



# Physician Toolbox: Alternatives to Opioids in the Management of Chronic Pain

Michelle N. Dang, MD

Texas Pain Society

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# Objectives

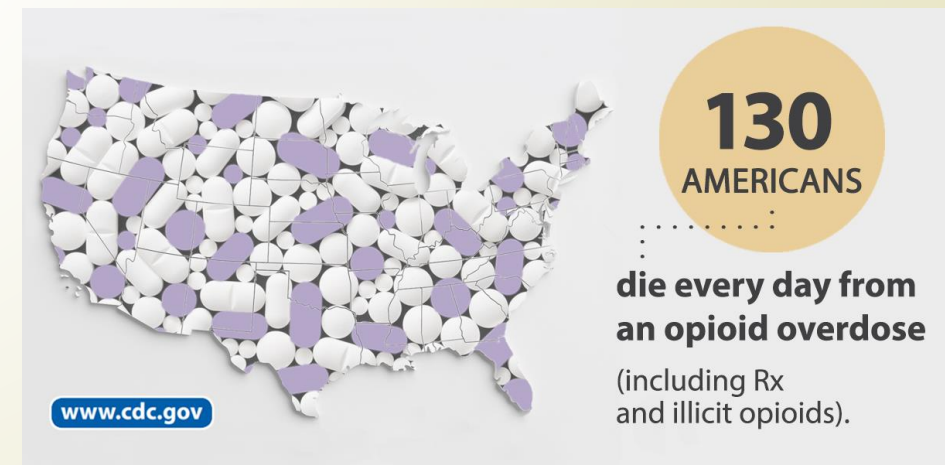


- Integrative Medicine: Brief Overview
- Supplements
- Mind Body Techniques
- Other Modalities
- Lower Back Pain
- Nutrition
- Useful resources
- Moving Beyond Medications

# Opioids

- CDC
  - 48.5 million Americans have used illicit drugs or misused prescription drugs
  - Almost 218,000 Americans have died from overdoses related to prescription opioids from 1999 to 2017
- Beginning 3/1/2020 in Texas (Texas Prescription Monitoring Program) pharmacists and prescribers will be required to check the patient's prescription monitoring database history before dispensing and prescribing opioids, benzodiazepines, barbiturates, or carisoprodol
- Beginning 9/1/2017 Texas licensed pharmacies are required to report all dispensed controlled substances to the Texas PMP no later than the next business day after the prescription is filled

<https://www.cdc.gov/drugoverdose/opioids/index.html>





# Integrative Medicine



- Adapted from The University of Arizona Center for Integrative Medicine
  - “Integrative Medicine is healing-oriented medicine that takes account of the whole person, including all aspects of lifestyle. It emphasizes the therapeutic relationship between practitioner and patient, is informed by evidence, and makes use of all appropriate therapies.”
- Basic Principles
  - Patient and practitioner are partners in the healing process
  - Look at mind, spirit, community and body as factors influencing health and wellness
  - Use both conventional and alternative methods to promote healing
  - Based on good science







# Supplements



- How to choose supplements: SERTRAIN
- **Safe:** look for drug interactions e.g. blood thinners, high blood pressure medications and how they interact
- **Effective:** look at efficacy clinical trials/studies for specific conditions
- **Researched:** look at types of trials
- **Track record:** how long as this been on the market w established evidence
- **Available Brand**
- **Intake specifics:** how is it taken in terms of dosing/frequency/duration
- **Notes on individual use**

# Supplements: Vitamin D

- ▶ Cross-sectional study of >9000 postmenopausal women (age 60-85) evaluated for serum 25OHD concentrations
  - ▶ Hypovitaminosis D defined as serum concentrations <50nmol/L
  - ▶ Hypovitaminosis D found in 24.4%
    - ▶ 69.5% reporting back pain
    - ▶ 17.2% reported restrictions in ADLs
- ▶ Addition of vitamin D appears beneficial
  - ▶ 4000iU/day reduced daily pain and need for medications



Gendelman, et. Al. A randomized doubled-blind placebo-controlled study adding high dose vitamin D to analgesic regimens in patients with musculoskeletal pain. *Lupus*. 24:4 (2015) 489-489.

Silva, et. al. Association of back pain with hypovitaminosis D in postmenopausal women with low bone mass. *BMC Musculoskeletal Disorders* 14:184 (2013).

# Supplements: Magnesium

- ▶ Deficiency in magnesium is prevalent in pain states
- ▶ Trial of those receiving magnesium over placebo x 6 weeks noted reduced pain intensity and increased lumbar spine ROM
- ▶ Titrate dose up to 400mg a day
- ▶ Side effects: diarrhea





# Supplements: Omega-3



Yates, C.M. Pharmacology and therapeutics of omega-3 polyunsaturated fatty acids in chronic inflammatory disease. *Pharmacology and Therapeutics* 141:3(2014) 272-282.

## Supplement Facts

Serving Size: 2 Soft Gels

	Per ½ Serving (1 Soft Gel)		Per Serving (2 Soft Gels)	
		% DV*		% DV*
Calories	12		25	
Calories from fat	12		25	
Total Fat	1.5 g	2%	2.5 g	4%
Saturated Fat	0 g	0%	0 g	0%
Trans Fat	0 g	†	0 g	†
Total Omega-3s	1075 mg	†	2150 mg	†
EPA (Eicosapentaenoic Acid)	562 mg	†	1125 mg	†
DHA (Docosahexaenoic Acid)	438 mg	†	875 mg	†
Other Omega-3s	75 mg	†	150 mg	†

\* Percent Daily Values (DV) are based on a 2,000 calorie diet.

† Daily Value (DV) not established.

Less than 5 mg of Cholesterol per serving.

**Ingredients:** purified deep sea fish oil (from anchovies and sardines), soft gel capsule (gelatin, glycerin, water, natural lemon flavor), natural lemon flavor, d-alpha tocopherol, rosemary extract (a natural preservative).

No gluten, milk derivatives, or artificial colors or flavors.

- Can reduce inflammatory mediators ie CRP, IL-6, TNF-α
- 1000-3000mg EPA+DHA: look at label and add EPA+DHA dose excluding other Omega-3s.

# Supplements: Turmeric/Curcumin

- ▶ Turmeric (derived from plant *Curcuma longa*): ginger family; most well known as a spice with bright yellow color
- ▶ Curcuminoid as active ingredient with principal ingredient curcumin
  - ▶ Inhibits inflammatory mediators
  - ▶ Clinical trial with 1200mg curcumin daily in 18 pts with RA: less morning stiffness and joint swelling
  - ▶ Study in 45 pts with RA comparing Curcumin 500mg to Diclofenac 50mg or combination (8 weeks): statistically significant changes in all with curcumin alone highest percentage of improvement
    - ▶ Primary endpoints: reduction in disease activity score; secondary endpoints: ACR criteria for reduction in tenderness and swelling of joint scores
- ▶ Mild adverse effects: dyspepsia, N/V, dizziness, loose stool






# Supplements: Headaches

- ▶ CoQ10: 100-300mg+
- ▶ Vitamin D3: 1000IU (check serum levels)
- ▶ Folate/B12: 1000mcg+ (methylated form)
- ▶ Riboflavin (Vitamin B2): 25-50mg+
- ▶ Alpha lipoic acid: 600mg+
- ▶ N-Acetyl Cysteine: 1200-1500mg
- ▶ Nicotinamide Riboside: 250mg+
- ▶ Resveratrol: 500mg+
- ▶ Omega3 (EPA/DHA): 1-3grams
- ▶ Melatonin: 3-10mg qHS (vivid dreams)
- ▶ Butterbur: 100-150mg
- ▶ Ginger: 0.5 to 4g



# Supplements: Joint Pain

- ▶ Curcumin: 0.5-2g per day, usually 600mg TID
  - ▶ Boswellia: 250-500
  - ▶ Ginger: 0.5-2g
  - ▶ Chondroitin: 800mg+
  - ▶ Glucosamine: 1500mg
  - ▶ Avocado: 300mg
  - ▶ Bromelain: 250mg QID
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# Mind Body Techniques

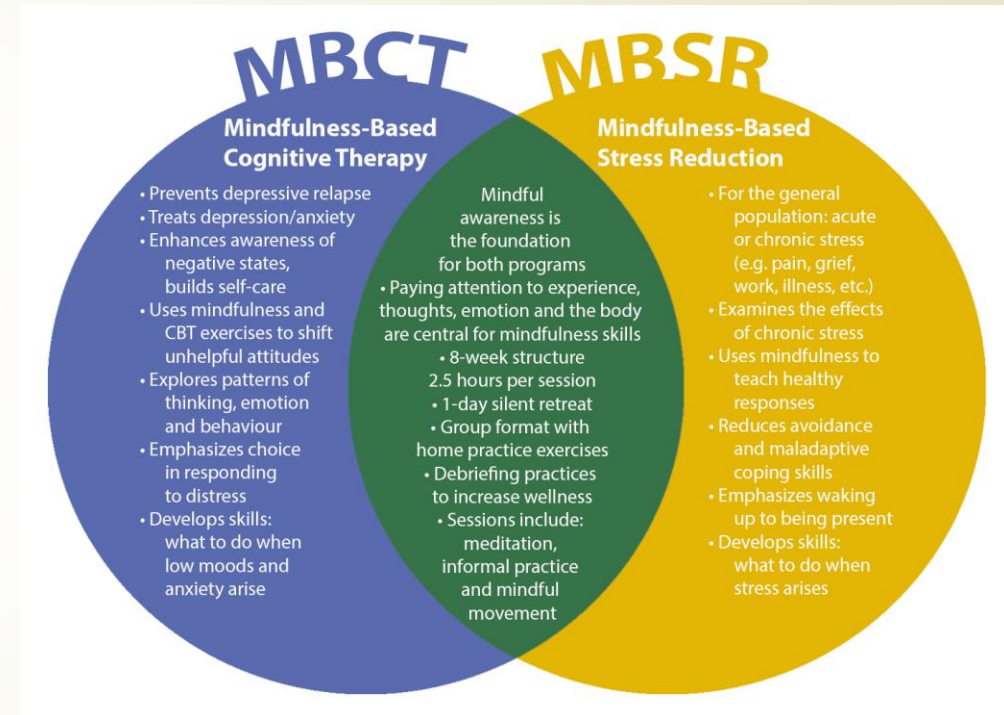


- ▶ Guided Imagery
  - ▶ Structured, deliberate, directed daydream
  - ▶ Audio with spoken narrative with music
  - ▶ Perception: Distract and interrupt awareness of pain or reframe experience of pain
  - ▶ Attention: focus attention towards pain
- ▶ Mindfulness/Mindfulness Based Stress Reduction (MBSR) courses
  - ▶ Awareness to transform perception of pain: acceptance, resiliency, and compassion



# Mind Body Techniques: MBSR

- Increasing awareness and acceptance of moment to moment experiences, i.e. physical discomfort and difficult emotions
- 8 week program (2 hours/week) with 6 hour retreat
- Randomized clinical trial comparing CBT with MBSR
  - 342 participants with CLBP
  - Both MBSR and CBT resulted in greater improvement in back pain and functional limitations at 26 weeks



Adapted from Dr. Patricia Rockman, Centre for Mindfulness Studies, Toronto



# Mind Body Techniques: Biofeedback

- ▶ Biofeedback
  - ▶ Certain signals i.e. heart rate variability, skin conductance, muscle tension utilized to increase mind-body awareness
- ▶ Breathing: respiratory feedback bands around abdomen/chest monitoring breathing patterns and RR
- ▶ HR: finger/earlobe or chest/torso sensors using EKG to measure HR and variability
- ▶ Muscle: sensors over muscles with EMG to monitor electrical activity
- ▶ Temperature: sensors on hands/feet with thermometer
- ▶ Brainwave, sweatgland



# Other Modalities: Tai Chi



- ▶ Tai Chi (external movement) and Qigong (internal movement)
  - ▶ Rhythmic martial arts and meditative practice
  - ▶ Qi: internal energy
  - ▶ Exercises to help with flow and balance of Qi
  - ▶ Improves balance, coordination and strength
  - ▶ Evidence for relief of back pain, HA, OA, fibromyalgia: majority studies for at least 12 weeks
  - ▶ National Institutes of Health: <https://nccih.nih.gov/video/taichidvd-full>

# Other Modalities: Sleep Optimization

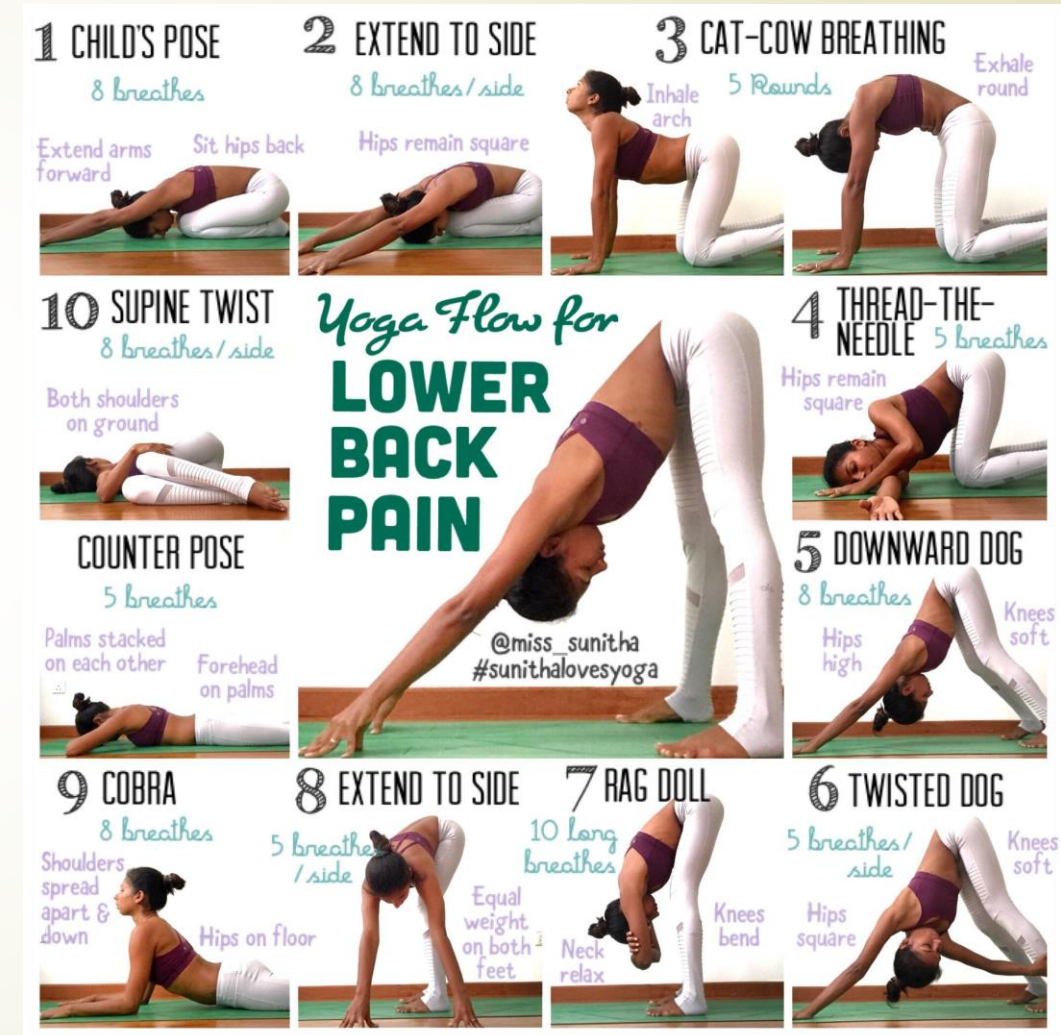
- Sleep
  - Sleep deprivation increases pro-inflammatory cytokines
  - Rule out OSA, movement disorders
  - Optimize sleep hygiene
    - Exercise, healthy diet, limit caffeine/tobacco/EtOH, cool room, remove ambient lighting
  - Supplements: Vit B, Mg+2, Vit D, melatonin





# Integrative Pain: LBP

- Interdisciplinary Rehabilitation
  - Most effective programs: CBT, supervised exercise
- Yoga
  - 2017 ACP/APS Guidelines recommend yoga for LBP
- Tai Chi
- Lifestyle Modification
  - Obesity, smoking
- Acupuncture
- Manipulation, Massage
- Botanicals
  - Devil's Claw: 30-100mg harpagoside divided into TID
  - Capsicum: cream containing 0.05% - 0.075% capsaicin BID to TID
  - Willow bark: 240mg daily





## What is Back Pain?

Back pain can have many causes. These causes include accidents, injuries, tight muscles, being overweight, and getting older. Cancer, infection, or diseases in other organs can occasionally cause it as well. Stress can make the pain worse and last longer.



### WHAT DOES IT FEEL LIKE?

Back pain symptoms include:

- ❑ Aches and pains along the spine, from base of the neck to the tail bone
- ❑ Sharp, localized pain in the neck, upper back, or lower back
- ❑ Chronic ache in the middle or lower back, especially after sitting or standing for a long time
- ❑ Pain that goes from buttocks down the leg



### HOW LONG DOES IT LAST?

It is different for each person. Sometimes it can last only a few days or weeks. This is acute pain. Sometimes it can last much longer. You might feel it all or some of the time. Chronic pain can last 3 months or longer.

### HOW CAN I FEEL BETTER?

Sometimes there is no quick fix for long-term back pain—but with time and changes in your lifestyle you can often see a big improvement. You should work with your health care practitioner to develop a treatment plan. The combination of standard care and integrative medicine care shows good results. Medications like NSAIDs can be helpful, but you should be careful about using these for the long term as there can be many side effects. Using opioid or narcotic medications for back pain can be especially dangerous. Here are some options to consider.

### BODY THERAPIES

**Acupuncture:** This Chinese Medicine treatment involves inserting tiny, sharp needles into the skin. It can reduce pain and improve function. It works especially well when combined with other therapies such as spinal manipulation and exercise therapy. You might consider community acupuncture. This is a low-cost treatment option. Treatment is provided in groups.

**Spinal Manipulation:** Both chiropractors and osteopathic physicians use techniques that help relieve back pain. A chiropractor strongly focuses on the treatment of the spine. An osteopathic physician also has special training on the spine but usually has a broader focus. They both use their hands to improve the motion in your joints.

**Physical Therapy:** Physical therapists help you to regain movement, strength, and flexibility. They can use both hands-on techniques and exercises to help you.

For more information, scan the QR code below, or visit [nciph.org/backpain](http://nciph.org/backpain)

**NCIPH** National Center for  
Integrative  
Primary Healthcare

[www.nciph.org](http://www.nciph.org)



**Massage Therapy:** A massage therapist will manipulate soft tissues of your body. It has been shown to have similar results to exercise in the treatment of chronic lower back pain. There are many types of massage. One type that works well for back pain is acupuncture.

### MIND-BODY CONNECTION

Pain can affect your mood. Your mood can affect your pain. It is important to consider mind-body connections when you have chronic back pain.

**Yoga:** This mind-body exercise can help improve back pain and prevent it from coming back. It can also improve your mood. There are many types of yoga. Find a teacher who is experienced in yoga therapy for back pain.

**Mindfulness Meditation:** This is a meditation technique that teaches you to focus on the present moment. It has been shown to reduce pain, and is a great long-term treatment you can do at home and with a teacher.

**Cognitive Behavioral Therapy:** This talk therapy focuses on how you think. A therapist will work with you to help you feel and act better in all situations. It has been shown to be effective in reducing chronic pain.

### HEALTHY LIFESTYLE

It is important to keep a healthy lifestyle in general. Below are some things that can help you feel better and prevent back pain in the future.

- ❑ Exercise and eat healthy: Maintain normal physical activity as much as possible. And keep your weight down. A healthy body puts less stress on your back.
- ❑ Lift properly: Bend your knees and keep your back straight.
- ❑ Take breaks: Take regular 5-minute breaks when sitting for a long time.
- ❑ Strengthen and stretch: Maintain strong belly and back muscles. Incorporate a regular walking and stretching routine.
- ❑ Check your mattress: Notice how you feel after you wake up. You might need to change your mattress.

National Center for Integrative Primary Healthcare  
Patient Education Materials

<https://nciph.org/file/?id=44796>

Updated October 2016

# Nutrition

- ▶ Ask about intake – fruits/vegetables, fast food, soda, alcohol
- ▶ Diet as link to inflammation and pain
- ▶ Reduce sugar/simple carbs
- ▶ Mediterranean Diet:
  - incorporates healthy fats, fruits, vegetables, nuts, and beans
  - ▶ RCT 130 pts with RA x 6 weeks: reduction of pain at 3/6 mo, reduction of early morning stiffness at 6 mo

rediscover goodness  
**OLDWAYS**  
CULTURAL FOOD TRADITIONS

## Mediterranean Diet Pyramid

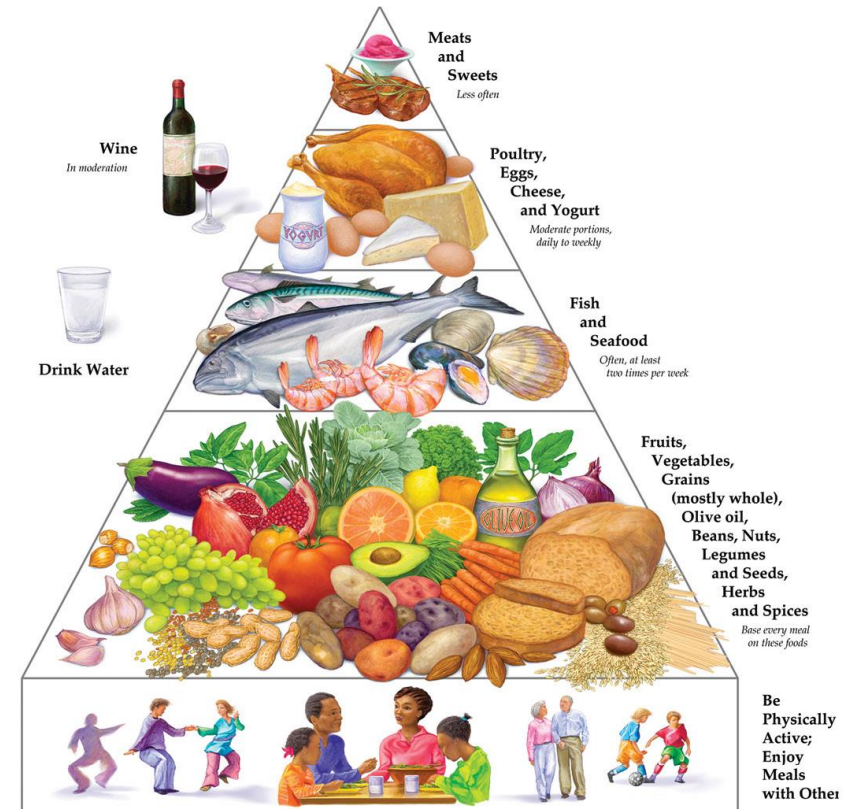


Illustration by George Middleton

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[www.oldwayspt.org](http://www.oldwayspt.org)



# Nutrition

- Combines components of traditional Mediterranean and Asian diet: maximizes healing potential
- Increase of beneficial anti-inflammatory foods and reduction of pro-inflammatory foods

## Anti-Inflammatory Food Pyramid

Andrew Weil, MD, created an Anti-Inflammatory Food Pyramid to help people make optimal food choices every day.





# Other Resources

- Dietitian or Nutritionist
- Psychology/Cognitive Behavioral Therapy
- Life Coach/Integrative Health Coach
- Breathwork

## The Relaxing Breath

Sit up, with your back straight (eventually you'll be able to do this in any position).

Put the tip of your tongue on the ridge behind your top front teeth; keep it there through the exercise.

To begin, exhale through the mouth, making a whoosh sound.

- *Close your mouth & inhale through your nose to the count of 4*
- *Hold your breath for 7*
- *Exhale through your mouth, making a whoosh sound, to a count of 8*
- *Repeat steps 1-3 - three more times*

Do this exercise at least twice a day. You may repeat it more often, but don't do more than four breaths at a time.



# MOVING BEYOND MEDICATIONS

## Non-Pharmacological Approaches to Pain Management and Well-Being

In response to the current public health crisis of opioid abuse, overdose, and death, many organizations have issued guidelines and recommendations for treating pain, including the former Surgeon General's "Turn the Tide" campaign. Similar to other guidelines, this campaign recommends non-pharmacological approaches as first line pain treatment, with opioids to be considered only if these and non-opioid pharmacological treatments are ineffective. This document expands upon those recommendations to help primary care clinicians and their patients with this approach.



Resources for Information on Nonpharmacological Approaches to Pain Management and Wellbeing



# References

- ▶ Chandran, B. and Goel, A. A randomized, pilot study to assess the efficacy and safety of curcumin in patients with active rheumatoid arthritis. *Phytotherapy Research* (2012).
- ▶ Cherkin, D et al. Effect of mindfulness-based stress reduction vs cognitive behavioral therapy or usual care on back pain and functional limitations in adults with chronic low back pain: a randomized clinical trial. *JAMA* (2016), 315(12): 1240-1249.
- ▶ Gendelman, et. Al. A randomized doubled-blind placebo-controlled study adding high dose vitamin D to analgesic regimens in patients with musculoskeletal pain. *Lupus*. 24:4 (2015) 489-489.
- ▶ Qaseem, et al. Noninvasive treatments for acute, subacute, and chronic low back pain: a clinical practice guideline from the American College of Physicians. *Annals of Internal Medicine*. 166(7): 514-530 (2017).
- ▶ Silva, et. al. Association of back pain with hypovitaminosis D in postmenopausal women with low bone mass. *BMC Musculoskeletal Disorders* 14:184 (2013).
- ▶ Yates, C.M. Pharmacology and therapeutics of omega-3 polyunsaturated fatty acids in chronic inflammatory disease. *Pharmacology and Therapeutics* 141:3(2014) 272-282.
- ▶ Yousef, et al. A double-blinded randomized controlled study of the value of sequential intravenous and oral magnesium therapy in patients with chronic low back pain with a neuropathic component. *Anesthesia*. 68:3 (2013) 260-266.