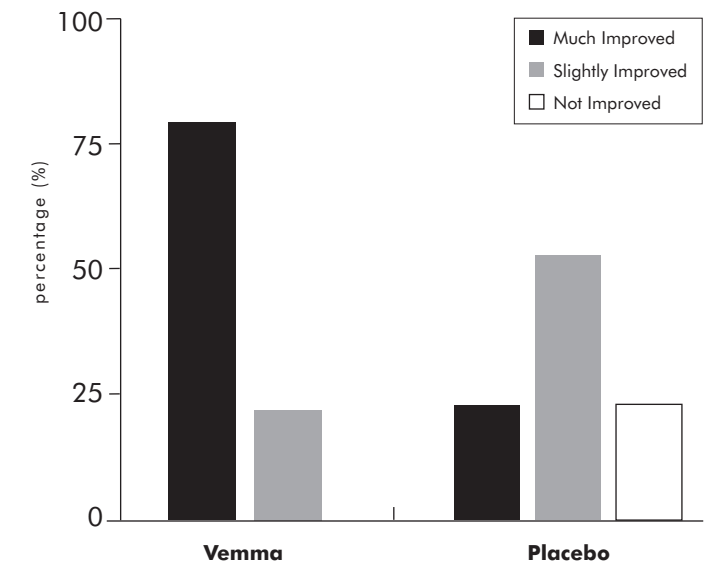
Shaded area indicates that only Vemma had low risk range (<math>< 1</math> mg/L) of CRP levels. White area is high risk range of CRP levels.

**SELF REPORTED HEALTH STATUS**

Thirty (100%) of the subjects in the Vemma formula group reported that they felt their health status improved after drinking the formula, significantly more so than the control group. Among those who reported improvement, only 7 (24%) in the placebo group reported that they feel “much improved,” significantly less than the 23 (77%) subjects in the Vemma formula group.

**CONCLUSIONS:** Our findings showed that consumption of the Vemma formula was beneficial to the subjects’ overall health status, realizing a statistically significant increase in immune markers function and a statistically significant decrease in CRP. Further studies are needed to ascertain the long term effect.

**Self Reported Health Status**



## Bioavailability and Antioxidant Effects of the Vemma Formula in Humans

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Brunswick Laboratories, 50 Commerce Way, Norton, MA, USA

### ABSTRACT

**OBJECTIVES:** To determine the overall bioavailability of the Vemma formula found in the Vemma Nutrition Program in the human body. This program is a multivitamin/antioxidant liquid supplement containing a full spectrum of vitamins, plant-sourced minerals, mangosteen fruit and pericarp, aloe vera and green tea.

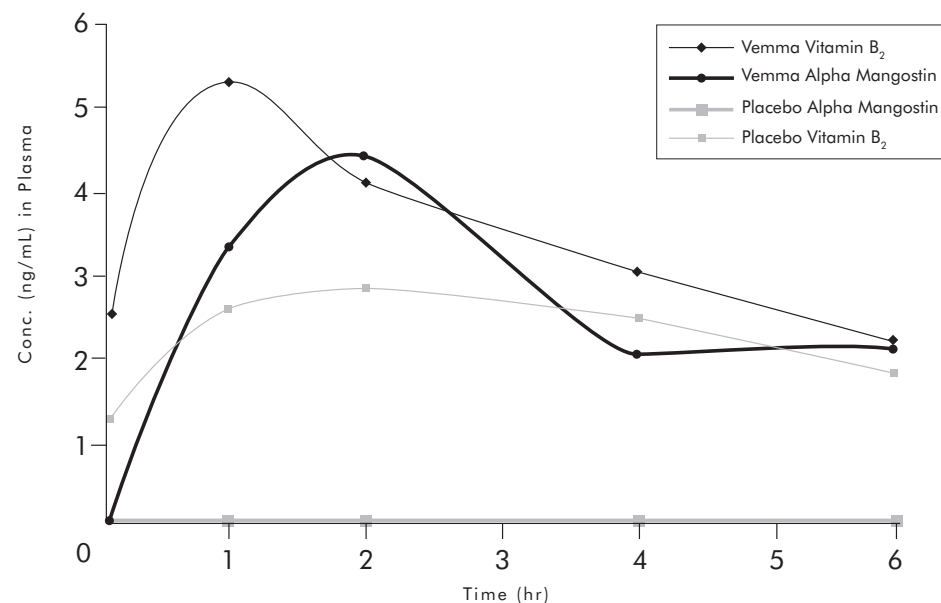
**DESIGN, SETTINGS, AND PATIENTS:** A randomized, double-blind, placebo-controlled clinical trial was conducted using 20 participants, 10 men and 10 women age 40 to 65. Participants were randomly divided into two groups, placebo and the Vemma formula, with the same number of male and female participants in each group. The trial duration was 24 hours.

**INTERVENTION MEASURES:** After the baseline tests were completed, participants received either a single dose (2 ounces/59 mL) of the Vemma formula or a placebo (a liquid that looks and tastes like Vemma, but with no active ingredients) before breakfast one morning. Trial participants stayed onsite for the duration of the study (24 hours) to ensure total compliance. Blood samples were collected from each subject before and after consumption of the Vemma formula or the placebo to determine the indices of interest.

### BIOAVAILABILITY

**RESULTS:** Bioavailability was seen in Vitamins B<sub>2</sub>, B<sub>3</sub>, B<sub>5</sub>, D<sub>3</sub>, xanthone alpha-Mangostin and antioxidant capacity. Bioavailability is defined as the proportion of a substance that is absorbed and utilized by the body. Until a nutrient is absorbed from the gastrointestinal tract and enters the systemic circulation, it is not available for use by the body. In the experiment group, within two hours after consumption of the Vemma formula, Vitamins B<sub>2</sub>, B<sub>3</sub>, B<sub>5</sub>, ORAC (antioxidant levels) and alpha-mangostin reached their maximum concentrations in these patients.

**Concentration of Markers in Human Plasma after 59 mL of Vemma**

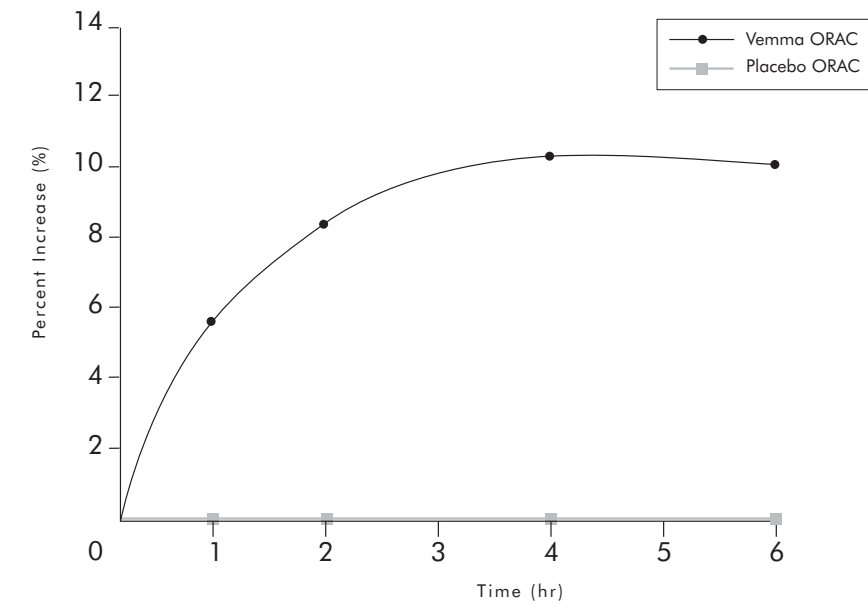


## ANTIOXIDANT CAPACITY

Antioxidants are thought to help because they can neutralize free radicals, which are toxic byproducts of natural cell metabolism. The human body naturally produces antioxidants, but the process isn't 100 percent effective and that effectiveness declines with age. The ORAC score (Oxygen Radical Absorbance Capacity) is a method of measuring the antioxidant potency. Antioxidants help prevent oxidation by counteracting free radicals. They do this by binding to them and transforming them into non-damaging compounds. Xanthones, a particular class of plant nutrients, are highly, biologically active and are unique because they possess very potent antioxidant properties. The xanthone source of the Vemma formula consists of whole fruit mangosteen and pericarp (rind) extract. Vitamins, as we all know, serve many functions and purposes in a healthy body.

The human serum antioxidant capacity increased by approximately 10 percent by hour 4 and stayed elevated through hour 6, the last blood draw in the trial. In the placebo group, which did not receive the Vemma formula, no change was observed in Vitamins B<sub>2</sub>, B<sub>3</sub>, B<sub>5</sub> and D<sub>3</sub>. In addition, alpha-mangostin was not detected in the placebo group.

**Plasma Antioxidant Capacity after Vemma**



**CONCLUSIONS:** Consumption of a single 2 ounce dose of Vemma resulted in a statistically significant increase in Vitamins B<sub>2</sub>, B<sub>3</sub>, B<sub>5</sub>, D<sub>3</sub>, xanthone alpha-Mangostin and antioxidant capacity in the blood serum. The elevated level of human serum antioxidant capacity was sustained through hour 6 of the study after the intake of the Vemma formula. In the placebo group, no change was observed.