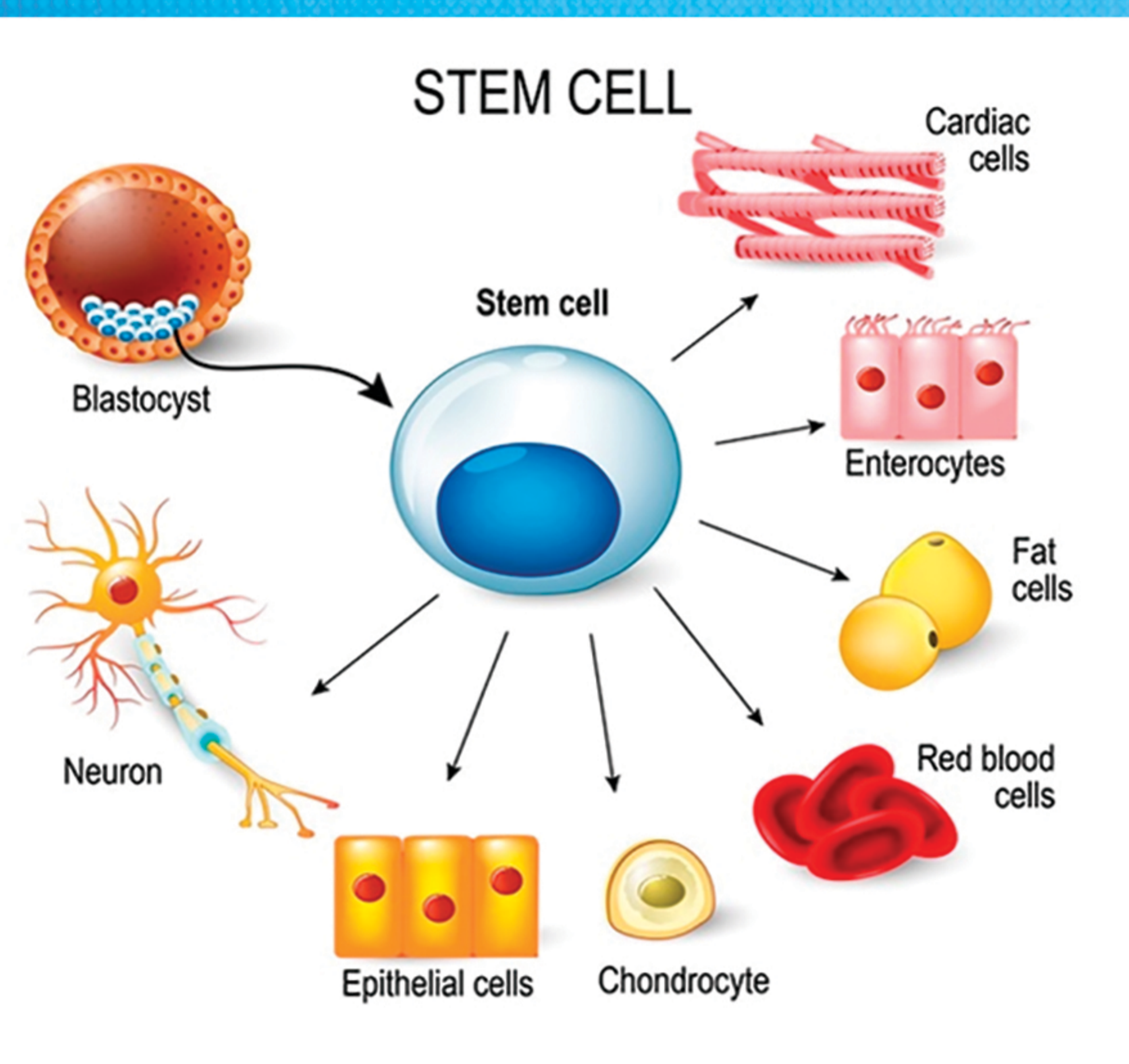


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Introduction

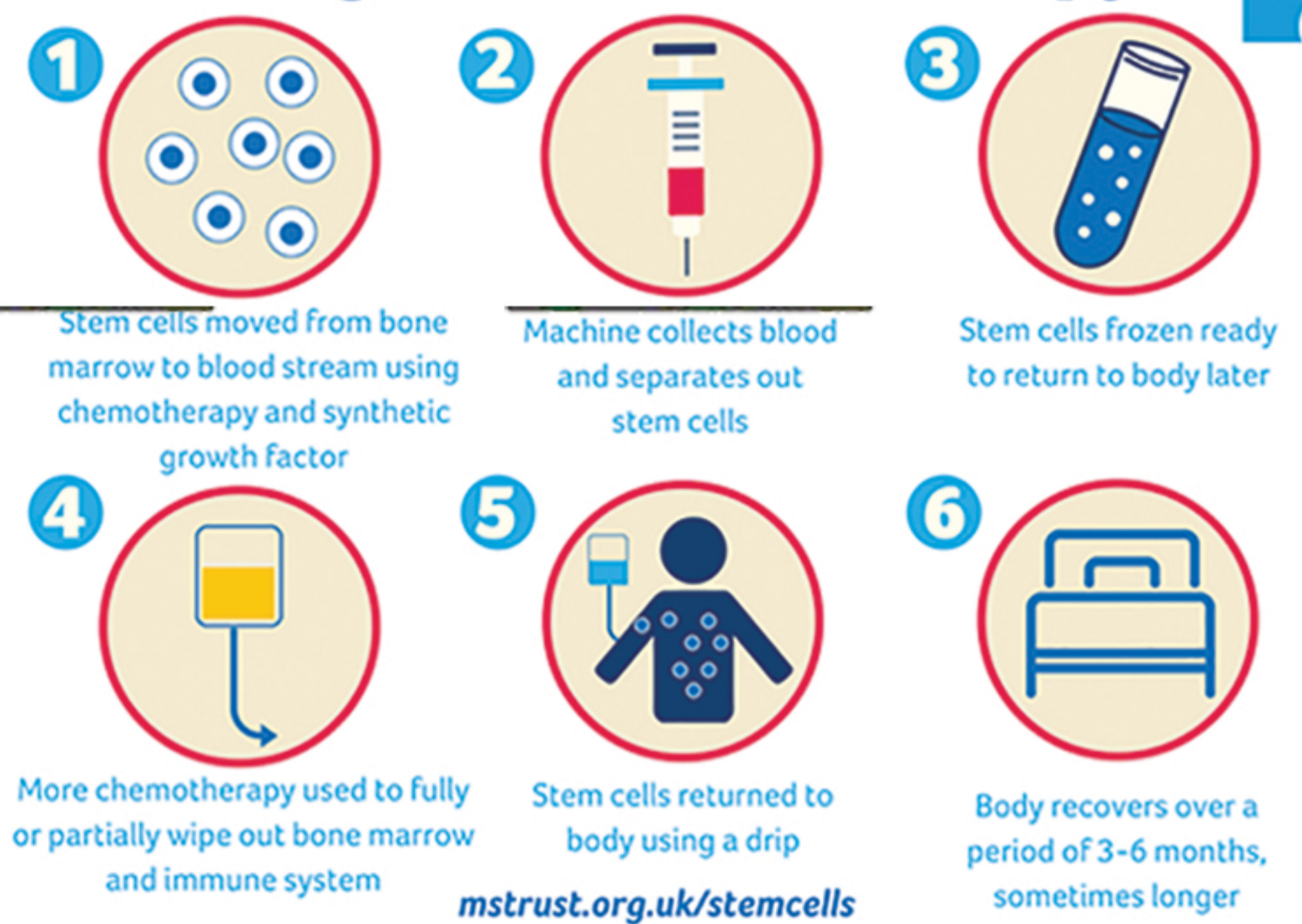
Stem cells are the body's raw materials — cells from which all other cells with specialized functions are generated. Under the right conditions in the body or a laboratory, stem cells divide to form more cells called daughter cells.⁽¹⁾



How

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. Researchers grow stem cells in a lab. These stem cells are manipulated to specialize into specific types of cells, such as heart muscle cells, blood cells or nerve cells. The specialized cells can then be implanted into a person. 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.⁽¹⁾

Six stages of stem cell therapy



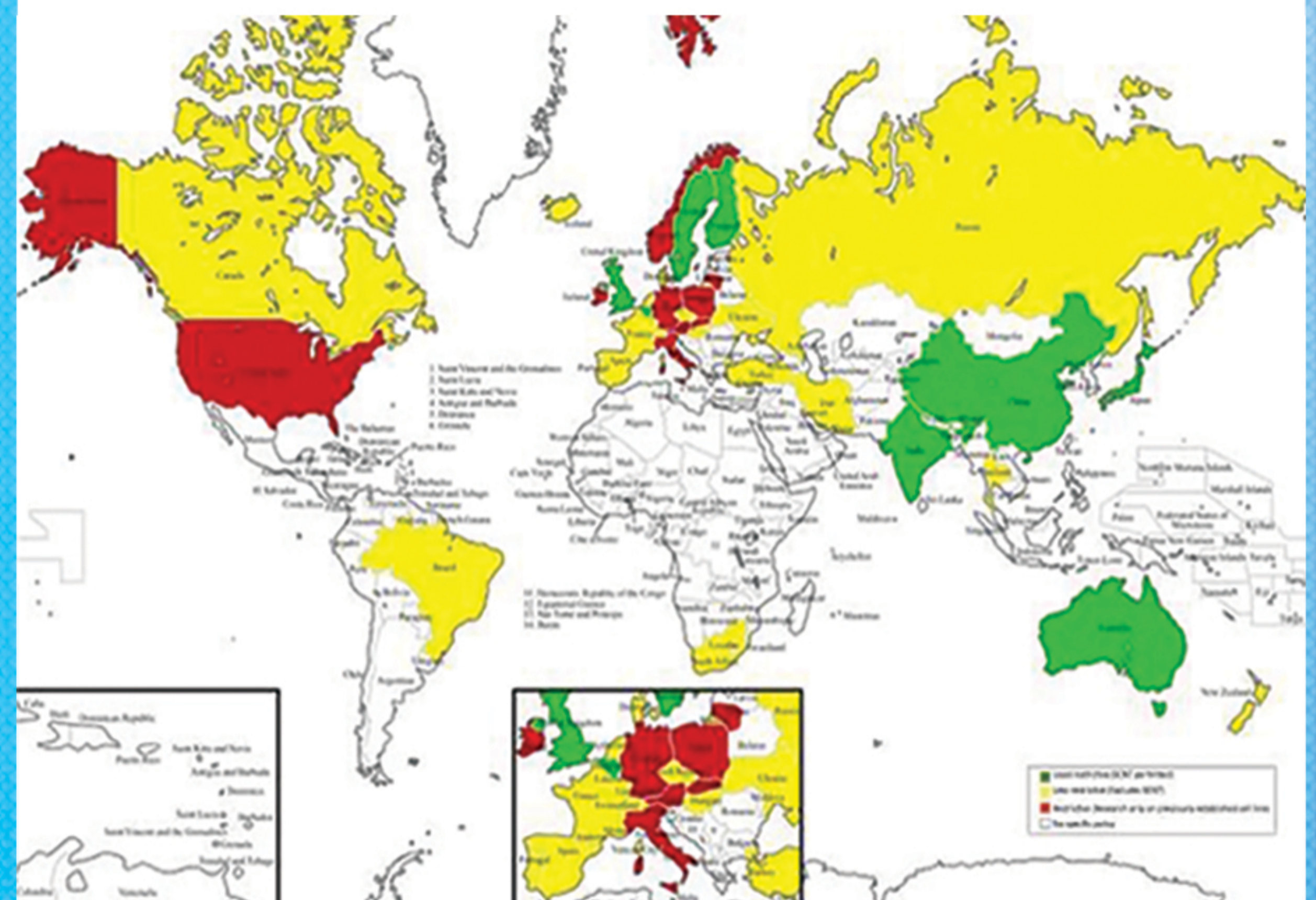
When

In the mid 1800s it was discovered that cells were basically the building blocks of life. Attempts were made to fertilise mammalian eggs outside of the human body and in the early 1900s.

In 1968, the first bone marrow transplant was performed to successfully treat two siblings with severe combined immunodeficiency. Other key events in stem cell research include.

- 1978:** Stem cells were discovered in human cord blood.
- 1981:** First in vitro stem cell line developed from mice.
- 1988:** Embryonic stem cell lines created from a hamster.
- 1995:** First embryonic stem cell line derived from a primate.
- 1997:** Cloned lamb from stem cells.
- 1997:** Leukaemia origin found as haematopoietic stem cell, indicating possible proof of cancer stem cells.⁽²⁾

Where⁽³⁾



Conclusion

- It is one of the many solutions to untreatable diseases.
- Unfortunately, stem cell therapy isn't yet accepted by society, but with the right support it can be one of the most significant breakthroughs in medicine.

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