

Chronic Low Back Pain

What is it? How is it diagnosed?

Low back pain is considered to be chronic if it has been present for greater than three months. Chronic low back pain may originate from an injury, disease or stresses on different structures of the body. The type of pain may vary greatly and may be felt as bone pain, nerve pain or muscle pain. The sensation of pain may also vary. For instance, pain may be achey, burning, stabbing or tingling, sharp or dull, and well-defined or vague. The intensity may range from mild to severe.

Many times, the source of the pain is not known or cannot be specifically identified. In fact, in many instances, the condition or injury that triggered the pain may be completely healed and undetectable, but the pain may still continue to bother the patient. Nevertheless, even if the original cause of the pain is healed or unclear, the pain felt by the patient is real and the treating physician knows this.

Chronic low back pain may be the result by many different conditions. It may start from diseases, injuries or stresses to a number of different anatomic structures including bones, muscles, ligaments, joints, nerves or the spinal cord. The affected structure sends a signal through nerve endings, up the spinal cord and into the brain where it registers as pain.

A number of different theories have developed to try to explain chronic pain but the exact mechanism is not completely understood. In general, it is believed that the nerve pathways that carry the pain signals from the nerve endings through the spinal cord and to the brain may become sensitized. Sensitization of these pathways may increase the frequency or intensity with which pain is perceived. A stimulus that is usually not painful, such as light touch, can be amplified or changed by these sensitized pathways and experienced as pain. Sometimes, even after the original injury or disease process has healed, sensitized pathways continue to send signals to the brain. These signals feel just as real and sometimes worse than the pain caused by the original injury or disease process.

Imagine an old television set or computer screen in which the same image is projected continuously. This image is eventually “burned” into the screen. Even when the screen is turned off, the image can still be seen on the screen. In the same manner, after the original source of pain is healed or no longer present, chronic pain patients may continue to feel pain. Although this is an oversimplification of what may happen in chronic pain, it helps to illustrate the current understanding of this condition.

How is chronic low back pain diagnosed?

As mentioned earlier, chronic low back pain is defined as back pain that lasts greater than three months. During the evaluation of chronic back pain, the goal is to rule out any injuries or disease processes that place the patient at risk of further injury if not treated or addressed. In addition, a specialist will consider diagnoses that can be treated in order to reduce the pain. A good patient history and a thorough physical examination by a well-trained physician are the most important aspects of the evaluation. Serious injuries and illnesses can often be diagnosed or ruled out based on the history and physical exam alone. Lack of a definite diagnosis does not necessarily mean more testing is needed. Needless tests do not add anything to what the physician has already discovered in his or her physical examination and review of previously performed studies and treatments. In fact, unnecessary testing is not only expensive to the patient, but can expose the patient to unnecessary risks or radiation.

If the treating physician feels that more testing is needed based on the patient's history and physical exam findings, he or she will discuss this with the patient. Testing may include blood tests, radiography (X-ray imaging), bone scans, computed tomography (CT) scans, magnetic resonance imaging (MRI), diagnostic injections, electromyography (EMG) and many other specialized tests.

Often, the exact cause of the pain is still not well defined at the end of the evaluation. Nevertheless an evaluation is successful if it has ruled out those processes that place the patient at risk if they are not treated.

What treatments are available?

Treatments for chronic back pain can vary greatly depending on the type and source of the pain. If a treatable source of the pain is found, then the underlying process can be addressed. When the underlying cause is either not specifically identifiable or not amenable to treatment, then the symptoms are treated. The goals of the treatment are to reduce pain, improve quality of life and increase function.

There are several different general categories of treatment that are usually recommended for chronic back pain. These categories include physical therapy, medications, coping skills, procedures and alternative medicine treatments. The treating physician will tailor a program involving a combination of these options to address the patient's needs. Involvement of a physician with special training in chronic pain management may be advisable in some cases.

Physical therapy includes patient education, and patient training in a variety of stretching and strengthening exercises, manual therapies and modalities (ice, heat, transcutaneous electrical nerve stimulation [TENS], ultrasound, etc.). Active therapies which the patient can continue on his or her own (such as exercise and strengthening) usually have the most permanent and long lasting effects. A home exercise program (HEP) is usually in place before the patient is discharged from

therapy. Exercise and strengthening are designed to increase stability and strength around the structures in the back that are being stressed. These techniques also work to avoid deconditioning that results from decreased activity. Exercises are tailored specifically to the patient and the type of back pain being addressed. The goal of educating the patient is to prevent progressive loss of activity because of fear of movement.

Medications used for treatment of pain are multiple and varied. They fall into several different categories. Both non-narcotic and, rarely, narcotic pain medications may be used in the treatment of chronic back pain. Nonsteroidal anti-inflammatory drugs (NSAIDs) are helpful with pain control and may help reduce inflammation. Muscle relaxants can also help with chronic pain and may enhance the effects of other pain medications. Nerve stabilizing drugs (antidepressants and antiseizure medications) are used to treat nerve-mediated pain. All these medications have different side effect profiles and interactions, and should be carefully monitored by a physician.

Coping skills are extremely important in the management of chronic back pain. Chronic pain directly affects all areas of a patient's life. Pain affects mood, and a patient's mood affects his or her ability to cope with pain. Pain also affects how patients interact with other people. For this reason, teaching patients appropriate coping skills for dealing with anxiety, depression, irritability and frustration can be invaluable. Involvement of a trained pain specialist, psychologist or psychiatrist greatly enhances the treatment of chronic back pain.

Procedures ranging from minimally invasive injections to surgery may be used to manage chronic pain. Sometimes, implantable devices, such as a spinal cord stimulator, are beneficial in managing chronic pain. The patient, with the help of his or her physician, should discuss the potential risks and benefits of any procedures considered. A second opinion may provide additional information or alternative approaches to managing your condition.

Complementary medicine also offers a variety of treatments, often helpful in the treatment of chronic pain. These treatments include acupuncture, dry needling, nutritional therapy, use of magnets and many others. It is important for a patient to discuss these treatments with his or her treating physician, to ensure that there are no harmful effects and that they do not interfere with other treatments being prescribed.