

A Review On Turmeric As A Health Benefits

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Abstract: *Turmeric (Curcuma longa) is a well-known medicinal herb that has long been used in traditional medical systems such as Ayurveda and Traditional Chinese Medicine. Curcumin, its main bioactive component, has anti-inflammatory, antioxidant, antimicrobial, and wound-healing properties and is a potent natural skin and tissue repair agent. Turmeric has demonstrated promise in the treatment of cracked heels, facial care, and general injury management when applied topically and orally. This review describes its pharmacognosy, mode of action, uses, safety, effectiveness, and contraindications.*

Keywords: anti-inflammatory, cracked heel, turmeric, curcumin, and herbal cream

I. INTRODUCTION

Minor injuries, cracked heels, and facial skin issues are common dermatological issues that impact people of all ages. The drawbacks of contemporary synthetic treatments have led to a rise in the use of natural remedies.



Fig. No. 1. Turmeric Powder

Turmeric has over 4,000 years of history and was first used as a spice, medicine, and dye in South Asia. Ancient writings such as the Sushruta Samhita and Charaka Samhita describe its role in inflammation, skin disorders, and wound healing. Current research confirms its pharmacological potential, particularly through the bioactive compound curcumin, which supports tissue repair and skin health.

Pharmacognosy:

Name in botany: *Curcuma longa*

Family: Zingiberaceae

Chemical constituents: Curcumin, demethoxycurcumin, bisdemethoxycurcumin, and volatile oils.



History:

The history of turmeric is extensive and goes back more than 4,000 years. It has its roots in South and Southeast Asia, especially India, where it has long been a staple of traditional cuisine, medicine, and cultural practices. Before its therapeutic benefits were acknowledged, turmeric was initially used as a dye and cosmetic in ancient India.

According to Ayurveda, turmeric is a potent herb that can be used to treat a variety of conditions, such as wounds, skin conditions, digestive issues, and respiratory issues. Turmeric's antiseptic and wound-healing properties were recorded in the ancient Ayurvedic text Sushruta Samhita (6th century BCE). Turmeric was also utilized in Siddha and Unani medicine because of its detoxifying, anti-inflammatory, and antioxidant properties.



Fig. No. 2. Turmeric Plant

As trade routes expanded, turmeric made its way from India to China, the Middle East, and Africa. Turmeric was added to Chinese medicine around 700 AD, where it was used to improve blood flow and heal internal wounds. In the 13th century, Arab traders brought turmeric to Europe, where it was known as "Indian saffron" due to its vibrant color and culinary applications.

Turmeric gained international recognition during the colonial era, particularly in the 18th and 19th centuries when European scientists began investigating its chemical composition and possible therapeutic applications. Vogel and Pelletier isolated curcumin in 1815, marking the beginning of modern pharmacological research on the compound. Since then, numerous studies have confirmed turmeric's therapeutic benefits, especially its antimicrobial, wound-healing, and inflammation-reducing capabilities.

Both conventional medical systems like Ayurveda and contemporary pharmaceuticals and cosmetics still depend heavily on turmeric. Its evolution from a traditional spice to a scientifically supported medicinal ingredient shows how important it is to both traditional and modern medicine.

Health benefits of turmeric:

Turmeric, derived from the rhizomes of *Curcuma longa*, is one of the most powerful medicinal herbs known to humankind. Its primary active constituent, curcumin, is responsible for a wide range of





Fig. No. 3. Benefits of turmeric

Anti-inflammatory Activity:

Curcumin is one potent natural anti-inflammatory compound. Enzymes like lipoxxygenase and cyclooxygenase (COX-2) are inhibited, and pro-inflammatory cytokines like TNF- α , IL-1, and IL-6 are reduced. In addition to helping manage chronic inflammatory conditions like arthritis, joint swelling, and muscle soreness, this encourages faster wound healing.

Activity of Antioxidants:

Turmeric's potent antioxidants help the body fight off harmful free radicals. Curcumin protects cells against oxidative damage, which can lead to cancer, heart disease, and aging, by boosting the activity of natural antioxidants such as glutathione peroxidase and superoxide dismutase (SOD).

Antiseptic and Antimicrobial Properties:

Turmeric has natural antiviral, antifungal, and antibacterial qualities. Because it is effective against bacteria like *Staphylococcus aureus*, *E. coli*, and *Candida albicans*, it can be used to treat wounds, ulcers, and skin infections. When applied topically, turmeric paste inhibits microbial growth and promotes healing.



Wound and Skin Healing:



Fig. No. 4

Curcumin promotes collagen synthesis, angiogenesis (the creation of new blood vessels), and epithelial cell regeneration for wound closure and tissue repair. For this reason, turmeric is commonly used in herbal creams, gels, and ointments for acne, burns, cuts, and cracked heels.

Digestive Health:

Traditionally, turmeric has been used as a digestive stimulant. It increases bile secretion, improves digestion, and helps manage conditions like indigestion, bloating, and ulcers. It also protects the gastric mucosa and reduces the risk of gastritis and peptic ulcers.

Effect of Hepatoprotection (Liver Protection):

By improving bile flow and eliminating toxins, turmeric helps the liver detoxify. Curcumin prevents cirrhosis, fatty liver disease, and alcohol- or drug-induced liver damage by lowering oxidative stress and liver inflammation.

Cardioprotective Impacts:

Curcumin reduces oxidative stress in blood vessels, inhibits platelet aggregation, and lowers LDL cholesterol to support heart health. This lessens the risk of heart attacks, high blood pressure, and atherosclerosis.

Potential Anticancer Effects:

By altering several molecular pathways, curcumin can prevent tumor initiation, growth, and metastasis, according to a number of studies. It shows promise in treating skin, breast, prostate, and colon cancers by reducing angiogenesis and causing cancer cells to undergo apoptosis, or programmed cell death.

Cognitive and Neuroprotective Advantages:

In neurodegenerative diseases like Parkinson's and Alzheimer's, turmeric has demonstrated advantages. Curcumin supports memory and cognitive function by lowering inflammation, oxidative stress, and amyloid plaque formation in brain tissue.



Anti-diabetic and Immunomodulatory Action:

By controlling T cells, B cells, macrophages, and cytokines, curcumin strengthens immune defense. Additionally, it enhances insulin sensitivity, lowers blood glucose levels, and guards against complications from diabetes.

Skin and Cosmetic Benefits:



Fig. No. 5

Turmeric is used in cosmetic formulations to brighten skin tone and reduce pigmentation, acne, scars, and aging signs because of its anti-inflammatory and antioxidant properties. It encourages a natural glow and nourishes the skin.

Evaluation:

To assess the quality, purity, and therapeutic effectiveness of turmeric (*Curcuma longa*), pharmacognostic, physicochemical, phytochemical, and analytical investigations are used. Under a microscope, turmeric rhizomes show vascular bundles, starch grains, oil globules, cortex, and epidermis. On the macroscopic level, the rhizomes are yellow-orange with a distinctive aromatic smell and a slightly bitter taste. To evaluate quality and stability, physicochemical parameters like volatile oil content, extractive values, ash values, and moisture content are measured. Curcuminoids and volatile oils are the main focus of phytochemical evaluation, which frequently uses spectrophotometry, TLC, or HPTLC. While microbial and heavy metal tests guarantee safety, analytical investigations such as HPLC, UV-visible spectroscopy, and FTIR further validate the identity and concentration of active ingredients.

pH, viscosity, spreadability, and stability are also taken into account when evaluating formulations, especially for topical herbal products like face and cracked heel creams.

II. CONCLUSION

A tried-and-true medicinal herb with a wide range of therapeutic and restorative benefits is turmeric (*Curcuma longa*). Its main bioactive ingredient, curcumin, has potent anti-inflammatory, antioxidant, antimicrobial, and regenerative properties that help to promote wound healing, lower inflammation, stop infections, and safeguard tissues. Turmeric is an excellent treatment for burns, wounds, cracked heels, and other skin disorders because it promotes collagen synthesis, fibroblast activity, and epithelial regeneration.

Turmeric's effectiveness has been validated by numerous pharmacological and clinical investigations, thereby endorsing its use in both conventional and contemporary formulations. Although its low bioavailability is still a drawback, its therapeutic potential has been greatly enhanced by developments in innovative drug delivery systems like liposomes, nanoparticles, and gels.

In summary, turmeric combines traditional knowledge with contemporary scientific evidence to serve as a safe, all-natural, and efficient healing agent. It provides a viable, sustainable substitute for improving skin and wound care in upcoming medical applications when added to herbal and pharmaceutical formulations.



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