



# Rare Donor Registry Integrated with e-Rakt Kosh

[Source: TH](#)

## Why in News?

The **Union Health Ministry** is integrating the **Rare Donor Registry of India (RDRI)** with [e-Rakt Kosh](#) to enable real-time access to **rare blood types** (such as **Bombay, Rh-null, P-Null**) and improve nationwide coordination among blood banks.

## What is Rare Donor Registry of India (RDRI)?

- **About:** The **Rare Donor Registry of India (RDRI)** is a **national database** of rare blood group donors.
  - It was developed by the **Indian Council of Medical Research-National Institute of Immunohaematology (ICMR-NIIH)** in collaboration with leading medical institutes.
- **Purpose and Need:** RDRI supports patients who require specially matched transfusions, particularly those suffering from [thalassemia](#), [sickle cell disease](#), and other rare conditions.
- **Scope & Coverage:** The registry includes **over 4,000 screened donors**, tested for more than **300 rare blood markers**.
  - It focuses on blood groups that either **lack high-frequency antigens** or have **uncommon antigen combinations**.
- **Significance for People with Rare Blood Types:** Rare blood groups are difficult to match. Transfusing incompatible blood may cause **alloimmunisation**, where the patient develops antibodies against transfused blood, complicating future treatments.

## What is e-Rakt Kosh?

- **About:** **e-Rakt Kosh** is a centralized **digital blood bank management system** developed by [CDAC](#) under the **National Health Mission**.
  - It provides **real-time information on blood availability, donation camps, and blood banks** across India.
  - The platform **connects donors, hospitals, and blood banks**, enabling efficient tracking and safe transfusions.

## Blood

- **About:** Blood is a **vital fluid** that transports **oxygen, nutrients, hormones, and waste** throughout the body.
  - Produced in the **bone marrow**, blood also aids in **immunity, healing, and waste removal** via the liver and kidneys. An average adult has about **5 litres** of blood.
- **Components:** It consists of **45% cells (red blood cells, white blood cells, and platelets)** and **55% plasma**, a fluid that carries proteins, vitamins, and minerals.

# Components of blood

## Plasma

Transports nutrients, hormones, and proteins. It is a yellow liquid that makes up about 55% of the body's blood volume.



## Red blood cells

Carry fresh oxygen through the body and remove carbon dioxide. Red blood cells make up about 40 to 45% of blood.

## White blood cells

Part of the body's immune system, detect and fight viruses and bacteria. There are five major types of white blood cells, and they make up less than 1% of blood.

Source: American Society of Hematology

- **Blood Types or Groups:** There are **4 main blood groups/ types of blood:** A, B, AB and O.

	Type A	Type B	Type AB	Type O
Antigen (on RBC)	Antigen A 	Antigen B 	Antigens A + B 	Neither A or B 
Antibody (in plasma)	Anti-B Antibody 	Anti-A Antibody 	Neither Antibody	Both Antibodies 
Blood Donors	Cannot have B or AB blood Can have A or O blood	Cannot have A or AB blood Can have B or O blood	Can have any type of blood Is the universal recipient	Can only have O blood Is the universal donor

## What is Bombay Blood Group?

Click Here to Read: [Bombay Blood Group](#)

## UPSC Civil Services Examination, Previous Year Question (PYQ)

**Q. A married couple adopted a male child. A few years later, twin boys were born to them. The blood group of the couple is AB positive and O negative. The blood group of the three sons is A positive, B positive and O positive. The blood group of the adopted son is(2011)**

(a) O positive

- (b) A positive
- (c) B positive
- (d) Cannot be determined on the basis of the given data

**Ans: (a)**

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