



Chronic Pain Treatment Continuum



Introduction

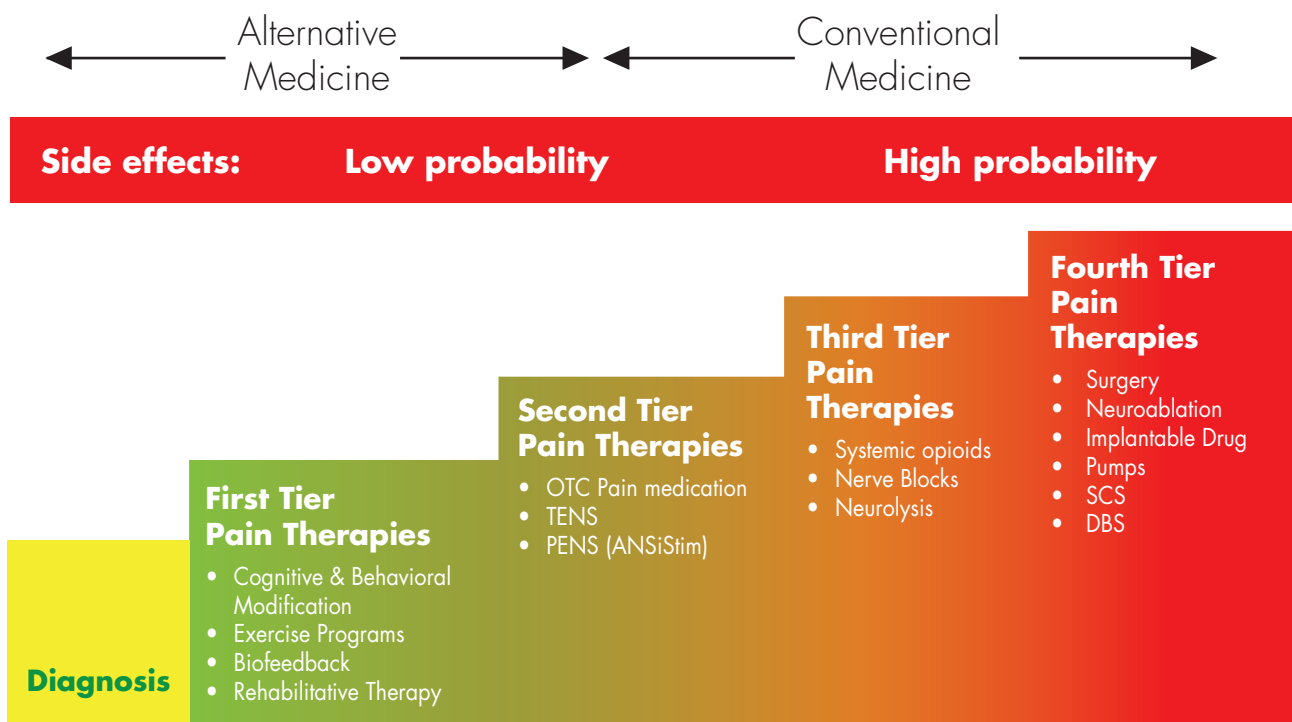
- There seems to be a very low awareness of pain treatment options even though a large section of the population in most countries suffers from chronic pain.
- This document introduces the patient to currently existing options for pain treatment in a continuum from least invasive to most invasive.

Low awareness of pain treatment options

- Although chronic pain is quite prevalent, there is a general lack of awareness about what chronic pain is and how it should be treated.
- only 15% of those surveyed who suffer from chronic pain have actually visited a pain clinic to receive proper treatment and there is a general lack of awareness about treatments other than basic 'painkiller' medication.
- Antony Chuter, Chair of Pain UK, said: "Patients should be educated about the treatment options available and also when to see a specialist and GPs should refer patients to pain clinics when necessary."
- Dr Vivek Mehta, consultant pain physician, Barts Health NHS Trust commented: "Although people believe that chronic pain is an actual condition, many are unaware of the treatment options and are living with a condition that has a profound negative impact on their quality of life. Aside from medication, there are numerous types of treatment available for people living with chronic pain."

Ref: <http://www.medicalnewstoday.com/releases/290594.php?tw>

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Notes: **NSAIDS** – Non-steroidal anti inflammatory drug
TENS – Transcutaneous electrical nerve stimulation
PENS – Percutaneous electrical nerve stimulation

SCS – Spinal Cord Stimulation
DBS – Deep Brain Stimulation

First Tier Pain Therapies

- **Cognitive and behavioral modification** Chronic pain is a tremendous psychological burden, and the way people respond to and tolerate pain depends on factors including their personality, culture and past pain experiences. With cognitive and behavioral therapies, these factors are considered to help a patient learn new skills and strategies for dealing with chronic pain, such as relaxation techniques and visualization exercises. Yoga and meditation fall under this category.
- **Exercise programs** One of the first treatments for chronic pain may be light exercise, such as walking. Exercise stimulates the release of the body's natural pain relievers called endorphins. It promotes flexibility, strength, and endurance, and it helps reduce stress. Exercise can also strengthen unused or weak muscles to compensate for an overworked muscle that is causing pain.
- **Biofeedback** By helping identify tight muscles and then relaxing those muscles, biofeedback may help relieve the discomfort of conditions like low back pain, abdominal pain, temporomandibular joint disorders and fibromyalgia.
- **Rehabilitative therapy** Rehabilitative therapy includes a variety of techniques—physical therapy, occupational therapy, massage therapy and chiropractic therapy—to reduce pain and increase function. Rehabilitative therapy is an important part of early pain treatment and is often combined with other treatments, such as medications.

Second Tier Pain Therapies

- **Over-the-counter pain medications** Another early treatment for pain is an over-the-counter analgesic (such as aspirin or acetaminophen) or an anti-inflammatory agent (such as ibuprofen).
- **Transcutaneous electrical stimulation (TENS)** In TENS therapy, electrical pulses are applied to nerve endings through electrodes placed on the skin over the painful area. Researchers theorize that these pulses temporarily interrupt the transmission of pain signals from small sensory nerves at the site of the pain. TENS may also stimulate the release of endorphins, which relieve pain and produce feelings of well-being.
- **Auriculotherapy a.k.a. Percutaneous electrical stimulation** In PENS therapy (as personified by the ANSiStim) electrical pulses are applied to nerve endings in the ear. PENS also releases endorphins which relieve pain. Researchers theorize that repeated application of this treatment achieves neuroplasticity and prevents the brain from sending out false pain signals.

Third Tier Pain Therapies

- **Systemic opioids** Powerful pain medications known as opioids are often prescribed when severe chronic pain does not respond to level-one and level two therapies. Opioids can effectively relieve the most severe pain.
- **Nerve blocks** With nerve blocks, a local anesthetic or steroids are applied directly to the nerve causing the pain. Nerve blocks may relieve pain temporarily by having a numbing effect or by decreasing the swelling of tissues around the nerve.
- **Neurolysis** With neurolysis, a chemical or extreme temperatures are used to stop a nerve from sending pain signals to the brain.

Fourth Tier Pain Therapies

- **Surgery** Surgery may be performed to repair or correct an anatomical defect or a defect due to an illness or injury. Surgery may also be performed on a nerve to interrupt the transmission of pain signals.
- **Neuroablation** Neuroablation is a surgical technique that permanently blocks nerve pathways to the brain by destroying the nerves and tissue at the source of the chronic pain. Several procedures are used, including cordotomy (a surgeon cuts a tract of the spinal cord), rhizotomy (a surgeon destroys a specific nerve near the spinal cord), and thalamotomy (a surgeon uses radiofrequency energy to heat and destroy specific cells deep in the brain).

Fourth Tier Pain Therapies - Neuromodulation

- **Neuromodulation** Neuromodulation therapies are implantable therapies for the management of chronic pain. These therapies include drug administration systems (drug pumps), (SCS) spinal cord stimulation, (PNS) Peripheral Nerve Stimulation and (DBS) Deep Brain Stimulation. It works by applying an electrical current to the source of chronic pain. This creates a pleasant sensation that blocks the brain's ability to sense the previously perceived pain.
 - **Drug Pumps** Drug delivery therapy releases medication directly into the fluid surrounding the spinal cord
 - **Spinal cord stimulation (SCS).** Soft, thin wires with electrical leads on their tips are placed through a needle in the back near to the spinal column.
 - **Peripheral Nerve Field Stimulation (PNFS).** Leads are placed just under the skin in an area near to the nerves involved in pain.
 - **Deep Brain Stimulation (DBS)** A small electrode is inserted into the area of the brain where movement disorders originate. These electrodes produce electrical impulses that regulate abnormal impulses. Or, the electrical impulses can affect certain cells and chemicals within the brain

Ref: www.poweroveryourpain.com/understand/managing/paincontinuum



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DyAnsys, Inc., 300 North Bayshore Blvd,
San Mateo, CA 94401, USA

ANSiline: 888 950 4321

E-mail: customer.contact@dyansys.com

www.dyansys.com

