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### For Clinicians

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Conjunctivitis can result from many causes. These causes include viruses, bacteria, allergens, contact lens use (especially the extended-wear type), chemicals, fungi, and certain diseases.

Infected children should be allowed to remain in school once any indicated therapy is implemented, except when viral or bacterial conjunctivitis is accompanied by systemic signs of illness. However, infected students should refrain from attending school if their behavior is such that close contact with other students cannot be avoided (Red Book).

# Viral Conjunctivitis

Viral conjunctivitis can be caused by the following viruses, with adenoviruses being the most common cause:



Colorized transmission electron micrograph of adenovirus. (<u>CDC Public Health Image</u> <u>Library</u> (<u>http://phil.cdc.gov/phil/details.as</u> <u>p?pid=10010</u>)

- Adenoviruses
- Picornaviruses, such as enterovirus 70 and coxsackievirus A24
- Rubella virus
- Rubeola (measles) virus

- Herpesviruses, including

   Herpes simplex virus
  - Varicella-zoster virus, which also causes chickenpox and shingles
  - Epstein-Barr virus, which also causes infectious mononucleosis (mono)
- Newcastle disease virus, a virus that infects birds but that can also cause conjunctivitis in humans exposed to infected birds

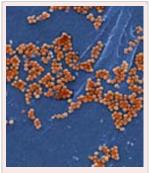
Viral conjunctivitis is highly contagious. Most viruses that cause conjunctivitis are spread through direct hand-to-eye contact by hands that are contaminated with the infectious virus. Hands can become contaminated by coming in contact with infectious tears, eye discharge, fecal matter, or respiratory discharges.

## **Bacterial Conjunctivitis**

The bacteria that most commonly cause bacterial conjunctivitis in the United States are

- Staphylococcus aureus
- Haemophilus species
- Streptococcus pneumoniae

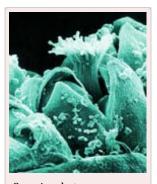
 Pseudomonas aeruginosa Bacterial conjunctivitis is highly contagious. Most bacteria that cause conjunctivitis are spread through direct hand-to-eye contact from contaminated hands. People can get conjunctivitis just by touching or using something that has been infected by a person who has the eye infection. This is why people who are diagnosed with conjunctivitis, particularly children, should stay home until after treatment is started to avoid infecting others. Infectious conjunctivitis (viral or bacterial) can also be spread by large respiratory tract droplets. Bacterial conjunctivitis is less common in children older than 5 years of age.



This scanning electron micrograph depicts numerous clumps of methicillin-resistant *Staphylococcus aureus* bacteria, commonly referred to by the acronym. (<u>CDC Public Health Image</u> <u>Library</u> (<u>http://phil.cdc.gov/phil/details.as</u> <u>p?pid=10048</u>) Globally, the bacterium *Chlamydia trachomatis* (trachoma) is the leading cause of preventable blindness of infectious origin. Trachoma is a chronic follicular conjunctivitis, which is transmitted from person-to-person, through shared items or by flies. Learn more about trachoma and other hygiene-related diseases (http://www.cdc.gov/healthywater/hygiene/disease/trachoma.html)

Topical antimicrobial therapy is indicated for bacterial conjunctivitis, which is usually distinguished by a purulent exudate.

# Allergic Conjunctivitis



Scanning electron micrograph of an Ambrosia trifida plant, more commonly known as ragweed. (<u>CDC Public Health Image</u> <u>Library</u> (<u>http://phil.cdc.gov/phil/details.as</u> <u>p?pid=243</u>)

> Allergic conjunctivitis is common in people who have other signs of allergic disease, such as hay fever, asthma, and eczema. It is caused by the body's reaction to certain substances to which it is allergic, such as

- Pollen from trees, plants, grasses, and weeds
- Dust mites
- Animal dander
- Molds
- Contact lenses and lens

solution

#### Cosmetics

#### **Related Materials**

Key Facts about adenovirus 14 (http://www.cdc.gov/ncidod/dvrd/revb/respiratory/eadad14-factsht.htm)

Causes of Conjunctivitis (about/causes.html)

Causes of Newborn Conjunctivitis (newborns.html#b)

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