

Sickle cell disease (SCD): effects of the weather



Could my child's pain be related to the weather?

- Changes in weather can affect children with sickle cell disease.
- Extreme temperature changes, either hot or cold, may cause a vaso-occlusive episode or VOE (called a pain crisis in the past).

How does the weather affect my child?

In cold weather, your child's body can get too cold. Cooling of the skin is a problem for people with sickle cell disease.

- When the skin gets very cold, the blood vessels in the body get smaller. This can slow down the blood flow to the skin, bone and muscles.
- Cooling of the skin and tissues also increases the amount of cells that are sickling. The sickle cell hemoglobin can cause the red blood cells (RBCs) to change shapes – from the normal round shape into a crescent (or sickle) shape.
- The sickle-shaped RBCs are sticky and do not pass well through blood vessels. As a result, blood vessels can sometimes get clogged. This prevents blood from flowing through them.
- A clogged blood vessel is called an "occlusion." Occlusions in blood vessels can lead to a painful vaso-occlusive episode (VOE).

In hot weather, your child can get dehydrated (too dry) because of the extra body water lost through sweating.

What symptoms could my child have?

Your child may have 1 or more of these:

- Back, arm or leg pain
- Shivers when too cold
- Sweats a lot if it is hot
- Very thirsty for fluids
- Dry skin or lips

How can I protect my child?

Children with sickle cell disease may play, exercise and go outside. **It is important to keep them from getting too hot, too cold or too tired.** You can do some things to decrease the risk of problems your child might have from the weather.

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

SCD: effects of the weather, continued

In cold weather

Make sure your child:

- Avoids very cold temperatures when possible.
- Covers themselves well in cold winter months. Have them wear winter coats, hats, scarves and gloves to keep the skin from cooling too much.
- Dresses in layers so they do not get too hot. This will prevent extreme changes in body temperature.
 - Sweating causes the skin to cool down and may slow down the blood flow. This could cause a vaso-occlusive episode (VOE).
 - Keep a jacket or sweater nearby, even in the summer months. This is helpful when your child is indoors with air conditioning for long periods of time and gets too cold.
- Drinks enough fluids to stay well-hydrated.
 - Most often, it is OK to give your child at least one 8 ounce (oz) cup of water for every year in age and then up to no more than 10 to 12 cups of water by age 10 years. For example: for a 7 year old, you may give your child at least seven 8 ounce (oz) cups of water.
 - See the water chart on page 3 for more details.

In hot weather

Make sure your child:

- Drinks enough fluids to:
 - Stay well-hydrated.
 - Keep up with water loss in the body caused from sweating a lot.
- Takes breaks in the shade or goes inside often; at least every 20 minutes is advised.
- Avoids going into cool air conditioning when very sweaty, such as after being in the sun or exercising outside.
- Dresses in layers so they can take off clothes if they get too hot and start to sweat.
- Does not swim in water that is too cold. Limit their time in the water so they do not get chilled.
- Dries off their whole body **right away** after getting out of the pool or playing in the water. Have them change into dry clothes **right away**.
- Has extra towels to avoid being wrapped up in a wet towel.

How can I help prevent my child from getting dehydrated?

Hot weather can cause sweating, which can cause the body to lose too much water. This can lead to dehydration and a vaso-occlusive episode (VOE). To help prevent this:

- Have your child drink lots of water. See the water chart on page 3 for more details.
- Ask your child's care team how much fluid your child needs each day to stay well-hydrated if you are unsure.

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SCD: effects of the weather, continued

When does my child need more fluids?

Your child needs more fluids when they:

- Have pain.
- Are very active.
- Are traveling.
- Are in hot weather.

Use the chart below to know how much water to give your child. Talk with your child’s care team if you have questions.

Child's weight in pounds (lb)	Child's weight in kilograms (kg)	Number of 8 ounce (oz) cups each day
10 to 20 lb	4 to 5 kg to 9 kg	2 to 4 cups
20 to 30 lb	9 to 14 kg	4 to 6 cups
30 to 40 lb	14 to 18 kg	5 to 7 cups
40 to 60 lb	18 to 27 kg	7 to 9 cups
More than 60 lb	More than 27 kg	10 or more cups

What should I do if my child is sick?

- Follow your child’s sickle cell provider’s advice for what you should do.
- Call your child’s provider and **get medical care right away** anytime your child has a fever of 101°F (38°C) or higher.
- During the time when the sickle cell clinic is closed (between 5 p.m. and 8 a.m. during the week and on weekends and holidays), call the hematologist on call before going to the hospital. They will call the emergency department (ED) and help with your child’s care.
- **ALWAYS** tell the ED doctors and staff that your child has sickle cell disease. Also tell them which sickle cell clinic they visit.

For more details on sickle cell disease and services, visit the Children’s Healthcare of Atlanta website at choa.org/sicklecell.

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.

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