Safety and Therapeutic Effects of Craniosacral Therapy: A Short Review

Thomas Rosenkilde Rasmussen. Ph.D., MSc, CST-D
Director of Science and Research, Upledger Institute International, Florida USA
Center for Manuel Medicin, Copenhagen, Denmark

CranioSacral Therapy (CST) is a non-invasive manual therapy that works with the body's fascial system and self-healing capacity. CST is derived from cranial osteopathic manipulative medicine and was developed by Dr. John Upledger, an American osteopath. Today the Upledger Institute is the world's largest provider of education in complementary healthcare. The Upledger Institute is continually evolving the standards and concepts of CST in line with new scientific research with a central focus on safety, diagnosis/evaluation, and therapeutic effect.

CST and osteopathy in the cranial field are repeatedly held as controversial in their concepts and the client's questionable clinical benefits. Diagnosing/evaluating using a unique rhythmic movement, the cranial rhythmic impulse (CRI) is controversial. Often, the debate includes studies with small cohorts and study designs that do not meet the standards of scientific studies or are outdated concerning current clinical research standards. In addition, the uncritical and often biased reference to studies is more a reflection of belief systems than common scientific sense and the intention of developing complementary approaches needed in today's health care.

Safety

Central to any modality in health care is safety with documentation of possible adverse events. Adverse events are often reported as major, minor or absent, and in some cases, adverse events that require withdrawal from a study. A growing number of scientific studies reporting on possible adverse events for clients receiving CST treatment have been published (see below). There is a significant difference in studies reporting cranial osteopathic manipulative treatments, which often use high forces and short treatment time, in comparison to studies reporting CST, which is a gentle hands-on treatment with a 5 g touch. From a total sample size of 745 clients (1-7), the reported adverse events for CST are absent or minor, and there are no recommendations for withdrawal from the studies. Further, in randomized controlled trials reporting safety data, the minor reported adverse events were similar comparing the intervention group with the sham group (4,5), or intervention group (standard treatment + CST) and control group with standard treatment without CST (3).

In conclusion, studies report CST as a safe complementary treatment modality where adverse events are absent or minor for adults (1,2,4,5,7), pregnant women (3), and children (6,7).

Diagnosis/Evaluation

CST uses palpation for diagnosis/evaluation and treatment guidance, including palpating the CRI and movement patterns, or the lack of, concerning specific parts of the client. Osteopathy in the cranial field and CST have reported a lack of interobserver reliability (8). Interobserver and intraobserver reliability need to be further researched. Successful intraobserver reliability diagnosing/evaluating cranial strain patterns has been reported (9), but interobserver and intraobserver reliability rarely reach significant ICC values (8,9). The lack of quality in palpatory diagnostic/evaluation procedures in manual therapies is not unique to osteopathy in the cranial field and CST. For example, spinal palpatory diagnostic/evaluation procedures lack interobserver and intraobserver reliability, especially when it involves soft tissue palpatory diagnostic/evaluation tests (10).

The use of the CRI in diagnosis/evaluation and treatment adds to the controversy. Historically, studies on palpated CRI rates have shown a wide range from which it has been challenging to create a valuable normative range for clinical studies (review in ref 11).

An objective approach to study the existence of the CRI was attempted by Dr. Viola Fryman (12), measuring physical movements on the head directly. The drawback of the direct measurements was high pressure on the head from the equipment used, and that participants had to hold their breath to exclude respiratory movements. However, the study (12) identified head movements different from the arterial and respiratory rhythm.

Recently we developed a machine able to detect and follow different rhythmical motions on the head and body in real-time (13). Objective measurement of a third rhythmic movement on the human head in a larger cohort was reported, giving rational scientific evidence, documenting the existence of a rhythmic movement different from arterial and respiratory rhythms (13).

With the documentation of objective measurements by instrumentation, we expect to see a continued improvement in the future training of therapists using cranial palpation concerning both a normative range and nature of the rhythmic movements involved in the diagnosis/evaluation.

Therapeutic effects

Concerning CST, the number of randomized controlled trials (RCTs) is growing. The previously systematic review of RCTs in CST from 2012 (14) concluded that further research was needed as the included studies had a moderate methodological quality of the included studies. Interestingly, a recent systematic review and meta-analysis of RCTs using CST for chronic pain treatment show a robust effect of CST treatments (15). Ten RCTs of sufficient study quality with 681 patients were included giving a more solid basis for the therapeutic effect of CST.

Conclusions

CST is a clinically safe modality for all age groups and pregnant women. As the number of RCTs studies of sufficient quality grow, so does the evidence for the therapeutic effects of CST. Improved RCTs documenting potential benefits in patients' groups commonly seeking CST treatment is needed to further establish the efficacy of CST as a widely used modality. The documented significant and robust effect of CST in chronic pain is an evidence-based step for the use of CST in health care.

A central area of development is the diagnosis/evaluation using soft tissue palpation and the CRI. With an objective instrumental approach, the CRI is documented (13), and the palpatory diagnostic/evaluation can be further studied experimentally.

For over thirty years, worldwide, a high number of people have sought CST therapists for various chronic conditions, using CST as a complementary treatment. In the early times of CST it has mainly been experiential reporting with anecdotal stories expressing the success of incorporating CST. Case reports and pilot studies have been a part of the development to study the possible effect of CST. Today the peer review RCT Studies Review here is documenting both safety and therapeutic effect of CST, and leads the way to larger studies in different health care conditions so often incorporating CST as a complementary treatment.

References

1 Castro-Sanchez AM et al *Clin Rehabil.* 2011. 25(1):25-35.
2 Castro-Sanchez AM et al J Altern Complement Med 2016. 22(8) : 650-7.
3 Elden H et al. ACTA Obstetricia et Gynecologica Scan 2013. 92:775-782.
4 Haller H et al. Clin J Pain 2016. 32:441 – 449.
5 Mataran-Penarrocha GA et al. Clin Rehabil 2011.25:25-35.
6 Wyatt K et al. Arch Dis Child 2011. 96:505-512.
7 Haller H et al Comp. Thera Med 2021. 58:1-7.
8 Hartman SE & Norton JM Sci Rev Altern Med 2008. 6:23-34.
9 Halma KD et al. JAOA 2008. 108:493-502.
10 Seffinger MA et al Spine 2004. 29:413-25.
11 Nielson et al. JAOA 2006. 106: 337-341.
12 Fryman V. JAOA 1971. 70: 928-945
13 Rasmussen et al. J Body Movement Ther 2021. 26:24-29
14 Jakel A et al. JAOA. 2011.111:685-693.
15 Haller H et al. BMC Musculoskeletal Disorders. 2020. 21: 1-14.