



# Pharmacological study of Nimba( *Azadirachta indica*)and its uses in Different Diseases as per Ayurveda.....

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## Abstract

The (Nimba) Neem tree (*Azadirachta indica*) has been called the marvel tree for centuries inside the Indian subcontinent. It has come to be critical in the global context nowadays as it offers answers to the fundamental concerns going through mankind. Neem (*Azadirachta indica*) is considered harmless to humans, animals, birds, useful bugs and earthworms, and has been approved by means of the US Environmental Protection Agency for use on meals vegetation. Azadirachtin and different active elements inside the neem seed have insecticidal houses which can be effective against a large spectrum of bugs, many mites and nematodes, and even snails and fungi, and do no longer appear to generate resistance within the pests they affect. Nowadays, neem and its extracts are utilized in numerous herbal and allopathic medicines. What's extra, even neem contraceptives are available inside the market these days. Neem extract which have Nimbinin, nimbandiol as active ingredients, alcoholic extract of the leaves turned into determined to own a significant blood sugar lowering impact, that are very useful towards diabetes. Neem is utilized in Dermatitis Eczema, Acne, Bacterial, Fungal infections and different pores and skin issues. It has demonstrated its effectiveness as a effective antibiotic. Neem additionally has proven antiviral, anti-fungal and anti-bacterial residences. It allows help a sturdy immune system and is utilized in cases of inflammatory pores and skin conditions. Traditionally Neem has been used for pores and skin and blood purifying conditions. Neem now not only enables in curing illnesses, but it also affords us with the electricity of fighting illnesses via enhancing our immunity.

Key words: Neem, Ayurveda, Antimicrobial ,Dermatitis.

## Introduction

The clinical residences of Neem were acknowledged to Indians for the reason that time immemorial. The earliest Sanskrit clinical writings confer with the advantages of Neem's fruits, seeds, oil, leaves, roots and bark. Each has been used within the Indian Ayurvedic and Unani systems of drug treatments, and is now being used within the manufacture of contemporary day medicinals, cosmetics, toiletries and prescription drugs. The Neem tree has been referred to as the surprise tree for centuries inside the Indian subcontinent. Neem has turn out to be important in the international context nowadays for its type of medicinal uses. Neem extract that have Nimbinin, nimbandiol as energetic materials, alcoholic extract of the leaves became determined to own a great blood sugar reducing impact, which might be very beneficial against diabetes. Neem is used in Dermatitis Eczema, Acne, Bacterial, Fungal infections and other skin disorders. It has established its effectiveness as a powerful antibiotic. Neem also has proven antiviral, anti-fungal and anti-bacterial houses. It enables support a strong immune device and is utilized in instances of inflammatory pores and skin conditions. Traditionally Neem has been used for skin and blood purifying situations. Perhaps Neem's most touted advantage is the effect it has upon the pores and skin. Preparations from the leaves or oils of the tree are used as preferred antiseptics. Due to Neem's antibacterial residences, it is powerful in preventing most epidermal disorder consisting of pimples, psoriasis, and eczema. Ancient ayurvedic practitioners believed high sugar stages within the body brought on pores and skin sickness; Neem's sour first-rate became said to counteract the beauty. Traditionally, Indians bathed in Neem leaves steeped in warm water. Since there has by no means been a document of the topical utility of Neem inflicting an adverse facet impact, this is a commonplace technique to remedy skin illnesses or hypersensitive reactions. Neem also may additionally provide antiviral remedy for smallpox, hen pox and warts--especially when carried out without delay to the skin. Its effectiveness is due in element to its ability to inhibit an endemic from multiplying and spreading. Neem produces ache-relieving, anti inflammatory and fever-lowering compounds that could useful resource inside the healing of cuts, burns, sprains, earaches, and complications, in addition to fevers. Several studies of Neem extracts in suppressing malaria had been performed, all supporting its use in remedy. Neem has broad programs to human and animal fitness, in addition to organic farming. Neem is a powerful antiviral and antibacterial. But, it has peculiarities that set it other than different herbs in that magnificence of wide antimicrobials. Neem oil is likewise usually brought to quite a few creams and salves. It is effective towards a vast spectrum of skin diseases inclusive of eczema, psoriasis, dry skin, wrinkles, rashes and dandruff. A few drops can be introduced to hand recovery salves and shampoo. Neem oil is pretty powerful as a mosquito repellent. Because of its unsightly odor, it is nice while it is brought to a method with other critical oils, including citronella. Neem oil is an effective and environmentally secure pesticide while it is diluted and sprayed on vegetation thru irrigation structures. It is a more healthy alternative to artificial chemical insecticides. Neem oil does now not damage the soil and it increases yields

## Rasapanchaka

Rasa-Tikta Kasaya

Guna-Laghu Ruksha

Vipaka-Kattu

Virya-Sita

## Doshakarma (Action on Dosha)

Pitta Kapha samak ,Pitta shamak due to its Sitavirya. Tikta Kasaya rasa. Kaphahara due to katu vipak and Kasaya rasa.

**Gana Vargikarana( Classical Categorization)**

**Charaka**-Kandughana varga

**Sushruta** –Aragvadhadi gana

Guduchayadi gana

Lakshadi gana

**Bhavaprakash Nighantu**- Guduchayadi gana

**Habitat –**

Nimba (Neem) tree grows all over india.It is common planted as avenue trees.

**Varieties-**

1.Nimba-Azadirachta indica

2.Mahanimba-Melia azadirachta

3.Pravata Nimba-Ailanthus excelsa

4.Akasa Nimba-Malingtonia horensis

**Chemical Constituents and Properties**

Neem consists of a sour fixed oil, nimbidin, nimbin, nimbinin and nimbidol, tannin and uses are:

- Antiinflammatory (nimbidin, sodium nimbidate, gallic acid, catechin, polysachharides).
- Antiarthritic, hypoglycemic, antipyretic, hypoglycemic, diuretic, anti-gastric ulcer (nimbidin).
- Antifungal (nimbidin, gedunin, cyclic trisulfide)
- Antibacterial (nimbidin, nimbolide, mahmoodin, margolone, margolonone, isomargolonone)
- Spermicidal (nimbin, nimbidin) Antimalarial (nimbolidfe, gedunin, azadirachtin)
- Antitumor (polysaccharides)
- Immunomodulatory (NB-II peptoglycan, gallic acid, epicatechin, catechin)
- Hepatoprotective (aequeous extract of neem leaf)
- Antioxidant (neem seed extract)

**Taxonomical description of Neem**

Kingdom Plantae

Division Magnoliophyta

Order Sapindales

Family Meliaceae

Genus Azadirachta



NIMBA( NEEM)

### Health Benefits (Chikitsa Prayoga)

Neem wishes no introduction in these days's world.. Neem is referred to as free tree of India as it's miles found almost every where in India. It is considered as a magic tree, which has houses that not handiest relieves but also cures from illness. Neem is an herb that has been a amazing assert to human species due to the fact thousands of centuries. Neem is extraordinarily useful to humans and this is the motive it's far being worshiped in India and is considered because the place in which Gods is living. It is said that no evil sprits dares to come near a neem tree and this is the cause neem is part of each Indian.

### Medicinal Properties (Aushadheey Guna)

Medicinal houses of neem have been acknowledged to Indians due to the fact that time immemorial. The earliest Sanskrit clinical writings confer with the advantages of neem's fruits, seeds, oil, leaves, roots and bark. Each of those has been used inside the Indian Ayurvedic and Unani structures of drugs. In Ayurvedic literature neem is defined inside the following manner: 'Neem bark is cool, bitter, astringent, acrid and refrigerant. It is beneficial in tiredness, cough, fever, lack of appetite, worm infestation. It heals wounds and vitiated situations of kapha, vomiting, skin diseases, excessive thirst, and diabetes. Neem leaves are pronounced to be beneficial for eye disorders and insect poisons. It treats Vatik ailment. It is anti-leprotic. It's fruits are bitter, purgative, anti- hemorrhoids and anthelmintic'. It is said that neem provides an answer to many incurable sicknesses. Traditionally neem products were used against a extensive sort of sicknesses which encompass heat-rash, boils, wounds, jaundice, leprosy, pores and skin problems, belly ulcers, fowl pox, and many others. Modern studies additionally confirms neem's healing powers in case of many sicknesses and affords warning signs that neem would possibly in destiny be used a great deal greater extensively. Some crucial scientific and veterinary application of neem is given in this internet site. Neem has rightly been called sarvaroghari. Since time immemorial, Indians have learnt and made use of neem in plenty of approaches each for personal and network fitness by way of manner of environmental amelioration. Despite all of the vicissitudes India has long past via over the centuries, neem has controlled to stay a pal, truth seeker and guide to a mean Indian. It is time this heritage is preferred and in location of promotional and preventive fitness care, our indigenous understanding and assets are made use of on an growing scale as low-fee, effective factor for the belief of the lofty intention of 'Health for all. Nimba tree has been diagnosed on the five-thousand-12 months-antique seals excavated from the Indus Valley Civilization". How the tradition lives on has additionally been graphically introduced out, "Today the margosa is valued more distinctly for its potential to workout the demon of disorder than the spirit of the lifeless, and an photograph of the people goddess Sitala can frequently be visible suspended from a margosa branch in which she guards against small pox, as soon as the first-rate killer of the Indian . Renowned for its antiseptic and disinfection residences, the tree is notion to be specially defensive of women and children. Delivery chambers are fumigated with its burning bark (Margosa seed oil has been chemically tested as an external contraceptive, utilized by women as a spermicide). Dried margosa leaves are burned as mosquito repellent. Fresh leaves, infamous for his or her bitterness, are cooked and eaten to benefit immunity from malaria. Neem's antiseptic homes are widely

diagnosed now. "Neem preparations are reportedly efficacious against Variety of skin diseases, septic sores, and infected burns. The leaves, carried out inside the form of poultices or decoctions, are also endorsed for boils, ulcers, and eczema. The oil is used for pores and skin illnesses which include scrofula, indolent ulcers and ringworm. Cures for plenty sicknesses were pronounced however these need to be showed independently with the aid of trials below managed conditions. Laboratory exams have proven that neem is powerful in opposition to sure fungi that infect the human body. Some essential fungi in opposition to which neem preparations have been discovered to be effective are: athlete's foot fungus that infects hair, pores and skin and nails; a ringworm that invades both pores and skin and nails of the ft; a fungus of the intestinal tract; a fungus that causes infections of the bronchi, lungs, and mucous membranes and a fungus this is a part of the everyday mucous plants that may get out of manage leading to lesions in mouth (thrush), vagina, pores and skin, palms and lungs. Neem has been used traditionally in India to treat numerous viral sicknesses. Even many scientific practitioners accept as true with that smallpox, bird pox and warts can be dealt with with a paste of neem leaves – normally rubbed at once at the inflamed skin. Experiments with smallpox, chicken pox, and bird pox display that even though neem does not therapy these illnesses, however it is effective for functions of prevention. Its effectiveness is more desirable on account of its smooth and abundant availability and occasional cost at the side of the gain – a huge and vital benefit – of crating income and employment for the terrible. Neem is effective in opposition to dermatological insects such as maggots and head lice. It is a not unusual exercise to use neem everywhere in the hair to kill head lice. Rural inhabitants in India and Africa regularly use neem twigs as teeth brushes. Neem twigs incorporate antiseptic substances. That explains how these humans are able to keep wholesome enamel and gums. Ayurveda describes neem as natural drug that's used to easy the enamel and hold dental hygiene. Neem within the form of powder is likewise used to brush teeth and massage gums. Chagas disease is a chief health trouble in Latin America. It cripples millions of human beings there. Laboratory exams in Germany and Brazil display that neem can be an answer to this dreadful ailment which so far remains in large part uncontrollable. The disease is because of a parasite that's spread with the aid of an insect known as kissing worm. Extracts of neem have effects on the kissing bugs. Research has shown that 'feeding neem to the bugs not only frees them of parasites, but azadirachtin prevents the young bugs from molting and the adults from reproducing'.

**Antibacterial Compounds:** Recent reviews attention on antibacterial activities inside the mouth, in particular in gum sickness and cavities, in addition to preventing sexually transmitted diseases and as a vaginal contraceptive.

**Antifungal Properties:** The modern-day studies proved its antifungal properties which manipulate fungi that can motive athlete's foot, ringworm and Candida, the organism that causes yeast infections and thrush.

**Anti-Inflammatory:** Nimbidin, a component of Neem, has been display to posses amazing anti- inflammatory and antiarthritis activity. Nimbiden suppresses the features of macrophages and neutrophils concerned in infection.

**Antioxidant Compounds:** The system through which free radicals are created, is a normal characteristic of the body but the ensuing molecules are unstable and can damage different cells. A collection of problems, consisting of cardiovascular disease, eye health, cataracts and macular degeneration, age-related neurodegeneration (decline of the mind cells and frightened machine) or even most cancers takes place due to excessive degrees of loose radicals. Neem protects in opposition to chemically precipitated cancer causing agents and liver damage by boosting antioxidant ranges.

**Antiviral Compounds in Neem:** Neem inhibits the increase of Dengue virus, a hemorrhagic fever associated with Ebola, and interferes with the replica of the coxsackie B virus, one in every of a institution of "enteroviruses" which can be second most effective to the not unusual cold because the maximum infectious viral sellers in people.

**Cancer:** Neem's efficacy in killing cancer cells or boosting the frame's immune machine to protect it from harm. Neem or its isolated compounds have shown amazing action against a wide sort of human cancer mobile that encompass colon, stomach, lung, liver, pores and skin, oral, prostate and breast.

#### **Potential Contraceptive Properties of Neem:**

Use of Neem as either a pre or submit coital contraceptive, noting that it avoided proliferation of sperm cells in concentrations as little as

0.05 to at least 1%. Purified extracts of Neem contained immunomodulators that stimulate the cells and macrophages that terminate pregnancies. Fertility became regained after one or cycles and not using a obvious impact to future pregnancies.

**Diabetes:** With its extraordinarily bitter houses, Neem has been used in problems as a result of overeating goodies. Recent research have focused that Neem's hypoglycemic impact.

**Immuno stimulatory Compound:** Immuno stimulating houses of neem is most crucial benefit. It boosts each the lymphocytic and cell-mediated systems, together with "Killer T" cells which can be capable of wreck microbes, viruses and most cancers cells by way of injecting toxic chemical substances into the invaders.

**Liver features:** It allows to defend the liver from harm, which in flip facilitates to cleanse the blood. Neem leaf decrease, chemically induced liver harm via stabilizing degrees of serum marker enzymes and boosting ranges of antioxidants, like the ones determined in diet C and E and in natural carotenoids, which neutralize free radicals and prevent harm.

**Neuroprotective Effect:** Antioxidant compounds in neem assist to save you brain damages, who had suffered a stroke by using enhancing lipid peroxidation and increasing ascorbic acid (Vitamin C) inside the mind.

**Oral Diseases:** Another traditional use of neem has been to bite the neem sticks. It continues to be used to smooth enamel in rural elements of India. Antimicrobial properties that help to lessen plaque and gingivitis.

**Dental Care:** People used Neem twigs as tooth brushes for centuries. Neem twigs include antiseptic components necessary for dental hygiene and prevents teeth decay, periodontal illnesses, Infections, tooth decay, bleeding gums and sore gums.

**Sexually Transmitted Diseases:** Neem suggests amazing ability to manipulate sexually transmitted illnesses. Neem furnished seventy five% protection from the HIV virus.

**Stress:** Low doses of Neem leaf extracts have sedative results. The effect disappears at excessive doses, about four hundred or 800 milligrams in line with kilograms of frame weight. It also reduces tension and pressure.

**Ulcers:** Using Neem bark decreases 77% gastric acid secretion as well as gastric secretion volume sixty three% and pepsin pastime 50%, due to its anti inflammatory compounds, gastric damage is reduced.

**Arthritis:** Neem has an extended records of relieving infected joints. Neem now not simplest facilitates in lowering irritation however also suppress the ache. It is also useful in Rheumatism.

**Heart Disease:** Major reasons of a heart attack encompass blood clots, excessive cholesterol, arrhythmic heart motion and excessive blood pressure. Its leaf extracts have reduced clotting, decreased blood stress and terrible cholesterol, slowed fast or abnormally excessive heartbeat and inhibited irregular coronary heart rhythms.



**Malaria:** Malaria is quite not unusual in India and at some stage in the tropics. Neem leaf extracts helps to prevent regular development of the malaria virus. Even though Neem may be effective in opposition to the parasites that carry malaria, it has no longer been shown to prevent the malaria contamination as soon as it's within the frame. Dried margosa leaves are burned as mosquito repellent.

**Skin Diseases:** Neem has been fantastically efficiently in opposition to harmful fungi, parasites, and viruses. It has been most useful in treating loads of skin problems and illnesses along with psoriasis, eczema and other chronic situations. Psoriasis is successfully handled with Neem oil.

**Vitiligo:** Vitiligo is assumed to be an autoimmune disorder that reasons patches of skin to lose its color. The dosage is of 4 grams of Neem leaves three instances an afternoon, preferably taken before each meal. Neem oil implemented to the affected regions may want to aid within the reversal of discoloration.

**Viral Diseases:** In India, Neem is also used to treat viral diseases which include smallpox, bird-pox. Neem has antibacterial traits as nicely.

**AIDS:** Some of the first-rate news is that Neem may additionally help within the search for prevention or a treatment for. AIDS. AIDS may additionally possibly be dealt with with the aid of ingesting Neem leaf extracts or the entire leaf or by way of consuming a Neem tea.

### Therapeutic Uses

- Treating scalp situations, together with dandruff, itchiness and head.
- Treating pimples.
- Providing relief for pores and skin problems which include eczema and psoriasis.
- Healing of wounds.
- Treating and recovery fungal infections, ringworm, inflamed sores and burns
- Treating athlete's Foot
- Treating nail fungus and restoring brittle nails

**Fruits (Phala)-** Neem culmination are bitter, purgative, antihemorrhoidal and anthelmintic (vermifuge) in nature.

**Flowers (Pushpa)-** The flowers are utilized in vitiated situations of pitta (balancing of the body heat) and kapha (cough formation). They are astringent, anthelmintic and non poisonous.

**Seeds(Beej) -** Neem seeds are also defined as anthelmintic, antileprotic (treatment options or prevents leprosy) and antipoisonous. Seeds, along with leaves and dry Neem cake, are an energetic component in mosquitocoils.

**Oil (Tailam)-**Neem oil, derived from crushing the seeds, is antidermatonic, a powerful vermifuge and is bitter in flavor. It has a extensive spectrum of motion and is especially medicinal in nature. As an oil utilized in aromatherapy, it has been effective inside the remedy of head lice in youngsters, mainly where tea tree has didn't solve the circumstance. This become mainly sizeable on a deadly disease of head lice, two years ago, at a college neighborhood to my practice, wherein I dealt with numerous children. Those with blonde to reddish hair had their head lice situation cleared up a whole lot faster with Neem oil implemented at a 3% dilution to a shampoo base, than with tea tree.

**Dosage( Matra)**

Swarasa (Juice)- 10-20 ml

Kalka(Paste)-10-20 gm

Kasaya(Decoction)-50-100 ml

Churana(Powder)-2-4gm

Taila(Oil)-5-10 Drops

**Yoga (Important preparation)**

1.Nimbadi churna

2.Nimbadi Kwatha

3.Nimbamritadi kasaya

4.Panchanimba Churna

5.Tikta ghrita

6.Panchatikta ghrita Guggulu

**The Future Aspects in Medicines**

Herbal drugs are used for remedy of various styles of sicknesses in all parts of world. Neem tree is an vital part of those herbal medicines and is cited in lots of historic texts dealing with drugs. Traditional Indian clinical government vicinity it at the pinnacle in their pharmacopeia. Due to wonderful properties of Neem, its bark, leaves, flowers, seed and fruit pulp had been and at the moment are used to deal with a huge range of diseases and court cases starting from leprosy, diabetes, ulcers to pores and skin problems and constipation and so forth. Scientists from the evolved world are working significantly in exploring Neem tree and its homes to formulate new antibiotics.

**Cosmetics**

Different elements of Neem tree are getting used appreciably in production of soaps, skin creams/lotions, shampoos, toothpastes, splendor aids and toiletries. The Neem twigs are extra generally getting used as antiseptic enamel brushes. In most instances Neem oil/extract is being used for making those cosmetics like soaps and enamel pastes etc.

**Conclusion**

Neem leaves and roots are suitable for blood circulate and blood purification. Neem has been appreciably used in Ayurveda, Unani and Homoeopathic medicine and has come to be a cynosure of current medicinal drug. Neem elaborates a great array of biologically active compounds which are chemically various and structurally complicated. More than a hundred and forty compounds had been isolated from specific elements of neem. All components of the neem tree- leaves, vegetation, seeds, fruits, roots and bark were used historically for the remedy of infection, infections, fever, skin sicknesses and dental issues. Neem leaf and its parts have been established to exhibit immunomodulatory, anti inflammatory, antihyperglycaemic, antiulcer, antimalarial, antifungal, antibacterial, antiviral, antioxidant, antimutagenic and anticarcinogenic houses. It comes out of my own personal experiences and



have a look at of the outcomes and homes of Neem. It is likewise my conviction that Neem is a high-quality cure for diseases and gives an awful lot to humans which include coloration, appropriate air, health and overall well-being. I also assume it essential that people emerge as aware of the values of Neem. Among all of the plants in the world that have proved useful for humanity, some are distinguished with the aid of their superb versatility. Among these, the Neem tree is one of the maximum important one. Neem is deemed very powerful with in the remedy of scabies even though best initial scientific evidence exists which never the less must be corroborated, and is usually recommended for those who are touchy to permethrin, a recognised insecticide which is probably irritant. Also, the scabies mite has yet to turn out to be proof against neem, so in chronic cases neem has been shown to be very effective.

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