Wellness Rx LLC

"A Patient-Centered Pharmacy"

Living with Chronic Pain

FORWARD

Almost every human being will experience some level of pain in their lifetime. While acute pain is triggered by tissue damage and most often is short term in duration, chronic pain is persistent pain that continues after the injury is healed.

While **25% or 1 in 4** Americans report suffering from recurrent pain, obtaining a correct assessment or diagnosis of one's chronic pain is the key to successful treatment.

Leaning how to keep pain at a tolerable level so that one can enjoy quality of life, is very personal and challenging. Ensuring that one is aware of all options available to meet the challenge often requires a team approach for sustained success.

At ***Wellness Rx,*** we understand this challenge and have developed a team of professionals to provide enhanced support and special services to our patients.

This report which has been built around the highly successful Mayo Clinic's findings on chronic pain is one support tool used within our unique "***Chronic Pain Management Program***."

It is our hope that with expanded health information and compassionate health care professionals, patients with health care challenges will not feel alone in their journey to healing.

Ed Ullmann
CEO/Pharmacist
Wellness Rx, LLC.

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PAIN

Facts:

- Pain comes in many forms: sharp, jabbing, throbbing, burning, stinging, tingling, nagging, dull and aching. Pain varies from mild to severe, can be constant or can come and go.

- **Acute pain** is triggered by tissue damage and is designed to protect an individual from further injury. **Chronic pain** is persistent pain that continues after the injury is healed (six months or more). Chronic pain can be hard to diagnose.

- 25% or one in four Americans suffer from **recurrent pain.** One in 10 report persistent pain of at least 1 year duration. Seniors suffer the most chronic pain.

- Financial and emotional impact of unrelieved pain on individuals, families, employers and our health care system is substantial and growing.

- Obtaining a **correct assessment** of one's acute or chronic pain is the number one key to successful treatment.

- Pain treatment includes prevention, lifestyle changes, rehabilitation therapies, psychological services, **drug therapy** and interventional services (injections/implants).

- Sensitivity to pain **varies from person to** person. Degree of pain and how one reacts to pain is impacted by ones biological (genetics), psychological & cultural make-up.

- Pain results from a series of electrical and chemical exchanges involving one's **spinal cord, brain and peripheral nerves** (they extend from the spinal cord to the skin, muscles & internal organs).

- Our brain and spinal cord produce **natural** (morphine like) **painkillers** to treat severe pain (i.e. endorphins). When released, they attach to receptors in the brain, producing stop-pain messages. Other substances in our bodies intensify pain by stimulating nerve endings at the injury site and within the spinal cord.

- **Chronic pain is the most challenging to diagnose and treat.** Sometimes it's due to a painful inflammation in our **joints** (**arthritis** is the **#1 cause of chronic pain** especially among the elderly), sometimes an **aching in our muscles** (**fibromyalgia**), sometimes a swelling of blood vessels in our brain and scalp (i.e. **migraine)**, sometimes due to reduced muscle tone caused by physical inactivity and sometimes because of damage to a peripheral or spinal nerve (accident, infection , surgery, diabetes, shingles or alcoholism).

TYPES OF COMMON CHRONIC PAIN:

- **Arthritis or Joint Inflammation**: The number one form of chronic pain in the world. Arthritis can affect any joint in the body and may be triggered by an injury, lack of physical activity, natural wear on your joints or genetic disease. The two most common forms of arthritis are **osteoarthritis** (50% of all cases) and **rheumatoid arthritis (RA).** Osteoarthritis most often develops after age 45, equally in men and women and most often it impacts the hands and feet, neck, lower back, knees and hips. RA stems from an immune system disorder that causes the immune system to attack the lining of joints. White blood cells move into joint tissue producing inflammation and pain. Over time, swelling of the tissues trigger the release of natural chemicals that can damage cartilage, tendons and ligaments. RA most often develops between ages 20 and 50. Women are impacted twice as much as men and joints in the wrists, hands, feet and ankles are most affected by the disease.

- **Back Pain: 80% of adults have had at least one bout of back pain during their lifetime**. Back pain is one of the most common reasons for health care visits and missed work. Most back pain occurs in the lower back (lumbar area). Acute back pain often stems from an injury or overuse. Muscle strain can occur if you lift something too heavy, twist too sharply or stand too long. Excessive body weight and poor posture can easily lead to muscle strain. When back muscles become strained, they can spasm, or "knot or lock up". Spasm is your body's respond to injury, designed to immobilize you and prevent further damage. **90% of muscle strain is usually resolved within 4 weeks. In men, lower back pain often is caused or made more intense by financial difficulties.**

- **Sciatic:** Pain that radiates from your back down through your buttock to your lower leg. Sciatic may be caused by inflammation or compression of spinal nerve roots that merge to form your sciatic nerve. Tingling, numbness or muscle weakness also may occur. Usually, the pain goes away on its own. However, severe nerve compression can cause progressive muscle weakness and continued pain.

- **Herniated Disk:** Injury or normal wear and tear can cause a disk between the bones in your back (vertebrae) to bulge or rupture (herniate), creating painful pressure on nerves. This is sometimes called a **slipped disc**. When the disc ruptures, the rubber -like interior of the disc pokes out from its normal position between your vertebrae. Almost everyone over 40 has one or more bulging disks, and most people aren't bothered by them. But if the bulging material presses against an adjacent nerve, the condition can produce pain. Generally, the rupture heals over time and the pain goes away. But in some cases, nerve compression and pain can persist.

- **Neck Pain:** An injury, poor posture, or repetitive motions resulting in fatigue and overuse can strain muscles, ligaments or tendons in your neck, producing inflammation and pain. Most of the time the pain lasts for just a few days or weeks. Occasionally, though, the pain can become chronic.

  Chronic neck pain may stem from:

  1. A herniated disk or degeneration of joints in your upper spine as a result of osteoarthritis. Instead of sliding across each other smoothly, bony surfaces in your neck grate or rub on each other, producing stiffness and pain.

  2. A drying of the disks that cushion the vertebrae in your spinal column. When this occurs, the spaces in your spine where the nerves exit become narrowed and adjacent nerves become irritated 3). Bony outgrowths (spurs) that can form when disks between the bones in your neck thin and loose their elasticity. As joints rub together with greater than normal force,

3. surfaces where they meet become irregular, causing pain. Often, one pain leads to another. When you feel pain, you automatically tense your neck muscles to prevent further movement in a sore spot. The tension, however, also produces pain and can trigger a painful muscle spasm.

- **Fibromyalgia**: A collection of symptoms that includes widespread pain and tenderness. Different than arthritis, the pain is in muscles and tissues near the joints instead of in the joints themselves (doesn't destroy joints or cause joint or muscle inflammation). The pain of fibromyalgia may be "a deep aching all over feeling" or a burning sensation. Other symptoms associated with the syndrome (not classified as a disease) include: chronic fatigue, digestive disorders, difficulty sleeping, numbness, stiffness, tingling, headache, sensitivity to weather and temperature changes, dizziness and mood disorders. Symptoms of fibromyalgia often become noticeable in one's 30s and flare up's often come and goes with no consistent pattern. Fibromyalgia isn't progressive or life-threatening.

- **Headache: O**ne of the most common pains experienced by individuals. **Tension-type** headaches are the **most common** and result from contraction of the muscles on the outside of the skull and secondarily by the enlargement of blood vessels in the scalp. Tension headaches may produce dull, tight, pressurized pain that envelopes the forehead, scalp, the back of the neck or both sides of the head. Occasionally the pain may be burning or throbbing.

  Up to **17% of women** and 6% of men experience a more painful type of headache known as a **migraine** (moderate to severe throbbing pain on one side of the head - often the temple or forehead). Bright lights and loud noises may intensify the pain, and one may become nauseated and vomit. Most migraines occur for only a few hours before peaking and slowly subsiding. A migraine appears to stem from an imbalance of brain chemicals (i.e. serotonin) that causes blood vessels in the brain to swell and signal pain. Women often point to problems before, during or right after their menstrual periods. Others point to a particular food that triggers an attack (alcohol, aged cheeses, chocolate, caffeine, MSG, and fermented, pickled or marinated foods). Others experience a migraine during extreme periods of stress and fatigue, changing sleeping patterns or environmental changes (odors; weather; bright lights; loud noises).

  Headaches are also caused by **sinus problems, certain medications** (high blood pressure; birth control pills; hormone therapy) and with frequent use of pain medications when the dose wears off (so called **"rebound withdrawal**). In fact, some experts suggest that the **number one cause of headaches** is the overuse of analgesics medications like aspirin. Hence, when the dose wears off, the pain comes back stronger than before (blood vessels swell/ press on nerves) and the individual takes more medication to relief the pain.

- **Irritable Bowel Syndrome (IBS):** A complex disorder in the lower intestinal tract (spasm in the bowel) that causes pain, bloating, gas, and recurrent bouts of diarrhea or constipation. IBS pain often occurs below the navel, and it may be dull and aching or sharp and sudden. People with IBS may react more strongly to stress, activity or diet than those people without the condition. However, there is little evidence that IBS results from particular foods (fatty foods, beans and other gas-producing foods, alcohol, caffeine and high-fiber foods may worsen symptoms). IBS **doesn't** result in any structural damage to the intestines.

- **Pain** can result from the **overuse of muscles and tendons primarily in the hands, wrists and arms**. In addition to pain, one can also experience tingling, weakness, numbness, swelling and stiffness. This type of injury often occurs to those who regularly use repeated motions while performing daily activities (i.e. computer users; meat cutters; assembly line employees).

- **Carpal Tunnel Syndrome:** The most common overuse injury condition. The constant strain on the wrist inflames the tendons located below the carpal ligament (across the palm side of the wrist). The inflamed tendons become swollen and then press against the **median nerve** (provides sensation to the fingers) which causes pain, intermittent numbness, tingling or pain that starts in the wrist and moves down into the **thumb and first two or three fingers.** Some people also experience pain all the way to their neck (length of the median nerve), find their symptoms worse at night because of the position of their wrist or arm while sleeping and often find symptoms triggered by routine activities like driving a car or reading a book.

- **Pelvic Pain**: One in seven women experiences some type of **chronic pelvic pain (10-20% of all GYN visits).** Common causes include endometriosis, chronic pelvic inflammatory disease (PID), interstitial cystitis or fibroids.

- **Peripheral Neuropathy: A** nerve-related condition that most often affects the hands and feet, causing a tingling, shooting or burning pain that can be accompanied by numbness. Common causes include diabetes, alcoholism, autoimmune diseases such as RA or lupus, hereditary neuropathies, infection or vitamin deficiencies or a side effect from chemotherapy drugs. Peripheral Neuropathy usually starts with a tingling sensation in the toes or the balls of the feet that spreads upward. Numbness and weakness may follow and the skin many become highly sensitive.

- **Postherpetic Neuralgia:** Refers to nerve damage that can occur as a result of **shingles or herpes zoster** (reactivation of the chickenpox virus in nerve tissues). The damage fibers aren't able to send normal pain messages. Instead, the messages become distorted and exaggerated, producing unrelenting, and often severe, pain. Pain experienced with acute shingles can be burning, sharp and jabbing, or deep and aching. The skin often becomes hypersensitive where even the slightest touch of clothing or even a change in temperature can produce a flare of pain. Postherpetic neuralgia affects **half the people older than age 60 with shingles and 75% of people older than age 70.** For many people, the condition gradually disappears on its' own, but this can take months to years. Fortunately, there is now a **vaccine (Zostavax)** that can be administered to individuals over age 50 to protect against shingles and postherpetic neuralgia. The one time shot (no booster shot is ever needed) provides **100% protection** against shingles for individuals who have never experienced an outbreak of shingles in their lifetime and **50% protection** for individuals who have experienced one or more outbreaks (if a future breakout did occur, it would be less intense and hopefully, result in less nerve damage and postherpetic pain).

Occasionally, surgery can cure or reduce chronic pain. For some types of chronic pain, medication and injections are beneficial. Frequently, though, none of these approaches are very effective and it takes a holistic approach to get relief and control of ones life

CHRONIC PAIN CYCLES:

Living with chronic pain is like a roller coaster ride. There are good days and then bad days when the mood sinks and one feels helpless. Rarely does pain stay at an even level. It fluctuates. When one part of your body is in pain, your whole body reacts.

For patients dealing with debilitating pain (have trouble performing daily activities) especially, strong behavioral (decreased activity; decline in strength and endurance; frustration; withdrawal and isolation) and emotional changes (fear; let down and anger when medical intervention doesn't help much; sadness/depression/withholding of emotions; decrease in self-esteem/purpose; increase in alcohol, illicit drugs or pain medication; increased personal conflicts) often results.

As chronic pain continues, it's easy for one to focus all of their attention on their pain. They can express rage, cry/groan/grimace, limp/freeze-up, stay in bed, withdraw from others, limit activity, talk about pain and body breaking down or obsessively research options for surgery or alternative treatments.

The personal and economic costs associated with chronic pain can be substantial. Family members are initially very supportive, but over time, their patience can grow thin. Friends feel your pain, but don't know what to do. Co-workers and employers often only add to the stress. Bills pile-up and fear for one's economic future compounds the pain and drains the self-esteem.

IMMEDIATE CHALLENGES:

While the treatment of chronic pain is one's prime objective, the immediate challenges are very real. **Inactivity or a significant change from one's normal physical activity** quickly leads to increased body fat. In addition to increased weight gain, this increases ones risk of cardiovascular disease, diabetes and weaken bones (higher risk of osteoporosis).

Maintaining an adequate diet, **hydration** (eight (8) glasses of clean water daily) and dealing with the side effects of medications (i.e. constipation from opiates) is essential to the healing process.

Chronic pain reduces restful sleeping. According to the National Sleep Foundation, two-thirds of people with chronic pain reported awakening too early because of their pain and being unable to fall back to sleep. Excessive alcohol use, medications and constant stress only add to the problem.

Depression and chronic pain often go hand in hand. Emotional strain combined with persistent pain, creates a sinkhole that can be difficult to escape. The longer the depression the harder it is to treat. People who are depressed often report stronger, longer lasting and more severe pain than do people who aren't depressed. Difficulties at work (or loss of job), financial strain and/or damaged family relationships can only add to the darkness and feeling of isolation.

Reliance on prescription medications, alcohol and/or illicit drugs can quickly become a troublesome side effect of chronic pain. Tolerance to the drugs is real (need higher dosages to receive same level of pain relief or to just feel normal) and physical or chemical dependency often follows (requires detoxification at some stage). Combining medications, without medical authorization, can also lead to serious, if not deadly, outcomes.

TREATING CHRONIC PAIN:

Treating chronic pain is much more complex and difficult than treating acute pain. Success is highly personal (varies greatly individual by individual) and generally always requires a variety of traditional and alternative strategies. With many types of injuries and illnesses, given time and hard work, the pain will eventually disappear. **But not all pain can be eliminated.** For some people, the pain never goes away. The **challenge is not total relief**, but rather reducing the aching and throbbing to a more tolerable level that one can live with.

Treating chronic pain is truly holistic in nature and requires real grit by the pain sufferer. While the most common form of treatment remains medication, prevention, physical or occupational therapy/rehabilitation, behavioral and lifestyle changes and emotional counseling should all be incorporated into one's **treatment plan.** The option of surgery, injections, stimulators or pumps remains real back-up choices.

In establishing a treatment plan, a patient generally works closely with their primary care physician (PCP) to explore all options. For some, a conservative approach that incorporates nutritional counseling, exercise, physical therapy, lifestyle changes, alternative therapies and limited medication works well. For others, an aggressive search to **diagnose the cause** of the chronic pain is important. This can include a thorough medical history, physical exam, extensive diagnostic testing and a referral to a **pain specialist (physician board certified in the field of pain medicine)** or to a licensed pain management specialist with **proven outcomes** treating patients with chronic pain.

Pain specialists often work in medical group practices which may include neurologists, anesthesiologists, physical or occupational therapists, nurses, mental health professionals, registered dietitians or alternative medicine practitioners.

Pain clinics or pain centers are also highly marketed facilities that specialize in the treatment of pain. Some centers are associated with a medical institution and others are standalone non-profit or for-profit facilities operated by one or more individual doctors. Generally, pain clinics or centers specialize in the treatment of **a specific type of pain, such as headache or back pain,** a specific category of claim like Worker's Compensation or it may treat an array of painful conditions. Centers may be **certified or accredited** but they don't have to be.

In the end, the goal of referral to a pain specialist or center is the same: if the cause of the chronic pain is found, the treatment plan will attack the **pain source directly**. If a cause can't be found, the plan will incorporate different ways to control the pain (keep it at a manageable level). The difference between specialist and centers will be their **outcomes or success rate.**

For patients that wish to pursue more extensive treatment, a referral to a **certified pain rehabilitation center** is another viable option. Pain rehabilitation centers or programs are designed to reverse the downward course that can occur with chronic pain. The **expensive two to four-week programs** are generally located within a leading academic center or well known medical clinic (i.e. Mayo Clinic) and share a common philosophy that chronic pain affects many aspects of a life and, therefore, requires a **broad or holistic treatment approach**.

In most programs, pain specialists integrate behavioral and lifestyle changes with physical and occupational therapy and, occasionally, selective use of medications or injections. Depending on the location or cause of the pain, **other therapies**, such as relaxation techniques, stress management, complementary medicine and natural healing techniques, also may be incorporated into the treatment plan.

MEDICATION:

When used appropriately, medications can help pain and often with limited side effects from their use. Medications are best at treating acute pain and in helping control temporary flares in ones pain. The benefits of long-term use of medication to treat chronic pain is hard to quantify and can result in serious side effects.

In addition to pain and inflammation, medications may be prescribed to help treat other conditions that can accompany chronic pain, such as depression, anxiety and sleep problems.

The safety, dosage, duration, efficacy (power of a medication to produce desired results) and combination of drugs to be taken all must be balanced by the prescribing physician(s). Equally important, is the potential of drug interactions, drug allergies, genetics, drug-disease interactions (i.e. diabetes), diagnosis (i.e. cancer), patient's age and life setting and cost. In general, it is wiser to start medications at lower doses and to step-up in stages over time. The goal **of all drug treatment is to find the right dose with the fewest side effects for the specific patient.**

Keeping a daily journal can only help your physician(s) to make better decisions with your drug treatment plan. Most important, medication should be taken as prescribed and not changed without your physicians approval (increasing dosage, decreasing dosage or abruptly terminating a medication).

TYPES OF MEDICATION:

One of the oldest and most common pain relievers or analgesics is **acetaminophen (brand name Tylenol).** Acetaminophen is most effective for mild to moderate pain that **isn't caused by inflammation**. Acetaminophen doesn't cause stomach pain (or bleeding), **does reduce fever** and is the drug of choice for pregnant women or patients taking blood thinning medications. Long term use of acetaminophen can cause liver or kidney damage (also recommended not to mix with alcohol).

- **NSAIDS**:

  The **number one pain relievers** in the world are a class of medications called **non-steroidal anti-inflammatory drugs or (NSAIDS).** NSAIDS are most effective for mild to moderate pain that's accompanied by swelling and inflammation (arthritis; sprains, strains, back and neck injuries or cramps).

  NSAIDS work by inhibiting an enzyme in our bodies that makes hormone-like substances called prostaglandins (involved in the development of pain and inflammation). They may cause nausea, stomach pain, stomach bleeding or ulcers (always take with food). In large doses, NSAIDS can also lead to kidney problems, fluid retention and high blood pressure. Risk of these conditions increases with age. Like with many drugs, NSAIDS have a so-called ceiling effect (limit as to how much pain they can control). Hence, beyond a certain dosage, they don't provide any additional benefit but the side effects remain. NSAIDS are sold over-the-counter (OTC) and in higher doses by prescription. Common products are **aspirin, ibuprofen (Advil; Motrin) and Naproxen (Aleve).** A similar-type drug **Celebrex** (COX-2 inhibitor) is also available by prescription.

- **Tramadol (Ultram)** is a trusted non-opioid drug (less risk of physical dependence and addiction) that works by interfering with the transmission of pain signals and by affecting certain brain chemicals to decrease the perception of pain. Common side effects of tramadol use include dizziness, sedation, headache, nausea, constipation and seizures. Product is available in an extended-release form and with acetaminophen (Ultracet).

- **OPIOIDS:**

Opioids (narcotics) are prescription medications regulated by the Drug Enforcement Administration (DEA) and state health departments. Opioids are used to relief pain from cancer, terminal illness, severe injury, surgery (very effective) and more recently to help relief chronic pain. Most opioids are **natural compounds derived from the opium poppy plants; some are synthetic medications.**

The most common opioids are called agonists (triggers a response by a cell). The field includes: codeine; fentanyl (Duragesic patches**); hydrocodone** plus acetaminophen (Vicodin; Lortab); hydromorphone (Dilaudid); meperidine (Dolophine); methadone (Dolopine); morphine (MS Contin); **oxycodone with or without acetaminophen (Percocet; Roxicet)** and time-released oxycodone (**OxyContin).** Some opiates are agonists and antagonists (blocks an action) and are used to help patients withdraw from physical dependence (products containing buprenorphe).

Side effects of opioids (particularly when taken at higher doses) include mild dizziness, drowsiness, sedation, unclear thinking, fatigue, **constipation**, nausea and vomiting. Opioids also have an effect called **rebound pain** (pain can get worse as drugs wear off or is withdrawn from treatment plan) and **hyperalgesia (**changes in your nervous system that may heighten your perception of pain and make you feel more uncomfortable).

In addition, when opioids are taken in increasing doses for several weeks or months, it leads to **tolerance** (initial dose loses its effectiveness over time; need a higher dose to maintain same level of pain relief). Longer term use can lead to **physical dependence** (body becomes accustomed to the drug; will experience anxiety, tremors and other physical symptoms when drug is withdrawn) and **addiction** (irresistible craving for drug; loss of control over the use of drug; compulsive use of drug).

The use of opioids in the treatment of chronic pain remains controversial. At best, many experts suggest that over time, opioids **may only** help to improve pain **no more than 30% of the time.** Trying to compare how one was functioning before they started the medication (hence, what level of improvement) can be difficult and challenging. Regardless, the number 1 drug prescribed in the United States today is the opioid hydrocodone**.** The number 1 misused, stolen or illegally distributed drug today is the opioid **oxycodone.**

In the bigger picture, Americans now use **80%** of the worldwide production of opioid drugs; **10-30%** of opioid prescriptions written are abused , opioids now outstrip use of illegal substances in America and out nation's emergency rooms are being flooded with opioid overdosing.

WHEN OPIOID DEPENDENCE BECOMES A PROBLEM:

Today help for opioid dependence is more accessible and with more treatment options than ever before. The stigma of addiction is being softened as most families are now aware of someone close to them that has dealt with or is dealing with the complications of the chronic use of opioid medications.

Most physicians, counselors and insurance companies now treat opioid dependence as a **chronic medical condition** and treatment options are often suited to an individual's lifestyle and personal needs. The traditional option of extended in-patient care or a residential treatment center is commonly replaced today with outpatient clinics or in more private settings such as one's doctors' office. Medication-assisted treatment in an outpatient clinic or doctor's office is often combined with counseling and behavioral therapies, to provide a more holistic approach for achieving success.

The treatment of opioid dependence is rapidly becoming a specialty area where doctors become certified to prescribe medications to help suppress withdrawal symptoms and decrease cravings (#1 drug used is Suboxone).

Outpatient clinics still often prescribe low cost **methadone** to help block the euphoria associated with opioids to help diminish the effects of withdrawal.

Success has also been achieved by a careful program of reducing the strength and dosage of the opioid medication over an extended period of time **(step-down therapy).**

Local addiction support groups and long successful 12- step programs are also available to assist with treatment success.

TOPICAL MEDICATIONS:

Topical medications are products that are applied to the skin to help relieve pain. These drugs act on the surface of your body or are absorbed through the skin where they may help relieve nerve pain and inflammation just below the skin's surface.

Local anesthetics (patches, gels, creams & sprays) inhibit pain signals along nerves at the site where the medication is applied. Fentyl patches is a synthetic opioid product used for severe pain (left on for 12 hours; then off for) and Lidocaine patches are often prescribed for relief of pain associated with posttherpetic neuralgia and nerve pain. Redness and swelling may occur at the application site.

Nonprescription (OTC) **local anesthetics products** include lidocaine (Xylocane; often used for sunburn relief), benzocaine (Lanacane) and pramoxine (Prax; Itch-X).

Other nonprescription topical medications include:

- **Capsaicin** (made from the seeds of hot chili peppers) based products (Capzasin-P, Zostrix) are rubbed onto the skin 3 or 5 times a day and can take up to two weeks of daily use before you feel noticeable pain relief. Capsaicin is often used to treat arthritic pain in joints close to your skin's surface, such as fingers, knees and elbows. The products can irritate the skin and produce a burning sensation.

- **Trolamine salicylate** based products (Aspercreme; Sportscreme) decreases the ability of nerve endings in the skin to sense pain.

- Nonprescription **counterirritant products** (ArthriCare; Bengay; Icy Hot) stimulate nerve endings in the skin to produce feelings of cold, warmth or itching. These responses counter, or block, more intense pain sensations. Products are often used for occasional, mild muscle aches, joint pain, simple strains or sprains. Products most be applied frequently, often have a medicinal smell are **not** effective for most forms of chronic pain.

Topical and oral products that contain **homepathic formulas** are safe and often effective options for treating chronic pain.

INJECTIONS, STIMULATORS AND PUMPS:

INJECTIONS:

Injecting medication at or near the pain site can often provide pain relief especially during the initial period of intense pain or upon a **flare up of severe pain.** Injections are most effective for joint (hip, knee, shoulder, elbow or wrist), muscle or nerve (injected around a specific group of nerves) pain that's confined to a specific location.

The type of drug injected may be a local anesthetic like novacaine to control or numb the pain or a steroid like cortisone to reduce inflammation or a combination of the two. The site of the injection and the type of medication used can limit how often you can receive an injection. **Steroids,** in particular, **may take a few days to work and can cause serious adverse side effects** that become worse with frequent use (less than 3-6 months). Injections are also used to help **diagnose** the source of the pain and are often part of a treatment plan that includes physical therapy.

Recently a compound called **hyaluronic acid** (Synvisc and Hyalgan) has been injected into knee joints to help treat osteoarthritis of the knee. In theory, the drug attempts to improve lubrication and joint mobility in a series of shots. Results to date have not been promising, the benefits don't last beyond six months and there's been no evidence the shots slow progression of the disease.

Another highly visible injected drug Botulinum toxin or **"Botox"** causes temporary paralysis of muscles to relief pain. Botox injections are often used for conditions caused by cramping muscles (i.e. neck pain), certain types of headaches or other disorders involving chronic muscle spasm. The amount of the toxin used is very small and it generally lasts about three months requiring repeat injections.

- **Spinal Injections:**

  Spinal injections (local anesthetic; steroid or both) are used to treat chronic pain associated with a spinal joint or nerve that's been damaged, irritated or inflamed. The injection is made directly **into the spinal fluid** (intrathecal) and is often used during surgery on the abdomen or lower extremities.

  If the injection isn't into the spinal fluid, it's called an **epidural injection**. Epidurals are often used to relieve the pain of childbirth and sometimes given to relieve some types of neck or back pain, such as sciatica. The medication coats nerves in the location where it's injected, relieving pain. All spinal injections are performed under X-ray guidance and can help diagnose the cause of pain.

NERVE STIMULATORS:

Nerve stimulators are electronic devices to stimulate certain nerves, with the goal of reducing pain (not curing pain, but helping to better manage it).

Spinal cord and peripheral nerve stimulators require a surgical procedure with X-ray Guidance. A thin wire called a lead is placed in the epidural space within the spinal cord. An electrical generator is also inserted under the skin. The lead is connected to the generator, electrical power is sent to an electrode, and then nerve fibers at the location of the pain are stimulated. The stimulation, hopefully, alters the pain messages and replaces them with more pleasant sensations.

Non-surgical treatments include transcutaneous electrical nerve stimulators (TENS machines) and percutaneous electrical nerve stimulation (PENS).

- **TENS:** With a **TENS machine**, you place electrodes on the skin near the painful area and then attach electrodes to a small, battery-powered unit. The unit level, painless electric impulses that pass through the skin to underlying nerve fibers to modify pain perception (may trigger release of pain killing **endorphins** and/or block nerve pathways that carry pain messages). TENS machines can be used at home, work or under the guidance of a health professional and the level of electric impulses can be controlled or adjusted. Most often, TENS is combined with exercise and other pain treatments.

- **PENS:** Used in combination with acupuncture. Instead of electrodes, thin needles penetrate the skin to just below the surface.

MEDICATION PUMPS:

Medication pumps or **intrathecal drug delivery systems** deliver pain medication (opioid, local anesthetic; muscle relaxant; other) directly to the fluid that surrounds the spinal cord. The pumps are most often used to **treat cancer pain** and chronic pain that doesn't respond to other types of treatment (nerve damage; injury to the spinal cord).

Medication pumps are **expensive** and require a surgical procedure with X-ray guidance. A small flexible catheter is placed in the spinal fluid, the catheter is connected to a drug infusion pump that's implanted into the lower abdomen and the medication is placed into the pump via a small covered opening in the top of the pump. **A computerized program tells the pump how much of the medication you are to receive, dispensing the drug at a set rate. The program helps to reduce side effects, but direct delivery of the medication is powerful and can produce numbness or reduce ones ability to sense pressure or temperature changes. Also, if the pump runs out of medication, withdrawal symptoms, changes in blood pressure and other complications can follow.**

COMPLIMENTARY REFERRAL OPTIONS:

- **Nutritional Therapy**
- **Physical Therapy**
- **Occupational Therapy**
- **Certified Exercise Therapist or Personal Trainer**
- **Flexibility Exercises**
- **Aerobic Exercises**
- **Aquatic or Hydro-Therapy**
- **Strengthening Exercises**
- **Life Style Changes**
- **Mental Health (Individual & Group Therapy; Support Groups)**
- **Stress Management**

- **Massage Therapy**: The use of different manipulative techniques to move ones body's muscles and soft tissue. Massage therapy is based on the belief that when muscles are overworked, waste products can accumulate in the muscle, causing soreness and stiffness.

  The goal of massage therapy is to improve circulation in the muscles, increasing the flow of nutrients and oxygen and eliminating waste products. It also induces the body's relaxation response which can help relieve stress, anxiety, headaches, lower blood pressure, improve range of motion in joints and increase production of the body's natural painkillers. Massage therapists are certified in their field and schools often provide specialty training such as Swedish massage.

- **Neuromuscular or Neurosomatic Therapy: A**n integrative form of manual therapy that identifies and corrects structural and biomechanical patterns in the body that cause chronic pain. By using careful analysis of dysfunctional postural and movement patterns, this therapy creates a specific therapy program for an individual who addresses the five stages of rehabilitation: eliminate muscle spasm; restore flexibility; restore proper biomechanics; increase muscle strength and increase muscular endurance. Goal: eliminate pain and educate the patient on ways to prevent recurrence of the injury.

- **Cranial Sacral Manipulation or Cranio Sacral Therapy**: A light touch, non-invasive manual technique that focuses on cranial manipulation to help relieve many ailments including stress, headaches and back pain. This safe and often effective therapy was pioneered by Dr. John Upledger.

- **Rolfing:** A form of deep tissue massage named after Dr. Ida P. Rolf, an American biochemist who referred to her work as "structural integration." This system is a way to deeply manipulate and reorganize connective tissue and fascia and to relieve patterns of physical misalignment through a series of sessions. A Rolfer uses mild, direct pressure to melt or release facial holdings and allow the body to find health through the re-establishment of balance. It is currently believed that the slow, deep strokes of Rolfing stimulate intra-fascial mechanoreceptors (sensory neurons of the muscle nerve), which in turn trigger the nervous system to reduce the tension of the related muscles and fascia. It allows the brain and nervous system to "re-boot" areas of the body that are receiving too much electrical stimulation (chronically tight or sore muscles). Once a healthy level of muscle contraction is established, the person's entire structure is free to express a pain-free form.

- **Chiropractic treatment:** Based on the concept that restricted movement in the spine may lead to pain and reduce function. Spinal adjustment (manipulation) tries to treat restricted spinal mobility (restore spinal movement; improve function and decrease back pain). Most effective for uncomplicated low back pain that lasts less than four weeks. It may also be effective for headache and other spine-related conditions, such as neck pain.

ENERGY THERAPIES:

- **Acupuncture: A**n ancient Chinese technique that treats patients by manipulating thin, solid needles that have been inserted into acupuncture points in the skin. According to traditional Chinese medicine, stimulating these points can correct imbalances in the flow of energy (qi) through channels known as meridians. Acupuncture's use for relief of certain types of pain and post-operative nausea has been endorsed by many respectable organizations including the US National Institutes of Health. Acupuncture's use when administered by a trained professional is very safe and carries a very low risk of serious side effects.

- **Acupressure:** A non-invasive technique that refers to physical pressure being applied to acupuncture points on the body by the hand, elbow or with a specific device. Acupressure is widely used throughout the world for many ailments from chronic pain to the drainage of swollen sinuses.

- **Magnetic Therapy:** An alternative medical practice that uses static magnets - usually in the form of bracelets, rings, wraps and shoe inserts to alleviate pain and other health concerns. Magnetic therapy dates back millennia; today, the most common purported mechanism of action is that the magnet improves blood flow of the underlying tissue and alters the body's electromagnetic energy balance.

EXERCISE/MOVEMENT THERAPIES:

- **Yoga:** A Hindu philosophy that teaches a person to experience inner peace by controlling the body and mind through a system of exercises that incorporates physical positioning and breath control. Yogic poses can help to correct the alignment of the body. It also helps tone the whole body, strengthens bones and muscles, corrects posture, improves breathing and increases energy.

- **Tai Chi:** Tai Chi has its roots as a Chinese martial art. In addition to the martial aspects of Tai Chi, there is a great deal of stress placed on the concepts of meditative calm and overall physical health. In the modern world Tai Chi is not thought of as a martial art, but rather as a system of movement and breathing meant to be therapeutic. Tai Chi practitioners focus on two main types of formal training. In the first, the student learns a number of movement poses that they undertake on their own. These poses work on steady, healthy breathing, supple posture, and a smooth movement of the body's joints. In the second, the student works with another practitioner to understand how these forms interact with another person's movement. These pushing hands poses help teach sensitivity as well as helping to improve the solo poses through a more rigorous exercise.

- **Alexander Technique:** A method that works to change (movement) habits in our everyday activities. It is a simple and practical method for improving ease and freedom of movement, balance, support and coordination. The technique teaches the use of the appropriate amount of effort for a particular activity, giving more energy for all activities. It is not a series of treatments or exercises, but rather a reeducation of the mind and body. The Alexander Technique is a method which helps a person discover a new balance in the body by releasing unnecessary tension.

- **Pilates: A** body conditioning routine that may help build flexibility, muscle strength, and endurance in the legs, abdominals, arms, hips, and back. It puts emphasis on spinal and pelvic alignment, breathing, and developing a strong core or center, and improving coordination and balance. The system allows for different exercises to be modified in range of difficulty from beginning to advanced. The Pilates technique asserts that physical energy exerted from the center should coordinate movements of the extremities: Pilates is flowing movement outward from a strong core.

ADDITIONAL ALTERNATIVE THERAPIES:

- **Aromatherapy:** An ancient form of healing that uses essential oils (over 150 types) that are derived from plant extracts and resins; used to treat various symptoms including pain when massaged into ones skin or inhaled.

- **Meditation, Relaxed Breathing, Hypnosis, Bio-Feedback, Mind-Body Therapy and Art & Music Therapy.**

HERBAL MEDICINES:

- **Devil's Claw:** Used for pain and inflammation in joints; headaches and back pain.
- **Glucosamine:** Made from the skeletons of shellfish; measured results for the treatment of osteoarthritis.
- **Chondroitin:** Made from cow and shark cartilage; also used for osteoarthritis with measured results.
- **S-adenosylmethionine (SAM-e):** Helps produce and regulate hormones and maintain cells. Also used for osteoarthritis; interacts with antidepressants.
- **Arnica:** Applied to the skin as a cream, ointment, liniment, salve, or tincture. It has been used to soothe muscle aches, reduce inflammation, and heal wounds. It is commonly used for injuries such as sprains and bruises.