

## Clotrimazole

**Introduction:** Clotrimazole is an antifungal medication commonly used in the treatment of fungal infections of both humans and animals such as vaginal yeast infections and ringworm. It is also used to treat athlete's foot and jock itch.

**Mechanism of action:** Clotrimazole interacts with 14- $\alpha$  demethylase, a cytochrome P-450 enzyme that converts lanosterol to ergosterol, an essential component of the yeast membrane. In this way, clotrimazole inhibits ergosterol synthesis, resulting in increased cellular permeability. Clotrimazole may also inhibit endogenous respiration, interact with membrane phospholipids, inhibit the transformation of yeasts to mycelial forms and the uptake of purine, impair triglyceride and/or phospholipid biosynthesis, and inhibit the movement of calcium and potassium ions across the cell membrane by blocking the ion transport pathway known as the Gardos channel.

**Pharmacology:** Clotrimazole, an imidazole derivative with a broad spectrum of antimycotic activity, inhibits biosynthesis of the sterol ergosterol, an important component of fungal cell membranes. Its action leads to increased membrane permeability and apparent disruption of enzyme systems bound to the membrane.

**Indications:** Clotrimazole topical solution is indicated for the topical treatment of candidiasis due to *Candida Albicans* and tinea versicolor due to *Malassezia furfur*. Clotrimazole is also available as a nonprescription item which is indicated for the topical treatment of the following dermal infections: tinea pedis, tinea cruris, and tinea corporis due to *Trichophyton rubrum*, *Trichophyton mentagrophytes*, *Epidermophyton floccosum*, and *Microsporum canis*.

**Dosage:** Gently massage sufficient clotrimazole topical solution into the affected and surrounding skin areas twice a day, in the morning and evening. Clinical improvement, with relief of pruritus, usually occurs within the first week of treatment with clotrimazole topical solution. If the patient shows no clinical improvement after four weeks of treatment with clotrimazole topical solution, the diagnosis should be reviewed.

**Side effects:** The drug has certain side effects that can affect individuals in different ways. The following are some of the side effects that are often associated with the drug:

- Burning sensation
- Itching
- Local mild irritation
- Hypersensitivity

There is no evidence of risk to the developing baby during pregnancy or risk to lactating women.

**Precautions:**

**General:** If irritation or sensitivity develops with the use of clotrimazole, treatment should be discontinued and appropriate therapy instituted.

**Pregnancy: Pregnancy Category B:** this drug should be used only if clearly indicated during the first trimester of pregnancy.

**Nursing Mothers:** It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when clotrimazole is used by a nursing woman.

**Pediatric Use:** Safety and effectiveness in pediatric patients have been established for clotrimazole when used as indicated and in the recommended dosage.

**Contraindications:** Clotrimazole topical solution is contraindicated in individuals who have shown hypersensitivity to any of their components.

**How Supplied: Customized as per request.**