

Complementary and alternative medicine for chronic pain among individuals with high-risk opioid use: A scoping review

Supplementary File

Database:

Ovid MEDLINE(R) ALL <1946 to November 25, 2025>

#	Query	Results from 26 Nov 2025
1	Chronic Pain/	28,421
2	("chronic pain" or "persistent pain" or "non-cancer pain" or long-term pain).mp.	79,716
3	1 or 2	79,716
4	exp Complementary Therapies/	264,399
5	("complementary therap*" or "alternative medicine" or "integrative medicine" or "acupuncture" or "mindfulness" or "yoga" or "chiropractic" or "meditation" or "physiotherapy" or "diet" or "herbal medicine" or "massage therap*").mp.	772,109
6	4 or 5	965,627
7	exp Analgesics, Opioid/	146,427
8	exp Opioid-Related Disorders/	38,509
9	(opioid* or opiate* or opium or fentanyl* or morphine* or heroin* or codeine* or hydromorphone* or oxycodone*).mp.	246,969
10	7 or 8 or 9	262,503
11	3 and 6 and 10	646

Figure S1. Complete MEDLINE search strategy used to identify studies related to chronic pain, high-risk opioid use or opioid use disorder, and complementary and alternative medicine.

Table S1. Characteristics of all included published studies n=33.

Author, Year	Type of study	Timeline	City, Country	Population	Psychiatric Comorbidities	Measures/Guidelines for Chronic Pain	OID Diagnosis	OID Treatment Medication/OAT	OAT setting	CAM Modality	Delivery format; CAM length of treatment	Effects of CAM on opioid use & Effects of CAM on chronic pain	Psychosocial outcomes	Treatment retention rate	Patient-perception/experience	Facilitators and Barriers to access CAM modality
Barry, 2010	Cross-sectional survey	Sept 2006 – March 2007	New Haven, Connecticut, United States	N=293 adults seeking MAT; 80% white; 60% male; mean age 36.1 ± 10.7; n=213 ≥ moderate recent pain	N/A	Self-reported; 1-5 ordinal pain intensity scale	In MOUD treatment	Methadone	Outpatient MMT clinics	Acupuncture; meditation; yoga; prayer; herbs; stretching; PT; massage; chiropractic; hypnosis	N/A	N/A	N/A	N/A	Mean 2.2/5 Perceived efficacy, chronic pain participants scored higher	Facilitators: High interest in pain treatment (62%)
Coffee, 2025	Pilot feasibility study	N/A	Salt Lake City, Utah, United States	N=18 adults; mean age 31–40 years; 61% female; 50% white; 22% American Indian/Alaskan Native; 22% Hispanic/Latino; 56% unemployed; 56% inpatient; 44% outpatient	Anxiety	Self-reported; Baseline comparison via Bayesian t-test	Diagnosed; in MOUD treatment	Methadone; Buprenorphine; Naltrexone	Inpatient detox/residential clinics; Outpatient MOUD clinics	Virtual Tai Chi Easy (vTCE); Mind-body therapy (Qigong-based Tai Chi)	Virtual; 8 weeks; 16 sessions	N/A	N/A	15.8% Retained to final assessment; 84.3% Attrition; 100% Attrition in inpatient group by Week 6	3.5/5 Acceptability; 3.5/5 Appropriateness; 4/5 Feasibility	Facilitators: Outpatient setting accessibility, recorded sessions, personal device access, flexibility, lower cost, potential integration into outpatient MOUD. Barriers: inpatient scheduling conflicts, device access issues, high dropout from detox programs, nonembedded intervention
Parisi, 2025	Baseline cross sectional analysis; Randomized controlled trial	N/A	Salt Lake City, Utah, United States	N=372 adults; n=250 at elevated risk for opioid misuse	N/A	Brief Pain Inventory (BPI)	COMM (Current Opioid Misuse Measure)	N/A	N/A	Mindfulness oriented recovery enhancements (MORE)	Group; 8 Weeks	Effect on opioid use: Significantly increased MAIA total score (Attention Regulation; Trusting); reductions in opioid misuse	Increase in interoceptive awareness; Increase in attention regulation; Increase in trusting bodily signals	N/A	Perceived improvement of awareness of bodily sensations, self-regulation, catastrophizing, emotional distress; No harm reported	Facilitators: Emotion regulation skills
Goodman, 2025	Mixed-methods pilot study; Pre-post single session quantitative design; qualitative interviews	May 2018 – May 2019	Greater Boston metropolitan area, United States	N=16 persons living with HIV (PWH); mean age 57.2; 50% Black/African American; 43.8% White; 6.3% >1 race; 93.8% non-Hispanic/Latino; 75% gay/bisexual; 25% bisexual	N/A	Pain rating scales; IASP Chronic pain definition reference; Situational Pain Catastrophizing Scale (SPCS)	Self-reported	N/A	N/A	Music-based smartphone application intervention; "Uwinda" (Boss) generative instrumental music app	Individual; in-person; 10 minutes; 1 session	Effect on chronic pain: Pain catastrophizing significantly decreased	Significant decrease in negative affect after music session (POMS-SF)	N/A	High acceptability; Seen as useful adjunct; 14/16 Reported appropriateness; Many willing to use at home	Facilitators: Many already use music for coping, ease of use, personalized selection, low/no cost, easy integration into routines/regimens; Barriers: Not perceived as 1:1 replacement for medicine by all; inaccessibility to private controlled environments for treatment
Garland, 2025	Randomized clinical trial	Data collection 2016 – 2020; follow up & data analysis December 2022 – June 2024	Utah, United States	N=160; mean age 53.7; 63.8% female; n=98 with OUD; n=62 without OUD	Depression; nonopioid SUD	N/A	COMM ≥9	N/A	N/A	Mindfulness-Oriented Recovery Enhancement (MORE); Supportive Group (SG) therapy (Rogerian supportive psychotherapy)	Group; 8 week; 8 sessions; 2 hours per session; Home practice: daily; 15 minutes	Effect on opioid use: Reduced opioid craving more than control; increased positive ER (LPP during regulate vs view); lower craving scores at follow-up	Improved attention to positive information; Improvement in positive affect; Improvement in anhedonia	N/A	N/A	N/A
Garland, 2024	Randomized clinical trial	N/A	Salt Lake Valley, Utah, United States	N=250 Parent RCT; n=187 secondary analysis sample; mean age 52.4 years; 62.6% female	N/A	Brief Pain Inventory (BPI)	COMM ≥9; DMI (Drug Misuse Index); ABC interview (Addiction Behaviors Checklist); Urine toxicology	N/A	N/A	Mindfulness-Oriented Recovery Enhancement (MORE)	Group; 8 weeks; 8 sessions; Home practice: daily; 15 minutes	Effect on opioid use: Higher meditation-induced self-transcendence (NADA-S) at post-treatment; Higher universal love through 9 months.	Reported self-transcendence effect; Reported universal love effect	N/A	N/A	N/A
Garland, 2024	Randomized controlled trials; constrained longitudinal analysis	April 2017 – October 2021	Salt Lake City, Utah, United States	N=230 U.S. veterans and active-duty military personnel with long-term opioid therapy; 83% male; 91% veterans; predominantly White	Major depressive disorder (60%); PTSD (19%); Alcohol/non-opioid SUD	Brief Pain Inventory (BPI)	Current Opioid Misuse Measure (COMM); Mini-International Neuropsychiatric Interview for OUD diagnosis	Oxycodone; hydrocodone; tramadol; morphine; buprenorphine; methadone	Outpatient	Mindfulness-Oriented Recovery Enhancement (MORE)	Group; in-person; virtual; 8 weeks; 8 sessions; 2 hours each session; Home practice: daily; 15 minutes	Effect on opioid use: 20.7% reduction in opioid dose compared to 3.9% control; Reduced daily opioid craving; Reduced misuse in in-person subgroup Effect on chronic pain: Significant reduction in pain severity; Significant reduction in pain	Reduced anhedonia; Reduced catastrophizing; Increased positive affect; Increased saving; Increased reappraisal; Increased attention to positive information	81% Retained to 8-month follow-up; 5.5 Mean sessions attended; Attrition did not differ between groups	Pain relief while reducing opioids; No worsening of mood; Improved reward responsiveness	Facilitators: VA healthcare system access, Group social support
Cooperman, 2024	Phase 2 Randomized clinical trial	August 2020 – June 2022	New Jersey, United States	N=154; n=57 female; n=43 male	Anxiety (n=24.4); Depression (n=22.6)	Ecological Momentary Assessment (EMA) pain ratings; Brief Pain Inventory (BPI)	Diagnosed via clinic enrollment	Methadone	Outpatient methadone treatment clinics	Mindfulness-Oriented Recovery Enhancement (MORE)	Group-based; virtual; 8 weeks; 8 sessions; 2 hours each session	Effect on opioid use: Reduced return to drug use; reduced methadone treatment dropout; fewer days of drug use; improved methadone adherence at 16 weeks Effect on chronic pain: Significant reduction in EMA pain ratings; 11% reduction met minimally clinically important change threshold	Greater reduction in depression scores compared to control; Anxiety improved in MORE group but between-group difference not statistically significant	13% Dropout rate in MORE group; 22% Dropout rate in control group	Perceived Feasible; Perceived Acceptable	Facilitators: Telehealth delivery, electronics provided, structured group format, integration of treatment into pre-existing recovery
Webb, 2023	Program evaluation using retrospective pre-post survey design	March 2021 – March 2022	Rural American Indian reservation in the Rocky Mountain region; United States	N=40 adults; mean age 48.5 years; 40% female; 40% Black; 52% White; 13% Hispanic	Depression; Anxiety	Self-reported	In MOUD treatment	N/A	Outpatient treatment centers	Massage therapy; acupuncture; chiropractic therapy	Individual; in-person; 12 months; mean 6.5 sessions	Effect on opioid use: 40% reported increased confidence in sobriety; 25% reported taking fewer prescription medications Effect on chronic pain: Mean self-reported physical health score improved from 5.32 to 8.38	83% reported being more hopeful about overall health and wellness; 35% reported feeling like they belong; 53% reported feeling there were more resources in the community; significant improvements across all Medicine Wheel domains	N/A	70% Perceived helpful; 75% Reported improved sleep; 70% Reported muscle pain relief; Reduced anxiety; Increased awareness of physical issues; Feedback for longer sessions and expanded availability	Facilitators: Culturally centered, community-based design, tribal leadership approval, peer specialist involvement, sessions offered in two location, integration of Medicine Wheel, grant funding
Ellerbrook, 2023	Qualitative pilot study	April 2020 – July 2021	Nijmen, The Netherlands	N=21 adults; mean age 47.8 years; 60% female	N/A	ICD-11 chronic pain criteria; VAS pain score	DSM-5 criteria; MATE interview	Buprenorphine; naltrexone	Inpatient rotation; outpatient care	Mindfulness-Based Cognitive Therapy (MBCT)	In-person; Group; 8 weeks; 8 sessions; 2.5 hours per session; Home practice: daily; 45 minutes	Effect on opioid use: 4 participants reported reduced opioid craving and improved coping with withdrawal Effect on chronic pain: Improved pain acceptance; Improved pain coping	Improved emotional regulation; Reduced anxiety/anger; Increased self-compassion; Improved functioning; Improved interpersonal openness	4 of 21 Participated; 1/21 Participants completed all sessions	Reported helpful and meaningful; Valued teacher attitude, peer groups, and home practice exercises	Facilitators: Positive expectations, desire to develop coping strategies with pain/cravings, professional encouragement; peer support. Barriers: Timing (offered too late), travel burden, time commitment; health issues (depressive symptoms, pain, fatigue)
Price, 2024	Mixed-methods randomized controlled trial	August 2019 – January 2023	Washington State, United States	N=303 adults; 52% female; 28% male; median age 40	PTSD 41%; moderate depression 49%; moderate anxiety 40%	Brief Pain Inventory (BPI); Symptoms Checklist	Diagnosed; in MOUD treatment	Buprenorphine; methadone	Outpatient MOUD clinics	Awareness in Body-oriented Therapy (MABT)	Individual; in-person; 8 weeks; 8 sessions; 1.25 hours per session	Effect on chronic pain: Significant reduction in pain severity; Significant reduction in activity interference; Reduced physical symptom frequency	Significant improvement in PTSD symptoms; Significant increases in interoceptive awareness; Improved depression and anxiety scores but no between-group difference; Improved mindfulness skills improved but not statistically significant overall	71% of MABT group completed ≥6 of 8 sessions	Reported increased awareness, self-care, emotion regulation, reduced distress, and strengthened recovery	Facilitators: Therapist support; structured stages; home practice
Ahmad, 2022	Cross-sectional acceptability survey	January 11 – Feb 25, 2019	San Francisco, California	N=71 adults; mean age 46.6 years; 30% female	N/A	Brief Pain Inventory (BPI)	Diagnosed via OTP enrollment	Methadone; buprenorphine	Outpatient hospital-based OTP	Yoga	N/A	N/A	N/A	N/A	Mean 74.3/100 willingness to try yoga if offered at clinic, higher with prior yoga experience; Overall favourable beliefs about yoga	Facilitators: Prior yoga experience, favorable beliefs about yoga, use of multiple pain coping strategies. Barriers: Lack of financial resources, limited class availability, physical restrictions

Cooperman, 2021	Randomized pilot trial	Recruitment January – February 2019	New Jersey, United States	N=30 adults in methadone maintenance treatment; mean age 50.4; 50% female; 53% Black; high baseline heroin use (67% past 30 days)	High baseline depression; anxiety	Brief Pain Inventory (BPI)	Diagnosed; in MOUD treatment	Methadone	Outpatient methadone clinics	Mindfulness-Oriented Recovery Enhancement (MORE)	In-person; Group; 8 weeks; 8 sessions; 2 hours per session; At home practice: daily; mean 23.8 minutes	Effects on opioid use: ~60% reduction in illicit drug use in MORE vs control; significantly lower opioid craving (PACS); reduced illicit opiate use days	Significant reductions in depression and anxiety; Increased well-being; Increased vitality; Increased social functioning	55.6% Days voluntarily practiced	N/A	Facilitators: Integrated within clinic schedule, fidelity monitoring, weekly supervision, matched counseling hours
Behar, 2020	Qualitative descriptive study	Interviews 2018	Utah, United States	N=18 HIV-positive adults in primary care with lifetime illicit substance use history; mean age 55; 61% male; 33% female; 6% transgender; 44% Black; 44% White; 11% other race	N/A	Self-reported	N/A	N/A	N/A	A range among participants was reported, including physical therapy; acupuncture; massage; yoga	N/A	Effects on opioid use: Majority participants reported reduced opioid intake Effects on chronic pain: Reduced pain		N/A	N/A	Facilitators: Prior exposure to nonpharmacologic therapies, perceived legality/safety of non-pharm options; Barriers: Cost, insurance limits, availability and access (timing and location)
Vowles, 2020	Randomized controlled pilot trial	N/A	Albuquerque, New Mexico, United States	N=35 veterans with chronic pain and opioid misuse; Mean age 50.5 years; 86% male	N/A	PROMIS Pain Interference & Behavior	COMM score ≥9; SCID DSM-5 criteria for OUD	N/A	Outpatient	Acceptance and Commitment Therapy; Mindfulness-Based Relapse Prevention	In-person; group; 12 weeks; 12 sessions; 1.5 hours per session	Effects on opioid use: Reduced opioid misuse (COMM) at 6 months; 50% in integrated group fell below COMM cutoff vs 10% in control Effects on chronic pain: Reduced pain interference; Reduced pain intensity; Small reduction in pain behavior	N/A	78.6% completed 6-month follow-up; 77% session attendance	N/A	Facilitators: Weekly supervision, Group based format; Barriers: Hesitation about behavioral therapy; Travel burden; Buprenorphine exclusion
Uebelacker, 2019	Randomized controlled pilot trial	Recruitment March 2017 – August 2018	Fall River, Massachusetts, United States	N=40 adults; n=20 with chronic pain receiving methadone maintenance therapy; n=20 receiving buprenorphine; mean age 43–44 years; 58% male	N/A	Brief Pain Inventory (BPI); Visual Analog Scale; Self-reported	Receiving methadone maintenance or buprenorphine for opioid use disorder ≥3 months	Methadone; buprenorphine	Methadone clinic; primary care clinic; outpatient health center	Manualized hatha yoga program	In-person; group; 12 weeks; 12 sessions; 1 hour per session	Effects on chronic pain: Pre-post class pain decreased 2.08 points compared to 0.97 points in control; reductions in pain interference over 3 months among high attenders	0.72 greater points reduction of anxiety post-session compared to control; Reduced sadness; Reduced irritability; Reduced fatigue; Improved mood immediately post-session	90% Completed Month 3 assessment; 50% of treatment group and 65% of control group attended ≥6 of 12 classes	High program satisfaction; Majority reported home practice uptake	Facilitators: On-site delivery at familiar clinic, high teacher fidelity (90–97%); Barriers: health problems, relapses, jail, homelessness, scheduling conflicts, discomfort with class time, physical limitations
Garland, 2019	Stage 1 randomized controlled trial; ecological momentary assessment analysis	N/A	New Jersey, United States	N=30 individuals with OUD and chronic non-cancer pain receiving methadone maintenance therapy; mean age 50.4 years; 50% female	N/A	EMA numeric rating scales	Diagnosed; admitted to MOUD within past year	Methadone	Methadone maintenance treatment clinics; outpatient	Mindfulness-Oriented Recovery Enhancement (MORE)	Group; 8 weeks; 8 sessions; 2 hours per session; Home practice: daily; 15 minutes	Effects on opioid use: Greater reductions in opioid cravings compared to control; 68% less severe cravings; 56% weaker urges in event-contingent ratings; 129% greater self-control over craving; participants 1.3 times better able to control cravings; 44% decrease in opioid wanting Effects on chronic pain: 13% greater reductions in pain compared to control	26% Greater reduction in stress compared to control; 22% Increase in positive affect	93% Retention rate; MORE group completed mean 6.1/8 sessions	Participants reported greater self-control over craving	Facilitators: Matched therapist contact time across arms, structured manualized intervention, daily home practice
Przesp, 2018	Prospective Cohort Study; multimodal inpatient treatment study	2012 – 2014	Rancho Mirage, California, United States	N=150 patients with chronic pain and substance use disorder; n=122 completed assessments; 58.2% female; 41.8% male; mean age 48.4 years; mean pain duration 15.6 years; mean opioid use 7.4 years; 92.6% multiple pain areas; 93.4% multiple pain disorders	Depression 98.4%; unresolved trauma 98.7%	Brief Pain Inventory; West Haven Yale Multidimensional Pain Inventory; Short-form McGill Pain Questionnaire-2; Visual Analog Scale	DSM-IV-TR criteria	buprenorphine	Inpatient SUD treatment center	Osteopathic manual medicine; Qigong	Group; Individual; 6 weeks; 4 sessions per week; mean 15.5 hours total per week	Effects on chronic pain: BPI severity reduced from 4.46 to 1.63; BPI interference reduced from 4.88 to 1.39; BPI average pain reduced from 4.64 to 1.76; SF-MPQ-2 total reduced from 3.30 to 0.91; 62% reduction in mean pain over treatment	BDI-II reduced from 20.33 to 5.32; WHYMPI life control increased from 2.64 to 4.54; WHYMPI affective distress reduced from 3.67 to 1.74	8% Dropout rate; 122/150 completed all assessments	Dramatic perceived change and benefit	Facilitators: Integrated CP and SUD treatment; abstinence-based 12-step structure; qigong matched with recovery model; structured multimodal schedule
Garland, 2015	Randomized controlled pilot trial	N/A	Florida, United States; IRB Florida State University	N=29 chronic noncancer pain patients taking opioids daily ≥90 days and at risk for opioid misuse with complete EEG data; n=12 men; n=17 women; mean age 47.1 years; mean pain duration 12.7 years	Major depressive disorder 70.4%; generalized anxiety disorder 33.3%; n=2 PTSD and alcohol abuse	Pain severity and functional impairment previously reported in parent RCT; EEG late positive potential 400–1,000 ms; Self-reported	COMM; DSM-IV; MINI	N/A	Outpatient primary care, pain, and neurology clinics	Mindfulness-Oriented Recovery Enhancement (MORE)	Group; Individual; 8 weeks; 8 sessions; Home practice: daily; 15 minutes	Effects on opioid use: Increases in LPP response to natural reward cues predicting greater reductions in opioid craving	Increase in positive affect	N/A	Participants reported greater positive affect in response to reward cues; no formal satisfaction measure reported	Manualized intervention; therapist supervision; daily home practice; structured saving exercises
Garland, 2014	Randomized controlled pilot trial	N/A	Tallahassee, Florida, United States	N=115 chronic noncancer pain patients prescribed opioids daily ≥90 days; mean age 48; 68% female; mean pain duration 11.2 years; 72.2% at risk for opioid misuse on COMM	Major depressive disorder 68.3%; generalized anxiety disorder 30.7%; alcohol use disorder 12.8%; PTSD 11.9%; substance use disorder 9.0%	Brief Pain Inventory (BPI)	COMM >13; MINI	N/A	Outpatient primary care clinics; neurology clinics; pain clinics	Mindfulness-Oriented Recovery Enhancement (MORE)	Group; Individual; 8 weeks; 8 sessions; Home practice: daily; 15 minutes	Effects on opioid use: Decreased opioid misuse; decreased desire for opioids Effects on chronic pain: Greater reductions at post-treatment across all 7 BPI pain interference domains compared to control	Reduction in interference with relationships; Reduction in sleep interference; Increased enjoyment of life; Improved mood	71.4% of MORE group completed treatment; 82.6% of control group completed treatment	Similar scores in feasibility and acceptability between treatment and control	Manualized protocol; therapist supervision; active control controlling for expectancy and support; daily home practice; group format 8–12 participants
Garland, 2014	Randomized controlled pilot trial	N/A	Florida, United States	N=49 chronic noncancer pain patients taking opioid analgesics daily or nearly daily ≥90 days; 71% women; mean age 46.6; 87.5% at risk for opioid misuse on COMM; 28.6% met MINI opioid use disorder criteria	Major depressive disorder; generalized anxiety disorder; PTSD; alcohol use disorder; non-opioid substance use disorder	Brief Pain Inventory (BPI); MINI psychiatric interview	COMM; MINI	N/A	Outpatient primary care clinics; neurology clinics; pain clinics	Mindfulness-Oriented Recovery Enhancement (MORE)	Group; Individual; 8 weeks; 8 sessions; Home practice: daily; 15 minutes	Effects on opioid use: Reduced generalized opioid craving; reduced subjective opioid cue-reactivity; decreased opioid misuse Effects on chronic pain: Decreased pain severity; Decreased functional impairment	Increased positive effect	N/A	N/A	Manualized intervention; therapist supervision; daily home practice; structured saving exercises; matched therapist contact time in control
Garland, 2014	Randomized controlled pilot trial	Recruitment 2011 – 2012	Tallahassee, Florida, United States	N=115 chronic noncancer pain patients prescribed and taking opioids daily or nearly daily ≥90 days; mean age 48; 68% female	Major depressive disorder 68.3%; generalized anxiety disorder 30.7%; alcohol use disorder 12.8%; PTSD 11.9%; substance use disorder 9%	Brief Pain Inventory (BPI); MMAPACT benchmarks referenced for clinical significance	COMM ≥13	N/A	Outpatient primary care clinics; neurology clinics; pain clinics	Mindfulness-Oriented Recovery Enhancement (MORE)	Group; Individual; 8 weeks; 8 sessions; 2 hours per session; Home practice: daily; 15 minutes	Effects on opioid use: Reduced desire for opioids at posttreatment; 63% reduction in opioid use disorder in MORE vs 32% in control post-treatment Effects on chronic pain: 10% Reduced pain; 22% Reduced interference	Reduced sympathetic stress; Reduced neurological stress symptoms; Increased nonreactivity	70/88 completed treatment; 52 completed 3-month follow-up	No significant difference in perceived treatment credibility between groups	Manualized protocol; fidelity monitoring via session recordings; daily home practice; mindful breathing before opioid dosing; matched active control for social support
Wiest, 2015	Randomized controlled trial	May 1, 2011 February 29, 2012	Portland, Oregon, United States	N=51 opioid dependent adults receiving methadone maintenance treatment ≥90 days with chronic neurocathartic pain ≥6 months and pain intensity ≥4/10 on NRS; mean age 40; 53% female	High psychosocial marginalization; Suggestive-clinical anxiety (HADS)	Numeric: Rating Scale (NRS)	DSM-IV-TR	Methadone	Outpatient methadone treatment center	Swedish massage therapy	Individual; In-person; 8 weeks; 8 sessions; 50 minutes per session	Effects on chronic pain: ≥2 Mean pain point reduction at Week 8	No significant changes in anxiety or depression (HADS); improved Patient Global Impression of Change (PGIC) at Weeks 4 and 8 but effect not sustained at Week 12	85% completion in treatment group; 75% completion rate in control group	Improved PGIC scores at Weeks 4 and 8; Participants reported satisfaction; Perceived worsening at Week 12 attributed to termination of massage; No adverse events	Participant belief in ability to be pain-free (self-efficacy) associated with greater pain reduction; standardized protocol, in-clinic delivery integrated with OAT
Nguyen, 2025	Non randomized; Prospective; Longitudinal; Observational; Study	February 2020 – March 2022	Vancouver, British Columbia, Canada	N=35; n=14 female; n=19 male; n=2 transgender/non binary	Anxiety 40%; Axis 1=6 17%; Depression 57%; PTSD 49%	PEG (Pain, Enjoyment of life, General activity) Scale for Primary Outcome; PCS (Pain Catastrophizing Scale); Pain Self-Efficacy Questionnaire for	Diagnosed	N/A	N/A	MyoActivation	Individual; median 4 weeks; median 4 sessions	Effects on opioid use: 33% participants self-reported using less unregulated substance use; 37% self-reported using less unregulated substance use for the pain management Effects on chronic pain: 32% reduction in PEG score; 1617% reduction in PCS score; 35–36% improvement in PSEQ score	N/A	N/A	Reported increased hope, energy, and mood	Interdisciplinary availability (physiotherapy & counseling); Free access for service; Trust-building

						Secondary Outcome											
Garland, 2022	Interviewer blinded Randomized Clinical Trial (RCT)	January 2016 – January 2020	Salt Lake City, Utah, United States	N=250; n=159 female; n=91 male	MORE group: Major Depressive Disorder 67.4%; Generalized Anxiety Disorder 19.4%; PTSD 16.3%; Supportive psychotherapy group: Major Depressive Disorder 69.4%; Generalized Anxiety Disorder 19.8%; PTSD 13.2%	Brief Pain Inventory (BPI)	COMM-29; Drug Misuse Index (DMI); Addiction Behaviors Checklist; Urine toxicology screening	Oxycodone; Hydrocodone; Tramadol; Morphine; Buprenorphine; Methadone	Primary care outpatient clinics	Mindfulness-Oriented Recovery Enhancement (MORE)	Group: In-person; 8 weeks; 8 sessions; 2 hours per session; Home practice: daily; 15 minutes	Effects on opioid use: 45% at 9-month follow-up no longer misuse opioids compared to 24.4% of control group; more than 50% dose reduction was observed in 35.5% of group compared to 15.9% of control; greater reduction of craving Effects on chronic pain: Significant reduction in mean BPI pain severity score compared to control	Lower mean emotional distress score (DASS) compared to control	81.2% completed minimum intervention dose (≥4 sessions); 36.8% discontinued by 9 months	No significant difference in perceived treatment credibility between groups	(Unlike outpatient addiction specialty care that primarily focuses on treating OUD symptoms; MORE intervention was delivered in a primary care setting and simultaneously addressed pain and addictive behavior	
Clinical Trial (anonymous), 2020	Interventional clinical trial	March 2021 – Nov 2021	Boston, Massachusetts, United States	Mean age 48.5; n=12 female; n=8 male		Brief Pain Inventory (BPI)		Methadone; Buprenorphine	Methadone clinic/MOUD treatment setting	Yoga	In-person; 8 weeks	N/A	N/A	65% retention rate	N/A	N/A	
Schuman-Olivier, 2023	Pilot study	December 2018 – July 2019	Cambridge, Massachusetts, United States	N=18; mean age 47.4; n=5 female; n=13 male	PTSD 77.8%; MDD 77.8%; GAD 72.2%; Bipolar 22.2%; Panic disorder 27.8%; Social anxiety disorder 22.2%; Alcohol use disorder 44.4%; Cannabis use disorder 22.2%; Stimulant use disorder 38.9%; Sedative use disorder 5.6%; Tobacco use disorder 88.9%	PROMIS-Pain Interference	DSM-5	Buprenorphine; Naloxone	Outpatient primary care clinic	Mindful Recovery for OUD and Chronic Conditions (M-ROCC)	Group: in-person; 24 weeks	Effects on chronic pain: Improved PROMIS-Pain scores; Reduction in pain interference	Decreased experiential avoidance (BEAQ); Increased mindfulness (FFMQ); Increased interoceptive awareness (MAIA); Increased self-compassion increased (SCRS); Decreased PROMIS-Anxiety scores among participants with comorbid anxiety	72% retention rate	12/12 Found use for stress/anxiety management; 7/12 Found use for reducing pain catastrophizing/rumination	Reported facilitators were mainly perceived usefulness of mindfulness skills for stress/anxiety and pain-related thinking	
Lent, 2025	Observational study	March 2023 – April 2023	Philadelphia, Pennsylvania, United States	N=47 adults with OUD and chronic pain on buprenorphine; mean age 42.3; n=22 female; n=25 male; n=34 White; n=12 Black; n=1 Asian	Depression 27.7%; Anxiety 25.5%	Brief Pain Inventory (BPI); Pain Self-Efficacy Questionnaire Short Form (PSEQ-2)	Diagnosed; on Buprenorphine treatment	Buprenorphine; Naloxone	Outpatient	Medical cannabis	Individual; 3 months	Effects on chronic pain: Mean 0.82 point reduction in BPI Pain severity; Mean 1.77 point reduction in BPI Pain interference; Mean 0.85 point increase in pain self-efficacy (PSEQ-2)	Significant improvements in 7/8 SF-36 quality of life domains including: vitality, social functioning, and role emotional; Sleep score improved from mean 10.95 to mean 8.80 (Pittsburgh Sleep Quality Index PSQI)	85% completed the 3-month follow-up	N/A	Participants were interested in initiating medical cannabis and had a physician recommendation for MC for OUD (facilitator); study offered discounted dispensary product (participant compensation in kind); likely facilitated participation	
Lent, 2025	Qualitative study	February 2024 – September 2024	Pennsylvania, United States	N=10 interviewed after 12 months of medical cannabis; median age 44.5 years; n=6 male; n=4 female; n=1 Hispanic; n=5 unemployed	N/A	Brief Pain Inventory Short Form (BPI-SF); Self-reported	N/A	Buprenorphine; Naloxome	Outpatient	Medical cannabis	Individual; 12 months	Effects on opioid use: Reduced cravings; reduced likelihood of relapse Effects on chronic pain: Decreased self-reported pain; Improved self-reported physical functioning	Qualitative self-reports (no formal scale used): Improved sleep; Improved mood; Reduced anxiety/stress; Improved emotional regulation; Improved quality of life and functioning	N/A	Perceived benefits in pain relief, cravings/relapse prevention, sleep, and mood; Concerns in side effects and cost	Perceived pain relief; improved sleep; reduced cravings; reduced relapse risk; viewing medical cannabis as “safer” than street supply; preference for “natural/plant” option; ability to use medical cannabis as an alternative coping tool	
Faraj, 2021	Pilot study	Oct 8, 2018 – Sept 20, 2019	Detroit, Michigan, United States	N=15 methadone maintenance treatment (MMT) patients with OUD and chronic pain; n=11 female	N/A	Brief Pain Inventory (BPI); Visual Analog Scale (VAS)	N/A	Methadone	Outpatient MMT clinic	Virtual Reality Meditative Intervention (VRMI)	Individual; Virtual; 12 weeks	N/A	Visual Analog Scale (VAS) (0–10) Pain, opioid craving, anxiety, and depression significantly decreased after session: pain 6.6 ± 2.4, craving 5.2 ± 1.3, anxiety 8.2 ± 2.6, anger 3.8 ± 0.8, depression 4.0 ± 1.13; Beck Depression Inventory-II (BDI-II) 12.5 ± 10.1; State-Trait Anxiety Inventory (STAI) 49.3 ± 2.7; Distress Tolerance Scale (DTS) 58.7 ± 11.1; Perceived Stress Scale (PSS) 23.2 ± 6.2; Difficulties in Emotion Regulation Scale (DERS) 82.1 ± 10.6; Alcohol and Drug Use Self-Efficacy Scale (ADESE) templted 39.7 ± 19.4, confident 71.5 ± 25.2; Brief Pain Inventory (BPI) 15.2 ± 10.0 and pain functional interference was 20.9 ± 19.5	N/A	N/A	N/A	
Tofighi, 2023	Mixed-methods survey study	September 2021 – January 2022	New York City, United States	N=72 adults in office based opioid treatment (OBOT) with buprenorphine; mean age 50.4 years; n=29 females; 41.7% White; 18.1% Black; 22.2% Latinx; 15.3% Asian; 2.9% other	N/A	N/A	N/A	Buprenorphine	Outpatient	Meditation-based interventions (MBIs)	Group: Individual; Virtual; In-person	N/A	N/A	N/A	Acceptable; Potentially helpful for stress/anxiety/pain/cravings; Not for everyone	Motivations to participate included: improving stress/anxiety, pain, sleep, and cravings; desire for additional coping tools; openness to non-pharmacologic support; some participants noted that having MBIs offered within the clinic and linked to their care could support participation (structure/accountability)	
	Secondary analysis of national treatment program survey data	July 2019 – August 2019	United States	N=13,441 adults entering OUD treatment; chronic pain mean age 36.7; no chronic pain mean age 34.6	N/A	N/A	Self-reported; RAPID survey	Buprenorphine; Methadone	Inpatient; outpatient; counseling	N/A	N/A	N/A	N/A	N/A	Dissatisfaction with pain treatment; Fear of relapse due to uncontrolled pain	N/A	
DiMeola, 2022	Pilot study	February 2019 – February 2019	North Haven, Connecticut, United States	N=452 methadone maintenance treatment (MMT) patients who attended ≥1 pain management group; mean age 38; 35% female	N/A	N/A	Self-reported	Methadone	Outpatient methadone maintenance treatment clinic	Non-pharmacologic pain management intervention (NPMI); coping with Pain group; Wit-Covey; juggling Group	In-person; Group; 50 min-per session	Effects on chronic pain: Decreased pain intensity	Reduced anxiety; Reduced depression; Reduced stress; Increased energy; Increased happiness; Increased compassion in 2/3 groups; Compassion not significant different post-session in Wit-Covey group	N/A	Practical built-in facilitator; groups were integrated into MMT and could count toward required counseling attendance (low barrier structurally)		

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Table S2. Study Design and Evidence Characteristics of Included Published Studies (n = 33). Summary of sample size ranges and pain-, opioid-, and treatment-related findings stratified by study design.

Study Type	Sample Size Range	Pain-related findings	Opioid-related findings	Treatment-related findings
Cross-Sectional Studies (n = 2) ^{1,12}	N = 71–293	Chronic pain was common among opioid-treated samples, with the majority reporting at least moderate recent pain; perceived efficacy of nonconventional pain treatments was modest overall but higher among patients with chronic pain ¹ . Favorable beliefs about yoga specifically for pain management were also reported ¹² .	Neither study measured a direct effect of CAM on opioid-use outcomes; both instead assessed interest in and acceptability of CAM among patients already receiving methadone or buprenorphine for OUD ^{1,12} .	High interest in pain treatment (62%) ¹ and high willingness to try yoga if offered at the clinic (mean 74.3/100), particularly among those with prior yoga experience ¹² . Barriers: cost, limited class availability, physical restrictions ¹² .
Randomized Controlled Trials (n = 17) ^{3,5-8,11,13,15-17,19-23,25,26}	N = 20–372	Most Mindfulness-Oriented Recovery Enhancement (MORE) trials reported significant reductions in Brief Pain Inventory (BPI) severity and/or interference ^{7,8,17,20-22,25} . Mindful Awareness in Body-Oriented Therapy also reduced pain severity and activity interference ¹¹ ; hatha yoga reduced pain intensity/interference among high attenders ¹⁶ ; an integrated Acceptance and Commitment Therapy/Mindfulness-Based Relapse Prevention program reduced pain interference and intensity ¹⁵ ; and massage therapy produced a ≥2–point pain reduction by Week 8²³.	Reductions in opioid craving and/or misuse were reported across most MORE trials, including a 20.7% opioid dose reduction ⁷ , improved methadone adherence and reduced drug use ⁸ , ~60% reduction in illicit drug use with lower craving scores ¹³ , up to 68% less severe craving ¹⁷ , reduced craving and cue-reactivity ^{19,21} , decreased misuse ^{20,22} , and roughly 45% no longer meeting misuse criteria at 9 months vs. 24.4% of control ²⁵ . Related secondary MORE analyses linked increased interoceptive awareness ³ and mindfulness-induced self-transcendence ⁶ to reduced opioid misuse, and improved emotion regulation with lower craving at follow-up ⁵ . In the integrated ACT/MBRP trial, 50% of participants fell below the COMM misuse cutoff vs. 10% of control ¹⁵ . Opioid-use effects were not separately reported for hatha yoga ¹⁶ , massage ²³ , or the unpublished/anonymized yoga trial ²⁶ .	Retention was generally moderate-to-high across MORE/mindfulness trials (71–93%) ^{7,8,17,20-22,25} and ACT/yoga trials (78–90%) ^{15,16,23} ; the anonymized yoga trial reported 65% retention with no further outcome data available ²⁶ . Common facilitators included therapist supervision, manualized protocols, matched-contact-time controls, and integration into existing OAT or VA care ^{7,8,17,25} ; barriers included travel burden, scheduling conflicts, and hesitancy toward behavioral therapy ^{15,16} .

Pilot / Feasibility Studies (non-randomized) (n = 4) ^{2,27,30,33}	N = 15–452	Virtual-reality meditation produced significant pre–post decreases in pain ³⁰ ; non-pharmacologic pain-management groups decreased pain intensity ³³ ; and a mindful recovery program improved PROMIS pain-interference scores ²⁷ .	Virtual-reality meditation was accompanied by decreased opioid craving alongside pain reductions ³⁰ ; opioid-use effects were not directly reported for the remaining pilots ^{2,27,33} .	Feasibility/acceptability was rated favorably for virtual Tai Chi (3.5–4/5) ² and the mindful recovery program (72% retention) ²⁷ . Retention varied more widely elsewhere — virtual Tai Chi had high attrition (84.3%; 100% in the inpatient arm) ² , while clinic-integrated groups that counted toward required counseling attendance had a low structural barrier to participation ³³ .
Qualitative Studies (n = 3) ^{10,14,29}	N = 10–21	Participants described improved pain acceptance and coping following an 8-week mindfulness-based cognitive therapy program ¹⁰ , and reduced pain following opioid-dose reduction ¹⁴ or with medical cannabis use ²⁹ .	A minority of participants reported reduced opioid craving and improved withdrawal coping ¹⁰ ; most participants in another sample reported reduced opioid intake following dose reduction ¹⁴ ; and medical cannabis users reported reduced cravings and relapse likelihood ²⁹ .	Common facilitators included peer support, positive expectations, and prior exposure to non-pharmacologic therapies ^{10,14} ; common barriers included cost, insurance limits, and access/timing ^{10,14} . The mindfulness-based program had very low completion (1 of 21 completed all sessions) ¹⁰ .
Mixed-Methods Studies (n = 2) ^{4,31}	N = 16–72	A single 10-minute smartphone-based music session produced a significant decrease in pain catastrophizing ⁴ .	Opioid-use outcomes were not quantitatively reported for either study; participants receiving buprenorphine viewed meditation-based interventions as potentially helpful for cravings ³¹ .	Both interventions were rated highly acceptable the music app was seen as low-cost and easy to integrate into routines ⁴ , and meditation-based interventions were seen as helpful for stress, anxiety, pain, and cravings, though “not for everyone” ³¹ .
Cohort / Observational Studies (n = 3) ^{18,24,28}	N = 35–150	Osteopathic manual medicine combined with qigong in an inpatient, 12-step-based program produced large reductions in BPI severity (4.46→1.63) and interference (4.88→1.39) ¹⁸ ; myoActivation produced a 32% reduction in PEG score ²⁴ ; and medical cannabis use over 3 months produced modest reductions in BPI severity/interference with increased pain self-efficacy ²⁸ .	33–37% of myoActivation participants self-reported reduced unregulated substance use ²⁴ ; medical cannabis use was associated with reduced cravings and relapse likelihood ²⁸ . Opioid-use outcomes were not separately reported for the inpatient osteopathic/qigong program ¹⁸ .	The inpatient program had low dropout (8%) ¹⁸ ; 85% of medical cannabis users completed the 3-month follow-up ²⁸ . Facilitators included integrated pain/SUD treatment models ¹⁸ , and physician recommendation with discounted product access for cannabis ²⁸ .
Program Evaluation / Survey Studies (n = 2) ^{9,32}	N = 40–13,441	Massage, acupuncture, and chiropractic therapy on a rural American Indian reservation were associated with improved self-reported physical health scores (5.32→8.38) ⁹ ; a national treatment-program survey did not report quantitative pain outcomes but found high rates of co-occurring	40% of participants reported increased confidence in sobriety and 25% reported taking fewer prescription medications ⁹ .	High satisfaction (70% found CAM helpful) was tied to a culturally centered, community-based design ⁹ ; patients with co-occurring chronic pain in the national survey reported greater dissatisfaction with pain treatment and fear of relapse due to uncontrolled pain, highlighting an unmet need nationally ³² .

		chronic pain among patients entering OUD treatment ³² .		
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Note. Findings are synthesized by study design; individual studies are cited selectively to illustrate representative findings. Studies reporting similar or overlapping findings are summarized collectively.

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Table S3. Summary of ongoing and unpublished studies identified during the search process. The table includes registry information, study population, intervention type, outcomes, expected completion date, and study status.

Title	Registry ID	Population	Interventions	Outcomes	Expected Completion Date	Notes
Integrative Treatment for Achieving Holistic Recovery From Comorbid Chronic Pain and Opioid Use Disorder	NIH Reporter: 11161508 https://reporter.nih.gov/project-details/11161508	Adults with comorbid chronic pain and OUD	Multimodal integrative/CAM treatment program	Pain outcomes, OUD outcomes, holistic recovery	1-July-2026	Ongoing
Optimizing Chronic Pain Care With Mindfulness and Chronic Pain Management Visits	NCT06387290 https://clinicaltrials.gov/study/NCT06387290	N = 300 adults with chronic pain and OUD	Mindfulness-based intervention + chronic pain management visits	Opioid misuse measure, Pain outcomes, Change in Quality of life, Opioid Dosing & Craving, PTSD, Depression, Anxiety	1-May-2028	Ongoing
Implementation and Effectiveness of Mindfulness Oriented Recovery Enhancement as an Adjunct to Methadone Treatment for Opioid Use Disorder and Chronic Pain	NCT06032559 https://clinicaltrials.gov/study/NCT06032559	N = 450 adults with chronic pain and in Methadone treatment	MORE (Mindfulness-Oriented Recovery Enhancement) + methadone	Days of Drug Use, Chronic Pain	31-July-2027	Ongoing
Integrated Treatment for Veterans With Co-Occurring Chronic Pain and Opioid Use Disorder	NCT04648228 https://clinicaltrials.gov/study/NCT04648228	N = 157 Veterans with co-occurring chronic pain and OUD	Integrated behavioral treatment	Pain Interference, Pain Intensity, Opioid Misuse, Depression, Pain related fear, Alcohol & Other drug use, Social Role functioning, Physical Functioning, Psychological impact of illness, PTSD, Generalized Anxiety, Sleep	31-August-2026	Ongoing

				disturbance, Pain Catastrophizing, Patient Global Impact of Change		
Randomized Trial of Yoga and Physical Therapy Onsite at Opioid Treatment Programs for Patients With Chronic Back Pain and Opioid Use Disorder	NCT05492825 https://clinicaltrials.gov/study/NCT05492825	N = 180 Adults with chronic back pain and OUD	Yoga and physical therapy onsite at opioid treatment programs	Change in Pain Intensity, Illicit Opioid Use, Health Related Quality of Life, Pain Catastrophizing, Opioid Craving, Physical Activity, Global Impression of Change, Depression, Anxiety, Physical Function, Back Pain related disability, Mindfulness, Retention	2-November-2026	Ongoing
The Acupuncture for Pain, Opioid Use Disorder and Mood (AcuPOM) Study: A Pilot TrialA1 - Anonymous.	NCT06543355 https://clinicaltrials.gov/study/NCT06543355	N = 17 with chronic pain and OUD, receiving Methadone through an Opioid Treatment Program (OTP)	Modified Battlefield Acupuncture + National Acupuncture Detoxification Association (BFA + NADA)	Feasibility, Adherence, Acceptability/Satisfaction	4-June-2025	Ongoing
Assessing the Efficacy of Self-Driven Repetitive Artmaking Practice on Pain and Mood States for Patients With Chronic Pain, Opioid Use Disorder, and Opioid MisuseA1 - Anonymous.	NCT06554431 https://clinicaltrials.gov/study/NCT06554431	N = 31 with chronic pain with an OUD diagnosis or opioid misuse	Art Therapy with 3 Take-home art kits	Feasibility, Acceptability, Anxiety, Depression, Level of Pain, Pain Catastrophizing, Social connectivity, Non-prescribed Opioid Use, Level of Intoxication	5-January-2025	Ongoing

Table S4. CAM modalities from Extracted Studies n = 33. Classification of CAM modalities identified across the included studies, with representative interventions and corresponding frequencies. Studies reporting multiple CAM modalities were counted in each applicable category.

CAM Category	Example Modalities Included	Count
Mindfulness & Meditation-Based Interventions	MORE, mindfulness meditation, MBCT, mindfulness-based relapse prevention, M-ROCC, MBIs, MABT, VR-guided meditation	16
Yoga / Tai Chi / Qigong / Movement-Based Mind–Body Therapies	Yoga, Hatha yoga, Tai Chi Easy, Qigong, internal/external qigong, stretching	7
Manual & Physical Therapies	Massage therapy, Swedish massage, chiropractic therapy, osteopathic manual medicine, PT, myoActivation	6
Psychological / Behavioral CAM-Integrated Therapies	Acceptance and Commitment Therapy (ACT), coping with pain groups, supportive psychotherapy comparators	4
Acupuncture & Needling-Based Therapies	Acupuncture, myoActivation needling	4
Music / Sound-Based Interventions	Music smartphone app intervention, generative instrumental music, participant-selected tracks	1
Virtual / Technology-Assisted CAM Interventions	VR meditative intervention, virtual Tai Chi Easy, Wii-Covery	2
Cannabis-Based Interventions	Medical cannabis (THC/CBD)	2
Spiritual / Religious Practices	Prayer	1
Natural Products / Herbal Therapies	Herbs	1
Hypnosis-Based Interventions	Hypnosis	1

Table S5. Overview of the most frequently reported pain assessment tools, what they measure, and the main pain-related findings across included studies.

Most common pain SCALES reported	SCALE definition	Findings
Brief Pain Inventory (BPI)	Measures pain severity and the extent to which pain interferes with daily activities, mood, sleep, work, relationships, and overall functioning.	Positive findings - Reduced pain severity and/or interference^{12,18,20,25} - Improvements maintained at follow-up²⁰ Reduced average pain scores¹⁸ Mixed findings - Improvement on EMA pain ratings but not BPI⁷ Qualitative findings - Reduced pain and improved physical functioning²⁶ Overall trend: Most studies reported reductions in pain severity and/or pain interference following CAM interventions.
Self-reported pain measures (self-report scales, pain ratings, surveys)	Patient personally and describes chronic pain without scale using lifetime experience and continued experience of chronic pain at the time of the study; Qualitative	Positive findings - Mean self-reported health score increased; Not a direct pain measure but overall physical health rating⁸ Mixed findings - No Mixed findings Qualitative findings - Decrease in self-reported pain intensity^{14,26,27} Overall trend: Many studies with self-identified chronic pain does not measure pain outcome after CAM
Visual Analog Scale (VAS) / Numeric Rating Scale (NRS)	Measures self-reported pain intensity, usually on a 0–10 scale, where 0 = no pain and 10 = worst pain. It captures short-term pain severity before and/or after treatment.	Positive findings: - Reduced pain intensity after CAM sessions/interventions^{15,16,18,28} - Yoga showed immediate reductions in pain after class compared to control¹⁶ - VR meditation significantly reduced post-session pain scores²⁸ Mixed findings: - Massage showed some pain reduction, but effects were not sustained for all participants²³ Qualitative findings:

		- Improved pain acceptance and coping reported in mindfulness-based therapy ⁹
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Table S6. All Scales Mentioned Across Extracted Studies n = 33. Summary of all assessment tools reported across the included studies, including a brief description of the outcomes measured by each instrument.

Scale/Measure	What it Measures
Brief Pain Inventory (BPI)	Measures pain severity and the extent to which pain interferes with daily activities, mood, sleep, work, relationships, and overall functioning.
Visual Analog Scale (VAS)	Measures pain intensity by asking participants to rate their pain along a continuous line, typically from "no pain" to "worst imaginable pain."
Numeric Rating Scale (NRS)	Measures pain intensity using a numerical scale, most commonly 0–10, where higher scores indicate greater pain.
Ecological Momentary Assessment (EMA)	Measures real-time pain experiences and symptoms throughout daily life using repeated assessments, reducing recall bias.
PROMIS Pain Interference	Measures how much pain interferes with physical, emotional, social, and daily functioning.
PROMIS Pain Behavior	Measures observable expressions of pain, such as verbal complaints, guarding, facial expressions, and activity changes.
Pain Catastrophizing Scale (PCS)	Measures negative thoughts and emotions related to pain, including rumination, magnification, and feelings of helplessness.
PEG Scale	Measures three domains: Pain intensity, interference with Enjoyment of life, and interference with General activity.
Pain Self-Efficacy Questionnaire (PSEQ)	Measures a person's confidence in performing daily activities and functioning despite pain.
Short-Form McGill Pain Questionnaire-2 (SF-MPQ-2)	Measures multiple dimensions of pain, including sensory, affective, neuropathic, and intermittent pain qualities.
West Haven-Yale Multidimensional Pain Inventory (WHYMPI/MPI)	Measures pain severity, functional impairment, emotional distress, and social responses to pain.