

AN EXCERPT FROM THE 2016
PHYSICIANS' DESK REFERENCEFind Laminine on
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LAMININE®**DS****LifePharm Global Network****RECOMMENDED USE**

Laminine® is a dietary supplement intended for anti-aging. Laminine® capsules are to be administered orally. Recommended usage for adults is 1 to 4 capsules daily.

Do not take if you have a known allergy to eggs or fish.

If you are pregnant or nursing do NOT consume this product.

PRODUCT DESCRIPTION**Ingredients & Supplement Facts**

Serving size: 1 capsule

Serving per container: 30

	Amount Per Serving	% Daily Value
OPT9 Proprietary Blend	620 mg	*

(Fertilized Avian Egg Extract, Marine Protein, Phyto Protein)

* Daily Value (%DV) Not Established

The proprietary formula in Laminine® is called OPT9™. This formula is composed of three (3) ingredients: Fertilized Avian Egg Extract (FAEE), Phyto Proteins, and Marine Proteins.

Other Ingredients

Laminine® contains the following inactive carriers: Vegetable Capsule, Silicon Dioxide, and Magnesium Stearate.

PRODUCT DESCRIPTION

Laminine contains fertilized avian egg extract, along with a blend of marine and phyto proteins added to make it unique with all essential amino acids.

TECHNICAL DESCRIPTION

The health benefits of the hen egg have been known for centuries. Investigation of the mechanism of the development of an egg after fertilization revealed certain health benefits. In earlier studies, whilst monitoring weight gain of the egg during their development, scientists (1) found very little gain in the first 9-10 days (7.5%), and then a sharp increase (1190% by day 23), suggesting rapid development of a body. The potency of the nutrients available to the fertilized avian egg at this stage has always been assumed to be high, but it was only recently that the chemical structure of the original egg solids for these critical stages, termed blastodermal to proteoblastic stages was obtained. During the blastodermal to proteoblastic stages of embryogenesis, oligopeptides with molecular weights from 0.5 to 1.0 kD were identified. Oligopeptides are compounds, which have 2 to 20 amino acids joined by a peptide bond. These short chains of amino acids are able to cross the digestive barrier without breaking down or changing the ratios and proportions (2). Peptides are far more potent than other neurotransmitters, requiring only small amounts to produce a profound effect.

Additionally, the uptake of the Fibroblast Growth Factor (FGF) (present in the proteoblastic fluid) by the developing avian egg sharply increases between days 11 & 12. These peptides and the FGF have been isolated through a proprietary process precisely at the right stage of development, using a proprietary drying technique to bring the health benefits to humans. The extract is termed Fertilized Avian Egg Extract (FAEE).

In 1929, John R. Davidson, a Canadian Doctor, discovered an extract derived from fertilized avian eggs when they were at a critical stage of development. He used this extract to restore health in his patients. Dr. Davidson spent well over a decade developing and researching his theory. However, when Dr. Davidson passed away in 1943, his research on fertilized avian eggs was not passed on and was soon forgotten. Nearly 50 years later, the pursuit of fertilized avian egg extract was revived by Norway's foremost expert on egg research: Dr. Bjørne Eskeland. He took Dr. Davidson's original research a step further and hypothesized that fertilized avian eggs contained a special combination of amino acids, peptides and protein fractions that could help provide an incredible array of health benefits when consumed by humans. This included vitamins, minerals and proteins, as well as important defense elements, growth factors, hormones and other biologically active components.

MECHANISM OF ACTION

The bioactive peptides in Laminine stimulate the dormant stem cells to utilize the phyto amino acids and marine protein to repair damaged aged cells.

Drying the proteoblastic fluid before the peptides are "used up" to build organs and bones, allows us to provide this building, repairing, maintenance mechanism of perfectly balanced amino acids, peptides and growth factors to humans.

Nature has devised an extremely versatile mechanism to provide nutrition with miraculous precision to the embryo of living creatures. The precise blend of oligopeptides may be seen as building blocks, without a bridge, or a director. The role of such a director is fulfilled by a growth factor known as the Fibroblast Growth Factor, or FGF, also a bioactive peptide. FGF is prolific in proteoblastic liquid as well as the human placenta. On the 11th day of the incubation cycle of a chicken egg, the chicken tissue shows a steep increase in these bioactive peptides, with the appropriate peptides to form the solid organs and bones (3). A detailed day-by-day study was performed in 1988 (5; 7). Discovered only in the seventies, FGF and bioactive peptides are critical in the development of embryos, including humans.

Bioactive peptides are responsible for building the linings in the blood vessels, creating the infrastructure for the nutrients to flow to critical areas of the brain and organs. Research credits bioactive peptides with the potential to directly affect many neuro disorders because of clear results of the ability of bioactive peptides to affect the growth of neurites (4). Neurites are signal senders (Axons) and signal receivers (dendrites) attached to the brain neurons.

Research (6) has also shown clearly that new cell cultures show a dramatic increase in peptide and amino acid uptake in the presence of FGF. This result gives credence to the hypothesis that embryonic growth is influenced by a very precise mechanism, which combines unique combinations of amino acids, peptides and FGF.

BENEFITS

The beneficial impacts of Laminine® are: positive effects on memory, skin, libido, energy, joints, muscles, stress, sleep and emotional stability.

CLINICAL AND EXPERIMENTAL STUDIES**Wound Healing Activity**

In a 1997 study, immediately following surgery, (animal) subjects were randomized to receive either an amino acid diet or a peptide diet for 10 days and the strength of the wound was measured. Wound bursting pressure was found to be significantly higher in subjects receiving the peptide diets than in those just receiving amino acid diets. The authors suggest that dietary peptides may stimulate the production of growth factors such as growth hormone, insulin, or insulin growth factor (IGF-1). They also postulate that it is possible that the amino acid entry into the cell via peptide transporters is more efficient for stimulation of protein synthesis than entry in the form of just amino acids. Other possible mechanisms suggested by the authors for the increased wound healing with peptide versus non peptide diets include stimulation of collagen synthesis, increased blood flow to the wound, free radical scavenging, and generation of cytokine profiles which better support wound healing.

Cortisol Study

This study was designed to ascertain the effect of the nutritional supplement, Laminine on cortisol levels in the body. During the experiment, 28 subjects, 16 women and 12 men, between the ages of 36 and 83 took part in the study. Salivary cortisol level content of each participant was measured

prior to him/her taking part in the study. This figure is known as "pre-Laminine usage level." The salivary cortisol level was also measured every fifth day three times throughout the study when each participant's intake amount was changed. Overall, study participants' cortisol levels were reduced by an average of 23.7 percent, where 16 started on a higher intake of Laminine—four capsules, twice a day—and 12 started on one capsule twice per day. Participants that initially started on a higher intake of Laminine saw their cortisol level reduced significantly over the first four days as compared to subjects that began the study with a lower usage amount. However, at the end of the study, there was a small, although insignificant, difference in favor of the high initial intake. The total cortisol reduction by the end of the study was 27.3 percent in women and 19.2 percent in men.

While the results of this study are encouraging, additional tests with a larger sample size are needed to validate the findings.

CLINICAL EXPERIENCE**The Effects of Laminine on Normal Blood Sugar Levels****ABSTRACT**

A pilot study was undertaken to observe a possible trend of the effects of Laminine, a dietary supplement, on normalizing blood sugar levels in subjects beginning to experience unhealthy blood sugar levels. Subjects' Hgb A1c (hemoglobin marker for blood sugar levels) were assessed at the beginning of the study and after 12 weeks taking two supplements daily. Eleven individuals participated in the study. Three subjects took a placebo, four subjects with slightly higher than normal Hgb A1c levels took two Laminine daily. Four subjects who were on blood sugar lowering medications that had been previously prescribed for them took two Laminine daily.

Although sample sizes were small, statistical evaluation using matched pairs T test showed that the group experiencing slightly higher than normal blood sugar levels were significantly downregulated with supplementation ($p < 0.05$). The unit change in down-regulation of blood sugar was also statistically significant ($p < 0.05$). No significant change was observed in the group that was also taking blood sugar medication with supplements. The results indicated that Laminine supplementation may have supported the normalization of blood sugar levels in individuals who are experiencing higher than normal blood sugar levels. A study is warranted to observe this effect in a larger population. No untoward side effects were observed in either group supplementing with Laminine for 12 weeks.

INTRODUCTION

Although metabolic syndrome was primarily a condition of middle-aged populations, it is becoming a condition of children, adolescents and young adults all over the world.⁹ Its criteria are overweight, sedentary lifestyle, and "modern diets" of too much food and poor lifestyle habits. Obesity, which is part of the metabolic syndrome, is the fastest growing health-related problem worldwide. The urgent need for preventive measures aimed at reducing the significantly increased health risk is underscored.¹⁰ The metabolic syndrome is an entity, made up of a cluster of cardiovascular risk factors, which increase the risk of future coronary heart disease, type II diabetes, and stroke.¹⁰ The prevalence varies between countries but runs about 20 percent in most westernized countries (i.e. 24 percent in the middle-aged population in Europe).¹¹ Lifestyle has been closely associated with the development of metabolic syndrome, with diet and physical activity identified as two of the most important modifiable lifestyle factors, in this regard.¹¹

The physician provides the primary counsel to help turn these conditions around by discouraging high fat diets, overweight and a sedentary lifestyle. Physicians welcome any additional tools they can use besides traditional pharmaceuticals to counteract high cholesterol, high blood pressure, unhealthy blood sugar levels and overweight. Besides encouraging low calorie diets and adequate exercise, certain dietary supplements may support maintaining healthier blood glucose levels. Laminine contains two categories of supplemental ingredients. A substantial amount of egg from a nine-day fertilized egg is high in levels of particular growth stimulants and rare antioxidants. This egg product is not heat processed or heat dried so as to not alter structural changes in the proteins and hormone substances (i.e. fibroblast growth factors). Receptor sites on fibroblast growth factor may stimulate receptor sites on somatic cells or stem cells, encouraging cell responses. Additional marine and plant proteins (also Spirulina) round out the amino acid profile.

METHODS

All participants signed a voluntary consent form and were informed of the dietary supplement's ingredients and safety. The Hgb A1c test was chosen to measure the effects of

Laminine on normal blood sugar levels as opposed to other blood sugar tests because of its accuracy. Hgb A1c measures the percentage of hemoglobin (a protein in red blood cells that carries oxygen throughout the body) coated in sugar (glycated hemoglobin) over the previous 60-90 days. Therefore, it is not affected by short-term glycemic fluctuations (heavy meal, medications, etc.) that may impact the accuracy of other tests. The study lasted 12 weeks (84 days) in order to measure changes in Hgb A1c levels properly. Normal/healthy Hgb A1c levels are 5.6 percent and below, Hgb A1c levels between 5.7 to 6.4 percent may indicate an increased risk for unhealthy blood sugar levels and Hgb A1c levels of 6.5 percent or above may indicate unhealthy blood sugar levels.

Standards for Hgb A1c Levels

	HGB A1C LEVELS
NORMAL/HEALTHY	5.6% or below
INCREASED RISK OF UNHEALTHY BLOOD SUGAR LEVELS	5.7% to 6.4%
UNHEALTHY BLOOD SUGAR LEVELS	6.5% or above

As the difference between healthy blood sugar levels and an increased risk for unhealthy levels can be as minute as 0.1 percent, even a slight drop in Hgb A1c levels proves beneficial for maintaining normal blood sugar.

The dietary supplement, Laminine is a proprietary blend of Fertilized Avian Egg Extract, phyto proteins and marine proteins. Together, this combination provides the body with all 22 amino acids, including both the essential and non-essential required for protein synthesis.

Group A took one placebo in the morning and one in the evening.

Group B took one Laminine capsule in the morning and one in the evening.

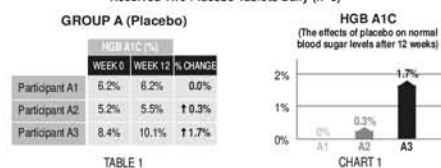
Participants in Group C took one Laminine capsule in the morning and one in the evening in addition to their blood sugar medication. All of the participants in Group C were taking their blood sugar medication prior to participating in the study. Participants in this group were on as few as one and as many as three different medications during the course of the study. These medications included insulin and oral medications.

Group A and the two groups receiving Laminine were tested initially at week 0 before administration of placebo or dietary supplement and then at week 12.

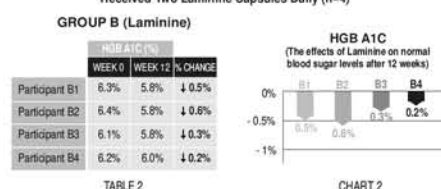
Neither diet nor exercise was monitored during the study period.

PARTICIPANT RESULTS

Participants with Unhealthy Blood Sugar Taking no Medication Received Two Placebo Tablets Daily (n=3)

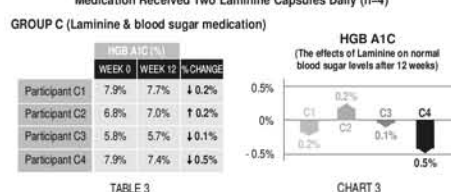


Participants with Unhealthy Blood Sugar Taking no Medication Received Two Laminine Capsules Daily (n=4)



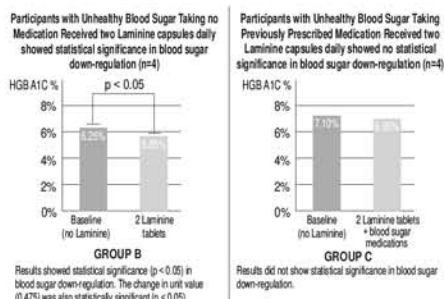
Each of the four participants in Group B (Laminine) experienced a down-regulation in Hgb A1c levels after 12 weeks, with the greatest normalization exhibited in participant B2.

Participants with Unhealthy Blood Sugar Taking Previously Prescribed Medication Received Two Laminine Capsules Daily (n=4)



In Group C (Laminine + blood sugar medication), three of the four participants showed normalizing Hgb A1c levels.

STATISTICAL RESULTS



EVALUATION

The four subjects in Group B (at risk for unhealthy blood sugar levels) consuming two Laminine daily were evaluated using two sample matched pairs T test with a significant result ($p=0.0273$). Using one sample test, only on the differences, there was an average change of 0.475, which was also significant ($p=0.0382$).

The group of subjects who were experiencing blood sugar levels controlled by medication (Group C) consuming two Laminine daily were also evaluated using two sample matched pairs T test with no significant results.

Both statistical evaluations assumed the data was normally distributed. Subject groups were extremely small, but each subject had measurements taken before and after 12 weeks of supplementation, therefore these differences could be evaluated.

CONCLUSION

Metabolic syndrome often shows increasing levels of glucose intolerance. Measures to support persons who are overweight, have sedentary lifestyles and are showing higher than normal glucose levels but are not classified as diabetic, could possibly benefit from taking Laminine. Although the sample size was small, this preliminary investigation did show significant difference between glucose levels before and after 12 weeks of supplementation with Laminine. The difference in the Hgb A1c marker measurements before and after supplementation (a change of 0.475 units) was also statistically significant in Group B, adding additional credence of the noted effect. This preliminary evaluation shows the possibility that this supplement may have a beneficial effect towards helping maintain normal blood glucose in subjects at risk for developing high blood glucose and warrants further study with a larger population.

The statistical evaluation of Group C individuals, taking medicines for normalizing high blood glucose levels, illustrated safety of the supplement as it did not interfere with medication or alter significantly the measurements as a group. Only one subject showed a higher rather than lower effect while on the supplement. Noticeably, one participant in Group C had been taking insulin with Laminine at the start of the study, and per this participant's personal physician's recommendation had tapered off insulin and maintained stable blood sugar levels by the conclusion of the 12 weeks.

All participants in Group B experienced a normalized down-regulation in Hgb A1c levels and three out of the four participants experienced a positive change in their levels in Group C.

It is known that nine-day fertilized avian egg extract that is not denatured with heat processing could retain fibroblast growth factor (FGF) activity. Because growth factors react with receptor sites on somatic cells or stem cells, this activity could support glucose absorption. Laminine also contains fish and vegetable protein, which may have an effect on glucose tolerance when added to the diet continuously. Continuing studies are warranted on clinical effectiveness and also on mechanism of action of Laminine.

J.B. Spalding, Ph. D. retired statistics professor from University of North Texas, Denton, Texas performed the statistical analysis.

Cholesterol Profiles Study

The study was designed to test the effects of the nutritional supplement, Laminine, independently and in combination with Laminine OMEGA+++, on cholesterol, low density lipoproteins (LDL), high density lipoproteins (HDL), triglycerides and blood pressure. There were 15 individuals in the study, broken into three groups of five. This was a double-blind placebo-controlled study that took place over a total period of 12 weeks.

The study took place during two phases. The first lasted eight weeks and included Groups A, B, and C. Cholesterol serum profiles and blood pressure were taken from participants in each group at the start of week one and at the conclusion of week eight. During this phase of the study, participants took a total of four supplements a day—two in the morning and two in the evening. The second phase of the study only included participants from Group A and lasted

an additional four weeks, after which time cholesterol serum profiles were measured again. During phase II, participants in Group A consumed eight supplements a day—four in the morning and four in the evening.

During the first phase of the study, results showed that the average cholesterol down-regulation in Group B was about 9.8 percent, compared to 11.5 percent in Group C. Meanwhile, cholesterol levels in Group A actually rose by 1.0 percent over the first eight weeks but normalized by 11 percent between weeks nine and 12. Results for LDL and triglycerides generally followed a similar pattern.

Phase I	CHOLESTEROL*	LDL*	TRIGLYCERIDES*
GROUP A (Placebo/Placebo)	↑ 1.04%	↓ 9.7%	↑ 140.3%
GROUP B (Laminine OMEGA+++/Placebo)	↓ 9.8%	↓ 19.6%	↓ 32.2%
GROUP C (Laminine/Laminine OMEGA++*)	↓ 11.5%	↓ 20.9%	↓ 16.7%

* Measured in mg/dl
Percentages reflect average change after eight weeks

Phase II	CHOLESTEROL*	LDL*	TRIGLYCERIDES*
GROUP A (Laminine/Laminine OMEGA++*)	↓ 11%	↓ 2.6%	↓ 58.2%

* Measured in mg/dl
Percentages reflect average change after four weeks

Subjects in Group A were also given a subjective survey at the conclusion of Phase II, when they were asked to rate improvement in their joints, memory, skin, sexual drive, muscle tone and strength, stress levels, sleep and emotional wellbeing. Of the five subjects in Group A, only four chose to be a part of the survey. After Phase II, the average improvement in all categories was about 5.75 on a scale of 0-10, with zero representing no change and 10 representing a significant improvement. These are subjective results but nonetheless notable.

	AVERAGE IMPROVEMENT AT WEEK 12
JOINTS	5.8
MEMORY	6
SKIN	5.8
SEXUAL DRIVE	5.8
MUSCLE TONE AND STRENGTH	5.5
STRESS	5
SLEEP	6.2
EMOTIONAL WELL-BEING	6.2

Cholesterol Profiles Study Discussion

Triglyceride levels in Group A normalized by 267 mg/dl or 58.2 percent during Phase II, the most substantial change throughout the duration of the study. However, participants in Group C experienced the best and most consistent overall results. HDL levels were within normal limits both at the beginning and end of the study for all participants.

Although participants in Group A took double the Laminine and Laminine OMEGA+++ during Phase II, results were not drastic enough to recommend doubling the suggested usage for Laminine OMEGA+++ for all individuals. The down-regulation in LDL was not significant in Group A during Phase II as compared to Group C during Phase I. Nevertheless, for individuals that do have high triglyceride concerns, doubling the intake of Laminine and Laminine OMEGA+++ can yield a normalization in a short period of time.

These data suggest that Laminine OMEGA+++ helps to down-regulate cholesterol, LDL, triglyceride and blood pressure levels (Group B), but when taken with Laminine, the benefits are more significant as a whole (Group C after Phase I and Group A after Phase II).

A study of this size has an estimated margin of error of approximately 30 percent. Therefore, while the results of this study are encouraging, additional tests with a larger sample size are needed to validate the findings.

SAFETY

People with egg allergies should consult a physician before taking Laminine®. Pregnant women should consult with a physician before taking Laminine®.

HOW SUPPLIED

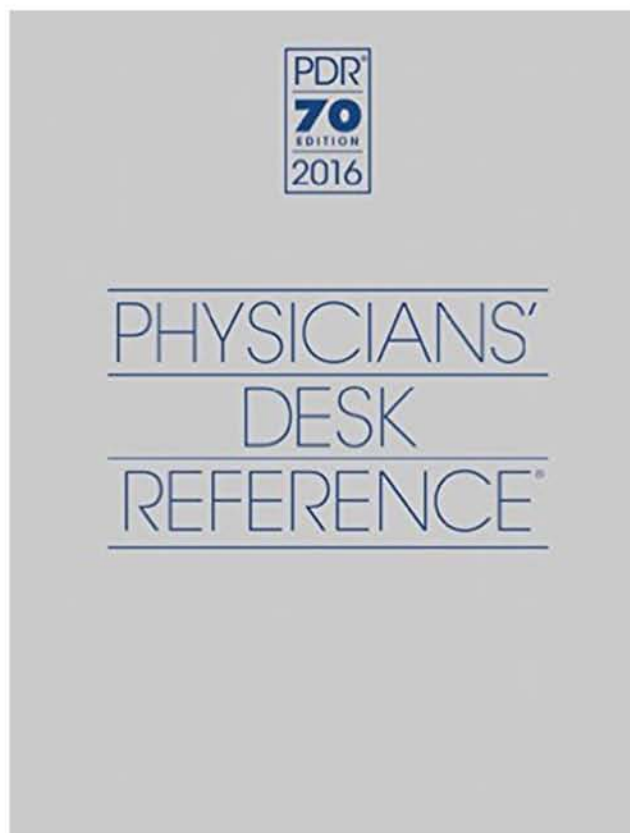
The Fertilized Avian Egg Extract in Laminine® is also contained in: Laminine® OMEGA+++

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Shown in Product Identification Guide, page 307



LAMININE IS FEATURED IN THE 2016 PHYSICIANS' DESK REFERENCE

