Add the QR code

Scan the QR code to download

Heading Text Arial bold 18pt

1/3 fold

1/2 fold

1/3 fold

NHS
West Hertfordshire Teaching Hospitals
NHS Trust

Patient information

Blood Transfusion in Pregnancy and its alternatives

Excellent patient care, together

Blood transfusion in pregnancy and its alternatives

This information is for you if you want to know more about blood transfusion and its alternatives while pregnant or shortly after giving birth.

What is blood transfusion?

Blood transfusion is the process of infusing donated blood and products into your body.

What are the components and the functions of the blood?

The human blood is comprised of three main cell groups namely, the red blood cells, the white blood cells, and platelets, suspended in a liquid known as the plasma.

Plasma: This is the liquid portion of your blood. It contains about 90% water and constitutes about 50% or more of your blood. It transports cells, nutrients, and waste products from one part of your body to the other and contains substances involved in the maintenance of the chemical and water balance in your body, formation of blood clots and mediation of immune response to various types of infection.

Red blood cells: These are the most abundant cells in your blood, each living up to 120 days on the average. They transport oxygen from your lungs to your tissues and carbon dioxide from your tissues to your lungs. They contain iron-rich pigments called haemoglobin, that is responsible for the ability of your red blood cell to bind and release oxygen and the red colour of your blood.

Anaemia is a state in which the level of haemoglobin in your blood is lower than normal. Symptoms include tiredness, breathlessness, headaches, and exhaustion. When severe, you may develop dizziness, chest pain, fainting attacks, and collapse. The commonest cause of anaemia in pregnancy is the deficiency of iron in our body. Other nutrients necessary to produce adequate amount of the red blood cells in your body include folic acid and vitamin B12.

White blood cells: These are cells that are responsible for your body's immune response to infection. There are various types, some of which live for a few days and others for many years. In their absence, your body won't have a chance to fight against infections.

Platelets: These are cells that form blood clots that are responsible for stopping or preventing bleeding from your body.

Effect of pregnancy on the blood

Pregnancy exerts an extra toll on your whole body and in response your blood adapts to meet the needs of pregnancy.

- The plasma volume increases significantly in pregnancy to match the need to transport more nutrients to your womb and excrete the extra waste produced by the unborn baby. This increase is responsible for the bulk of the increased blood volume seen in pregnancy. On the average the volume of blood in your body increases by about 1.5 litres in pregnancy, when carrying a single baby or twice the amount when carrying a twin. This helps to compensate for some of the blood lost during the delivery.
- Your body also increases the production of many substances necessary for forming blood clots, particularly towards the end of your pregnancy, when you are expected to deliver.

These substances are essential for forming blood clots that help prevent excessive bleeding after the separation of the placenta from your womb. Their deficiency may result in severe bleeding after birth.

- The number of white blood cells produced in your body also increase in pregnancy. This is important in protecting you against infection.
- Paradoxically, the functions of some white blood cells are reduced to prevent your immune system from mounting up an immune response against your unborn baby which contains 50% of its father's gene. Unfortunately, this may increase your risk of infection to some virus and malaria.
- Finally, there is a significant increase in the production of the red blood cells in your body. This is important to supply the extra oxygen required for the growing foetus. Unfortunately, since the red blood cells require iron for their production, there is a chance that you may develop anaemia quickly, if you do not have enough iron stored in your body, especially since the same iron is required by your baby to make its own red blood cells.

What are the indications for blood transfusion?

This may be divided into emergency and non-emergency need for blood transfusion.

Non-emergency requirement for blood transfusion

The commonest non-emergency reason for blood transfusion in pregnancy is anaemia. Occasionally deficiency in other blood components such as platelets may require blood transfusion in pregnancy. Below are some of the common reasons you may be offered blood transfusion in pregnancy.

1. Just before delivery if you are very anaemic despite having little or no symptoms. This is because any small amount of bleeding during childbirth, may make you further anaemic and severely unwell, hence unable to cope with childbirth, childcare and recovery after delivery.
2. If you bled heavily during birth and you are left very anaemic, making it difficult for you to care for your baby, either immediately or few days after delivery.
3. When you have a genetic disorder that affect your body's ability to produce a healthy haemoglobin and red blood cells, hence developing severe anaemia in pregnancy.

Emergency requirement for blood transfusion

You will be offered blood transfusion if you develop severe, heavy bleeding that could threaten your life or normal functioning of your organs. This can happen at any time in pregnancy including early, mid, or late pregnancy before delivery or during and after delivery.

If unconscious, your doctors will need to decide on your behalf and act promptly if you need a blood transfusion. You and your family will be kept fully informed about the situation as soon as possible. Your midwife would have asked you at booking of your pregnancy if you accept blood transfusion. If you decline blood transfusion, she would have been referred you to the obstetrician to formulate a plan for your delivery to make it as safe as possible. Your decision would be confirmed with a written document and your request would be respected even when there is a threat to your life unless you change your mind before then or during the emergency.

Blood products

Once screened and collected, the human blood is separated into different substances, stored in plastic bags for different medical purposes. These substances which are referred to as blood products are used to replace specific deficiency in different people.

Primary blood products

These are substances that are made directly from the human blood. They include the red blood cells, the fresh frozen Plasma and the platelet concentrate. As the name suggests, both the red blood cells and platelet concentrates are used to replace deficiencies in the respective cells in your blood ie anaemia and deficiency of platelets respectively, while fresh frozen plasma is used to replace substances in the blood that facilitate the formation of blood clots in women bleeding heavily or at risk of severe bleeding, deficient in these substances.

Derivatives or fractions of primary blood product

These are products derived in turn from primary blood products. Examples include anti D injection and cryoprecipitate. Some women who decline primary blood products may accept fractions of primary blood products, hence it is important to inform your doctor which of these products you are happy to accept in pregnancy.

What happens when offered blood transfusion?

If you were offered a blood transfusion, your blood would be collected and tested in the laboratory and matched with blood products from different donors till a compatible match is found. This is known as grouping and crossmatching.

The commonest blood product transfused in pregnancy is the red blood cells. Once a matched blood product is ready, a cannula (small plastic tube) is placed into a vein in your hand or arm and attached to a drip, via which the blood flows through. Each bag of blood product is referred to as a unit of blood, which is about one-third of a litre. Each unit of blood is allowed to run for about 4 hours but in an emergency, it may be transfused more quickly. You may be offered more than one unit in some cases. You will be carefully monitored before and during the transfusion and your midwife will take your blood pressure, temperature, and heart rate regularly during the transfusion.

How safe is blood transfusion?

All blood donations in the UK are screened for various communicable infection transmissible via blood and only blood free from these infections are used in blood transfusion. The risk of getting an infection from a blood transfusion is very, very low. The biggest risk from receiving a blood transfusion used to derive from receiving the wrong blood. This risk has been reduced significantly by processes that ensure correct identification of patients before transfusing any blood products, hence your identification would be confirmed by two qualified personnel before commencing the blood transfusion to ensure that you are receiving the right blood product prepared for you.

What are the complications of blood transfusion?

During blood transfusions, you may experience mild complications such as headaches, mild fever, rash and/or itchiness. These are easily relieved by drugs, such as paracetamol, and improve within a day or so. Very rarely, more severe side effects may occur and include difficulty in breathing, severe headaches, and a sudden fall in blood pressure.

This is called a transfusion reaction. If this happens the transfusion will be stopped immediately, and you will have a check-up by doctors to see why this may have happened. The bag of blood would be returned to the laboratory and some blood may be collected from you to investigate why this occurred.

What happens after blood transfusion?

Once all the blood has been transfused and the drip removed, your haemoglobin level may be re-checked to make sure that you have received enough blood. In emergencies, you may need to stay in hospital afterwards till you recover.

What if I don't want a blood transfusion?

As mentioned earlier, you will be managed under the care of the obstetrician where and a management plan will be made for your pregnancy, labour, and delivery. You would be asked to sign a written document declining blood transfusion and should the need for a blood transfusion arise, your doctors will respect your wishes. Other options will be discussed to prevent and mitigate against this but in some cases, a blood transfusion may be the only effective treatment to save your life. Again, you can change your mind at any point about the use of blood.

What are my alternatives if I refuse blood transfusion?

The first step is to avoid being anaemic before and during pregnancy. This is because if you are anaemic before getting pregnant, or during pregnancy, anaemia tends to worsen as pregnancy advances and any further blood loss at delivery may make you severely anaemic and very unwell.

What can I do to prevent or treat anaemia?

Eating a diet rich in nutrients essential for making adequate amount of red blood cells are important. These include diet rich iron which is important for making haemoglobin, vitamin B12 and folic acid Such diet include food such as meat, poultry, eggs, vegetables, and cereals.

Iron supplementation:

- Your haemoglobin and Iron store will be checked at different stages of your pregnancy. If they are low, you may be offered iron supplementation to correct your iron store and anaemia. Women who are carrying twins are more at risk of anaemia and may be started on irons supplements earlier than other women.
- Iron supplementation is usually by oral supplementation but occasionally an iron infusion may be arranged in cases where you do not tolerate the iron tablets.

Tranexamic acid: This is an injection which can be given in women who may bleed heavily to reduce blood loss and, in those bleeding, profusely to reduce the bleeding. It works by encouraging the formation of blood clots.

Cell saver: This is a process of collecting blood lost during an operation and infusing it back into you after filtering in a machine known as a cell saver. It is commonly used in women who are likely to develop severe bleeding during a planned caesarean section, making it ideal for women who declined blood transfusion undergoing surgery. Unfortunately, it may not be available during an emergency as it requires personnel trained in its use.

How to contact us

Women's and Children's Department
Watford General Hospital
West Hertfordshire Teaching Hospitals NHS Trust
Vicarage Road, Watford, Hertfordshire, WD18 0HB
Tel: 01923 217343

For more information

Further reading:

National Blood Transfusion Committee in England – Patient Blood Management: https://nationalbloodtransfusion.co.uk/working-group/patient-blood-management

NHS Blood and Transplant (England and Wales): www.blood.co.uk

Patient information leaflets: hospital.blood.co.uk/patient-services/patient-blood-management/patientinformation-leaflets

Royal College of Surgeons of England – Code of Practice for the Surgical Management of Jehovah's Witnesses: https://www.rcseng.ac.uk/-/media/Files/RCS/Library-and-publications/Non-journal-publications/jehovahs-witnesses.pdf

UK Cell Salvage Action Group:
https://www.transfusionguidelines.org/red-book

Royal College of Gynaecologists patient information

Heavy bleeding after birth (postpartum haemorrhage): https://www.rcog.org.uk/for-the-public/browse-our-patient-information/heavy-bleeding-after-birth-postpartum-haemorrhage/

Sickle cell disease and pregnancy: https://www.rcog.org.uk/for-the-public/browse-our-patient-information/sickle-cell-disease-and-pregnancy/

Beta thalassaemia and pregnancy: https://www.rcog.org.uk/for-the-public/browse-our-patient-information/beta-thalassaemia-and-pregnancy/

How to contact us

Department name
Watford General Hospital
Vicarage Road
Watford
Hertfordshire, WD18 0HB
Hospital switchboard: 01923 244366

Department name
Hemel Hempstead Hospital
Hillfield Road
Hemel Hempstead
Hertfordshire, HP2 4AD
Hospital switchboard: 01442 213141

Department name
St Albans City Hospital
Waverley Road
St Albans
Hertfordshire, AL3 5PN
Hospital switchboard: 01727 866122

Useful web address:

PALS:	www.westhertshospitals.nhs.uk/patientexperience/pals.asp
Hospital information:	www.westhertshospitals.nhs.uk
Saba parking:	www.sabaparking.co.uk/app

Where can I park?

Car parking at Watford General Hospital is available in the multi-storey car park. It's pay on exit, so you only pay for the time you need. You can pay by cash or card. The post code for the car park is **WD18 0LT.**

The external car park ticket machines on all sites **only accept cash**. However, you can pay by card via the Saba parking app (excluding AMEX), or search Saba parking app at the App store or Google play.

Please note: due to current redevelopment works at St Albans, parking is very limited.

For more information about travelling to our sites and travel concessions, visit our website.

PALS

Concerns, complaints or suggestions

If you are unhappy with your experience or would like to give feedback, please contact our Patient Advice and Liaison Service (PALS). PALS is available to patients, relatives, carers and friends to raise concerns.

For more information, please scan the QR code or visit our website.

If you need this leaflet in another **language, large print, Braille or audio version**, please call **01923 217198** or email westherts.pals@nhs.net.


Language


Large Print


Braille


Audio

No smoking policy

We have a strict no smoking policy. Smoking, including e-cigarettes is not permitted anywhere on any of the hospital sites.

Author	Olusegun Agunbiade
Department	Women's and Children's Services
Ratified / review date	November 2024 / November 2027
ID number	33/2325/V1

Sustainability:
Please consider the environment before printing this leaflet.