

PAIN MANAGEMENT

It's not what you think!

What is Pain Management?

- It is the practice of treating Chronic, and sometimes Acute pain, employing a multi-modal approach, in an effort to return the patient back to normal function or near normal, to the extent that they can engage in their ADL's and perhaps return to work.

Pain Mgt Overview

- We treat:

- Chronic, Pre/Post- surgical and in some cases acute pain syndromes with a variety of treatment options such as:

- Pain medications , opiate and non opiate, usually as a last resort
 - Various injections
 - Osteopathic Manipulation Therapy
 - Acupuncture
 - Psychotherapy
 - Intrathecal Pain Pumps or Spinal Cord Stimulators
 - Physiatry
 - Physical/Occupational Therapy

What is Acute Pain

- Acute pain begins suddenly and is usually sharp in quality. It serves as a warning of disease or a threat to the body. Acute pain might be caused by many events or circumstances, including:
 - Surgery
 - Broken bones
 - Dental work
 - Burns or cuts
 - Labor and childbirth
- Acute pain might be mild and last just a moment, or it might be severe and last for weeks or months. **In most cases, acute pain does not last longer than six months**, and it disappears when the underlying cause of pain has been treated or has healed. Unrelieved acute pain, however, might lead to chronic pain.

What is Chronic Pain

- Chronic pain persists despite the fact that the injury has healed. Pain signals remain active in the nervous system for weeks, months, or years.
- Common chronic pain complaints include:
 - Headache
 - Low back pain
 - Cancer pain
 - Arthritis pain
- Neurogenic pain (pain resulting from damage to nerves)
- Chronic pain might have originated with an initial trauma/injury or infection, or there might be an ongoing cause of pain. However, some people suffer chronic pain in the absence of any past injury or evidence of body damage.

The “cost” of Pain:

- According to a recent Institute of Medicine Report: *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*, pain is a significant public health problem that costs society at least \$560-\$635 billion annually, an amount equal to about \$2,000.00 for everyone living in the U.S. (1)
- This includes the total incremental cost of health care due to pain from ranging between \$261 to \$300 billion and \$297-\$336 billion due to lost productivity (based on days of work missed, hours of work lost, and lower wages). (1)

Pain Mgt Overview cont:

- We Do Not Treat:

- Addiction to opiates, alcohol or illegal drugs*

- Withdrawal, acute intoxication or medication detoxification*

- Drug seeking behavior*

- We **do not wean patients that others** have started on opiates, we make recommendations in that regard (usually a job for addiction specialists or Drug Rehabilitation

- We **may not take over opiate Rx's**

- Postop Surgical pain, we make recommendations. If you have a patient you expect pain issues with, refer us **prior to surgery**

* Refer to Psychiatry and/or Addiction Medicine

SO...HOW DO WE TREAT PAIN?

There's no Magic Bullet...
It's Combination Therapy!

First off, what you and your patients should expect

We **do not** start out with Opiate pain medications, and usually do not recommend them until all other options have failed.

We develop a treatment plan that has multiple modalities based on patient presentation, Physical Exam, PMH and laboratory studies; ie MRI, Xrays and previous treatments.

And keep in mind it's Pain MANAGEMENT not necessarily pain Elimination!

The Initial Visit

- We determine the patient treatment course based on H&P, imaging and previous treatments if any.
- Often most of our patients have some spinal associated complaint involving either one or a combination of any region of the spine (cervical, thoracic, lumbar) these include:
 - Spinal Stenosis
 - Neuritis/Radiculitis
 - Spondylosis
 - DDD, vertebral Fx, kypho/scoliosis, Postlaminectomy Syndrome,, etc.

- other types of pain include:
 - DDD, vertebral Fx, kypho/scoliosis, Postlaminectomy Syndrome
 - hip/shoulder/knee, facial pain, headaches and some abdominal pain d/t pancreatitis, Post Thoracotomy and even Post Herpetic Neuralgia
- So depending on the Dx, we then offer treatment options, often in combination: epidural injections, pain medications along with Physical Therapy, OMT and psychotherapy.

Treatment Options

For spinal disorders:

- We offer: Cervical/Lumbar/Thoracic steroid injections, done under fluoroscopy
 - Epidural Steroid Injections x3 @ 2 weeks intervals – for pain that radiates bilaterally ie to leg/feet, arms/hands
 - Transforaminal Epidural Steroid Injections x3 @ 2 weeks intervals- for pain that is lateralized to one side or focused centrally
 - Facet Medial Branch Nerve Blocks (MBNB) x2 @ 2 weeks intervals - often done as a test to determine if Radiofrequency Ablation is feasible. For centralized pain.
 - Caudal Epidural Steroid Injections x3 @ weeks (for Post Laminectomy syndromes d/t scar tissue)

LUMBAR EPIDURAL STEROID INJECTION

Overview

This injection procedure is performed to relieve low back and radiating leg pain. Steroid medication can reduce the swelling and inflammation caused by spinal conditions.

Fluoroscopic Guidance

The patient lays face down. A cushion under the stomach area provides comfort and flexes the back. In this position, the spine opens and allows for easier access to the epidural space. A fluoroscope assists the physician in locating the appropriate lumbar vertebra and nerve root. A local anesthetic is used to numb the skin.

Tissue Anesthetized

All the tissue down to the surface of the lamina portion of the lumbar vertebra bone is anesthetized.

Larger Needle Inserted

The physician slides a thicker needle through the anesthetized track.

Needle Guided to Epidural Space

Using the fluoroscope for guidance, the physician slides the needle toward the epidural space between the L-4 and L-5 vertebra.

Contrast Dye Injected

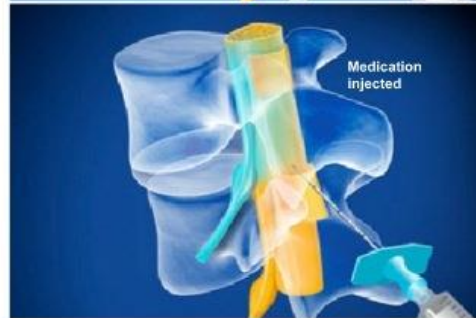
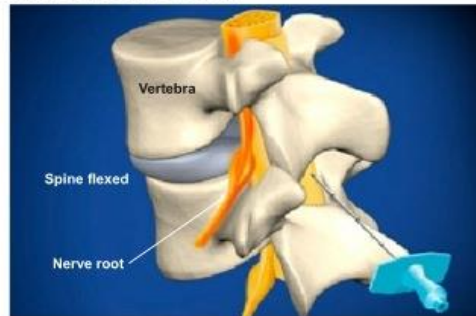
A contrast solution is injected. The physician uses the fluoroscope to see the painful areas and to confirm the correct location of the needle tip.

Steroids Injected

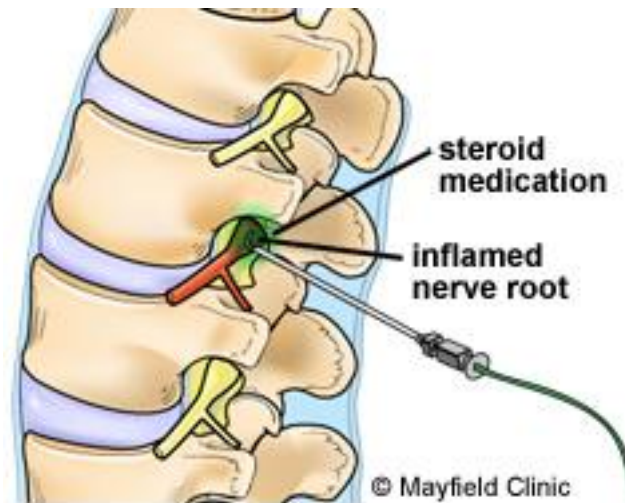
A steroid-anesthetics mix is injected into the epidural space, bathing the painful nerve root with soothing medication.

End of Procedure

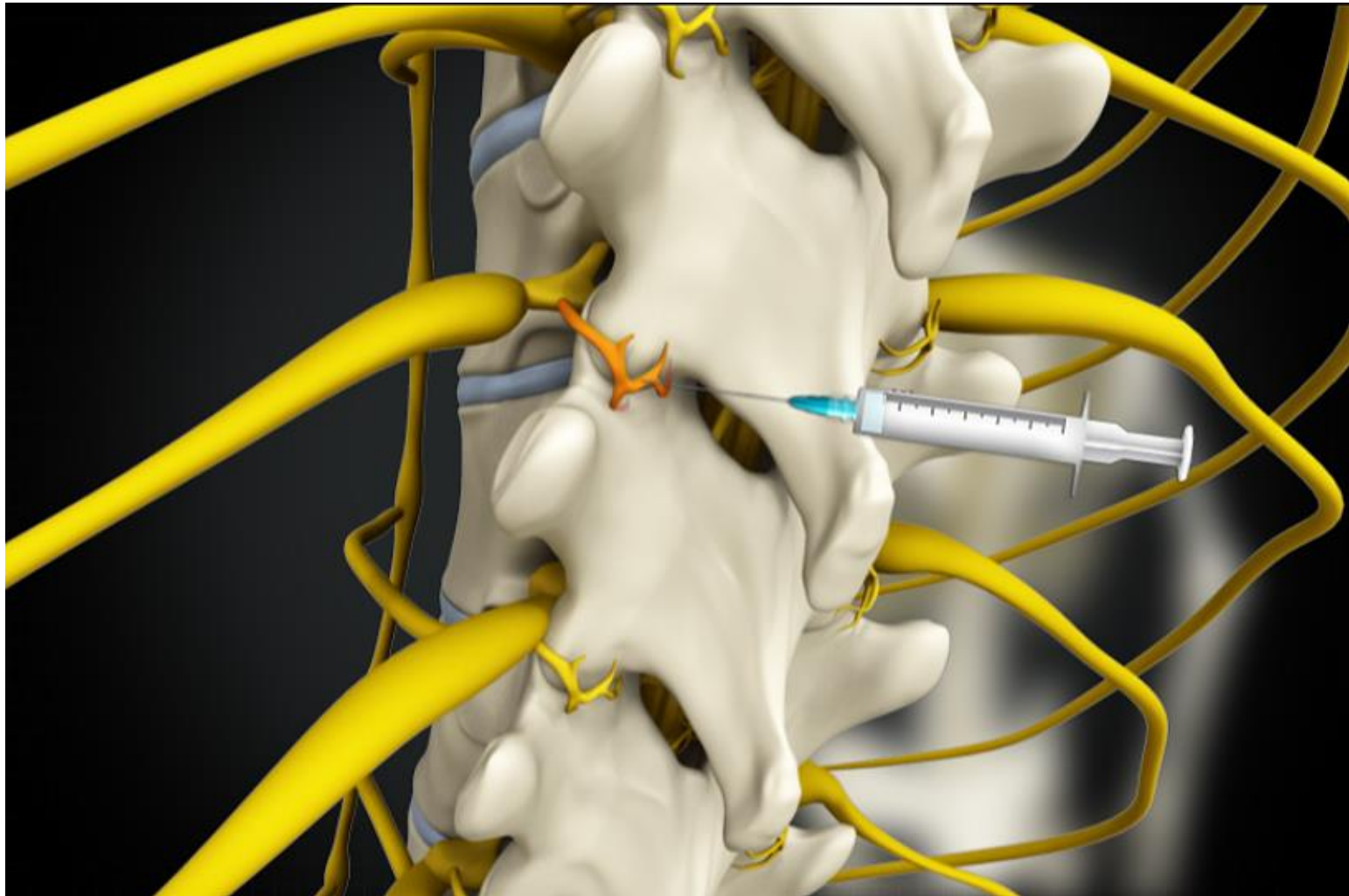
The needle is removed, and a small bandage is applied to cover the tiny needle surface wound. In some cases it may be necessary to repeat the procedure as many as three times to get the full benefit of the medication. Many patients get significant relief from only one or two injections.



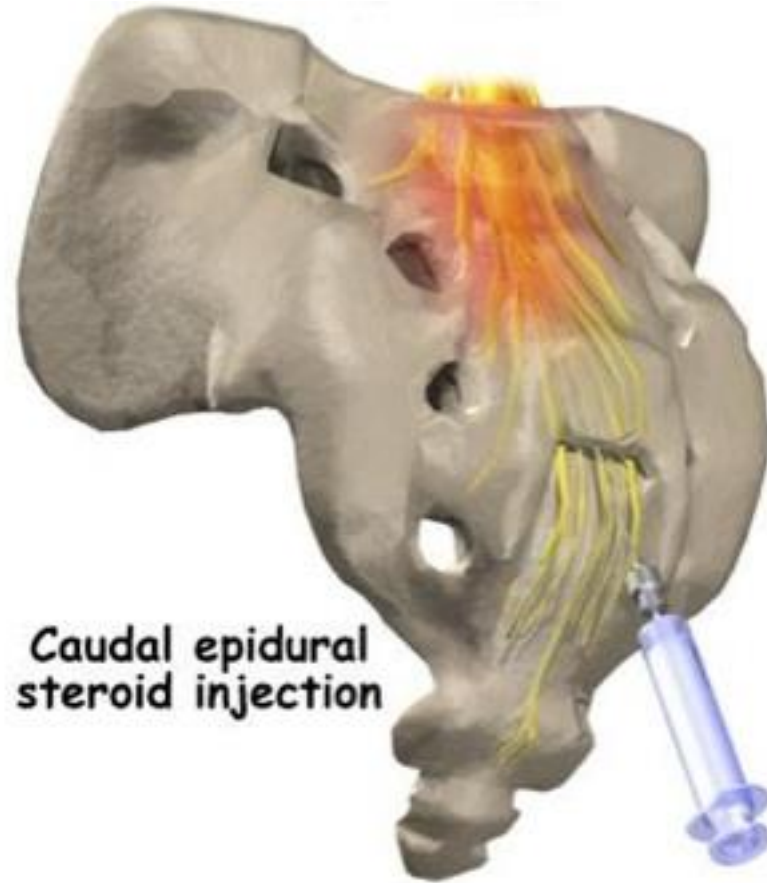
Transforaminal Epidural Steroid Injection



Facet Medial Branch Nerve Block



Caudal Epidural Steroid Injection



Other Blocks that we offer:

- Stellate Ganglion Block
 - Complex Regional Pain Syndrome (CRPS) formerly Reflex Sympathetic Dystrophy
 - Herpes Zoster
 - Trigeminal Neuralgia
 - Upper Arm Pain
- Celiac Plexus Block
 - For upper abdominal pain d/t
 - Cancer
 - Chronic Pancreatitis
- Radiofrequency Ablation – uses an electrical current to heat up a small area of the nerve tissue, desiccating it and thereby decreasing the pain signal. Can provide full or near full relief of pain for an extended period of time. Done under fluoroscopy and after successful MBNB.

Other Blocks cont.

- **Lumbar Sympathetic Nerve Blocks** - treat and also diagnose CRPS
- **Hypogastric Plexus Block** - The hypogastric plexus is a collection of nerves located in front of the fifth lumbar and first sacral vertebral bodies. The block usually involves a series of several injections, repeated at weekly intervals. Treats pain located in the pelvic structures, to include the region of the bladder, lower intestines, as well as the uterus, ovaries and vagina in women, and the prostate and testicles in men.
- **Ganglion Impar Block** - a procedure used to treat or diagnose chronic pelvic or rectal pain by blocking nerve impulses. The ganglion impar is a structure located at the level of the coccyx.

Complications of Epidural Steroid Injections

- Infection 1-2% (severe 0.1-0.01%) can cause meningitis, Epidural abscess, osteomyelitis or discitis. Most likely organism is S. Aureus
- Hematoma 1:150,000 can lead to neurologic dysfunction and in some case irreversible damage.

For Surgical Consult

- We evaluate patient's needs ***Prior to Surgery***, based on previous experience with pain medications
- Then we make recommendations to the surgeon as to what post op pain medications to use.
- Tunneled Epidural Catheters
 - Usually for knee or shoulder surgery
 - It is placed the day of surgery but sometimes the day before
 - Provides a constant flow of medication usually ropivacaine w/ bolus offerings, which in turn provides good constant pain relief
 - Helps to reduce the use and thus the side effects of oral pain medications

Pain Medications

Many options are available: usually oral medications

- Non-Opiate: first line
 - NSAIDS, SNRI'S and Anticonvulsants
- Opiates: last resort
- Topicals: creams, lotions, gels, patches
 - These also include some non-opiate and opiate compounded medications

Non-Opiate Pain Medications

- NSAIDS:
 - Celecoxib (Celebrex)
 - Ibuprofen either OTC or Rx
 - Naprosyn
 - Diclofenac
- Anticonvulsants: treatment of neuropathic pain, DM neuropathy and RLS
 - Gabapentin (Neurontin) Topiramate
 - Gralise
 - Pregabalin (Lyrica)
- Serotonin Norepinephrine Reuptake Inhibitors – useful for OA and Musculoskeletal pain
 - Venlafaxine (Effexor)
 - Duloxetine (Cymbalta)
 - **Caution in use with MAOI's = serotonin syndrome**

Serotonin Syndrome aka Serotonin Toxicity

- Life-threatening drug interactions from either therapeutic drug use, combination overdose of particular drugs and/or recreational drug use.
- Not an allergic reaction, but a drug reaction as a consequence of excess serotonin on the Central or Peripheral NS
- Symptom onset is often rapid
- Cognitive, Autonomic and Somatic Effects:
 - **HTN, increased heart rate can lead to shock**
 - shivering, hyperreflexia, sweating, dilated pupils, hyperthermia
 - Mental changes; hypervigilance or insomnia/agitation
 - DIC, metabolic acidosis, rhabdomyolysis, seizures, renal failure.

Opiates

- Prior to starting opiates, we will try everything else first.
- Also prior to starting opiates and during use, we will:
 - Get a Urine Toxicology – and random at least 2 x p/yr and patient age is **not** a factor. Our UT also tests for the medication's metabolites.
 - Ohio Automated Rx Reporting System aka “OARRS report” and these are checked at every visit
 - Have them sign an Opioid Treatment Agreement
 - Random pills counts

any violation of the above may get the opiates d/c'd and/or the patient released from our care

Opiates

- The patient is also advised of the complications and potential harm of opioid use, which they acknowledge in the Opioid agreement and is also annotated in the patient EMR. This is also reiterated at subsequent office visits.
- Of course initiating opiates is done in conjunction with other treatment modalities.
- To reiterate **we usually Do Not start** a patient on opiates in the beginning.
- Review other medications for contraindications such as benzodiazepines – potentiate each others' side effects

Opiates

Short Acting (SA) Dosed at q 4-6 hours

- Hydrocodone – Norco
- Percolone and Percocet
- Morphine
- Tapentadol
- Tramadol
- Hydromorphone (dilaudid)

Extended Release (ER) Dosed at q 8-12

- Oxycontin
- Morphine ER
 - EMBEDA an ER morphine and naltrexone HCl combination, recommended for abuse deterrent. Situations were patient abuse, neglect or control may be a problem
- Tapentadol (Nucynta ER)
- Hydrocodone – Hysingula ER

Urine Tests; Pain Panel vs Urine Toxicity Screen

- Pain Panels (PP) provide evidence of the drug/s and their metabolites and their levels, whereas Urine Toxicity (UT) Screen only shows the drug in the urine.
- The importance is that patients can add the drug to their urine after providing a sample, and with a standard UT the health care provider would never know that it is not being taken by the patient.
- The PP will show if that the drug has been taken as some of the metabolite will be evident.

Component Results

Component	Value	Range & Units	Status
Phencyclidine	Negative	Negative	Final
Benzodiazepines Urine	Negative	Negative	Final
Cocaine Urine	Negative	Negative	Final
Amphetamines	Negative	Negative	Final
THC	Negative	Negative	Final
Opiates	Negative	Negative	Final
Barbiturates Urine	Negative	Negative	Final

Comment:

All results of drug screens performed at Fairview Hospital are unconfirmed and should be used for medical purposes only.

If confirmation of a positive result is desired, call the Laboratory and follow with a written order in patient's medical record. POSITIVE results indicate that the sample is likely to contain the drug. NEGATIVE results indicate that either the sample does not contain the drug or that the drug is present at a concentration below the cut-off level.

Cut-off concentrations below which results for drug screen are NEGATIVE:

PCP 25 ng/mL BZO 200 ng/mL

COCN 300 ng/mL AMP 1000 ng/mL

THC 50 ng/mL OPI 300 ng/mL

BAR 200 ng/mL

Ethanol, Urine	<13	<13 mg/dL	Final
Oxycodone, Urine	Positive (A)	Negative	Final

Comment:

Cutoff threshold at 100 ng/mL.

Detection of any drug(s) is presumptive only. For confirmation by alternative methods contact the Laboratory within 5 days. For medical purposes only. Documented cross-reactivities (false positives) on file in Laboratory.

Results

PAIN PANEL URINE QUANT (EU,FV,HL,LK,LU,MM,SP) \

Patient Info

Patient Name	Sex	DOB

6/9/2015 2:45 PM - Results in Interface

Component Results

Component	Value	Range & Units	Status
Cannabinoid Quant, Urine	<16	<16 ng/mL	Final
Comment:			
Tetrahydrocannabinol carboxylic acid (THCA) is a metabolite of delta-9-tetrahydrocannabinol which is the main active component of marijuana.			
Benzoylcochine Quant, Urine	<24	<24 ng/mL	Final
Comment:			
Benzoylcochine is a metabolite of cocaine.			
6-Acetylmorphine Quant, Urine	<5	<5 ng/mL	Final
Comment:			
6-MAM (6-monoacetylmorphine, also known as 6-acetylmorphine) is a unique metabolite of heroin. Presence of 6-MAM indicates use of heroin. 6-MAM is further metabolized to morphine and absence of 6-MAM does not rule out the use of heroin.			
Amphetamine Quant, Urine	<5	<5 ng/mL	Final
Methamphetamine Quant, Urine	<8	<8 ng/mL	Final
Buprenorphine Quant, Urine	<20	<20 ng/mL	Final
Norbuprenorphine Quant, Urine	<20	<20 ng/mL	Final
Comment:			
Norbuprenorphine is the primary active metabolite of buprenorphine.			
Methadone Quant, Urine	<16	<16 ng/mL	Final
EDDP Quant, Urine	<6	<6 ng/mL	Final
Comment:			
EDDP is a metabolite of methadone.			
Tramadol Quant, Urine	<25	<25 ng/mL	Final
Desmethyltramadol Quant, Urine	<20	<20 ng/mL	Final
Comment:			
Desmethyltramadol is a metabolite of tramadol.			
Fentanyl Quant, Urine	<6	<6 ng/mL	Final
Norfentanyl Quant, Urine	<6	<6 ng/mL	Final
Comment:			
Norfentanyl is a metabolite of fentanyl.			
Codeine Quant, Urine	<11	<11 ng/mL	Final
Morphine Quant, Urine	<10	<10 ng/mL	Final
Comment:			
Morphine is a metabolite of codeine and heroin.			
Dihydrocodeine Quant, Urine	<5	<5 ng/mL	Final
Hydrocodone Quant, Urine	<8	<8 ng/mL	Final
Comment:			
Hydrocodone is a metabolite of dihydrocodeine.			
Oxycodone Quant, Urine	<5	<5 ng/mL	Final
Hydromorphone Quant, Urine	<5	<5 ng/mL	Final
Comment:			
Hydromorphone is a metabolite of hydrocodone.			
Oxymorphone Quant, Urine	<5	<5 ng/mL	Final
Comment:			
Oxymorphone is a metabolite of oxycodone.			
Creatinine, Ur Pain Pan	>50	>19 mg/dL	Final
Urine pH, Pain Pan	4-10	4 - 10	Final
Specific Gravity, Ur Pain Pan	>1.020	1.005 - 1.020	Final
Oxidants, Ur	Negative	Negative	Final
Specimen Quality, Ur Pain Pan			Final

Specimen quality results within acceptable limits

Topicals

- Compounded Medications
- – these are formulas that are Rx strength and contain medications commonly used in IV/PO form
 - Such as ketamine, gabapentin, baclofen, lidocaine, verapamil, diclofenac
 - They are useful in musculoskeletal pain, neuropathic, RA/OA, Tendonitis, Post op Pain, Headache, CRPS. Plantar fasciitis, Herpetic pain, Post Laminectomy Syndrome (PLS)

Compounding Pharmacies:

DermaTran Health Solutions ph 855-675-5210

Bellevue Pharmacy ph 800-728-0288

Focused Pain Relief ph 877-648-1951

Topicals

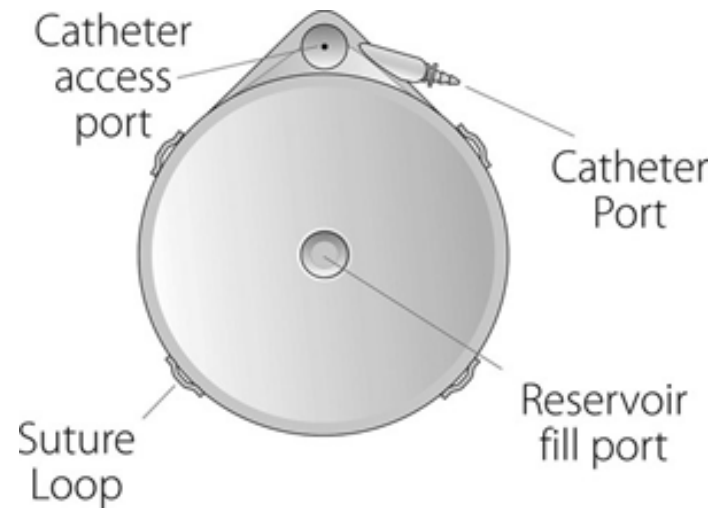
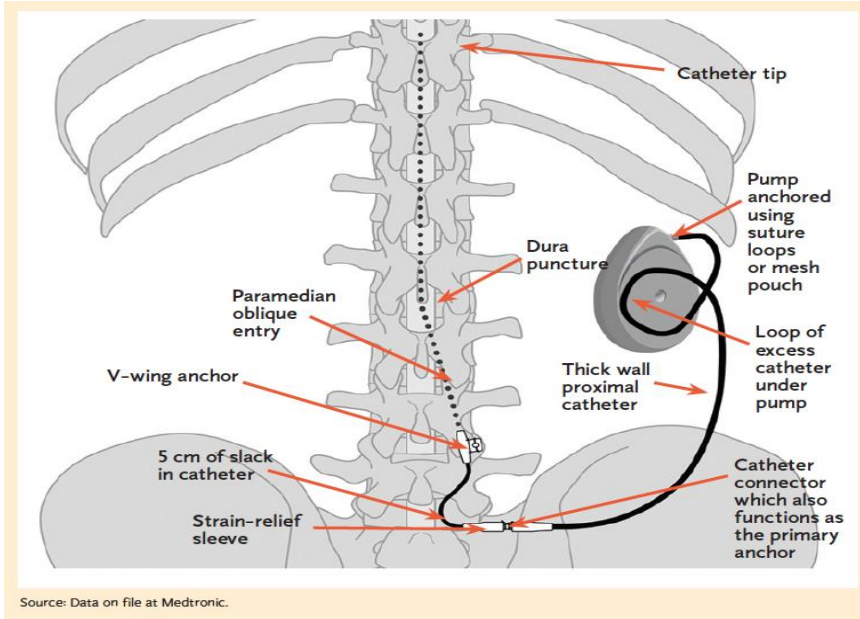
- Lotions – Voltaren, Diclofenac and Lidocaine gels
- Transdermal Patches: best used when compliance is a problem, po is not effective/tolerated, long term pain relief is desired
- Opiate formulas:
 - Buprenorphine (Butrans) 5, 10, 15 & 20 mcg/hr - applied weekly
 - Fentanyl 12.5, 25, 50 & 100 mcg/hr – applied q 3 days
- Non-opiate formulas:
 - Lidocaine and Flector (diclofenac) – applied 12 hours on 12 hours off.

Other Options:

- Spinal Cord Stimulators (SCS) – neurostimulation
- Intrathecal Pain Pumps (ITPP)
 - In either device stimulator leads or catheters are surgically implanted in the epidural space under fluoroscopy
 - Trials are performed in both methods to evaluate efficacy.
 - SCS – temporary leads are placed and attached to an external device for one week
 - ITPP – temporary catheters are placed and the patient is admitted for 24 hour observation and the proposed medication is slowly infused overnight and the patient is monitored for effect.
 - ITPP medications are typically Morphine or Ziconitide (Prialt) for pain or Baclofen for muscle spasms.

Intrathecal Pain Pumps (ITPP)

- A programmable infusion system that delivers a constant rate of pain medication often morphine 24/7.
- Refillable usually every 3 months depending on daily rate of infusion
- RESERVOIR SIZES : 20 mL, 40 mL
- LONGEVITY : 4-7 years
- MINIMUM PROGRAMMABLE FLOW RATE : 0.048 mL/day

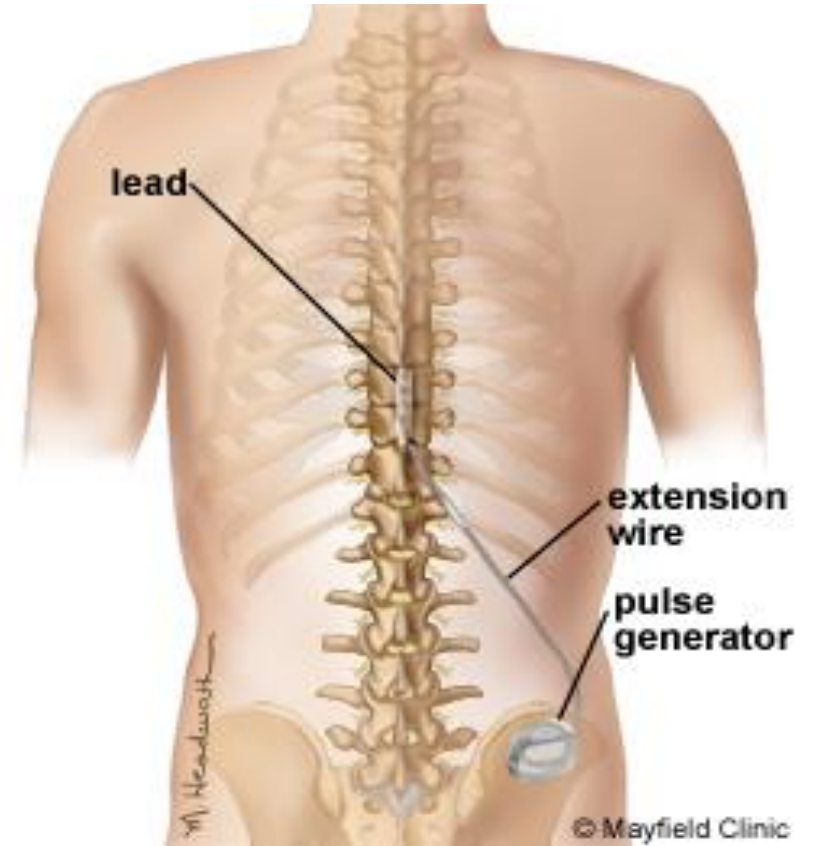
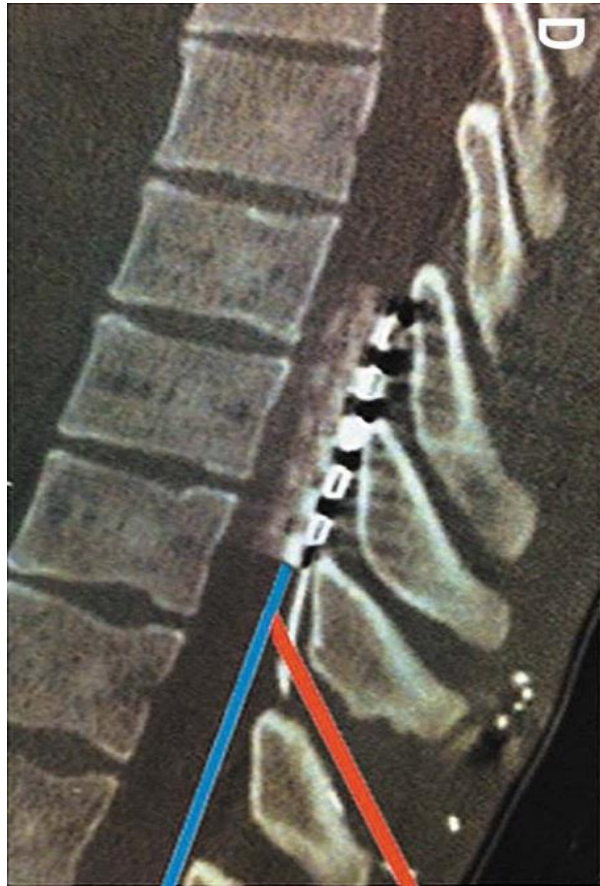


Spinal Cord Stimulators (SCS)

- An implantable system consisting of electrical spinal leads and an implanted neuro pulse generator. The leads are placed usually on either side of the spinal cord staggered for broader coverage.
- Individual electrodes can be turned on or off for specific coverage.
- The generator is usually implanted in the hip and is about 1/3 the size of an iPhone 5 and as thick.



SCS placement





If all else fails:

- Our last option – referral to the CCF Chronic Pain Rehabilitation Program under the direction of Dr. Covington. Phone# 216-444-5433

When to Consult Pain Management

- A diagnosed or suspected disorder of the spine or other chronic condition.
- When the condition which you are treating, has clearly become chronic and not responding to treatment, or any of the other following situations:
 - Pain that is not improving over the course of treatment (this may be something that is subjective to you/patient).
 - The patient is not making progress in return to function.
 - When you are no longer comfortable with the course of the treatment plan.
 - Patients with allergies to common pain medications
 - Pre-operative patients, especially those with allergies or complications with pain medications.

- (1) From *The American Academy of Pain Medicine*