

iTRANSFUSEFACTSHEET

all about blood

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I NEED TO KNOW WHAT'S IN A BAG OF BLOOD?

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What's in an empty blood bag?

Before donation, a blood bag contains 70 mL of anti-coagulant fluid. This fluid contains chemicals like citrate, phosphate, dextrose and adenine, which stop the donor's blood from turning into a solid clot and helps preserve the blood during storage.

What about when the blood gets added?

Once whole blood is collected from a donor, the bag contains a complex cocktail of cells (red cells, white cells and platelets), plasma, biological compounds and the anti-coagulants.

The composition of blood reflects its functions. Red cells deliver oxygen to the body tissues, white cells defend our body against infection, and platelets ensure that our blood will clot. Plasma is the largest component of blood (55%) and contains clotting factors, antibodies, and other proteins, fats and sugars. Plasma provides the food and takes away waste from our cells.

What's left in a bag of blood after processing?

A bag of blood is separated into red cells and plasma and sometimes platelets too. These are all moved into the correct bags for long term storage. The red cells have the white cells removed and are then put into a new bag containing a preservative and nutrient solution made of saline, adenine, dextrose and mannitol. This allows red cells to be kept in refrigerated storage at 2–6°C for up to 42 days.

Are there any undesirable things in a bag of red cells?

A bag of blood is a snapshot in time and contains whatever was in the donor's blood at donation – so donated blood could potentially contain inadvertent contaminants from the donor (e.g. skin contaminants). The Blood Service has exclusion criteria, skin hygiene



procedures and extensive testing to enhance the safety of each donation. The risk of unwanted things being in a bag of blood are kept extremely low.

Is fresh blood the same as old?

Despite the preservatives and careful storage and handling, the bags' contents will undergo various physical and biochemical changes as they age.

It is currently not known whether these red cell changes cause any problems for patients who need a transfusion. See iTRANSFUSE fact sheet *Hot Topic: The Age of Red Cells*, Vol 3, No 10.

PACKFACTS

Blood accounts for 8% of the human body weight.



Platelets also undergo changes in storage but their function is well maintained over their five day storage. The activity of various plasma proteins slowly diminishes during storage.

The information contained in this fact sheet is not intended to be medical or professional advice. The disclaimer found at transfusion.com.au applies to this fact sheet.

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