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NEEM



By Vital Plan



Reviewed by Bill Rawls, MD
Medical Director of Vital Plan



ABOUT BILL RAWLS, M.D.

Dr. Rawls' groundbreaking approach to wellness comes from decades of practicing medicine, extensive research in alternative therapies, and firsthand experience helping thousands find their path to wellness. Dr. Rawls is a best-selling author, Medical Director and Co-Founder of Vital Plan, a holistic health company and Certified B Corporation.

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NEEM QUICK FACTS

Common name: Neem

Scientific Name: *Azadirachta indica*

Other names: Neem tree, nim, nimtree, Indian lilac, margosa, nimba

Family: Meliaceae

Location: Mainly cultivated in the Indian subcontinent

Known for: Bitter taste and antimicrobial properties

Part Used: Stem bark, leaves, and seeds

Fun fact: In addition to being used medicinally, neem sprays make eco-friendly and very effective insecticides and fungicides for use in organic gardens and on house plants.

Good for: Microbial infections, inflammatory conditions of the skin and gut, gut dysbiosis, stomach hyperacidity, detoxification, lung health, and metabolic health

Key Properties & Actions: anti-inflammatory, hypoglycemic, antipyretic (lowers fevers), antimalarial, antifungal, antiviral, antioxidant, antiamebic, and a bitter digestive tonic



Summary

Neem is a fast-growing and long-living tree that has earned the title of “**village pharmacy**” in its native home of India.² Fully stocked with medicinal value, neem supports healing of a wide variety of acute and chronic ailments but is most well-known for its broad-spectrum and potent antimicrobial properties. Additionally, it is often used for helping relieve gut microbiome imbalances, supporting skin and hair health, and supporting normal blood sugar levels.

What is Neem?

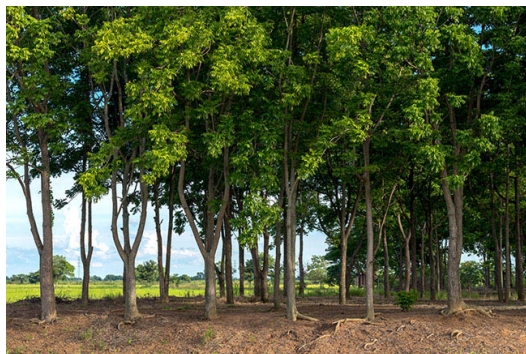


Bitter neem leaves are the most widely used part of the neem tree, a fast-growing medicinal plant belonging to the mahogany family.

Dubbed the Tree of the 21st Century by the United Nations, the neem tree has become **one of the most heavily researched plants in the past few decades due to its potent and wide-ranging medicinal value.** It has

established itself over centuries as an affordable remedy of choice, especially in developing countries, where up to 80% of people rely on plant medicine as their main source of healthcare.³

This fast-growing evergreen erects a straight trunk as high as 100 feet with a canopy as wide as 65 feet, making it an excellent shade tree in the sunny climates where it prefers to grow.

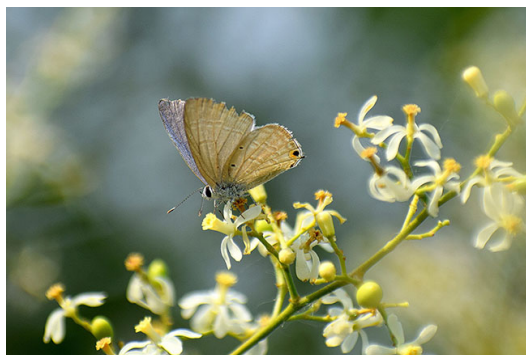


A neem tree can grow 100 feet tall and 65 feet wide, making it an excellent shade tree in the hot climates where it grows. Plants in hotter climates often have broad antimicrobial medicinal activity since they must produce more phytochemicals to defend themselves against microbes that flourish in warmer climates.

Green leaves and stem bark are the most commonly used medicinal parts of the neem tree, but it also has blooming white flower clusters that

produce a sweet lilac scent that carries for miles. Although not exactly tasty, neem trees also produce edible olive-shaped fruits that turn from green to yellow when ripe, holding one to three seeds inside.

Neem can grow almost anywhere, withstanding temperatures ranging between 40°F to 120°F. They routinely grow as old as 200 years and can be found throughout much of Asia, Africa, South America, and even in the warmer regions of Australia and the United States.⁸



A butterfly enjoying a sweet honey-scented neem flower.

Benefits of Neem and How It Works

Broad-Spectrum Antimicrobial Properties

When it comes to fighting viruses, bacteria, parasites, and fungi, neem has been used for acute topical and internal infections as well as for combatting longer-lasting, insect-borne infections such as chronic Lyme disease, West Nile virus, chikungunya, and dengue fever.¹³ Numerous studies have isolated **over 400 active chemical compounds found in neem, which helps explain its protective activity against the infections** mentioned above as well as candida, salmonella, chlamydia, herpesviruses, methicillin-resistant *Staphylococcus aureus* (MRSA), and more.¹

Although a group of active compounds in neem called limonoids have been shown to combat malaria-infected cells in mice in one particular study, the overall conclusions are mixed. Other studies found that neem failed to eliminate malaria symptoms. However, new research on a limonoid compound called gedunin is providing hope that different preparations and dosing methods of neem may create more consistent results in combating aspects of this particular disease.¹⁴

Balances the Gut Microbiome and Supports Digestion

Neem's championed antimicrobial properties also help to stabilize gut flora, and it has been used for fighting against gut dysbiosis issues, including small intestine bacterial overgrowth (SIBO), intestinal parasites, and candida. Not only does neem support a healthy microbiome by eliminating inflammatory toxins and pathogens, but it also has been studied for its ability to break up intestinal biofilms and reduce hyperacidity, which can help heal and prevent gastric and intestinal ulcers.⁶ All of these gut health benefits can have positive impacts on the nervous system due to an intimate connection via the gut-brain axis.

Metabolic Support

Neem extract has been used to help lower blood sugar levels in people with metabolic syndrome and Type 2 diabetes. **In several human studies, neem, given as an adjunct to diabetic medications such as metformin, showed enhanced results compared to using the medications alone.** Not only did the combination lower blood sugar levels, but it also reduced hemoglobin A1C levels (a better measure of average long-term blood sugar levels) as well as improved the blood triglyceride and cholesterol profile.^{15,16,17}

Detoxifies the Body

Ayurveda, one of the primary traditional medical systems of India, suggests that *ama* (natural toxins that accumulate in the body as a result of environmental, dietary, and lifestyle choices) is the main source of most disease-causing imbalances outside of infection — and neem is at the top of the list of ama-detoxifying plants.

Modern science agrees with labeling neem a toxin-purifying herb, and one of its phytochemical compounds called nimbin leads the way in providing antiseptic and antifungal effects.⁴ **Neem clears toxicity from the body, specifically by dilating blood vessels (which promotes the removal of waste), regulating bile production, and reducing inflammation associated with chronic and acute infections.** Eliminating toxins from the body can create a host of benefits, including boosted immunity and energy.

Supports Skin Health

Neem's claim to fame in the modern world has been due, in large part, to its beauty-enhancing effects on the skin. Inflammation, poor detoxification, and microbiome imbalances in the body can manifest through the skin in the form of acne, redness, irritation, rashes, and decreased wound healing. **Neem's antimicrobial and anti-inflammatory properties, used both topically and internally, have been found to help clear and heal wounds and other skin irritations.**⁷

Promotes Hair Health

Along with our skin, hair also reflects our identity and health, and if you have problems with either, neem oil (pressed from neem seeds) doesn't disappoint. One important compound in neem called azadirachtin¹² has insecticidal properties powerful enough to thwart parasites like lice¹³ and **antifungal actions that prevent the buildup of fungi on the scalp that often causes dandruff.**¹¹

In Ayurveda, where neem has been used for hair health for centuries, hair loss is considered to be caused by what is referred to as “excess heat trapped in the head,” which can lead to thinning, flaking, itchiness, and drying of the scalp. Neem’s cooling property quells and reduces “trapped heat,” while neem oil lubricates follicles, boosts blood flow to the head, and nourishes the scalp with essential nutrients needed for lively locks.

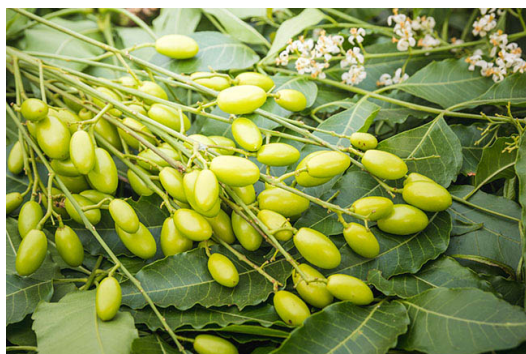
Enhances Oral Hygiene

Neem’s antibacterial properties make it a perfect herb to combat unhealthy bacteria in the mouth. One study shows that neem’s antiseptic action protects teeth and gums against plaque-induced gingivitis, proving to be equally as effective as oral disinfectants like chlorhexidine, a germicidal drug often used in medicated mouthwashes for gingivitis.⁹

Indeed, in many countries where neem plants flourish, the twigs themselves are used as a sort of rudimentary toothbrush to keep teeth and gums healthy and mouth microbes in check.⁷

Supports the Respiratory Tract

A study published by the *International Journal of Molecular Medicine* found neem leaf extract significantly reduced inflammation caused by cigarette smoke in the lungs of mice, suggesting the potential for neem to assist with symptoms of chronic obstructive pulmonary disease (COPD).¹⁰



Ripened neem fruits hold one to three seeds, which have reportedly been used historically as a natural birth control method. This is one reason that use of neem is not advised for pregnant women or women planning to become pregnant.

History & Traditional Use

While neem is best known for its use as an Ayurvedic herb, the revered tree has even deeper roots in the oldest of the three main Indian medical systems known as Siddha medicine, dating as far back as 10,000 B.C. to 4,000 B.C in South Indian Tamil culture.

In some of its earliest usage, neem flowers were used to prevent bile disorders, and the neem leaf was used to relieve symptomatic ulcers. Neem bark, on the other hand, was used in central nervous system-related disorders.

Many of these ancient claims are supported by today’s science, too. For example, anxiety has been shown to be improved by neem without causing impaired motor function — a common side effect often experienced while taking some anti-anxiety medications.¹¹

Neem leaf powder is most often used topically for skin, hair, and dental health.



How to Use and Dosing

Just as there are multiple ways neem benefits the body, there are a variety of forms of delivery using different parts of the neem tree.

For Internal Use

As a Supplement: Neem is often taken as a whole-herb powder, powdered extract, or tincture. Dosing always depends on the product quality, preparation method, and the individual using it, but here are some generally recommended serving sizes for reference. For products made from the powder of the whole leaf, general dosage recommendations are typically in the range of 500 to 1000 mg, 1-2 times daily. For powdered leaf extracts, 150 to 250 mg, 1-2 times daily. For a neem leaf tincture, 0.5 to 1 mL, 1-3 times daily.

Neem works well with other antimicrobial herbs such as houttuynia, cryptolepis, Chinese salvia, prickly ash, andrographis, cat's claw, and Japanese knotweed.

As Herbal Tea: Drinking neem tea isn't typically the most preferred method of consuming neem due to its bitter nature. The bitterness is due to many of its antimicrobial compounds, but thankfully there are ways to dress it up for your enjoyment if you want to take it as a tea.

Adding citrus, ginger, mint, berries, cinnamon, or a pinch of a sweetener of your choice to your neem tea can help offset its astringency. **Keep it simple, and start light by combining a small amount of whole neem leaves or neem powder with one or two of the above options until you find the winning combo.**

For External Use

As a Powder: Calm red and inflamed skin by adding neem powder to a hot bath for a medicinal soak.



Neem oil is pressed from the seeds of neem fruits and can tame acne and inflammation in the skin and also decrease dandruff.

Neem Oil for Smooth Skin: A few drops of neem oil applied to the face (and larger amounts as needed for the body) 20-30 minutes before showering can improve skin moisture and reduce acne.

Neem Oil for Healthy Hair: To relieve dandruff or simply nourish your hair, rub neem oil into the scalp using the pads of your fingertips to avoid scraping your skin with your nails. Let the oil soak in for up to an hour before washing it out with shampoo.

Interactions

Because neem has been shown to reduce blood glucose, people with diabetes or anyone on blood sugar-lowering medications should work with their healthcare provider before taking neem internally.¹²

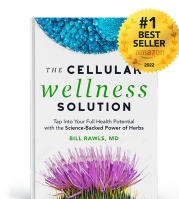
Always check with your healthcare practitioner before use if you are taking medications. For more general education on potential interactions between herbs and medications, check out Dr. Bill Rawls' article: [Is it Safe to Take Herbs with My Medications?](#)

Precautions & Side Effects

Do not use neem internally if you are pregnant or trying to conceive. As neem is such a potent herb, it's typically best used at lower doses in combination with other balancing herbs. Traditional use suggests it's best to avoid taking large doses of neem for an extended time, especially for those with a tendency toward having cold, dry constitutions.

Disclaimer

This information is intended only as general education and should not be substituted for professional medical advice. Any mentioned general dosage options, safety notices, or possible interactions with prescription drugs are for educational purposes only and must be considered in the context of each individual's health situation. Use this information only as a reference in conjunction with the guidance of a qualified healthcare practitioner.



Discover more in **Dr. Bill Rawls' new #1 Bestselling book: *The Cellular Wellness Solution: Tap Into Your Full Health Potential with the Science-Backed Power of Herbs.***

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Mark Hyman, MD

Fourteen-time #1 New York Times Bestselling Author

Want to See the Science? Check Out Our References Below.

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*This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease. Always consult your qualified healthcare provider before beginning any diet or program.

ABOUT THE MEDICAL DIRECTOR

Dr. Bill Rawls

Dr. Rawls is a licensed medical doctor in North Carolina and a leading expert in integrative health. He has extensive training in alternative therapies, and is the Medical Director of Vital Plan, a holistic health and herbal supplement company in Raleigh, NC.

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