# Low platelets or ITP

Low platelets or ITP — check if a drug caused it, bone marrow problem, or infection. ITP means low platelets only, nothing else wrong. Give steroids or IVIG if bleeding or platelets below 30,000.

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**THE ONE-LINE TRUTH**

Find what caused it — drug, infection, bone marrow disease, big spleen, or immune system attack.

## The chain — how it unfolds

1. Platelets drop below normal (less than 150,000). — why: The bone marrow is not making enough, the immune system is destroying them, the spleen is trapping them, or clotting is using them up — so fewer platelets are available in the blood to stop leaks.
2. Tiny red or purple dots appear on the skin, especially on the legs (called pinpoint bleeding spots (petechiae)). — why: With fewer platelets, tiny capillaries under the skin leak a little bit of blood, and because there are not enough platelets to plug the holes, the blood stays under the skin as small dots.
3. Bruises form more easily and spread larger than normal (called purple bleeding blotches (purpura) or bruises (ecchymoses)). — why: When you bump into something, blood vessels tear and leak — normally platelets rush in and seal it fast, but with low platelets the leak keeps going and blood spreads under the skin, making a big bruise.
4. Bleeding starts from the gums, nose, or digestive tract; periods become very heavy. — why: Mucous membranes (the wet lining of the mouth, nose, gut, and uterus) have fragile vessels that break easily — without enough platelets, even normal wear and tear causes bleeding that does not stop on its own.
5. If platelets fall very low (below 10,000), bleeding can happen inside the brain, eyes, or other organs without any injury. — why: At extremely low counts, even the normal pressure of blood flow can push through vessel walls that have tiny weak spots, and there are not enough platelets to plug them — brain bleed is the most dangerous because it can cause stroke or death.

6. The team checks a blood smear, asks about medicines and infections, and may test bone marrow to find the cause. — why: Treatment depends on the cause: if a drug is destroying platelets, stop it; if it is ITP, give steroids or IVIG to calm the immune system; if bone marrow is failing, treat the underlying disease — so the diagnosis must be accurate.
7. If ITP is confirmed and platelets are very low or bleeding is active, steroids (prednisone or dexamethasone) or IVIG (intravenous immunoglobulin) are given to raise the count quickly. — why: Steroids quiet the immune attack on platelets, and IVIG floods the system with antibodies that block the spleen from destroying platelets — both buy time for the count to recover and bleeding to stop.
8. If the cause is not fixed or platelets stay low despite treatment, the spleen may be removed (splenectomy) or other immune drugs (rituximab, thrombopoietin agonists) are used. — why: The spleen is where most platelet destruction happens in ITP — removing it stops the destruction and lets platelets circulate normally; other drugs either block the immune attack or tell the bone marrow to make more platelets.

## Spot it — what you see, and why

- Pinpoint red or purple dots on the skin (petechiae): Platelets are the cell pieces that plug tiny leaks in blood vessels. When there are too few, tiny blood vessels leak under the skin and leave small red or purple dots you can see.
- Easy bruising from small bumps: Without enough platelets to seal breaks in blood vessels, even a light bump lets blood spread under the skin, making a bruise that is bigger or appears more easily than normal.
- Bleeding gums or nosebleeds that are hard to stop: The mouth and nose have many delicate blood vessels close to the surface. When platelet counts are low, these vessels cannot seal quickly, so bleeding lasts longer than it should.
- Heavy or prolonged menstrual periods: The inner lining of the uterus sheds each month and needs platelets to stop the bleeding. Fewer platelets mean the body takes longer to clot and seal off the bleeding vessels.
- Blood in the urine or stool: Small blood vessels in the bladder or intestines can leak when platelet counts drop very low, releasing blood into urine or stool because the body cannot patch the tiny holes fast enough.
- Sudden, severe headache or confusion: Very low platelets can let bleeding happen inside the skull (intracranial bleeding (hemorrhage)). Blood pressing on brain tissue causes headache and confusion, and this is a medical emergency.

## Red flags — act now

- Blood in urine or stool, or vomit that looks like coffee grounds

- Sudden severe headache, confusion, vision changes, or weakness on one side of the body (signs of bleeding in the brain)
- Heavy bleeding that will not stop after 10 minutes of firm pressure
- Platelet count below 10,000 per microliter (very high risk of serious bleeding)
- Fever, fast heart rate, confusion, and yellow skin together with low platelets (may be thrombotic thrombocytopenic purple bleeding blotches (purpura) or TTP, not ITP)

## Treat it — in this order

1. Stop any drug that can cause immune platelet destruction (heparin, quinine, sulfonamides, vancomycin, certain anticonvulsants, NSAIDs) → Removes the trigger that turned on the immune attack against platelets. Once the drug is cleared (usually within days), the antibodies fade and the bone marrow can restore platelet counts.
2. Corticosteroids: prednisone 1 mg/kg/day orally for 2–4 weeks, or dexamethasone 40 mg/day for 4 days → Suppresses the immune system—especially B cells and macrophages in the spleen that make and use antibodies to tag platelets for destruction. Platelet count usually rises within 3–7 days. Current ASH and international guidelines recommend corticosteroids as first-line for adults and children with ITP and bleeding or platelet count below 20,000–30,000.
3. Intravenous immunoglobulin (IVIG) 1 gram/kg as a single dose, or 0.4 gram/kg/day for up to 5 days → Floods the immune system with normal antibodies that block the receptors (Fc receptors) on macrophages in the spleen, so the macrophages cannot grab and destroy antibody-coated platelets. Also may neutralize the anti-platelet antibodies. Platelet count often jumps within 24–48 hours. Used for urgent situations, active bleeding, or to boost response to steroids.
4. Platelet transfusion (only if platelet count below 10,000 with severe bleeding, or below 50,000 before urgent surgery or during CNS bleeding (hemorrhage)) → Immediately adds platelets to the blood to plug holes in bleeding vessels and prevent or treat life-threatening bleeding (hemorrhage), especially in the brain. Buys time while other treatments (steroids, IVIG) take effect.
5. Tranexamic acid (TXA) 1–1.5 grams orally or IV three times daily for mucosal bleeding (nosebleeds, gum bleeding, heavy periods) → Blocks plasmin, the enzyme that breaks down clots. This stabilizes the fragile clots that low platelets can barely form, stopping oozing from mucous membranes.

## Your top priorities at the bedside

1. Check the platelet count result and ask the lab if the sample was drawn in an EDTA tube (purple top), then request a recheck in a blue top or direct finger stick smear — why: EDTA anticoagulant makes platelets clump together in about 1 out of 1,000 people, creating pseudothrombocytopenia (fake low platelets), so the patient does not actually have low platelets and does not need dangerous treatments
2. Assess for active bleeding by checking gums, nose, skin for pinpoint bleeding spots (petechiae) or large bruises (ecchymoses), and ask about blood in urine, stool, or heavy menstrual bleeding — why: Platelets under 10,000 cannot form clots, so any bleeding can become life-threatening quickly, especially in the brain or gut, and requires emergency platelet transfusion and IVIG
3. Institute bleeding precautions including no rectal temperatures or suppositories, no intramuscular injections, electric razor only, soft toothbrush, and fall precautions with bed alarm and non-slip socks — why: Any trauma or puncture can cause uncontrolled bleeding when platelets are low because there are not enough platelets to plug damaged blood vessels