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
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)
Herpes Simplex Virus Syndromes

- **Herpes labialis (Cold sores)**
- **Dermatitis**
- **Herpetic gingivostomatitis**
- **Encephalitis**
- **Kerato-conjunctivitis**
- **Genital herpes**
- **Etc.-itis**
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
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
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)
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)
The End

Thank You!