



School Health Advisory: COXSACKIE VIRUSES & OTHER ENTEROVIRUS INFECTIONS

“Enteroviral infections are so common that we usually don’t see them in children older than 10 years because they have already had the infection. Also we rarely see complications from the infections.”

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CLASSIFICATION

ENTEROVIRUSES include:

- Poliovirus
- Group A and Group B Coxsackie viruses
- Echoviruses
- Numbered Enteroviruses.

Enteroviruses are RNA viruses of genus picornaviridae that includes more than 100 distinct serotypes.

SYMPTOMS

Most common manifestation is a nonspecific febrile (feverish) illness. Other manifestations:

- **RESPIRATORY:** runny nose (coryza), sore throat (pharyngitis), red swollen gums (herpangina), inflamed mouth (stomatitis), stridor, wheezing and pneumonia.
- **SKIN:** Hand-foot-mouth disease, nonspecific rashes (exanthems)
- **NEUROLOGIC:** Aseptic meningitis, encephalitis, and motor paralysis (acute flaccid myelitis)
- **GASTROINTESTINAL/UROGENITAL:** Vomiting, diarrhea, abdominal pain, hepatitis, pancreatitis, and inflamed testis (orchitis)



- **EYE:** Acute hemorrhagic conjunctivitis and uveitis (red eyes)
- **HEART:** Inflammation around the heart (myopericarditis)
- **MUSCLE:** Muscle pain in chest (pleurodynia)

EPIDEMIOLOGY

Enteroviruses are common and distributed worldwide. The incidence and severity of the disease are typically greatest in infants and young children. Infections occur more frequently in tropical areas where there is poor sanitation, poor hygiene, and dense population. In temperate climates, the infection occurs mostly in the summer and fall (June to October in northern hemisphere).

- Humans are the only known carrier of enteroviruses although some primates can become infected.
- The majority of the infections are asymptomatic.
- Enteroviruses are spread by fecal-oral and respiratory routes and from mother to infant prenatally, in the peripartum period, and possibly via breastfeeding. Transmission can also occur from fomites (surfaces of objects that have been contaminated) and from contaminated food and water.
- Incubation period is usually 1 to 6 days.

TREATMENT

- There is no specific therapy for enteroviruses.
- Immune Globulin Intravenous (IGIV) can be tried in meningoencephalitis, life-threatening neonatal infections, transplant recipients, cancer patients, and viral myocarditis.

CONTROL MEASURES

- Hand hygiene, especially after diaper changing and respiratory hygiene (sneezing into elbow) are important in decreasing spread of enterovirus within families and institutions.
- Avoid contaminated utensils and fomites.
- Disinfect all surfaces of possible contact.

COXSACKIE A16 CAUSES (BUT NOT EXCLUSIVELY) HAND – FOOT – MOUTH DISEASE

SIGNS AND SYMPTOMS

- Fever
- Sores that are small but painful on the throat, gums, tongue and inside the cheeks
- Rashes
- Blisters on hands, soles of feet, and diaper area
- Headaches
- Poor appetite



CALL THE PEDIATRICIAN:

- If the child complains of neck pain, chest pain, difficulty breathing or is listless and lethargic, their doctor should be consulted.



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- If the child's mouth sores prevent swallowing their doctor should be consulted.
- If meningitis is suspected a spinal tap will be performed to have the laboratory test the spinal fluid.
- If myocarditis is suspected a chest x-ray and electrocardiogram (EKG) will be performed.

TREATMENT

- There is no specific treatment for Hand – Foot – Mouth disease.
- Acetaminophen may be recommended for pain and fever.
- A numbing mouthwash may be advised.

PROGNOSIS

- Most children recover in 7 to 10 days.
- Myocarditis may lead to heart failure and even sudden death.
- Newborn can have a more severe illness.

PREVENTION

- Good hand-washing will reduce the spread of infection.
- A child with an enteroviral infection should stay out of school, swimming pools, and child care settings during the first few days of the infection.

REFERENCES

1. Coxsackie Viruses and Other Enterovirus Infections:
<https://www.healthychildren.org/English/health-issues/conditions/infections/Pages/Coxsackieviruses-and-Other-Enterovirus-Infections.aspx>
2. Red Book 2018-2020 –Enteroviruses 331-334

