

The Miracle Super Food That Builds Your Bones Better Than Calcium and Prevents Heart Disease Better Than Lipitor

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You may not yet be familiar with natto -- sticky, fermented soybeans that have been compared in flavor to Roquefort cheese -- but this superfood has been a tradition in Japanese cuisine for more than 1,000 years. And you owe it to your health to give it a try.

In ancient times, anecdotal reports show that natto was used to relieve stomachaches, the flu, and to help pregnant women give birth. The nutritive value of this food was so high that Samurai consumed it on a daily basis, and even fed it to their horses to increase their speed and strength.

Today natto is receiving worldwide attention for its role as a functional food that may ward off cancer, heart disease, osteoporosis, and much more.

I am so convinced of its value, as you will learn later on, that I am now consuming a serving nearly every day. Later on I will share with you my secret to improve its palatability. Believe me you will need a major trick to consume this food as it is a major challenge for most to adjust to its taste.



What Exactly Is Natto?

Natto is produced by a fermentation process by adding *Bacillus natto*, which is beneficial bacteria, to boiled or steamed soybeans.

For centuries, it was easily made at home; soybeans were packed in straw (which contained a natural bacillus) then buried for a week in the ground.



In modern times, natto is typically made by injecting the bacteria into the soybeans. After it's fermented, natto contains between 1 million and 1 billion active bacteria per gram.¹

Natto has a stringy, sticky texture, and in Japan it's often eaten with rice as a breakfast food. While some consider its pungent flavor and aroma a delicacy, others find it to be more of an "acquired" taste.

Natto for Your Heart Health

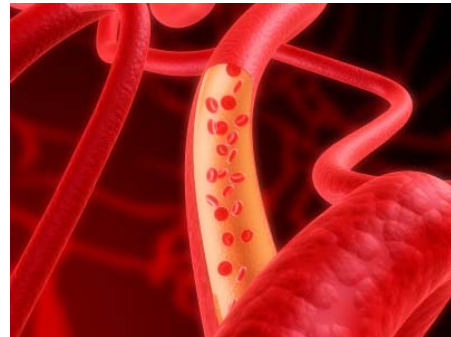
Much of the fanfare surrounding natto has to do with nattokinase, a fibrinolytic (clot-busting) enzyme that was discovered by Dr. Hiroyuki Sumi, aka “Dr. Natto,” in 1980 while he was working as a researcher at the University of Chicago. The *Bacillus natto* acts on the soybeans, producing the nattokinase enzyme.

Dr. Sumi studied about 200 foods from around the world and found that natto has the highest fibrinolytic activity of any food he studied. “There is no enzyme that has a stronger fibrinolytic activity than nattokinase,” he said.² The nattokinase enzyme seems to be especially concentrated in the “threads,” or the stringy portion, of natto.

Why is this so important?

Because blood clots that form inside your blood vessels restrict your blood flow, and that can lead to a heart attack or stroke.

Whenever you are injured, your body naturally releases compounds that convert a protein in your blood called fibrinogen into fibrin. Fibrin works like a spider web, forming long threads that catch your red blood cells and other substances to form a blood clot. If you're injured, this clot, or scab, stops the bleeding and allows your body to heal.



After their work is done, your body's clotting agents should disappear, and your blood flow should return to normal. However, sometimes your body may form a blood clot unnecessarily, and these are the dangerous kind.

Your body does produce an enzyme that breaks up fibrin naturally; it's called plasmin.

As you age, however, your body produces less plasmin and more fibrinogen. As a result, your body will begin clotting more, and disintegrating the clots less, on its own.

One of the most beneficial effects of nattokinase is that it has an extremely powerful ability to disintegrate blood clots. The properties of nattokinase closely resemble the fibrinolytic activity of your body's natural enzyme, plasmin.

You may have heard the misguided advice to take aspirin to prevent a heart attack. This popular recommendation is based on the same principles, as aspirin

is a blood thinner that may make your blood less likely to clot and block a narrowed artery.



However, I *do not* recommend that you take aspirin for your heart.

Aspirin works by manipulation of prostaglandins that influence inflammation in your body, and it is well understood that inflammation is a powerful influence in developing many diseases, especially heart disease.

Of course, you don't hear the media outlets reporting much on the extreme benefits of natto to your heart health... you only hear about the newest drugs to take for it. Then again, no one's going to get rich off of selling natto, so their motivation to promote it is clearly lacking.

Nattokinase from natto can come in and basically clean things up where your body's natural plasmin may have left off, which will aid your circulation and promote your heart health. But that is only the beginning of natto's health benefits.

Natto Contains the Most Vitamin K2 of All Foods

Along with nattokinase, natto contains another amazingly profound nutrient powerhouse: vitamin K2 (menaquinone).

Vitamin K2 is made by the bacteria that line your gastrointestinal tract, but as you age, and also if you take antibiotics, the bacteria weakens and produces less vitamin K2.

Vitamin K2, named for "Koagulation," is essential for proper blood clotting. It helps to prevent hardening of your arteries, which is a common factor in coronary artery disease and heart failure. Research suggests that vitamin K may also help to keep calcium out of your artery linings and other body tissues, where it can be damaging.

Not only is vitamin K great for your heart, it's absolutely essential for building healthy bones as without it your body will not optimally utilize calcium and vitamin D and plug the calcium into your bone matrix.



Vitamin K has been linked to osteoblasts, the cells that generate or "lay down"

bone and produce a specific protein known as osteocalcin. The protein osteocalcin acts as a kind of glue that helps to incorporate calcium into your bones, and vitamin K2 is necessary in order to produce this protein.

Vitamin K actually regulates calcium in your bones and arteries -- promoting your heart health and bone health at the same time.

This is because vitamin K facilitates a process on the proteins called "carboxylation." Carboxylation gives the proteins "claws" so they can hold on to calcium.

Proteins that don't get enough vitamin K, however, can't hold on to calcium. Without a functioning protein to control it, calcium drifts out of your bone and into your arteries and other soft tissue. Vitamin K2 gently redirects the "lost" calcium back to your "bone bank."



The evidence supporting natto's beneficial impact on your bones, and its role in preventing the bone disease osteoporosis, is hard to ignore.

One 2006 study, for instance, found that women who ate more than four packets of natto per week (each packet contained about 40 grams of natto) reduced bone mass loss at the top of their thigh bone by over 80 percent, and in their lower arm by 60 percent.³

Vitamin K2 has even been found to prevent fractures and sustain bone mineral density in people who already have osteoporosis.⁴

A low intake of vitamin K, meanwhile, is associated with an increased risk of hip fractures. According to a study of over 72,000 women, those who consumed the most amount of dietary vitamin K had a 30 percent lower risk of hip fracture than women who ate the least.⁵

Another study, this one involving 888 men and women from the Framingham Heart Study, found that those who had the highest intakes of vitamin K had a 65 percent lower risk of hip fracture than those who ate the least.⁶

In fact there is even a large geographic difference in hip fracture rates in eastern Japan and western Japan. In eastern Japan, where natto consumption is high, there are lower fracture rates than in western Japan, which has a lower rate of natto consumption.⁷

Vitamin K2 is even more effective than calcium for your bones. In one study, 241

women with osteoporosis were given either vitamin K2 or calcium each day for two years. It turned out the women who received the vitamin K2 had maintained lumbar bone mineral density, and experienced significantly fewer fractures.

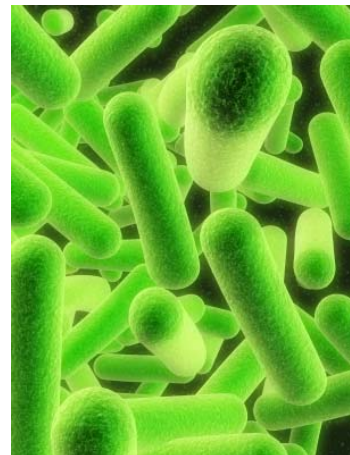
So if you're trying to fortify your diet with foods that will boost your bone health, natto is quite possibly the best option there is. Eating one serving of natto is actually the equivalent of taking eight capsules of the vitamin K2 that we carry at Mercola.com -- and it is a fraction of the price with far more benefits than isolated K2.

B. Subtilis: Natto's Dramatic Probiotic

Natto contains a bacteria called *Bacillus Subtilis* (*B. subtilis*), which is a powerful probiotic (good bacteria). This is one of the primary reasons why I consume natto on a regular basis as this is one of the best sources of this amazingly useful bacteria.

Prior to World War II, the German army used this probiotic to cure its soldiers of dysentery. While Japanese soldiers also received this protective effect (from eating natto), the German soldiers, during their 1941 African campaign, noticed that the local people would eat warm camel and horse droppings to get rid of the disease.

After testing the droppings, German scientists found out why the droppings worked to rid the body of harmful pathogenic bacteria: it was full of *B. subtilis*.



Cultures of *B. subtilis* soon became known as one of the best treatments for dysentery and intestinal problems, and they were sold by prescription under the name Bacti-Subtil until the early 1960s when synthetic antibiotics were introduced.

Though *B. subtilis* is not widely used now in the United States, it is still being sold by prescription in other countries such as Italy, France, Germany, and Vietnam.

Of course, you can get a hefty dose at a much lower price, and with no prescription necessary, just by eating some natto. The benefits of *B. subtilis* are many, and well make up for the pungent taste of the food:

- It can treat gastrointestinal disorders, including antibiotic-associated diarrhea and h. pylori, the leading cause of chronic gastritis and peptic ulcer disease.

- It can treat drug-resistant infections, including *Clostridium difficile*-associated diarrhea (CDAD), which is caused by taking antibiotics.
- It may help to prevent allergic disorders by reducing certain antibodies and allergic histamine response.⁸
- It induces the pro-inflammatory cytokines interleukin-6, which plays an important role in stimulating your immune response to bacterial infections, trauma, osteoporosis, and more.⁹
- It can be effective as an anti-tumor immunotherapeutic agent to fight cancer, and has significant immunostimulatory effects.¹⁰

While it was traditionally thought that *B. subtilis* did not colonize in your intestinal tract, an April 2006 study found otherwise.¹¹

Using natural isolates of *B. subtilis*, the researchers found that these strains could persist in a mouse gut for significantly longer than the laboratory strain. The isolates could also grow and “exhibited a novel phenomenon of being able to form spores in almost half the time required for the laboratory isolate.”

This means that *B. subtilis* is not a transient visitor to your gastrointestinal tract but rather has “adapted to carry out its entire life cycle within this environment.”

What Else is Natto Good For?

Well, according to a study that wrapped up in April 2007, eating natto can benefit people who have high cholesterol or high triglyceride levels¹² (a type of fat in your bloodstream that can cause hardening of your arteries (atherosclerosis), which increases your risk of stroke, heart attack, and heart disease).

Among those who had high cholesterol (defined as greater than or equal to 220 mg/dl), eating one pack (30 g) of natto every morning without interruption for four weeks lowered their total cholesterol levels by an average of nearly 8 percent.

So, who needs cholesterol-lowering drugs like Lipitor, that are fraught with side effects, when you can lower your cholesterol naturally with a whole food like natto?

Meanwhile, those with high triglycerides (greater than or equal to 150 mg/dl) who ate natto had an average decrease of almost 13 percent. Further, 20 out of 25 participants who had symptoms of constipation reported improvement.

Natto can also help to naturally lower your blood pressure.

Researchers from Miyazaki Medical College and Kurashiki University of Science and Arts in Japan found that that natto inhibits angiotensin converting enzyme (ACE), which helps to lower your blood pressure.¹³ According to one of their studies on humans, eating nattokinase lowered blood pressure by 10 percent.

Not All Soy Foods are Created Equal

While I wholeheartedly recommend that you try adding natto to your diet, it is one of the very few soy foods that I advise eating.

Soy products that are unfermented -- soy milk, tofu, soybean oil, soy burgers, and all the other processed soy products out there -- are not health foods and I strongly advise avoiding them.

In fact, unfermented soy products have been linked to everything from reproductive disorders and infertility, to cancer and heart disease. If this surprises you, please read my special report *How to Get the Benefits of Soy... Without All the Health Risks*, available at www.Mercola.com.

Soy foods only become healthy after a long fermentation process, during which the dangerous phytate and "antinutrient" levels of soybeans are reduced, and their beneficial properties are made available to your digestive system.

Other types of fermented soy products that you can also add to your diet are:

- Tempeh
- Miso
- Traditionally made soy sauce (not the processed varieties)

I do, in fact, recommend that everyone add fermented foods to their diet, and all of these would apply. Because of its extensive list of health benefits, natto is the fermented food that I have chosen to add to my diet.



How to Prepare Natto

There's no debating the health benefits of natto, so why isn't everyone lining up to get it? Quite simply because natto doesn't taste or look very good.

It has a slimy texture similar to raw eggs, but it tastes and smells much worse. Some people even say it smells similar to dirty socks! Natto can also be challenging to find (some health food stores and Japanese or Korean specialty shops carry it).

You should, of course, always listen to your body, but I do suggest you give natto a try. It is definitely an acquired taste, so once you get past your initial reluctance you may find it is quite palatable.

Here's what you need to do to make homemade natto.

Ingredients:

- 1 pound organic soybeans
- 0.1 grams of *Bacillus natto* bacteria powder, you can find it at some Japanese and Korean grocers, or substitute 1 package of store-bought natto

Method:

- Wash the soybeans and soak them for about 24 hours.
- Steam the soybeans for three to six hours, until you can easily crush them. Drain.
- Just before the soybeans are done cooking, sterilize all of your utensils, bowls, and natto containers (large, flat casserole dishes work well) by dipping them into a pot of boiling water. Also make sure your hands are clean.
- Pour the soybeans into a sterilized bowl.
- Mix the bacteria powder with 2 tablespoons boiled water (that you have then allowed to cool) until it's dissolved. Pour the mixture over the soybeans and stir well.



- If you are using store-bought natto, add it to a small amount of pre-boiled, then cooled, water and stir until it forms a paste. Pour the paste over the soybeans and stir well. You want a ratio of about 5-10 percent natto to 90-95 percent cooked soybeans.
- Transfer the beans into your sterilized dishes. Place them in a thin layer, no more than 1 inch high.
- Place a sterilized linen cloth or cheesecloth over the dishes, then secure in place with clips or a large rubber band around the edge.
- Put the dishes into your oven (turned off) with the light on. The light should heat the oven just enough to keep the temperature between 99°F 108°F. This is the temperature you need for proper fermentation.
- Place a thermometer in the oven to monitor the temperature. If it's too cool, add a work lamp to the bottom of the oven fitted with a 40W or 60W bulb, depending on how much heat you need.
- Keep the beans between 99°F 108°F for 22-24 hours.
- Then, remove the clips or rubber band (but leave the cloth) and place the dishes into your refrigerator. Refrigerate it overnight before eating.
- Natto can be kept in your refrigerator for up to one week. You can also freeze it for up to two months.

If you choose to go the store-bought route, beware of natto that's advertised as no- or low-odor. In an attempt to make the natto more palatable, these types of natto are undeveloped, and the amount of its effective components are likely decreased.¹⁴

How Do You Eat Natto?

Well, first off, please do not eat it as they traditionally do in Japan -- on top of white rice -- as the rice will cause your insulin levels to rise, which you definitely don't want.

I also do not advise eating natto plain as it will be very difficult to get down without any condiments. You can try traditionally made soy sauce or hot mustard.

My personal favorite is to combine it with another protein and plenty of condiments. So I use organic yellow mustard, raw red onions finely chopped,

grape seed mayonnaise and Himalayan salt. Took a few servings to adjust to it but now I actually look forward to it.

It makes your stomach feel SO GOOD after you eat it. You know you did a wonderful thing for your body once you consume this. I am surprised at how good I feel everyone time I eat it.

However, if you don't feel good after eating it, however, such as feeling nauseous, this is a clue that it is not right for your body. You should listen to that clue and not eat it, or adjust your amount over time

But please avoid being afraid of natto's stinky stereotype. The health benefits are just too numerous to pass up, and as smelly and slimy as it may first appear, many people, including myself, do enjoy both the health benefits -- and the taste -- of natto.

I hope you will join me in including natto as one of your regular foods as I consider one of the true superfoods that you could include in your diet.

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