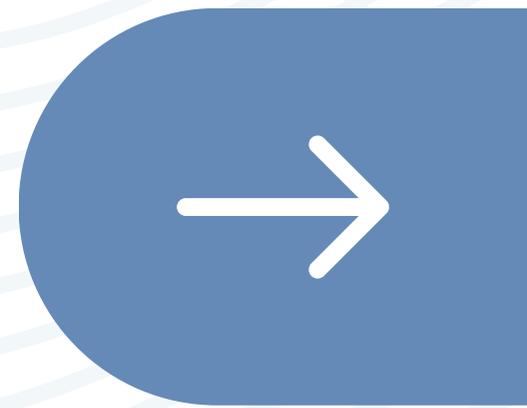


# #DIBS BY NEXTILLO

DAILY INFORMATION BULLETIN SERVICE

CLASSIFICATION OF STEM CELLS





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## CLASSIFICATION OF STEM CELLS

*Stem cells are unspecialized cells of the human body.*

- *They are able to differentiate into any cell of an organism and have the **ability of self-renewal**.*
- *Stem cells exist both in **embryos** and **adult cells**.*
- ***Totipotent stem cells** are able to divide and differentiate into cells of the whole organism.*



# VISUAL REPRESENTATION





# CLASSIFICATION OF STEM CELLS

## ***properties of STEM CELLS***

- *The Stem cells-> 2 important properties:*
- *➤ SELF-RENEWAL*
- *➤ DIFFERENTIATION*
- *Stem cells divide in three major ways:*
- *SELF RENEWAL-The first type will give rise to two cells identical to the mother cell,these cells will join hematopoietic stem cells,so this is self-renewal*
- *DIFFERENTIATION-In this type Daughter cells are different from the mother cells and will follow the differentiation path*
- *Hematopoietic stem cells will divide in a way by which one cell will have the same character as the mother cell and it is considered to be self-renewal*



# CLASSIFICATION OF STEM CELLS

## STEM CELLS THERAPY

- This is **the future of organ transplant**
- Stem cell therapy, also known **as regenerative medicine**, promotes the repair response of diseased, dysfunctional or injured tissue using stem cells or their derivatives. It is the next chapter in organ transplantation and uses cells instead of donor organs, which are limited in supply.
- For example, if the person has heart disease, the cells could be injected into the heart muscle. The healthy transplanted heart muscle cells could then contribute to repairing defective heart muscle.
- These stem cells are manipulated to specialize into specific types of cells.



# MCQ

**Question: Where can scientist obtain stem cell ?**

- A. Only from an embryo**
- B. Only from tissue in the body**
- C. Only from the brain**
- D. From an embryo or tissue in the body**

**Answer: (D) From an embryo or tissue in the body**

