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Integrative Health within Intensive Interdisciplinary Pain Treatment for Pediatric Patients with Chronic Pain

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Chronic pain is a significant health problem affecting more than 20 percent of the pediatric population worldwide (Chambers et al., 2024). An intensive interdisciplinary pain treatment (IIPT) approach consisting of interventions targeting the interaction among biological, psychological, social, and environmental factors contributing to and maintaining chronic pain is often required for patients who are severely disabled by pain and do not improve with outpatient-level care (Gatchel et al., 2007; Hechler et al., 2015; Simons et al., 2013). The comprehensive treatment approach is delivered by three or more specialties working in a concurrent, coordinated manner, in either a day program or inpatient format (Hechler et al., 2015; Ospina & Harstall, 2002). Programs typically include behavioral medicine/psychological intervention, pain management, physical and/or occupational therapy, with some programs increasingly offering additional holistic, non-pharmacological interventions, such as integrative health (Hechler et al., 2015).

Integrative health reflects the evolution of healthcare from a predominantly disease-centered model toward an evidence-informed, whole person approach that addresses physical, emotional, mental, and spiritual wellbeing (Jonas & Rosenbaum, 2021; National Center for Complementary and Integrative Health, 2021a; Rakel & Weil, 2018). Integrative health is the intentional, coordinated integration of evidence-informed complementary approaches with

conventional care to support health and wellbeing (National Center for Complementary and Integrative Health, 2021b). This approach consists of multiple, interconnected goals supported through diverse interventions, ranging from hands-on modalities, including massage and acupuncture/acupressure, to mind-body practices such as guided imagery (Lin et al., 2005), with some programs offering lifestyle medicine (Jonas & Rosenbaum, 2021). Mindfulness-based practices are often incorporated, including meditation, gratitude exercises, reflective writing, mindful movement, nature-based activities, and expressive arts (Dossey, 1997; National Center for Complementary and Integrative Health, 2021a; Ulrich & Gilpin, 2003). As evidence supporting effectiveness steadily grows, use of complementary approaches alongside conventional medicine has increased (Krist et al., 2023; Nahin et al., 2024; Pitetti et al., 2001).

These complementary interventions, as part of an interdisciplinary treatment approach, have the potential to enhance management of pediatric chronic pain. While research examining outcomes within pediatric pain populations is emerging, these interventions have been found to be feasible and associated with decreased pain frequency and pain interference in pediatric patients with serious illnesses, including a subset with pain (21% of the sample; Raybin et al., 2025). In the adult literature, integrative health approaches have been shown to provide mild to moderate decreases in pain intensity

and frequency, improvements in physical functioning, increased overall functioning, and enhancements in quality of life (Dyer et al., 2022; Garland et al., 2020; Giannitrapani et al., 2019; Skelly et al., 2020; Tick et al., 2018). As research in pediatric pain populations continues to develop, integrative health approaches for pediatric patients with chronic pain attending an IIPT may be particularly beneficial. Thus, the aim of this article is to provide a service description of how the integrative health team is embedded within an inpatient pediatric IIPT program.

Integrative Health Reflects Whole Person Care

Integrative health moves beyond traditional biomedical models, applying a whole person care perspective in the treatment of chronic pain (Krist et al., 2023), beginning with the understanding that health cannot be reduced to symptoms alone, and that healing often emerges through connection rather than solely through intervention (Bokhour et al., 2022). Integrative health includes non-pharmacological interventions that are person-centered, relationship- and strengths-based, and informed by empirical evidence to support optimal function, health, and healing (Kreitzer & Koithan, 2025; Vohra et al., 2012). Core principles of integrative health include recognition of the body's innate capacity for healing and the role of nature's restorative properties in supporting wellbeing (Burt-Imira et al., 2023; Kreitzer & Koithan, 2025).

Interdisciplinary clinicians within IIPT programs share substantial overlap in goals (e.g., enhancing coping and reengagement with age-specific activities), interventions (e.g., guided imagery and progressive muscle relaxation), and target outcomes (e.g., reducing functional disability and pain severity). Integrative health expands the range of evidence-informed, non-pharmacological interventions to holistically address chronic pain that may not be fully resolved through conventional medical treatments alone (Tick et al., 2018).

Integrative Health within an Inpatient Pediatric IIPT Program

The Functional Independence Restoration (FIRST) Program at Cincinnati Children's Hospital and Medical Center is an inpatient IIPT with admission length individualized for patient need (range 3 to 9 weeks). The program serves patients ages 10 to 17 years. Most common primary pain diagnoses include amplified musculoskeletal pain syndrome, joint hypermobility/hypermobility Ehlers-Danlos syndrome, complex regional pain syndrome, fibromyalgia, headache, and abdominal pain (Please see Williams et al., 2020 for a full program description).

Integrative health team members function within the FIRST program and include registered nurses (RNs) and licensed massage therapists (LMTs) with advanced degrees in mental health, theology, and integrative health nursing. Team members have advanced training and certifications in Ayurvedic practices, traditional Hawaiian medicine, traditional Chinese medicine, and energy-based therapies. Complementary approaches utilized by the integrative health team to achieve specific goals in the FIRST program are listed in Table 1. These interventions were chosen based on currently available research in pediatric acute and chronic pain suggesting decreases in pain intensity and anxiety, and improvement in mood and relaxation scores (Cotton et al., 2014; Kaul et al., 2025; Kempert, 2020; Misra et al., 2019; Suresh et al., 2008; Vohra et al., 2021).

Table 1: Service description of the integrative health team within the intensive interdisciplinary pain treatment (IIPT) of the Functional Independence Restoration (FIRST) program: Overall goals, interventions, and short-term and long-term outcomes

Goals of Integrative Health Sessions	Interventions Utilized to Achieve Goals	Short-Term Target Outcomes	Long-Term Target Outcomes
Provide patient & family education on holistic approaches that enhance the body's innate healing abilities Develop a coping plan in collaboration with the patient to enhance & promote health and wellbeing across the lifespan Enhance pain-related coping skills across activities of daily living Reduce functional limitations associated with pain by promoting engagement in the program model & supporting patients' ability to achieve desired health outcomes Promote functional independence & mobility by improving muscle and joint health through massage, gentle touch, stretching Reduce the experience of somatic distress, hypersensitivity, & overstimulation Promote relaxation & stress management Reduce autonomic nervous system activation/anxiety Provide holistic support to the patient & family Promote development of lifelong health-promoting skills	Relaxation breathing practices Guided imagery Clinical aromatherapy Massage Therapy Clinical reflexology Acupressure Energy therapy (i.e., Reiki; Healing Touch) Craniosacral therapy Yoga Mindful practices such as journaling, meditation, gratitude, nature-based activities, expressive arts and mindful movement	Enhanced self-awareness of health-supporting behaviors Increased patient engagement in functional goals Improved utilization of learned coping skills Reduction in pain-related distress Improvement in musculoskeletal symptoms Decrease in hypersensitivity to touch Improved sleep Reduced anxiety Increased locus of control – patients learn wellness strategies they can easily use independently Increased awareness of the availability of safe, low/no cost, self-administered, nonpharmacologic intervention for supporting health and wellbeing	Return to pre-morbid functional status Reduction in pain intensity and/or frequency Independence in utilizing coping skills Reengagement with social activities (maintain connections with family and friends; return to school) Positive self-esteem and self-compassion Increased capacity to respond to stressful situations Increased emotional resilience Improved focus and concentration Acquisition of lifelong skills to enhance health Increased joy in life

Within the IIPT model of care, the integrative health team adopts a functional approach to pain management, recognizing that chronic pain is often a nervous system-mediated experience rather than a direct indicator of tissue damage (Raja et al., 2020). Instead of prioritizing symptom reduction, this model emphasizes restoring participation in daily life, including movement, emotional engagement, and social connection, with progress measured through increasing capacity and adaptability rather than changes in pain intensity alone (Hechler et al., 2015). Mindfulness-based integrative health approaches can facilitate the downregulation of sympathetic arousal by building capacity to be in the present moment, while remaining open, curious, and compassionate towards oneself, thereby enhancing interoceptive awareness, promoting regulation during activation, and helping patients approach sensations with curiosity rather than fear (Kabat-Zinn, 2013; Price & Hooven, 2018). Integrative health clinicians conduct a holistic assessment during the first week of the program, exploring the patient's needs, preferences, support systems, previous experiences with integrative approaches, current coping/relaxation strategies, hobbies/interests, and spiritual practices. Factors that may impede functioning and readiness to engage with integrative approaches are evaluated. Rapport is prioritized throughout assessment and treatment, as a strong therapeutic relationship enhances engagement (Eccleston et al., 2014). During hands-on assessments, integrative health clinicians observe patient reactions to touch, such as guarding, anxiety, or avoidance behaviors. Muscle tone and compensatory movement strategies are also evaluated. The assessment culminates in collaboratively establishing integrative health-specific goals aligned with the patient's broader functional objectives within IIPT.

Patients in the FIRST program participate in two 45-minute integrative health sessions per week. These are structured yet adaptable for each patient and are provided in the patient's hospital room or outdoors in hospital garden spaces. Each session includes didactic and experiential education on complementary health practices. Early sessions are typically clinician-directed and may include massage, breathwork, and mindfulness practices. Over time,

patients develop preferences for specific practices and often guide session focus. See Table 1 for a summary of short- and long-term target outcomes for sessions.

Clinical decision-making is informed by ongoing assessment of physiological arousal, emotional readiness, sensory sensitivity, and cognitive engagement. Interventions are adjusted accordingly, with language emphasizing safety, capability, and curiosity rather than symptom severity. Clinicians avoid reinforcing pain-focused narratives and instead encourage exploration of bodily sensations and emotional experience with questions that promote self-reflection (Table 2).

Table 2. Sample questions utilized by the integrative health team within the intensive interdisciplinary pain treatment (IIPT) of the Functional Independence Restoration (FIRST) program to promote self-reflection

<i>Domain</i>	<i>Reflective Questions</i>
Patient priorities	What matters most to you?
Grounding	What would help you feel more grounded right now?
Physical awareness	What part of your body needs additional support today?
	Where do you feel the most at ease in your body today?
	Is there anywhere in your body that feels neutral or okay right now?
Activity preference	Would you like to engage in an activity that is more active or more restful right now?
Support needs	What kind of support sounds most helpful in this moment?
Positive coping	What has felt helpful, even if just a small amount?

Selection of interventions is informed by clinician expertise, patient preference, safety considerations, feasibility within the inpatient setting, and alignment with functional goals of the IIPT model. Patients are invited to engage in therapies they find meaningful or interesting, fostering autonomy and intrinsic motivation. Clinicians adjust pacing, modality selection, and intensity in response to observed cues like breath patterns, muscle tension, verbal expression, and attentional capacity. Positive

experiences are built upon, while modalities that are less effective or enjoyable are adapted or replaced. The focus is on discovering techniques the patient can confidently integrate into their daily life and carry forward after discharge. Practical considerations for incorporating an integrative health approach into IIPT programs are listed in Table 3.

Table 3. Practical considerations for implementing integrative health within an interdisciplinary intensive pain treatment (IIPT) program

Implementation Domain	Practical Considerations
Staff Training	Ensure clinicians are credentialed and experienced in selected modalities.
Modality Selection	Consider contraindications, phobias, and safety considerations (e.g., needle phobia precluding acupuncture; allergy assessment when utilizing clinical aromatherapy).
Infrastructure	Allocate private, therapeutic spaces for care delivery. Provide outdoor sessions when feasible.
Funding	At Cincinnati Children's Hospital and Medical Center (CCHMC), organizational commitment is reflected in the use of operational funds to support integrative health clinical roles. These positions are embedded within a non-billing division that also includes media specialists, child life assistants, board-certified music therapists, certified therapeutic recreation specialists, art therapists, and certified child life specialists. Additional funding for therapeutic materials, education, and training is primarily supported through philanthropy.
Concurrent Use of Interventions	Sessions may incorporate multiple modalities. For example, a guided imagery practice may be used at the start of a session to help a patient transition into massage therapy, particularly when apprehension is present. Integrative health sessions may combine massage, reflexology, acupressure, and clinical aromatherapy to provide individualized support.

Team Meetings and Communication	Weekly team meetings and spontaneous interdisciplinary collaboration support open communication, facilitate problem-solving, and allow treatment approaches to be modified to meet the unique needs of individual patients. Integrative health clinicians contribute to modifying overarching patient care plans.
Functional Approach to Chronic Pain Management	Provide staff education regarding the distinction between a functional approach to chronic pain management (e.g., return to physical and social activities) and symptom-focused management (e.g., decreasing pain).

Overall, FIRST program data indicates that the majority of patients demonstrated significant improvements in functional ability, with most treatment-related gains maintained across the eight-month observation period (Williams et al., 2020). Although integrative health-specific outcome data in the FIRST program is limited, consistent qualitative patterns have emerged. Clinicians frequently observe marked improvements in emotional expression, self-regulation, and confidence over the course of the program. Patients demonstrate reduced fear of unpleasant bodily sensations and greater persistence under stress. Families of patients often describe them as more resilient, communicative, and self-directed in managing distress or symptom flares. These observed changes show the meaningful functional and psychosocial gains that patients are able to achieve beyond pain intensity. Formal quantitative data collection is to come in the future.

Conclusion

Intentional, coordinated integration of evidence-informed complementary practices into this pediatric IIPT reveals integrative health as a potential strategy for positively impacting pediatric chronic pain experience and management. The concept of whole person care underpinning integrative health invites clinicians across disciplines to consider ways to cultivate and optimize conditions for health and wellbeing. Research indicates that

even small shifts towards relationship-centered care have meaningful and lasting effects on patients' capacity to navigate pain (Haverfield et al., 2018). Careful assessment, individualized delivery, and alignment with functional goals maximize benefit

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and support continued efforts to refine and optimize integrative health approaches in pediatric chronic pain care.

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References

Bokhour BG, Hyde J, Kligler B, Gelman H, Gaj L, Barker A, et al. From patient outcomes to system change: Evaluating the impact of VHA's implementation of the Whole Health System of Care. *Health Serv Res*. 2022; 57:53-65. doi:10.1111/1475-6773.13938

Burt-Imira K, Carrie H, Clarke PS, Deshpande R, Ekwueme KR, Fernando C, et al. *Cultural misappropriation in integrative health*. Integrative Medicine for the Underserved (IM4US); 2023. Accessed March 2026.
https://im4us.org/page/cultural_whole_person_care_whit_epaper

Chambers CT, Dol J, Tutelman PR, Langley CL, Parker JA, Cormier BT, et al. The prevalence of chronic pain in children and adolescents: A systematic review update and meta-analysis. *Pain*. 2024; 165:2215-2234. doi:10.1097/j.pain.0000000000003267

Cotton S, Luberto CM, Bogenschutz LH, Pelley TJ, Dusek J. Integrative care therapies and pain in hospitalized children and adolescents: A retrospective database review. *J Altern Complement Med*. 2014 Feb;20(2):98-102. doi: 10.1089/acm.2013.0306.

Dossey BM. *Core curriculum for holistic nursing*. Gaithersburg, MD: Aspen Publishers; 1997.

Dyer NL, Surdam J, Dusek JA. A systematic review of practice-based research of complementary and integrative health therapies as provided for pain management in clinical settings: Recommendations for the future and a call to action. *Pain Med*. 2022; 23:189-210. doi:10.1093/pm/pnab151

Eccleston C, Palermo TM, Williams AC, Holley AL, Morley S, Fisher E, et al. Psychological therapies for the management of chronic and recurrent pain in children and adolescents. *Cochrane Database Syst Rev*. 2014; 5:47-87. doi:10.1002/14651858.CD003968.pub4

- Gatchel RJ, Peng YB, Peters ML, Fuchs PN, Turk DC. The biopsychosocial approach to chronic pain: Scientific advances and future directions. *Psychol Bull.* 2007; 133:581-624. doi:10.1037/0033-2909.133.4.581
- Garland EL, Brintz CE, Hanley AW, Roseen EJ, Atchley RM, Gaylord SA, et al. Mind-body therapies for opioid-treated pain: A systematic review and meta-analysis. *JAMA Intern Med.* 2020; 180:91-105. doi:10.1001/jamainternmed.2019.4917
- Giannitrapani KF, Holliday JR, Miake-Lye IM, Hempel S, Taylor SL. Synthesizing the strength of the evidence of complementary and integrative health therapies for pain. *Pain Med.* 2019; 20:1831-1840. doi:10.1093/pm/pnz068
- Haverfield MC, Giannitrapani K, Timko C, Lorenz K. Patient-centered pain management communication from the patient perspective. *J Gen Intern Med.* 2018; 33:1374-1380. doi: 10.1007/s11606-018-4490-y
- Hechler T, Kanstrup M, Holley AL, Simons LE, Wicksell R, Hirschfeld G, et al. Systematic review on intensive interdisciplinary pain treatment of children with chronic pain. *Pediatrics.* 2015; 36:115-127. doi:10.1542/peds.2014-3319
- Jonas WB, Rosenbaum E. The case for whole-person integrative care. *Medicina (Kaunas).* 2021;57(7):677. doi:10.3390/medicina57070677
- Kabat-Zinn J. *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness.* Bantam Books; 2013.
- Kaul I, Busby K, Yeh AM. Integrative medicine consults in a pediatric hospital: A case series. *Explore.* 2025;21(6):103259. doi:10.1016/j.explore.2025.103259
- Kempert H. The use of yoga as a group intervention for pediatric chronic pain rehabilitation: Exploring qualitative and quantitative outcomes. *Int J Yoga.* 2020;13(1): 55–61. doi:10.4103/ijoy.ijoy_13_19
- Kreitzer MJ, Koithan M (eds). *Integrative nursing* (3rd ed.). Oxford University Press. 2025.
- Krist AH, South-Paul J, Meisnere M (eds). *Achieving whole health: A new approach for veterans and the nation.* Washington DC: National Academies Press; 2023. doi:10.17226/26854
- Lin YC, Lee AC, Kemper KJ, Berde CB. Use of complementary and alternative medicine in pediatric pain management services: A survey. *Pain Med.* 2005;6:452-458. doi:10.1111/j.1526-4637.2005.00068.x
- Misra SM, Monico E, Kao G, et al. Addressing pain with inpatient integrative medicine at a large children's hospital. *Clin Pediatr (Phila).* 2019;58(7):738-745. doi:10.1177/0009922819839232.
- Nahin RL, Rhee A, Stussman B. Use of complementary health approaches overall and for pain management by US adults. *JAMA.* 2024; 331:613-615. doi:10.1001/jama.2023.26775
- National Center for Complementary and Integrative Health (NCCIH). *Complementary, alternative, or integrative health: What's in a name?* National Institutes of Health. 2021a. Accessed March 2026. <https://nccih.nih.gov/health/complementary-alternative-or-integrative-health-whats-in-a-name>.
- National Center for Complementary and Integrative Health. *NCCIH strategic plan FY 2021–2025. Mapping the pathway to research on whole person health.* 2021b. Accessed May 2026. <https://nccih.nih.gov/about/nccih-strategic-plan-2021-2025>14, 2026.
- Ospina M, Harstall C. Multidisciplinary pain programs for chronic pain: Evidence from systematic reviews. Alberta, Canada: *Health Technol Assess Alta Herit Found Med Res.* 2002.
- Pitetti R, Singh S, Hornyak D, Garcia SE, Herr S. Complementary and alternative medicine use in children. *Pediatr Emerg Care.* 2001; 17:165-169. doi:10.1097/00006565-200106000-00004
- Price CJ, Hooven C. Interoceptive awareness skills for emotion regulation: Theory and approach of mindful awareness in body-oriented therapy (MABT). *Front Psychol.* 2018; 9:798-810. doi:10.3389/fpsyg.2018.00798
- Raja SN, Carr DB, Cohen M, Finnerup NB, Flor H, Gibson S, et al. The revised International Association for the Study of Pain definition of pain: Concepts, challenges, and compromises. *Pain.* 2020; 161:1976-1984. doi:10.1097/j.pain.0000000000001939
- Rakel D, Weil A. Philosophy of integrative medicine. In: Rakel D, ed. *Integrative Medicine.* 4th ed. Elsevier; 2018:2-11
- Raybin JL, Montgomery K, Janosy N, Mist S, Franklin H, Dieckmann NF, et al. Study of complementary and integrative interventions in pediatric patients with serious illness. *J Pain Symptom Manage.* 2025; 69:515-526. doi:10.1016/j.jpainsymman.2025.02.013

Simons LE, Sieberg CB, Pielech M, Conroy C, Logan DE. What does it take? Comparing intensive rehabilitation to outpatient treatment for children with significant pain-related disability. *J Pediatr Psychol*. 2013; 38:213-223. doi:10.1093/jpepsy/jss109

Skelly AC, Chou R, Dettori JR, Turner JA, Friedly JL, Rundell SD, et al. *Noninvasive nonpharmacological treatment for chronic pain: A systematic review update*. Agency for Healthcare Research and Quality; 2020. Comparative Effectiveness Review No. 227. AHRQ Publication No. 20-EHC009. doi:10.23970/AHRQEPCCER227.

Suresh S, Wang S, Porfyrus S, Kamasinski-Sol R, Steinhorn DM. Massage therapy in outpatient pediatric chronic pain patients: do they facilitate significant reductions in levels of distress, pain, tension, discomfort, and mood alterations? *Paediatr Anaesth*. 2008;18(9):884–887. doi:10.1111/j.1460-9592.2008.02638.x

Tick H, Nielsen A, Pelletier KR, Bonakdar R, Simmons S, Glick R, et al. Evidence-based nonpharmacologic strategies for comprehensive pain care: The Consortium Pain Task Force white paper. *Explore*. 2018;14(3):177-211. doi:10.1016/j.explore.2018.02.001.

Ulrich RS, Gilpin L. Healing arts: Nutrition for the soul. In: Frampton SB, Gilpin L, Charnel PA, eds. *Putting Patients First: Designing and Practicing Patient-Centered Care*. John Wiley & Sons; 2003:117-146.

Vohra S, Punja S, Jou H, Schlegelmilch M, Wilson B, Spavor M, et al. Comparative effectiveness of pediatric integrative medicine: A pragmatic cluster-controlled trial. *Children (Basel)*. 2021;8(4):311. doi:10.3390/children8040311

Vohra S, Surette S, Mittra D, Rosen LD, Gardiner P, Kemper KJ. Pediatric integrative medicine: Pediatrics' newest subspecialty? *BMC Pediatr*. 2012;12:123. doi:10.1186/1471-2431-12-123

Williams S, Homan K, Crowley S, Pruitt DW, Collins AB, Deet ET, et al. The impact of spatial distribution of pain on long-term trajectories for chronic pain outcomes after intensive interdisciplinary pain treatment. *Clin J Pain*. 2020; 36:181-188. doi:10.1097/AJP.0000000000000793