

Hypoxic Brain Injury

Condition: Hypoxic ischemic brain injury, or anoxic brain injury (ABI) occurs when the brain does not get enough oxygen, which causes brain cells to die.

Background: HBI can happen if blood flow to the brain is stopped, or if there isn't enough oxygen in the blood. Things that stop blood flow to the brain can include blood loss from an injury, or from a heart attack. Lack of oxygen in the blood can be caused by anything that stops a person from breathing or from carbon monoxide (CO) poisoning, where CO takes the place of oxygen in the blood.

History and Symptoms: The symptoms of HBI depend on how long the brain has not had oxygen. There may be changes in behavior or thinking, or the person may lose consciousness. After becoming conscious, a person may still have other problems with behavior, thinking, vision, and movement. Some people have seizures.

Physical Exam: The doctor will do tests to see how well the brain is working. If the person is conscious, can he answer questions, follow directions, move and see things normally? In both conscious and unconscious patients, the doctor will also test check reflexes, muscle tone, and response to other sensory stimuli.

Diagnostic Process: CT and MRI scans can show where and how much damage there is. Blood tests can help show what caused the HBI, and some early research blood tests are helpful for understanding how severe the brain damage has been. Electroencephalogram (EEG) can show if the patient is having a seizure. Tests of vision, verbal and motor responses, and thinking will show how severe the injury is.

Rehab Management: The first step in treatment is to get oxygen to the brain and treat whatever injury caused the problem. Rehabilitation then depends on the kinds of problems that remain. Once life-saving measures are done, a physical medicine and rehabilitation (PM&R) physician is able to guide further recovery, and help the patient return to his/her prior activities. A combination of medications and therapies may be needed, and the patient and family will also have to learn to adapt to physical, mental, and emotional changes. PM&R physicians, also known as physiatrists, often lead a treatment team that includes physical therapists (PTs), occupational therapists (OTs), speech therapists (speech-language pathologists, or SLPs), recreational therapists, psychologists/counselors, and social workers.

Other Resources for Patients and Families: Support groups and counseling may help patients and families learn how to cope with changes. Organizations such as the Brain Injury Association of America may help. If someone is unable to return to their prior job, a vocational counselor can also be helpful.

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.