

Herpes Simplex Virus Type-1

The Gift That Keeps On Giving

By

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Jeepers Creepers

- # The herpes viruses got their name from the Greek *herpein*, which means to creep, due to the creeping nature of the virus
- # Also, herpes gives people the creeps

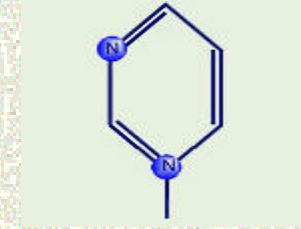


Herpes Viruses

Family: *Herpesvirinae*

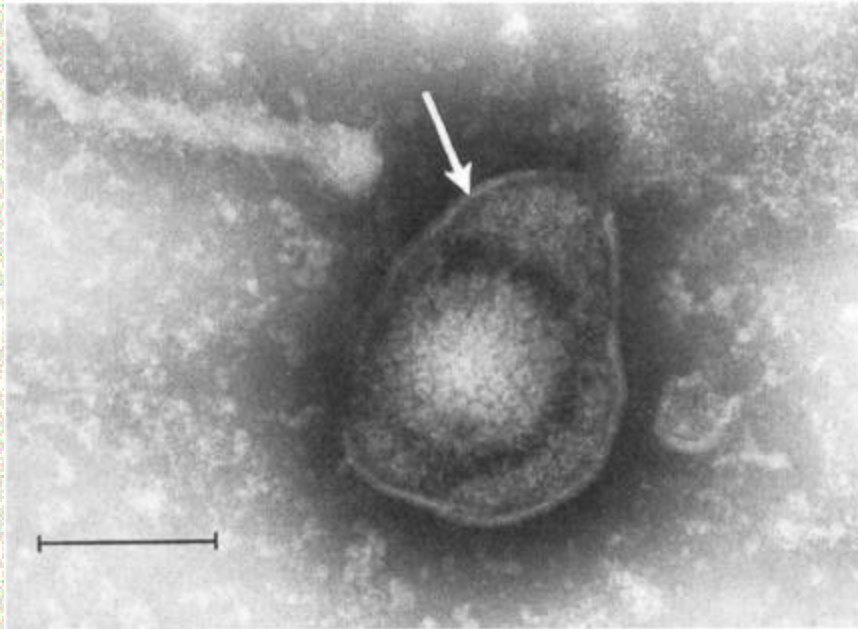
- Herpes Simplex Virus (Type 1 and 2)
 - Varicella-zoster
 - Herpesvirus B
 - Cytomegalovirus
 - Human herpesvirus 6
 - Human herpesvirus 7
 - Epstein-Barr virus
 - Kaposi's sarcoma-associated herpesvirus
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HSV-1 Genome



- # Linear dsDNA consisting of 152,260 base pairs (relatively long)
- # Has been completely sequenced
- # 74 tightly packed genes
 - Most have protein-coding function
 - Each has its own promoter but may have overlapping reading frames
- # Replication occurs in nucleus
- # Viral proteins synthesized in cytoplasm then transported to nucleus

HSV-1 Morphology



4 concentric layers

- Inner core
- Icosahedral nucleocapsid
 - Consisting of 162 tubular capsomeres
- Tegument
- Outer envelope

Diameter

- Naked particle 100 nm
- Complete enveloped virion 120–200 nm

Infection - Is it type 1 or 2?

- # Type 1 and 2 are very similar
 - # All of the syndromes caused by herpes simplex virus can be caused by either type
 - # Generally, HSV-1 infects above the waist and HSV-2 infects the genital region
 - # HSV-1 can be passed to the genitals and HSV-2 to the oral region by direct contact (i.e.. oral sex)
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Herpes Simplex Virus Syndromes

- # Herpes labialis (Cold sores)
 - # Dermatitis
 - # Herpetic gingivostomatitis
 - # Encephalitis
 - # Kerato-conjunctivitis
 - # Genital herpes
 - # Etc.-itis
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Primary Infection

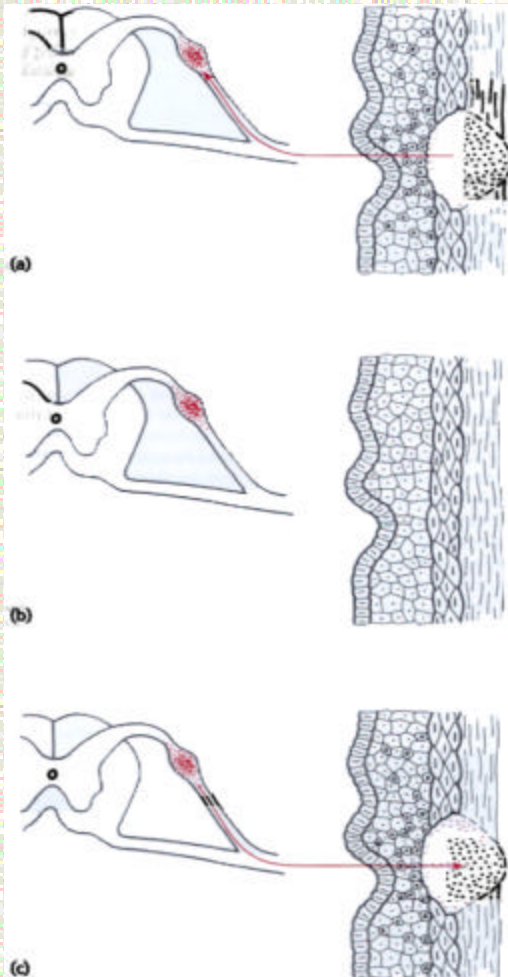
- # Usually occurs in early childhood
 - # Rare after the age 30
 - # Transmitted through many types of contact
 - A kiss
 - Sharing eating utensils
 - Linens and towels
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Primary Infection

- # Can be asymptomatic
- # A lot of people will be infected and never have an outbreak
- # May cause acute gingivostomatitis



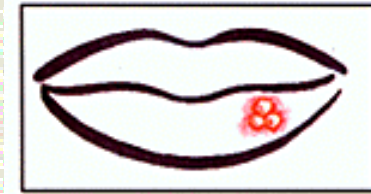
Latency



- # After initial infection, HSV-1 will travel to certain clusters of nerve cells near the spinal cord
- # Once there, it will lie dormant until triggered
- # This latent phase varies from person to person
- # Once triggered, it will follow the nerves back to face and mouth for a secondary infection or recurrence

Recurrence

- Starts as tingling, itching sensation
- Blister stage
- Ulcer Stage
- Scabbing Phase
- Healing Phase
- The whole process takes 8-12 days
- Usually not as severe as primary infection



Cold Sore Triggers

- # Virology class presentations or other stresses
 - # Fatigue
 - # Common cold
 - # Fever
 - # Sun exposure
 - # Excessive heat or cold
 - # Menstruation
 - # Pregnancy
 - # Injury to the mouth
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Treatment

Symptom Relief

- Ice, cold compresses, or tea bags to cool
- Keep dry with boric acid or methylated spirit
- Over-the-counter oral anesthetics

Anti-viral Medication

- Acyclovir (Zovirax)
- Penciclovir (Denavir)
- Valacyclovir
- Famciclovir

“Alternative” medicines

- Diet low in carbs and rich in amino acids (little borne arginine and lots of lysine)
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Joanne's Treatment

The absolute best possible treatment (in my opinion) is perfume

- The key is to apply as soon as possible

Lysine

- Prophylaxis - helps reduce the number and severity of outbreaks
 - During outbreak - Take every 4 hours to speed healing (according to a friend)
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The End

Thank You!

