

I NEED TO KNOW ABOUT PLATELETS

Transfusion Fact Sheet Volume 1, Number 4
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What are platelets?

Platelets are small disc shaped cells that are actually fragments from another type of cell called a megakaryocyte.

How long do they survive?

The average lifespan of a platelet in the body is 8 to 12 days.

What do platelets do?

Platelets play a crucial role in ensuring our blood can clot when needed. Platelets also contain growth factors that aid in the repair of damaged body tissue.

How do they work?

When a body tissue is damaged, it releases chemicals. This causes the platelet to become activated, changing their shape and becoming sticky. Once activated the platelets clump together and stick to the damaged tissue. This is called a 'platelet plug' which begins the process of forming a clot to stop bleeding.

What patient conditions may need platelet transfusions?

Platelet transfusions are commonly used in patients with a low platelet count or nonfunctioning platelets who are bleeding or at high risk of bleeding and are unlikely to make their own platelets soon. This may occur during high dose chemotherapy, bone marrow transplantation, major surgery while on drugs which prevent platelets from working (eg aspirin), liver disease requiring surgery and severe trauma.

Will a platelet transfusion always help the platelet count?

There is little point using a platelet transfusion when the patient has a strong antibody which can destroy platelets. This occurs in Immune Thrombocytopenic Purpura or ITP. The patient's immune system will eat up their own and any transfused platelets. These patients need therapy which modifies their immune system.

What components does the Blood Service produce for these patients?

The Blood Service produces platelets by apheresis or by separating them from whole blood. Apheresis involves removing



the donor's blood, spinning it in an apheresis machine, collecting the platelets and returning all the other parts of blood to the donor. If whole blood is collected, it can be spun (centrifuged) to separate the red cells from the 'buffy coat' and the plasma. The buffy coat contains platelets, white cells and some red cells. Four buffy coats can be put together (pooled) and then centrifuged and filtered to remove unwanted cells from the final product.

How are they stored?

Platelets do not survive refrigeration well and must be kept at room temperature, between 20–24°C. This places them at higher risk of bacterial contamination so they can also only have a shelf life of five days. They also need to be stored on a machine that gently rocks them so that the platelets don't become clumped together.

How many are collected?

In 2010–2011, the Blood Service collected 51,955 apheresis platelet donations and 82,748 buffy coat pools were made.

BLOOD FACT

Drugs which inhibit platelet function are some of the biggest selling drugs in the world.