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**Title:** Craniosacral Therapy for Children with Autism and/or Sensory Processing Disorder

### Clinical Question

P (population/problem) Among children with autism spectrum disorder or sensory processing disorder  
I (intervention) Does the use of craniosacral therapy (CST)  
C (comparison) Compared to standard care without (CST)  
O (outcome) Improve behavior?

**Target Population:** Children (ages 3 and up) with Autism Spectrum Disorder (ASD) and/or Sensory Processing Disorder (SPD).

### Definitions of intervention:

Craniosacral therapy (CST) is a gentle, noninvasive type of hands-on body treatment in which the therapist monitors the patient's craniosacral rhythm (subtle pulsations of the craniosacral fluid) by placing the hands at specific locations on the cranium, spine and sacrum (Mehl-Madrona 2007 [2a]). Craniosacral therapy (CST) is commonly practiced by a licensed massage therapist with massage therapy techniques.

Craniosacral therapy (CST) is considered to be a Complementary and Alternative Medicine (CAM) therapy. The National Center for Complementary and Alternative Medicine (NCCAM), an institute of the NIH, defines CAM as a group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine (NCCAM website 2010 [5a]).

Behaviors include but are not limited to sleep problems, off-task behaviors, attentiveness at school, ASD/SPD stereotypical behaviors, self-injurious behavior, disruptive social skills, repetitive body movements, cooperation issues, verbal outbursts, head banging, hitting, biting, anxiety, obsession, difficulty with eye contact, inability to focus.

### Recommendation(s) (See Table of Recommendation Strength following references)

There is insufficient evidence and a lack of consensus to make a recommendation on using craniosacral therapy (CST) to improve the behavior of children with autism and sensory processing disorder.

- Note: Concerns are raised in the literature about the validity of the tools used to measure the craniosacral rhythm, identify craniosacral dysfunction and efficacy of craniosacral treatment (Green 1999 1a], Levy 2005 [5b]).

### List relevant CCHMC policies / procedures.

Integrative Care Craniosacral Therapy Competency

### Discussion/summary of evidence

There is currently inadequate research to support the use of craniosacral therapy (CST) among children with Autism Spectrum Disorders (ASD) and/or sensory processing disorder (SPD). Three studies reported on the use of CAM therapies in a pediatric autistic population naming craniosacral therapy (CST) as a CAM therapy but did not report specifically on craniosacral therapy (CST) (Akins 2010 [5a], Levy 2005 [5b], Weber 2007 [5a]). One systematic review reported on the use of craniosacral therapy (CST) but not specifically with children with autism (Green 1999 [1a]). One descriptive study included craniosacral therapy (CST) in reporting the use of CAM therapies in pediatric patients but not specifically children with autism (Low 2008 [4a]). One case study reported on craniosacral therapy (CST) with a pediatric patient with ADHD, but the report did not include children with autism (Gillespie 2009 [5a]). Also included in the body of evidence is a small RCT study (n=20) of children with ASD who received parent delivered massage therapy (Escalona 2001 [2a]). The treatment group received nightly massage therapy for 15 minutes (Escalona 2001 [2a]). The comparison group received a nightly routine of reading with their parents (Escalona 2001 [2a]). Children in the massage treatment group showed improvements with sleep problems, off-task behaviors, attentiveness at school and stereotypical behaviors (Escalona 2001 [2a]). Although this study provides some evidence for the benefits of massage, this study did not specifically address the craniosacral technique. No other studies of craniosacral therapy (CST) were identified in adults or children with ASD and/or SPD.

Grade for the body of evidence is low.

### Research Agenda

- Inclusion of comparison groups would strengthen the methodology of future studies of craniosacral therapy (CST) (Weber 2007 [5a]).
- Identify validated tools to measure clinical outcomes.

### Health Benefits, Side Effects and Risks

An open label (n=68) observational study of craniosacral therapy (CST) and acupuncture treatments in adults with asthma reported improved asthma quality of life scores and reduced medication usage (Mehl-Madrona 2007 [2a]).

No side effects or adverse events were reported in four studies included in this review (Akins 2010 [5a], Hanson 2007 [4a], Low 2008 [4a], Mehl-Madrona 2007 [2a]).

Although the safety of craniosacral therapy (CST) has not generally been questioned, there are no studies specifically addressing safety or adverse outcomes. Specific data on safety outcomes or adverse events is sparse (Mehl-Madrona 2007 [2a], Low 2008 [4a] and Akins 2010 [5a]). Upledger craniosacral training programs state that acute intracranial hemorrhage, intracranial aneurysm, recent skull fracture and herniation of the medulla oblongata (Upledger 1983 [5b]) are contraindications for craniosacral therapy (CST). The theoretical basis for this is the potential to increase intracranial pressure with craniosacral therapy (CST). Data to support this idea is not reported in the literature.

## Bibliography

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Note: Full tables of evidence grading system available in separate document:

- [Table of Evidence Levels of Individual Studies by Domain, Study Design, & Quality](#) (abbreviated table below)
- [Grading a Body of Evidence to Answer a Clinical Question](#)
- [Judging the Strength of a Recommendation](#) (abbreviated table below)

**Table of Evidence Levels** (see note above)

<b>Quality level</b>	<b>Definition</b>
1a† or 1b†	Systematic review, meta-analysis, or meta-synthesis of multiple studies
2a or 2b	Best study design for domain
3a or 3b	Fair study design for domain
4a or 4b	Weak study design for domain
5a or 5b	General review, expert opinion, case report, consensus report, or guideline
5	Local Consensus

†a = good quality study; b = lesser quality study

**Table of Recommendation Strength** (see note above)

<b>Strength</b>	<b>Definition</b>
“Strongly recommended”	There is consensus that benefits clearly outweigh risks and burdens (or visa-versa for negative recommendations).
“Recommended”	There is consensus that benefits are closely balanced with risks and burdens.
No recommendation made	There is lack of consensus to direct development of a recommendation.
<p><b>Dimensions:</b> In determining the strength of a recommendation, the development group makes a considered judgment in a consensus process that incorporates critically appraised evidence, clinical experience, and other dimensions as listed below.</p> <ol style="list-style-type: none"> <li>1. Grade of the Body of Evidence (see note above)</li> <li>2. Safety / Harm</li> <li>3. Health benefit to patient (<i>direct benefit</i>)</li> <li>4. Burden to patient of adherence to recommendation (<i>cost, hassle, discomfort, pain, motivation, ability to adhere, time</i>)</li> <li>5. Cost-effectiveness to healthcare system (<i>balance of cost / savings of resources, staff time, and supplies based on published studies or onsite analysis</i>)</li> <li>6. <i>Directness</i> (the extent to which the body of evidence directly answers the clinical question [population/problem, intervention, comparison, outcome])</li> <li>7. <b>Impact on morbidity/mortality or quality of life</b></li> </ol>	

## Supporting information

### Introductory/background information

A 2007 descriptive study by Low, reports 57 percent of 185 families with children of various levels of health who completed the survey, are using Complementary and Alternative Medicine (CAM) therapies for their child (p. 147 [4a]). CAM is used by an estimated 20-40% of healthy children seen in outpatient settings and 30-70% of children with special health care needs (Kemper 2008 [1a]). A descriptive study reported that 74% of children with ASD have used CAM therapies to treat autism (Hanson 2007 [4a]) and Akins reported that 52-95% of families with a child with autism are using CAM treatments (p. 308 [5a]). Low reports, of the 57% of families who affirmed CAM usage, 14% of these families use craniosacral therapy treatments specifically (p. 148 [4a]). This evidence shows a clear public interest in the use of CAM therapies to address some pediatric medical conditions.

Craniosacral Therapy (CST) is commonly practiced by a licensed massage therapist or other professionals with a license to touch. It is important that a craniosacral therapy (CST) therapist obtain adequate training in craniosacral therapy (CST) prior to applying treatment in a pediatric population. Cincinnati Children's requires that all Holistic Health Specialists who treat patients meet the competency standards stated in the Integrative Care Craniosacral Therapy Competency. Some healthcare providers are reluctant to refer for craniosacral therapy (CST) due to the lack of scientific evidence. Greater understanding and awareness of the potential benefits will increase accessibility for children who may benefit from craniosacral therapy (CST).

Clinicians who practice craniosacral therapy (CST) with patients with ASD anecdotally observe a decrease in self-injurious behavior and improved social skills (Upledger 1983 [5b]). Additionally, craniosacral therapy (CST) is often very relaxing and calming supporting overall health and wellness. However these benefits have not been generally studied and reported in the medical literature.

Local data from the Cincinnati Children's Hospital Integrative Care Out-patient Clinic reveals that parents of children with autism and/or sensory processing disorder seek craniosacral therapy (CST) treatments for their child. Parents report improvements in behavior, ability to focus and social skills. Craniosacral therapy (CST) treatments are paid for out of pocket yet; parents often will set up regularly scheduled craniosacral therapy (CST) appointments for their child.

When looking at the local data from 2008 to 2011, 24% ( $n=37$ ) of all patients seen at the Integrative Care Clinic at Cincinnati Children's Hospital Medical Center were children with ASD, SPD disorder and/or behavior issues. Of these patients 31% ( $n=9$ ) have incorporated this therapy into their regular treatment plan as evidenced by scheduling regular appointments.

### **Group/team members**

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### **Search strategy**

#### **Databases:**

Ovid-Cochrane, Medline  
 EBSCO-Cinahl, Health Watch

#### **Keywords:**

Craniosacral therapy, craniosacral, autism, autism spectrum disorder, sensory integration disorder, sensory integration, sensory processing disorder, SPD, alternative treatments, CAM therapies, CAM, massage

therapy, integrative therapies, anxiety, ADD/ADHD, tantrums, behavior issues, behavior problems, behavior, safety, efficacy

**Limits: None, all dates included**

**Retrieved: September 2010-July 2011**

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**Note**

**This Best Evidence Statement addresses only key points of care for the target population; it is not intended to be a comprehensive practice guideline. These recommendations result from review of literature and practices current at the time of their formulation. This Best Evidence Statement does not preclude using care modalities proven efficacious in studies published subsequent to the current revision of this document. This document is not intended to impose standards of care preventing selective variances from the recommendations to meet the specific and unique requirements of individual patients. Adherence to this Statement is voluntary. The clinician in light of the individual circumstances presented by the patient must make the ultimate judgment regarding the priority of any specific procedure.**

**Reviewed against quality criteria by 2 independent reviewers.**