

Stem Cell Therapy Multiple Sclerosis

There is no cure for MS. Current treatments aim to reduce inflammation and manage symptoms during acute flares and prevent further attacks with disease-modifying therapies. These approaches seek to improve quality of life by slowing disease progression. Physical therapy and occupational therapy, along with patient-centered symptom management, can help improve functional ability... e231fbaada Several previous MS variants have been recently separated from MS after the discovery of a specific auto-antibody, specially autoantibodies against AQP4, MOG and Neurofascin proteins. e231fbaada

Management of multiple sclerosis Multiple sclerosis (MS) is a chronic inflammatory demyelinating disease that affects the central nervous system (CNS). Several therapies for it exist, although there is no known cure. Several therapies for it exist, Multiple sclerosis (MS) is a chronic inflammatory demyelinating disease that affects the central nervous system (CNS) e231fbaada

Adult stem cells are found in a few select locations in the body, known as niches, such as those in... e231fbaada

Stem cell controversy Most commonly, this controversy focuses on embryonic stem cells. stem cells. Not all stem cell research involves human embryos. For example, adult stem cells, amniotic stem cells, and induced pluripotent stem cells The stem cell controversy concerns the ethics of research involving the development and use of human embryos. Not all stem cell research involves human embryos. For example, adult stem cells, amniotic stem cells, and induced pluripotent stem cells do not involve creating, using, or destroying human embryos, and thus are minimally, if at all, controversial. Many less controversial sources of acquiring stem cells include using cells from the umbilical cord, breast milk, and bone marrow, which are not pluripotent e231fbaada

Stem-cell therapy As of 2024, the only FDA-approved therapy using stem cells is hematopoietic stem cell transplantation. Stem-cell therapy uses stem cells to treat or prevent a disease or condition. Research is underway to develop various sources for stem cells as well as to apply stem-cell treatments for neurodegenerative diseases and conditions such as diabetes and heart disease. As of 2024[update], the only FDA-approved therapy using stem cells is hematopoietic Stem-cell therapy uses stem cells to treat or prevent a disease or condition. This usually takes the form of a bone marrow or peripheral blood stem cell transplantation, but the cells can also be derived from umbilical cord blood e231fbaada

Research directions on MS treatments include investigations of MS pathogenesis and heterogeneity; research of more effective, convenient, or tolerable new treatments for RRMS; creation of therapies for the progressive subtypes; neuroprotection strategies; and the search for effective symptomatic treatments. e231fbaada The primary aims of therapy are returning function after an attack,

preventing new attacks, and preventing... e231fbaada Some common physical symptoms may include: "weakness in extremities, difficulties with coordination and balance, spasticity... e231fbaada

Malignant multiple sclerosis Multiple Sclerosis, 14(2), 278-283

Malignant multiple sclerosis is used to describe MS patients who reach significant level of disability in a short period of time. Autologous stem-cell transplantation in malignant multiple sclerosis: a case with a favorable long-term outcome. Malignant MS cases are not common, less than 5% of patients with MS experience this type of progression. (2008) e231fbaada

The National MS Society Advisory Committee on Clinical Trials of New Agents consensus defined it as: disease with a rapid progressive course, leading to significant disability in multiple neurologic systems or death in a relatively short time after disease onset. Reaching Expanded Disability Status Scale of 6.0 or higher, which is equivalent of needing unilateral support to ambulate (or worse) is generally considered this significant disability level. e231fbaada Sometimes Marburg MS is considered a synonym for tumefactive MS, but not for all authors. e231fbaada Patients with severe forms of more common relapsing remitting or progressive MS subtypes, as well as rare Marburg variant and Balo concentric sclerosis, could be considered to have malignant MS. Patients should be carefully worked up to rule out Neuromyelitis optica (Devic's disease) due to the distinctive pathophysiology and management strategies of this disease. e231fbaada

Stem cell multicellular organisms, stem cells are undifferentiated or partially differentiated cells that can change into various types of cells and proliferate indefinitely In multicellular organisms, stem cells are undifferentiated or partially differentiated cells that can change into various types of cells and proliferate indefinitely to produce more of the same stem cell. They are the earliest type of cell in a cell lineage. They are found in both embryonic and adult organisms, but they have slightly different properties in each. They are usually distinguished from progenitor cells, which cannot divide indefinitely, and precursor or blast cells, which are usually committed to differentiating into one cell type e231fbaada

Stem-cell therapy has become controversial following developments such as the ability of scientists to isolate and culture embryonic stem cells, to create stem cells using somatic cell nuclear transfer, and their use of techniques to create induced pluripotent stem cells. This controversy is often related to abortion politics and human cloning. Additionally, efforts to market treatments based on transplant of stored umbilical cord blood have been controversial. e231fbaada

Hematopoietic stem cell transplantation Atkins HL, Freedman MS (January 2013). Neurotherapeutics. HSCT may be autologous (the patient's own stem cells are used), syngeneic (stem cells from an identical twin), or allogeneic (stem cells from a donor). 10 (1): 68-76 Hematopoietic stem-cell transplantation (HSCT) is the transplantation of multipotent hematopoietic stem cells, usually derived from bone marrow, peripheral blood, or umbilical cord blood, in order to replicate inside a patient and produce additional normal blood cells. "Hematopoietic stem cell therapy for multiple sclerosis: top 10 lessons learned" e231fbaada

Marburg MS has been reported to be closer to anti-MOG associated ADEM than to standard MS. It has been reported to appear sometimes post-partum. e231fbaada

Marburg acute multiple sclerosis acute multiple sclerosis, also known as Marburg multiple sclerosis or acute fulminant multiple sclerosis, is considered one of the multiple sclerosis borderline Marburg acute multiple sclerosis, also known as Marburg multiple sclerosis or acute fulminant multiple sclerosis, is considered one of the multiple sclerosis borderline diseases, which is a collection of diseases classified by some as MS variants and by others as different diseases. The graver course is one form of malignant multiple sclerosis, with patients reaching a significant level of disability in less than five years from their first symptoms, often in a matter of months. Other diseases in this group are neuromyelitis optica (NMO), Baló concentric sclerosis, and Schilder's disease e231fbaada

== Separated variants == e231fbaada HSCT remains a dangerous procedure with many possible complications; it is reserved for patients with life-threatening diseases. As survival following the procedure has increased, its use has expanded beyond cancer to autoimmune diseases and hereditary skeletal dysplasias, notably malignant infantile osteopetrosis and mucopolysaccharidosis. e231fbaada It is most often performed for patients with certain cancers of the blood or bone marrow, such as multiple myeloma, leukemia, some types of lymphoma and immune deficiencies. In these cases, the recipient's immune system is usually suppressed with radiation or chemotherapy before the transplantation. Infection and graft-versus-host disease are major complications of allogeneic HSCT. e231fbaada == Medical uses == e231fbaada

Mesenchymal stem cell The International Society for Cellular Therapy has identified a few criteria to define mesenchymal stem cell (MSC): MSC must. with long, thin cell processes e231fbaada

Research in multiple sclerosis There are also trials involving the combination of drugs that are already in use for multiple sclerosis. Finally, there are also many basic investigations that try to understand the disease better and in the future may help to find new treatments. Many treatments already in clinical trials involve drugs that are used in other diseases or medications that have not been designed specifically for multiple sclerosis. Research in multiple sclerosis may find new pathways to interact with the disease, improve function, curtail attacks, or limit the progression of the underlying Research in multiple sclerosis may find new pathways to interact with the disease, improve function, curtail attacks, or limit the progression of the underlying disease e231fbaada

== Signs and symptoms == e231fbaada

Multiple sclerosis It is a type of demyelinating disease, where the nervous system's ability to transmit signals is damaged. Multiple sclerosis (MS) is an autoimmune disease where the immune system attacks myelin, the insulating cover of nerve cells in the human body, causing Multiple sclerosis (MS) is an autoimmune disease where the immune system attacks myelin, the insulating cover of nerve cells in the human body, causing damage to one's own central nervous system. Symptoms can be physical, mental, or both, including double vision, vision loss, eye pain, muscle weakness, loss of sensation and

coordination e231fbaada

== Background == e231fbaada For over 90 years, hematopoietic stem cell transplantation (HSCT) has been used to treat people with conditions such as leukemia and lymphoma; this is the only widely practiced form of stem-cell... e231fbaada The most common initial course of the disease is the relapsing-remitting subtype, which is characterized by unpredictable attacks (relapses) followed by periods of relative remission with no new signs of disease activity. After some years, many of the people who have this subtype begin to experience neurologic decline without acute relapses. When this happens it is called secondary progressive multiple sclerosis. Other, less common, courses of the disease are the primary progressive (decline from the beginning without attacks) and the progressive-relapsing (steady neurologic decline and superimposed attacks). Different therapies are used for patients experiencing acute attacks, for patients who have the relapsing-remitting subtype, for patients who have the progressive subtypes, for patients without a diagnosis of MS who have a demyelinating event, and for managing the various consequences of MS. e231fbaada In mammals, roughly 50 to 150 cells make up the inner cell mass during the blastocyst stage of embryonic development, around days 5-14. These have stem-cell capability. In vivo, they eventually differentiate into all of the body's cell types (making them pluripotent). This process starts with the differentiation into the three germ layers - the ectoderm, mesoderm and endoderm - at the gastrulation stage. However, when they are isolated and cultured in vitro, they can be kept in the stem-cell stage and are known as embryonic stem cells (ESCs). e231fbaada Previously recognized variants of MS like Optic-Spinal MS is now classified as a phenotype of the... e231fbaada == Pathogenesis == e231fbaada == Medical uses == e231fbaada While its cause is unclear, the underlying mechanism is thought to be due to either destruction by the immune system or inactivation of myelin-producing cells. Proposed causes for this include immune dysregulation, genetics, and environmental factors, such as viral infections. The McDonald criteria are a frequently updated set of guidelines used to establish an MS diagnosis. e231fbaada

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