



Recognition and Prevention of Communicable Diseases in Children



Trish Many, PHN
Oneida County Health Department

Objectives/Goals



- Identify common childhood diseases
- List possible exclusion criteria
- Describe prevention measures



Communicable Diseases

- Definition- An infectious disease or infestation that is transmitted from one person or animal to another, directly or indirectly.
- Manifestations- Variation in signs and symptoms are common, however each disease has its own specific grouping of symptoms. Skin rash, poor appetite, nausea, vomiting, diarrhea, malaise, fever and body aches are common examples.



Fifth Disease (Erythema infectiosum)

- Transmission: By respiratory secretions and blood (herpes virus)
- More often seen in winter and spring
- Communicability: Is greatest before onset of symptoms and usually not contagious after rash appears
- Exclusion: Not usual; because unlikely to be contagious after the rash appears.
- Do not notify parents of an out break
- Incubation period 4-14 days



Fifth Disease cont.

- Begins by exhibiting flu-like illness (headache, nausea, body ache)
- Within one week red raised rash appears on cheeks resembling "slapped face" effect accompanied with oral paleness
- Within 2-4 days a lace-like rash spreads outward from trunk and limbs lasting 1-3 weeks
- Secondary cases: Over 50% of exposed children will come down with the rash in 10-14 days.

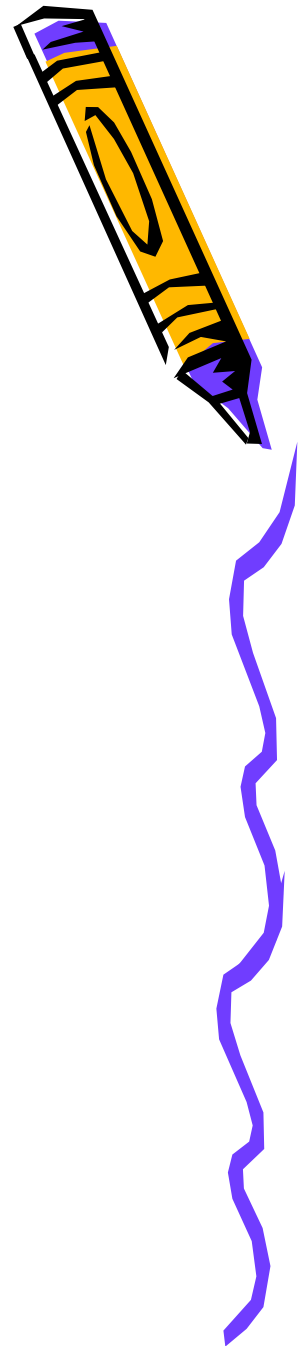


Fifth Disease cont.



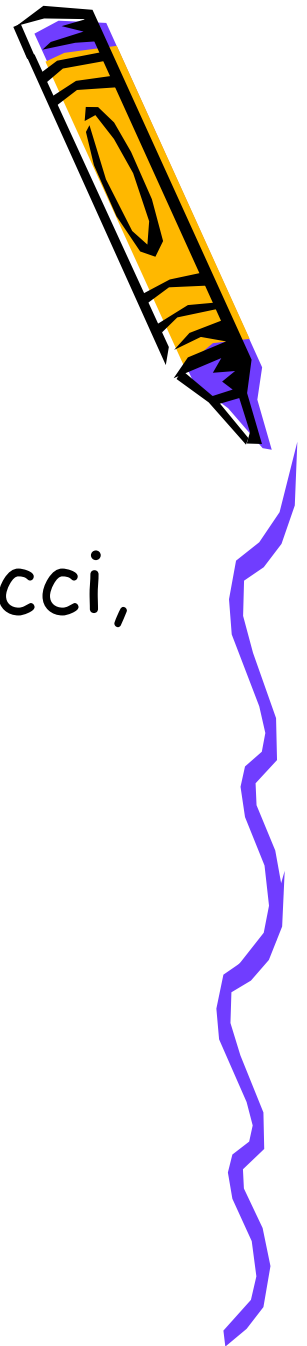
- Treatment: Supportive Care may include: use of Acetaminophen, oatmeal-based preparations to relieve any itching related to rash & rest
- Children with certain blood disorders may be at greater risk of complications
- Women attempting to conceive and those who are pregnant should abstain from interaction with infected persons related to high incidence of fetal infection resulting in spontaneous abortion
- Prevention: Avoid contact with infected persons early in disease





Fifth's Disease
Source: Kids Health, 2003.

Impetigo



- Highly contagious, superficial infection of the skin caused by a bacteria (streptococci, staphylococci, or both)
- Common sites are the face, hands, neck, and extremities
- This is the most common bacterial skin condition in children



Impetigo cont...



- Lesions begin as a vesicle or pustule that are swollen and red
- Person may complain of itching and burning at lesion site
- Lesion progresses to a crusting stage
- The initially clear fluid filled vesicles become cloudy and rupture leaving a honey colored crust scab in an ulcerated area

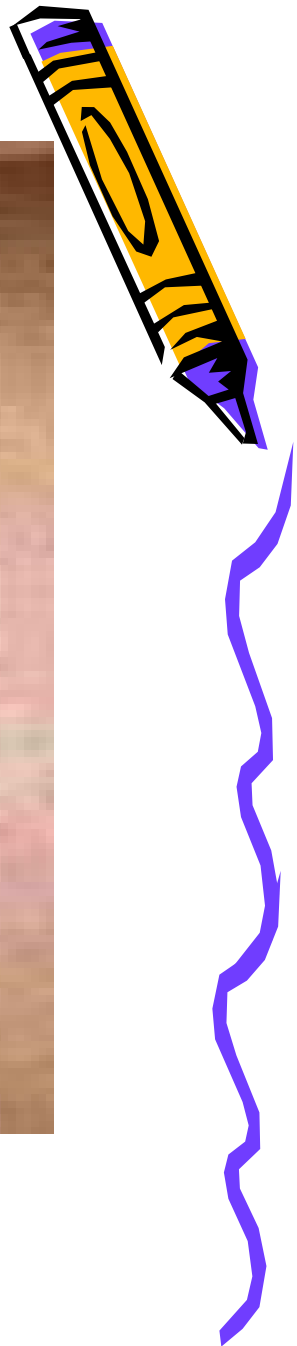


Impetigo cont...



- Transmission: Close physical contact with each other...contact with the drainage
- Communicability: For 24 hours after treatment with antibiotic ointment is initiated
- Exclusion: Until on treatment for 24 hrs
- Prevention-children's nails should be kept short, known infected persons should avoid close physical contact with others or with objects shared with others, don't share towels or wash cloths.



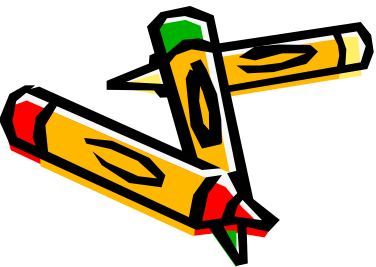


Impetigo
Source: Kids Health, 2003.

Pink Eye

(Acute Bacterial Conjunctivitis)

- An infection that results in eye irritation, redness, swelling and weeping from the lacrimal ducts
- Infectious organisms are known to be *Haemophilus aegyptius*, *Staphylococcus aureus* and *Streptococcus pneumoniae*
- Extremely Contagious



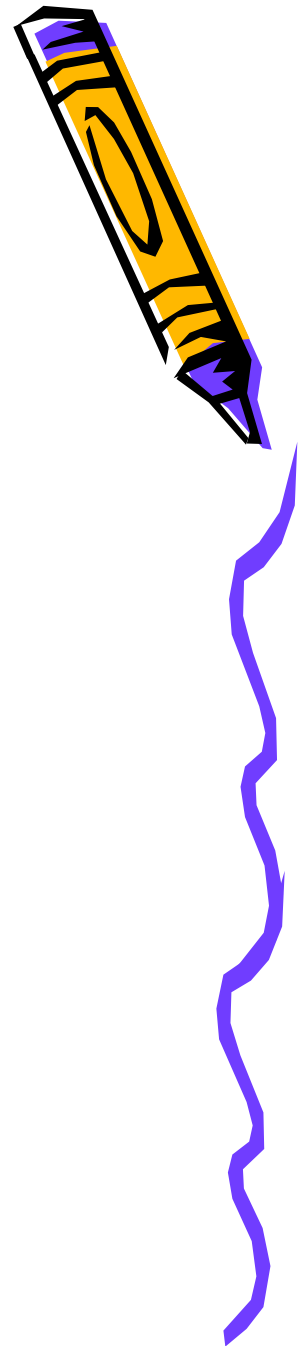
Pink Eye cont...



- Transmission: Through contact of discharge from the eye and upper respiratory tract
- Communicability: May last as little as 2 days or as long as 2-3 weeks
- Not likely to be infectious after 24 hours of treatment with antibiotics
- Exclusion: Until been on treatment for 24hrs
- Treatment: Antibiotic eye ointment or drops are used if infection is identified
- Prevention: Good hand washing and infection control measures; do not allow children to share personal objects or toys used by infected child



Don't let children rub their eyes



Pink Eye

Source: St. Luke's Cataract and Laser Institute, 2003

"Strep" Throat (Acute Pharyngitis)

- A contagious infection that normally affects the pharynx, including the tonsils
- Reservoir: Commonly seen in children 4-7
- Rare in children under 12 months
- Caused by bacteria, most often are caused by a Streptococcus
- Transmission: Spread through direct contact with respiratory droplets of infected person

• Monitor others for illness



Strep Throat cont...



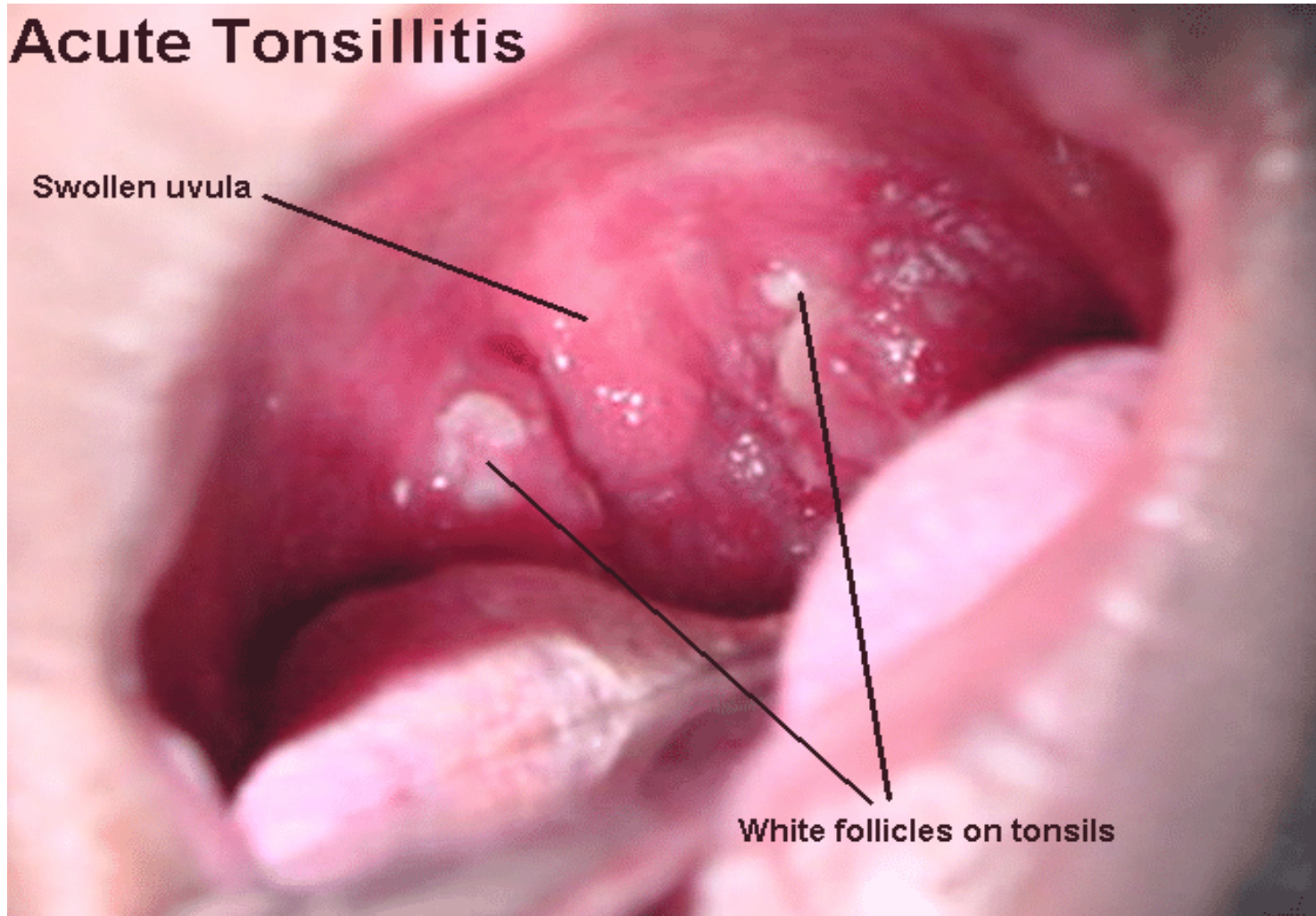
- Common signs & symptoms involve sore throat, redness, swelling, exudate, "patchy" tonsils and fever
- Children with this (mild or severe) should see a practitioner for culture
- Communicability: Usually not contagious after 24 hours of antibiotic treatment
- Exclusion: Until on treatment for 24hrs
- Children usually can return to school in 1 day if fever is gone.



Prevention: Limit direct contact of infected person with others



Acute Tonsillitis



Swollen uvula

White follicles on tonsils



"Strep" Throat
Source: Hardin MD, 2003



Ringworm (Dermatophytosis)



- A fungal infection that can infect the skin, hair and nails
- Typically a round, pink-red, raised area resembling a "worm" like appearance
- Most common infections are: tinea capitis (ringworm of scalp), tinea corporis (ringworm of the body), tinea cruris (ringworm of the groin) and tinea pedis (ringworm of foot, athlete's foot).
- Caused by various genera and species of fungi known as dermatophytoses
- Can affect persons of all ages

Notify parents of cases



Ringworm cont...

- Transmission: Can be from person to person, animal to person or from soil
- Communicability: Contagious as long as lesions are present and fungus remains on contaminated objects. Can spread for 3-4 months and may spontaneously reoccur.
- Incubation period: Microscopic diagnosis can be made in 3-5 days; it may take 2-3 weeks to show clinical symptoms



Ringworm Prevention



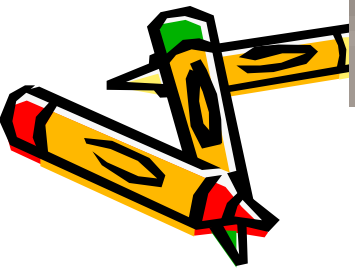
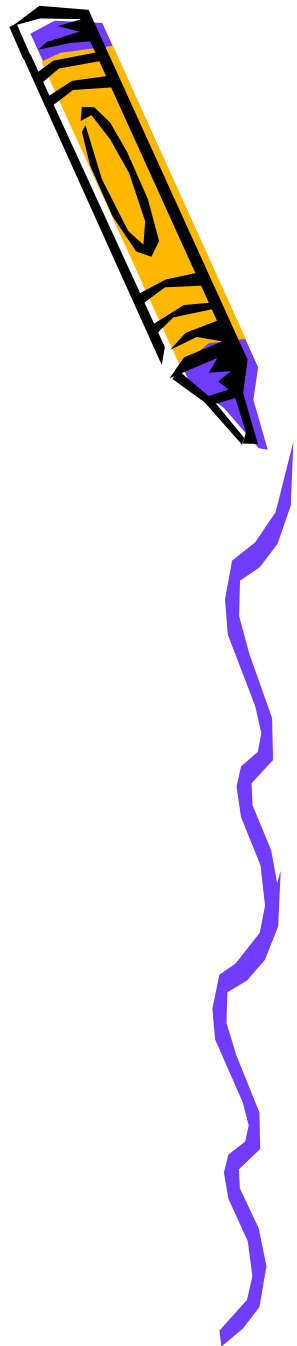
- Treatment: Diagnosis through medical practitioner and use of antifungal lotions, creams or shampoos as directed.
- Keep area covered at all times. If draining, cover it with an absorbent gauze and clothing. If no drainage either gauze or clothing.
- Do not share tubes of ointment
- No specific exclusion, other than MD note; with diagnosis and treatment



ringworm of the body (tinea corporis)



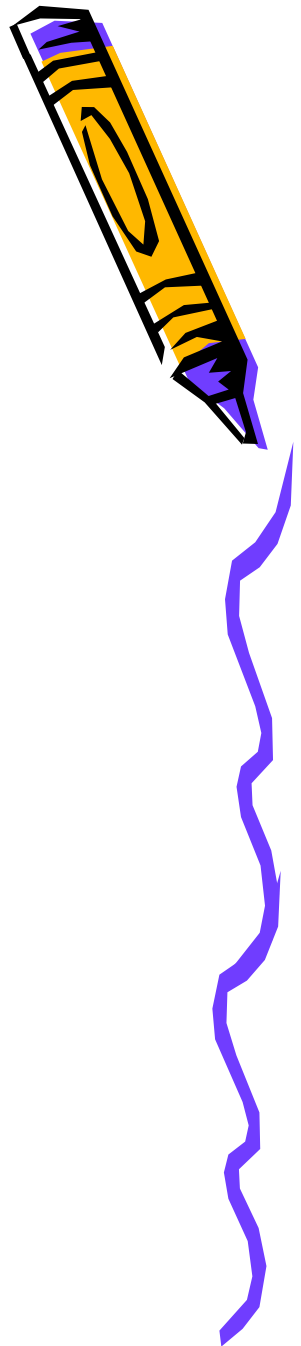
Source: Medline plus, 2003



Ringworm of the scalp (tinea capitis)



Source: Medline plus, 2003

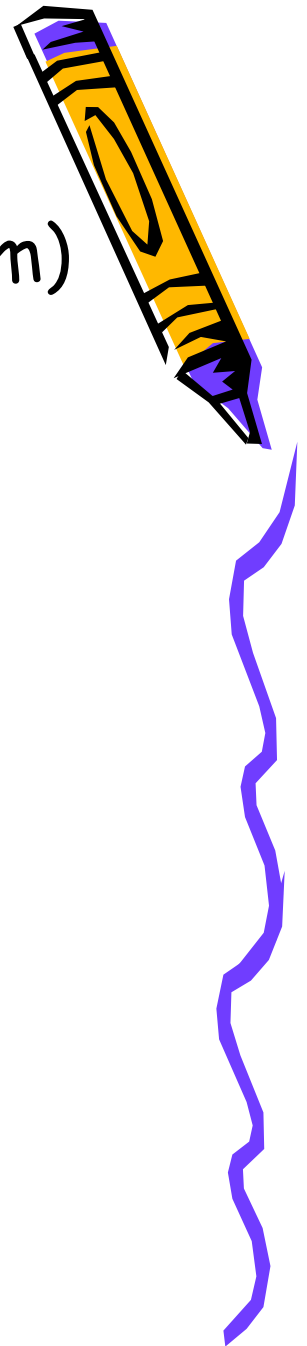


Pinworm (Enterobiasis)

- Parasitic worm infection of the intestine (*Enterobius vermicularis*)
- Transmission: Inhalation and transfer of eggs from hand to mouth, bedding, clothing, food or other objects contaminated with eggs by humans
- Transmission is increased within close settings such as housing complexes, schools and child care facilities
- Life cycle completion from 2-6 weeks
- Eggs remain viable for approximately 2 weeks on host
- May be asymptomatic or exhibit symptoms of perianal itching (worse at night when eggs are discharged by female), disruption of sleep pattern and irritability

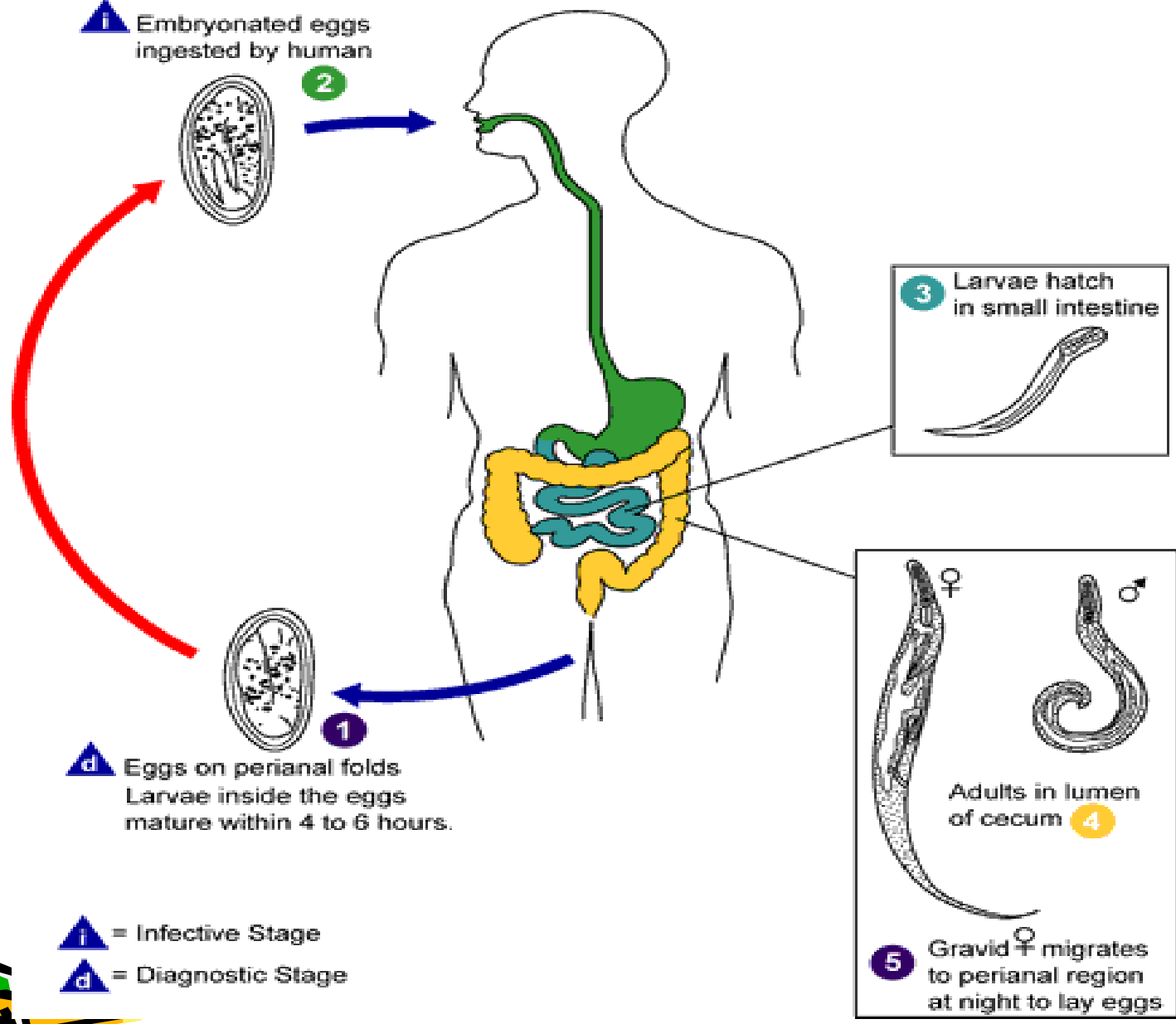


Pinworm cont...

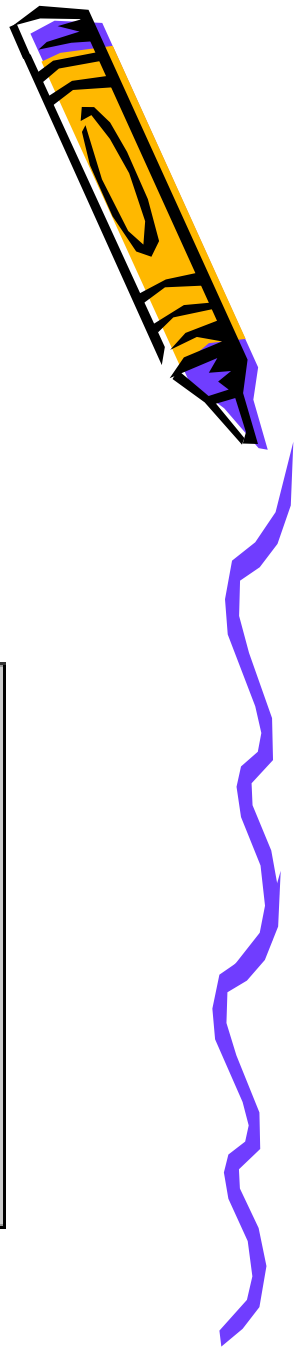


- Most common helminthic (parasitic worm) infection in the United States
- Requires diagnosis and treatment by medical practitioner for appropriate treatment and eradication of organism
- Exclusion: Until after treatment
- Prevention: Notify parents and personnel. Good hand washing. Good hygiene of clothes, toys and blankets
- Avoid itching and encourage good hand washing to prevent secondary infection and spreading of parasite





Source: Centers for Disease Control, 2002



Salmonellosis/(Salmonella)

- An acute onset infectious enterocolitis with symptoms of diarrhea, headache, abdominal cramping, nausea and occasionally vomiting
- Caused by the infectious bacterial agent *Salmonella*. The bacteria is harbored by a variety of domestic animals (chicken, swine, reptiles, cattle, dogs and cats) as well as human carriers
- Uncomplicated salmonellosis is self-limiting and will run course in few days, ensure hydration and electrolyte replacement with oral preparations such as Pedialyte

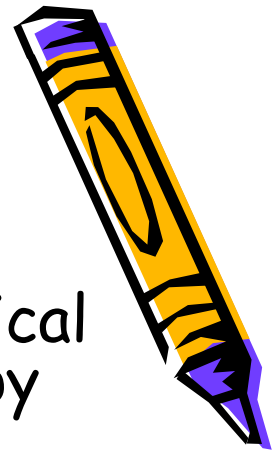


Salmonellosis cont...

- Transmission: Ingestion of the organism usually from contaminated food. Occasionally passed person-person. Can also be transmitted to humans from animals
- Incubation period may be as great as 6 to 72 hours
- Communicability: May last from several days to weeks
- Treatment: Depends on level of disease state and can range
- Exclusion: During acute diarrheal illness

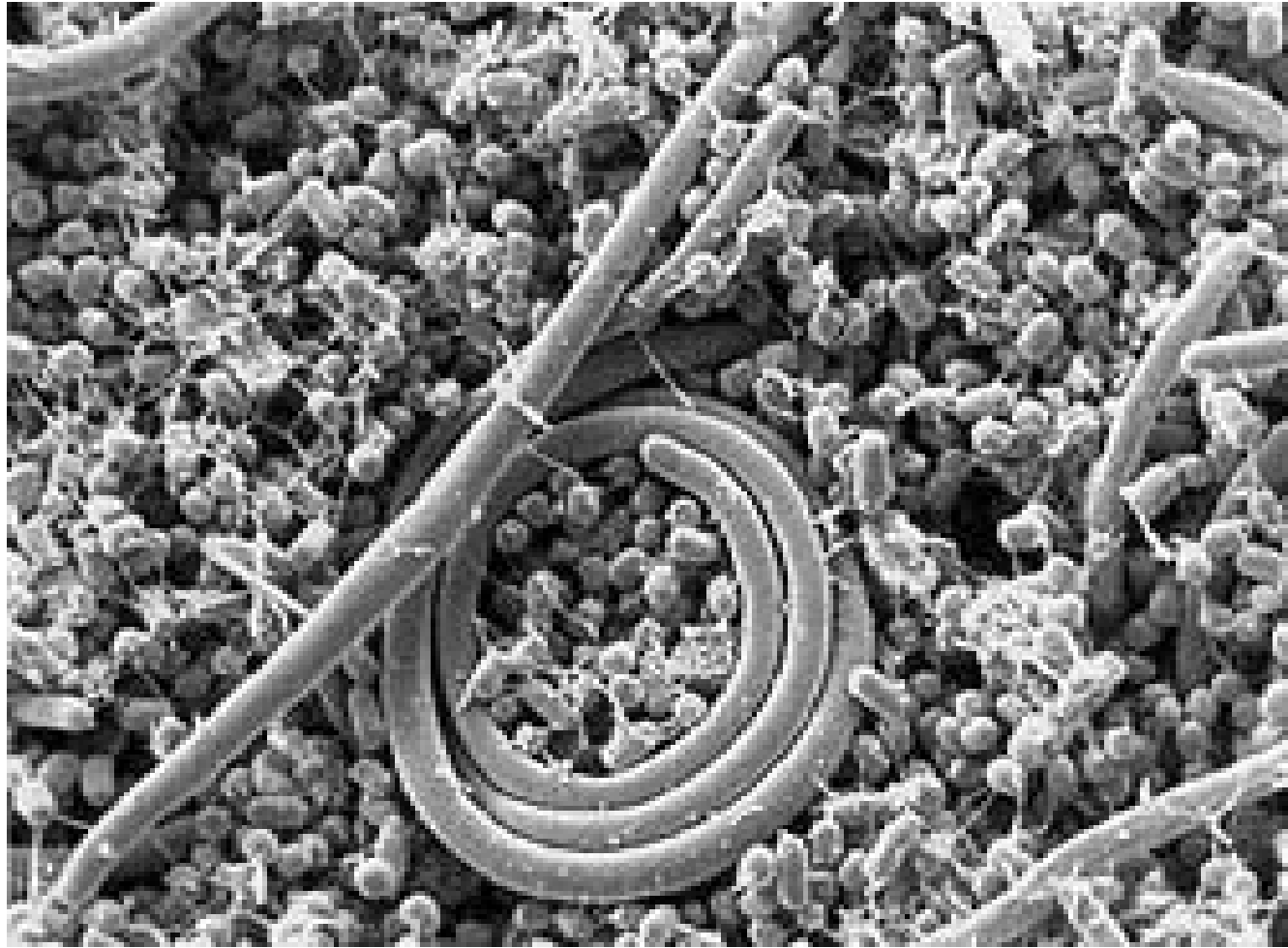


Salmonellosis cont...



- Infants under two months, elderly and immunocompromised persons should seek medical intervention and may require antibiotic therapy along with other treatment methods
- Prevention/Education:
 - Report known cases to local health department
 - Avoid eating raw or undercooked meats, poultry and eggs
 - Clean food preparation surfaces with effective anti-bacterial agents
 - wash hands after using the bathroom, before food preparation and after playing with animals
 - monitor drinking wells for infectious organisms

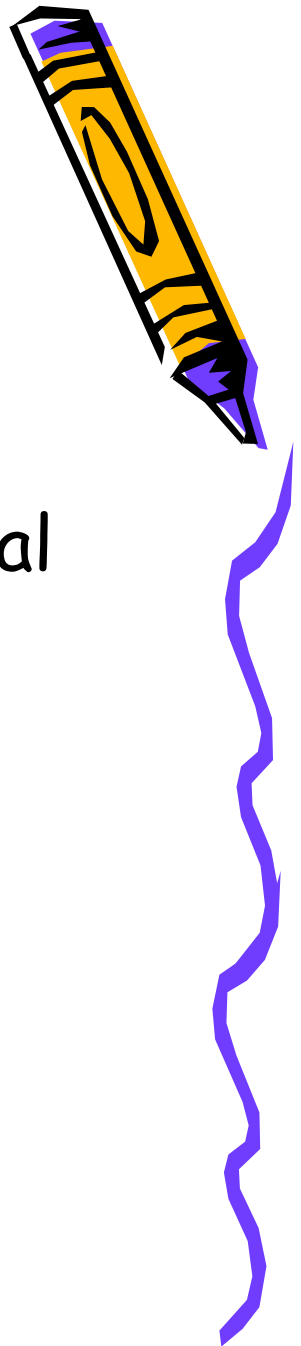




Source: United States Department of Agriculture, 2003

Cryptosporidium

- Microscopic parasite
- Can be spread person to person or animal to person by fecal-oral route
- Symptoms:
 - » Dehydration
 - » Watery Diarrhea
 - » Wt loss
 - » Fever
 - » Nausea/Vomiting



Crypto Continued

- Incubation period: Can be 2-10 days (average 7)
- Contagious for about 1-2 weeks. Illness may go in cycles where the person feels better for a few days.



Prevention

- Hand washing
- Do not swim for 2 weeks after diarrhea has resolved.
- Avoid contaminated water (untreated, ponds, foreign travel)
- Wash all fruits and vegs well
- No disinfectant is guaranteed to be completely effective, however 3% hydrogen peroxide is usually effective.



Head Lice (Pediculosis capitis)



- Infestation of hair and scalp
- Live and reproduce on humans
- Do not fly or jump, but crawl quickly
- Transmission: Through direct or indirect sharing of hats, combs/brushes, towels and linens
- Occurs at all socio-economic levels
- Not easy to get rid of. Need to be vigilant...at least 2 treatments



Head lice cont...

- The nit or egg look like silvery-white "teardrop" dandruff that clings to the hair shaft
- Commonly found: at the crown, at the nape and behind ears
- The actual "bugs" are rarely seen
- Exclusion: Children with lice should be isolated with their personal belongings from others and be effectively treated and inspected before returning to childcare settings



Images to assist in the identification of head lice and their eggs.

<http://www.hsph.harvard.edu/headlice.html>



Adult female louse
on nit comb



Viable egg
on hair
~2 days old



Viable egg
~1 day before hatching

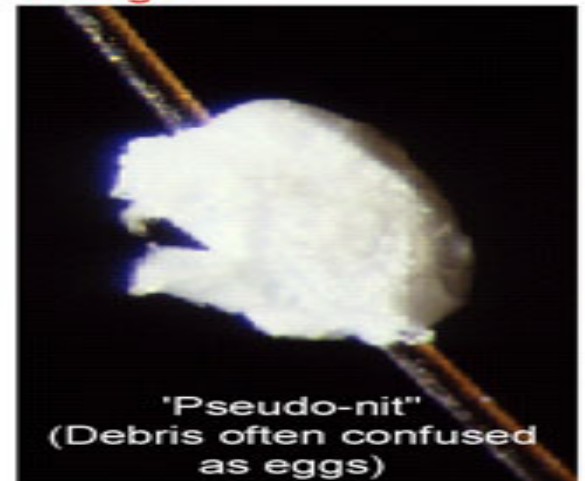
c 2000 President and Fellows of Harvard College



Empty egg
(hatched)



Dead egg
(>2 weeks old)



'Pseudo-nit'
(Debris often confused
as eggs)

[Return to text](#)



Head Lice
Source: Harvard School of Public Health,
2000.



Scabies

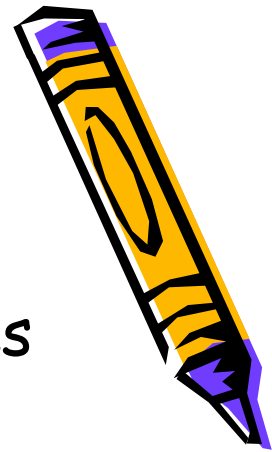
(*Sarcoptes scabiei*)



- Highly contagious infestation by a type of mite
- Symptoms include rash with varying lesions, itchiness that worsens at night and restlessness
- Usual infestation sites are in the: web of fingers, underarms, palms, wrists, neck, head, legs, thigh folds, buttocks, soles, chest and abdomen
- Incubation: Usually 2 weeks/1-4 days with repeat exposure
- Transmission: Prolonged direct contact with infected person or bedding.
- A mite can live up to a few days off the human body, so spread by bedding and clothing is rare, but possible



Scabies cont...



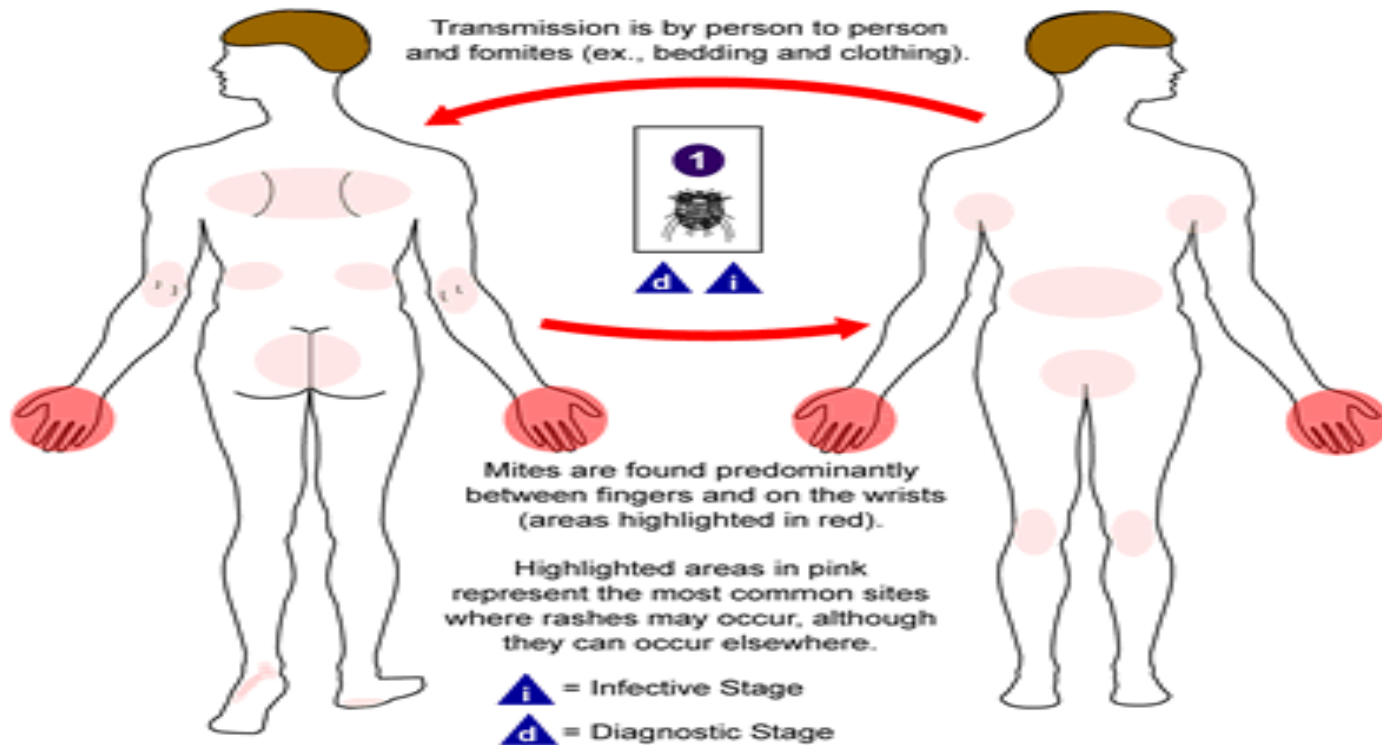
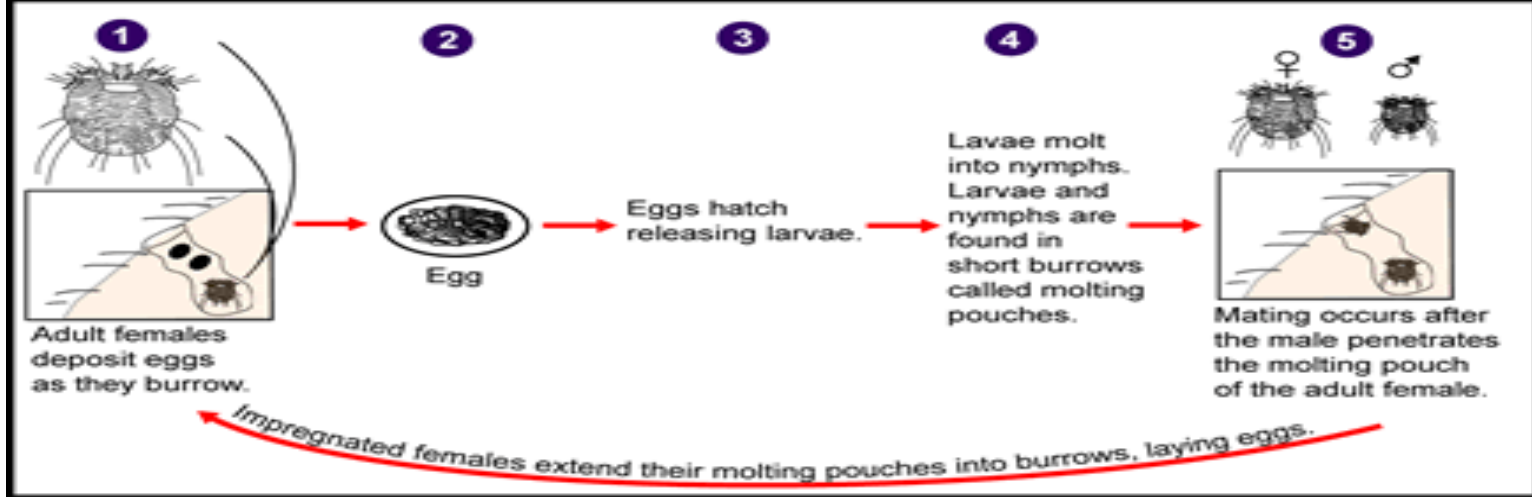
- Appearance of lesions are usually linear grey threadlike patterns (actually marks from mites burrowing) that may end in a vesicle
- Affects both genders and all ages
- Isolate suspected child from others including personal objects. Avoid interaction with the infected person until after treatment
- Medical intervention is needed to successfully treat and prevent recurrence
- Exclusion: Until on treatment for at least 24 hours
- Close contacts may need treatment as well.





Scabies

Source: Kids Health, 2003.



Source: Centers for Disease Control, 2002.

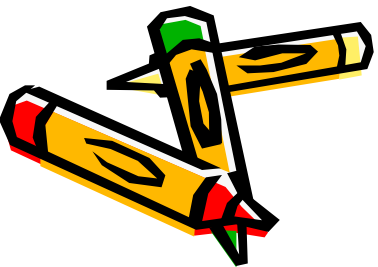
Pertussis (Whooping Cough)

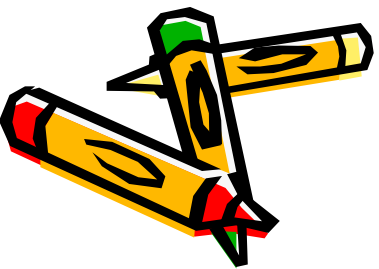
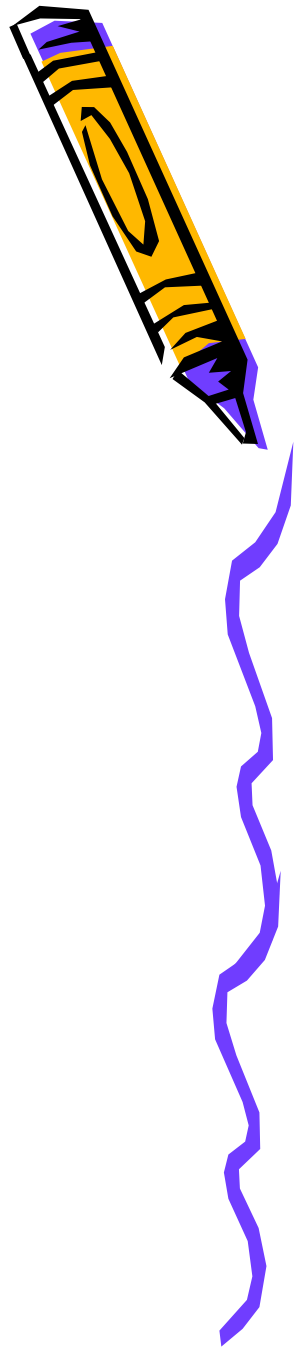
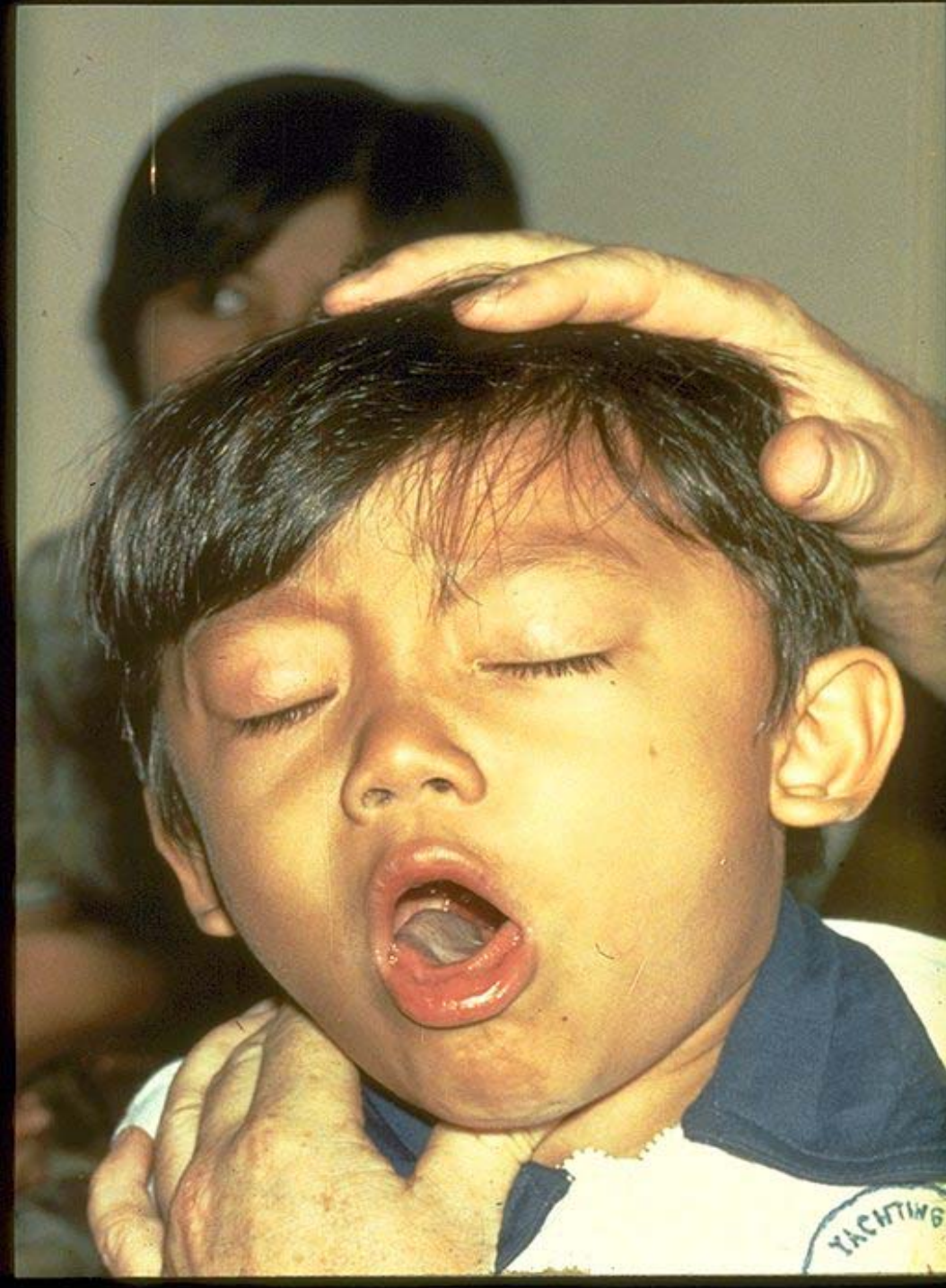
- Reservoir: Human
Adolescents and adults
- Transmission: Respiratory droplets
contact with articles rare
- Communicability: Maximum in catarrhal stage and 2 weeks after cough onset (~21 days)
Treatment with antibiotics will alter this.
- Secondary attack rate: up to 90% with close contacts



Pertussis Clinical Features

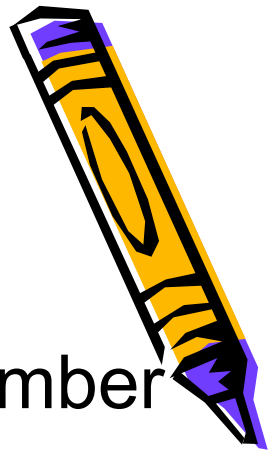
- Incubation period 5-10 days (up to 21 days)
- Insidious onset, similar to minor upper respiratory infection with nonspecific cough (lasts about 1-2 weeks)
- Then progresses to coughing spells (whoop sound) with vomiting can last 6 weeks or more
- Fever usually minimal throughout course







Pertussis: Transmission

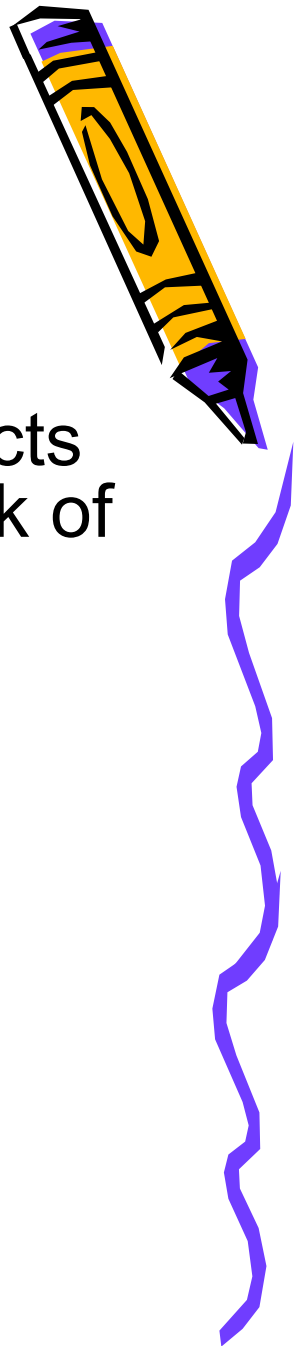


- Close Contacts:
 - Direct face-to-face contact regardless of number of hours spent together
 - e.g., close friends/playmates, household members, girlfriend/boyfriend, teammates, MD/patients
 - Child Care : sharing the same daycare, pre-K, or kindergarten classroom
 - Other High Risk Individuals



Pertussis: Transmission

- High Risk Contacts: consider as close contacts despite a lesser exposure because of the risk of severe disease;
 - children < 1 year of age
 - under-immunized children < 7 years
 - immunocompromised individuals
 - hospital room contacts
 - pregnant women
 - persons with chronic lung disease



Pertussis: Treatment

- *Persons with pertussis are considered non-infectious after having completed 5 days of any of the appropriate antibiotics or if it has been at least 21 days since their onset of cough.*
- *Exclusion: Usual 5-7 days after treatment and note from the doctor to return*
- *Close contacts will need to seek MD for possible exposure treatment.*



Prevention: Know the Children

- Be aware and keep readily available emergency information regarding medical conditions of children
- Know the onset of symptoms for these conditions so that appropriate intervention can be initiated
- Have methods available to treat those children (asthma-inhalers, allergies-benadryl or epi-pens)



Communicable Disease Prevention

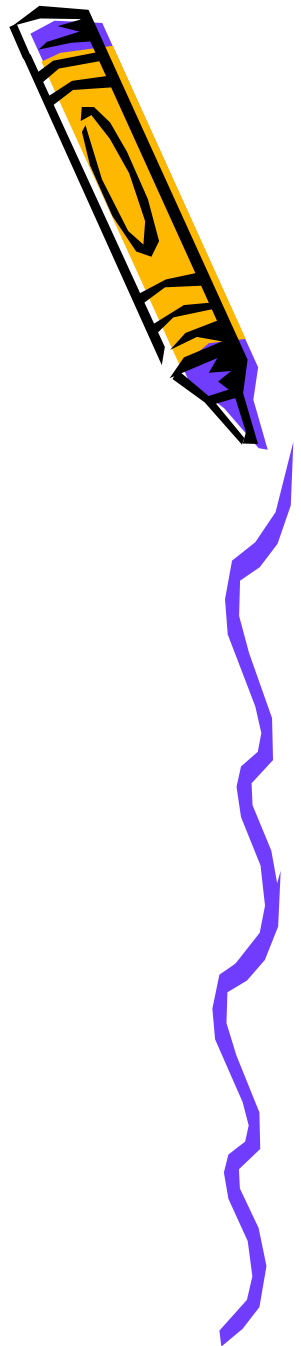


- Hand washing is the number one method to decrease the spread of infectious organisms
- Encourage staff and children alike to participate in proper hand washing activities
- Use approved anti-microbial solutions for cleaning as appropriate
- Make sure all participants in child care programs have up to date immunizations as required by New York State Department of Health
- Isolate or send children home if they show signs of illness (temp., rash, N&V) per policy



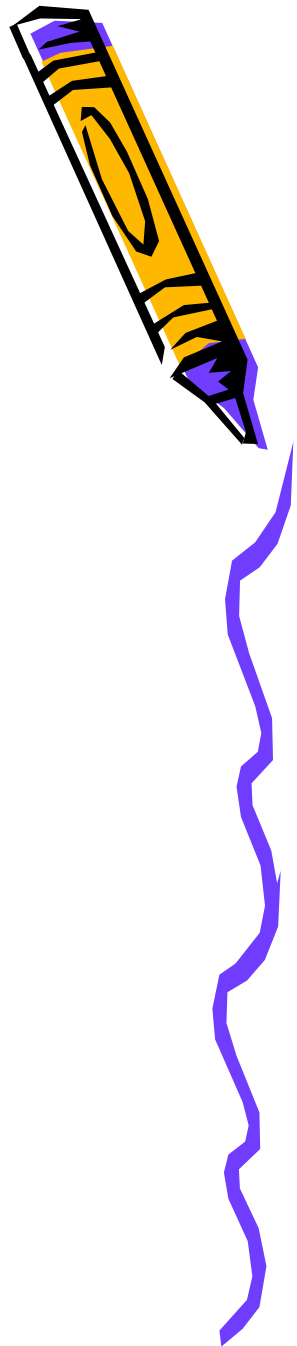
General Prevention Measures:

- Hand washing for 15-20 seconds
- Cleaning and disinfecting
 - bleach or approved manufactured solution per your facility policy
- Daily health checks
- Open communication with parents



Thank you

- Any Questions?????
-?????-



References

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- *New York State Department of Health; www.health.state.ny.us*
- *State University of New York Institute of Technology (2003); Jennifer Maher, RN, SFNP*

