Something to sneeze at!
Cold vs Flu vs Allergies

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School Health Conference
Regardless of the cause, they all make us feel miserable 😞
Objectives

1. Identify the causes of influenza, colds and allergies
2. Recognize the major symptoms of each illness
3. Classify treatment options for each type of illness
Influenza
Influenza

- Influenza is NOT the stomach flu (gastroenteritis)
- It is a contagious, respiratory illness caused by the influenza virus (A, B, H1N1)
- Infects the nose, throat and lungs
  - Spread by droplets from coughing, sneezing, talking
- Can infect others 1 day before symptoms develop and 5-7+ days after becoming sick
- Variable season: October to May
  - Usually peaks in January and February
Signs and Symptoms

- Fever or feeling feverish/chills
- Cough
- Sore throat
- Runny or stuffy nose
- Severe muscle or body aches
- Headaches
- Fatigue (very tired)
- Some people may have vomiting and diarrhea, though this is more common in children than adults.
Influenza cont’d

• Complications of flu can include:
  – bacterial pneumonia
  – ear infections
  – sinus infections
  – dehydration
  – worsening of chronic medical conditions, such as congestive heart failure, asthma, or diabetes.

• The single best way to prevent the flu is to get a flu vaccine each season
  – “Flu shot” = inactivated (killed) virus
  – “Flu mist” = nasal spray, live attenuated (weakened) virus
    • Flu mist only for healthy people ages 2-59 who are not pregnant
    • Asthmatics or those with/near compromised immune systems may NOT get Flu mist!
Treatment

- REST!
- FLUIDS!
- HAND WASHING!
- Ibuprofen, tylenol or naproxen to relieve pain or fever
- Antiviral medication
  - Shortens duration of flu by several days
  - Works best when given within first 48-72 hours of illness
  - May prevent serious complications such as pneumonia, hospitalization and death
  - **Oseltamivir** (brand name Tamiflu®) is approved for treatment of influenza in persons aged two weeks and older, and for chemoprophylaxis to prevent influenza in people one year of age and older.
  - **Zanamivir** (brand name Relenza®) is approved to treat flu in people 7 years and older and to prevent influenza in people 5 years and older.

- [http://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm](http://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm)
Common Cold

- Over 200 viruses can cause the common cold
- The rhinovirus is the most common type of virus that causes colds
Signs and Symptoms

• Sneezing
• Stuffy or runny nose
• Sore throat
• Coughing
• Watery eyes
• Mild headache
• Mild body aches
Treatment

• REST!
• FLUIDS!
• HAND WASHING! (Same droplet transmission as flu)
• Ibuprofen, tylenol or naproxen to relieve pain or fever
• Hot shower, warm steam bath
• Nasal saline, bulb suction
• Cool mist humidifiers
• Cold medicines?
  – The Food and Drug Administration (FDA) supports the recommendation that (OTC) cough and cold medicines not be used in children under 4 years of age.
  – Overuse and misuse of OTC cough and cold medicines in young children can result in serious and potentially life-threatening side effects.
“But my snot is funny colors! I must need antibiotics!”

– When germs that cause colds first infect the nose and sinuses, the nose makes clear mucus. This helps wash the germs from the nose and sinuses.

– After two or three days, the body's immune cells fight back, changing the mucus to a white or yellow color.

– As the bacteria that live in the nose grow back, they may also be found in the mucus, which changes the mucus to a greenish color. This is normal and does not mean you or your child needs antibiotics.
Allergies
Allergic Rhinitis and Conjunctivitis

• The development of clinical symptoms in response to allergen exposure
• The presence of IgE leading to the activation of mast cells and basophils
The Allergic Inflammatory Response

- Allergen
- Lymphocyte (B Cell)
- Antibodies
- Mast Cell
- Histamine
Sensitization and Clinical Symptoms

- Sensitization to environmental allergens from indoor and outdoor sources require time
  - observed between the 1st and 10th years of life
- Seasonal allergic rhinoconjunctivitis
  - generally not observed during the 1st two years of life
  - minority of children will develop specific IgE antibodies during this early period
Allergic history

• Pattern of Symptoms
  – Seasonal
  – Recurrent exposure to animals
  – Year round

• Response to medications

• Coexisting conditions
  – Asthma, atopic dermatitis, food allergies

• Environmental History
Signs and Symptoms

• Nasal symptoms
  – ITCHING
  – Congestion
  – Sneezing
  – Drainage

• Ocular symptoms
  – ITCHING
  – Redness (Not all red eyes are “pink eye”!)
  – Drainage
  – “Allergic Shiners” – dark circles under the eyes

• Ears and throat: discomfort or ITCHING

• Skin: rash, hives, ITCHING
Common Allergens

• Pollens and Molds
  – Tree Pollen- Late Feb to April
  – Grass Pollen- May & June
  – Weed Pollen- August to October
  – Outdoor Molds- Spring-until frost in the fall
• Animal Dander
• Dust mites
• Roach
Physical Appearance

- Allergic Shiners
- Denny Morgan Lines
- Nasal Crease
- Clear nasal drainage
### Table 1. Bacterial vs. Viral vs. Allergic Conjunctivitis

<table>
<thead>
<tr>
<th>Clinical Finding</th>
<th>Bacterial</th>
<th>Viral</th>
<th>Allergic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilateral eyes</td>
<td>50% to 74%</td>
<td>35%</td>
<td>Mostly</td>
</tr>
<tr>
<td>Discharge</td>
<td>Mucopurulent in younger children</td>
<td>Mild, watery, or “sleepers” only</td>
<td>Rare</td>
</tr>
<tr>
<td>Redness</td>
<td>Common in older children, uncommon in infants and toddlers</td>
<td>Usually</td>
<td>Usually</td>
</tr>
<tr>
<td>Acute otitis media</td>
<td>32% to 39%</td>
<td>10%</td>
<td>No</td>
</tr>
<tr>
<td>Pruritic</td>
<td>No (but many rub eyes)</td>
<td>No</td>
<td>Major</td>
</tr>
</tbody>
</table>

Treatment

• Antihistamines
  – 1st generation (Benadryl*, chlorpheniramine*)
    • Dry mouth, constipation, drowsiness
  – Newer generation (Zyrtec*, Claritin*, Allegra*)
    • Less sedating, less “drying”, last 12-24 hours

• Nasal sprays
  – Steroids (Nasonex, Flonase)
  – Antihistamines (Astelin, Astepro, Patanase)
  – Combination (Dymista)

• Antihistamine eye drops (Patanol, Pataday, Bepreve, Alaway*, Zatidor*)
  * = OTC
Treatment cont’d

• Leukotriene antagonist: Singulair
  – May reduce nasal congestion
• Nasal saline spray or sinus rinses
  – Neti pot
Environmental Controls

- Avoid exposure to allergens
  - Keep windows closed and use air conditioner during pollen and mold seasons
  - Keep pets out of bedroom, weekly washing, wash hands after contact
- Keep humidity in house between 35-50%
- Avoid exposure to tobacco smoke and other airborne irritants
- Mattress and pillow encasements (dust mites)
- Weekly washing of bedding, towels and clothing in hot water (130 degrees!)
- Upkeep of furnace filters
- Frequent vacuuming of carpets and cleaning of home
Case example

• 5 y/o female with persistent cough
• Treated with Zyrtec and Flonase
• Allergy testing deferred
• At 6 week f/u:
  – Grandma: “Her cough is so much better!”
  – Mom: “What? She still coughs every night!”
• Allergy skin testing was completed
  – Positive to trees, grasses, weeds, molds, cat and American cockroach
  – Where does the child sleep?
  – Are there pets in the home?
<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Cold</th>
<th>Flu</th>
<th>Allergies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aches &amp; Pains</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Cough</td>
<td>Yes</td>
<td>Yes</td>
<td>Maybe</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>No</td>
<td>Yes</td>
<td>Maybe</td>
</tr>
<tr>
<td>Fatigue, Weakness</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Fever</td>
<td>Maybe</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Headache</td>
<td>No</td>
<td>Yes</td>
<td>Maybe</td>
</tr>
<tr>
<td>Itchy watery eyes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Rash</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Sneezing</td>
<td>Yes</td>
<td>Maybe</td>
<td>Yes</td>
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<tr>
<td>Sore Throat</td>
<td>Yes</td>
<td>Maybe</td>
<td>Maybe</td>
</tr>
<tr>
<td>Stuffy Nose</td>
<td>Yes</td>
<td>Maybe</td>
<td>Yes</td>
</tr>
</tbody>
</table>
References

• “Allergies” www.aaaai.org
• “Key Facts about Influenza (Flu) and Flu Vaccine” www.cdc.gov
• “Common cold and runny nose” www.cdc.gov
• “Cold, flu or allergy: Figure out what’s ailing you” http://newsinhealth.nih.gov/2005/October2005/docs/01features_02.htm