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### Effect of Osteopathic Manipulative Treatment in Patients with Postural Orthostatic Tachycardia Syndrome (POTS): A Literature Review

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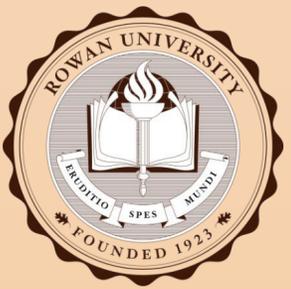


OSTEOPATHIC MEDICINE

# Effect of Osteopathic Manipulative Treatment (OMT) in Patients with Postural Orthostatic Tachycardia Syndrome (POTS): A Literature Review

Sidharth Sahni, DPT; Harrison Jordan, BS; Binoy Desai, BBA; Danielle Cooley, DO; Alexander King, DO

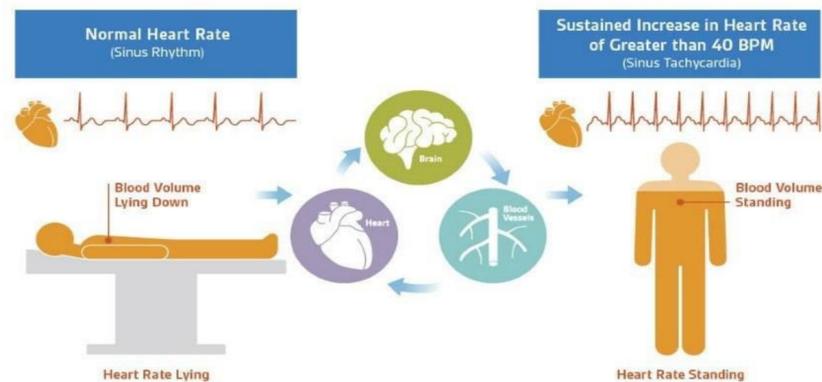
Rowan University School of Osteopathic Medicine



## Background

- Postural Orthostatic Tachycardia Syndrome (POTS) is characterized by autonomic dysregulation resulting in diminished blood flow and excessive tachycardia.
- The pathogenesis of POTS involves reduced blood flow to the heart once a patient shifts from a lying to a standing position. Several healthy children will experience a shift of fluid from the intravascular space to the interstitial space, resulting in a diminished stroke volume and a compensatory increase in the sympathetic tone to the heart producing tachycardia.

### Postural Orthostatic Tachycardia Syndrome (POTS)

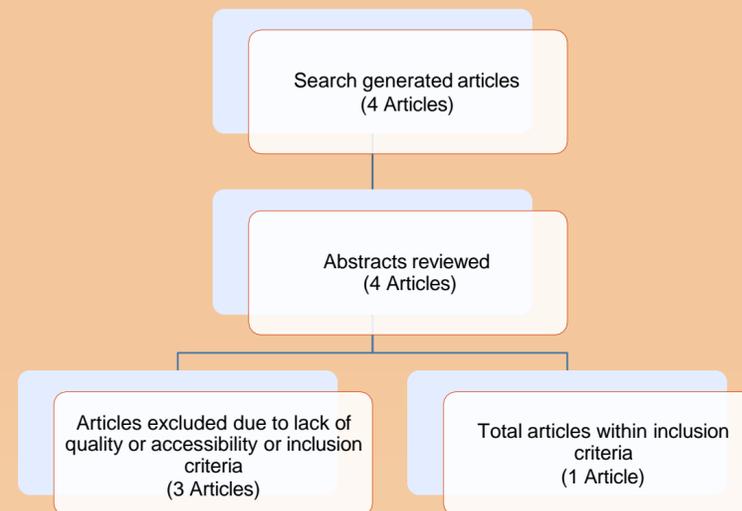


- There are approximately 500,000 cases of POTS disease in the United States. There are more cases occurring in women than men between the ages of 15 and 25.
- POTS is diagnosed in adolescent patients when there is an elevation in the heart rate of at least 40 beats/minute within 10 minutes of standing.
- Symptoms include dizziness, nausea, vision changes, chest pain, fainting, heart palpitations, and poor sleep.
- Currently, there are limited interventions for treating patients with POTS. This research reviewed current literature to assess if osteopathic manipulative therapy (OMT) is a viable treating option for POTS patients.

## Methods

- A literature review was generated using key search terms.
- The articles were then sorted based on the inclusion and exclusion criteria. 1 researcher sorted through the initial set, which was then reviewed again independently by 2 additional researchers.
- The literature review was performed on PubMed, CINAHL, Cochrane Library databases, and Ovid Medline.
- A total of 4 articles were generated, of which 1 article met the established criteria.

Figure 1 : Article Search Flow Chart



## Results

- 1 case report featuring a POTS patient fit the inclusion criteria. This study found somatic dysfunctions affecting sympathetic and parasympathetic innervation to the heart.
- The patient in the case report was treated with OMT using the ligamentous articular strain and cranial manipulation. The treatment resulted in the improvement of the patient's POTS symptoms; therefore, suggesting a relationship between somatic dysfunction and autonomic dysregulation.
- There have been no further clinical studies on the use of OMT in POTS.

## Conclusion

- POTS has been scarcely studied in the clinical setting.
- A study that will assess the use of OMT for improvement in the quality of life for patients with POTS is recommended to help create a Pediatric POTS-OMT Intervention Guide and Training manual. Further research is needed to verify the appropriate sequence of interventions for patients with POTS.

## Clinical Relevance

- A follow-up study to evaluate the effect of OMT on the quality of life for patients with POTS is planned. The hypothesis is that osteopathic manipulation plays a role in the management of POTS, as patients should experience improvement in their symptoms and their overall quality of life.
- Patients with this disease are currently advised to increase their fluid intake as well as the amount of salt in their diet.
- Physical therapy has been found to be useful in the management of POTS.

## Proposed Osteopathic Manipulation

Osteopathic Cranial Manipulation	Balanced Ligamentous Tension	Ligamentous Articular Strain	Thoracic Inlet Myofascial Release
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