

HEALIOS®

(2-amino-4-carbamoylbutanoic acid disaccharide complex)

Healios® dietary supplement is a liquid nutrient suspension designed to promote and maintain the health of the epithelial cells and mucosal tissues of the mouth, throat, esophagus, and digestive tract. This is a common need of those who have difficulty swallowing because they are receiving chemotherapy or radiation treatment, or have undergone dental or oral surgery. The benefits of supplementing with the nutrients found in Healios® have been clinically demonstrated.**

** 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.

DIRECTIONS

- Mix one scoop (~11g) with 25 –100ml of water, swirl in mouth then swallow.
- Be sure to drink slowly.
- Take twice per day. Once in the morning, and once at bedtime.
- For best results, take after a meal.

Keep out of reach of children. Protect from heat, light, and moisture. Store at 15–30°C or 59–86°F.

Orange Natural & Artificial Flavor

Supplement Facts		
Serving Size 1 Scoop (11g)		
Servings Per Container 30		
Amount Per Serving %DV*		
Calories	35	
Total Carbohydrate	7g	3%
Total Sugars	6g	†
Includes 6g Added Sugars		12%
Healios® Oral Support Blend	5345mg	†
L-Glutamine, Trehalose, L-Arginine		
*Percent Daily Values are based on a 2,000 calorie diet.		
†Daily Value (DV) not established.		
Other Ingredients: Sucrose, Natural & Artificial Flavor, Citric Acid, <i>Stevia rebaudiana</i> Leaf Extract, Malic Acid, Silica, Beta Carotene (color).		

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Unflavored

Supplement Facts		
Serving Size 1 Scoop (10g)		
Servings Per Container 30		
Amount Per Serving %DV*		
Calories	25	
Total Carbohydrate	6g	2%
Total Sugars	6g	†
Includes 6g Added Sugars		12%
Healios® Oral Support Blend	5345mg	†
L-Glutamine, Trehalose, L-Arginine		
* Percent Daily Values are based on a 2,000 calorie diet.		
† Daily Value (DV) not established.		
Other Ingredients: Sucrose, Silica.		

Grape Natural & Artificial Flavor

Supplement Facts		
Serving Size 1 Scoop (11g)		
Servings Per Container 30		
Amount Per Serving %DV*		
Calories	35	
Total Carbohydrate	7g	3%
Total Sugars	6g	†
Includes 6g Added Sugars		12%
Healios® Oral Support Blend	5345mg	†
L-Glutamine, Trehalose, L-Arginine		
*Percent Daily Values are based on a 2,000 calorie diet.		
†Daily Value (DV) not established.		
Other Ingredients: Sucrose, Natural & Artificial flavor, Citric Acid, <i>Stevia rebaudiana</i> Leaf Extract, Red Cabbage Juice (color), Malic acid, Silica.		

Developed by and Manufactured Exclusively for:

HEALIOS®
ONCOLOGY NUTRITION, LLC

333 Northpark Central Drive
Houston, TX 77073
(281) 774-1317

www.HealiosProducts.com

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(2-amino-4-carbamoylbutanoic acid disaccharide complex)



HEALIOS®

Healios® Glutamine Complex is a product designed to promote healthy mucosal tissues in patients receiving multiple therapies, including biological (for example which target the mTOR pathway), chemotherapy (for example doxorubicin and other agents known to cause mouth, throat or esophageal soreness), radiation treatment (especially involving mouth, head, neck, and esophagus), or have undergone dental or oral surgery.

The benefits of supplementing one's diet with the nutrients found in Healios® have been clinically demonstrated in published scientific studies.

What is Healios®?

Healios® is a liquid nutrient suspension that promotes and maintains the health of the epithelial cells and mucosal tissue of the digestive tract. The life span of a typical epithelial cell in the digestive tract varies from two to three days in the mouth and esophagus to up to six days in the large intestine.

The lining of the entire digestive tract is continuously renewed through the divisions of epithelial stem cells, keeping pace with the rate of cell destruction and loss at epithelial surfaces. Healios® is designed to promote healthy renewal and function of the mucosal lining, especially for those who have difficulty swallowing.

Who developed Healios®?

Peter M. Anderson, MD, PhD. who has served as a Professor, Department of Pediatrics Patient Care, Division of Pediatrics, Curtis Distinguished Professor, The University of Texas MD Anderson Cancer Center, Houston, TX originally developed the science and patents that formed the foundation for Healios®. Dr. Anderson is now at the Cleveland Clinic in Cleveland, Ohio.

Dr. Anderson discovered the benefits of supplementing the amino acid glutamine (a key ingredient found in Healios®) as part of his cancer patients' treatment to reduce the toxic side effects of therapy in the 1990's. He was seeking to address the well-known side effects involving the mouth caused by cancer treatments.

Times of stress increase the body's need for additional nutrients to maintain healthy functions. We know that one of the most sensitive areas is the digestive tract where the normal rapid "turn-over" or replacement of epithelial cells needs the most nutritional support. Proper nutrition for the digestive lining is doubly important because not only does the lining need to be nourished and replenished, but a healthy gut lining is essential to proper nutrient absorption for the whole body.

How did Dr. Anderson discover the benefits of the Healios® glutamine suspension for the treatment of cancer-related mucositis?

While at The University of Minnesota in the early 1990's Dr. Anderson became increasingly discouraged that his young adult and pediatric cancer patients were suffering from the side effects of their cancer treatments: mouth soreness (also called stomatitis and mucositis). Mucositis can become so bad in some patients that they have a hard time swallowing and do not eat enough to absorb adequate nutrients.

Dr. Anderson states: "Patients often had to be put on a morphine drip and I thought to myself – this shouldn't be part of a package deal – where we tell you, if you are miserable we can give you I.V. fluids and put you on a morphine drip – but don't worry, it's temporary." There had to be a better way to address the problem and/or make it less severe.

Dr. Anderson continues, "The medical literature made it clear that the naturally occurring amino acid glutamine shuttles nitrogen into damaged cells, helping them to heal." The challenge was in getting the absorption of glutamine to take place directly at the site of the mucosal lining, so that healthy tissue can grow.

Dr. Anderson was able to find a way to greatly increase the absorption of glutamine by a factor of over 100 times by putting it in a suspension that would "feed the digestive lining" specifically in the mouth, throat, and esophagus. By combining glutamine with a blend of synergistic ingredients, he was able to achieve the desired effect, while still keeping the taste good and the suspension easy to use for patients.

The concept was tested successfully in people with cancer in one pilot study and 3 larger randomized placebo, double-blind trials. The Healios® formula is an improved result of Dr. Anderson's original research.

How did Healios® Oncology Nutrition come together?

Dr. Anderson partnered with a team of top oncologists and a world-class nutraceutical company to achieve his dream of making Healios® easily available to patients world-wide. Dr. Anderson hopes to make Healios® an option to consider in the standard dietary regimen for many people with demonstrated need to supplement their diets with glutamine. This way, even patients with cancer can contribute to their own nutritional health in a meaningful way.

The Healios® option could even be used during and after each cycle of chemotherapy or during radiation. The goal is to improve the nutrition and daily lives of many.

What time of day should I take Healios®?

Healios® is taken generally twice per day, once in the AM and once in the PM.

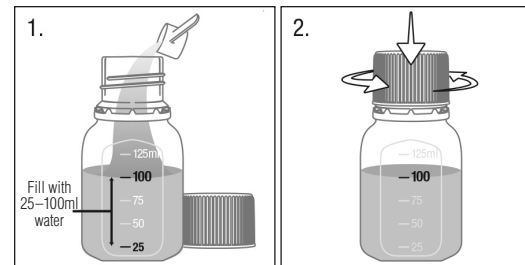
When should I start taking Healios®?

Healios® works to both support normal healthy cell repair and epithelial renewal. Your body's need for glutamine increases when the body and its tissues are under stress or exposed to some chemotherapy agents and/or radiation.

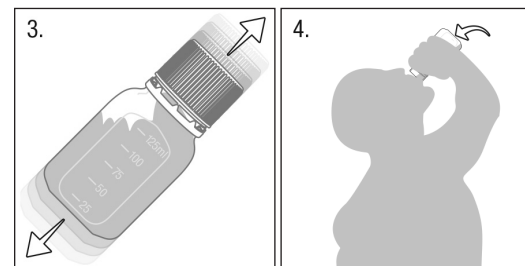
If you will anticipate a need for the added support of Healios® you should take it starting at the initiation of any period of increased stress to the mouth, throat, esophagus, or digestive system.

Two regimens are recommended. Your healthcare professional can help you assess your nutritional needs, and help to design a supplementation program that is right for you.

A suggested regimen is for starting use of Healios® twice daily, throughout the "stress period", plus at least two additional weeks afterwards.

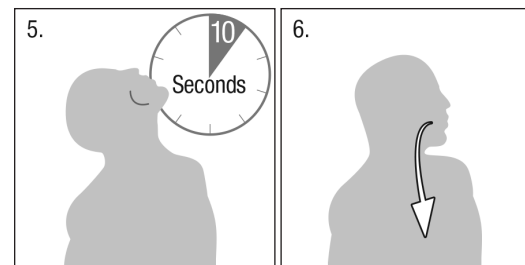


1. Pour 25 to 100ml of water into bottle & 1 scoop of Healios®.



3. Shake the bottle until the solution is thoroughly mixed.

4. Pour some mixture into mouth. **DO NOT SWALLOW YET.**



5. Swish in mouth for 10 seconds.

6. **SLOWLY** swallow mixture. Repeat until mixture is gone.

How do you use Healios®?

Healios® comes packaged as a flavored powder that is mixed with water in the enclosed bottle. You then "swish and swallow" the Healios® drink mix for approximately 10 seconds. It's that easy.

Why do you "swish and swallow" Healios®?

Studies have shown that a slow "swallow" is more beneficial than gulping. The developers of Healios® found that swishing and swallowing is an effective way to get optimal absorption and effect. This is accomplished within 10 seconds because of the rapid delivery system. For treatments primarily affecting the esophagus 6 small sips and swallows over a one minute period may provide a more effective coating and delivery where the nutrients are needed.

How does Healios® taste?

Knowing that his pediatric patients don't like to take pills, Dr. Anderson and his team designed Healios® to taste good, and at the same time fulfill the need for direct application on the affected areas. "I tried it on my own kids when they were in elementary school. I knew if we could find something they would like, we could get any kid to take it." Healios® has a taste that is pleasant enough for a child to enjoy. Healios® is available in delicious orange and grape flavors, and unfavored.

Would a regular glutamine pill or powder work for me?

Probably not. Ordinary glutamine as a pill or powder in water for the treatment relies too heavily on uncertain bio-absorption. A glutamine suspension in water has been relatively ineffective in at least 2 scientific studies. Healios® has had success with patients in a variety of clinical settings because of special ingredients used to facilitate uptake where it is needed, namely in the tissues of the mouth, the throat, and the esophagus.

What makes Healios® taste sweet?

Healios® contains two types of disaccharides in a precise combination to increase the uptake of glutamine as it comes in contact with mucosal tissue. Thus these disaccharides give Healios® its sweet taste and also make it more effective.

Are the sugars in Healios® bad for me?

No. Normal diets contain some carbohydrates which are broken down into sugars by saliva and the small intestines. The disaccharide sugars in Healios® shuttle the glutamine into the cell where it supports normal healthy cell repair and epithelial renewal. Your body's need for glutamine increases when the body and its tissues are under stress or exposed to toxins or radiation.

Without adequate amounts of glutamine in the diet, the body begins to break down muscle to supply the glutamine it needs. Inadequate protein in a diet can cause breakdown of muscle tissue to make up the deficit. Glutamine is an essential nutrient to fuel white blood cells, mucosal cells, and the intestines.

Are there any side effects from Healios®?

The glutamine contained in Healios® is a naturally occurring amino acid found in animal and plant protein and should not cause any side effects in the majority of patients, however some individuals may be sensitive to glutamine.

Do not use Healios® if you have severe liver disease with difficulty thinking or confusion (hepatic encephalopathy); suffer from mania (a mental disorder); are prone to seizures; or have sensitivity to monosodium glutamate (MSG), a food additive. Always check with your doctor before using Healios®.

What role does glutamine have in general health?

Glutamine is an amino acid that is a natural component of proteins. It can be found in foods such as milk, beef, chicken, and fish.

Glutamine accounts for approximately 60% of all free amino acids in the blood and can be utilized by the body as a fuel, used to help make new body protein, and to also help make other important compounds and amino acids.

Glutamine has long been known as an important nutrient to promote healing, as it is a "nitrogen shuttle" for tissue repair.

The amount of glutamine in standard doses of Healios® is similar to what can be achieved with a high protein diet. However the extra ingredients of Healios® give the tissues of the mouth, throat, and esophagus the ability to more effectively get targeted amounts to maintain tissue integrity and/or provide support to your body's natural healing if damage occurs.