

## Acyclovir

**Introduction:** Acyclovir is a synthetic nucleoside analogue active against herpes viruses.

**Mechanism of action:** Acyclovir is a synthetic purine nucleoside analogue with *in vitro* and *in vivo* inhibitory activity against herpes simplex virus types 1 (HSV-1), 2 (HSV-2), and varicella-zoster virus (VZV). The inhibitory activity of acyclovir is highly selective due to its affinity for the enzyme thymidine kinase (TK) encoded by HSV and VZV. This viral enzyme converts acyclovir into acyclovir monophosphate, a nucleotide analogue. The monophosphate is further converted into diphosphate by cellular guanylate kinase and into triphosphate by a number of cellular enzymes. *In vitro*, acyclovir triphosphate stops replication of herpes viral DNA. This is accomplished in 3 ways: 1) competitive inhibition of viral DNA polymerase, 2) incorporation into and termination of the growing viral DNA chain, and 3) inactivation of the viral DNA polymerase. The greater antiviral activity of acyclovir against HSV compared to VZV is due to its more efficient phosphorylation by the viral TK.

**Indications:** Acyclovir Ointment 5% is indicated in the management of initial genital herpes and in limited non-life-threatening uocutaneous Herpes simplex virus infections in immunocompromised patients.

**Dosage:** Apply sufficient quantity to adequately cover all lesions every 3 hours, 6 times per day for 7 days. The dose size per application will vary depending upon the total lesion area but should approximate a one-half inch ribbon of ointment per 4 square inches of surface area. A finger cot or rubber glove should be used when applying acyclovir to prevent autoinoculation of other body sites and transmission of infection to other persons

### Side effects:

**General:** Edema and/or pain at the application site.

**Skin:** Pruritus, rash.

### Precautions:

**General:** The recommended dosage, frequency of applications, and length of treatment should not be exceeded. There are no data to support the use of acyclovir Ointment 5% to prevent transmission of infection to other persons or prevent recurrent infections when applied in the absence of signs and symptoms. acyclovir Ointment 5% should not be used for the prevention of recurrent HSV infections. Although clinically significant viral resistance associated with the use of acyclovir Ointment 5% has not been observed, this possibility exists.

**Pregnancy: *Teratogenic Effects:*** Systemic acyclovir should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

**Nursing Mothers:** It is not known whether topically applied acyclovir is excreted in breast milk. Systemic exposure following topical administration is minimal. Nursing mothers who have active herpetic lesions near or on the breast should avoid nursing.

**Geriatric Use:** Clinical studies of acyclovir Ointment did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences in responses between the elderly and younger patients. Systemic absorption of acyclovir after topical administration is minimal.

**Pediatric Use:** Safety and effectiveness in pediatric patients have not been established.

**Contraindications:** acyclovir Ointment 5% is contraindicated in patients who develop hypersensitivity to the components of the formulation.

**How supplied: Customized As Per Request.**