Thrombocytopenia (low platelets)

Platelets are the part of blood that stops bleeding. Thrombocytopenia means that you have fewer platelets than you should have. People with lymphoma sometimes have thrombocytopenia because of the lymphoma itself or as a side effect of the treatment they are having. This can put them at a higher risk of bleeding and bruising.

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What is thrombocytopenia?

Thrombocytopenia is a shortage of platelets (also called ‘thrombocytes’) in your blood.

Platelets are a type of blood cell involved in blood clotting. When you cut yourself or damage a blood vessel, the platelets fill up the hole, forming a platelet plug. Clotting factors (proteins in the blood) then bind everything together while the area heals.

Figure: Platelets
Platelets are made in the bone marrow (the spongy centre of some bones). They usually stay in the bloodstream for about 10 days before they are removed by the spleen. The bone marrow works all the time to make new platelets. It works harder if platelets are needed to stop bleeding somewhere in your body.

If you have a low number of platelets, it is harder for you to form a blood clot. This means you might bleed for longer than usual if you cut yourself. You might also bruise more easily than normal.

If you have a low number of platelets, you are ‘thrombocytopenic’.

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**How many platelets should I have?**

The number of platelets in your blood is measured by a test called the full blood count (FBC).

Healthy adults usually have between 150,000 and 450,000 platelets in every microlitre of blood. This is sometimes written down as 150 to 450 x 10^9/L. This is a bit of a mouthful, so doctors and nurses usually just refer to the number (for example, a platelet count of 150).

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**Why do people with lymphoma get thrombocytopenia?**

Thrombocytopenia may happen if the bone marrow is not making enough platelets, or if platelets are being used or destroyed faster than the bone marrow can replace them.

In people who have lymphoma, thrombocytopenia might happen because of:

- lymphoma in the bone marrow
- some lymphoma treatments
- platelets collecting in an enlarged spleen (splenomegaly)
- platelets being destroyed by an antibody that attacks them (immune thrombocytopenia).

**Lymphoma in the bone marrow**

If lymphoma cells are in the bone marrow, they take up space that is normally used to make healthy blood cells. This can lower the number of platelets your bone marrow makes, so you develop thrombocytopenia.
Thrombocytopenia caused by lymphoma in the bone marrow often begins to improve once treatment for the lymphoma has started to work and the number of lymphoma cells decreases.

**Lymphoma treatments**

Although the aim of chemotherapy is to kill lymphoma cells, some healthy cells are also affected. This can include the cells in your bone marrow that make new platelets. If these cells don’t make enough platelets to replace the ones that die off naturally, your platelet count falls.

The number of platelets in your blood generally starts to drop 7 to 10 days after chemotherapy and reaches its lowest point about 2 weeks after treatment. Platelet levels gradually return to normal after 4 to 5 weeks.

Not all chemotherapy regimens (combinations of drugs) cause thrombocytopenia. **Radiotherapy** can cause thrombocytopenia if it is used to treat a large area or if it is given in combination with chemotherapy.

Some antibody therapies and targeted drugs can also cause thrombocytopenia.

**Splenomegaly**

As well as circulating in your blood, some platelets are stored in your spleen. Because these platelets are not in your bloodstream, they don’t help with clotting and they’re not included in your platelet count. If your spleen is bigger than normal (splenomegaly), more platelets collect there. This leaves fewer platelets than normal in your bloodstream.

**Immune thrombocytopenia**

Sometimes, lymphoma can cause your immune system to make antibodies against your own cells. These antibodies are known as ‘autoantibodies’.

If the autoantibodies stick to your platelets, the platelets are destroyed when they pass through the spleen. If your bone marrow can’t make new platelets fast enough to replace the ones that are destroyed, your platelet count drops and thrombocytopenia develops. This type of thrombocytopenia is known as ‘immune thrombocytopenia’. It is unusual in people with Hodgkin lymphoma and most types of non-Hodgkin lymphoma, but it can affect up to 1 in 10 people with chronic lymphocytic leukaemia (CLL).
Symptoms of thrombocytopenia

Most people with a low platelet count don’t have any symptoms. This is because your body has a built-in reserve with many more platelets than you need for day-to-day life.

If your platelet count falls to very low levels, you might notice some symptoms and signs. A general guide to what you might experience at different platelet counts is:

- slightly low platelet count (above 50): you will probably have no symptoms at all
- low platelet count (30 to 50): you might bruise more easily and bleed for longer if you cut yourself
- very low platelet count (10 to 30): you might bleed after very minor injuries that wouldn’t normally bleed, bleed for longer than usual, and bruise more easily
- extremely low platelet count (below 10): you are at risk of bleeding even without an obvious cause.

If you have a low platelet count that causes bleeding, you might also develop anaemia.

Contact your medical team if you develop any of the following symptoms:

- nosebleeds
- bleeding gums after brushing your teeth
- heavy periods in women
- bleeding for longer than normal after a cut or scratch
- bruising more easily than usual
- small, red or purple spots called ‘purpura’ or ‘petechiae’ on your skin (often on your legs), your lips or in your mouth
- blood in your vomit
- blood in your urine
- blood in your poo (this might be obvious, bright red blood or it can make your poo black and sticky)
- persistent headache, blurred vision or a change in your level of consciousness.

If you start bleeding, get in touch with your hospital straight away.
Figure: Purpura (small, red or purple patches) on the legs

Figure: Petechiae (tiny red or purple spots) on the inside of the mouth
Treatment of thrombocytopenia

Thrombocytopenia is often short-lived and many people with a low platelet count don’t need any treatment at all. However, if your platelet count is very low, or you are at particular risk of bleeding, you might need treatment. This might include:

- changes to the medicines you are taking
- platelet transfusions
- other treatments.

Treatment for immune thrombocytopenia is different, because it does not respond well to platelet transfusions.

Changes to your medicines

Some medicines, including blood-thinning medicines, some antibiotics and some treatments you can buy over-the-counter (for example, aspirin), can cause thrombocytopenia, or increase your risk of bleeding once thrombocytopenia has developed. Your medical team will check what medicines you are taking and will stop or adjust the dose of any that might be affecting your platelet count.

If you are having chemotherapy and your platelet count is very low, your chemotherapy dose might be reduced or you might have a longer break between treatment cycles. Sometimes, your chemotherapy regimen might be changed.

Platelet transfusion

Platelet transfusions are similar to blood transfusions, given for anaemia. You might need a platelet transfusion if:

- you have an extremely low platelet count (less than 10)
- you have a very low platelet count (less than 20) and a fever
- you have a low or very low platelet count (less than 30 to 50) and you are bleeding
- you have a low platelet count (generally less than 50) and you need to have an operation or other medical procedure that puts you at risk of bleeding.

Platelet transfusions aim to increase your platelet count enough to stop any bleeding or to reduce your risk of bleeding. Because the platelets get used up, the effect only lasts for a few days.
Other treatments

Sometimes, a medicine called ‘tranexamic acid’ might be used as well as, or instead of, a platelet transfusion. It prevents or reduces bleeding by stopping blood clots from being broken down.

Occasionally, you might need other treatments to help your blood clot, such as an injection of vitamin K or an infusion of fresh frozen plasma (similar to a blood transfusion).

Treatment for immune thrombocytopenia

If your thrombocytopenia is caused by autoantibodies destroying your platelets, platelet transfusions don’t usually work. Instead, you will probably be treated with steroids, such as prednisolone. The dose of steroid is high to begin with, which may cause irritation to your stomach. You might be given another drug to protect your stomach. Once your platelet levels are under control, the dose of steroid is lowered.

Steroids are effective for most people who have autoimmune thrombocytopenia. If steroids aren’t effective, other possible treatments include immunoglobulin replacement therapy, antibody treatment with rituximab or a splenectomy (having your spleen removed). Some people need treatment with drugs that suppress (dampen) your immune system (immunosuppressants).

If your platelet level still doesn’t improve, you might need treatment with a drug called a ‘thrombopoietin receptor agonist’. Thrombopoietin is a hormone (a chemical messenger) that tells your bone marrow to make more platelets. Thrombopoietin receptor agonists are medicines that mimic the effects of thrombopoietin. You might be treated with them if:

- you have immune thrombocytopenia
- your platelet count hasn’t responded to other treatments
- you are very ill
- you have a high risk of bleeding and
- you need frequent courses of treatment for your thrombocytopenia.

Reducing your risk of bleeding

If you have low platelets, there are some simple precautions you can take to reduce your risk of bleeding.
Food, drink and medicines

- Try to avoid food that might make your mouth bleed (for example, crisps).
- Limit how much alcohol you drink (it can make bleeding worse).
- Do not take aspirin or other blood-thinning medicines unless your doctor has told you to.
- Do not use enemas or suppositories.

Activities

- Take extra care to avoid cutting yourself when using knives or scissors.
- Avoid high-impact sports (for example, long-distance running) and contact sports (for example, rugby).
- Wear gloves, long sleeves and long trousers to help protect you from scratches and cuts when gardening or doing DIY.
- Take care to avoid burns when ironing and cooking.
- Wear shoes outside.

Hygiene

- Use lip balm and moisturiser to stop your lips and skin drying out.
- Brush your teeth gently using a soft toothbrush and avoid flossing to prevent your gums bleeding.
- Do not have any dental work done if possible.
- Avoid blowing your nose too hard or too often.
- Use an electric razor instead of wet shaving.
- Use sanitary towels instead of tampons.
- Try not to strain when using the toilet.
- Use a water-based lubricant during sex. (You may be advised to avoid sex completely if your platelet count is lower than 50.)

What to do if you start to bleed

- Stay calm.
- Sit down or lie down.
- Apply pressure to the injury if you can.
- Use an ice pack to slow the bleeding.
- If possible, raise the injury above the level of your heart.
- Contact your hospital.
References

The full list of references for this page is available on our website. Alternatively, email publications@lymphoma-action.org.uk or call 01296 619409 if you would like a copy.

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