

## Outbreak of Acute Flaccid Myelitis (AFM)

The CDC is investigating a surge in cases of a rare syndrome, called AFM, which causes inflammation in spinal cord and results in the sudden onset of a weakened limb or limbs that may lead to paralysis. The majority of cases (90%) are in children. In this current outbreak, the average age is four (4) years old.

Although the condition is not new, there was a significant increase in cases beginning in 2014, which coincided with a large outbreak of a particular enterovirus D68 (EV-D68), but samples of blood, spinal cord and stool have not yielded a common cause or pathogen (germ). All have tested negative for Polio.

Interestingly, even years (2014 and 2016) have resulted in a greater number of cases than the odd years of 2015 and 2015. It is too soon to determine if 2018 will have a larger number of cases like the two previous even years, but with the CDC confirming 38 cases of AFM through September and more states and local news are reporting new cases in 6 states (Minnesota, Colorado, Illinois, Washington, Texas, New Jersey and New York). The first significant outbreak was in Aug -- Dec of 2014 with 120 cases throughout 34 states. In 2015, there were 22 cases in 17 states; 2016, there were 149 cases in 39 states, which includes Washington, DC. Last year (2017), there were 33 cases in 16 states.

There are several groups of viruses that can cause AFM, including enteroviruses (both polio and non-polio), West Nile virus, and some adenoviruses. All of these viruses are spread much like a cold or flu, except for West Nile Virus which typically is transmitted by mosquitos but can also be spread from mother to child in pregnancy, childbirth or breastfeeding. AFM has also been associated with environmental toxins and genetic disorders but, again, no common cause has been found.

Exposure to the viruses may occur from close contact with infected individuals, particularly via sneezing or coughing, contact with contaminated surfaces or objects or from mosquito bites. There may be other causes but these seem to be the most common.

Symptoms include a sudden onset of arm or leg weakness, with loss of reflexes and muscle tone; some may have trouble or be unable to urinate. Other symptoms that are reported include difficulty swallowing or having slurred speech, facial or eyelid droop, facial weakness, or difficulty moving the eyes. There is also the possibility of pain in the limbs though not usually numbness or tingling. The most ominous symptom is respiratory muscle spasm resulting in the ability to breathe on one's own.

Prevention includes keeping an adequate distance from those that appear sick with a cold or flu, particularly if there has been reported limb or other muscle weakness. Frequent and, if young, supervised handwashing with soap and water, cough and sneeze etiquette (<https://www.youtube.com/watch?v=CtnEwwUWDo0>), and frequent disinfecting of common or contaminated surfaces, with an approved disinfectant capable of killing enteroviruses and adenoviruses, should be used. It is recommended that immunizations be up-to-date and follow current guidelines.

There is no known cure but most recover, although some will need ongoing supportive care. Treatment is supportive and generally appropriate care is decided by a neurologist. If respiratory muscles are involved, management of airway and breathing, with intubation and a ventilator may be necessary. Many of these patients will be hospitalized and diagnosed with physical exam and MRI.

**What EMS should know:** with AFM already in 16 states, EMS Workers should be aware of this syndrome and discuss management and transport with Medical Direction. The CDC is recommending to parents and caregivers that any child who complains of/shows signs of limb weakness have immediate evaluation by appropriate health care professionals.



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There should be increased attention to infection control practices including the use of Standard Precautions plus any other pertinent PPE, based on contact and treatment of the patient, hand hygiene and particular attention paid to appropriate medical equipment & truck disinfection.

For more information on AFM, see <https://www.cdc.gov/acute-flaccid-myelitis/>

<http://www.cdc.gov/acute-flaccid-myelitis/afm-surveillance.html>

<https://www.cdc.gov/acute-flaccid-myelitis/about-afm.html>

<https://www.cdc.gov/acute-flaccid-myelitis/references.html>

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