

<b>Diagnosis/Condition:</b>	Pediatrics
<b>Discipline:</b>	Integrated
<b>ICD-10 Codes:</b>	N/A
<b>Origination Date:</b>	2009
<b>Review/Revised Date:</b>	01/2025
<b>Next Review Date:</b>	01/2027

Integrative healthcare (IH) use by children has become of increasing interest as data shows increasing numbers of children seeing IH providers and using IH-related modalities at home<sup>1</sup>.

## IH Use in the Pediatric Population

The use of IH by children varies due to definitions of practitioner type, therapies, and modalities used. A 2024 review suggest that IH usage is increasing globally.<sup>2</sup> The US National Health Information Survey (NHIS)<sup>3</sup> asked selected adult respondents about IH use by children in their households. According to most recent NHIS survey data (2012), approximately 12% of children in the U.S. use some form of IH.<sup>3</sup>

NHIS data found use is greater among:

- Children whose parents used IH
- Adolescents aged 12-17 (14.7%), compared to younger children (9.3%)
- White children (14.9%), compared to Hispanic children (6.1%) and black children (5.5%)
- Children whose parents had higher education levels (more than high school: (15.0%) and higher family income (14.8%)
- Children with chronic health conditions.

NHIS IH Data: Top Modalities

- Natural Products (Nonvitamin, nonmineral dietary supplement): 4.9%
- Chiropractic/Osteopathic manipulative therapy: 3.3%
- Yoga, tai chi, or qi gong: 3.2%
- Deep-breathing exercises: 2.7%
- Homeopathy treatment: 1.8%
- Meditation: 1.6%

NHIS IH Data: Top Conditions

- Back or Neck Pain: 8.9%
- Head or chest cold: 5.1%
- Anxiety or stress: 3.4%
- Attention deficit hyperactivity disorder (ADHD): 2.2%
- Insomnia or trouble sleeping: 1.7%
- Other musculoskeletal disorders: 6.0%

Most pediatric patients who use IH also receive conventional care.<sup>4</sup> Eighty-six (86%) percent of major universities offer one or more IH therapies in their pediatric clinical pain programs and pediatric programs dedicated to integrative medicine are also developing across the United States and Canada.<sup>5</sup>

## **Common Conditions treated with IH**

This list is compiled from the common conditions identified in current reviews and the NHIS and other surveys.

- Recurrent abdominal pain and gastrointestinal disorders.
  - A multicenter survey of pediatric medical centers indicated that 50% of pediatric patients with inflammatory bowel disease used IH therapies.<sup>6</sup>
  - Diarrhea (dietary supplements, amino acids, probiotics, partially hydrolyzed guar gum, herbs, homeopathy, Traditional Chinese Medicine (TCM).<sup>7,8,9</sup>
  - Colic (fennel seed oil, botanical blends, probiotics, nutritional modulation, manipulative therapies, craniosacral therapy, acupuncture, massage, education and behavioral interventions).<sup>10,11,12,13,14</sup>
  - Crohn's disease.<sup>15,16</sup>
  - Vitamin D levels in pediatric celiac disease (CD) patients were lower than in healthy controls.<sup>17</sup>
  - Nonpharmacologic Treatment for Children with Functional Constipation.<sup>18</sup>
- Irritable bowel syndrome (biobehavioral methods in which the patient actively participates in care, diet and natural health products, physical methods, and Pediatric mood disorders (omega-3 fatty acids, nutrition, vitamins and minerals, St. John's Wort, exercise).<sup>19,20</sup>
- Eating disorders (nutrition, herbs, nutritional supplements, acupuncture, massage, mind-body therapies, yoga).
- Muscular dystrophies.<sup>21</sup>
- Nocturnal enuresis (acupuncture, acupressure, hypnosis, biofeedback).<sup>22,23</sup>
- Acute bronchitis.<sup>24</sup>
- Atopic dermatitis (TCM including herbs, honey mixture, homeopathy, nutritional supplements) probiotics, biomechanical therapies, mind-body therapies).<sup>25,26</sup>
- ADHD, dyslexia, autism, motor coordination disorders, ASDs (Fish oils for neurodevelopmental disorders).<sup>27,28,29</sup>
- IH has also been reportedly used in populations with autistic spectrum disorders<sup>30,31</sup> allergic disorders (allergic asthma and allergic rhinitis),<sup>32,33</sup> and adolescents with juvenile diabetes (Type I).<sup>34,35</sup>
- Asthma. Evidence suggests that diets emphasizing the consumption of plant-based foods might protect against asthma development and improve asthma symptoms through their effects on systemic inflammation, oxidation, and microbial composition.<sup>36</sup> Aerobic exercise-based pulmonary rehabilitation significantly enhances pulmonary function and quality of life in pediatric asthma patients.<sup>37,38</sup>

- Suboptimal breastfeeding has a substantial impact on infants and maternal health. Musculoskeletal dysfunction is associated with breastfeeding problems. Manipulative treatments have moderate positive evidence for the effect on suboptimal breastfeeding.<sup>39</sup>

## **Reported Modalities Include**

### *Acupuncture:*

A 2025 scoping review (in press)<sup>40</sup> updates an earlier 2015 publication<sup>41</sup> that assesses the use of acupuncture for common pediatric conditions. Seventy-one new publications were identified (42 clinical trials & 29 reviews) that represented 17 conditions. Based on the latest research the authors suggest that acupuncture is safe in the pediatric population and provides:

1. Positive effects for postoperative nausea and vomiting
2. Promising effects for four conditions: Cerebral Palsy; Nocturnal enuresis; Perioperative & Procedural pain; & Tic disorders.

When the publications list was combined with the prior 2015 review a total of 142 publications have been identified and the top five conditions (based on clinical trials) studied are:

1) Pain; 2) Cerebral Palsy; 3) Nausea and vomiting; 4) Digestive complaints, and 5) Autism Spectrum Disorder. Based on the totality of these findings the authors concluded, "Combined with the positive safety profile, the evidence suggests that clinicians and patients may benefit from the use of acupuncture for these conditions."

### *Herbal Medicine (Traditional East Asian Medicine):*

Systematic Reviews suggest positive effects for several conditions:

- Allergic Rhinitis: A 2024 meta-analysis suggests benefit of an herbal formula plus usual care (UC) vs. UC alone (n=7; 624 participants)<sup>42</sup>
  - Effective rate (RR = 1.20; 95% CI = 1.13 to 1.27)
  - Caution due to low quality trials
- Asthma (cough variant): A 2021 Meta-analysis suggests benefit from TCM herbal formula plus + UC vs. UC alone<sup>43</sup>
  - Total Effective Rate (n=12; 907 participants): RR: 1.14 (95% CI: 1.08 to 1.20; P< 0.0001)
  - IgE levels (n=4; 263 participants): MD: 61.18 (95% CI: -89.45 to -32.92; P< 0.0001)
  - Caution due to low quality trials
- Bronchiolitis (Infantile): A meta-analysis suggests benefit of TCM herbs plus UC vs. UC alone.<sup>44</sup>
  - Shorter hospitalization time (n=11; 1,350 participants): MD: -2.10 (95% CI: -2.87 to -1.34; P≤0.05)
  - Recurrence Rate (n=5; 1,083 participants): RR: 0.41 (95% CI: 0.30 to 0.56; P<0.01)
  - Caution due to low quality trials
- Oncology: A 2022 scoping review suggests that TCM herbs plus conventional chemotherapy may be useful in the treatment of childhood cancers.<sup>45</sup>

- Suggested benefits were improved response rates, reduced chemotherapy-induced adverse effects, and lower infection rates in patients with leukemia.
  - Caution due to low quality trials
- Pneumonia (Mycoplasma): A meta-analysis (n=30; 2,997 participants) suggests benefits of TCM herbal formula plus UC *vs.* UC alone.<sup>46</sup>
  - Response rate: RR: 1.18 (95% CI: 1.13 to 1.22)
  - Pulmonary rales (disappearance time): MD: -1.3, 95% CI: -1.71 to -0.88)
  - Caution due to low quality trials

*Mind-Body Therapies:*

- Reiki: Several small pilot studies suggest feasibility & benefit
  - Cerebral Palsy Symptoms (n=13)<sup>47</sup>
  - Dysmenorrhea (n=75)<sup>48</sup>
  - Pain relief during hematopoietic stem cell transplantation (n=9)<sup>49</sup>
  - Pain (post-op) (n=38)<sup>50</sup>
  - Palliative Care (n=16)<sup>51</sup>
- Mind Body Medicine (biofeedback, hypnosis, music therapy, mindfulness, yoga, progressive muscle relaxation).<sup>52,53,54,55,56</sup>
- Trauma focused cognitive behavioral therapy (TF-CBT) is an effective treatment for pediatric posttraumatic stress symptoms (PTSS) as well as for depressive, anxiety, and grief symptoms.<sup>57</sup>
- Sensory integration (SI) for autism spectrum (inconclusive).<sup>58</sup>

*Movement and Exercise:*

- Yoga<sup>59,60</sup>

*Homeopathy:*

- Natural remedies and homeopathic preparations are more frequently used in upper respiratory tract infections, infant colic, sleep disturbances, and recurrent infections.<sup>61</sup>

*Supplements and Nutrients:*

- Melatonin for sleep disorders and ADHD.<sup>62,63,64</sup>
- Probiotics for gastrointestinal disorders, including irritable bowel syndrome (IBS).<sup>65,66</sup>

*Meditation and mindfulness:*

- Systematic Reviews suggest positive effects of mindfulness-based therapies for several conditions:
  - ADHD: A 2025 meta-analysis (n=11; 224 participants) suggests benefit; but call for more high-quality research.<sup>67</sup>
  - Obesity: A 2025 meta-analysis (n=5; 224 participants) suggests potential for improving lifestyle behaviors, but effectiveness in reducing BMI remains inconsistent.<sup>68</sup>

- Oncology: A 2020 review (n=6) suggests interventions were generally well accepted and beneficial regarding symptom management (procedural pain, distress, and QOL).<sup>69</sup>

*Herbal Medicine (Western):*

- *Curcuma longa* (curcumin) for inflammatory bowel disease (IBD)<sup>70</sup>
- *Echinacea* (*Echinacea purpurea*) for cold and upper respiratory infection symptoms
- *Butterbur* (*Petasites hybridus*) for asthma and allergic rhinitis

*Manual Adjustments/Manipulation:*

- Chiropractic care<sup>71,72,73</sup>
- Manual therapy<sup>74</sup>

## **Patient Preference and Autonomy**

Confidence in and use of IH by families and their children is increasing. Many people use IH because they are attracted to the IH philosophies and health beliefs, are dissatisfied with the process or results of conventional treatments or are concerned about adverse effects of drugs like stimulants.<sup>75</sup> Many families reported that IH was “more congruent with their own values, beliefs, and philosophical orientations towards health and life.”<sup>76</sup>

Continuing education and bidirectional communication should be improved, as many parents and practitioners perceive physician-IH practitioner communication as highly important and instrumental in promoting their children's health and safety.<sup>77,78</sup>

## **Resources for Clinicians**

Pediatric Integrative Medicine. McClafferty H, Vohra S, Bailey M, et al. Pediatric integrative medicine. *Pediatrics*. 2017;140(3):e20171961.

<https://pediatrics.aappublications.org/content/140/3/e20171961>

The Pediatric Complementary and Alternative Medicine Research & Education (PedCAM) Network ([www.pedcam.ca](http://www.pedcam.ca))

Hawk C, Schneider MJ, Vallone S, Hewitt EG. Best Practices for Chiropractic Care of Children: A Consensus Update. *J Manipulative Physiol Ther*. 2016;39(3):158-68. Available at:

[https://www.jmptonline.org/article/S0161-4754\(16\)00062-2/fulltext](https://www.jmptonline.org/article/S0161-4754(16)00062-2/fulltext)

American Chiropractic Association Council on Chiropractic Pediatrics. On this site, you will find the most up to date literature for Pediatric Chiropractic care.

<http://acapedscouncil.org/evidence-by-condition/>

Academic pediatric integrative medicine programs:

- AAP Provisional Section on Complementary, Holistic, and Integrative Medicine.
- International Pediatric Integrative Medicine Network.
- Pediatric Complementary and Alternative Medicine Research and Education Network.

## **Resources for Patients**

The National Institutes of Health (NIH), CAM Use and Children, National Center for Complementary and Alternative Medicine, <https://www.nccih.nih.gov/health/children-and-the-use-of-complementary-health-approaches>

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