



INTEGRATIVE APPROACHES TO CHRONIC PAIN MANAGEMENT: WHAT ACTUALLY WORKS?

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Objectives

1. Participants will be able to describe how to structure an integrative pain management treatment plan.
2. Participants will be able to articulate the best evidence based biologically based therapies for the treatment of chronic pain.
3. Participants will be able to articulate the best evidence based mind-body therapies for the treatment of chronic pain.

What is Chronic Pain?

- End point
- Description
- Not really a diagnosis
- Many etiologies can lead to similar picture

Integrative Chronic Pain Management



Case - Mary

- 47 yo female with 15 year history of chronic pain
- Started after she injured her back while working at her grocery store job – waxed and waned for a few years with frequent flares before becoming chronic and daily over the last 10 years
- The last several years have been marked with worsening fatigue, feeling achy throughout her body and mental foginess
- Has seen several providers for back injections and tried a few medications with no real improvement
- Divorced, single mom of 2 teenagers
- Suffers from depression
- BMI 32, BP 140/90, exam remarkable for some tenderness in lumbar paraspinal muscles, flat affect

Case - Mary

- Pt sedentary with little to no activity
- Eats mostly fast/processed foods, a piece of fruit every other day
- Sleeping poorly
 - Hard time falling asleep, wakes up intermittently throughout night
- Family History of chronic pain, h/o parents divorcing when she was very young and bounced between parents

Doctor as placebo

- Using yourself as a treatment
- Listen, empathize, and educate
- Patient's express decreased pain with improved understanding of pain physiology¹
- Studies that show patients had more improvement when physicians were positive vs. negative in setting of unexplained illness²

Education and Empathy

- Educate your patient on what you understand to be the cause of their pain and suffering
- Patient's express decreased pain with improved understanding of pain physiology¹
- Be positive²
- Express empathy for thier suffering³

Physical Activity

- Fear of damage from pain often leads to less activity leading to tightening of muscles and increased pain in a negative cycle
- For most chronic pain conditions graded exercise programs are shown beneficial
- 30% improvement for low back pain
- Extremely effective for centralized pain conditions

Physical Activity

- Programs can vary
- Patient and diagnosis dependent
- Simplest and least expensive approach is patient initiated activity
- Most likely to be successful if they have support around plan (physical therapy, group exercise, friend/family member support, FitBit?)

Sleep

- Pain and sleep are reciprocally related
- Sleep deprivation is a stronger predictor of worsening and recurrent chronic pain episodes
- Sleep disorders proven to exist in centralized pain disorders
- Frequent pain behavior is to cope in ways that get in the way of good sleep hygiene

Sleep

- Supplements:
 - Melatonin 3mg up to 10mg qHS¹
 - L-Theanine 200mg qhs (may increase to TID)²
 - Magnesium (chelated or glyconate) 200mg -600mg titrate to side effects of loose stools³
- Medications:
 - Cyclobenzaprine 5-10mg 2 hours before bed⁴
 - Amitriptyline 25-50mg qHS, SNRI's such as duloxetine 30-60mg qHS⁵
 - Gabapentin 300mg-600mg qHS⁶

1. Ferracioli-Oda E, et al. *PLoS One*. 2013. 2. Hidese S, et al. *Acta neuropsychiatrica*. 2017. 3. Abbasi B, et al. *J Res Med Sci*. 2012. 4. Moldofsky H, et al. *J Rheumatol*. 2011. 5. Hauser W, et al. *CNS drugs*. 2012. 6. Tzellos TG, et al. *Journal of clinical pharmacy and therapeutics*. 2010.

Obesity

- Increasing evidence for obesity as risk factor for chronic pain
 - Higher incidence of fibromyalgia, chronic low back pain, tension and migraine headaches¹
- Obesity associated with decreased QOL and increased rates of depression for patients with chronic pain²

1. Seaman, D. (2013). Body mass index and musculoskeletal pain: is there a connection? *Chiropractic & Manual Therapies*, 21(1), 15. 2. Marcus, D. A. (2004). Obesity and the impact of chronic pain. *Clinical Journal of Pain*, 20(3), 186-191.

Obesity and Inflammation

- For many obese patients there is chronic non-resolving inflammation¹
- CRP is an accepted marker of chronic inflammation
- Elevated CRP has been shown preliminarily to increase rates of low back pain
 - Higher elevation in patients who are obese²

Inflammation

- Chronic inflammation promotes nociception
- Chronic non-resolving inflammation is associated with:
 - Low back pain, arthritis, RA, MS, atherosclerotic disease, diabetes¹
- Western diets low in fruits and vegetable (natural antioxidants) and high in red meat (generator of IL-6) promote inflammation²

Diet as Treatment

- Diets high in fruits, vegetables, fiber and Omega 3 Fatty Acids decrease inflammation¹
- Anti-Inflammatory Diet – high in fruits, vegetables, legumes, healthy oils, omega 3
- Mediterranean Diet – high in vegetables, fish, olive oil as main fat²



<http://www.drweil.com/drw/u/PAG00361/anti-inflammatory-food-pyramid.html>

Diet and Pain

- Strong biological rationale for the role of specific dietary components leading to abnormal glutaminergic neurotransmission
 - Ie. Perpetuating the process of centralized pain
- Glutamate is one of 2 non-essential amino acids
- In pain transmission – when nociceptive input occurs the signal is mediated by release of glutamate leading to excitation of the second order neurons
 - Lead to increased Substance P release and long-lasting basement membrane activation
- Abnormal glutaminergic transmission implicated in multiple chronic pain states: migraine, TMJ, IBS, and depression¹

Diet and Pain

- Glutamate and aspartate are the only two negatively charged, non-essential amino acids
 - Both act as excitatory neurotransmitters
- Studies to date:
 - Looked at removal of MSG/aspartame from diet of patients with chronic pain (mostly fibromyalgia)
 - Most have shown decrease in pain with removal and return of pain with re-introduction
 - Diets low in excitatory amino acids
 - Remove MSG and aspartame
 - Avoid natural foods containing such as aged cheese, soy and fish sauces, Bragg's aminos
 - Decreased pain with removal

Supplements

- Omega 3 Fatty Acids - 3 grams daily DHA/EPA¹
- Vitamin D – keep level between 30-50
 - Cochrane level data shows no consistent benefit to use of Vitamin D in pain²
- Magnesium – 400mg a night and titrate to tolerance³
- Turmeric 500mg QID⁴
- Some small quality small improvement in pain studies on Devil's Claw, SAME, chondroitin (only shown improvement for less than 6 months)⁵

1. Esposito, K., et al. *Eur Heart J*, 2006. 2. Straube S, et al. *The Cochrane database of systematic reviews*. 2015(5):Cd007771. 3. Yousef, A. A., et al. *Anaesthesia*, 2013. 4. Tizabi, Y., et al. *Molecules*, 2014. 5. de Souza Nascimento S, et al. *Evidence-based complementary and alternative medicine : eCAM*. 2013;

Mood/Emotions

- Interrelationship between emotions and pain
- Pain is unquestionably unpleasant and therefore has an emotional/affect quality to it
- This emotional/affect component is always negative
- Emotions most associated with pain are depression, anxiety/fear, and anger

Anxiety

- Most common negative emotion for people with chronic pain
- Levels of anxiety shown to be associated with increased pain severity & complications following surgery including LOS¹
- Fear of pain can drive increase in pain level
- Important to stop the fear pain cycle²

1. de Groot, K. I., et al. *British Journal of Health Psychology*, 1997. 2. Gatchel, R. J., et al. The biopsychosocial approach to chronic pain: scientific advances and future directions. 2007.

Anxiety

- Education surrounding cause of pain found to reduce pain in patients with fibromyalgia¹
- Fear can also stem from concerns about jobs, family etc
- Investigate and treat
- Consider CBT for anxiety vs. medication vs. psychotherapy vs. meditation²
- L-Theanine 200mg TID³

1. White KP, et al. *Arthritis and rheumatism*. 2002. 2. 1. Hadjistavropoulos HD, et al. *Clinical Pain Management*: Wiley-Blackwell; 2010. 3. Hidese S, Ota M, Wakabayashi C, et al. Effects of chronic l-theanine administration in patients with major depressive disorder: an open-label study. *Acta neuropsychiatrica*. 2017;29(2):72-79.

Depression

- Strong evidence for association between depression and chronic pain
- Unclear what causes what
- Known that treatment of depression improves overall pain level
- However should be treated as two distinct entities
- CBT vs. psychotherapy vs. medication

Trauma, Stress & Pain

- Strong links between history of trauma, PTSD and development of chronic pain
- Increased pain sensitivity in patients with trauma¹
- Trauma and stress thought to possibly sensitize the CNS to future development of centralized pain if present early enough in life
- Make sure to take a trauma/early family life history
- Suggest counseling if not already done if present

1. Mostoufi, S., et al. *Ann Gen Psychiatry*, 2014.

Tension Myositis Syndrome

- First discussed by Dr. John Sarno
- Another way of describing pain that is being caused by nerve pathways in the central nervous system often with underlying emotional triggers
- Dr. Howard Schubiner – Unlearn Your Pain
 - Program to help patients make the connections between past events, emotions and pain¹

1. Burger AJ, et al. *J Psychosom Res.* 2016.

Mindfulness Based Stress Reduction

- 8 week program in Mindfulness
- Originally developed by Jon Kabat-Zinn PhD to help patients with untreated chronic pain
- Decreases anxiety and depression
- Improves quality of life and acceptance of pain
- Some mild decreases in pain levels
- Center for Mindfulness in Healthcare and Society – has listing of qualified teachers

Body & Body Awareness

- Manual therapies/Body work
- OMM/OMT
- Massage
- Yoga/Thai Chi

- Patient and diagnosis specific
- Some limited evidence for efficacy of all of the above for various diagnosis^{1,2}
- Evidence that some CAM approaches shift patient expectations and improve self-efficacy³

Acupuncture

- Has been studied for many chronic pain conditions
 - Evidence for low back pain¹, migraine², OA³, fibromyalgia⁴
- Effects in OA, chronic musculoskeletal pain can last up to 12 months after 6 week course⁵
- Can sometimes be cost prohibitive
 - Look for Community Acupuncture (group based usually on a sliding scale fee)

1. Lam M, et al. *Spine*. 2013. 2. Linde K, et al. *The Cochrane database of systematic reviews*. 2016.
3. Manyanga T, et al. *BMC complementary and alternative medicine*. 2014. 4. Deare JC, et al. *The Cochrane database of systematic reviews*. 2013. 5. MacPherson H, et al. *Pain*. 2017.

Cognition

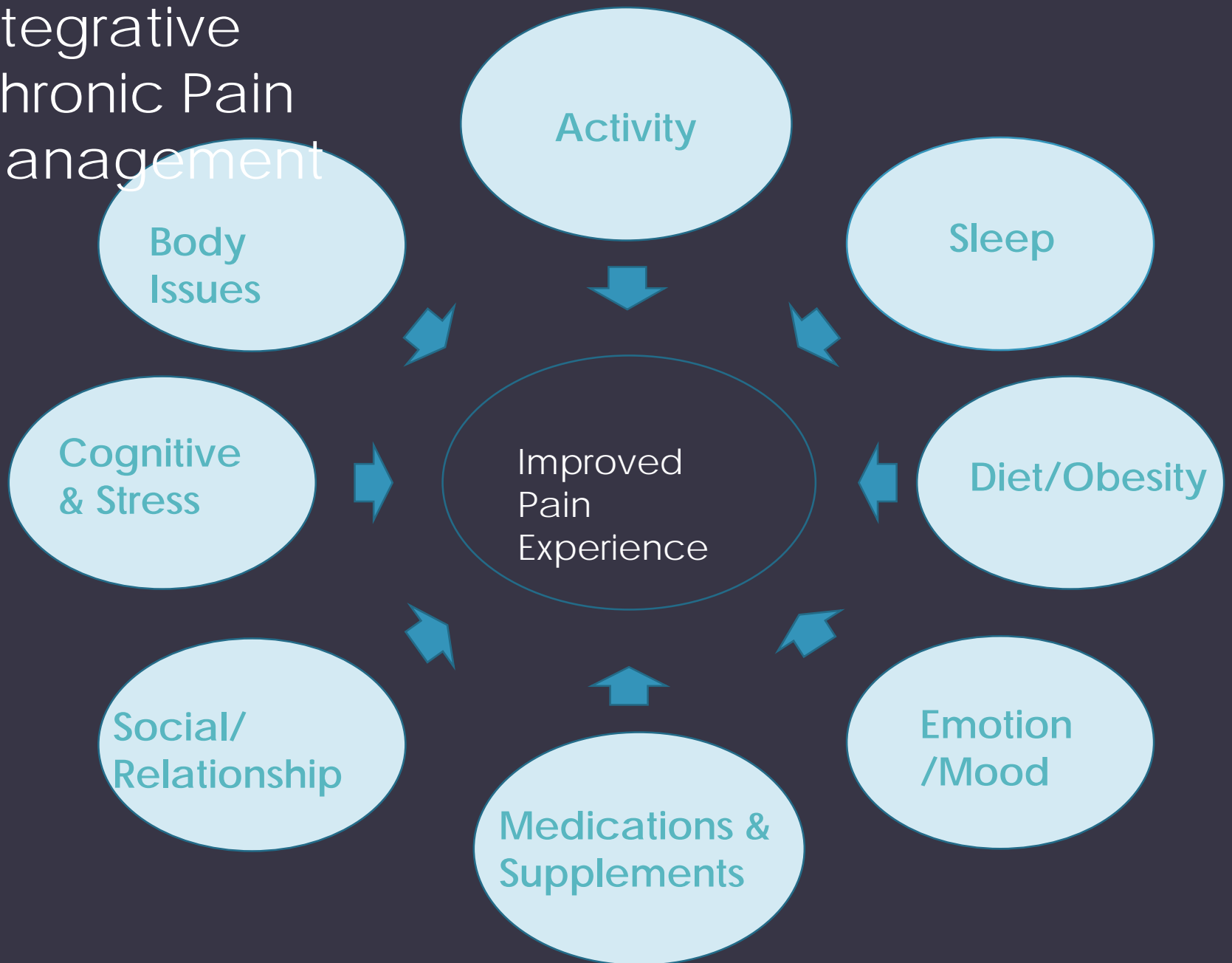
- Appraisal and Beliefs
 - Story around their pain¹
- Catastrophizing and Fear-Avoidance Beliefs
 - Poor predictor of outcome¹
- Perceived Self Control and Efficacy
 - Locus of Control¹
- CBT² vs. Acceptance and Commitment Therapy³

1. Hanley MA, et al. *The journal of pain : official journal of the American Pain Society*. 2008. 2. Ehde DM, et al. *The American psychologist*. 2014;69(2):153-166. 3. Veehof MM, et al. *Cognitive behaviour therapy*. 2016.

Social/Relationship

- Social pain activates same part of our brain as physical pain – the anterior cingulate cortex and the anterior insula
- Studies show they cross react with stimulated
- Patients with fibromyalgia have higher incidences of early life social pain
- Activating social connections may be beneficial

Integrative Chronic Pain Management



Integrative Chronic Pain Management

**Body
Issues**

Consider PT,
chiro,
acupuncture as
able.

Activity

Discussed pacing, low impact
aerobic activities, maybe
stretching

Sleep

Poor sleep
hygiene –
discussed,
added
magnesium

**Cognitive
& Stress**

Needs stress
reduction strategies,
explored mindfulness,
relaxation,
counseling.

**Improved
Pain
Experience**

Diet/Obesity

Discussed diet extensively,
small changes
recommended

**Social/
Relationship**

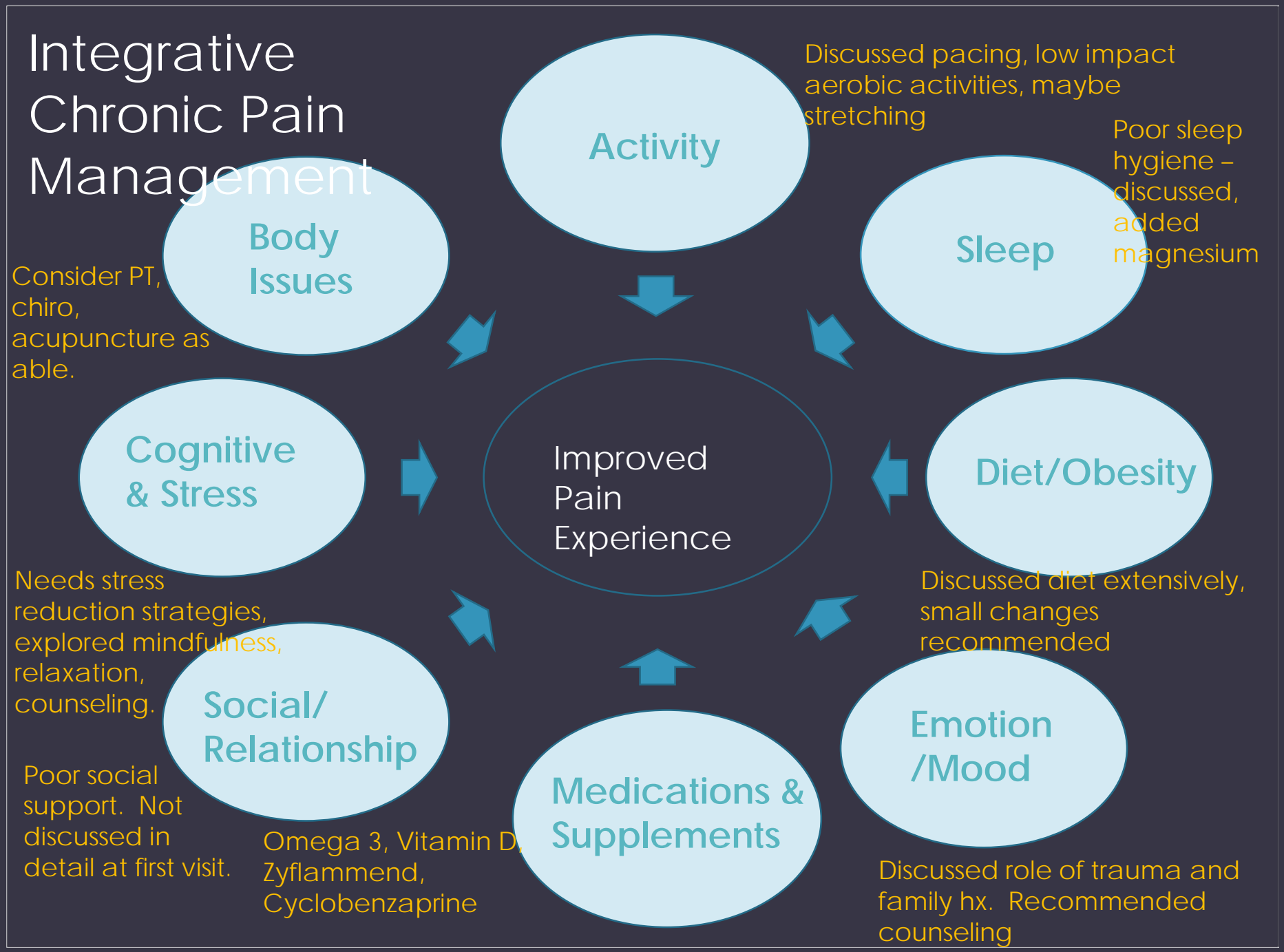
Poor social
support. Not
discussed in
detail at first visit.

**Medications &
Supplements**

Omega 3, Vitamin D,
Zyflamend,
Cyclobenzaprine

**Emotion
/Mood**

Discussed role of trauma and
family hx. Recommended
counseling



Summary

- Make your relationship with your patient the primary thing you focus on
- Make sure you feel comfortable with what is causing their pain and suffering
- Know what the patient's goals are
- Develop a treatment plan that is multifaceted, appropriate to the patient and the diagnosis
- Don't over emphasize medications!