

HEALTH IN OUR HANDS!

The Arkansas State University Wellness Program Newsletter
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This month's issue of *Health in Our Hands* recognizes blood donor month.

Giving Blood

Blood is a bodily fluid composed of red blood cells, white blood cells, platelets and a watery substance called plasma. This specialized fluid is responsible for delivering oxygen and nutrients to cells, removing waste, transporting hormones, as well as helping our bodies fight infections. Blood is a very critical element for life and cannot be artificially manufactured. It is through the generosity of donors that blood banks receive blood to transport to hospitals. There are over 38,000 blood donations needed every day. One donation of blood can save up to three lives

Types of Donations

There are a number of substances in blood that can be transfused to help save lives. After an individual makes the decision to donate, they can choose to donate whole or parts of blood such as red blood cells, platelets, and plasma. Blood can also be donated directly or autologously.

Whole blood is "the most common" form of blood donation. A pint of blood is usually drawn and takes about 8- 10 minutes. A person is eligible to donate again every 56 days. Whole blood can also be used for its parts once it arrives at the hospital. However, it will not contain as much platelets, plasma, or red blood cells compared to donating individual elements. The entire donation process,

Blood Donation

including paperwork, usually takes about an hour.

Platelets are tiny cell fragments that operate to control bleeding. Platelet apheresis is performed only at select blood donation centers. For this particular donation, an apheresis machine is used to collect the platelets from blood and sends the red blood cells and majority of the plasma back to the donor. The process usually takes anywhere from one and-a-half to two and-a-half hours. This substance is used a great deal during surgical procedures. A person is eligible to donate platelets every 7 days and up to 24 times a year.

Plasma is the liquid portion of blood that supplies water and nutrients to cells and contains proteins that help blood clot. Plasma donations are usually collected during platelet apheresis. The apheresis machines collect and separates platelets, plasma, and red blood cells. If plasma is being collected simultaneously with platelets, only the red blood cells are sent back to the donor once separated. This process normally takes an hour and fifteen minutes. A person is eligible to donate plasma every 28 days up to 13 times a year

Red blood cells are what give blood its color. These cells carry inhaled oxygen to tissues and carbon dioxide away from tissues to be exhaled. Red blood cell donation is similar to plasma and platelet donations. The apheresis machine does the separating and sends the other elements back to the donor. These cells are the most common elements

transfused to patients. The process should take 1 hour and 25 minutes. A person is eligible to donate double red blood cells every 112 days up to 3 times a year.

Other types of blood donations are directed and autologous. A **directed** donation is received by a patient from a family member or friend. An **autologous** donation is when an individual donates for their own use with a doctor's approval. If the blood from the autologous donation is not used, it is simply discarded.

Blood Types

Because we're all human and everyone's blood runs red, we should be able to donate to anybody. Right? No, wrong. Blood is categorized into four major types. For a safe transfusion, blood types can only be matched in a certain way.

- **Type A-** can be donated to type A and AB
- **Type B -** can be donated to type B and AB
- **Type AB-** can only be donated to AB; however, a patient with type AB can receive from all blood types
- **Type O-** can be donated to all blood types

There is also another component associated with blood type and that's positive and negative. These terms come from the Rh factor. If it's present the blood type is positive and negative if absent. The universal blood type for red cell donation is type O negative and plasma donation is type AB positive.

Donation Process

The donation process is pretty simple. There are only four steps:

registration, health history/physical, donation, and refreshments.

- **Registration.**

During this time, a staff member will sign the donor in, request identification, and present them with information about the donation process after.

- **Health History**

A qualified staff member will ask the donor specific questions regarding their health. They will also perform a mini-physical to determine if the individual is eligible to donate.

- **Donation**

During this stage, the donor is seated. The site for the donation is cleaned and a sterile needle is placed in the arm. The donation phase is complete once a pint of blood has been collected.

- **Refreshments**

Once a pint of blood has been collected, the donor can relax and enjoy nice refreshments before leaving.

After the blood has been drawn, it is placed in an ice cooler before it is processed, tested, stored, and distributed. During the processing stage, blood is scanned, centrifuged, and samples are drawn for testing. The blood samples are sent to a laboratory where they are tested for: Chagas disease, Hepatitis B virus, Hepatitis C virus, HIV 1, 2, Human T-Lymphotropic virus, syphilis, and West Nile virus. If a blood sample tests positive, the donor will be contacted and the donation will be discarded.

Eligibility

Not everyone is eligible to donate blood. The Food and Drug Administration specifies most of the eligibility rules for blood centers across the nation. However, each program has medical professionals determining the other rules. As a result, eligibility rules will vary between programs. The following are only a few reasons why an individual would be ineligible:

- Donor with acute infection

- Diabetic donors who used bovin insulin from the United Kingdom
- Blood pressure has to be lower than 180/100 and higher than 80/50
- Donors having cancers of the blood (leukemia, lymphoma, etc.)
- Donors having Chromis Fatigue Syndrome, Chronic Fatigue and Immune Dysfunction Syndrome, Myalgic Encyphalomyelitis, Cruetzfeldt-Jakob Disease, Mad Cow Disease
- Hemochromatosis
- Hemoglobin below 12.5 g/dL (different requirements for double red blood cell donation)
- Hepatitis, Jaundice since age 11
- HIV, AIDs
- Sickle Cell Disease (those with the trait are eligible)
- Donors with active Tuberculosis or currently being treated
- Donors that are pregnant
- Donors that have spent a substantial amount of time in countries where Mad Cow Disease is found
- Donors that have lived in Western Africa or have had close contact with people from that area (concern about HIV Group O)

Prepare Yourself for Donation

Every donor wants to have a successful donation. Here are a few tips that will help:

- ✓ Drink plenty of water. Hydration is very important when donating blood.
- ✓ Get plenty of rest. You wouldn't want to be tired.
- ✓ Wear comfortable clothing. The needle will be placed in your arm. Wearing a top that can be rolled past the elbow would be convenient.
- ✓ Eat a healthy meal. Consuming an unhealthy meal can affect the blood testing by the fats that linger in the blood.

- ✓ Bring identification. You will be asked for id during registration.
- ✓ Ask questions. If you're unsure or curious about anything just ask. The staff is there to help you.
- ✓ Research the center if you are not familiar with it. It's always beneficial to do a little research. Knowing you're donating at a good center may help relieve some anxiety.
- ✓ Refrain from doing strenuous activities after you have donated. Follow the suggestions you will receive post-donation.

Locations

If you're in the Jonesboro, AR area and you would like to donate blood, here is a list of locations.

American Red Cross- Jonesboro Center

1904 Grant Street, Suite A
Jonesboro, AR 72401
(870)268-1975

DCI Biologicals Inc.

2309 E Nettleton Ave
Jonesboro, AR 72401
(870)-934-9435

Sources for this article include:

1. www.redcrossblood.org/donating-blood
2. www.nlm.nih.gov/medlineplus/bloodtransfusionanddonation.html
3. www.americasblood.org

**If you have any suggestions for newsletter topics, please contact Dean Susan Hanrahan at hanrahan@astate.edu.

The Arkansas State University Employee Wellness Newsletter is published monthly during the academic year by the College of Nursing and Health Professions. Health questions can be addressed to Dean Susan Hanrahan, Ph.D., ext. 3112 or hanrahan@astate.edu. Produced by Jerrica Thomas, graduate student in the College of Nursing and Health Professions, Physical Therapy Program.