

Fever and neutropenia

Reviewed by SickKids Hospital Staff | Last updated: June 9th 2011

An overview on fever and a side effect of chemotherapy, called neutropenia. Learn how to help manage your child's fever at home.

Key points

- Neutropenia occurs when the number of white blood cells decrease to low amounts. This can happen as a result of cancer treatment.
- A low white blood cell count puts a child at risk for infection. Fever is often the first sign of an infection.
- If your child has fever and neutropenia they will receive antibiotics.

What is fever and neutropenia?

When a child receives treatment for cancer, he is at risk of infections. Sometimes these infections can be serious. At times the number of white blood cells can decrease to very low amounts. This is called neutropenia. It is during this time when the risk of having a serious infection is higher.



Often, a fever is the first sign of an infection. This is why all children who have a fever during cancer treatment need to be evaluated urgently. If the doctor finds that the child has low white blood cells (neutropenia), they will start your child on antibiotic treatment at once.

Fever

A fever is part of the body's response to infection. Your child has a fever if their:

- temperature is 38.3°C or more by mouth one time, or;
- temperature is 38°C or more by mouth for one hour or more.

Whenever possible, take your child's temperature by mouth. Only take your child's temperature under the arm if you can't take it by mouth.

When checking for fever under your child's arm, your child has a fever if their:

- temperature is 37.8°C or more under the arm one time, or;
- temperature is 37.5°C or more under the arm for one hour or more.

Neutropenia

The blood contains a type of white blood cell that helps the body protect itself from infection. These blood cells are called neutrophils. Healthy people usually have more than 1.5×10^9 neutrophils for every litre of blood. Neutropenia happens when the number of neutrophils in the blood decreases to less than 0.5×10^9 cells/litre.

How is fever and neutropenia treated?

If your child develops a fever, a doctor or nurse practitioner in the Emergency Department or the Haematology/Oncology Clinic will evaluate your child. They will check your child's white blood cell count. If they find that your child is neutropenic, your child may be:

- admitted to the hospital and treated with antibiotics, intravenously (IV) or orally
- given a dose of IV antibiotics at the hospital, and prescribed oral antibiotics to take at home. This happens in a small number of cases.

Your child's Haematology/Oncology doctor will decide which treatment option is best for your child. They will base this decision on strict, pre-set criteria determined by the best scientific evidence to date.

What will happen if my child can receive treatment for fever and neutropenia at home?

In the Emergency Department or the Haematology/Oncology Clinic:

1. Your child will receive one dose of IV antibiotics.
2. Your child will receive one dose of oral antibiotics.
3. Your child will then be sent home on oral antibiotics under the care of at least one parent (or alternate) that can stay with your child at home (not in daycare or school).

What you need to do if your child is being managed at home:

1. Record each time you give your child their antibiotic on the medicine calendar.
2. Take your child's [temperature](#) every four hours and record it in the temperature diary.
3. Bring your child to the Haematology/Oncology Clinic for a check-up until they stop your child's treatment for neutropenia. Your child's doctor or Contact Nurse will let you know how often and when to come into the clinic for a check-up.

4. A homecare nurse will be asked to visit you at home to review the diary with you and also to assess your child.
5. If your child looks ill at any time, if your child throws up the antibiotic, or if you have concerns about your child, call the Contact Nurse or the Haematology/Oncology Fellow-on-Call.

For more information, watch the video on [Neutropenia and chemotherapy for acute lymphoblastic leukemia](#).

At SickKids

Before leaving the Emergency Department, you will be given:

- a 72-hour supply of antibiotics to be given by mouth
- a Temperature Diary & Medication Calendar
- an appointment for a follow-up appointment in the clinic

When managing your child's neutropenia at home:

- Come to the Haematology/Oncology clinic for your child's check up on Mondays, Wednesdays and Fridays until your child's doctor or nurse stops treatment.
- Homecare nurses may visit your home on Saturdays, Sundays, Tuesdays and Thursdays.
- It is important that you speak with a member of the SickKids team every day about your child. On days when you do not come to the clinic, call your child's Contact Nurse, Tuesdays and Thursdays and the Haematology/Oncology Fellow-on-Call on weekends between the hours of 8:00 a.m. and noon to report your child's temperatures and progress.
- If you are ever concerned about your child, call our Contact Nurse (Monday through Friday during the day) or the Haematology/Oncology Fellow-on-Call at 416-813-7500 after 5:00 p.m. or anytime on the weekends.

Please visit AboutKidsHealth.ca for more child health information.

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