

Health Benefits of Moringa

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STORY AT-A-GLANCE

- › Moringa (*Moringa oleifera*) is also known as horseradish tree or drumstick tree. While it looks nothing like broccoli, it is part of the brassica family and is considered a vegetable. It grows like a tree and is a complete protein
- › It has high levels of inert glucosinolates that are metabolized to moringin, which has potent anti-inflammatory and cytoprotective effects. Specific health benefits associated with Moringa include wound healing, hair growth, liver protection, mild laxative action and polysaccharides that may help alleviate colitis by protecting the intestinal barrier
- › Its anti-inflammatory properties help lower rheumatoid factor, and the plant extracts have demonstrated protective effects against heart damage, improving cardiac contractility and lowering blood pressure
- › Moringa extract can reverse sickled blood cells in sickle cell disease, lower blood sugar and has antibacterial properties against food-borne pathogens
- › Moringa can be purchased in powdered form, as capsules or oil; look for wild-harvested Moringa and consult with a health practitioner before taking a supplement. You can also grow the seeds like microgreens and use them when they're small, like sprouts

The choices we make every day can have a significant impact on our health and wellness. I'd like to share some of the multiple evidence-based health benefits of the *Moringa oleifera* plant. I've shared some of these before, but in light of the growing disease burden and health care costs, you may find it helpful to include Moringa to optimize your nutrition, skin and hair care.

Moringa (*Moringa oleifera*) is also known as horseradish tree or drumstick tree. While it looks nothing like broccoli, it is part of the Brassica family and is considered a vegetable,¹ despite growing like a tree.

According to researchers,² Moringa has outstanding economic importance, and the genus has been used in traditional folk medicine for centuries to address skin health, mental fitness, pain, energy, wound healing, constipation, weight loss, labor pains, high blood pressure and stomach disorders.

In 2022, researchers noted³ that the number of people who would be 50 years and older would increase by 61.11% from 2020 to 2050. In that population, the number of people with at least one chronic illness is also estimated to increase by 99.5%. Alongside this growing disease burden are growing healthcare costs.

According to the Peter G Peterson Foundation,⁴ people in the U.S. spend more on healthcare than other nations but do not have better health outcomes. Rising healthcare costs are also a key driver of the national debt. By making small choices each day, we can each influence the disease burden and healthcare costs that affect us individually and our families.

Moringa Has Powerful Glucosinolates and Nine Essential Amino Acids

Glucosinolates are sulfur-containing phytochemicals found in cruciferous vegetables like broccoli, cabbage and Brussels sprouts.⁵ However, research has also shown that Moringa is high in these health-promoting compounds. A 2018 report⁶ showed Moringa contains high levels of glucosinolates and has unique glucosinolates that are responsible for many of its medicinal properties.

Glucosinolates are inert but are metabolized into bioactive isothiocyanates by an enzyme called myrosinase. The primary isothiocyanate in Moringa responsible for the health benefits is moringin, and like sulforaphane in broccoli, moringin has potent anti-inflammatory and cytoprotective effects.

Interestingly, this plant is also a source of high-quality protein. The total mean protein content of domesticated Moringa is 30.24%.⁷ But perhaps the most important fact is that it contains all nine essential amino acids,⁸ something many other sources of plant protein cannot claim. Amino acids are the building blocks of protein. When your body breaks down or digests protein, amino acids are what are left behind.

Your body uses these amino acids to make new proteins to carry out a variety of functions, from growth and repair to wound healing and food metabolism. There are 20 amino acids that are classified as essential or non-essential.

Your body is capable of producing non-essential amino acids on its own but relies on food sources to obtain the nine essential amino acids. Moringa stands out as it contains all nine essential amino acids. According to the African Journal of Biotechnology,⁹ moringa is comprised of 19 amino acids, making it nearly complete with just one amino acid shy of the total 20.

Health Benefits Associated With Moringa

There are many evidence-based health benefits associated with Moringa, including the following:

- 1. Hair and skin** – Inflammation is an essential physiological response to tissue damage. The wound healing process typically starts immediately after damage, during which the first phase provides resistance to pathogens and the anti-inflammatory phase minimizes the healing.¹⁰ Data show that aqueous and ethanol extracts of moringa significantly reduce induced acute inflammation, which may be one way Moringa helps wound healing.

Other research shows Moringa oil speeds healing by acting on collagen production and myofibroblast content.¹¹ These actions may help explain data¹² published in 2014 that found Moringa cream enhances skin revitalization and has anti-aging effects.

Moringa products are sold as oils and soaps extracted from different parts of the tree. In Asia Pacific, the largest producer of Moringa, the products are locally used in skincare and hair care.¹³ Traditionally, the oil has also been used to treat itching, freckles and scabies.¹⁴

Moringa oil also has a long history in hair care. A 2022 study¹⁵ showed the activities of the phytosterol compounds found in Moringa oil obstructed the formation of dihydrotestosterone (DHT), which is known to speed hair loss and trigger alopecia. Other fatty acid compounds found in the seed oil also reinforce the potential the oil could help slow hair loss and support the growth of new hair.

- 2. Gastrointestinal system** – Your gastrointestinal tract is an essential component of your immune system. Moringa can help in several ways. Moringa may offer some protection against nonalcoholic fatty liver disease (NAFLD), which has been renamed metabolic dysfunction-associated steatotic liver disease (MASLD).¹⁶

In animal research¹⁷ on guinea pigs, Moringa leaves helped prevent hepatic steatosis by influencing the genetic expression of lipid metabolism and reducing inflammation in the liver. Moringa leaves are all so high in fiber, which can benefit digestive health.

Moringa has demonstrated a mild laxative effect in animal research¹⁸ that researchers theorize may have fewer side effects than other medicines typically used to treat constipation. The polysaccharides found in Moringa also helped alleviate induced colitis by inhibiting inflammation and helping to maintain the intestinal barrier.¹⁹

- 3. Joints, heart and lungs** – The anti-inflammatory properties of Moringa may offer some relief for people with rheumatoid arthritis. Research²⁰ published in 2021 investigated the effect of leaves and seed oil on inflammatory response in animals. The researchers included measurements of rheumatoid factor and pro-inflammatory and anti-inflammatory cytokines.

They found that after treatment, the rheumatoid factor decreased, concluding there were significant anti-arthritic and anti-inflammatory effects.

Another 2021 paper²¹ investigated the potency of the phytochemical compounds found in Moringa as a potential protective agent against vascular dysfunction and heart damage. Past studies have identified several compounds that improve cardiac contractility and protect structural integrity against damage. Studies have also demonstrated Moringa's ability to lower blood pressure in rats and humans.

The anti-inflammatory effects of Moringa may also help to manage or prevent bronchial constrictions associated with asthma, as well as reduce airway inflammation. An animal study evaluating lung function showed improvement after researchers administered Moringa oil. Researchers²² suggest the methanolic extract possesses significant anti-asthmatic activity and called for further identification and isolation of the active compounds.

- 4. Diabetes and blood** – Compounds in Moringa positively affect sickle cell disease and blood glucose levels. Sickle cell disease affects approximately 2.4 million people in Nigeria and roughly 24 million Nigerians carry the sickle cell gene. Researchers²³ evaluated the efficacy of Moringa against sickle cell as it's more available and affordable in those areas.

They found that a crude methanol extract did not significantly have ant-sickling activity but extracts of the leaf, seed and flower demonstrated a significant reversal of sickled erythrocytes. An animal study²⁴ also demonstrated an ethanol extract of Moringa reduces the genetic expression responsible for sickle cell disease and could be an important factor in the management of the condition.

A 2022 review²⁵ found Moringa leaf extract helps control blood glucose and insulin levels by enhancing insulin tissue sensitivity. They also found the leaf and seed extracts could help block the damaging effects of oxidative stress in individuals with diabetes. The review found limited clinical studies on the anti-diabetic effects and suggested that future research should consider Moringa as a functional food to help reduce the effects of diabetic complications.

5. Pathogens – Researchers tested the antibacterial effect of ethanolic extract of Moringa against *Staphylococcus aureus* and *Escherichia coli* (E. coli). Both bacteria cause diarrhea and other symptoms of food poisoning.²⁶ The researchers concluded that an ethanolic extract had antibacterial effects against these foodborne pathogens and further study was recommended to identify and isolate the active ingredients that were responsible for these effects.

6. Anti-cancer – A 2018 paper²⁷ reviewed the chemoprotective glucosinolates found in 12 species of Moringa, noting: "Overall, cytoprotective enzyme inducer potency for 11 of 12 Moringa leaf extracts was comparable to that observed for broccoli seeds, which are the most potent plant source of this activity."

As explained by the researchers,²⁸ glucosinolates in Moringa are metabolized to the isothiocyanate moringin by the enzyme myrosinase, which has potent anti-inflammatory and cytoprotective effects.²⁹

Effortless Ways to Incorporate Moringa Into Your Everyday Life

Similar to matcha, most Moringa is available for purchase and powdered form. The leaves are dried and then ground into a concentrated powder that's rich in beneficial compounds. In this way, the leaves are not cooked, only dried.

Cooking can denature the myrosinase enzyme, which then reduces the amount of glucosinolates that are converted to active isothiocyanates. You can also purchase Moringa oil or capsules. When choosing your source, consider one made from wild-harvested Moringa, which may be more bitter but ensures you're getting all the beneficial glucosinolates.

Before starting supplementation, it's best to consult a health practitioner who understands the dosage and how these supplements might interact with other medications you might be currently taking. You can also grow the seeds like microgreens and use them when they're small, like sprouts.

Sources and References

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