

Integrative Approaches to Chronic Pain

An Integrative Health approach to chronic pain explains how complementary and integrative approaches such as supplements, acupuncture, and manipulation therapies can be incorporated into a health care plan to manage the physical and emotional components of chronic pain.

Integrative Health emphasizes mindful awareness and self-care along with conventional and integrative approaches to health and well-being. The Circle of Health highlights eight areas of self-care: Physical Activity, Surroundings, Personal Development, Nutrition, Recharge, Family Friends, & Co-Workers, Spirit & Soul, and Mind and Emotions. The narrative below shows what an Integrative Health clinical visit could look like and how to apply the latest research on complementary and integrative health (CIH) to chronic pain.

Meet the Patient

Elena is a 55-year-old woman who began visiting a primary care clinician three years ago, but does not come in frequently because she has historically been in good health. In the past year, however, she has developed ongoing neck pain and right knee pain. An X-ray and MRI of her neck showed some degenerative changes but were otherwise normal. An X-ray of her right knee showed some osteoarthritis. Traditional over-the-counter analgesic medications provided minimal relief. Six weeks of physical therapy was also not helpful. Because of these treatment failures, she was seen in pain management and started on twice-daily oxycodone. Although this does help her pain when she takes it, her function has not improved. The medications cause some fatigue. Despite these limitations, she is concerned about stopping the opioid medication because it is the only thing she has found to be even temporarily helpful.

Elena feels the pain is having a negative impact on her life, as the neck pain is making driving her car and riding her bike more difficult. In addition, the mild depressive symptoms that she had dealt with intermittently in her life to this point have become more persistent over the past few months. Her sleep quality is decreasing and she has gained 10 pounds in the past year. She is frustrated with these negative changes and poor treatment options and is looking for a better approach to her health.

Personal Health Inventory

On her [Personal Health Inventory](#) (PHI), Elena rates herself as a 2 out of 5 for her overall physical well-being and a 1 for overall mental and emotional well-being. When asked what matters most to her and why she wants to be healthy, Elena responds:

"I want to feel I am making a positive impact in the world around me. My 2 children and 2 grandchildren are the most important people to me. I want to be around them as much as I can, as well as be able to be active in the outdoors."

The Personal Health Inventory (PHI) has eight areas of self-care where Elena rates herself on where she is, and where she would like to be. Elena decides to first focus on the areas of Physical Activity and Mind and Emotions by scheduling walks daily and consulting professionals to gain a better understanding on relaxation.

Click here to see [Elena's PHI](#).

Introduction

Chronic pain is incredibly common, with worldwide estimates at 20% by the World Health Organization (WHO).¹ In the United States, it is estimated that as many as 100 million people live with some degree of chronic pain.² The consequences of pain are widespread and include negative effects on home activities, work productivity, relationships, and emotional states.¹ It furthermore has repercussions for all of society, due to lost work productivity, increased health care costs, and elevated disability costs. The estimated cost of chronic pain in the United States alone is \$210-\$635 billion annually.^{1,2}

Despite its common occurrence, chronic pain remains a treatment challenge. Pain is a subjective experience that has many influences. Even for localized pain, there are often multiple physiologic sources of pain. Low back pain and neck pain exemplify this, as potential pain generators include the fascia, muscles, ligaments, facet joints, discs, and sacroiliac joints.³ Chronic pain results in adaptive changes in the central nervous system, altering normal pain processing. The pain experience is further influenced by a person's psychological and emotional experience.³ Due to these multiple influences, it is very difficult to be specific in the diagnosis and treatment of pain. Treatment approaches that are too narrow, not taking into account the entire pain experience, are likely to fail.

Conventional medical treatments involve medications, interventional pain procedures (e.g., epidural injections, radiofrequency ablation), surgical interventions, and physical therapy. Medication recommendations normally begin with acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs). These are generally regarded as the safest medications, but they are certainly not without risk. Acetaminophen carries the risk of hepatotoxicity, and NSAIDs cause gastrointestinal bleeding, interfere with platelet aggregation, can worsen renal function, and may increase risk of cardiovascular events.⁴ Tricyclic antidepressant medications are recommended as adjunctive treatments for both nociceptive and neuropathic pain.⁴ These may cause sedation and are on the Beer's list for cautious use in the elderly.⁵ Opioid medications are under increasing scrutiny due to their multiple adverse effects, potential for misuse (e.g., pseudoaddiction, when a person uses medications inappropriately but is not seeking a "high"), risk of addiction, and lack of functional improvement compared to non-opioid analgesics.¹

Interventional and surgical treatments for pain will vary depending on the suspected source of pain. Overall, however, in chronic pain conditions they are often of little benefit; they typically have only short-term benefit and are not indicated for diffuse pain conditions. Physical therapy treatments are recommended for many pain conditions. Although specific exercises and

approaches are often advocated, there is no evidence supporting the use of specific exercises for chronic pain. Much of the benefit is likely the result of encouraging movement in general, including addressing deconditioning.

There is room for improvement with current conventional approaches to both diagnosis and treatment of chronic pain. Patients remain frustrated with treatment options and outcomes, and they turn to complementary treatments for pain more often than for any other diagnosis.⁶ Pain is an area where an Integrative Health approach is clearly needed by clinicians and patients alike. Broadening treatment goals and therapeutic options for patients like Elena has the potential to improve both patient and provider satisfaction with approaching this challenging problem.

Chronic pain can be incredibly challenging to treat. The more a patient's care can be individualized, and the more a clinician can draw from both conventional therapies and complementary approaches, the more successful treatment is likely to be.

Proactive Self-Care and Chronic Pain

Physical Activity

Movement is often limited in patients with chronic pain, leading to a cycle of deconditioning, weakness, stiffness, hyperalgesia and, therefore, further reductions in movement. Breaking this cycle with some form of exercise prescription is a vital part of a therapeutic plan in chronic pain.

Exercise can affect pain on multiple physiologic levels, making it an ideal treatment modality.⁷ Exercise can improve aerobic capacity, strength, and flexibility. This combination can lead to increased functional capacity over time. Exercise itself can alter pain perception, inducing hypoalgesia to new pain stimuli; increased pain threshold can follow both aerobic and strength training.⁵ In individuals with chronic pain, this is best demonstrated at low to moderate intensity training.⁵ Exercise is also known to have effects centrally, improving sleep and depressive symptoms.^{8,9} These symptoms commonly coexist with chronic pain and affect pain perception, making them excellent targets for treatment.

Movement therapies represent a diverse group of interventions. Traditional exercises include generalized aerobic training (walking, running, biking, swimming, etc.), strength training, and joint-specific flexibility programs. Other disciplines such as yoga and tai chi incorporate multiple aspects of fitness and also include mind-body components. In general, there is no “best” exercise approach, and no evidence that a specific exercise or program is superior for a particular pain condition. In addition, the type of exercise does not impact adherence to a program.¹⁰ Exercise prescriptions should take into account a person's current functional status, treatment goals, and interests.

The American College of Sports Medicine recommends addressing exercise frequency, intensity, time of the activity, and type of activity when making exercise recommendations.¹¹ In addition, they recommend a minimum of 150 minutes of aerobic activity per week.¹¹ Depending on a patient's functional status, this may not be reasonable. Starting slow with an exercise program is sound advice for anyone, but this is of increased importance in patients with chronic

pain. Exercising at too high of an intensity has the potential of worsening pain perception in patients with fibromyalgia pain.⁵ Just titrating up is important for many other activities, so too is it important with physical activity; the all-or-nothing behavioral pattern is not helpful where exercise is concerned.

It is also important to keep accessibility in mind when recommending more physical activity. For example, some people do not feel safe walking in their neighborhoods and/or do not have money to join a gym. Problem solving regarding barriers to increasing activity and providing consistent encouragement are an important part of recommending movement as well. For more information on tailoring physical activity recommendations to individual patients, click here:

[Prescribing Movement](#)

Yoga warrants mention when discussing specific exercise options with patients due to increasing literature supporting its use in pain. There is research with positive outcomes in chronic low back pain, rheumatoid arthritis, and chronic headaches, to name a few.^{12,13} This may be an attractive option for patients who have not been active due to their pain, as yoga styles can be gentle and highlight the mind-body aspects of the discipline. Finding gentle ways to introduce movement is critically important, and patients with chronic pain can use yoga to move in ways that do not aggravate pain. In addition, the mindful awareness aspects of yoga may help with concurrent depressive and anxiety symptoms.¹² There are many ways to learn or incorporate yoga. A helpful book on mindful movements is listed in the resources section. More information on yoga is featured in the "[Yoga](#)" Integrative Health tool.

Individualize physical activity for any given patient. Keep individuals' exercise preferences, the location of their pain, barriers that limit their exercise and comorbidities in mind as you develop an exercise prescription that suits their specific needs.

Nutrition

Nutritional choices can influence pain directly or indirectly. Some foods have known anti-inflammatory properties, which may affect pain through altering cytokine and oxidant production.¹⁴ (For more details, refer to the "[Choosing a Diet](#)" Integrative Health tool.) Indirectly, food can affect pain through improving mood, energy level, sleep, and by helping a person to achieve a healthy weight.

Omega-3 fatty acid components of the diet have been found to decrease inflammatory mediators, whereas omega-6 fatty acids are generally pro-inflammatory.¹⁵ Sources of omega-3 in foods include salmon, sardines, flaxseeds, walnuts and pumpkin seeds. Omega-6 fatty acids are found in meats and dairy products. Supplementation with omega-3 fatty acids has been found in meta-analysis to improve joint tenderness and morning stiffness in patients with rheumatoid arthritis.¹⁶ Aside from fatty acids, natural anti-inflammatory agents can be found in some spices. Turmeric and ginger also can alter inflammatory mediators, and because of this are available in concentrated versions as supplements.¹⁵ Research regarding outcomes in pain measures is mixed and is focused on amounts found in supplements.¹⁵ The amounts found in food are unlikely to have an effect on pain in isolation, but it is a safe way to add anti-inflammatory components to the diet. Fruits and vegetables add numerous phytochemicals to the diet, which are naturally high in antioxidants.

The Mediterranean diet offers many of the anti-inflammatory components offered above in addition to having research supporting cardiovascular health benefits, provided that individuals do not rely too heavily on processed foods when they follow it and provided that they have no symptoms that are triggered by eating certain grains. The Mediterranean diet emphasizes fruits, vegetables, whole grains, olive oil, and nuts while limiting the intake of meat and dairy products. A trial of a Mediterranean-style diet is reasonable and most patients would benefit from an individualized nutrition assessment. When in doubt, emphasize a “whole foods nutrition” approach that minimizes packaged and process foods in general, recognizing that what people can eat is influenced by where they live, their cultural background, and what foods they know how to prepare.

Recharge

Addressing sleep habits is vital in patients with chronic pain. There is a complex interplay between pain, sleep, and mood. Sleep disorders are associated with chronic pain and depression, as well as other medical problems such as heart disease.¹⁷ Sleep disturbance and pain intensity are related, and this relationship seems bi-directional.¹⁸ It is well known that sleep disturbance can be a consequence of chronic pain. In addition, it has been shown that sleep disturbance can reduce pain thresholds, and increase the chance of developing fibromyalgia.¹⁹ In addition, sleep problems interfere with the ability to cope with chronic pain.²⁰

Helping a chronic pain patient with sleep disorders can be challenging, but fortunately many recommendations overlap with others that will be helpful for pain. In general, patients should view sleep and energy as something to address all day, not just at bedtime. Nutrition and exercise recommendations discussed above may also help with sleep. An attempt should be made to optimize evening sleep hygiene habits. Supplements with beneficial effect on sleep may also be considered, such as melatonin and valerian. For more information, refer to [Recharge](#) and, [Hints for Encouraging Healthy Sleep](#). Various Mind and Emotions tools can also be helpful, as discussed below.

Spirit and Soul

Spirituality and life's purpose are not traditionally part of a clinical discussion regarding pain. There are multiple reasons for this, including that it may be difficult as a physician to know what to do with that information. For a patient-centered approach, having an understanding of what is most important to a particular patient is useful in determining overall treatment goals. Having the solitary goal of reducing pain does not relate to functional status or quality of life and is not helpful in guiding treatment choices.²¹ Having functional goals that are mutually agreed on between patient and clinician may improve satisfaction for both parties. When those functional goals can be tied to something that is intimately important for a person, such as “enjoying more time with my grandchildren,” the goals have much more personal meaning. For an extensive discussion of spirituality and its relationship to health, please refer to [Spirit and Soul](#).

Never underestimate the importance of spirituality and mind-body approaches in the treatment of chronic pain. Many clinicians with a successful track record in treating chronic pain note that these areas are fundamental. What truly gives a person a sense of meaning and purpose and how can that individual seek this despite the pain? And how does the person contextualize the

pain? The pain itself is a signal – the firing of nerve fibers. Suffering is how we respond to that signal, and it can look different for each individual. How can a person most effectively use mind-body tools to cope?

Mind & Emotions

Mind-body interventions represent multiple psychological, social, and spiritual approaches to problems; these approaches include psychotherapy, meditation, relaxation, guided imagery, hypnosis, and biofeedback. The link between mind-body interventions and chronic pain is important to consider, given that the central nervous system makes adaptive changes in chronic pain. For example, when experiencing chronic pain, the volume of gray matter is decreased in the prefrontal and thalamic areas.²² Using mind-body interventions directly addresses this component of central-mediated pain.²³ In addition, therapies targeted at a patient's psychosocial experience have been shown to affect both pain perception and related psychological symptoms, such as depression or anxiety. Overall, this is an important category of therapies to discuss with patients, as it may improve not only pain, but also mood-related symptoms, stress management, and illness-related coping skills.

Osteoarthritis, rheumatoid arthritis, chronic low back pain, chronic headache, fibromyalgia, and post-surgical pain are among the many conditions that have been studied with mind-body interventions.²⁴ A Cochrane review on behavioral therapies in chronic low back pain concluded that strong evidence exists for a moderate effect on pain relief and mild improvement in functional status and behavioral outcomes with behavioral therapies.²⁵ Similar findings were found in a meta-analysis for rheumatoid arthritis, with psychologic-behavioral interventions improving pain, disability, psychologic status, and coping.²⁴ The current evidence in fibromyalgia is less robust, currently with limited evidence of benefit when behavioral treatments are used in isolation.²⁶ However, there is moderate evidence of effectiveness when combined with aerobic exercise.²⁴ More general chronic pain also seems to be effectively treated with mind-body therapies. A meta-analysis found cognitive behavioral therapy in chronic pain effective with improved pain, coping skills, activity level and social function.²⁷ Acceptance and commitment therapy (ACT) and a number of other psychotherapeutic approaches have also been found to have benefit.²⁸ For more detailed information on potential therapeutic options, refer to the "[Mind and Emotions](#)" Integrative Health overview.

Broadly, mind-body therapies have shown promise in decreasing pain and improving function with many diagnoses.²⁴ What is not known, however, is which specific interventions provide the most benefit. Most mind-body interventions seem effective. The best choice for an individual patient will depend on what is available in the region and which therapies resonate most with the patient.

Mindfulness meditation is an excellent option for many patients with chronic pain. There is evidence that mindfulness can decrease pain intensity and stress levels.^{29,30} Potential exists for mindfulness to impact PTSD, which is of particular relevance to Veterans with chronic pain.³¹ This form of meditation can be self-taught, is free, and can continue indefinitely as a self-care modality. There are also many resources that can be offered to patients to assist in learning about the practice and in performing the meditation itself.

Dietary Supplements

There are multiple supplements with proposed benefit in pain conditions. While some of these products have research supporting their effectiveness, many do not. When discussing supplements with patients, it is recommended to discuss them as part of a holistic approach as opposed to a solitary treatment solution. Also, it is important to be critical of the supplement brand and source to improve the likelihood of getting the desired dose of a product.

Note: Please refer to the [Passport to Whole Health](#), Chapter 15 on Dietary Supplements for more information about how to determine whether or not a specific supplement is appropriate for a given individual. Supplements are not regulated with the same degree of oversight as medications, and it is important that clinicians keep this in mind. Products vary greatly in terms of accuracy of labeling, presence of adulterants, and the legitimacy of claims made by the manufacturer

Pain medications are not the only option. Whether or not you choose to recommend them yourself, it is important to be familiar with various dietary supplements that patients often take for pain management. From omega-3 and vitamin D to herbals such as devils' claw and turmeric, these supplements are garnering increased attention from patients and researchers alike.

Omega-3 Supplementation

As discussed above, supplementation with omega-3 fatty acids has been found in meta-analysis to improve joint tenderness and morning stiffness in patients with rheumatoid arthritis.¹⁶ Efficacy is more clearly established in inflammatory conditions such as rheumatoid arthritis. It is unknown what effect omega-3 supplementation has on pain with less of an inflammatory component.¹⁵ Doses should be standardized based on the amount of EPA and DHA present in the supplement, and should not exceed two gms per day of EPA + DHA to get the desired benefit. Omega-3 supplements are quite safe and may improve other aspects of health, such as reducing triglycerides.

Vitamin D

The relationship between vitamin D deficiency and chronic pain is intriguing, but not yet clear. Epidemiologic studies have correlated low vitamin D levels and chronic musculoskeletal pain, with prevalence in one study exceeding 90%.^{32,33} Vitamin D deficiency is known to cause osteomalacia and a resultant dull, achy pain which can be either localized or widespread.³⁴ In addition, vitamin D deficiency is associated with muscle weakness and increased falls.³⁴ Despite the high correlation and a plausible mechanism of contributing to pain states, as well as a smaller 2013 study of Veterans that found that vitamin D improves pain, sleep and quality of life, a 2015 Cochrane review found vitamin D supplementation in chronic pain is no more effective than placebo.³⁵ It is not clear if there are any specific pain conditions for which vitamin D supplementation could be useful.³⁵ At this time, it seems reasonable to test vitamin D levels in patients with chronic pain also at risk for vitamin D deficiency and institute a trial of

supplementation in those with low levels. Currently, evidence does not support empiric vitamin D supplementation in chronic pain patients.

Devil's Claw (*Harpagophytum procumbens*)

A 2007 study found five systematic reviews on devil's claw and noted strong evidence of effectiveness for low back pain and osteoarthritis pain of the knee and hip.³⁶ This effect was not inferior to NSAIDs. The review concluded by stating, "Since there is strong evidence for devil's claw...the possible place in the treatment schedule before NSAIDs should be considered."³⁶ Doses should contain at least 50 milligrams of the harpagoside constituents, which equates to 2.6 gms/day of the root. Effects are dose-dependent. Devil's claw is generally well tolerated.

Willow Bark (*Salix alba*)

Willow bark contains salicin, which is related to aspirin. It has been used for centuries to relieve pain.³⁷ The mechanism of action is thought to be COX-2 inhibition, similar to aspirin, but without the effects on prostaglandins or coagulation.³⁸ There is evidence of efficacy in chronic low back pain similar to that seen in rofecoxib 12.5 mgs.³⁷ Evidence for use in osteoarthritis is mixed.³⁷ The effect is dose-dependent, and the willow bark dosage used in studies was standardized to 240 mgs of salicin.

Other Herbal Anti-Inflammatories

Other herbal medicines have known anti-inflammatory properties, most notably turmeric and ginger. Both of these supplements have some preliminary evidence to support their use, but overall evidence is not strong at this point. Ginger has shown some effectiveness for osteoarthritis of the knee and turmeric for rheumatoid arthritis.³⁶ Both are considered safe and are good additions to an anti-inflammatory diet, but clear recommendations cannot be made at this time for chronic pain patients.¹⁵

Glucosamine and Chondroitin

These are compounds found in the joint cartilage, synovial fluid, and connective tissue. Both may prevent cartilage destruction, and as such, they have long been popular supplements for osteoarthritis (OA). Evidence of effectiveness has been mixed and controversial. A Cochrane review found efficacy for glucosamine *sulfate*, but this was specific to the Rotta brand and not noted when findings were pooled together with research on other brands.³⁹ Improvement in knee OA was in both pain and function. Glucosamine hydrochloride supplements have not shown efficacy in OA. Glucosamine sulfate has also been tested specifically for chronic low back pain and showed no evidence of efficacy.⁴⁰ At this point, there is some evidence for the use of glucosamine and chondroitin in the treatment of knee OA but not for other painful conditions. For patients with knee OA it may be worth a trial of therapy, keeping in mind the effects may not be seen for three months. Dosing for both glucosamine and chondroitin is in the range of 500 milligrams three times daily.

Topical Capsaicin

Capsaicin is widely available as a cream in various doses. It is useful as a short-term analgesic, and a review has shown it to be superior to placebo for acute episodes of chronic low back pain.⁴¹ It is widely available in most drug stores.

Complementary Approaches

Manual and Manipulative Therapies

Manual therapies encompass a diverse group of techniques and providers. They share the common goal of attempting to normalize structure in order to improve function. Manual therapy techniques are practiced by osteopathic physicians, chiropractors, physical therapists, and massage therapists. High-velocity, low-amplitude (HVLA) thrusts, soft tissue mobilization, muscle energy, strain-counterstrain, myofascial release, and craniosacral therapy are all potential techniques employed by manual medicine clinicians. The most common application of these techniques is to improve pain and function, so they are certainly applicable to the chronic pain population.

Osteopathic physicians and chiropractors practice spinal manipulative therapy. This is most often associated with HVLA thrust techniques, although several techniques are typically used in conjunction with HVLA in an attempt to improve function. Multiple mechanisms of action have been proposed, although it is not clear what most contributes to improved outcomes. Gapping of facet joints, improved joint range of motion, and activation of spinal stretch reflexes are all thought to play a role.⁴²

Spinal manipulative therapy has been the subject of multiple reviews with some positive, although conflicting results. A 2005 meta-analysis including six controlled trials and 525 patients concluded that osteopathic manipulative treatments significantly reduce low back pain.⁴³ A 2011 Cochrane review concluded that spinal manipulative treatment "...was as effective but not more effective than standard medical treatment or physical therapy."⁴⁴ However, when a 2012 review assessed spinal manipulation for multiple diagnoses, it found that the majority of systematic reviews have failed to show a benefit in terms of reducing pain.⁴⁵ Taken together, the evidence favors spinal manipulation in the treatment of low back pain. This view is supported by multiple national guidelines on the treatment of chronic low back pain, including the National Institute for Health and Care (NICE) guidelines.⁴⁶ It is difficult to generalize this conclusion to chronic pain of any source, however, as the evidence is not conclusive for other specific pain diagnoses.⁴⁷

Massage therapy focuses on soft tissue techniques and may be used as a primary intervention or an adjunct treatment, preparing patients for exercise or other modalities.⁴⁸ A 2008 review concluded that strong evidence exists that massage is effective for nonspecific chronic low back pain.⁴⁸ Interestingly, effects of massage can be long-lasting, with improvements shown at one year of follow-up.⁴⁸ There is also evidence of benefit for massage therapy in patients with fibromyalgia.⁴⁹ Massage therapy is safe, although care needs to be taken in patients with hypersensitivity to not cause a flare of pain with more aggressive soft tissue treatments. For more information, refer to the "[Massage](#)" tool.

Acupuncture

Acupuncture is one of several elements of Chinese medicine (CM), and it has a history of more than 2,000 years of use. CM is holistic system encompassing acupuncture, herbal medicine, nutrition, meditative practices (qi gong) and movement (tai chi). CM is based on the belief that health is maintained by balancing two opposing forces, yin and yang. Yin is the cold, slow or passive force and yang represents the hot, excited or active force.⁵⁰ Yin and yang balance is managed by qi, the body's vital energy source, believed to flow in channels throughout the body. Disease results from an imbalance of yin and yang with resultant blockages in the free flow of qi. The goal of CM modalities is to restore and maintain the balance of yin and yang. Acupuncture stimulates points on the body, usually with needles, altering the flow of qi, attempting to achieve this balance. Even though acupuncture represents one piece of CM, it is often practiced as an independent therapy. For additional information, refer to the "[Acupuncture](#)" and Chinese Medicine Integrative Health tool.

Deciding to recommend acupuncture may be a difficult choice for some physicians, because the theoretical basis of yin, yang, and qi does not fit well with a modern understanding of human physiology or pathology. However, basic science research has uncovered multiple mechanisms of action that likely contribute to acupuncture's physiologic effect. Needling an acupuncture point stimulates the natural endorphin system, altering the pain sensation.⁵⁰ This effect is reversible with naloxone.⁵¹ Serotonergic systems also seem to be involved centrally. Multiple chemicals released peripherally appear to influence acupuncture analgesia, including interleukins, substance P and adenosine.⁵⁰ A local anesthetic injected around a peripheral nerve at an acupoint blocks acupuncture's analgesic effect.⁵² The gate control theory is also believed to play a role, with modulation of sensory input at the level of the dorsal horn of the spinal cord.⁵⁰ Taken together, these studies suggest that acupuncture has multiple mechanisms of action in the brain, spinal cord, and in the peripheral nervous system, making it a truly unique therapeutic modality.⁵³ It remains controversial how these various mechanisms interact and how they could have persisting effects on chronic pain.

While the WHO lists over 40 disorders effectively treated with acupuncture, pain is the common reason acupuncture is used.⁵² There is a growing literature base and multiple reviews supportive of using acupuncture for these multiple indications. From 1991 to 2009, nearly 4,000 acupuncture research studies were published, and pain was a focus of 41% of them.⁵² Cochrane reviews showing effectiveness of acupuncture have been published for neck pain, low back pain, headaches and osteoarthritis.⁵⁴ Several other literature reviews support the use of acupuncture in the treatment of chronic low back pain.⁵⁵⁻⁵⁷ The NICE low back pain treatment guidelines list acupuncture as a primary therapeutic option.⁴⁶ The Cochrane summary on the use of acupuncture in migraines concludes that "acupuncture is at least as effective, and possibly more effective than prophylactic drug treatment, and has fewer adverse effects."⁵⁸

Acupuncture has strong data supporting its use for treating a variety of different types of pain.

Personal Health Plan

Name: Elena

Meaning, Aspiration, Purpose (MAP): My mission is to live with a sense of purpose and service while maintaining connectedness with my family and the outdoors.

My Goals:

- Start walking outdoors with the overall goal of being able to hike in nature again
- Improve sleep quality
- Learn acceptance of elements of life that are out of my own control
- Learn ways to control pain without opioids

Mindful Awareness: Begin with experiencing a mindfulness practice at home using the mindfulness CD given at the clinic visit. Consider joining a Mindfulness Based Stress Reduction group. Local instructors can be located at: <http://www.umassmed.edu/cfm/stress/index.aspx>.

Areas of Self Care:

- Personal Development
 - In an effort to further explore my sense of purpose at this stage of my life, consider areas of interest that perhaps were not in pursue when I was on active duty. Consider areas where I can direct my passions or find new ones, such as art, music, or writing.
- Nutrition
 - Begin keeping a food and drink diary. Make it a goal to include as many fruits and vegetables in my diet as possible. Depending on my intake of healthy fats, consider supplementation of omega-3 fatty acids.
- Recharge
 - Develop a sleep hygiene routine. Limit caffeine in general, but particularly after noontime. Avoid drinking alcohol near bedtime. If sleep issues persist, consider using the guided imagery and hypnosis techniques. (To support this recommendation, the clinician can refer to the following tools: "[Hints for Encouraging Healthy Sleep](#)", "[Guided Imagery](#)," and "[Clinical Hypnosis](#).")
- Spirit and Soul
 - My sense of community service is inspiring, and it seems I could use a new outlet for this trait. Start to consider what opportunities would allow me to connect with something bigger than myself. This could be related to a current or new passion. Direct energies toward my family as well as to other outlets that feels meaningful. As I do so, work on reframing my pain experience and treatment.

Professional Care: Conventional and Complementary

- Prevention/Screening
 - Up-to-date on PAPs, screening labs, and immunization
 - Treatment (e.g., conventional and complementary approaches, medications, and supplements)
 - Acupuncture
- Walking



- Medications
- Skill building and education
- Sleep Hygiene
- Nutrition
- Mindfulness based stress reduction

My Support Team

- Principal Professions
- Primary care clinician
- Acupuncturist
- Personal Trainer
- Personal
- Best Friend
- Sister

Next Steps

- Start walking daily
- Schedule an evaluation with an acupuncturist
- Consider the above suggests to see what resonates the most
- Follow up within the next 2 months to check in on my progress

Please Note: This plan is for my personal use and does not comprise complete medical or pharmacological data, nor does it replace a medical record.

Follow-Up With Elena

Through the process of completing her Personal Health Inventory, Elena realized that her pain had a bigger influence on other areas of her life than she realized. Her mood and sleep had worsened, physical activity decreased, and the quality of her relationships were suffering. In addition, she realized that her sense of purpose and identity was lacking recently. She was able to understand how these areas were interconnected, and more significantly, she realized that she could control many aspects of her pain experience. Her pain had made her feel helpless to this point, since none of the treatments seemed to have a big effect. Knowing that she had control over many aspects of the quality of her life was empowering.

Elena began by walking daily, even though she could only go a much shorter distance than she was used to. She started supplementation of omega-3 fatty acids. She decided to include a series of acupuncture treatments as well. She liked the idea that acupuncture had the potential to influence not only her pain but also to impact her mood and sleep. Elena found over the next month that this combination of treatments greatly reduced her pain, and she was able to start weaning her opioid medications. When the pain in her knees flared a little, she treated it by using ice or capsaicin cream instead of taking an opioid. This normally controlled her symptoms enough to get her through the pain.

In an effort to reconnect with her sense of meaning and purpose, Elena started volunteering at the local hospital. She also signed up for an art class, something she always wanted to do but had put off. Elena also wanted to explore meditation, but she decided to start with simple breathing exercises so as not to make too many changes at once.

Eventually, she was able to eliminate her daily pain and just had to deal with occasional neck and knee stiffness. She was able to get back to hiking, even if it was not on trails quite as challenging as she had done previously. She found that her time with her grandchildren was more enjoyable due to her improved pain, mood, and energy level. She continued with exercise and omega-3 supplementation. She had such good results from acupuncture that she continued to go two to three times per year in an effort to maintain her new level of improved function.

Integrative Health Tools

- [Acupuncture](#)
- [Non-Drug Approaches to Chronic Pain](#)

Resources

Online

- [American Chronic Pain Association](#)
- [American Academy of Pain Management](#)
- [University of Wisconsin Integrative Medicine Patient Handouts](#)
- [Patient-developed pain coping resource](#)

Books

- Hanh TN, Wietske V. *Mindful Movements: Ten Exercises for Well-Being*. New York, NY: Parallax Press, 2008.
- Crowley C, Lodge H. *Younger Next Year: A Guide to Living like 50 Until You're 80 and Beyond*. New York, NY: Workman Publishing, 2005.

Author(s)

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