

**NURS 821 Advanced
Pathophysiology
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Lecture 3 Mechanisms and
Manifestations of Disease (cont'd)
Part 6 Pathophysiology of Selected
Skin Disorders

Systemic Viral Infections

Chicken pox (Varicella)

- Definition-viral infection causing blistering rash on skin and mucous membranes
- Rash appears on trunk and face, spreading along all membranes
- Rash-1/5" to 2/5", wide, reddish base occur in crops over 2-4 days
- Rash distribution varies
- As blisters itch and break, scabs form, secondary infection can occur

Varicella (cont'd)

- Symptoms-fever, abdominal pain, vague sick feeling-last 3-5 days, fever of 101-103
- Usually mild but can be deadly in immunocompromised and asthmatics
- May stay dormant and cause shingles later in life



Varicella

Measles (Rubeola)

- Definition-highly contagious respiratory infection caused by rubeola virus
- Epidemics in springtime prior to vaccine
- Currently, uncommon in U.S., but occasional outbreaks

Measles

- Can be serious, even fatal
- Spread by contact w infected fluids from nose, mouth, droplets
- Contagious 1-2 days pre-symptoms to 4 days after rash develops; takes 9-11 days for symptoms post exposure

Measles



Rubeola (cont'd)

- Infants protected first 6-8 months by maternal immunity
- Symptoms-Respiratory-irritability, rhinitis, photophobia, hacking cough, fever (to 105)
 - Symptoms usually disappear w rash except fever (persists 2-3 days)

Rubeola

- Koplik's spots-small, red, irregular spots w blue-white centers inside mouth
- Rash
 - Occurs 2-3 days pre-rash
 - Starts on forehead, spreads to feet (3 days); recedes in reverse
 - Large, flat, red, brownish-coalesce; may peel as recedes

Measles Complications

- Lasts 10-14 days; return to school 7-10 days post rash, fever
- Complications-Dehydration, secondary infections, pneumonia, bronchiolitis, conjunctivitis, ear infections, croup, myocarditis, hepatitis, encephalitis

Herpes Simplex

- Definition- viral infection caused by herpes hominus of the skin, hides in nerves-never leaves
- Activated by stress, illness, sun, menses, etc. Travels down nerves to skin to cause blisters.
- Manifestations-blisters, F, HA lymphadenopathy
- Transmitted even without symptoms by kissing, sexual or close contact
- Two types; these may cross-infect:
 - HSV-1 60% of facial "cold sores"
 - HSV-2 40% of genital sores

Herpes Simplex



Infectious Diseases with Major Skin Manifestations

Lyme Disease (CDC, 2000)

- **Definition**-An infectious disease caused by *Borrelia burgdorferi* transmitted by the bite of a tick.
- Transmitted by deer ticks in the northeastern and north-central U.S.; by the western black-legged tick on the Pacific Coast.
- Tick size-smaller than common ticks; slightly larger than pinhead.
- Ticks feed by inserting mouth parts into host and feeding for several days.

Lyme Disease Risk (CDC, 2000)



- Risk increased in northeastern, mid-Atlantic, and upper north-central regions, as well as several counties in northwestern California.
- Typically contracted during residential yard maintenance or recreational activities in wooded areas.

Lyme Manifestations

- Headache
- Stiff neck
- Fever
- Muscle aches



- Rash-85%-unique, enlarging rash at bite; 15% no noticeable rash
- Complication-arthritis-like joint pain and swelling, personality changes, cognitive disorders-memory changes and trouble concentrating

Lyme Bull's Eye Rash



Stages of Lyme: The Great Masquerader

- Post-bite-localized infection
 - Erythema marginans c or w flulike symptoms
 - Bulls eye rash-clear center
 - Sx-malaise, fever, HA, lymphadenopathy

Stages of Lyme: The Great Masquerader

- Disseminated infection-wks to 9 mos. post-infection
- Secondary erythema marginans, arthralgia (arthritis wks to yrs later in 60%), meningitis, neuritis, carditis
- Late persistent infection-years later-arthritis, encephalopathy, polyneuritis
