



# IVERMECTIN

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Ivermectin is an antiparasitic medication used in the treatment of a variety of worm infestations such as onchocerciasis and for multiple dermatologic conditions such as scabies and lice. Ivermectin comes as a topical lotion or tablet form that is taken orally, preferably on an empty stomach. It is usually given as a single dose although second doses may be given. Topical ivermectin has much lower systemic absorption when compared to oral administration. This medication is not indicated for patients less than 15 kg and for children less than five years of age. Ivermectin has a pregnancy category of C which indicates that this medication should be used with caution only if the benefits outweigh the risks in pregnant patients.

**Mechanism:** Ivermectin is a macrocyclic lactone derived from a bacterium called *Streptomyces avermitilis*. This medication works by interfering with the invertebrate's nerve and muscle cells. In these cells, there are specific glutamate-gated chloride channels which ivermectin strongly binds to and activates. This in turn will cause increased permeability to chloride ions. The resulting hyperpolarization of the nerve and muscle cells will eventually lead to the paralysis and death of the parasite.

**Uses:** Ivermectin has traditionally been used for worm infestations such as onchocerciasis and strongyloidiasis. However, there are many dermatologic conditions that ivermectin has been shown to effectively treat off-label such as **scabies, head, body, and pubic lice, cutaneous larva migrans** and a mite called *Demodex folliculorum* which may appear rosacea-like. Ivermectin has been shown to clear scabies in both healthy patients and in immunocompromised patients with HIV/AIDS with a single oral dose of 200 µg of ivermectin per kilogram although some stubborn cases such as crusted scabies may warrant more doses. This single dose has also been shown to be very effective for cutaneous larva migrans by stopping itching and halting the cutaneous track within 48 hours. For previously failed treatments for head lice, two doses of ivermectin given at a dose of 400 µg per kilogram in a seven day interval was shown to effectively treat head lice with a higher success rate than malathion lotion.

**Side Effects:** Side effects are extremely minimal for ivermectin taken in therapeutic doses for dermatologic conditions. The main side effects are experienced by patients using this medication for onchocerciasis and other filarial diseases. These include abdominal pain, muscle aches, dizziness, headache, nausea, tremors, edema, sleepiness, and malaise. Side effects are also uncommon with topical ivermectin but may include dandruff, dry skin, and a burning sensation. If side effects are severe or do not go away, medical attention should be sought promptly.

**This information has been provided to you compliments of the American Osteopathic College of Dermatology and your physician.**

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