

# What is Hemostasis?

**Hemostasis is your body's normal reaction to an injury that causes bleeding. This reaction stops bleeding and allows your body to start repairs on the injury. This capability is essential to keep you alive, particularly with significant injuries. However, in uncommon cases, the processes that control hemostasis can malfunction, causing potentially serious — or even dangerous — problems with bleeding or clotting.**

## **How does hemostasis work?**

Hemostasis combines the terms “hemo” (meaning “blood”) and “stasis” (meaning “standing still”). In this context, it's the term for how your body stops bleeding. Rather than being just a single process, hemostasis is actually a collection of several processes. Though they look like separate processes, these all happen at the same time when your body forms a blood clot.

## **Primary hemostasis (platelet clotting)**

Primary hemostasis is when your body forms a temporary plug to seal an injury. To accomplish that, platelets that circulate in your blood stick to the damaged tissue and activate. That activation means they can “recruit” more platelets to form a platelet “plug” to stop blood loss from the damaged area. That clot works much like a cork or bottle stopper, keeping blood in and debris or germs out. Primary hemostasis may also involve constriction (narrowing) of the damaged blood vessel, which can happen because of substances that activated platelets release.

## **Secondary hemostasis (coagulation cascade)**

The platelet plug is the first step to stop bleeding, but it isn't stable enough to stay in place without help. The next step, which stabilizes the plug, is secondary hemostasis. This step, sometimes called coagulation, involves molecules in your blood called “coagulation factors.” Those factors activate in sequence, the “coagulation cascade,” which amplifies clotting effects as the sequence continues. Ultimately, the coagulation cascade forms a substance called fibrin. During this step, the platelet plug acts like bricks and the fibrin acts like mortar. Together, they form a solid, stable clot.

