# World blood donor day

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# World Blood Donor Day

**By Dr Brighton Chireka**

Today is World Blood Donor Day and this day - 14th June has been celebrated annually since 2004. It's aim has been to improve the safety and adequacy of national blood supplies by promoting a substantial increase in the number of safe , voluntary , unpaid donors who give blood regularly. Voluntary donors play an important role of put others before themselves and in most cases it's people they do not even know. This is an act of being selfless and today I join hands in thanking these kind people.

According to World health Organisation (WHO), about 108 million blood donations are collected globally every year. "Voluntary, unpaid blood donations must be increased rapidly in more than half of the world's countries in order to ensure a reliable supply of safe blood for patients whose lives depend on it" , says WHO on World Blood Donor Day.

Blood is very important in saving lives and many countries all over the world struggle to meet the demand of blood. Blood can be used whole, or separated into its component parts, such as red blood cells, platelets, plasma, and other "substances" that can be used to treat a wide range of diseases. A single unit of blood can be used to benefit several patients.

Transfusions of blood and blood products helps save millions of lives every year, including during emergencies such as conflicts, natural disasters, and childbirth. It can help patients suffering from life-threatening conditions live longer and with higher quality of life, and supports complex medical and surgical procedures.

## As we are celebrating World Blood Donor Day , I thought I should take an opportunity to talk more about blood.

## What is blood made up of ?

We have the **plasma** which is the liquid part of blood and it makes up about 60% of blood volume . It is mainly made of water but contains many different proteins and other chemicals such as hormones, antibodies, enzymes , blood sugar, fat particles , salts etc.
Secondly we have **blood cells** which make up about 40% of the blood volume . Blood cells are made in the bone marrow and are divided into three main types.

**Types of blood cells**
1- **Red blood cells ( erythrocytes )**. These cells give the blood a red colour . Just a single drop of blood contains about 5 million red cells . Red cells contain a chemical called haemoglobin which binds oxygen and takes oxygen from the lungs to all parts of the body.
2- **White blood cells ( leukocytes) .** These are the soldiers of our body as there are part of the immune system. They are mainly involved in combating infection. There are different types of white blood cells such as neutrophils, lymphocytes, eosinophil, monocytes , basophils .
3- **Platelets**. These are tiny cells which help the blood to clot if we cut ourselves.

In order to receive blood safely there is need to make sure that it is compatible with the person receiving it. There is need to know the blood group of any individual . The mains reasons why we need to know blood group is when one needs tra fusion or if one is pregnant.

**What is blood group?**
Red blood cells have certain proteins on their surface called antigen. Also the plasma contains antibodies which will attack certain antigens if they are present. We have several types of red blood cell antigens but the most important types are the ABO and rhesus types.

**Let's look deeper at ABO types**
If one has type A antigens on the surface of their red blood cells, they will have anti-B antibodies in their plasma.
If one has type B antigens on the surface of their red blood cells , they will also have anti- A antibodies in their plasma.
If one has both type A and type B on the surface of their red blood cells , they will not have antibodies to A or B antigens in their plasma.
If one has neither type A or type B antigens on the surface of their red blood cells, they will have both anti- A and anti-B antibodies in their plasma.

Taking the explanation above we can now say the following ;

**There are four main blood groups defined by the ABO system:**
* **blood group A** has A antigens on the red blood cells with anti-B antibodies in the plasma
* **blood group B** has B antigens on red blood cells with anti-A antibodies in the plasma
* **blood group O** has no antigens on red blood cells , but has both anti-A and anti-B antibodies in the plasma
* **blood group AB** has both A and B antigens on the red blood cells but no antibodies in the plasma.

**Let's look at Rhesus types**
On top of having type A or type B antigens most people have rhesus antigens on their red blood cells and are called Rhesus positive. About 15% of people do not have rhesus antigen and are said to be 'rhesus negative' . This means about 85% of the UK population is rhesus positive.

**Can you explain these blood group names please with rhesus as well**

One's blood group depends on which antigen occur on the surface of the red blood cells. The genetic make up that we inherit from our parents will determine which antigens occur on our red blood cells.

**Blood group A**
One is blood group A positive if they have A and Rhesus antigens on the surface of their red blood cells.

One is blood group A negative if they have A antigens but not rhesus antigens on the surface of their red blood cells.

**Blood group B**
One is blood group B positive if they have B and Rhesus antigens on the surface of their red blood cells.
One is blood group B negative if they have B antigens but not rhesus antigens on the surface of their red blood cells.

**Blood group AB**
One is blood group AB positive if they have A, B, and Rhesus antigens on the surface of their red blood cells
One is blood group AB negative if they have A and B antigens but not rhesus antigens on the surface of their red blood cells .

**Blood Group O**
One is blood group O positive if they have neither A nor B antigens but have Rhesus antigens on the surface of their red blood cells
One is blood group O negative if they do not have A, B or Rhesus antigens.

Almost half (48%) of the UK population has blood group O, making this the most common blood group.

**Blood transfusion**

Receiving blood from the wrong ABO group can be life threatening.  It is then vital that the blood one receives is well matched ( compatible ) with theirs. If one is blood group B they should receive blood group B on transfusion. If blood group B people are given for example blood group A, the anti-A antibodies in a recipient with group B blood will attack the group A cells if transfused to them. This is why group A blood must never be given to a group B person.

As group O negative don't have any A or B antigens or Rhesus antigens, it can safely be given to any other group. Therefore blood group O negative is often used in medical emergencies when the blood type isn't immediately known. It's safe for most users because it doesn't have any A, B or Rhesus antigens on the surface of the cells, and is compatible with every other ABO and Rhesus blood group.

**Pregnancy and blood group testing**

Pregnant women are always given a blood group test. This is because if the mother is Rhesus negative but the child has inherited Rhesus positive blood from the father, it could cause complications if left untreated.

Rhesus negative women of child-bearing age should always only receive Rhesus negative blood.

**Giving blood**

Hopefully after reading this article you want to donate blood please get in touch with your country's blood transfusion services for further information. Most people are able to give blood, but only 4% actually do. You can donate blood in the UK if you:
* have a good overall level of health
* are 17 to 66 years of age (if it's your first time)
* weigh at least 50kg

You can check more information in Zimbabwe and UK below

National Blood Services Zimbabwe

NHS BLOOD TRANSFUSION SERVICES

This article was compiled by Dr Brighton Chireka , who is a GP and a blogger based in Kent in the United Kingdom. Feel free to contact him at info@docbeecee.co.uk and you can read more of his work on his blog at DR CHIREKA'S BLOG

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