PM&R knowledge NOW®

A resource on Physical Medicine and Rehabilitation (PM&R) topics developed by the American Academy of Physical Medicine and Rehabilitation (AAPM&R)

Disorders of Consciousness

Condition: Disorders of consciousness include coma (cannot be aroused, eye remain closed), vegetative state (can appear to be awake, but unable to purposefully interact) and minimally conscious state (minimal but definite awareness). Locked-in syndrome is not a disorder of consciousness but can look like one because of paralysis of limbs and facial muscles that causes an inability to speak and/or appearance of being unable to react.

Background: Most patients who survive injury to the brain regain consciousness but may have a disorder of consciousness. This may range from decreased awareness of surroundings to a persistent vegetative state. Patients with locked-in syndrome appear unable to react or speak, but the cause of this is paralysis of the limbs and facial muscles. Locked-in syndrome is often misdiagnosed as a disorder of consciousness.

Causes: Trauma, reduced blood supply or oxygen to the brain, and poisoning are leading causes for disorders of consciousness.

Disease Phases: Patients may be in a coma for several weeks after trauma. If patients survive, they may emerge into a vegetative state or minimally conscious state. The duration of vegetative state is variable which can be days to years and in some cases may be permanent. Emerging from a vegetative state resulting from trauma is more likely than from other causes, especially as time passes. There are some reports of people emerging from vegetative more than one year after traumatic brain injury, but not from other causes. Patients emerging from a minimally conscious state show signs of being able to interact and communicate.

Physical Exam: Healthcare providers perform neurological examinations at the bedside to assess if the patient's responses to commands are reflexive or voluntary.

Diagnostic Process: There are no laboratory or imaging tests available to diagnose disorders of consciousness. Several diagnostic scales or profiles can assess the level of a patient's brain injury and prognosis, and help healthcare providers develop a treatment plan. These assessments evaluate a patient's attention, communication, response to stimulation, vision and ability to follow commands.

Rehabilitation Management: The Physical Medicine and Rehabilitation (PM&R) Physician oversees medical management which focuses on improving consciousness as well as preventing and managing complications from prolonged immobility. They provide general health care that includes keeping skin healthy, stretching arms and legs, and bowel and bladder management. Patients may develop spasticity, pneumonia, or blood clots. Amantadine is a medication that may improve arousal if given during the weeks after traumatic brain injury. Other medications and physical means to stimulate patients are also often given.

Outcomes: Trauma-related disorders have better outcomes among patients with disorders of consciousness than non-trauma causes. Rehabilitation during the first 6 months after traumatic brain injury may increase the chances of improving outcomes in people who are minimally conscious. Patients recovering at earlier time periods generally have better outcomes than those recovering at later times. PM&R Physicians have expertise in predicting functional prognosis.

Family Education: Family education regarding a patient's prognosis and long-term planning are essential parts of disorders of consciousness care.

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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.