

Cognitive-Behavioral Therapy for Pain: An Intro for the Family Medicine Provider

John (Drew) Sturgeon, PhD
Department of Anesthesiology and Pain Medicine
University of Washington
April 21, 2022

Speaker Disclosures

None

Psychological Factors in Chronic Pain

Experience of pain is multifactorial

Sensory

Emotional

Evaluative/cognitive

Social (new in 2020 IASP definition)

Implication: All pain has a psychological component

Modern neuroscience models emphasize pain as a protective, brain-based response

Subject to both ongoing nociceptive input and neuroplastic/CNS changes across time

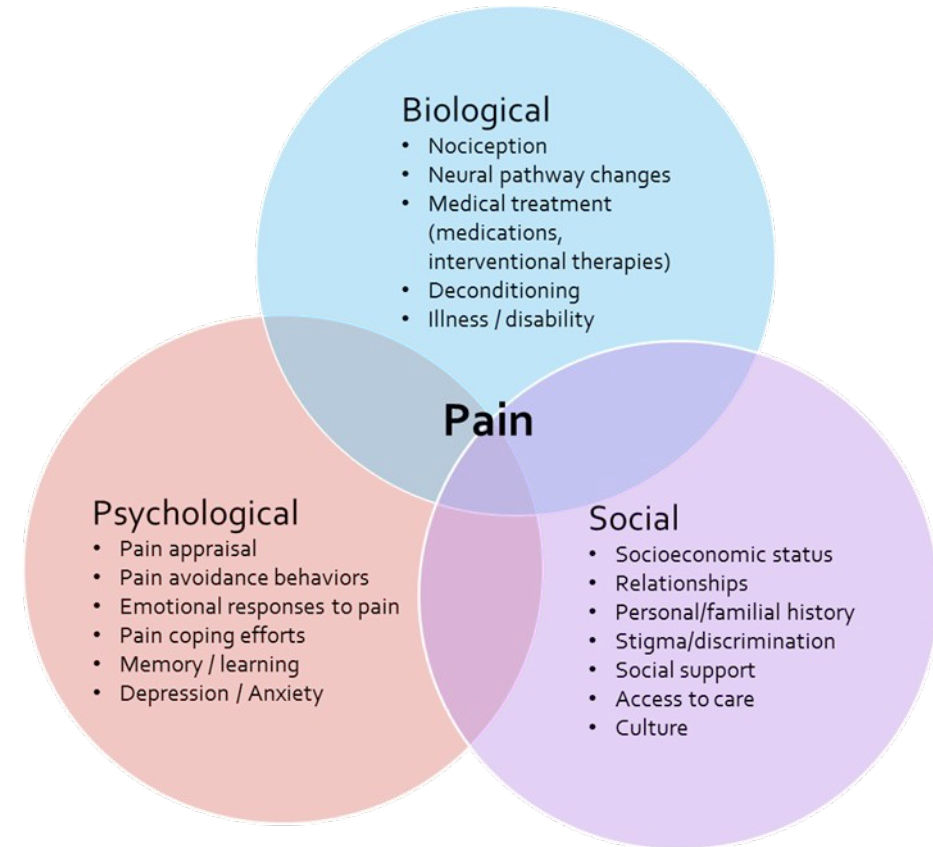
Pain as a Biopsychosocial Construct

Modern models define pain as comprised of biological, psychological, and social factors

As pain itself is multifactorial, best practices in pain management are also multifactorial

- Medications/interventions
- Physical/occupational/exercise therapy
- Psychological/behavioral interventions

Existing research emphasizes multidisciplinary treatment as optimal in pain management



Role of Psychology in Chronic Pain

- For patients unaccustomed to psychological interventions, early focus is commonly on education
 - Meaning of chronic pain (hurt vs. harm, life impact)
 - Role of rehabilitation and self-management efforts
 - Setting of self-defined meaningful functional goals (e.g., work, exercise, social activities)
 - Building repertoire of non-pharmacological pain management strategies
 - Increase active coping (e.g., not relying solely on rest, medications, passive modalities)
- Subsequent sessions review skills/practices and application to patient's life
- Evidence supports use of behavioral interventions in addition to other modalities (not as a replacement)

Fear Avoidance Model of Chronic Pain



Image retrieved from www.psychosomaticmedicine.org

Cognitive-Behavioral Therapy (CBT) for Pain

“Gold standard” treatment for chronic pain

- Small-to-moderate effect sizes on pain catastrophizing, mood, disability
- Small effect sizes for pain intensity
- Validated in most chronic pain conditions

Mechanisms of improvement include:

- Pain catastrophizing
- Fear of pain
- Physical activity
- Active coping

Useful as a “toolbox” approach to provide skills for pain coping

CBT for Pain Session Content

Psychoeducation about pain

Relaxation strategies (diaphragmatic breathing, muscle relaxation, imagery)

Behavioral pacing

Sleep improvement/sleep hygiene

Communication strategies

Positive event/activity scheduling

Cognitive restructuring

Psychoeducation

Acute versus chronic pain

Pain as a “teaching signal” or “protective response”

- Useful in acute pain/injury

- Potentially harmful in chronic pain

- Distinct patterns of brain activation for acute and chronic pain

Gate Control Theory of Pain – Pain signals are modifiable, regardless of levels of nociceptive input

Hurt vs. harm – Key opportunity for MDs to educate

- Framing pain as a “safe”, brain-based response that can be reconditioned (rather than unambiguous sign of ongoing tissue damage)

Behavioral Relaxation

Diaphragmatic breathing

- Slower, deeper, rhythmic breathing
- Initiating “relaxation response” = reduced nervous system activation/stress/pain

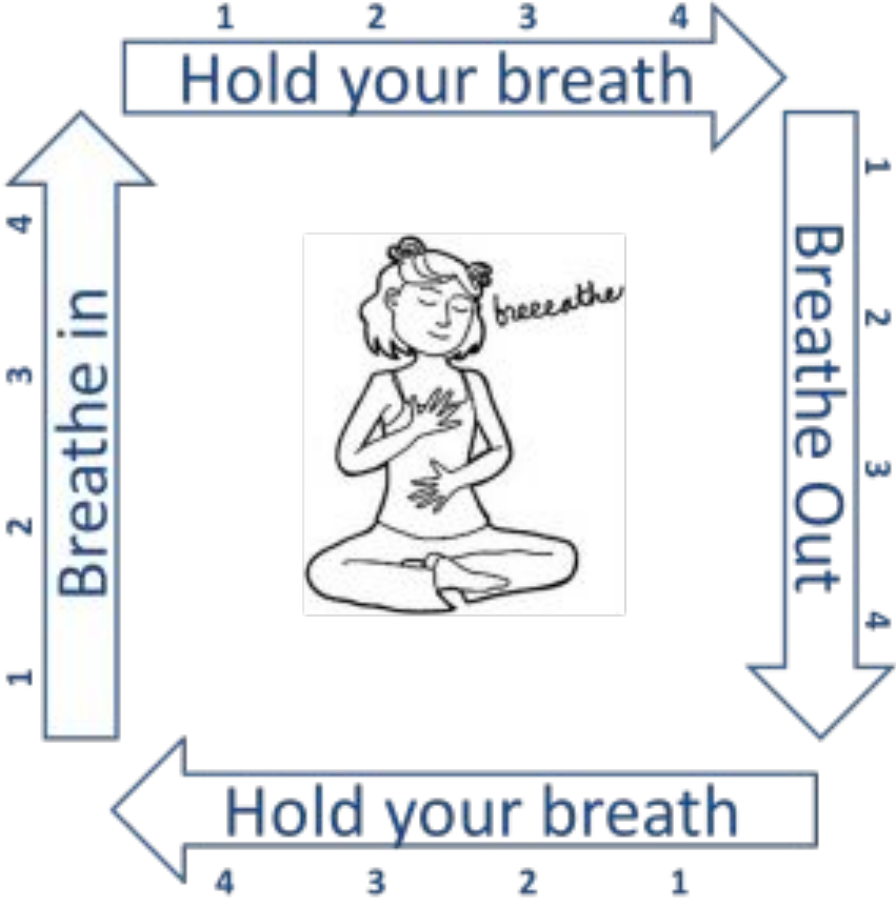
Two techniques:

- “4-1-4-1” – Breathe in 4 seconds, hold 1 second before exhale, breathe out 4 seconds, hold 1 second before inhale
- “Square breathing”

Key point: Relaxed, not dizzy/sleepy/lightheaded

- If so, breathe in less deeply, focus on speed (rather than depth) of breathing
- Rhythm is important- patient shouldn't need to “catch up”
- Can be used preventatively, or during stress or pain flares
- Even modest daily practices (e.g., 10 breaths at a time) can be helpful

Square Breathing



Other relaxation strategies

Progressive muscle relaxation

- Progressive tensing and relaxing of muscle groups, often from head to feet or feet to head

Guided imagery

- Several kinds exist, including pleasurable, enjoyable, or safe places (e.g., beaches, forests) or body-focused

Autonomic training

- Training focused on inducing relaxation through feelings of “heaviness and warmth”

Meditation (sometimes, not traditionally a component of CBT)

Scripts and guided videos are common and easily found online (e.g., YouTube)

Activity Pacing

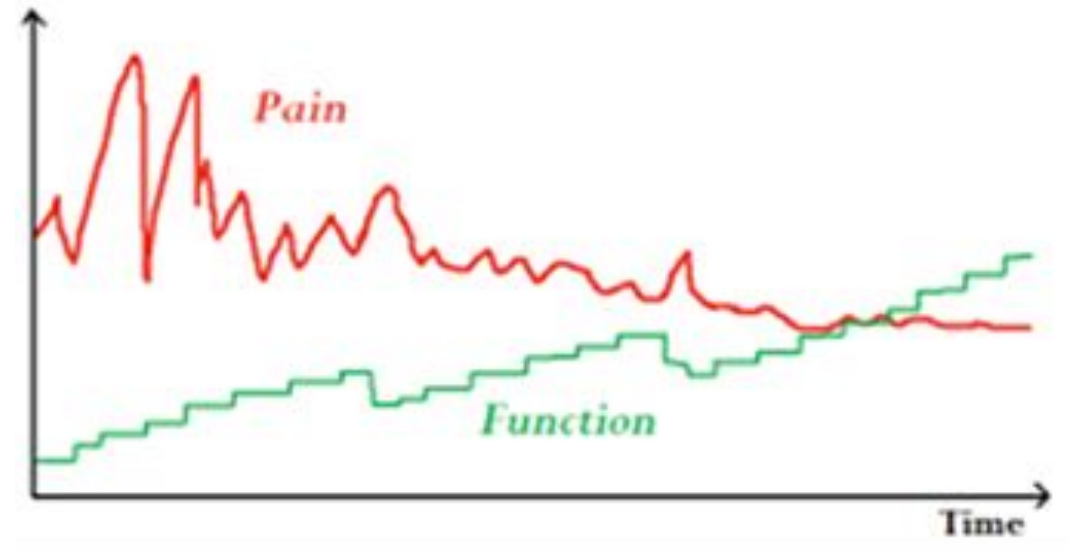
Increasing activity, reducing post-exertional symptoms

- Reduced time recovering from symptom flares
- Works well with “desensitization” treatments with pain

Gradual increases in specific physical activity

- Time-based, rather than symptom-based, activity plans

Key takeaway: Build a “sustainable baseline” of activity instead of constantly pushing through pain



Explaining Activity Pacing

1st Step: Identify high-tolerance and low-tolerance activities

- High-tolerance activity: Not likely to increase pain
- Low-tolerance activity: Likely to increase pain

2nd Step: Identify duration of time needed for low-tolerance activity to increase pain

3rd Step: Initially, cut duration of time in half as maximum time doing low-tolerance activity

4th Step: Use high-tolerance activities to help patient rest/recover between low-tolerance activities

5th Step: Gradually build up time across days/weeks

Sample Activity Pacing Plan

- Washing dishes (LT) – 3 minutes
 - Stretching (HT) – 5 minutes
- Washing dishes (LT) – 3 minutes
 - Reading/sorting mail (HT) – 10 minutes
- Washing floor (LT) – 5 minutes
 - Rest/breathing exercises (HT) – 5 minutes
- Washing floor (LT) – 5 minutes

Key idea: Pacing should increase activity in long run, not decrease it, by reducing pain flares and increasing tolerability of activity and flexibility in activity engagement

Emphasize as strategy to facilitate engagement in painful but important activities, not as a rigid rule

Sleep Improvement

Pain intensity and sleep disturbance show mutual influence

- Sleep defined as a conditioned response, reactive to context, thoughts and behaviors that can be modified across time

Sleep hygiene- Changing behaviors around sleep/bed that improve sleep quality

- Consistent sleep/wake time (even on weekends)
- Consistent “pre-sleep ritual” – doing same thing every night to prepare for bed
- Reducing/eliminating naps
- Reducing caffeine (after noon) and alcohol/nicotine use (within 3 hours of bedtime)
- Avoiding large meals/exercising vigorously within 3 hours of bedtime

Sleep Improvement (2)

Stimulus control

- Reducing non-sleep activities while in bed (TV, computers, eating, reading)
- Leaving the bed if not sleeping within 25-30 minutes
 - Doing boring/relaxing activity, return to bed only when sleepy
 - Initial sleep restriction (spending less time in bed) will ultimately yield better sleep quality
 - May require multiple weeks to notice benefit

Reducing rumination/“shutting your brain off”

- Making to-do lists
- Journaling/expressive writing

Reduce “clock watching”

Pleasant Event Scheduling

Behavioral/social activation targets improved mood and increased activity levels

Patients generate own list of enjoyable activities, esp. involving social/physical activation

Urge patients to schedule periods of time on daily or weekly basis to engage in these activities

- Emphasizing enjoyable activities as component of treatment
- Scheduling prevents “re-prioritizing”/avoiding activities due to pain/fatigue/anhedonia

Cognitive Restructuring

Helping patients recognize when their thoughts are unrealistic/inaccurate or unhelpful

- Explore how thoughts can affect mood/motivation/behavior, sometimes pain levels

ABC model (Antecedent-Belief-Consequence)

- External or internal events (e.g., pain) trigger automatic thoughts that affect mood/motivation/behavior

When unhelpful or inaccurate thought is recognized:

- Identify evidence for and against thought
- Identify alternative/more adaptive interpretations for situation
- Rate feelings/belief in thought before and after re-interpretation of thought

CBT Thought Record

Where were you?	Emotion or feeling	Negative automatic thought	Evidence that supports the thought	Evidence that does <i>not</i> support the thought	Alternative thought	Emotion or feeling
<p>Where were you? What were you doing? Who were you with?</p>	<p>Emotions can be described with one word. E.g., angry, sad, scared Rate 0-100%</p>	<p>What thoughts were going through your mind? What memories or images were in my mind?</p>	<p>What facts support the truthfulness of this thought or image?</p>	<p>What experiences indicate that this thought is not completely true all of the time? If my best friend had this thought what would I tell them? Are there any small experiences which contradict this thought? Could I be jumping to conclusions?</p>	<p>Write a new thought which takes into account the evidence for and against the original thought</p>	<p>How do you feel about the situation now? Rate 0 - 100%</p>

Assertive Communication

Chronic pain as “invisible disease”

- Undermines relationships, increases isolation, worsens mood and social/occupational engagement

Emphasizes direct, goal-oriented communication in situations where patients feel misunderstood by others

- Recognizing patterns of unhelpful passivity or aggressiveness
- Considering goals in social communication
- Managing difficult emotions while communicating
- Emphasizing calm, direct communication in situations where avoidance is impossible or unhelpful (e.g., with family, friends, medical providers, coworkers)

Emphasizes social relationships and social engagement as important part of pain management process

Other Psychological Treatments for Chronic Pain

- Mindfulness-based stress reduction (MBSR)
- Acceptance and commitment therapy (ACT)
- Hypnosis (standalone and in combination with CBT)
- Biofeedback (largest research base in headache conditions)
- Emerging psychotherapies
 - Emotional awareness and expression therapy (EAET)
 - Pain reprocessing therapy (PRT)

Talking to Patients about Pain Psychology

- All pain has a psychological component
- Seeing a psychologist does not mean pain is not real (or an exclusion for medical treatment)
- Nervous system activity connects “physical” pain to “psychological” pain
 - Useful in discussing stress, sleep, emotions, medications
- If unaddressed, psych symptoms worsen response to medical treatment
 - Getting mental health care enhances medical treatment
- Focus is on function and quality of life, despite ongoing pain
- If significant psychiatric distress is present (e.g., severe depression, panic attacks, PTSD), ideal to stabilize this as first step in pain treatment

Psychological therapies for the management of chronic pain

This article was published in the following Dove Press journal:

Psychology Research and Behavior Management

10 April 2014

Number of times this article has been viewed

John A Sturgeon

Department of Anesthesiology,
Stanford University, Palo Alto,
CA, USA

Abstract: Pain is a complex stressor that presents a significant challenge to most aspects of functioning and contributes to substantial physical, psychological, occupational, and financial cost, particularly in its chronic form. As medical intervention frequently cannot resolve pain completely, there is a need for management approaches to chronic pain, including psychological

Resources

American Chronic Pain Association (www.theacpa.org)

CBT handouts:

<https://www.therapistaid.com/therapy-worksheets/cbt/adults>

Books

- Manage Pain Before it Manages You – Caudill
- Pain Survival Guide – Turk & Winter
- Quiet Your Mind and Get to Sleep – Carney & Manber
- The Chronic Pain Solution – Dillard & Hirschman
- Full Catastrophe Living – Kabat-Zinn
- Less Pain, Fewer Pills - Darnall
- The Feeling Good Handbook – Burns
- Explain Pain – Butler & Moseley

Handouts

- Pacing:
 - https://www.mentalhealth.va.gov/coe/cesamh/docs/Activity_Pacing-patients.pdf
 - https://cdn.ymaws.com/www.cfha.net/resource/resmgr/Special_Interest_Groups/PCBH_SIG_/PCBH_Handouts/Chronic_Pain_Handout_3_Activ.pdf
- Square Breathing
 - <https://www.practicalhappiness.co.uk/wp-content/uploads/2017/06/Simple-Breathing-Techniques.pdf>
- Sleep Hygiene
 - <https://depts.washington.edu/hcsats/PDF/TF-%20CBT/pages/4%20Emotion%20Regulation%20Skills/Client%20Handouts/Sleep%20hygiene/Sleep%20Hygiene%20Tips.pdf>
- Cognitive Restructuring
 - <https://www.therapistaid.com/therapy-worksheets/cbt/adults>

Apps

Meditation – Headspace, Calm, Curable, Insight Timer

Sleep – CBT-I Coach, Calm, Insight Timer

Breathing - Breathe2Relax, Headspace, Calm