



Common chronic pain diseases

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INTERVENTIONAL PAIN FELLOWSHIP

- 
- ▶ Knee osteoarthritis
 - ▶ Frozen shoulder(Adhesive capsulitis)
 - ▶ Peripheral diabetic neuropathy
 - ▶ Postherpetic neuralgia(PHN)

Knee osteoarthritis

- ▶ Knee osteoarthritis is the most common type of arthritis diagnosed, and its prevalence will continue to increase as life expectancy and obesity rises.
- ▶ Interestingly, not everyone who demonstrates radiographic findings of knee osteoarthritis will be symptomatic. One study found that only 15% of patients with radiographic findings of knee OA were symptomatic.

Treatment / Management

- ▶ Treatment for knee osteoarthritis can be broken down into non-surgical and surgical management. Initial treatment begins with non-surgical modalities and moves to surgical treatment once the non-surgical methods are no longer effective.

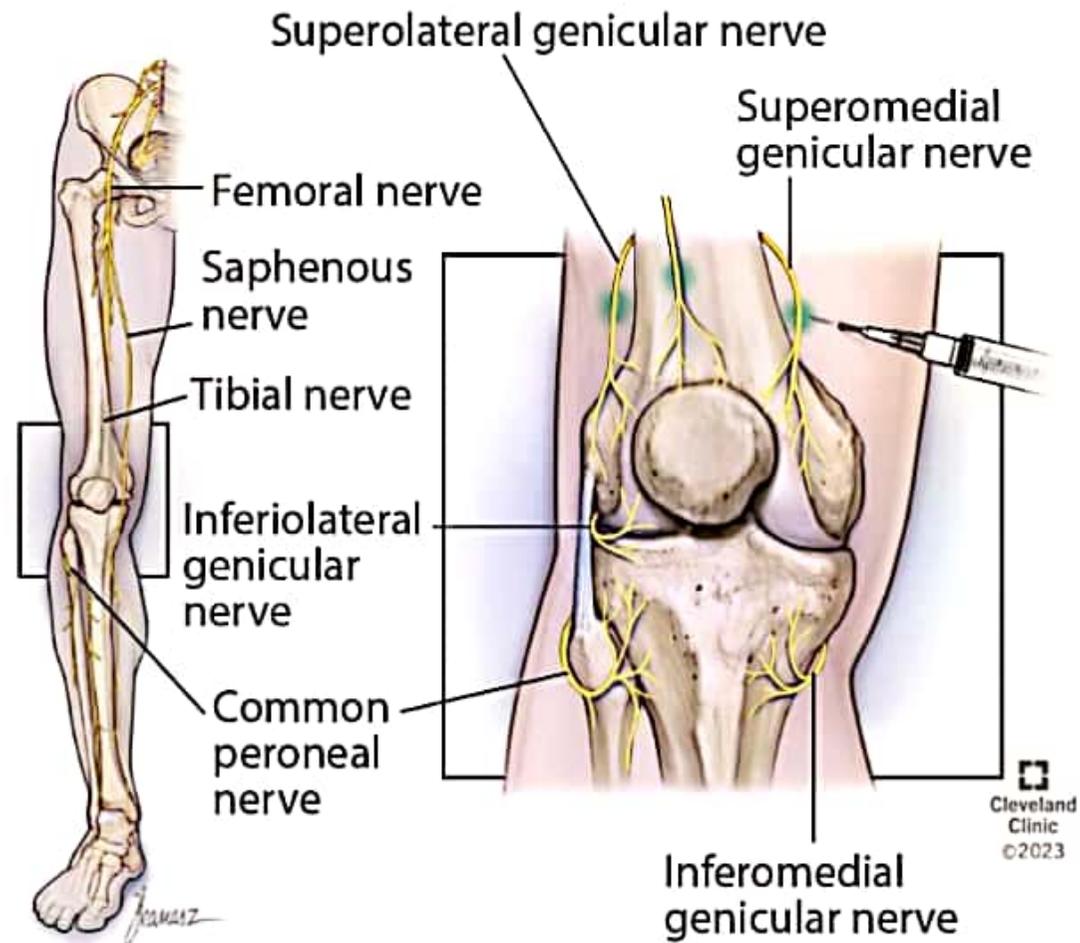
Non-Surgical Treatment Options

- ▶ Patient education
- ▶ Activity modification
- ▶ Physical therapy
- ▶ Weight loss
- ▶ Knee bracing
- ▶ Acetaminophen
- ▶ Nonsteroidal anti-inflammatory drugs (NSAIDs)
- ▶ Glucosamine and chondroitin sulfate
- ▶ Corticosteroid injections
- ▶ Hyaluronic acid (HA)



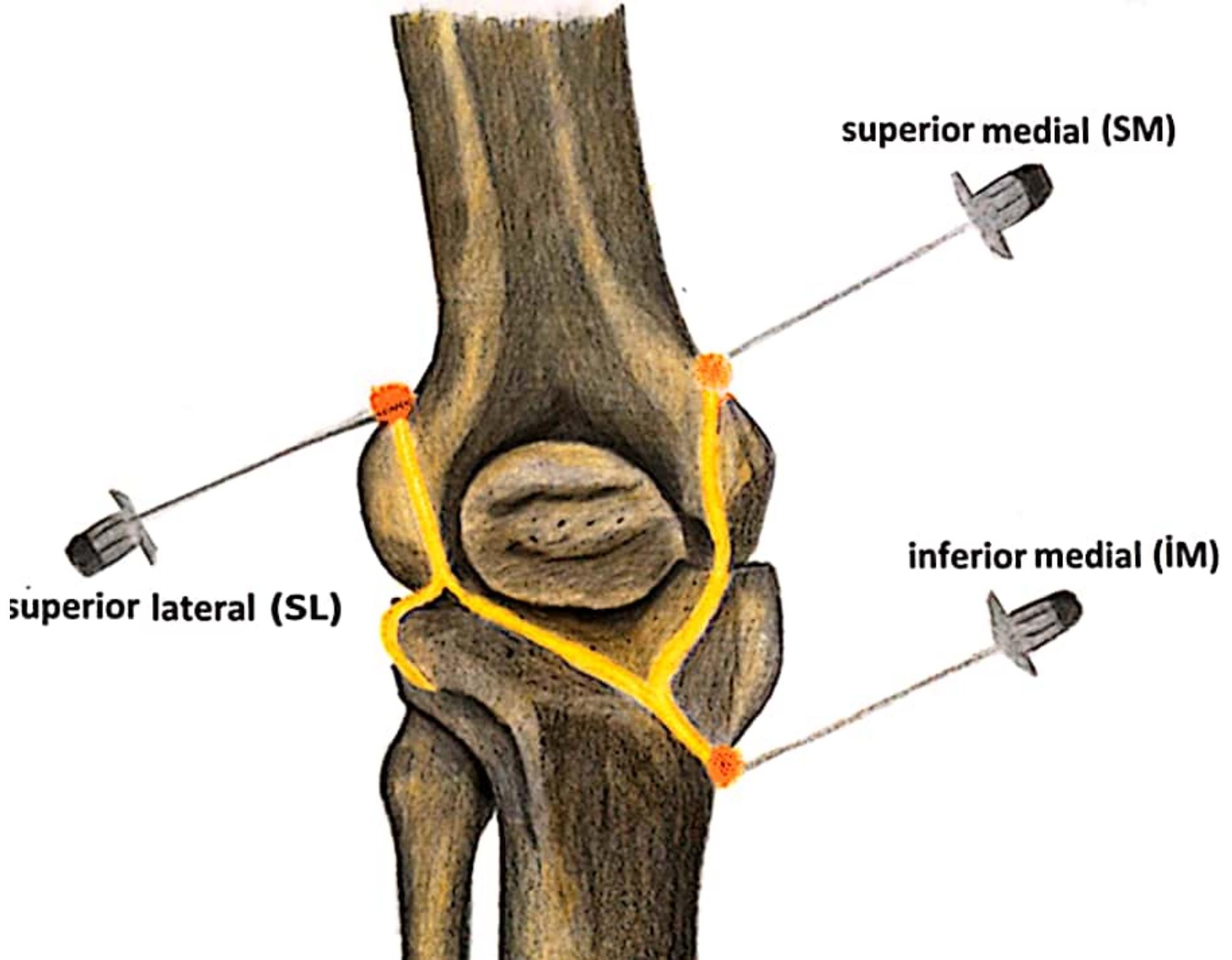
- ▶ Genicular nerves provide sensory innervation to knee and include the:
 - ▶ Superolateral genicular nerve (SLGN).
 - ▶ Superomedial genicular nerve (SMGN).
 - ▶ Inferomedial genicular nerve (IMGN).
 - ▶ Inferolateral genicular nerve (ILGN).

Genicular Nerve Block & Radiofrequency Ablation of Knee Joint



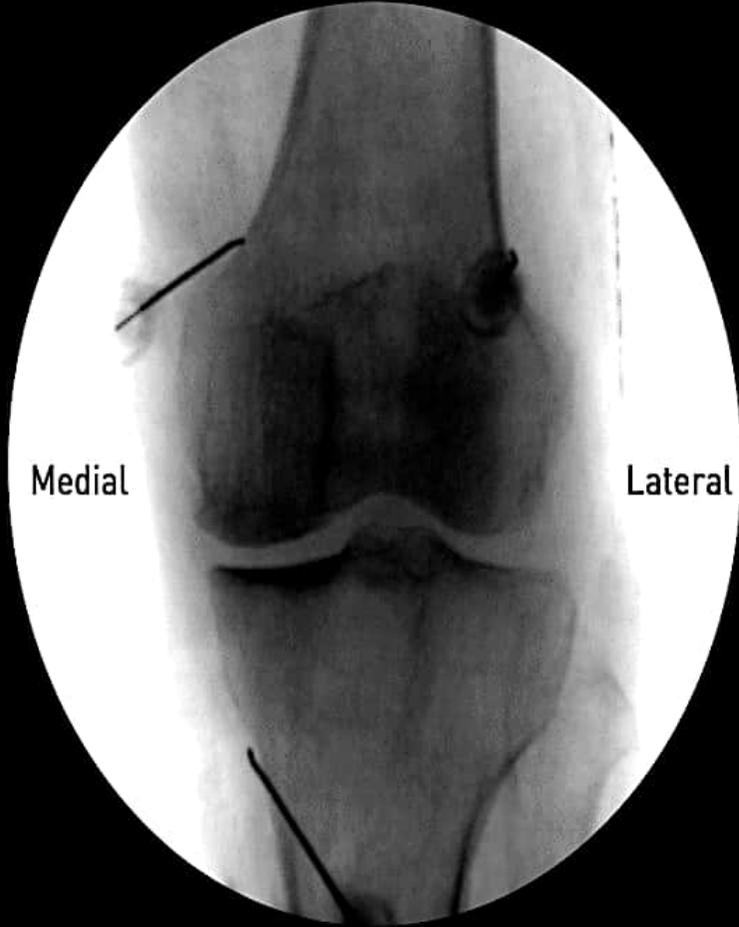
Conditions commonly treated with genicular nerve blocks

- ▶ **Knee Osteoarthritis** - This type of arthritis is due to wear and tear on the knee joint
- ▶ **Chronic knee pain** - Chronic knee pain can be caused by tendinitis, injury, osteoarthritis, gout, or other conditions
- ▶ **Patients with pain after total or partial knee surgery**
- ▶ **Patients with chronic knee pain who are not surgical candidates**
- ▶ **Patients who want to avoid surgery**

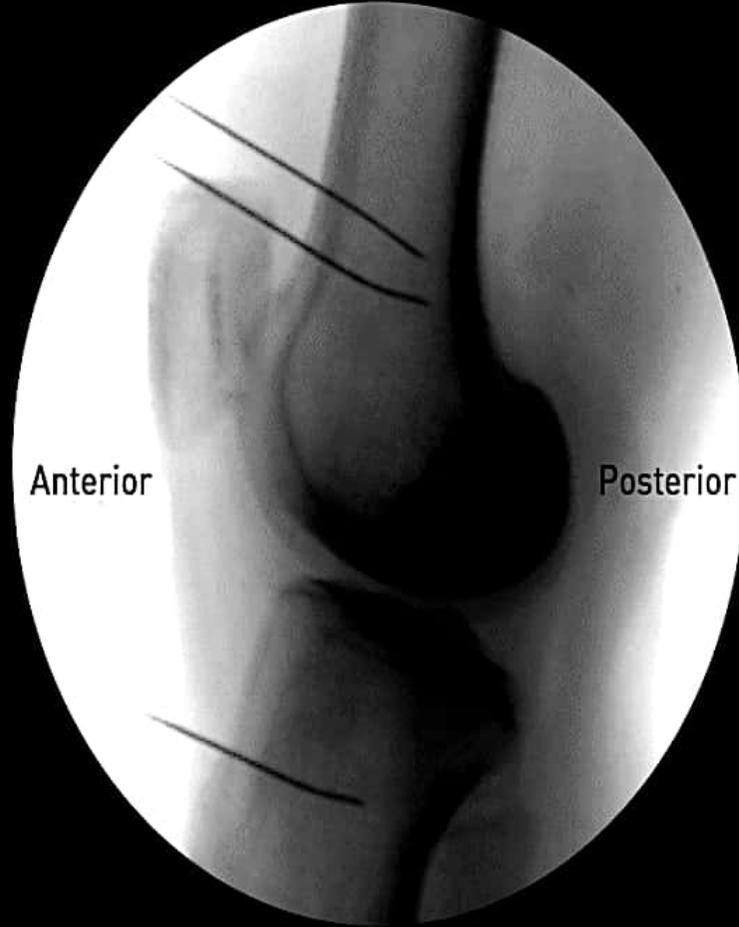


Diagnostic genicular nerve blocks

- ▶ These injections are performed under fluoroscopy guidance. A small amount of local anaesthetic (1-2ml) of lidocaine or bupivacaine is injected around the superior lateral (SL), superior medial (SM) and the inferior medial (IM) branches. A response is considered positive if there is at least 50% reduction in pain in the 24hrs following injection.



Lateral



Posterior

Frozen shoulder(Adhesive capsulitis)

Adhesive capsulitis refers to a painful shoulder in which the active and passive ranges of motion are severely limited. It develops in three stages:

- ▶ Freezing stage: In the "freezing" stage, shoulder slowly has more and more pain. As the pain worsens, shoulder loses range of motion. Freezing typically lasts from 6 weeks to 9 months.
- ▶ Frozen stage: Painful symptoms may actually improve during this stage, but the stiffness remains. During the 4 to 6 months of the "frozen" stage, daily activities may be very difficult.
- ▶ Thawing phase: Shoulder motion slowly improves during the "thawing" stage. Complete return to normal or close to normal strength and motion typically takes from 6 months to 2 years.

Causes

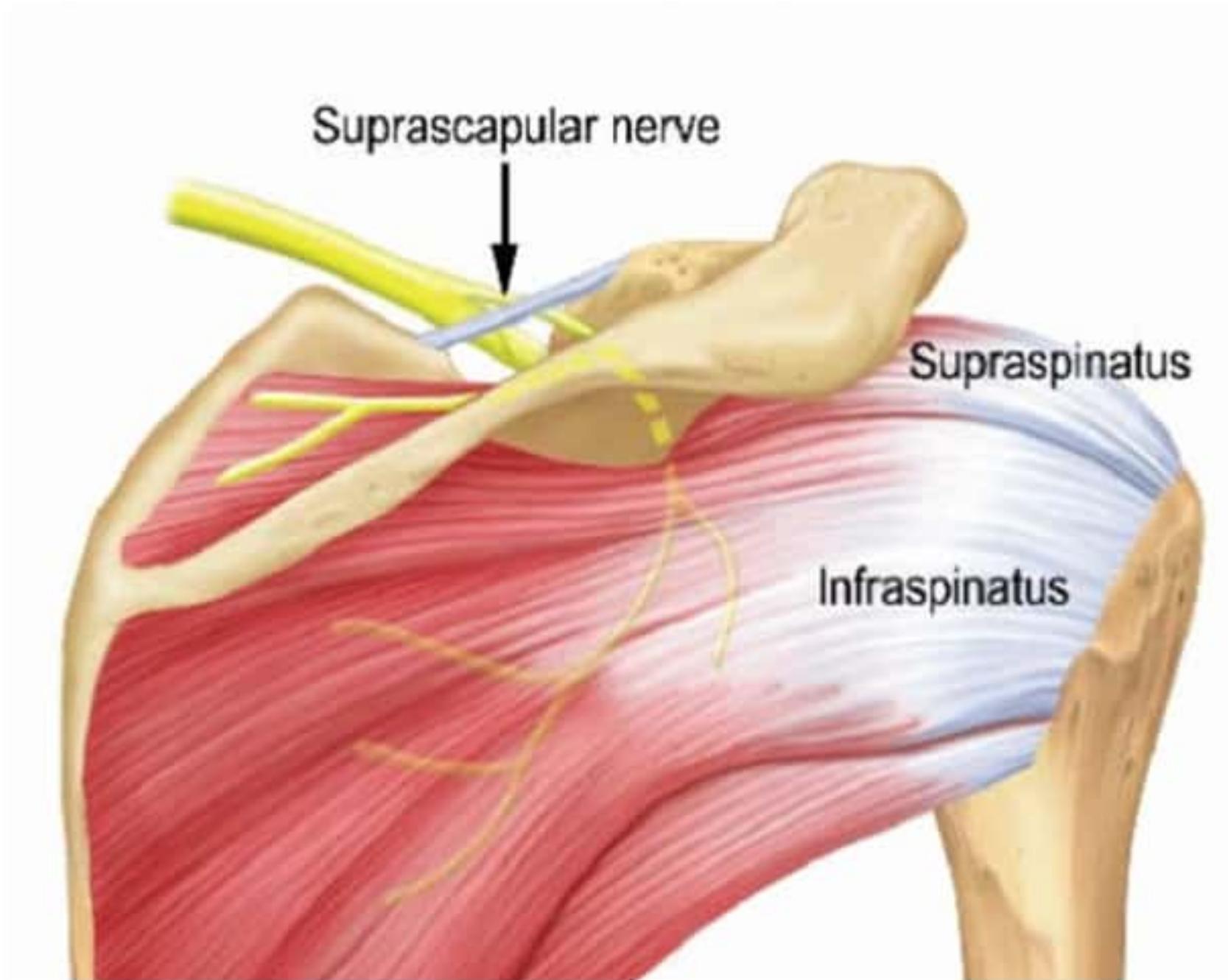
- ▶ Diabetes mellitus
- ▶ Thyroid disorders
- ▶ Parkinson's disease
- ▶ CVA(SHS)
- ▶ Immobilization
- ▶ After shoulder surgery
- ▶ Shoulder injury related to vaccine administration (SIRVA)

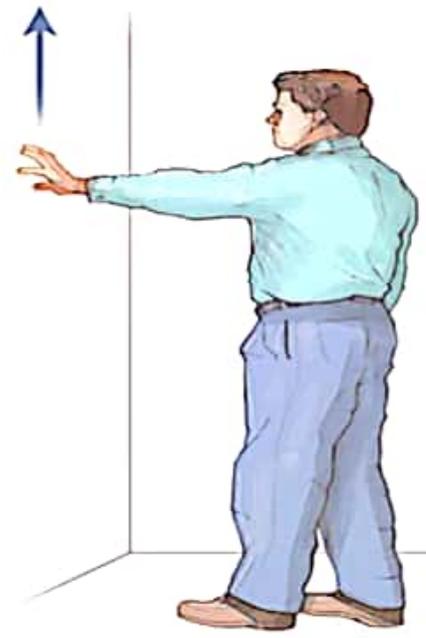
Diagnosis

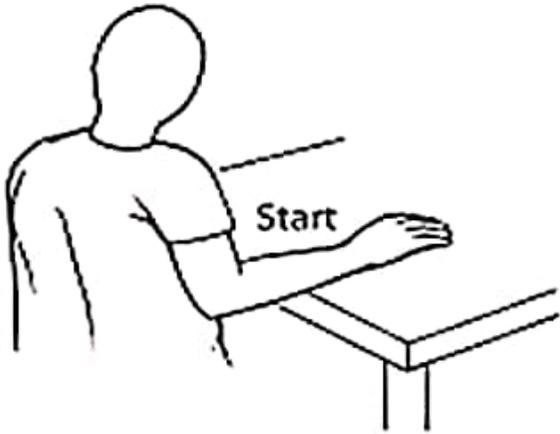
- ▶ Frozen shoulder can usually be diagnosed from signs and symptoms alone.
- ▶ Imaging tests — such as X-rays or an MRI — to rule out other problems.

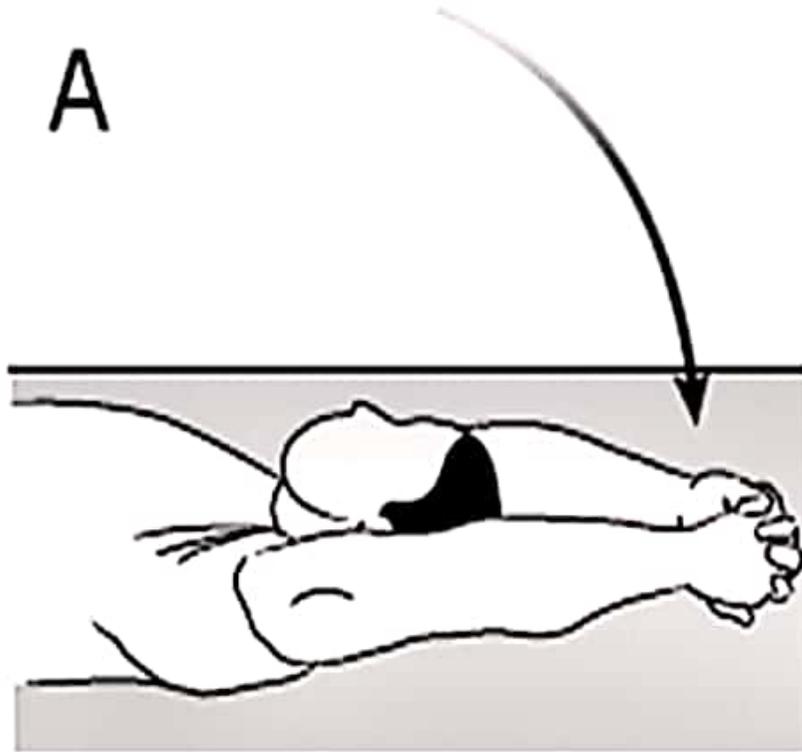
Treatment

- ▶ NSAIDs
- ▶ Suprascapular nerve block/Subacromial bursa injection/intra articular corticosteroid injection.
- ▶ Physical therapy:therapy includes stretching or range of motion exercises for the shoulder.
- ▶ Hydrodilatation:injecting a large volume of sterile fluid into the shoulder joint to expand and stretch the shoulder joint capsule.
- ▶ Surgery:The most common methods include manipulation under anesthesia and shoulder arthroscopy.("Stage 2: Frozen.")











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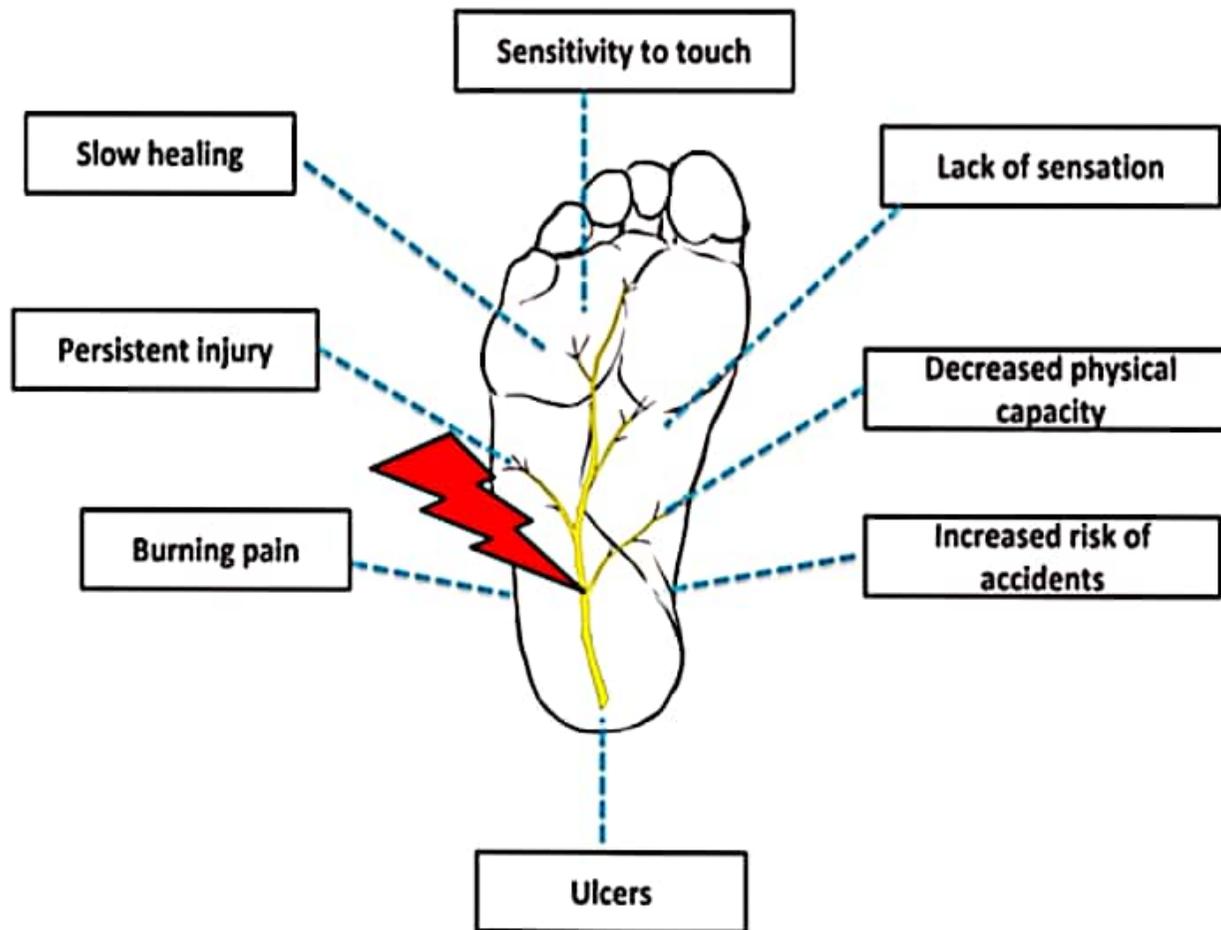
Peripheral Diabetic Neuropathy

- ▶ Diabetic peripheral neuropathy (DPN) is the most common diabetic complication, the most common form of neuropathy, and the leading cause of disability, foot ulceration and ultimately amputation.
- ▶ Diabetic peripheral neuropathy encompasses sensory, motor, and autonomic neuropathy.
- ▶ At the time of diagnostic DM onset in patients, about 10% to 20% of patients being concomitantly diagnosed with PN.
- ▶ 50% to 66% of patients with DM will eventually develop PN during their lifetime.

HISTORY

It affects the feet and legs first, followed by the hands and arms. Signs and symptoms of peripheral neuropathy are often worse at night, and may include:

- ▶ Numbness or reduced ability to feel pain or temperature changes
- ▶ Tingling or burning feeling
- ▶ Sharp pains or cramps
- ▶ Muscle weakness
- ▶ Extreme sensitivity to touch — for some people, even a bedsheet's weight can be painful
- ▶ Serious foot problems, such as ulcers, infections, and bone and joint damage



Conventional Management of Peripheral Neuropathy

- ▶ Physicians target three main variables: glycemic control, pain, and foot care.
- ▶ Interestingly, glycemic control does not appear to reduce the symptoms in patients suffering from this condition, therefore remaining largely a preventative strategy along with foot care.
- ▶ Tight control of blood glucose in patients with type-1 diabetes reduces the risk of DPN by 60%. The same is not the case for type-2 diabetes.



- ▶ Pharmacological alternatives are frequently recommended for the treatment of peripheral neuropathies and have demonstrated efficacy in randomized clinical trials and systematic reviews. Medications such as **duloxetine** (SNRIs) and **pregabalin** (Calcium channel α_2 - δ ligands) have been FDA approved for the treatment of neuropathic pain .
- ▶ Additional drugs such as tricyclic antidepressants may mitigate pain; however, they are not approved by regulatory bodies due to serious side effects.
- ▶ Lastly, although opioids have also been shown to improve pain scores in some patients, these compounds are known to trigger addictive behavior and should only be considered as a last resource for neuropathic pain.

Interventional treatment

- ▶ SCS(spinal cord stimulation):1B+
- ▶ Acupuncture and injection of botulinum toxin-A: 2B+/1B+
- ▶ surgical decompression of lower limb peripheral nerves in patients with intractable PDN and superimposed nerve compression : 2B±/1B+
- ▶ sympathetic blocks:2C+

Postherpetic Neuralgia

- ▶ PHN is defined as pain in a dermatomal distribution that is sustained for at least 90 days after the rash.
- ▶ Around one in five people with shingles will get PHN.
- ▶ Burning pain may be associated with allodynia or hyperalgesia.
- ▶ Risk factors: older age, severe rash, severe acute zoster pain, ophthalmic involvement, immunosuppression, and chronic conditions such as diabetes mellitus.

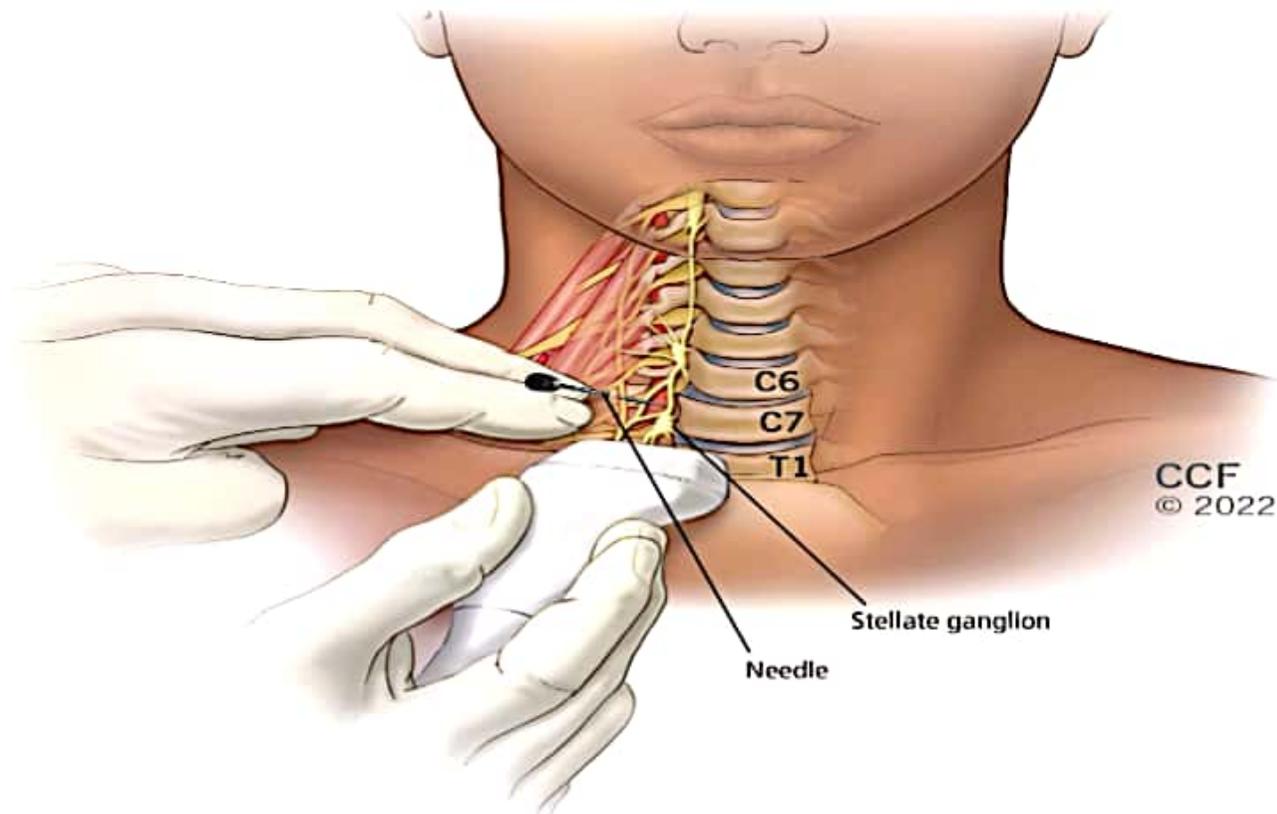
Secondary prevention of PHN

- ▶ It is doubtful if antiviral treatment can prevent PHN.
- ▶ Amitriptyline (25 mg a day taken for 90 days in the evening) during the acute phase, reduces the risk of PHN by 50%.
- ▶ TENS (transcutaneous electrical nerve stimulation) has been used to prevent postherpetic neuralgia in patients with acute-stage herpes zoster.

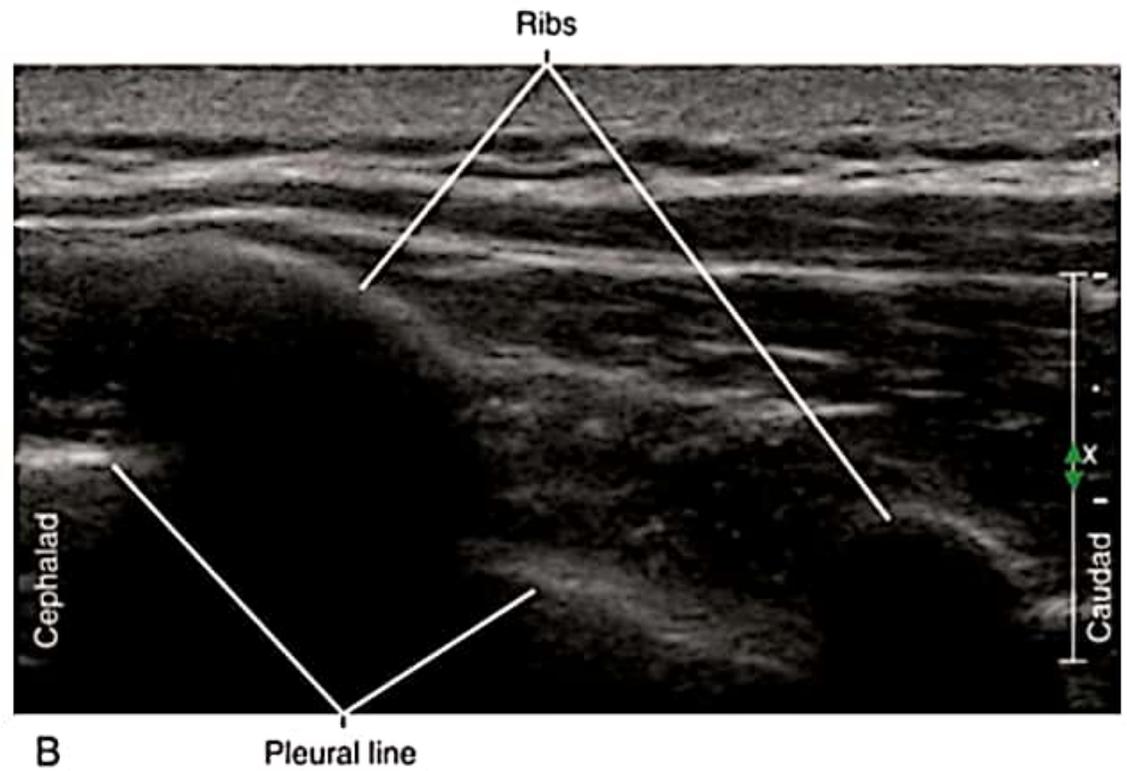
Treatment

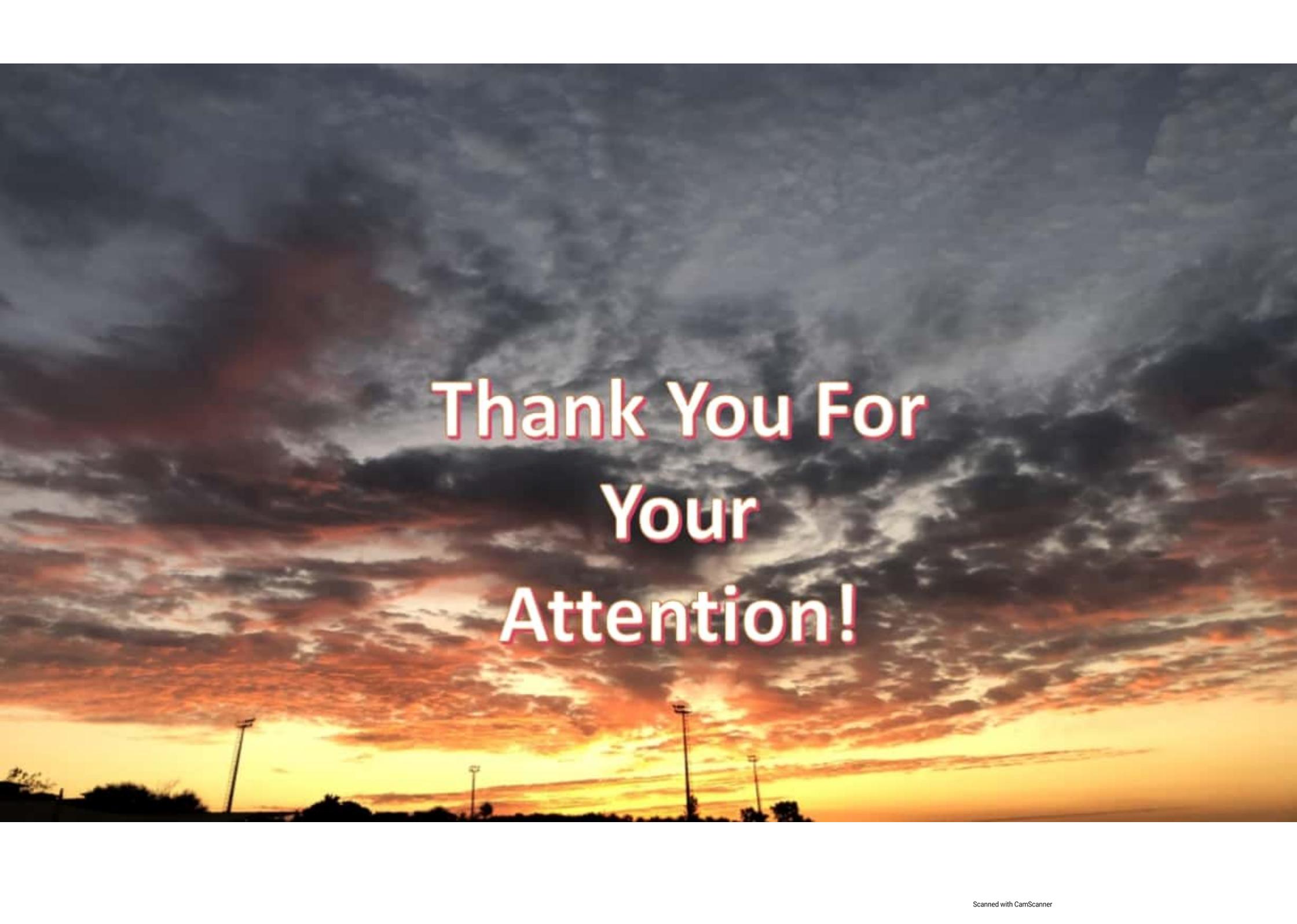
- ▶ Pharmacologic: TCAs (amitriptyline)-
Antiepileptics (gabapentin, pregabalin), SNRIs (duloxetine)
- ▶ Local: 5% lidocaine patch, 8% capsaicin patch
- ▶ TENS
- ▶ Interventions: sympathetic block, intercostal block, erector spinae block, tap block

Stellate ganglion block



Intercostal block





**Thank You For
Your
Attention!**