



Non-pharmacological Approaches to Chronic Pain Management

73

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Acupuncture/Acupressure

- Acupuncture, the art of needle penetration, has been widely used in the treatment of chronic pain for thousands of years.
- “Acus” is Latin for needle and “punctura” is Latin for penetration.
- Incorporates the use of needles to stimulate anatomical points which results in therapy.
- It is considered one of the **oldest medical procedures** and requires board certification to practice.
- Current working mechanism of action: acupuncture stimulation results **in the release of endorphins, interleukins, substance P, and adenosine** which helps to mitigate the pain relief response. Opioid antagonists **can block** the analgesic effects of acupuncture.
- A meta-analysis of RCTs of acupuncture found that the superiority of acupuncture over sham acupuncture, but the **effects are too small** to be clinically significant. It should be noted, however, that both acupuncture and sham acupuncture **have strong placebo effect**.
- Acupressure or Shiatsu, is **pressure with fingers or small beads** at acupuncture points. A

meta-analysis of four randomized trials of acupressure found that pain intensity was significantly reduced in the acupressure group compared with a placebo control (light touch) or compared with a combined control (light touch or no treatment).

Techniques

- Acupuncture point locations are determined either by using anatomic structures and via theoretical framework of eastern medicine such as the five elements (fire, wood, earth, water, metal) and meridians.
- Once the location of pain is identified, fine point needles are inserted to desired location.
- The usual duration of treatment is twenty minutes per session.
- A transcutaneous electrical nerve stimulation unit maybe attached to the acupuncture needles to send electrical pulses which is thought to result in the release of endorphins.

Considerations

- Avoid the insertion of acupuncture needles at sites of **active malignancy and infection**.
- Patients with automatic implantable cardioverter-defibrillator (AICD) or pacemaker should **avoid electro-acupuncture**

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because of risk of electrical interference with the device, however, traditional acupuncture is safe in these patients.

- Pregnancy is not an absolute contraindication, but cautions should be observed since some points can induce labor.
- Use of anticoagulants and bleeding disorders **are not contraindications** to treatment but caution should be taken.

Meditative Movement Therapies: Tai chi/Qigong/Yoga

- Balance problems are common in elderly resulting frequent falls and significant morbidity.
- Balance exercises are recommended for individuals who have a history of falling, chronic pain setting for fibromyalgia, and joint pain and to help improve balance and stability. Research has shown participation in group classes of exercises such as tai chi improve balance and reduce falls risk.
- Tai Chi is a type of balance exercise of gentle flowing, low-impact, **slow-motion exercise** movement that incorporates mind-body practice. Series of motions are done without pausing and movements are circular but never forced.
- Qigong is the focused and specific **thoughtful breathing exercise** while doing activity.
- Yoga uses **interactions among the mind, body,** and behavior to improve different aspects of physical and mental health. Yoga includes physical postures, breathing control, and meditation along with cognitive strategies of mindfulness.
- The main goal of meditative movement therapies is to help restore function or **limit stresses of chronic pain** through balanced physically stimulating management.
- The benefits of yoga have been evaluated in >100 meta-analyses, which shows statistically **significant benefits of yoga** compared with

no intervention. The benefits of yoga are similar to **other forms of light to moderate exercise.**

- Patients who are unable to perform intense exercise, yoga is a reasonable alternative. The patient who has cervical disc disease and glaucoma **should avoid yoga.** Yoga practice vary significantly, it is advised **to start at light levels** and increasing the intensity of practice over time as tolerated.

Group Therapy

- Incorporates the use cognitive behavioral therapy in group psychotherapy settings.
- Usually 8-weeks in length. May have multiple sessions based on progress.
- Skills taught: focused breathing, muscle relaxation, visualization of relaxing settings, and guided imagery.
- Therapeutic goal: to decrease anxiety associated with having pain, problem-solving techniques to approach pain care.
- Other benefits: finding a community that understands what living with 24/7 pain is and means reducing reduces patient isolation.
- Using positive peer pressure to improve coping mechanisms.

Clinical Pearls

1. RCTs have proven efficacy of acupuncture in chronic pain syndromes, specifically low back pain, knee osteoarthritis, and migraine. It is generally very safe if appropriate sterile techniques are utilized. Both acupuncture and sham acupuncture **had greater efficacy** than when patients are left untreated.
2. Group therapy is recommended especially when multiple interventions have been unsuccessful for pain control or if the patient has a history of poor compliance.

Questions

1. Current mechanism of action for acupuncture is:
 - A. Placebo effect
 - B. Release of interleukins
 - C. Release of substance P
 - D. All of the above
2. Which of the following is not a contraindication for acupuncture:
 - A. History of surgery and presence of scar tissue
 - B. Anemia
 - C. Pregnancy
 - D. Severe neutropenia
3. Using positive peer pressure to help with coping mechanisms is used in which of the following:
 - A. Tai Chi
 - B. Group therapy
 - C. Physical therapy
 - D. Acupuncture
4. Gentle flowing exercise that incorporates slow, not forced movement is known as:
 - A. Acupuncture
 - B. Quigong
 - C. Meditation
 - D. Tai Chi
5. Meditative Movement Therapies include which of the following:
 - A. Tai Chi
 - B. Quigong
 - C. Yoga
 - D. All of the above

Answers

1. D
2. C
3. B
4. D
5. D

Suggested Reading

- Engel G. The clinical application of the biopsychosocial model. *Am J Psychiatry*. 1980;137:535–44.
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- Wayne PM, Fuerst ML. *The Harvard Medical School guide to tai chi: 12 weeks to a healthy body, strong heart, and sharp mind*. Shambhala; 2013.