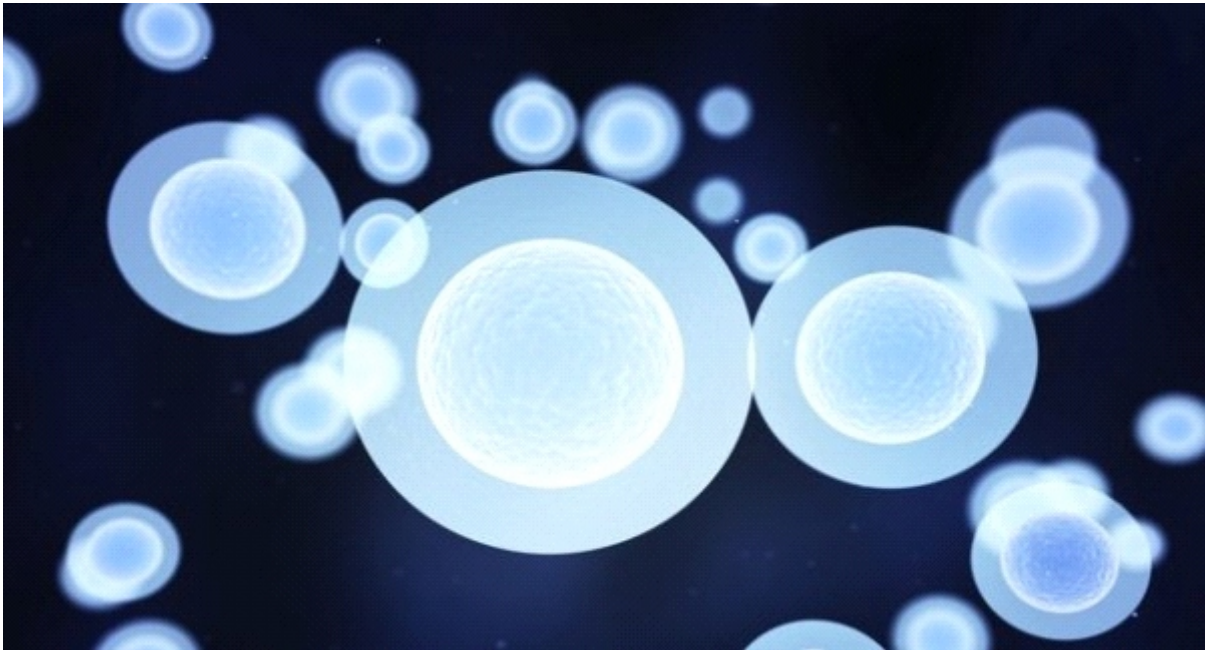
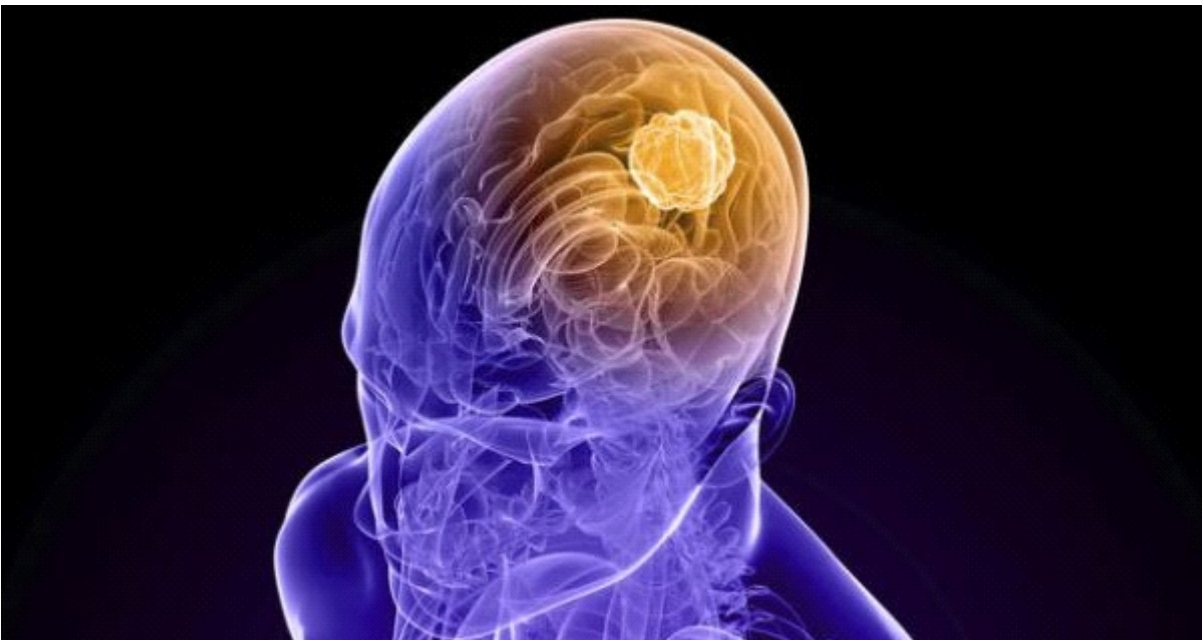


8 surprising diseases stem cells can cure



Stem cells are cells derived from our bone marrow or umbilical cord and are also called the 'basic cells' of our body. They have the power to mature into any type of tissue or cell in the body. Stem cell therapy, although fairly new, is widely used nowadays to treat many diseases. Here's a list of diseases you didn't know stem cell could cure.



Brain tumors: In this breakthrough research, scientists trapped the herpes virus in stem cells and used them to specifically target brain tumors. This experiment significantly improved survival rates in mice with the most common brain tumor in humans, glioblastoma multiforme. Mesenchymal Stem Cells (MSCs) were used as effective drug delivery systems and used to carry the cancer fighting virus. This virus helped debulking the tumour when it passed from the stem cells into tumorous cells. This technique has helped designing new treatment for this cancer.



Heart disease: Researchers have designed a 'mini heart' from stem cells to help return blood flow from veins lacking functional valves. A cuff like organ has been made from cardiac muscle cells which can be implanted over veins to aid blood flow through venous segments. Since this cuff is made from the patient's own cells, it reduces the chances of tissue rejection.



Type 1 diabetes: Researchers have found that stem cells can be converted into insulin producing cells and hence can be used to treat type 1 diabetes. The cells which are cultivated in the lab will have to be implanted into human subjects for them to be mature and fully functional.



Hearing loss: The most common cause of hearing loss is the damage to the inner ear. A study revealed that stem cells of the spiral ganglion (cells found in the inner ear) can be used to restore hearing. Stem cells of spiral ganglions have an innate ability of self renewal and differentiating into different types of cells and these spiral ganglions can be regenerated and differentiated into mature spiral ganglions, nerves and glial cells. Hence, they can be used to design inner neural structure of the ear which can help treat hearing impairments.



Skin conditions: A stem cell based gene therapy can cure skin blisters or skin tumors, a new study has found. A genetic disease called Epidermolysis Bullosa (EB) can now be successfully treated using gene therapy. In this research, skin stem cells were transplanted into the patient's legs who was suffering from this genetic disease, and normal skin function was restored, without causing any side-effects.



Infertility: Research has shown that infertility in men can be treated by using stem cells. Stem cells obtained from the skin cells of infertile men were used to produce sperm cell precursors that could eventually lead to healthy sperm production. The research also says that it will be possible to transplant stem-cell-derived germ cells directly into the testes of men with problems producing sperm thus giving a ray of hope for many men with infertility.



Lungs: Scientists have developed a new technique by which they have transformed human stem cells into cells of the lungs and airways. This progress can be used to generate tissues of the lungs which can be used for transplantation. This finding has paved roads for treatment of various lung diseases like Idiopathic Pulmonary Fibrosis (IPF).



Bladder diseases: Scientists have isolated specialised cells from human stem cells which can be used to treat diseased bladders. Scientists have used human stem cells to regenerate bladder tissue in the lab, which can be transplanted to augment or replace malfunctioning bladders. This research has paved a way for new treatments to treat patients with malfunctioning bladders.