

Natural Recovery and Regeneration of the Central Nervous System

Condition: Replacing nerve cells in the central nervous system (the brain and spinal cord) that have been destroyed by brain diseases or injury could possibly help people recover and regain function.

Background: The process of growing or re-growing nerve cells is called neurogenesis. It is most active before birth but continues even in adults. Scientists are now figuring out how to stimulate neurogenesis to treat patients with diseases such as Parkinson's disease, stroke, traumatic brain injury, spinal cord injury, and cerebral palsy. For example, exercise seems to stimulate neurogenesis. Other treatment approaches start in the laboratory with immature cells from the bone marrow, called stem cells. These stem cells can be treated so they will mature into nerve cells, which can then be put back into the brain or spinal cord to replace damaged cells. Each of these steps – retrieving the stem cells, treating them so they become the right type of cells, and then delivering them to the patient – is complicated and there is still a lot to learn.

Risk Factors: Studies of this type of treatment are just beginning, so not much is known about whether some patients would be more likely to benefit than others. For example, there may be differences based on the patient's age or the stage of the disease. Scientists also want to know if growing new nerve cells improves a person's ability to move or do other activities. And they are also studying if these treatments might have bad side effects.

Role of a PM&R Physician

Physical Medicine and Rehabilitation (PM&R) physicians are well suited to helping patients address issues of nerve tissue regeneration as they frequently treat patients with brain and spinal cord injuries (such as stroke, traumatic brain injury, spinal cord injury) and are constantly seeking new treatments to help their patients improve their function after these injuries. PM&R physicians are used to prescribing treatments that other doctors may be uncomfortable with. PM&R physicians also work closely with other fields such as neurology and neurosurgery who treat brain and spinal cord injuries and are comfortable coordinating treatment teams with these specialists.

Frequently Asked Questions

What is PM&R?

Physical medicine and rehabilitation (PM&R), also known as physiatry, is a primary medical specialty that aims to enhance and restore functional ability and improve quality of life to those with injuries, physical impairments or disabilities affecting the brain, spinal cord, nerves, bones, joints, ligaments, muscles and tendons. PM&R physicians, known as physiatrists, evaluate and treat the whole body, maximize patients' independence in their daily life and are experts in designing comprehensive, patient-centered treatment plans to empower patients to achieve their goals. By taking the whole body into account, they can accurately pin-point problems, decrease pain, assist in recovery from devastating injuries and maximize overall outcomes and performance with non-surgical and peri-surgical options. To learn more, visit www.aapmr.org/aboutpmr.

What makes PM&R physicians unique?

PM&R physicians' training focuses not just on treating medical conditions, but on enhancing the patient's performance and quality of life in the context of those medical conditions. They focus not only on one part of the body, but instead on the development of a comprehensive program for putting the pieces of a person's life back together – medically, socially, emotionally and vocationally – after injury or disease. PM&R physicians make and manage medical diagnoses, design a treatment plan and prescribe the therapies that physical therapists or other allied therapists perform or that are carried out by the patients themselves. By providing an appropriate treatment plan, PM&R physicians help patients stay as active as possible at any age. Their broad medical expertise allows them to treat disabling conditions throughout a person's lifetime.

Why see a PM&R physician?

A PM&R physician will thoroughly assess your condition, needs, and expectations and rule out any serious medical illnesses to develop a treatment plan. By understanding your condition and goals, you and your PM&R physician can develop a treatment plan suited to your unique needs.

How do I find a PM&R physician near me?

Visit www.aapmr.org/findapmrphysician or contact your primary care physician for a referral.