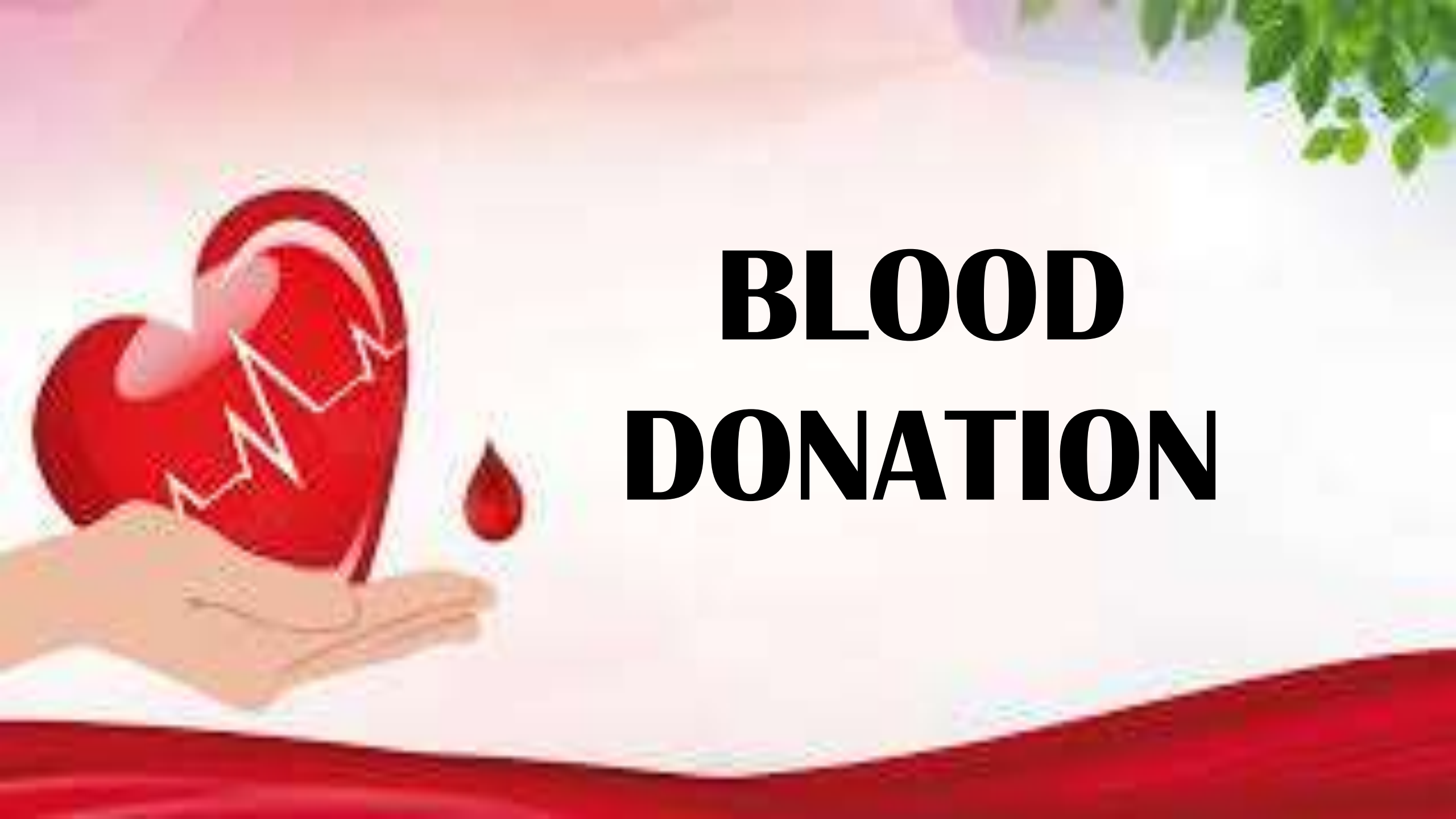
BLOOD
DONATION

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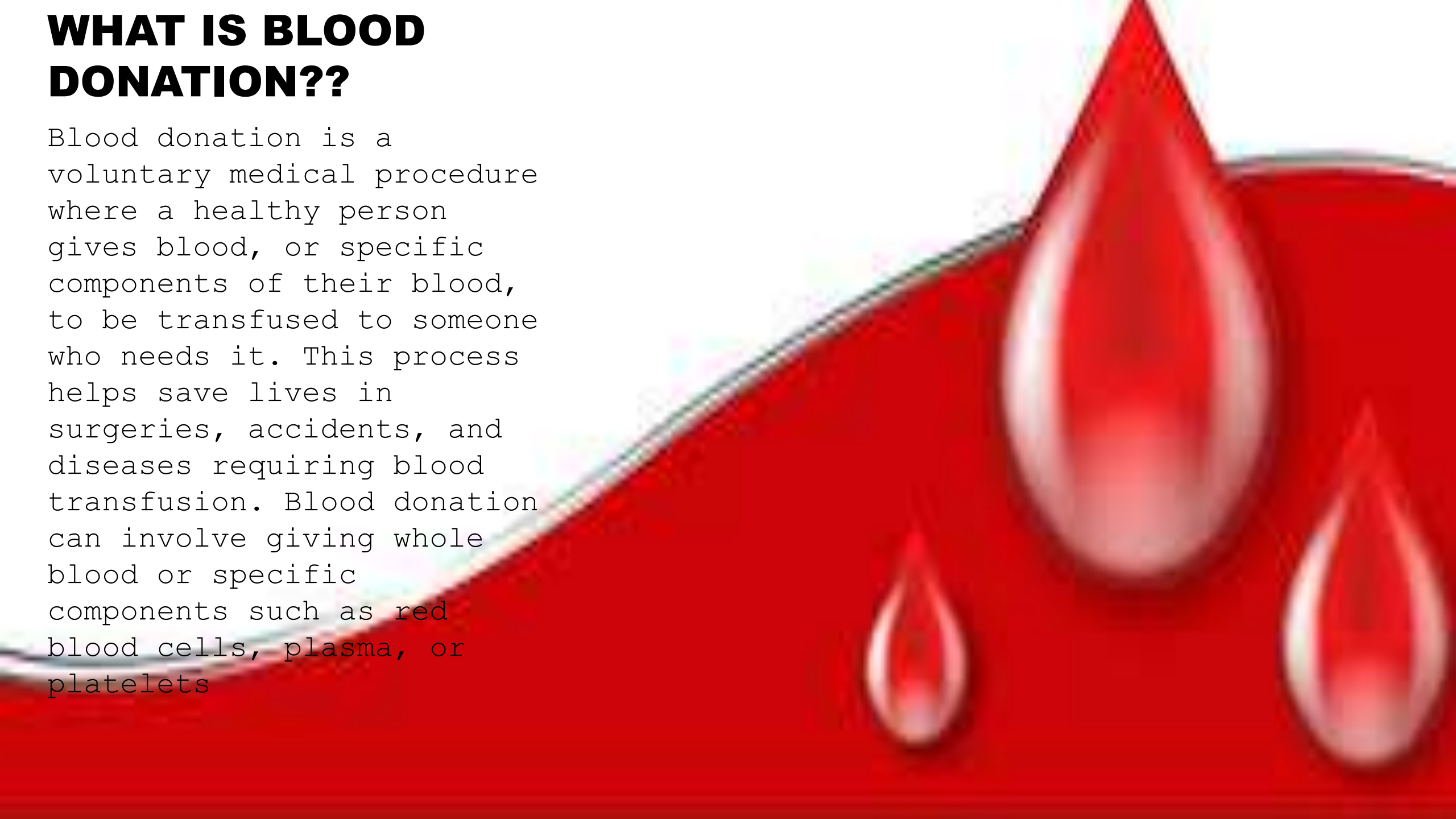
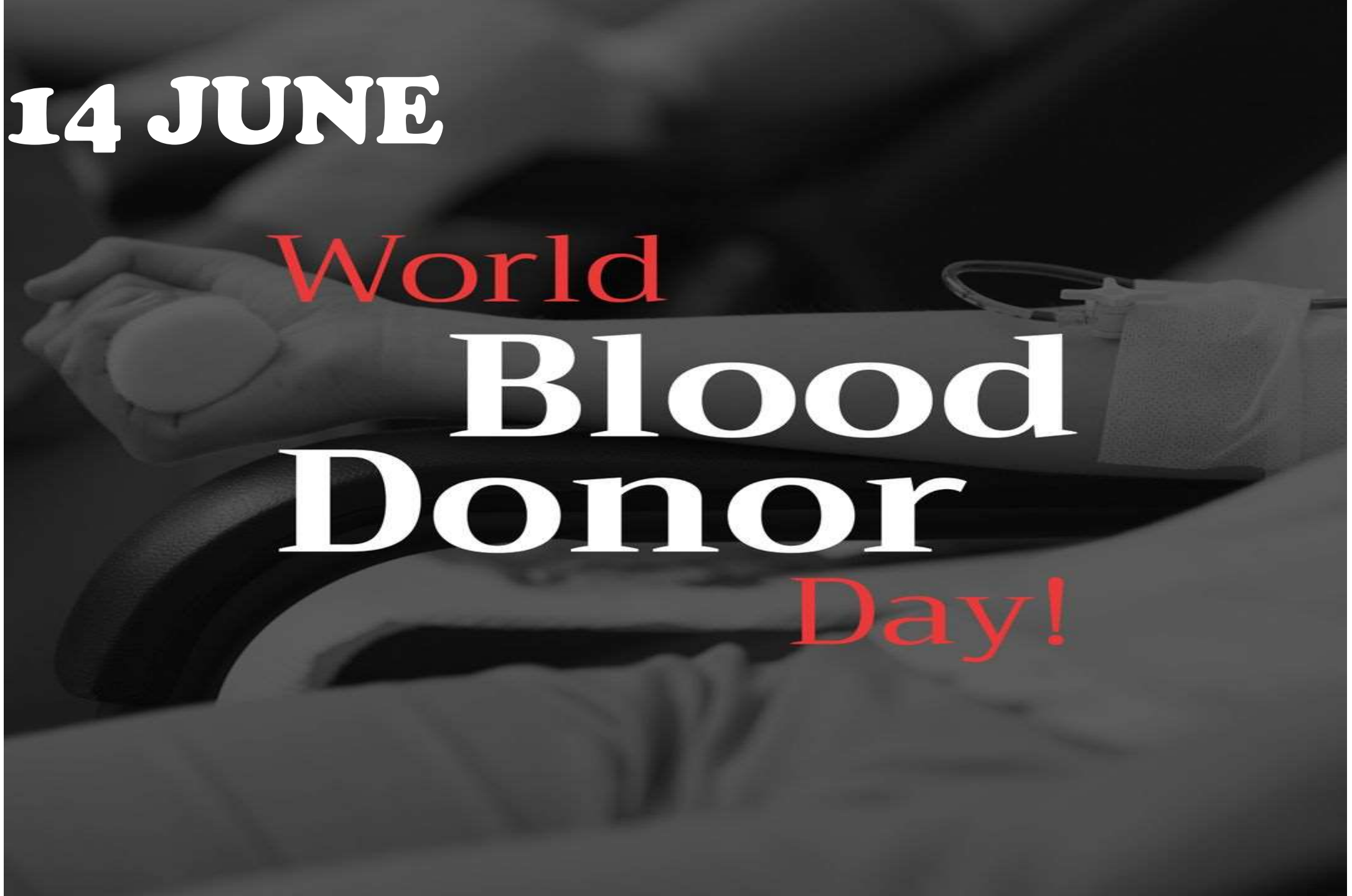
INTRODUCTION

Blood donation is a voluntary process where a healthy person gives a small amount of their blood, usually about a pint (450 ml), to help those in need of blood transfusions. This donated blood can be used whole or separated into components such as red blood cells, plasma, and platelets, each serving different medical purposes. The entire process typically takes about an hour, including health screening, the actual blood collection (which takes 8-10 minutes), and a brief rest afterward. Donors are carefully evaluated to ensure they meet health criteria for safe donation, including checks on pulse, blood pressure, hemoglobin levels, and medical history. Blood donation is essential in saving lives in emergencies, surgeries, cancer treatments, and for patients with chronic conditions.

WHAT IS BLOOD DONATION??

Blood donation is a voluntary medical procedure where a healthy person gives blood, or specific components of their blood, to be transfused to someone who needs it. This process helps save lives in surgeries, accidents, and diseases requiring blood transfusion. Blood donation can involve giving whole blood or specific components such as red blood cells, plasma, or platelets




14 JUNE
World
Blood
Donor
Day!

NEEDS OF BLOOD DONATION

The needs of blood donation are vital for saving lives in various medical situations. Blood donations are essential to help patients survive surgeries, cancer treatments, chronic illnesses, and traumatic injuries. Blood cannot be manufactured and is always in constant demand, but only a small percentage of eligible donors contribute regularly. Blood is used for transfusions in surgeries, cancer treatment, trauma recovery, and for patients with diseases like thalassemia, hemophilia, anemia, and those undergoing organ transplants or major surgeries. Different blood components such as red cells, platelets, and plasma are collected depending on medical needs. Platelets are critical for clotting and cancer treatment; plasma is needed for burns and other life-threatening conditions.

IMPORTANCE OF BLOOD DONATION

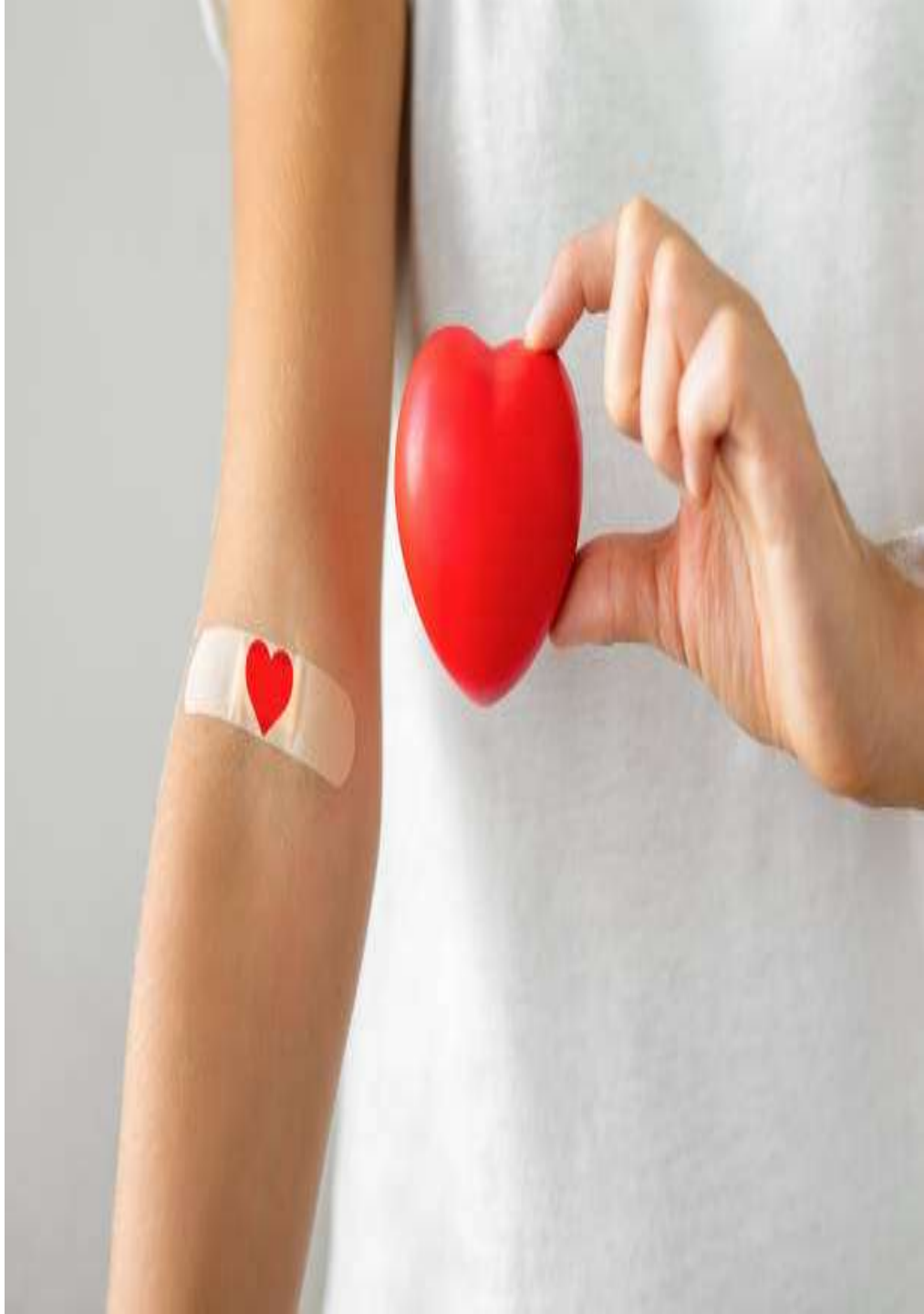
Blood donation is crucial for saving lives as it provides a vital resource for medical treatments,
surgeries, and emergencies,
ensuring a steady supply of blood for those in need

Blood Donation Process

The blood donation process involves a simple and safe procedure where a qualified donor voluntarily gives blood, which is then carefully collected, tested, and processed to ensure its safety and suitability for transfusion.

TYPES OF BLOOD DONATIONS

There are different types of blood donations, including whole blood donation, where a person donates a pint of blood , and other specialized donations like platelet and plasma donations, which focus on specific blood components Needed for certain medical conditions



COMPONENTS OF BLOOD

1)Plasma

- The liquid portion of blood (about 55%).
- Made mostly of water (90–92%), proteins (like albumin, globulin, fibrinogen), salts, hormones, nutrients, and waste products.
- Function: Transports nutrients, hormones, and proteins throughout the body.

2)Red Blood Cells (RBCs / Erythrocytes)

- Make up about 40–45% of blood.
- Contain **hemoglobin**, which carries oxygen from the lungs to the tissues and returns carbon dioxide from the tissues to the lungs.
- Function: Oxygen and carbon dioxide transport.

3)White Blood Cells (WBCs / Leukocytes)

- Less than 1% of blood.
- Types: Neutrophils, Lymphocytes, Monocytes, Eosinophils, Basophils.
- Function: Defend the body against infections, bacteria, viruses, and foreign substances (immune response).

4)Platelets (Thrombocytes)

- Small cell fragments, less than 1% of blood.
- Function: Help in blood clotting to prevent excessive bleeding during injury.

CRITERIA OF BLOOD DONATION

1) Age: Donors should be between 18 and 65 years old. Some countries allow donors as young as 16 or 17 with parental consent or medical discretion, and some accept donors older than 65 with a physician's approval.
2) Weight: Donors must weigh at least 50 kg (about 110 lbs), though some places allow donors weighing 45 kg for smaller blood volume donations.
3) Health Status: Donors must be in good health, feeling well, and free from infections like cold, flu, or any other contagious illness at the time of donation.
4) Hemoglobin Level: Minimum hemoglobin levels are typically 12.5 g/dl for females and 13.0-13.5 g/dl for males to ensure safe donation.
5) Vital Signs: Normal blood pressure (typically systolic 100-140 mmHg, diastolic 60-90 mmHg), pulse (60-100 beats per minute), respiration, and body temperature (below 37°C) are required.
6) Interval Between Donations: Usually donors can give whole blood every 8 weeks (56 days), with limits on the number of donations per year.
7) Other Conditions: Donors must not have behavior or conditions that pose a risk for transmissible infections like HIV, Hepatitis B or C. Tattoos or body piercings require deferral periods (usually 6 months) before donation.
8) Women Specifics: Donors should not be pregnant, recently delivered, breastfeeding, or menstruating at the time of donation.
9) Skin Condition: The donor's skin at the donation site should be free from infections, wounds, or signs of drug abuse.

- Informed consent is also required before donation, with donors being informed of the donation process and testing of their blood for safety reasons.
- These criteria ensure the safety of both donor and recipient and may vary slightly based on local regulations and medical guidelines.

PREPARATION OF BLOOD DOANTION

❑ Before Donation:

Ensure eligibility by checking health status and meeting donation criteria.
Get a good night's sleep to be well-rested and lower the chance of feeling faint.
Stay well hydrated by drinking plenty of fluids in the days leading up to and on the day of donation.
Eat a healthy meal before donating; avoid fatty foods which can affect blood quality. Include iron-rich foods to help maintain hemoglobin levels.
Avoid alcohol and caffeine before donation as these can cause dehydration.
Wear comfortable clothing with sleeves that can be easily rolled up above the elbow.
Bring a valid form of identification.
If donating platelets, avoid aspirin two days before the donation.

❑ On the Day of Donation:

Plan to arrive on time for the appointment.
Drink about 500 ml of water an hour before the donation to enhance circulation and ease vein access.
Engage in light exercise such as walking, but avoid vigorous activity before and after donation.
Inform staff of any medications, previous successful vein used, or arm preference.
Relax during donation to help keep blood pressure steady.

❑ After Donation:

Rest briefly and have a snack and drinks in the refreshment area.
Continue to drink fluids to replace lost volume.
Avoid heavy lifting or strenuous exercise for the next 24 hours.
Book the next appointment if willing to donate again.

✓ These preparation steps help reduce risks like fainting, promote successful donation, and support donor health.

HEALTH BENEFITS OF BLOOD DOANTION

- The health benefits of blood donation for the donor include:

- **Cardiovascular Health:** Regular blood donation helps lower iron stores in the body, which can reduce blood viscosity and the risk of heart attacks, strokes, and blood clots. Donors have an associated lower risk of heart attack by up to 88% compared to non-donors due to improved cardiovascular function and reduced arterial blockages.
- **Cancer Risk Reduction:** Blood donation reduces excess iron levels, which decreases oxidative stress and free radical damage in cells, potentially lowering the risk of certain cancers such as liver, colon, lung, and esophageal cancers.
- **Blood Pressure Regulation:** Some studies suggest that donating blood may help control blood pressure by improving blood flow and reducing blood thickness, thus aiding heart efficiency.
- **Free Health Screening:** Blood donors receive a mini-physical that includes checking pulse, blood pressure, hemoglobin, temperature, and screening for infectious diseases. This can help detect undiagnosed health issues such as high blood pressure, arrhythmias, or rare blood types.
- **Psychological Benefits:** Donating blood delivers emotional rewards such as stress reduction, a sense of belonging, purpose, and accomplishment, improving overall emotional well-being.
- Calorie Use and Weight: The process of producing new blood cells after donation burns calories, equivalent to approximately 600–650 per donation, aiding metabolism although it shouldn't be considered a weight-loss strategy.

- These benefits make blood donation a positive act not only for recipients but also for the donor's physical and emotional health.

MYTHS AND FACTS

- **Here are common myths and facts about blood donation explained simply:**

- **Myth: Donating blood hurts a lot.**
  Fact: You feel only a small pinch when the needle goes in, and then there is little or no pain.
- **Myth: Donating blood makes you weak.**
  Fact: Your body quickly replaces the blood lost, usually within a day or two, so you don't get weak.
- **Myth: Blood donation is unsafe and you can catch diseases.**
  Fact: The needles and equipment are clean and used only once, so it is very safe with no risk of infections.
- **Myth: Only people with rare blood types are needed.**
  Fact: All blood types are important and needed to help patients.
- **Myth: If you have tattoos or piercings, you can't donate.**
  Fact: You just need to wait a certain time (usually 12 months) after getting tattooed or pierced before donating.
- **Myth: If you take medicine or have health problems, you can't donate.**
  Fact: Many people taking medicines or with controlled health conditions can donate safely.
- **Myth: You can donate blood only once a year.**
  Fact: You can donate every 8-12 weeks depending on local rules.
- **Myth: You're too old to donate.**
  Fact: There is usually no upper age limit if you are healthy.

- **Donating blood is quick, safe, and important for saving lives. These facts help clear fears so more people can donate and help others.**

EVERYONE COULD

BE A HERO

YOU CAN HELP

SAVE A LIFE

GIVE BLOOD

Donate

BLOOD

Save Life

CONCLUSION

BLOOD DONATION IS A VITAL AND SELFLESS ACT THAT SAVES COUNTLESS LIVES, PROVIDING ESSENTIAL SUPPORT FOR PATIENTS UNDERGOING SURGERIES, CANCER TREATMENTS, TRAUMA CARE, AND MANAGING CHRONIC ILLNESSES. ONE DONATION CAN POTENTIALLY SAVE MULTIPLE LIVES BY SUPPLYING CRITICAL COMPONENTS LIKE RED BLOOD CELLS, PLASMA, AND PLATELETS. BEYOND HELPING OTHERS, DONATING BLOOD OFFERS HEALTH BENEFITS FOR THE DONOR, INCLUDING REDUCED RISK OF HEART DISEASE AND CANCER, BALANCED IRON LEVELS, AND A FREE HEALTH CHECKUP THAT CAN REVEAL UNDERLYING HEALTH CONDITIONS. THE PROCESS IS SAFE, QUICK, AND SIMPLE, MAKING IT AN ACCESSIBLE AND IMPACTFUL WAY TO CONTRIBUTE TO THE COMMUNITY. REGULAR BLOOD DONATION FOSTERS A PROFOUND SENSE OF PURPOSE AND SATISFACTION WHILE PLAYING A CRUCIAL ROLE IN MAINTAINING A RELIABLE BLOOD SUPPLY FOR MEDICAL EMERGENCIES AND TREATMENTS.

THANK YOU

BY:

LASYA.K

EEV(VLSI)