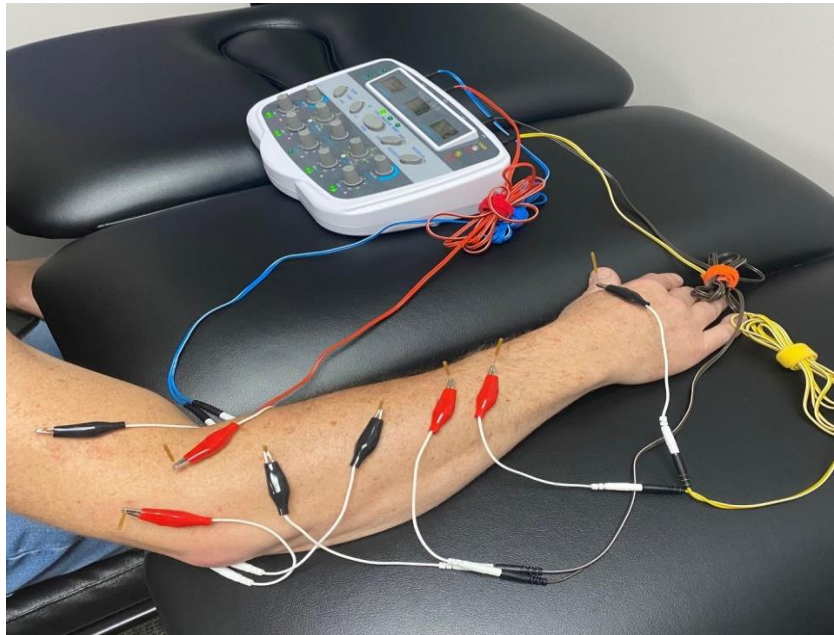




HOOSIER PHYSICAL THERAPY

DRY NEEDLING



Michael F. Barile, DC, PT

3030 Lake Avenue

Fort Wayne, IN 46805

260-420-4400

What Is Dry Needling

Dry needling requires the use of a thin monofilament needle as used in the practice of acupuncture. The technique does not use a hollow bore needle to deliver a liquid agent such as cortisone or other liquid agents used in medicine thus the name "dry" needling. Dry needling is a skilled therapeutic intervention in which fine "acupuncture" needles are inserted into myofascial trigger points (painful knots in muscles), tendons, scar tissue, fascial adhesions, ligaments, or near nerves to stimulate a healing response in painful neuromusculoskeletal conditions.

Acupuncture (acu = needle + puncture = penetration) has its origin in Traditional Chinese Medicine with the body maintaining its balance through energy or *qi* (*chee*) that flows through set pathways called meridians. The traditional acupuncturist makes a diagnosis of disturbance in the body's balance and makes a correction through needles.

Western or biomedical acupuncture has adopted a valid modern approach with a medical diagnosis being made and dry needles or acupuncture needles being used to influence physiology based on a scientific view of how muscle and nerves are effected. High quality trials are showing that acupuncture is better than placebo for treating many common conditions such as neck pain, low back pain, and headaches. Dry needling does draw form the Western or biomedical acupuncture literature from the context of treating neuromuscular conditions. Many acupuncture points line up with anatomical structures associated with neuromusculoskeletal disorders and are used to accurately access these structures.

Dry needling is a modern, science-based intervention for the treatment of pain and dysfunction based on human anatomy and physiology to treat medically diagnosed neuromusculoskeletal conditions such as neck pain, low back pain, shoulder pain, tennis elbow, golfer's elbow, tendonitis, carpal tunnel syndrome, headaches, hip pain, knee pain, and plantar fasciitis.

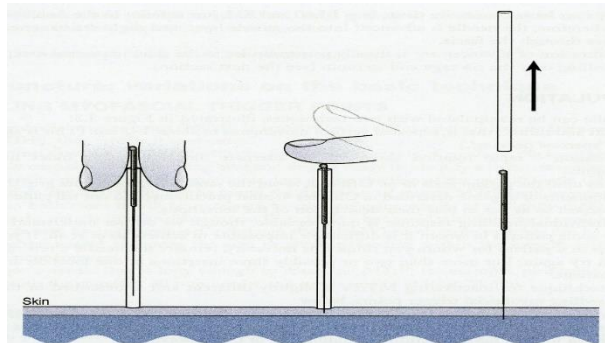
How Small Are The Acupuncture Needles Used For Dry Needling?



Individually Packaged Single Use Sterile Needles are Used For Safety

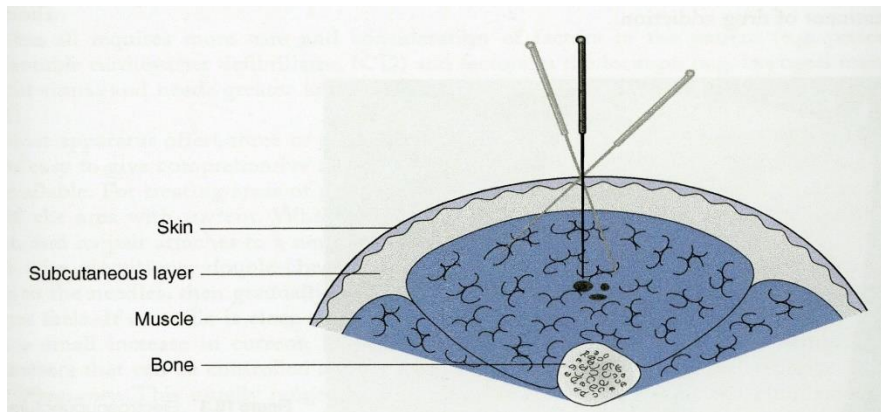


Guide Tubes Are Used To Accurately Place The Needle And Increase Comfort With Insertion



Various Needle length Are Used to Access The Involved Anatomical Structures





Is Dry Needling Safe

- ❑ Dry needling is very safe; however, serious side effects can occur in less than 1 per 10,000 (< 0.01%) treatments. Nerves or blood vessels may be damaged from dry needling which can result in pain, numbness, or tingling; however, this is a very rare event and is usually temporary.

- ❑ Drowsiness, tiredness, and or dizziness may occur after treatment in a small number of patients (1-3%). If this occurs, you are advised not to drive and to have a driver pick you up.

- ❑ Minor bleeding or bruising can occur after treatment (15-20% of patients) and is considered **NORMAL**.

- ❑ Temporary pain occurs during dry needling in 60-70% of treatments. Existing symptoms can get worse after treatments (< 3% of patients), however, this is not necessarily a “bad” sign.

- ❑ Fainting can occur in certain patients (0.3%), particularly at the first treatment session when needling of the head-neck is performed. Dry needling will be stopped if you feel faint, lightheaded, dizzy or nausea

Damage to internal organs has been reported in the medical literature following needling; however, these are extremely rare events (1 in 200,000)

Infection

Broken Needle

The most common serious side effect from dry needling when performed over the chest wall is pneumothorax (lung collapse due to air inside the chest wall) when needling around the thorax.

The symptoms of dry needling-induced pneumothorax commonly do not occur until after the treatment session, sometimes taking several hours to develop.

The signs and symptoms of a pneumothorax may include:

-Shortness of breath on exertion

-Increased breathing rate

-Chest pain

-Dry cough

-Bluish discoloration of the skin

-Excessive sweating

If such signs and/or symptoms occur, you should immediately go to the emergency room



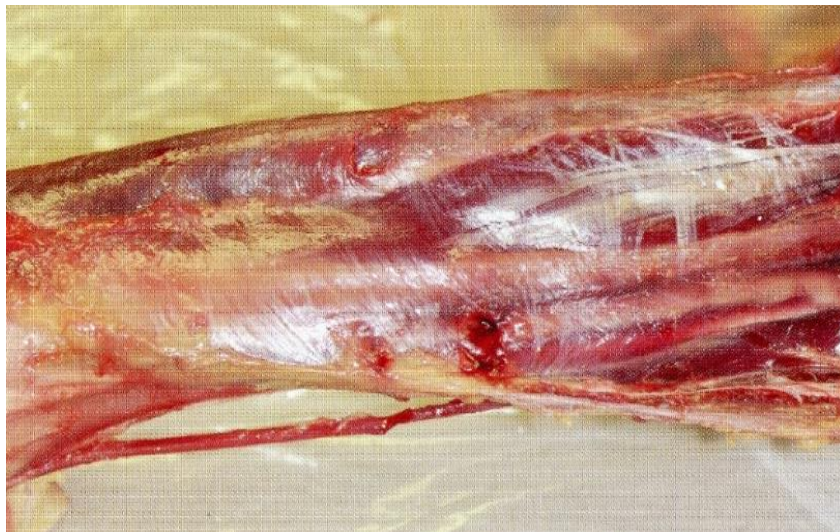
How Does Dry Needling Work

The healing effects of dry needling are local, segmental, and general

1. Local:

Needles stimulate nerves to release chemicals that improve blood flow and oxygen, allow fibroblast cell activation (a type of cell that contributes to the formation and repair of connective tissue), provide chemical release for local analgesia, improve nerve function, and inactivate trigger points or tight muscle knots.

Manual manipulation of the needle through clockwise and counterclockwise rotation transmits a mechanical stimulus at the cellular level described in the literature as mechanotransduction to the connective tissue or fascia as seen in the picture below. This creates the biomechanical phenomenon experienced by the therapist known as needle grasp. In needle grasp, the therapist feels a resistance to further needle manipulation. A series of recent studies by Langevin et al., describes what is occurring during mechanotransduction and the mechanism's involved. These articles suggest that needle grasp results when collagen fibers and other tissues wind around the rotating needle. The tissues experience significant deformation during this process and induces a remodeling by fibroblastic cell activity that contributes to the formation of connective tissue and soft tissue repair.



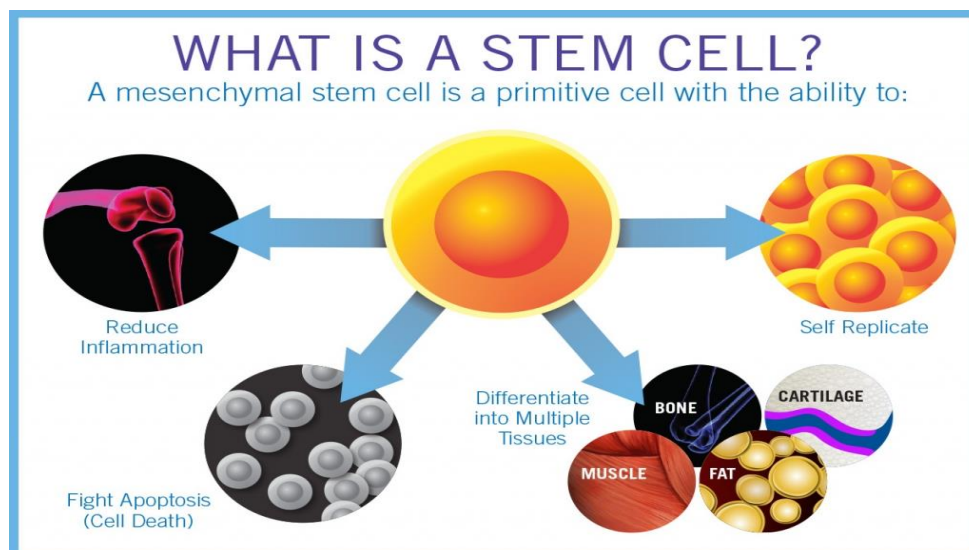
2. Segmental:

Needles stimulate nerve ending that send signals into the spinal cord to modulate pain through local reflexes as well through pathways in the spinal cord that communicate with the brain.

3. General:

Needles stimulate ascending and descending pathways of the spinal cord associated with the limbic system of the brain that controls pain perception. This network is known to be disrupted in chronic pain patients. Dry needling has been shown to restore normal function to the limbic system. Also, endocrine effects lead to the release of endorphins which are natural pain killers and elimination of cortisol which is a natural inflammatory chemical found in the body.

A study led by Indiana University School of Medicine researchers demonstrates how electroacupuncture triggers a neurological mechanism that can help promote tissue repair and relieve injury-induced pain. The study has shown how the use of electroacupuncture at specific points stimulates stem cell release into peripheral blood through the activation of the nervous system to aid tissue repair through increasing the levels of circulating stem cells. Stem cells are the repair people of the body. Mesenchymal stem cells have been found to be the most effective in orthopedic treatments and have the strongest potential to repair muscle, bone, joint and soft tissue injuries. Found primarily in bone marrow, these cells have the ability to self-replicate, reduce inflammation and differentiate into cartilage, bone, muscle, and fat cells to help the body regenerate the lost tissue in the injured area. They can activate your body's ability to heal itself.



How Does Dry Needling Feel

Most patients find that the initial needle insertion with the guide tube is typically not painful. Increased depth of penetration and rotation of the needle may produce the following sensations sensation that the Chinese call de qi. The following sensations are considered positive and indicate that the correct nerve ending have been stimulated.

- numbness, tingling
- distension, extension, fullness, pressure
- heaviness
- sore ache such as in muscle fatigue
- warm, cold
- spreading or radiation of symptoms

Pecking with the needle around bony insertion of tendons may lead to increased discomfort but should be considered tolerable.

Intolerable sharp and or burning sensations indicate penetration of a nerve or blood vessel and should be avoided

What Is A Recommended Plan Of Care

A minimum of 6 to 8 sessions are recommended with 12 to 15 considered optimal. Sessions should have no more than one week separation between visits. Up to eight needles are typical inserted following unique standardized protocols for a diagnosed condition. Electrical stimulation with dry needling is recommended unless contraindicated to accentuate the therapeutic effect. Each session lasts about 20 minutes on average. Dry needling is not used as a stand-alone treatment and is complemented by other interventions such as manual therapy, heat, ice, cold laser, and therapeutic exercise.