



Childhood Diseases


Information retrieved on 9/20/2006 from:
www.nlm.nih.gov/medlineplus.html



Infectious Mononucleosis

AKA Mono, “Kissing Disease”, Epstein-Barr Viral Syndrome

- Cause: Epstein-Barr virus and Cytomegalovirus
 - Both from the herpes virus family
- Incubation period: 7-14 days


- 
- Commonly transmitted by saliva and close contact

 - MC age group affected is 15-17 year olds
 - Infection may occur at any age
 - Younger children often don't have symptoms
 - Older patients may have fatigue for up to 6 weeks

Gradual onset of symptoms including:

- Sore throat
- Fever
- Headache
- Fatigue

Sore throat becomes progressively worse often accompanied by enlarged tonsils with a whitish yellow covering.

- 
- Enlarged lymph nodes
 - MC cervical & axillary
 - Cervical lymph nodes often painful
 - Rash
 - Pink, measles-like rash
 - more common if given amoxicillin for throat infection
 - Enlarged spleen & liver



Common tests for EB virus include:

- A monospot test (positive for infectious mononucleosis)
- Epstein-Barr virus antigen by immunofluorescence (positive for EBV)
- Epstein-Barr virus antibody titers



Management

- Antiviral medications do not help
 - Most patients recover within 2-4 weeks without medication
 - Fatigue usually resolves within a few weeks
 - may linger for 2 to 3 months


- To relieve typical symptoms...
 - Gargle with warm salt water (sore throat)
 - Rest & fluids
 - Avoid contact sports while the spleen is enlarged



Rubella

AKA Three day measles; German measles

- Viral infection
- Contagious 1 week before onset of rash until 1-2 weeks after rash disappears
- Spread through the air or by close contact
- May be transmitted to fetus by a mother with an active infection

- 
- Rubella is usually a mild, self-limited infection
 - Children generally have few symptoms

■ Signs & Symptoms

- Low-grade fever (<102 F)
- Headache, malaise, runny nose, bloodshot eyes
- Rash with skin redness or inflammation

■ Complications:

- Congenital rubella syndrome
- Transient arthritis
 - common in adolescents and adults with rubella
- Otitis Media (rare)
- Encephalitis (rare)



Tests:


- A rubella serology
- A nasal or throat swab for viral culture

- Lifelong immunity to the disease follows infection
- A rubella vaccine is available



Congenital Rubella Syndrome

“About 25% of infants born to mothers infected with rubella during early pregnancy will develop congenital rubella syndrome associated with a poor outcome.”

- 
- Defects related to congenital rubella are more common during early pregnancy
 - Complications are rare after the 20th week
 - Deafness (MC)
 - Cataracts
 - Cardiac defects
 - Mental retardation
 - Microcephaly
 - Miscarriage or stillbirth may occur



Rubeola

AKA Measles, Red Measles

- Viral infection
- Incubation period: 8 to 12 days before symptoms generally appear
- Spread by contact with droplets from the nose, mouth, or throat of an infected person



Signs & Symptoms:

- Sore throat,runny nose, cough, muscle pain, fever, bloodshot eyes
- Koplik's spots
 - White spots inside the mouth
- Photophobia



Complications:

- Secondary bacterial infections
 - otitis media, bronchitis, or pneumonia
- Encephalitis (~1/1000)

Tests:

- Viral culture (rarely done)
- Measles serology


- Immunity occurs after active infection
- A vaccine is available



Fifth Disease

AKA Parvovirus B19, erythema infectiosum,
“slapped cheek”

- A viral illness characterized by mild symptoms and a blotchy rash
- Once the rash appears, the patient is non-contagious and may return to school or day care

- 
- First sign noticed by parents: bright red cheeks
 - Later a rash appears on the extremities and trunk
 - Fades from the center outwards giving it a “lacy appearance”
 - Rash disappears entirely in 1-2 weeks



Complications

- Generally no complications in normally healthy children
 - Mild and generally benign viral infection
 - Complete recovery can be expected

Tests


- Blood tests for antibodies against Parvovirus B19 are available




Varicella

AKA Chicken Pox

- Cause: varicella-zoster (herpesvirus family)
 - also causes herpes zoster (shingles) in adults
- Very contagious; can be spread by direct contact, droplet transmission, or airborne transmission
- A vaccine is available


- 
- Usually occurs in children younger than ten
 - Adults and older children usually get sicker than younger children
 - Characterized by vague symptoms (fever, headache, tummy ache, or loss of appetite) for 1-2 days before the classic pox rash appears
 - These symptoms generally last 2 to 4 days after the rash appears

- 
- Itchy fluid-filled blisters develop over red spots on the skin (dew drops on a rose petal)
 - Often appear first on the face, trunk, or scalp and spread from there

Complications:

- Secondary infection of the blisters may occur
- Reyes syndrome, pneumonia, myocarditis, and transient arthritis
- Cerebellar ataxia may appear during the recovery phase or later
- Encephalitis (rare)

- Congenital infection
- Newborns are at risk for severe infection (if mother is not immune)

- 
- Chickenpox is usually diagnosed from the classic rash and the child's medical history

Tests:


- Blood tests and tests of the pox blisters themselves can confirm the diagnosis if there is any question



Treatment

■ Antiviral medicines

- skin conditions (eczema or recent sunburn)
- lung conditions (asthma)
- recently taken steroids
- take aspirin on an ongoing basis



In most cases, it is enough to keep children comfortable while their own bodies fight the illness...

Treatment:

- Trim the fingernails
 - reduce secondary infections and scarring
- Oatmeal and/or baking soda baths
- Topical lotions
- Oral antihistamine



Roseola

- Caused by a human herpesvirus 6
- Incubation period: 5 to 15 days
- Spread either through fecal-oral contact or via airborne droplets
- Common in children 3 months to 4 years old
 - MC in those between 6 months and 1 year

Classic presentation

- Fever (up to 105 F) ~3 days (may last 7)
- Fever falls between the 2nd and 4th day
- As the fever falls, the rash appears
 - First on the trunk and then spreads to the limbs, neck, and face
- Rash lasts from a few hours to two days



Symptoms:

- Abrupt onset of high fever
- Irritability
- Rash erupts on the 4th or 5th day of the illness (fever has usually resolved or is dropping by the time the rash appears)

Signs:

- A history of roseola in the community
- A physical exam of rash
- Swollen occipital lymph nodes

- 
- The vast majority of children with roseola fully recover

Complications:

- Febrile Seizure
- Encephalitis (rare)
- Aseptic meningitis (rare)

Treatment :

- No specific treatment
 - usually resolves without complications

Medical Management:

- Acetaminophen and sponge baths (fever)
- If convulsions occur ~>medical evaluation



Hand-Foot-and-Mouth Disease


AKA Coxsackievirus infection

- MC in young children
 - can be seen in adolescents and occasionally adults
- Outbreaks occur most often in the summer and fall



Symptoms

- Fever
- Sore throat
- Loss of appetite
- Headache
- Ulcers in the throat, mouth & tongue
- Vesicular rash on hands, feet, & diaper area

- 
- Infection usually begins in the throat
 - Hands, feet, and diaper area are affected by a vesicular rash (very small blisters)
 - Typically on the palm side of the hands & the sole side of the feet
 - Tender or painful if pressed



Expectations:

- Usually a mild illness
- Generally complete recovery occurs in 5-7 days

Complications:

- Dehydration may occur
 - mouth lesions cause pain with swallowing
- Possible febrile seizures




Scarlet Fever

AKA Scarlatina

- Cause: group A streptococcal throat infection
- Incubation period: generally 1-2 days

Symptoms:

- Sore throat
- Fever, chills
- Abdominal pain, vomiting
- Headache
- Muscle aches
- Generalized discomfort (malaise)
- Swollen, red “strawberry tongue”
- Rash on neck and chest
- Pastia's lines
 - bright red color in the creases of the underarm and groin

- 
- Typically begins with fever & sore throat
 - Strep. produces a toxin that causes a rash
 - Appears 1-2 days after the onset of illness
 - Usually appears on the neck & chest, then spreads over the body
 - Described as "sandpapery" in quality
 - Can last for over a week
 - As the rash fades, peeling (desquamation) may occur (finger tips, toes, and groin area)



Diagnosis:

- Physical examination
 - texture of the rash is more important than the appearance in confirming the diagnosis

Tests:

- Throat culture positive for Group A Strep
- Rapid antigen detection (throat swab)



Scarlet fever was once a very serious childhood disease, but now is easily treatable...

Expectations:

- With proper antibiotic treatment, symptoms should resolve quickly
- Rash can last for up to 2-3 weeks before it is fully resolved

Treatment:

- Antibiotic therapy
- Crucial to preventing rheumatic fever



Complications are rare with proper treatment


Complications include:

- Acute rheumatic fever
- Ear infection
- Adenitis or abscess
- Pneumonia
- Sinusitis
- Meningitis
- Bone or joint problems (osteomyelitis or arthritis)
- Liver damage (hepatitis)
- Kidney damage (glomerulonephritis)

Mumps

AKA Epidemic parotitis

- Viral infection
- Incubation period: 12 to 24 days
- Spread from person-to-person by respiratory droplets or articles contaminated with infected saliva
- MC in children between the ages of 2 and 12
 - can occur in other age groups

- 
- Acute, contagious, viral disease
 - Causes painful enlargement of the salivary or parotid glands
 - Other organs may be involved including the testes, the CNS, and the pancreas

 - After the illness, life-long immunity to mumps occurs
 - A vaccine is available



Symptoms:

- Face pain
- Swelling of the parotid glands
- Fever
- Headache
- Sore throat
- Swelling of the temples or jaw

- Additional symptoms in males: testicle pain & scrotal swelling



Diagnosis:

- Physical examination confirms the presence of the swollen glands
- No testing is usually required

Treatment

- No specific treatment
 - Probable outcome is good even if other organs are involved


Recommendations:

- Warm salt water gargles, soft foods, and extra fluids
- Intermittent ice or heat to the affected area
- Acetaminophen for pain relief



Diphtheria

- Cause: toxin-producing *Corynebacterium diphtheriae*
- Incubation period: 2 to 5 days
- Transmission:
 - Contact with respiratory droplets from infected persons or asymptomatic carriers
 - May also be transmitted by contaminated objects or foods

- 
- Diphtheria may be mild and unrecognized or it may become progressive

 - The bacteria primarily infect the nose and throat
 - Produces a characteristic membrane that is gray to black, tough, and fibrous
 - Membrane can cause airway obstruction

Symptoms :

- Sore throat
 - mild to severe; painful swallowing; hoarseness
- Drooling (airway obstruction)
- Fever and chills
- Bloody, watery drainage from nose
- Croup-like (barking) cough
- Stridor, difficulty breathing, or rapid breathing
- Apnea; Cyanosis

- Note: There may be no symptoms.

Complications

- Diphtheria toxin can damage the heart, nervous system, kidneys, or other organs resulting in disorders such as:
 - Myocarditis ~> heart failure
 - Neurologic palsies or peripheral neuritis ~> uncoordinated movements (develops in 3-7 weeks)
 - Severe nerve damage ~> paralysis
 - Kidney damage or nephritis

Diagnosis

- Characteristic gray pseudomembrane
- Enlarged lymph glands, swelling of the neck or larynx

Tests

- Gram stain of membrane or throat culture to identify *Corynebacterium diphtheriae*

If diphtheria is suspected, treatment should be started immediately, even before the results of bacterial tests are available.



Treatment :

- Diphtheria antitoxin
 - intramuscular or IV injection as soon as the diagnosis is suspected
- Infection is then treated with antibiotics
 - penicillin or erythromycin

- A vaccine is available



Pertussis


AKA: Whooping cough

- Highly contagious bacterial disease
- Spread through respiratory droplets



Symptoms

- Runny nose
- Slight fever (102°F or lower)
- Diarrhea
- Severe, repeated coughs
 - May lead to vomiting
 - May make breathing difficult
 - May cause a short loss of consciousness
- Choking spells in infants

- 
- In children, the coughing often ends with a "whoop"
 - Produced when the patient tries to take a breath
 - Rare in patients under 6 months and in adults
 - The infection usually lasts 6 weeks
 - Cold symptoms (~2 weeks)
 - Progressively worse cough (~4 weeks)
 - Complete resolution (may take months)



Diagnosis

- Usually based on symptoms
 - When symptoms are not obvious, pertussis may be difficult to diagnose...

Differentials

- In very young infants, symptoms may be caused by pneumomonia instead



Complications

- Nose bleeds
- Ear infections
- Pneumonia
- Slowed or stopped breathing (apnea)
- Convulsions
- Seizure disorder (permanent)
- Brain damage from lack of oxygen
- Bleeding in the brain (cerebral hemorrhage)
- Mental retardation
- Death



Expectations:

- In older children, outlook is generally very good
- Infants have the highest risk of death and need careful monitoring

Management

- Cough mixtures, expectorants, and suppressants are usually not helpful and should NOT be used

Treatment:

- Infants <18 months require constant supervision
 - Breathing may stop during coughing spells
- Infants with severe cases should be hospitalized
 - An oxygen tent with high humidity may be used
- If started early enough antibiotics can speed up resolution
- IV fluids (severe coughing spells prevent the patient from drinking enough fluids)


- A vaccine is available

Tetanus

AKA: Lockjaw

Spores in the dirt,
NOT rusty nails


- Cause: toxin of the bacteria *C. tetani*
 - Spores of the bacterium live in the soil and are found around the world (can remain infectious >40 years)
- Incubation period: 5 days to 15 weeks, 7 days average
- A vaccine is available



Infection begins when the spores are introduced into an injury or wound.

Symptoms:

- Spasms and tightening of the jaw muscle
 - "lockjaw"
- Stiffness and spasms of various muscle groups
 - neck, chest, abdominal, and back muscles
 - "opisthotonos"
- Tetanic seizures
 - painful, powerful bursts of muscle contraction
- Irritability
- Fever

- 
- Additional symptoms that may be seen:
 - Excessive sweating
 - Swallowing difficulty
 - Hand or foot spasms
 - Drooling
 - Uncontrolled urination and/or defecation



Complications:

- Airway obstruction
- Respiratory arrest
- Heart failure
- Pneumonia
- Fractures
- Brain damage due to lack of oxygen during spasms

Treatment:

- Antitoxin (control and reverse the tetany)
- Antibiotics (kill *C. tetani*)
- Wound debridement
- Treat symptoms
 - Bedrest with a nonstimulating environment may be recommended
 - Sedation may be necessary (keep the patient calm)
 - Respiratory support with oxygen, endotracheal tube, and mechanical ventilation may be necessary