

MCADD Basics

Medium Chain acyl-CoA dehydrogenase deficiency (MCADD) is a type of inherited fatty acid oxidation disorder that occurs if both parents carry the gene for MCADD. The disorder causes problems breaking down fat into energy for the body.

The enzyme that breaks down certain fats in the foods we eat is either missing or not working properly. The body can then not use fat for energy and must rely only on glucose. When the glucose is used up, the body tries to use fat without success.

When illness occurs, bodies need extra energy to fight illness. Children with MCADD cannot create the extra energy from their fat stores and are then at risk for a metabolic crisis.

Many states, including California, routinely check a newborn's blood during the first week of life to see if the infant has MCADD. This screening allows for early treatment.



How can teachers help?

- Tell parents when sickness is going around that may place a child with MCADD at risk.
- Let parents know if the child is unable to focus in school, seems overly fatigued or is acting differently than usual.
- Inform parents when the class will be outside in hot weather for a long period of time (energy is required to keep cool; a child with MCADD may need to sit in the shade or have extra nutrients to maintain energy).

Parents should always be notified IMMEDIATELY if a child with MCADD is experiencing extreme fatigue or other symptoms of illness.

Signs of MCADD

Symptoms of MCADD usually occur for the first time between three months and two years of age. The symptoms are often brought on when a child stops eating, usually because of a common illness like the flu, an ear infection, or a cold.

Metabolic Crisis

MCADD can lead to a metabolic crisis. The symptoms may include fever, diarrhea, and/or vomiting. This is usually followed by low blood sugar. If the metabolic crisis is not treated, it can lead to breathing problems, coma or death. Prompt treatment can prevent these devastating consequences. Due to early diagnosis and education, many

patients will never experience a metabolic crisis.

Hypoglycemia

If a child with MCADD goes too long without food, low blood sugar (hypoglycemia) can occur, with or without symptoms of a metabolic crisis. Low blood sugar can cause weakness, shakiness, dizziness, or cold, clammy skin.

Common Symptoms

Symptoms occur after a child has not eaten for more than a few hours. Some of the first symptoms may include: sleepiness, behavioral changes, irritable mood, poor appetite, low energy, fatigue, and/or vomiting.

Preventing Symptoms

When symptoms occur, a high carbohydrate drink or starchy snack may help. To prevent symptoms from occurring, children with MCADD may need to eat or drink more often than their classmates.

Children who are sick often do not want to eat, or they vomit and cannot keep food down. If this happens, the **PARENTS NEED TO BE CALLED IMMEDIATELY**. The child may need to go to the Emergency room for intravenous treatment.

Treatment

Treatment can include:

- Avoid going a long period of time without food.
- A low fat, high carbohydrate diet (limiting fat intake to 25-30%).
- Prescription L-carnitine supplements that help the body make energy and break down fat.
- IV treatment in the emergency room if the child vomits or refuses to eat.

Tips to Remember

- ▶ The child may look and feel fine one minute and then have a severe problem the next. To reduce the chance of symptoms, encourage the child to:
 - Stay well hydrated
 - Always eat during snack time
 - Tell the teacher if he or she feels ill
 - Monitor how they feel in hot weather or after physical activity
- ▶ Children with MCADD may need more nutrients than their peers to maintain their energy levels and function in school.
- ▶ Most children with MCADD perform very well in school. Parents want the teacher to treat their child the same as all the other students but also to realize that MCADD can be very serious.
- ▶ The teacher should watch for signs that might indicate a problem.
- ▶ Depending on the severity of the child's MCADD, the child may not have any symptoms. It is important to talk to the parent to know what to look for in case the child needs assistance.

Additional resources

Contact the Regional
Metabolic Clinic at
(510) 752-5101

For more information visit:

<http://newenglandconsortium.org/brochures/educators-guide-to-mcadd.pdf>

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult with your doctor. If you have questions or need more information about your medication, please speak to your pharmacist. Kaiser Permanente does not endorse the medications or products mentioned. Any trade names listed are for easy identification only.