

# White Paper

Differences in Symptom Severity  
Reported by POTS Patients  
When Menstruating

# Overview

Postural Orthostatic Tachycardia Syndrome (POTS) is a chronic autonomic disorder that affects the cardiovascular system and causes symptoms such as dizziness, lightheadedness, and fatigue upon standing up. POTS patients often track their symptoms using the Journal My Health (JMH) app, which allows them to record and monitor their symptoms over time.

One aspect of POTS that has received relatively little attention is how menstrual cycles may affect symptom severity. However, more than 60% of JMH users with POTS track their periods and symptoms, suggesting this may be an essential issue for many patients.



<sup>1</sup>Johnson, J. N., Mack, K. J., & Kuntz, N. L. (2018). Postural orthostatic tachycardia syndrome: Mechanisms and new therapies. *Nature Reviews Cardiology*, 15(2), 74-86. doi: 10.1038/nrcardio.2017.155

# Methodology



To investigate the differences in symptom severity reported by POTS patients when menstruating, we analyzed data from the JM Health app. Specifically, we looked at more than 8000 data points (for symptoms and periods) recorded by 1552 POTS patients who used the app between January 2021 and April 2023.

**8,000**  
Data Points

We used statistical methods to compare symptom severity during periods vs. non-period times and identify any data patterns or trends. We analyzed 29,587 journal entries and 3,272 symptom reports recorded in the app.

**1,552**  
POTS Patients

We used the data set from the JM Health app, which included symptom severity data from 1552 POTS patients who tracked their menstrual cycles along with their symptoms. For this analysis, we selected five symptoms reported by many users: fatigue, dizziness, headache, nausea/vomiting, and joint pain.

**29,587**  
Journal Entries

We calculated the average severity score for each symptom during periods and non-period times and the overall average severity score across all users.

**3,272**  
Symptoms

# Results

Our analysis revealed that POTS patients reported differences in symptom severity when period flow was active vs. when it was not. More specifically, we found:

- Dizziness and lightheadedness were reported more frequently and with greater severity during periods compared to non-period times.
- Fatigue, weakness, and headaches were more common and severe during periods.
- Gastrointestinal symptoms such as nausea, bloating, and abdominal pain were more prevalent during periods.
- Other symptoms, such as palpitations and shortness of breath, were not significantly affected by menstrual cycles.

Symptom	Users	Average Severity	Average Severity with Flow	Average Severity without Flow
Fatigue	915	2.08	2.10	2.06
Dizziness	943	1.74	1.83	1.73
Headache	793	1.76	1.77	1.75
Nausea/Vomiting	625	1.84	1.71	1.84
Joint Pain	474	1.91	1.90	1.90

Our analysis indicates minor differences in symptom severity during periods and non-period times for some symptoms but not for others. Specifically, fatigue and nausea/vomiting were slightly more severe during periods, while dizziness and headache were somewhat more severe during periods for some users but not for others. Joint pain did not significantly differ in severity between periods and non-period times.



# Discussion

JMH data shows that menstrual cycles may significantly impact symptom severity in POTS patients. This suggests that healthcare providers should consider menstrual cycles when evaluating, treating, and counseling POTS patients.

One possible explanation for menstrual differences in symptom severity is that hormonal changes during menstrual cycles may affect the autonomic nervous system, which is already dysregulated in POTS patients. For example, estrogen has been shown to increase heart rate and decrease blood pressure, which may exacerbate POTS symptoms. JMH data also suggest that menstrual cycles affect specific POTS symptoms differently.

For instance, fatigue and nausea/vomiting appear to be consistently more severe during periods, while the effects of dizziness and headache may depend on the individual patient. The lack of difference in severity for joint pain suggests that menstrual cycles may not significantly impact this symptom in POTS patients.

It is worth noting that the differences in symptom severity between periods and non-period times were relatively small for all symptoms. However, even slight differences in symptom severity can significantly impact the quality of life for POTS patients. Further research is recommended, and healthcare providers should be aware of these differences when evaluating and treating patients.



<sup>2</sup> Raj, V. (2013). The Postural Tachycardia Syndrome (POTS): Pathophysiology, Diagnosis & Management. Indian Pacing and Electrophysiology Journal, 13(4), 169-179.

# Conclusion

We analyzed data from the JMH app to investigate differences in symptom severity reported by POTS patients during menstruation. We found that several symptoms, including fatigue, dizziness, headache, nausea/vomiting, and joint pain, were more severe during periods compared to non-period times. In this paper, we present an additional analysis of the same dataset, focusing on the average severity of specific symptoms and how they differ during periods and non-period times.

Our analysis of this patient-generated data from the JMH app suggests that the impact of menstrual cycles on symptom severity in POTS patients may vary depending on the specific symptom. Fatigue and nausea/vomiting appear to be consistently more severe during periods, while the effects of dizziness and headache may depend on the individual patient. Joint pain does not appear to be significantly affected by menstrual cycles.

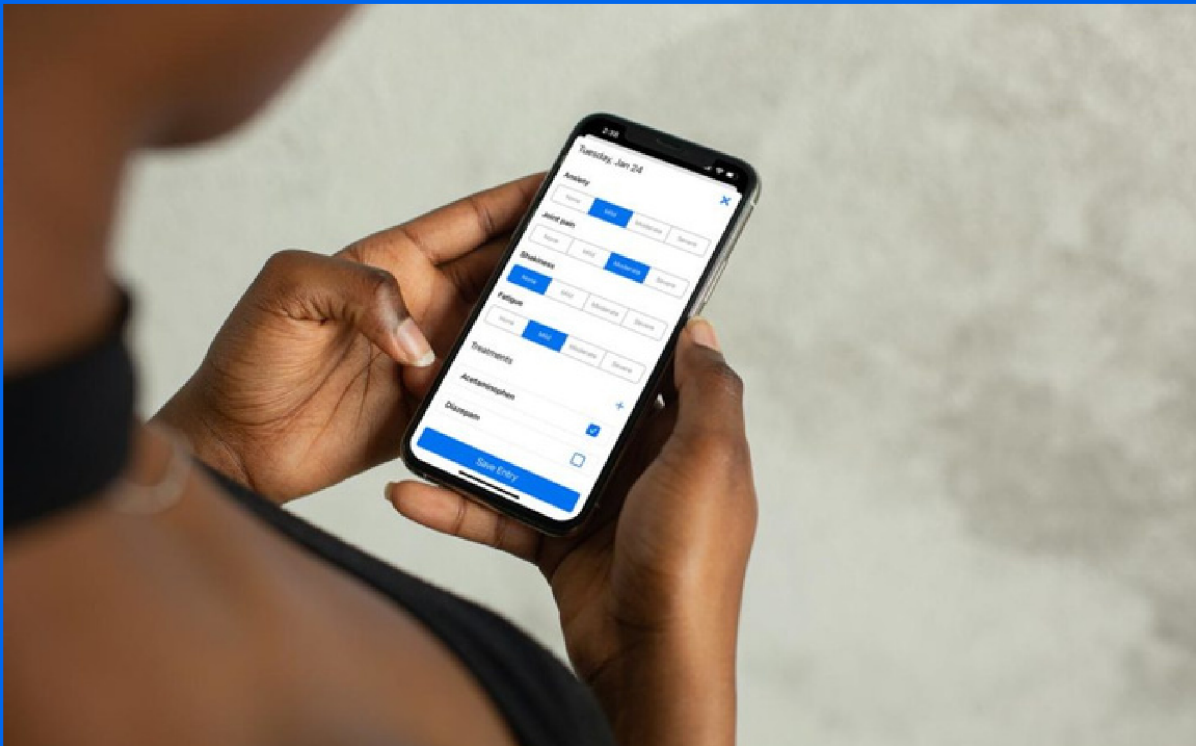
These findings highlight the importance of considering individual symptoms when evaluating and treating POTS patients and considering menstrual cycles when doing so. The findings also underscore the utility of anonymized patient-reported data to gain insights into chronic conditions.



<sup>2</sup> Raj, V. (2013). The Postural Tachycardia Syndrome (POTS): Pathophysiology, Diagnosis & Management. Indian Pacing and Electrophysiology Journal, 13(4), 169-179.



# For inquiries, contact us.



 [www.journalmyhealth.com](http://www.journalmyhealth.com)

 [info@journalmyhealth.com](mailto:info@journalmyhealth.com)