

Accurate Clinic
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Protocol Options for Reducing the Transition of Acute Pain to Chronic Pain

Lifestyle

Adequate sleep - stable sleep schedule, 7 hours sleep/night

Exercise - walk, 30 minutes/day, 5 days/week

Mindful time - meditation, prayer, listening to music, relaxation time; 30 minutes/day

Diet

The recommended diet is one that supports healing processes involved in tissue repair and regeneration. Protein is an essential component in the healing process so it is important to maintain a diet high in protein to facilitate recovery after injury. Foods with high content of omega-3 for resolution of inflammation include seafood and fish, especially mackerel, salmon and oysters. Other foods rich in omega-3 including flax seeds, chia seeds, walnuts and soy beans may also facilitate resolution of inflammation.

A diet rich in antioxidants aids in recovery and reduces inflammation. Some of the best food sources of antioxidants include dark chocolate or cacao, pecans, blueberries, strawberries, raspberries, artichokes and kale.

Essential nutrients which are increased in demand by healing tissues including the B-vitamins and [vitamin C](#). Minerals including calcium, [magnesium](#) and [zinc](#) are also important. Foods rich in magnesium include dark green leafy vegetables, fish, bran, whole grains, beans and nuts. The best sources of zinc are oysters (richest source), red meats, poultry, cheese (ricotta, Swiss, gouda), shrimp, crab, and other shellfish. Good plant sources of zinc include legumes (especially lima beans, black-eyed peas, pinto beans, soybeans, peanuts), whole grains, tofu, brewer's yeast, cooked greens, mushrooms, green beans, tahini, and pumpkin and sunflower seeds.

Prescription Medications

The use of prescription medications needs to be individualized by the managing clinician with careful attention to their mechanisms of action, potential drug interactions and safety precautions.

Opioids

Opioid analgesics, when indicated, should be carefully selected with emphasis placed on the use of individual opioids with unique characteristics that potentially reduce the transition of acute pain to chronic pain. These opioids include tramadol, buprenorphine, tapentadol and levorphanol.

Adjunctive Neuromodulator Medications

Adjunctive medications potentially useful for lessening pain and reducing the transition of acute to chronic pain include gabapentin (Neurontin), pregabalin (Lyrica) and topiramate (Topamax).

Antidepressants with direct benefit for nerve pain include duloxetine (Cymbalta), venlafaxine (Effexor), milnaciprin (Savella) and the tricyclic antidepressants (TCAs) including amitriptyline (Elavil) and doxepin. They can play a role in reducing nerve pain and potentially reduce post-injury pain and its chronification.

Orphenadrine, a muscle relaxer with NMDA antagonism, helps muscle pain and tightness and may also help reduce the transition of acute to chronic pain.

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Topical Medications

Topical Ketamine

Ketamine can be prepared by a compounding pharmacy and applied topically. It has been shown to be effective for nerve pain, especially in peripheral neuropathies and shingles. It offers potential benefit for reducing the transition of acute to chronic pain.

Topical Lidocaine

Lidocaine is an anesthetic numbing agent that is available in prescription 5% patches that can be applied to a painful area for up to 12 hours/day. The lidocaine has a direct action on nerves to provide its pain benefit. Over-the-counter lidocaine creams are also available from most pharmacies.

Topical Magnesium

Topical magnesium via use of topical magnesium creams or epsom baths (magnesium sulfate) which allows for topical absorption through the skin may benefit muscle pain reduce the transition to chronic pain.

Supplements

Palmitoylethanolamide (PEA)

Palmitoylethanolamide (PEA) is a natural substance manufactured by glial cells and also found in foods such as milk and egg yolks. PEA has good evidence to support its benefit in regulating neuroinflammation. Supplementing with PEA 600 mg twice a day is highly recommended.

Curcumin

Curcumin is a naturally occurring antioxidant and powerful anti-inflammatory with potency equivalent or superior to ibuprofen and other NSAIDs but it is not associated with the toxicity and safety concerns associated with NSAIDs. Furthermore, it is believed to stimulate cellular production of endogenous antioxidants. It offers definite potential benefit in the setting of post-injury pain.

Vitamin C: 500-1000mg/day

Vitamin B12: 1 mg/day

Low-dose Naltrexone (LDN)

Low-dose naltrexone (LDN) refers to a prescription drug that acts as an opioid antagonist but when used at very low doses (4.5-6 mg instead of usual doses of 100 mg) it may reduce the transition to chronic pain. Because LDN blocks opioids it is not recommended for use with opioids.

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Aromatherapy

Aromatherapy is an under-recognized and under-appreciated alternative form of treatment that consists of using aerosolized essential oils to achieve therapeutic benefit. Aromatherapy has shown benefit in reduction of pain and anxiety in the immediate post-injury period. Many of the aromatic compounds (terpenes) that have demonstrated therapeutic benefits with aromatherapy are also found in cannabis and contribute to the clinical benefits achieved with use of medical marijuana. For example, linalool, found in lavender oil and cannabis has proven effectiveness for sleep and anxiety.

One underlying principle should be emphasized:

Pain is magnified by stress.

Stress reducing measures need to be emphasized after injury.