



Review Article

## Role of Neem in Health and Disease Management

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### ABSTRACT

Neem (*Azadirachta indica*) is an important medicinal plant used in traditional medicine. Different parts of neem such as leaves, bark, and seeds have many therapeutic properties. Neem shows antimicrobial, antioxidant, anti-inflammatory, and antidiabetic activities. It is commonly used to treat skin diseases, infections, and dental problems. Because of its medicinal value, neem is widely used in herbal and pharmaceutical products.

### INTRODUCTION

Neem (*Azadirachta indica*) is a well-known medicinal plant widely used in traditional Indian medicine. It belongs to the family Meliaceae. Neem has been used for thousands of years in Ayurveda, Unani, and Siddha systems of medicine. Almost all parts of the neem tree such as leaves, bark, seeds, flowers, and oil have medicinal value.

### BOTANICAL DESCRIPTION

**Scientific Name:** *Azadirachta indica*

**Family:** Meliaceae

**Common Name:** Neem

**Parts Used:** Leaves, bark, seeds, flowers, oil

**Distribution:** India and tropical regions

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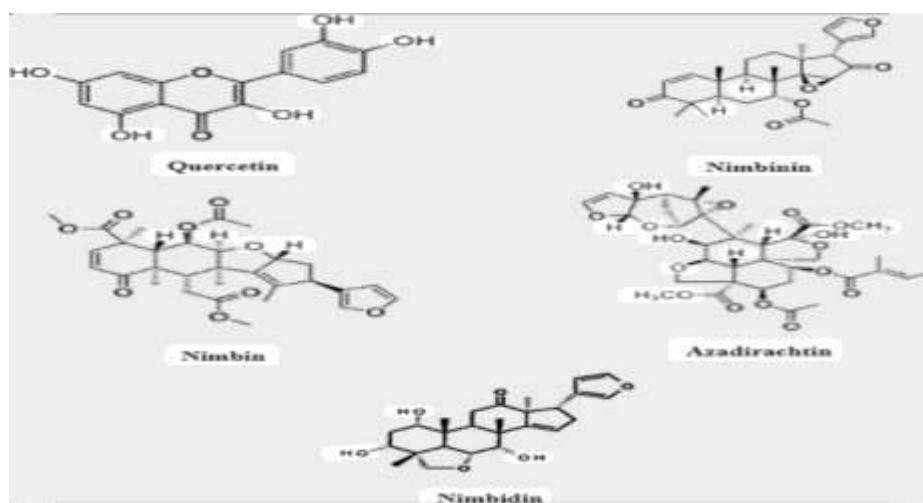




## CHEMICAL CONSTITUENTS

Neem contains many active chemical compounds such as:

- Azadirachtin
- Nimbacin
- Nimbidin
- Salannin
- Quercetin



## MEDICINAL USES OF NEEM

Neem is used in:

- Skin diseases like acne, eczema, and psoriasis
- Wound healing and infections
- Dental problems
- Diabetes management
- Blood purification

## PHARMACOLOGICAL ACTIVITIES

Neem shows various pharmacological activities:

### Antibacterial:

Neem has antibacterial properties that kill bacteria and stop their growth. It is effective against many disease-causing bacteria and is used for skin infections, wounds, and dental care. Neem leaves,

bark, and seeds contain active compounds like nimbin and nimbidin.

#### **Antifungal:**

Neem has antifungal properties that stop the growth of harmful fungi. It is useful in treating skin infections like ringworm and dandruff. Neem leaves and seeds contain active compounds such as nimbidin and azadirachtin.

#### **Anti-inflammatory:**

Neem helps to reduce swelling, pain, and redness. It is useful in wounds, skin problems, and inflammatory conditions due to compounds like nimbidin and flavonoids.

#### **Antioxidant:**

Neem protects the body from damage by free radicals. Its leaves and bark contain flavonoids, polyphenols, and vitamin C, which help prevent cell damage and aging.

#### **Antidiabetic:**

Neem helps lower blood sugar and improve insulin action. Its leaves and bark contain compounds like nimbidin that support diabetes management.

### **ROLE OF NEEM IN SKIN DISORDERS**

Neem is very useful for skin health. It helps treat acne, pimples, eczema, psoriasis, wounds, and fungal infections. Neem leaves, bark, and oil have antibacterial, antifungal, anti-inflammatory, and antioxidant properties that reduce infection, swelling, and skin damage.

It is commonly used in herbal creams, soaps, and oils to keep the skin healthy and clear.

### **ROLE OF NEEM IN DENTAL CARE**

Neem is very useful for keeping our teeth and gums healthy. Its leaves and twigs have antibacterial properties that kill germs in the mouth. Regular use of neem can: Prevent tooth decay by stopping harmful bacteria. Stop gum diseases like gingivitis because it reduces inflammation. Freshen breath naturally. Neem is often used in toothpaste, mouthwashes, or chewing sticks for oral hygiene.

### **ROLE OF NEEM IN DIABETES**

Neem helps in controlling blood sugar levels. Its leaves, bark, and seeds have compounds that can improve insulin activity and reduce sugar in the blood. Regular use of neem may help prevent complications of diabetes, like heart problems or kidney damage

### **SAFETY AND TOXICITY**

Neem is generally safe when used in small amounts, like in food, toothpaste, or skin products. High doses, especially of neem oil or seeds, can be toxic and may cause stomach problems, liver damage, or even serious effects in children. Pregnant women should avoid neem as it may cause complication.

### **CONCLUSION**

Neem (*Azadirachta indica*) is a medicinal plant with many health benefits. It has antibacterial, antifungal, anti-inflammatory, antioxidant, and antidiabetic properties. It is useful for skin, teeth, and overall health, but high doses can be toxic, so it should be used carefully.

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