



# DAPSONE

<http://www.aocd.org>

Dapsone is a bacteriostatic antibacterial sulfonamide drug used in the treatment of numerous systemic and dermatologic conditions. Dapsone has excellent bioavailability when absorbed from the gastrointestinal tract and equal efficacy when used in a topical formulation. Once absorbed, dapsone demonstrates a unique metabolic phenomenon known as fast and slow acetylation. This means certain individuals will metabolize it faster than others, however, there has been no difference noted in efficacy or side effect profiles.

**Mechanism:** Since dapsone is used for both systemic and dermatologic disease, it has been shown that it possesses multiple different mechanisms. When used orally as an antibiotic, dapsone inhibits the growth of bacteria dependent folic acid synthesis. As a topical preparation, dapsone inhibits myeloperoxidase and eosinophil-peroxidase, enzymes found within neutrophils and eosinophils respectively. This has been proven to protect host cells against cellular injury from toxic oxygen derived free radicals. Lastly, as an anti-inflammatory, dapsone has been shown to inhibit lysosomal enzymes as well as multiple prostaglandins and leukotrienes thereby blocking their inflammatory effects.

**Uses:** With three different mechanisms of action, dapsone has established a broad area of coverage in both systemic and skin diseases. As an antibiotic, dapsone is commonly used to treat mycobacterium leprae, the causative organism of **leprosy**. Also, it is used to prophylax against Pneumocystis pneumonia and toxoplasmosis in HIV patients as well as an adjuvant treatment for malaria.

As an anti-inflammatory agent, dapsone finds utility in treating numerous blistering dermatologic diseases such as:

- **Pemphigus vulgaris**
- **IgA pemphigus**
- **Bullous pemphigoid**
- Bullous form of systemic lupus erythematosus
- **Linear IgA dermatoses** associated with medication exposure, especially vancomycin
- **Dermatitis herpetiformis** associated with the gluten hypersensitivity known as celiac disease.

Furthermore, dapsone is also used in the management of dermatoses characterized by neutrophilic or eosinophilic cutaneous infiltrates like **Sweet's syndrome** and **pyoderma gangrenosum**.

Recently, dapsone has been made available as a new topical gel-based preparation (Aczone) for the treatment of mild to moderate **acne vulgaris** in adolescents and adults.

**Side Effects:** Severe complications include hemolytic anemia in patients of Asian and Mediterranean descent who have a deficiency in glucose-6-phosphate dehydrogenase (G6PD). Other systemic effects include methemoglobinemia and peripheral motor neuropathy. Those with sulfa-based allergies should avoid the use of dapsone. Side effects seen with the usage of the gel-based Aczone acne preparation include redness, dryness, oiliness and peeling of the skin. Furthermore, the manufacturer recommends avoiding usage in patients younger than 12 years of age. Treatment for various conditions with dapsone during pregnancy is generally considered safe for both the mother and fetus however it should only be given during pregnancy when benefit outweighs risk.

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

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