

Bone Marrow Suppression During Cancer Treatment in Children



What is bone marrow suppression in children?

Bone marrow is spongy tissue inside some of the larger bones. It makes most of the body's blood cells. Bone marrow suppression is when fewer blood cells are made in the bone marrow. It's a common side effect of some strong medicines, such as chemotherapy (chemo). Bone marrow suppression can cause:

- **Anemia.** This is a decrease in red blood cells, which carry oxygen.
- **Neutropenia.** This is a decrease in neutrophils. These are a type of white blood cell that fight infection.
- **Thrombocytopenia.** This is a decrease in platelets. These are cells that help stop bleeding.
- **Pancytopenia.** This is a decrease in all of these types of blood cells.

What causes bone marrow suppression in a child?

Chemotherapy medicines make it harder for the bone marrow to make blood cells the way it normally does. Nearly all chemo medicines cause a drop in blood cell counts. The drop in blood cell counts varies depending on which medicines are used for your child's treatment. Radiation therapy cancer treatment can also sometimes suppress bone marrow depending on the site treated.

Which children are at risk for bone marrow suppression?

A child is more at risk for bone marrow suppression if they are having chemo for cancer.

What are the symptoms of bone marrow suppression in a child?

Symptoms can occur a bit differently in each child.

Symptoms of low platelets (thrombocytopenia) can include:

- Easy bruising
- Bleeding from the nose, gums, or mouth
- Tiny red spots on the skin (petechiae)
- Blood in the urine
- Dark or black bowel movements

Symptoms of low white blood cells (neutropenia) can include:

- Fever and chills
- Rash
- Diarrhea
- Mouth sores
- Sore throat or pain when swallowing
- Pain or burning when passing urine
- Cough or shortness of breath

- Signs of infection anywhere in the body, such as swelling, pus, redness, warmth, and pain

Symptoms of low red blood cells (anemia) can include:

- Extreme tiredness that doesn't get better with rest
- Pale skin, lips, gums, and nail beds
- Increased heart rate
- Faster breathing rate
- Tires easily with exertion
- Dizziness
- Weakness
- Shortness of breath

Many of these symptoms may be caused by other health problems. Make sure your child sees their healthcare provider for a diagnosis.

How is bone marrow suppression diagnosed in a child?

A blood test is used to check a child's blood cell counts regularly when a child is having chemo. Many parents like to keep track of their child's blood counts to record their progress. Ask your child's healthcare provider what levels are acceptable for your child during cancer treatment.

How is bone marrow suppression treated in a child?

Treatment for bone marrow suppression will depend on your child's symptoms, age, and general health. It will also depend on how bad the condition is. While your child is having chemo, their blood cell levels will be checked often. Your child may be given medicines to help the bone marrow make more blood cells. Talk with your child's healthcare providers about the risks, benefits, and possible side effects of all medicines.

To help prevent bleeding, have your child:

- Not do strenuous activity, contact sports, or heavy lifting
- Not blow their nose too hard or cough hard
- Not shave any part of their body with a blade razor (use an electric razor)
- Use a soft toothbrush and ask their healthcare provider whether they can floss their teeth
- Not take medicines that can raise the risk of bleeding. These include anti-inflammatory medicines like ibuprofen.

To help prevent infections, have your child:

- Use an antiseptic mouthwash without alcohol, if advised by their provider. Brush teeth with a soft toothbrush 2 times a day.
- Wash cuts and scrapes with soap and water right away. Cover the area with a clean bandage.
- Wash their hands often, especially before eating and after using the bathroom, coughing, and touching pets. Use an alcohol-based hand sanitizer when soap and water aren't available.
- Keep away from crowds and sick people
- Wear a face mask when going out in public

- Not clean up droppings from pets or clean their cages, litter boxes, or tanks

When your child's blood counts are low, the healthcare team may advise that you change your child's diet. Talk about this with your child's healthcare team. Check your child's temperature every day for signs of a fever or when they don't feel well or when your healthcare provider advises. Ask the healthcare provider what you should do if it goes up and when you should call the provider.

Also, make sure your child:

- Balances rest and activity
- Eats high-protein foods
- Drinks plenty of fluids

What are possible complications of bone marrow suppression in a child?

Bone marrow suppression can cause anemia, extreme tiredness (fatigue), infections, and bleeding.

When should I call my child's healthcare provider?

Call the healthcare provider if your child has:

- Fever (see Taking your child's temperature, below)
- Bleeding that doesn't stop
- Symptoms of infection
- Symptoms that don't get better, or get worse
- New symptoms that concern you

Taking your child's temperature

Always use a digital thermometer to check your child's temperature. Never use a mercury thermometer. Don't use a rectal thermometer or take your child's temperature rectally. This is dangerous if your child's blood counts might be low. When you talk with your child's healthcare provider, tell them which method you used to take your child's temperature. Discuss the safest way to take your child's temperature with your healthcare team. Ask your provider at what temperature you need to call or return to the provider's office or health center.

Key points about bone marrow suppression in children

- Bone marrow is spongy tissue inside some of the larger bones. It makes most of the body's blood cells.
- Bone marrow suppression is when fewer blood cells are made in the marrow. It can cause a decrease in red and white blood cells, and platelets.
- Nearly all chemotherapy (chemo) medicines cause a drop in blood cell counts. The drop in blood cell counts varies depending on which medicines are used for your child's treatment.
- Symptoms include easy bruising, bleeding, fever, infection, and tiredness.
- While your child is having chemo, their blood cell levels will be checked often. Ask your child's healthcare provider what levels are acceptable for your child.
- Your child may be given medicines to help the bone marrow make more blood cells.

Next steps

Tips to help you get the most from a visit to your child's healthcare provider:

- Know the reason for the visit and what you want to happen.
- Before your visit, write down questions you want answered.
- At the visit, write down the name of a new diagnosis, and any new medicines, treatments, or tests. Also write down any new instructions your provider gives you for your child.
- Know why a new medicine or treatment is prescribed and how it will help your child. Also know what the side effects are.
- Ask if your child's condition can be treated in other ways.
- Know why a test or procedure is recommended and what the results could mean.
- Know what to expect if your child does not take the medicine or have the test or procedure.
- If your child has a follow-up appointment, write down the date, time, and purpose for that visit.
- Know how you can contact your child's healthcare provider after office hours, and on weekends and holidays. This is important if your child becomes ill and you have questions or need advice.

© 2000-2027 The StayWell Company, LLC. All rights reserved. This information is not intended as a substitute for professional medical care. Always follow your healthcare professional's instructions
This information is not intended as a substitute for professional medical care. Always follow your Healthcare professional's instructions. Copyright Krames LLC.