

What happens to your blood after you've donated? Donning a warm coat, I found out

If you've given blood, it's likely you had a biscuit straight after and then went about your day. But what happens to your blood after it has been removed from your body? That is the truly fascinating part of the story.

Metro went behind the scenes at NHS Blood and Transplant in Colindale, north London, one of three blood manufacturing and processing centres across the UK.

We followed the stages taken by blood donations, via freezers and high-tech machines, on their journey to save lives.

As many as 2,000 bags of whole blood arrive at the doors of the site every day. The race is then on to process the packs within 27 hours of donation to maintain the quality of the final products.

One of these is the red blood cells, which are used to treat people who have suffered blood loss, trauma and surgery.

But 55% of our blood is a yellowish fluid, called plasma. In the laboratory, scientists work around the clock to extract this 'liquid gold' which contains vital antibodies that can be made into medicines that save and improve lives. But that is a few steps away.

Your 470ml bag of blood is firstly strung up and filtered to remove the white blood cells, which fight infections and foreign invaders.

Staff, often working throughout the night, then place the filtered blood into a large spinning machine called a centrifuge.

Once your bag is spun around, you will suddenly see the yellow plasma has separated from the red blood cells.

A press is used to pump these two products into different bags. Those red cells are then stored at 4C until test results - taken when you give blood and then analysed in Bristol -

by Luke Alford

confirm the blood is safe to give to hospitals. When your blood is used, you will get a text saying which hospital it went to.

Your plasma, on the other hand, needs to be blast frozen in a rapid freezer, reaching -20C in one hour.

Some of those bags of plasma are also sent to hospitals to help treat severe bleeding.

But the other bags get a whole lot chillier, as they are destined to be made into vital new medicines.

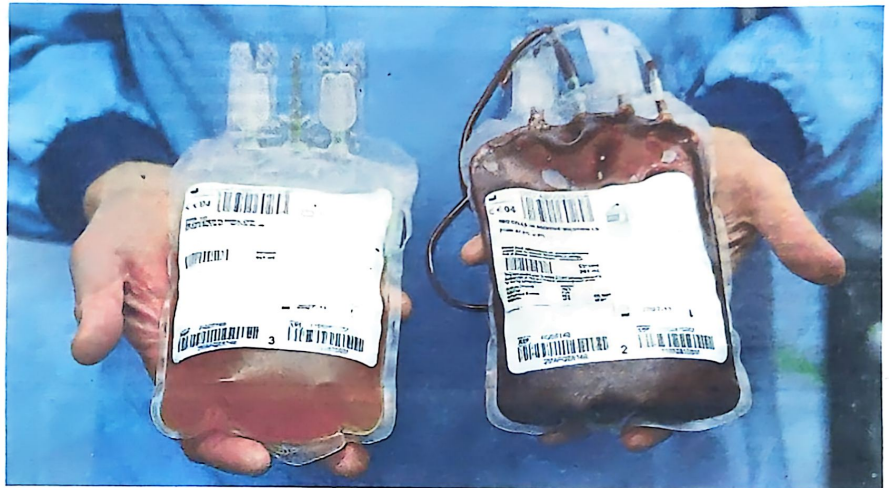
Plasma is used to produce immunoglobulins, which treat more than 50 autoimmune conditions, as well as albumins, which treat severe burns and traumatic injuries.

More than 17,000 people rely on immunoglobulins every year. Until 2021, there was a 25-year ban on plasma from Britons being used to create these medicines because of concerns around Creutzfeldt-Jakob disease, a fatal brain disorder caused by contaminated beef (spread by cattle infected with what was known as mad cow disease).

In March last year - four years after the ban was lifted - the first immunoglobulins from a UK donor went into the arms of an NHS patient.

But the health service doesn't yet have the technology to process our plasma into these small vials of medicine, so they have to be shipped to Europe.

While the bags of plasma wait to leave the UK, they are kept at -40C, requiring industrial-sized coats and gloves to be worn so workers



Liquid gold: Our blood is 55% yellow plasma. Left, it is spun in a centrifuge to separate the red blood cells. The resultant plasma is kept bagged in freezer, right, for use in medicines
PICTURES: WBMEDIA



It's a wrap: Metro reporters Luke Alford and Zineb Lazraq inside the freezer with the NHS's Jan Majkowski

- and the occasional journalists - don't freeze to death.

Once the removal van arrives, staff at Colindale have minutes to move boxes of plasma into mobile freezers before they are driven out of London.

Thousands of NHS patients have now received life-saving medicines made from British-donated plasma in the last 12 months. Despite this success, however, the UK is still reliant on other countries for more than 75% of immunoglobulin.

Showing Metro around, Jan Majkowski, plasma performance and efficiency lead at NHS Blood and Transport (NHSBT), told me: 'Plasma is instrumental to the process of blood donation and blood services.'

'The fractions of plasma are

invaluable. They are critical in treating rare diseases and common diseases like haemophilia and immune diseases.'

'The only support for these people is to receive these plasma transfusions.'

The donation drive is an important part of the 10 Year Health Plan for England - the government's mission to make the service more resilient to shocks by reducing our dependence on imported medicines. It will also be crucial to the roughly 17,000 NHS patients who rely on plasma-derived immunoglobulin every year.

NHSBT is always in need of blood to make the service more self-sufficient. Around 800,000 people donate every year but there is still an annual shortfall of 200,000. In particular, donors of Black heritage are needed for a blood type to treat sickle cell disorder, which is mostly found in people of Black African, Black Caribbean and Mixed heritage.