

60%

- The number of patients with persistent pain failing treatment
- The number of addictions due to genetic factors

Overview

Pain is a reaction to signals that are transmitted throughout the body. These signals are sent from the pain source, through the nerves in the spinal cord, and up to the brain, where they are perceived as pain. Chronic pain, defined as pain that persists or recurs for more than six months, can be caused by a variety of injuries and diseases, including nerve damage, and most commonly affects the lower back and legs. Left untreated or under treated, chronic pain may cause significant disability. Chronic pain may be intermittent or continuous, and it prevents many people from working, eating properly, exercising or enjoying life. Chronic pain is like a disabling disease in itself and not merely a symptom. It may have started due to an accident, from which a person has long since recovered; or there may be an ongoing cause of pain. A significant number of people are affected by chronic pain worldwide.

- Chronic pain affects approximately 25 percent of the U.S. population¹ and 50 percent of patients with cancer.²
- Almost three-fifths of adults 65 and older with pain in the United States said it had lasted for one year or more.³
- Nearly 1 in 5 adults in Europe suffers from long-term pain – at least 75 million people.⁴

Types

There are two types of chronic pain: nociceptive and neuropathic pain; some experience a combination of these two.

- **Nociceptive pain** is pain from disease or tissue damage outside the nervous system, and it can be dull, aching, throbbing and sometimes sharp. Examples include bone pain, tissue injury, pressure pain and cancer pain.
- **Neuropathic pain** is caused by nervous system damage, and is burning, tingling, shooting or lightning-like pain. Examples include neuralgia, complex pain syndrome, arachnoiditis and postlaminectomy pain (residual pain following anatomically successful spine surgery and a common indication for neurostimulation therapy). Compared to nociceptive pain, neuropathic pain is more severe, more likely to be chronic, and less responsive to drugs and other medical management.⁵

The most common location of chronic neuropathic pain is the back and legs.⁶ Low back pain is the most common type of pain reported in the U.S., with 23.9 percent of people ages 18 to 44 and 30.4 percent of people age 65 and over suffering from this condition in 2004.⁷ In 2004, 12.4 percent of Americans ages 18 to 44 and 14.4 percent age 65 and over suffered from neck pain.⁸

Impact

Chronic pain is constant and often takes over a patient's life. It places an immense burden on individual sufferers, their families and friends, their employers and co-workers, and their communities. Recent studies in the U.S. and Europe indicated that:

- Between half and two-thirds of people with chronic pain in a European study reported that they were less able or unable to exercise, enjoy normal sleep, perform household chores, attend social activities, drive a car, walk or have sexual relations.⁹
- One in four Europeans with chronic pain reported that relationships with family and friends were strained or broken.¹⁰
- One in three Europeans with chronic pain was less able or unable to maintain an independent lifestyle.¹¹
- One in five Europeans have been diagnosed with depression because of pain; for one in six, the pain is sometimes so bad they simply want to die.¹²
- 2/3rds of Americans with chronic pain say it causes irritable behavior or stress, some say it causes loss of desire or motivation.¹³

Chronic pain accounts for considerable direct healthcare costs, and indirect costs such as loss of productivity.

- Chronic pain costs U.S. businesses \$61.2 billion a year in lost productivity.¹⁴
- U.S. Healthcare costs from neuropathic pain are 3X that of people of similar age and gender without neuropathic pain.¹⁵
- A study in the UK estimates the direct health care cost of back pain in 1998 to be £1.6 billion, and the cost of informal care and related production losses total £10.7 billion. Overall, back pain is one of the most costly of all medical conditions.¹⁶
- One in five Europeans has lost a job due to chronic pain.¹⁷

Inadequate Treatment

For many patients, chronic pain is under recognized and under treated. People with chronic pain often feel guilty for complaining. They sometimes avoid seeking treatment for their pain, feeling that they would be wasting their doctor's time. Lack of awareness about the impact of chronic pain and its treatment options in the medical community also contributes to the under treatment of pain, as clinicians are not always aware of advances in pain therapies, or how to access the expertise of pain specialists.

- 50 percent of European pain patients endure inadequate pain relief for at least two years.¹⁸
- More than 60 percent of European pain patients report that their treatment is inadequate.¹⁹
- 77 percent of European pain patients have never seen a pain specialist.²⁰
- 90 percent of European pain patients have never had their pain formally assessed.²¹
- Only 1 percent of Swiss chronic pain sufferers have seen a pain specialist.²²
- In the U.S., more than two-thirds of chronic pain sufferers experience pain for more than 3 years, and 76 percent experience pain daily. One third of those whose pain is ever-present say the pain is very severe.²³
- 59 percent of people in the United States with persistent pain say it is not under control.²⁴

Treatment Options

- Behavior Modification — exercise, relaxation training, support groups
- Rehabilitation — physical therapy, chiropractic care, massage, acupuncture
- Oral Medications — anti-inflammatories such as ibuprofen, opiates such as codeine, and other anti-depressants
- Corrective Surgery — removing or modifying the condition causing pain through back surgeries
- Interventional Therapies — neurostimulation and intrathecal drug delivery with implantable medical devices
- Neuroablative Surgery — destruction of actual nerves, or in some cases, a portion of the spinal cord carrying pain signals

Genetics Plays a Major Role in Treatment Efficacy and Burden of Illness

According to NIH, 60% of addictions are due to genetic factors.²⁵ Three times as many people are addicted to or die from prescription narcotics than all illegal drugs combined.²⁶ In a workers compensation injury, the cost of a prescription and number of prescriptions for a chronic pain patient is 10X at year ten versus year one following an injury.²⁷ Therefore, it is critical to understand a patient's genetic risk for narcotic dependence and tolerance to help guide the choice of treatment and contain the spiraling costs of pain management patients already taking high doses but experiencing low functionality.

¹ Bonica, Bonica's Management of Pain, "History of Pain Concepts and Therapies," 2001

² Deer Neuromodulation, 1999

³ Bonica, Bonica's Management of Pain, "History of Pain Concepts and Therapies," 2001

⁴ Pain in Europe Study, 2003

⁵ Dworkin et al., 2003; Finnerup et al., 2005

⁶ Dworkin et al., 2003

⁷ National Center for Health Statistics Report: Health, United States, 2006, Special Feature on Pain

⁸ Ibid

⁹ www.epic.org

¹⁰ Ibid

¹¹ Ibid

¹² Pain in Europe Study, 2003

¹³ Americans Living With Pain Survey; American Chronic Pain Association, sponsored, April 2004

¹⁴ Stewart, Walter "Buzz" — "Lost Productive Time and Cost Due to Common Pain Conditions in the US Workforce," The Journal of the American Medical Association, Nov. 2003

¹⁵ Berger et al., 2004

¹⁶ Maniadakis N, Gray A (2000) The economic burden of back pain in the UK. Pain 84

¹⁷ Pain in Europe Study, 2003

¹⁸ Pain in Europe Study, 2003

¹⁹ Ibid

²⁰ Ibid

²¹ Ibid

²² Ibid

²³ Americans Living With Pain Survey, American Chronic Pain Association, 2004

²⁴ Ibid

²⁵ NIDA

²⁶ Liz Szabo, "Prescriptions Now Biggest Cause of Fatal Drug Overdoses," USA Today, 9/30/2009

²⁷ Maria Sciamè, PMSI, Pharmacy Costs in Workers Compensation, Florida Workers Compensation Educational Conference August 2010.