



Green Lipped Mussel Powder Buyers' Guide



GREEN LIPPED MUSSELS A NEW ZEALAND SUPERFOOD

There's an old New Zealand native proverb that says, "An active soul is a healthy soul."

It seems the native Maori people had discovered their own source of health and mobility, and found it in the green lipped mussels located only in waters of the New Zealand coast.

New Zealand has been harnessing the benefits of green lipped mussels for years, with our ancestors supported the health of their joints by eating a diet rich in green lipped mussels and other seafood, allowing for better mobility well into their later years.

It's something we all want, but few of us look to food as being a great source of health and vitality these days, which is unfortunate when such powerful age defying foods are available.

Harvested mussels grown naturally on the seashores were often eaten raw, providing greater nutritional benefits. This led researchers to begin exploring the benefits of green lipped mussels, and what they discovered was pretty remarkable.





GREEN LIPPED MUSSELS OFFER BIG BENEFITS

Since the early 1970s when the first green lipped mussel product hit the market, studies have shown that the distinctive ocean mussel can not only help support the body's ability to manage joint pain, but it also supports joint mobility as well as healthy inflammation management.

MORE ABOUT GREEN LIPPED MUSSELS KEY NUTRIENTS

While inflammation is a normal process that is one of our body's most amazing life-saving features, the process can go awry, triggering an inflammatory response when there is no threat or when the process of inflammation doesn't return the damaged area to a normal healthy state, known as homeostasis. This is called chronic inflammation, which has been linked to a host of health problems including premature aging.

To that end, the two key nutrients in Green Lipped Mussel Powder – glycosaminoglycans and omega-3 fatty acids – could go a long way in helping to support the body's ability to defy the aging process. About one in five American adults suffer from some form of joint health issues, and it seriously impacts their quality of life. For these people, getting dressed, climbing stairs and performing everyday household chores become an exercise in pain and frustration.



INGREDIENTS FROM THE SEA

The two key ingredients in green lipped mussels explain why the Maori people were able to defy aging and live a long, active life.

Glycosaminoglycans

or GAGs for short, are necessary for brain, cartilage and tissue development, and play a vital role in the health and maintenance of cartilage and tendons, skin and connective tissue. Some glycosaminoglycans – which are also known as mucopolysaccharides, or MPS - help ensure that tissues retain moisture so they function as they should.

As we age, we lose glycosaminoglycans – which include chondroitin sulfate (a familiar nutrient used to treat osteoarthritis naturally) and keratin sulfate, the two most closely associated with cartilage - so cartilage becomes

Omega-3 fatty acids

There are so many reasons to love the benefits of omega-3s, such as supporting heart health, brain function and emotional wellness, however supporting joint health makes the omega-3s in Green Lipped Mussel Powder a huge asset.

Omega-3 fatty acids have been shown in studies to help support healthy inflammation management, which can ease discomfort and support joint mobility.

Research has shown that the fatty acids in omega-3s – DHA and EPA - may inhibit the proteins that contribute to stiff joints while replenishing the

drier, thinner and less effective as a cushion between bones.

The loss of other glycosaminoglycans, including dermatan sulfate and hyaluronate, cause skin to also show signs of aging as connective tissues which include collagen and elastin become stiff.

While we probably didn't hear much about glycosaminoglycans in biology class, these molecules are very important to our overall health and well-being, and are often called "the glue of life," due to the big role they play in the aging process.

moisture in cartilage, effectively easing discomfort while resisting the progression of the disease.

Green lipped mussels also contain lipids that help maintain the structure of cell membranes as well as proteins that inhibit the enzymes that cause joint cartilage to break down, adding two more layers of joint support.

For the Maori, remaining active as they aged was normal, and research has determined that green lipped mussels were an important reason for this.

So what does that mean for us?



GREEN LIPPED MUSSEL SUPPLEMENTS: AN OVERVIEW

The first green lipped mussel powder found its way to market in 1973, and companies have been working on advancements ever since. If you're suffering from joint discomfort, you're probably wondering if one of those supplements can give you the joint support you need.

But results absolutely depend on how those supplements are processed and the care the manufacturer takes to retain the mussel's nutritional properties and benefits.

The Maori benefited from green lipped mussels because they often consumed the entire mussel raw.

By doing so, their bodies were able to absorb all the nutrients found in the mussel, including essential omega-3 fatty acids and proteins. Like many food items, green lipped mussels lose their nutritional value quickly, and both freezing and cooking can diminish the health benefits by changing the structure of the mussel and destroying key components.

If the green lipped mussel product you're researching is processed incorrectly, you won't receive all the benefits the mussel has to offer, and the product has missed the mark.

HOW TO CHOOSE THE BEST PRODUCT

Our mission at Xtend-Life has always been to help our customers live longer, healthier lives, and we're committed to providing high-quality products that do just that, such as our Green Lipped Mussel Powder.

It is one of the Xtend-Life products that focus on locally sourced ingredients. We use green lipped mussels native

only to New Zealand for our powdered supplement. For other products, we use kiwifruit grown in New Zealand, Manuka honey harvested in New Zealand and Hoki fish caught off our country's coast.

We source our bulk Green Lipped Mussel Powder from Aroma NZ, a family-owned company based in Christchurch that was

established in 1961. Because Aroma focuses on providing the best possible product using the latest technologies, the business's goals align with our own. They have established a solid reputation based on the use of quality green lipped mussels and scientific studies that back their product claims.

It's a good partnership, especially since their forays into the latest in technology allow us to bring you the best possible Green Lipped Mussel Powder, a product we're proud to sell because it offers real benefits, backed by both science and nature.

WHAT MAKES XTEND-LIFE'S GLM POWDER SUPERIOR?

Aroma has been at the forefront of green lipped mussel powder research, and with its GlycOmega-Plus proprietary blend, it has taken its previous product to the next level. This new generation of Green Lipped Mussel Powder is one that helps support healthy inflammation management because it is as close to the natural product as possible.



Omega-3 fatty acids

Green Lipped Mussels are a natural source of omega-3 fatty acids, which are retained throughout the processing. The mussels are freeze-dried at temperatures that are low enough to retain the benefits of the mussel meat, so taking the supplement gives you the same benefit the Maori people experienced when eating fresh raw mussels direct from the ocean.

If the mussels were to be cooked and ground – as some manufacturers do when producing Green Lipped Mussel Powder - many of the nutrients would break down, and you'd be taking a product that offered little real benefit.

Cold extraction

Which includes opening mussels by hand rather than using steam - is expensive, but it results in a superior product in the end. Mussels are harvested at their peak, when the most nutrients are present in the flesh, and are combined with a plant-based antioxidant to amplify the beneficial effects and act as a chemical-free stabilizer.

Aroma also processes its harvest quickly, since the more time it takes from harvest to finished product, the more likely the mussel will oxidize – like the flesh of an apple when exposed to air – diminishing the benefits.

Each new batch of Green Lipped Mussel Powder undergoes testing at the University of Otago Wellington School of Medicine, where researchers specifically focus on the chondroitin sulfates that can help support joint and connective tissue functions, easing the discomfort and supporting the mobility of joints.

STUDY REVEALS GLYCOMEGA-PLUS BENEFITS



Regular testing ensures product consistency, which is important for those who take the product on a regular basis, and rely on its effectiveness. To demonstrate this, Aroma commissioned a study by the University of Queensland which found that Aroma's GlycOmega-PLUS Green Lipped Mussel Powder eased joint discomfort in 59 percent of those taking the supplement.

“A key contributor to the results was the quality and purity of the stabilized mussel from Aroma NZ and the extract's preservation of therapeutic activity,”

- Luis Vitetta and Samantha Coulson, the primary clinical investigators for the project.

Aroma has the largest freeze drying plant in the southern hemisphere, and uses eight freeze driers -manufactured by Cuddon Freeze Drying Technology, a family-owned business also located in New Zealand - to tackle the mussels harvested from EU/ US FDA approved growing areas in the pristine waters of the Marlborough Sound, located at the top of New Zealand's South Island.

Mussels are inspected for quality prior to harvesting, ensuring that the live mussels

brought to Aroma's plant have the highest levels of the mollusk's beneficial properties.

Aroma retains those levels by freeze drying the mussels at a controlled low temperature, a process that retains the integrity of the mussel, keeping the beneficial properties at high levels. Aroma's proprietary blend is then stabilized with a unique antioxidant – not a chemical preservative that can have a negative impact on your body.

GLM BENEFITS BEYOND HEALTHY JOINTS

Because so many of the nutrients in the green lipped mussel are retained during the world-leading freeze-drying process used by Aroma – including a range of amino acids - Xtend-Life's Green Lipped Mussel Powder offers benefits beyond improved joint comfort and mobility.

Skin, hair and nails

The omega-3s in green lipped mussels can provide benefits both inside and out, and can support the health and appearance of skin, hair and nails. Two key glycosaminoglycans - dermatan sulfate and hyaluronate – can also significantly reduce the visible signs of aging by helping collagen and elastin stay healthy and pliable.

Immune system

A healthy immune system means everything, and Green Lipped Mussel Powder may help support the body's ability to fight both viral and bacterial infections, as well as improving the production of antibodies, supporting wound healing. And because it supports healthy inflammation management, it has the potential to help manage healthy bacteria in the gut, where 80 percent of the immune system is.

Nutrition

Essential omega-3 fatty acids, proteins and carbohydrates in green lipped mussels contribute to the body's total daily nutritional requirements, improving overall health, boosting endurance and energy levels and filling in gaps that may exist in even the healthiest of diets.



Bones and teeth

By supporting the health of surrounding tissue, there is less pressure on both teeth and bones, so they have the support they need to stay strong.

Nervous system

When nerve cells function better thanks to the lubrication provided by omega-3s, organs work better, muscles repair themselves more quickly and tissue regenerates at a faster rate.

Heart health

Those omega-3s also help benefit the circulatory system, supporting blood flow to and from the heart and supporting the health of arterial walls.

Pet health

A 2013 study from Canadian researchers found that green lipped mussel supplements contributed significantly to the well-being of dogs with joint discomfort, improving both pain and mobility during the two-month controlled testing period. "This shows the efficacy of a GLM-enriched diet, which should definitely be proposed as an adjunctive treatment to conventional medication," researchers said.

Green Lipped Mussel Powder has also been shown to support recovery from sports related injuries, help relieve the discomfort of bursitis and menstrual cramps.

QUALITY MATTERS

With Xtend-Life, the Green Lipped Mussel Powder you purchase at any time will always be of the same high quality, due to our rigorous standards and testing.

According to a 2011 study from the University of Queensland in Australia, during a 12-week period, subjects using Aroma's GlycOmega PLUS green lipped mussel extract to support joint health found themselves using less over-the-counter pain medication than before. This is exactly the same premium quality Green Lipped Mussel Powder used by Xtend-Life.

The research appearing in the journal *Inflammopharmacology* found that the Green Lipped Mussel Powder performed better – and according to study author and researcher Samantha Coulson worked quicker - than glucosamine supplements when it came to both discomfort and stiffness.

“The excellent results from this latest independent trial show that our Green Lipped Mussel Powder worked more rapidly and provided faster relief than glucosamine for the people who took part,” said Winters. “The study proved that Aroma NZ's GlycOmega PLUS significantly helped reduce joint discomfort and increased joint mobility in patients and

With Xtend-Life Green Lipped Mussel Powder you get the same benefits as of consuming the raw mussel, without having to plan an excursion to the coast of New Zealand to harvest them yourself.



confirmed that our green lipped mussel ingredient definitely contains significant properties to support healthy inflammation management.”

The study also found that the freeze-dried Green Lipped Mussel Powder helped reduce the presence of a certain bacteria that promotes chronic inflammation, adding another layer of support.

“Back-to-back successful clinical studies on our green lipped mussel extract have now confirmed its efficacy, providing strong evidence of how it could help the millions of people globally who suffer with joint immobility and stiffness every day of their life,” Winters said.



OIL VS POWDER

If you've decided that green lipped mussel is right for you – it's a natural way to support joint health and function – you

probably have some questions about the differences between powder and oil. While each offers clinically-proven results, consider this.

When oil is extracted from the mussel, much of the nutrient-dense meat is left behind. The oil contains omega-3 fatty acids but it is missing some key nutrients that make our Xtend-Life freeze-dried powder a superior product.

Xtend-Life's Green Lipped Mussel Powder is recommended because the product is sourced from pristine waters using sustainable farming practices and the quick and effective method of freeze drying retains the benefits found in a raw mussel.

IF YOU'RE WONDERING WHAT'S IN XTEND-LIFE'S GREEN LIPPED MUSSEL POWDER, THIS IS IT:

- **60%-62% Protein (in form of essential amino acids)**
- **12%-13% Complex carbohydrates**
- **11%-12% Chondroitin sulfates (which target joint health)**
- **4%-5% Lipids**
- **5%-6% Minerals**

Xtend-Life recommends 2400 milligrams per day for optimum results.

Among these nutrients are omega-3 fatty acids, enzymes that help break down the food we eat into nutrients we can use and vitamins including antioxidants to fight free radicals and oxidation.

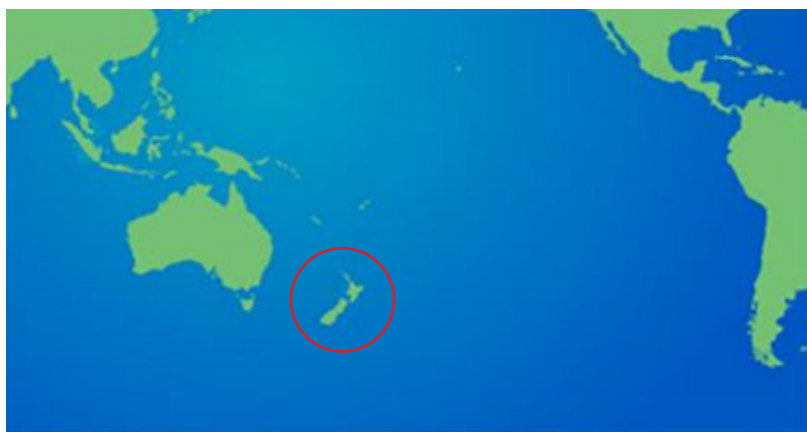
BENEFITS OF XTEND-LIFE GREEN LIPPED MUSSEL POWDER

Green lipped mussel powder has been called a “miracle food” because it is one of the most complete foods available, offering a host of nutrients as well as mineral salts that are similar to the electrolytes found in human blood cells.

And while there are plenty of versions on the market, our customers at Xtend-Life have come to expect the best from us, and that’s what we deliver.

As a raw mollusk, green lipped mussels help with tissue formation and the balance of body fluids, both of which play a role in supporting joint health.

Our Green Lipped Mussel Powder is as close to that raw, natural state as possible, because we know that nothing beats the real thing when it comes to nutrients.



ENVIRONMENTALLY FRIENDLY

Xtend-Life’s Green Lipped Mussel Powder is produced using the very best green lipped mussels harvested in the pristine and pure Marlborough Sound in the South Island of New Zealand. This region is a haven for mussel growers as the waters flowing in and around the Sound ensures that young mussels grow and develop into healthy mature adults.

With the ever increasing global demand for seafood and shellfish - especially green lipped mussels – wild fisheries cannot cope with the volume and instead of pillaging Mother Nature’s seafood stock to the point of total depletion, commercial growers (also called aquaculture) quickly became

the industry’s answer to sustainable mussel stocks.

These mussel farms have proved to be so successful in green lipped mussel sustainability that since 2002, this portion of New Zealand’s aquaculture industry has achieved huge growth.

Xtend-Life fully supports the Marlborough Sound sustainability effort. As with all of our products, we will always source our raw materials from eco-friendly suppliers who are as passionate about delivering a quality product as we are, whilst ensuring that future generations can enjoy the ocean’s bounty just as much as we can today.



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A WORD FROM WARREN

"I hope that you have found the information in this guide to be helpful. We are truly proud of the quality of our Green Lipped Mussel Powder and as a whole food it complements not only our Omega 3 /DHA Fish Oil products , but also our other sophisticated supplements such as Total Balance and Not Just Joints. For those readers who would really like to get down to the 'nitty-gritty' of this product, there is more interesting material in the following sections."

In good health,

WJ Matthews

Warren J Matthews
Chairman of Xtend-life

MORE INFO

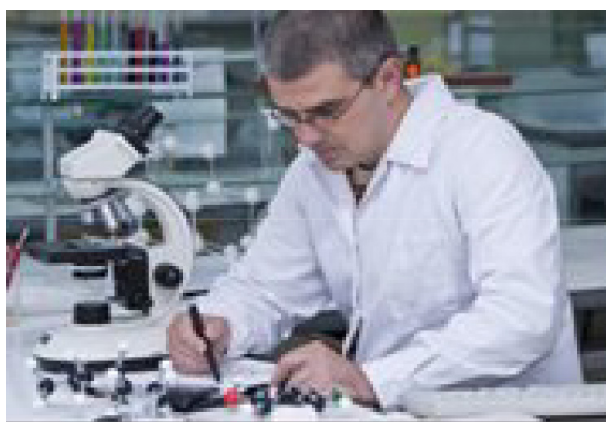
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INTRODUCTION

In order to benefit from the vast number of health factors associated with green lipped mussels, you need to choose the green lipped mussel powder that has retained a high proportion of natural mucopolysaccharides (commonly referred to as MPS) during the manufacturing process. MPS are a unique group of complex carbohydrates which play a significant role in human metabolism, growth and health.

Having been accredited through folklore for many decades, MPS finally became known to scientists and health professionals during the 1970s. Dr Orville H. Miller, Professor of Pharmaceutical Chemistry at the University of Southern California, first identified the essential

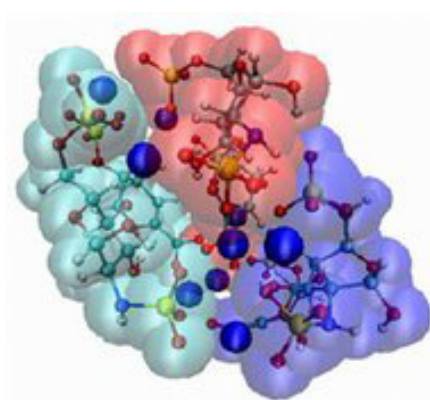


Because of their structure and ionic charge, MPS are crucial in the integrity of the body at a cellular level – particularly in organs, loose connective tissue and joints. It is because of this that MPS have been described as ‘The Glue of Life’.

The best mussel powder for you is one which contains a high percentage of MPS as well as every other beneficial organic component of the green lipped mussel. In an industry where there are many products

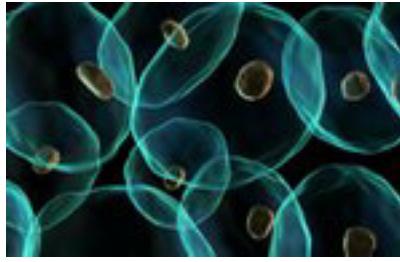
factors of a number of natural medicines in his personal research.

Dr. Miller’s research approached the potential health-improving properties of the green lipped mussel from an historic nutritional view, relating the observed effects of similar nutrients in the library of world knowledge with the recorded and verbal folklore of natural medicines as viewed by modern scientific research. A lifelong student of folk remedies, he traveled across the world, analyzing samples of snakes, iguanas and mussels to determine their reputed health-giving elements. Dr. Miller found the beneficial properties in the carbohydrate – or mucopolysaccharide (glycosaminoglycans) – content of these foods.



– some good, some bad and some downright unacceptable in terms of health, nutrition and even safety – choosing the best Green Lipped Mussel Powder can be daunting.

In addition to being exceptionally pure and fresh, Xtend-Life’s Green Lipped Mussel Powder is also 100% natural and has been produced without using any cooking or high temperatures.



MORE ABOUT MUCOPOLYSACCHARIDES

Green Lipped Mussel Powder have been widely acknowledged as nutritional gems, containing a myriad of proteins, omega-3 fatty acids and complex carbohydrates. However, the past four decades have revealed one key component found exclusively in high concentration within the flesh of raw green lipped mussels.

In addition to an array of other important functions, MPS help modulate the bio-exchange of the inter-cellular matrix (the millions of gel-like spaces that hold the body's water composition) where oxygen and nutrients are transferred to the individual cells, as well as where metabolites (organic cellular waste) are removed.

MPS are like the nails in a house, the rivets in a ship's hull and the fibers in clothing – small in proportion to the whole but necessary to hold the structure together. In your body, they are the unsung heroes which enable you to perform various daily functions (both voluntary and involuntary) that can easily be taken for granted.

Unfortunately, the amount of MPS in our bodies decreases as we age. We're not talking about the commonly perceived years associated with aging. For example, after your first ten years, you would have already lost over 90% of the MPS in your body. The fact that human tissues are so high in MPS during the young developmental years strongly supports that they are an integral factor in the growth process and overall wellbeing.

PRISTINE WATERS = PERFECT MUSSEL POWDER



In order to determine the quality of a fresh water ecosystem, many biologists simply look at the local frog population. A thriving number of frogs will more often than not mean that the environment where they live is free from contaminants and

pollutants. The marine eco-system has its own environmental indicator – the mussel.

Located at the northern tip of New Zealand's South Island, the Marlborough Sound is a coastal area reputed to be one of the purest in the world. Green lipped mussels are harvested in these waters throughout the year and their unrivalled level of purity results in nothing but the very best mussel powder on earth.