



NOTTO Annual Report 2023-24

For Prelims: [National Organ and Tissue Transplant Organisation \(NOTTO\)](#), [Transplantation of Human Organs and Tissues Act, 1994](#), [Transplantation of Human Organs and Tissues Rules 2014](#), [National Organ Transplant Program \(NOTP\)](#), [Organ Trafficking](#).

For Mains: [Status of Organ Transplant in India](#) and associated challenges.

Source: IE

The [National Organ and Tissue Transplant Organisation \(NOTTO\)](#) released its annual report for the year 2023-24 on [Indian Organ Donation Day \(IODD\)](#) on **August 3, 2024**.

- According to NOTTO, in 2023, India **reached a significant milestone by surpassing 1,000 deceased organ donors in a single year** for the first time, breaking the record set in 2022.

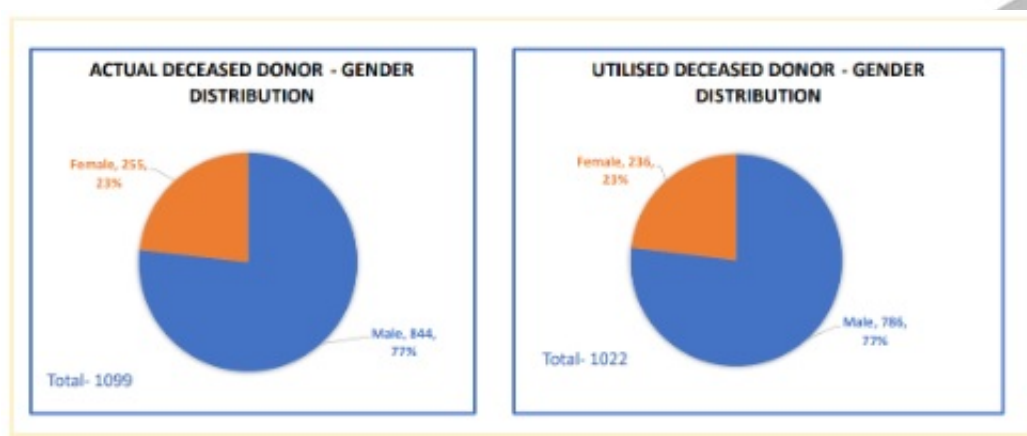
Indian Organ Donation Day (IODD)

- It is **observed annually on 3rd August since 2010** to augment awareness about brain stem death and organ donation, dispel myths and misconceptions associated with organ donation and motivate and encourage the citizens of the country to donate organs and tissues after death.
- In 2024, “Angdaan Jan Jagrukta Abhiyaan” was launched for various awareness activities.
 - Under the Abhiyaan, the **month of July was observed as the Organ Donation Month**.
- A person after his death can give new life to up to 8 people by donating vital organs namely Kidney, Liver, Lung, Heart, Pancreas and Intestine and improve quality life of many more by donating tissues like cornea, skin, bone and heart valve etc.

What are Key Highlights of the Report?

Finding	Details
Gender Distribution of Donors	<ul style="list-style-type: none">▪ 63% of living donors were women.▪ 77% of deceased donors were men.
Transplants by Region	<ul style="list-style-type: none">▪ Delhi-NCR: Nearly 78% of foreign national transplants.▪ Delhi: 4,426 transplants total, with foreign nationals accounting for over 32%.▪ Rajasthan: 116 transplants to foreign nationals.▪ West Bengal: 88 transplants to foreign nationals.

Gender Distribution of Donors	<ul style="list-style-type: none"> ▪ 63% of living donors were women. ▪ 77% of deceased donors were men.
Deceased Donor Milestone	<ul style="list-style-type: none"> ▪ More than 1,000 deceased organ donors in a single year for the first time. ▪ Deceased-donor transplants increased from 837 in 2013 to 2,935 in 2023.
Transplants with Organs from Unrelated Deceased Donors	<ul style="list-style-type: none"> ▪ Nine transplants to foreigners with organs from unrelated deceased donors. ▪ Locations: Three in Tamil Nadu, two each in Delhi, Maharashtra, and Gujarat.
Foreigners' Allocation Rule	<ul style="list-style-type: none"> ▪ Organs from deceased donors are allocated to foreigners only when no matching Indian patients are available.
Organ Donation Rate	<ul style="list-style-type: none"> ▪ Less than 1 per million population.



Note: Presently, India ranks **third** in the world in terms of **organ transplantation** and **second** in terms of **corneal transplantation**.

What are the Regulatory Framework Related to the Organ Transplantation in India?

- **Transplantation of Human Organs and Tissues Act, 1994 (THOTA):**
 - Organ donation and transplantation in India are **regulated** under the **THOTA (amended in 2011)** having the following provisions:
 - A **transplant** can come from organs donated by **deceased individuals** or from a **living donor** who is known to the recipient.
 - **Altruistic donations** from **distant relatives**, in-laws, or long-time friends are permitted, but they undergo extra checks to ensure **no financial exchange** has occurred.
 - **Unrelated donors** must provide documents and photos to show a **long-term connection** or friendship with the recipient.
 - **Offering** or paying for organs, arranging or advertising such deals, seeking organ suppliers, or helping to make false documents can result in up to **10 years in jail** and a **fine** of up to **Rs 1 crore**.
 - **Brain stem death** is legally recognised as **death** under **THOTA** since 1994.
 - The **Transplantation of Human Organs and Tissues Rules 2014** were notified for promoting organ donation from deceased donors.

- **National Organ and Tissue Transplant Organisation (NOTTO):**
 - **NOTTO**, an **apex organisation** at the national level, was established to provide a national system for **organ procurement and distribution**.
- **National Organ Transplantation Guidelines:**
 - **Removed Age Cap:** The upper **age limit has been removed** as people are now living longer.
 - Earlier, according to the NOTTO guidelines, an end-stage organ failure patient **above 65 years of age was prohibited** from registering to receive the organ.
 - **No Domicile Requirement:** The **domicile requirement** to register as an organ recipient in a particular state has been removed under a '**One Nation, One Policy**' move.
 - Now a needy patient can register to receive an organ in any state of his or her choice and will also be able to get the surgery done there.
 - **No Fees for Registration:** The Centre has instructed states to discontinue the registration fee that was previously charged for this purpose.
- **Organ Transport Policy:**
 - Recently, the Union government has finalised a **uniform policy** to speed up the process of **transporting a live organ** between hospitals or cities.
 - It was created by **Niti Aayog** with input from several ministries like civil aviation, railways, transport and highways etc.

What are the Ethical Concerns Related to Organ Donation and Transplantation?

- **Living Persons:**
 - **Violates the Traditional Rule of Medicine: Kidney donors are vulnerable to urinary and chest infections**, which violates the first traditional rule of medicine, **primum non nocere (above all, do no harm)**. One person becomes a patient to benefit another person who is already a patient.
 - **Donation is Prone to Trafficking:** Organ donation is susceptible to **trafficking** when there is **illegal and unethical activity** involved in the acquisition, transportation, or transplantation of organs. In its 1991 document, the World Health Organisation (WHO) expressed worry about the increase in **illegal trade** of human organs, especially from **living donors** who are **not related** to the **recipients**.
 - **Emotional Coercion:** The relationship between the donor and recipient influences the donor's motivation for organ donation. Living related donors are **genetically related** to the recipient and often feel **obligated** due to family ties and emotional bonds. Ethical concerns include the potential for **undue influence, emotional pressure and coercion**.
- **Deceased Person:**
 - **Consent and Autonomy:** It is important to determine whether the person had expressed their **consent** or **refusal** for organ donation while they were alive. If the person's wishes are unknown, it can be **ethically challenging** to make decisions on their behalf.
 - **Allocation and Fairness:** Ethical concerns can emerge when there are **disparities** in access to transplantation based on factors such as **wealth, social status** or **geographical location**.
 - **Transparency and Public Trust:** The ethical concerns related to disclosure of information, the handling of organ procurement and transplantation procedures, and the management of **organ donation registries** are important considerations.

What are the Challenges in Organ Transplantation?

- **Donor Organ Supply:** In India, the **demand** for organ donations **far exceeds** the available **supply**. An estimated around **1.8 lakh persons** suffer from **renal failure** every year, however the number of renal transplants done is around 6000 only. The organ **donation rate** is still less than **1 per million**. The need is for **65 organs per one million population**.
- **Peri-Transplant Donor Tissue Damage:** Aging and diseases reduce donor organ quality, leading to **Ischemia-Reperfusion Injury (IRI)**. Many organs are **discarded** due to **inferior quality**, impacting transplant success rates.
- **Outdated Preservation Techniques:** Many hospitals still rely on **traditional static cold**

storage methods, which may not be as effective as newer technologies. Not all transplant centres in India have access to **advanced preservation technologies** like hypothermic or normothermic machine perfusion.

- **Chronic Rejection in Organ Transplantation:** Long-term survival rates for transplanted organs have not significantly improved over the past 20 years. Current **anti-rejection therapies** have remained **unchanged**, with only modest improvements in survival rates.
- **Lack of awareness:** There is a lack of awareness among people about the importance of organ donation and transplantation. E.g., lack of Awareness of concept of **Brain Stem Death** among stakeholders

What are the WHO's Important Guiding Principles Related to Organ Donation?

- **Guiding Principle 1:** Cells, tissues, and organs can be removed from deceased persons for transplantation if legal consent is obtained and there is **no** evidence of the **deceased's objection**.
- **Guiding Principle 2: Physicians** determining that a potential donor has died should not be **directly involved** in cell, tissue or organ removal from the donor or subsequent transplantation procedures; nor should they be responsible for the care of any intended recipient of such cells, tissues and organs.
- **Guiding Principle 3:** Deceased donations should **maximise therapeutic potential**, while living adult donors should comply with domestic regulations. Typically, living donors should have a **genetic, legal or emotional connection** to their recipients.
- **Guiding Principle 4:** No organs should be taken from **living minors** for transplantation, except for limited exceptions allowed by national law. Special measures must be implemented to **safeguard minors**, and whenever possible, their consent should be obtained before donation.
 - The same principles apply to legally incompetent individuals (who are not able to testify or stand trial).
- **Guiding Principle 5:** Donations of cells, tissues, and organs must be **voluntary** and **without monetary compensation**. The sale or purchase of these items for transplantation should be prohibited.

Way Forward

- **Strengthen Organ Donation and Awareness Programs:** Launch comprehensive public awareness campaigns to educate the public about the importance of organ donation and how it saves lives.
 - Integrate organ donation education into school curricula and community programs to foster a culture of donation from a young age.
- **Enhance Infrastructure and Facilities:** Adopt advanced organ preservation techniques, including hypothermic and normothermic machine perfusion systems. Implement standardised protocols for organ procurement, preservation, and transport across all transplant centres.
- **Advance Research and Innovation:** Investigate and implement emerging technologies such as bioengineered organs, [xenotransplantation](#), and [nanotechnology](#) in transplantation.
- **Foster Ethical and Regulatory Frameworks:** Create and promote ethical guidelines for organ donation, transplantation, and research, addressing issues such as consent and equitable access.

Drishti Mains Question:

Q. What are the challenges involved in transplantation of organs in India? How organ transplantation rate can be improved in India?

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. Consider the following statements: **(2020)**

1. Genetic changes can be introduced in the cells that produce eggs or sperms of a prospective parent.
2. A person's genome can be edited before birth at the early embryonic stage.
3. Human induced pluripotent stem cells can be injected into the embryo of a pig.

Which of the statements given above is/are correct?

- (a)** 1 only
(b) 2 and 3 only
(c) 2 only
(d) 1, 2 and 3

Ans: (d)

Q. With reference to the scientific progress of ancient India, which of the statements given below are correct? **(2012)**

1. Different kinds of specialised surgical instruments were in common use by the 1st century AD.
2. Transplant of internal organs in the human body had begun by the beginning of the 3rd century AD.
3. The concept of sine of an angle was known in 5th century AD.
4. The concept of cyclic quadrilaterals was known in 7th century AD.

Select the correct answer using the codes given below:

- (a)** 1 and 2 only
(b) 3 and 4 only
(c) 1, 3 and 4 only
(d) 1, 2, 3 and 4

Ans: (c)

Mains

Q. Stem cell therapy is gaining popularity in India to treat a wide variety of medical conditions including Leukaemia, Thalassemia, damaged cornea and several burns. Describe briefly what stem cell therapy is and what advantages it has over other treatments? **(2017)**