

Multisystem inflammatory syndrome in children (MIS-C)



What is multisystem inflammatory syndrome in children (MIS-C)?

MIS-C can happen when different organs in the body get inflamed. This may include the:

- Heart
- Lungs
- Kidneys
- Brain
- Eyes
- Intestines
- Stomach

MIS-C results in inflammation (swelling) of the blood vessels (like with Kawasaki disease and toxic shock syndrome). Most children have a complete recovery.

MIS-C:

- Is very rare
- Happens 3 to 4 weeks after a child has either:
 - Had COVID-19, or
 - Been exposed to someone with COVID-19
- Seems to be most common in school-aged children
- Can be treated with medicines that control swelling and help avoid organ damage (such as to the heart)

What causes MIS-C?

Doctors and scientists do not know what causes MIS-C. We do not know why some children get MIS-C and others do not. We also do not know if children with certain health problems are more likely to get MIS-C.

We do know that:

- COVID-19 is caused by the SARS-CoV-2 virus.
- Many children with MIS-C either had this virus or had been around someone with COVID-19.

MIS-C was only just discovered in April 2020, and we continue to learn more.

In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.

MIS-C, continued

What are the possible symptoms?

Your child may have one or more of these:

- Fever (temperature of 100.4° F or higher)
- Abdominal (belly) pain
- Vomiting (throwing up)
- Diarrhea (loose stools)
- Red or cracked lips
- Swelling or redness of his hands or feet
- Muscle aches
- Sore throat
- Neck pain
- Rash
- Red eyes
- Feels very tired
- Loss of taste or smell (for no other known reason)
- Headache
- Confused
- Acts irritable

What tests could my child have?

Your child's doctor may do tests to look for swelling or other signs of disease. These tests may include:

- Blood tests
- Chest X-ray (CXR)
- Electrocardiogram (EKG). This is to check the rhythm of your child's heart.
- Echocardiogram (echo). This is an ultrasound of your child's heart.
- Ultrasound of your child's abdomen. This is to check the size of your child's organs.
- Urine tests

What is the treatment?

Your child's doctor may order different medicines to help reduce swelling and protect your child's heart, kidneys and other organs. Medicines may include:

- Intravenous immunoglobulin (IVIG)
- Aspirin
- Corticosteroids

What will happen after we go home?

Be sure to follow-up with your child's pediatrician – this is very important. Your child may also need to follow-up with specialty doctors such as:

- Infectious disease doctor
- Cardiologist (heart doctor)
- Rheumatologist (immune system doctor)

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MIS-C, continued

What else do I need to know?

DO:

- Give your child aspirin for as long as your child's heart doctor tells you.
- Make sure your child gets the influenza (flu) vaccine.

DO NOT:

- If your child got IVIG, he should NOT get any live-virus vaccines for 11 months. This includes the measles-mumps-rubella (MMR) and varicella (chickenpox) vaccines.
 - IVIG can last up to 11 months. It may prevent live-virus vaccines from working well.
 - See your child's pediatrician if you plan to travel somewhere where measles is still common (if your child has not had 2 doses of MMR before he got sick).
- Your child should NOT take part in sports or vigorous activity until cleared by the heart doctor.

When should I call the doctor?

Call your child's pediatrician if your child has any of these:

- Fever (temperature of 100.4°F or higher) for more than 24 hours without any other reason
- Gastrointestinal (GI) symptoms such as:
 - Stomach pain
 - Vomiting (throwing up)
 - Diarrhea (loose stools)
 - Blood in his stool
 - Does not want to eat or drink
- Is exposed to chickenpox, measles or the flu virus. This is especially important if your child is still taking aspirin.

Also call if you have any questions or concerns about how your child looks or feels

Where can I find more information?

You may visit the Centers for Disease Control and Prevention (CDC) website for more information:

[cdc.gov/coronavirus/2019-ncov/daily-life-coping/children/mis-c.html](https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/children/mis-c.html)

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This teaching sheet contains general information only. Talk with your child's doctor or a member of your child's healthcare team about specific care of your child.

In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.