



Sudden onset of limb weakness could signal acute flaccid myelitis or polio

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In anticipation of enterovirus (EV) season this summer and fall, the Centers for Disease Control and Prevention (CDC) is encouraging pediatricians who encounter patients with sudden onset of limb weakness to have a high index of suspicion for acute flaccid myelitis (AFM), which has been associated with EV infections.

Pediatricians also should rule out poliovirus infection as a cause of limb weakness and ensure children are receiving routine immunizations.

The CDC began tracking AFM in 2014, when a cluster of cases emerged in the United States. AFM is characterized by a sudden onset of flaccid weakness and lesions in the gray matter of the spinal cord, which can lead to lifelong paralysis. While uncommon, this illness occurs each year mainly among young children.

To date, 686 cases have been confirmed, with case increases seen in 2016 and 2018.

Of the 238 cases in 2018 in which laboratory results were available, 50% were enterovirus/rhinovirus (EV/RV) positive, and the most common virus typed was EV-D68. Additional research has demonstrated EV antibodies in the spinal fluid of children with AFM, and EV-D68 RNA was isolated from the spinal cord anterior horn cells in a child who died acutely from the illness. Evidence now points to EV-D68 as the main cause of the biennial increases in cases, although other viruses, including other EVs, have been detected in patients with AFM.

Another AFM surge was anticipated in 2020, but nonpharmaceutical interventions for COVID-19 control likely caused fewer cases than expected. These interventions, including mask wearing, social distancing, isolation and quarantine recommendations, interrupted circulation patterns of many respiratory viruses, including influenza, respiratory syncytial virus and EV-D68.

As these interventions have been relaxed with COVID-19 vaccines widely available for children ages 6 months and older, many viruses have started to circulate again. It is unclear, however, if their circulation will return to previous levels and seasonal patterns. In addition, children who were not exposed to viruses due to nonpharmaceutical interventions may be more susceptible to infection. Although AFM is an uncommon outcome of EV-D68 infection, virus circulation could lead to a larger number of cases in 2022.

Increasing awareness

The CDC is continuing its campaign to increase pediatricians' awareness and knowledge of AFM.

Clinicians should suspect AFM in children with sudden onset of limb weakness who have a prodromal febrile or respiratory illness, especially between August and November. These patients should be hospitalized immediately to monitor for serious outcomes of AFM, including respiratory failure and autonomic instability. It is important to collect clinical specimens (spinal fluid, nasopharyngeal swab, serum and stool) as soon as possible to improve chances of detection and isolation of an infectious pathogen. Two whole stool samples should be collected more than 24 hours apart to rule out poliovirus as a cause.

Early consultation with neurology and infectious disease specialists can help ensure adequate patient management and testing.

The CDC is reminding pediatricians to continue to provide routine immunizations according to the recommended schedule (<http://bit.ly/33ekBFE>). The enteroviruses responsible for AFM are different from poliovirus but are within the same virus family (*Picornaviridae*) and cause acute flaccid weakness that appears clinically similar. Wild poliovirus was eliminated in the United States in 1979, and the last imported case occurred in 1993; however, polio and other vaccine-preventable diseases remain a threat in other parts of the world.

With disruptions and temporary suspension of many routine vaccination programs worldwide during the COVID-19 pandemic, ongoing challenges to public health and health care infrastructure, and international travel restrictions lifted, increased vigilance for possible cases of polio is important along with maintaining high routine childhood vaccination coverage.

Pediatricians should carefully evaluate any child with polio-like symptoms, especially in cases of unexplained acute flaccid weakness when the child is unvaccinated, has traveled abroad or was exposed to someone who recently traveled to an area where polio still occurs. This includes testing two whole stool specimens and two throat swabs at least 24 hours apart to rule out poliovirus infections in children, taking a thorough travel history and verifying childhood immunization records, especially for poliovirus vaccination.

Any patient suspected to have AFM or polio should be reported to local and state public health authorities as soon as possible.

AFM educational resources

The CDC has several resources to educate pediatricians and front-line clinicians on AFM. A poster called "Head, Shoulders, Knees, and Toes" (<https://bit.ly/3ajdyVE>) can help evaluate proximal muscle weakness,

as AFM commonly affects the proximal muscles to a greater degree than distal muscles. In addition, a six-part AFM course developed in partnership with the AAP is available for free on PediaLink (<https://bit.ly/3OMp9vn>).

A children's book called *No Time for The Moon* was created in collaboration with the Siegal Rare Neuroimmune Association to help children and families affected by AFM understand the condition and provide support through their rehabilitation journey. It will be available soon at <https://wearesrna.org/no-time-for-the-moon/>.

While the next AFM surge cannot be predicted, the CDC remains watchful for cases of acute flaccid weakness and encourages pediatricians to educate themselves about AFM and polio.

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Resources

- [CDC AFM webpage](#)
- [Information for clinicians on AFM](#)
- [CDC polio webpage](#)
- [Information for clinicians on polio](#)
- [AAP AFM webpage](#)