

The effects of somatic yoga on interoceptive accuracy, confidence and state dissociation in functional neurological disorder

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Introduction

- Functional neurological disorder (FND) is a neuropsychiatric condition involving motor, seizure, and/or sensory symptoms.
- Converging evidence points towards the following symptoms:
 - elevations in state and trait dissociation in FND,
 - altered accuracy and confidence regarding the detection of internal bodily states (interoceptive sensibility/awareness).
- Few studies have been conducted to understand the impact of interventions targeting these possible underlying processes.

Aim

To investigate the potential for a six week somatic yoga intervention to improve state dissociation, interoceptive accuracy and confidence.

Methods

Participants

- 21 with mixed FND symptoms (motor, seizure, sensory).
- Inclusion:** 18+, normal or corrected to normal eyesight, fluency in English, primary diagnosis of FND
- Exclusion:**
 - currently undergoing another body-based intervention,
 - physical symptoms or disability impairing ability to perform tasks or attend in person
 - Functional cognitive symptoms only
 - Comorbid diagnosis of major cardiovascular, psychiatric or neurological disorder.
- Randomly assigned to somatic yoga (n=12) or music relaxation control (n=11).

Methods

- Experimental testing was completed:
 - Immediately before yoga/music intervention
 - After completion of one single session of yoga or music relaxation
 - Again at intervention end, six weeks later.
- All participants completed the **heartbeat tracking task (HTT)** as a measure of interoceptive accuracy and confidence.
- The Clinician-Administered Dissociative States Scale (CADSS)** was included as a measure of state dissociation, administered at baseline, immediately post the single session of yoga or music, and again at week six.
- Preliminary analyses** involved:
 - mixed ANOVAS with one within-subjects factor (Time: baseline, post-single session, post-six weeks).
 - one between-subjects factor (Group: yoga, music) conducted separately for HTT accuracy, HTT confidence, and state dissociation (CADSS).



Figure 1: Example HTT readout

Results

Variable	Yoga N=12 M (SD)	Music N=11 M (SD)	Effect	F (df)	p	η^2
HTT Accuracy						
Baseline	.39 (.32)	.32 (.29)	Group	.29 (1, 15)	.60	.02
Post-single session	.49 (.34)	.45 (.39)	Time	4.24 (2, 30)	.02	.22
Post-six weeks	.53 (.35)	.43 (.35)	Group x Time	.18 (2, 30)	.84	.01
HTT Confidence						
Baseline	3.90 (3.17)	5.70 (3.09)	Group	6.63 (1, 15)	.02	.31
Post-single session	2.88 (3.05)	5.91 (3.29)	Time	1.98 (2, 30)	.16	.12
Post-six weeks	4.48 (3.19)	6.28 (3.20)	Group x Time	.16 (2, 30)	.85	.01
CADSS						
Baseline	9.18 (8.58)	5.60 (7.23)	Group	2.91 (1, 12)	.11	.20
Post-single session	6.82 (8.42)	4.22 (5.87)	Time	.79 (2, 24)	.47	.06
Post-six weeks	6.82 (7.08)	1.71 (2.29)	Group x Time	.19 (2, 24)	.83	.02

Notes. HTT = Heartbeat Tracking Task; CADSS = Clinician Administered Dissociative States Scale.

Table 1: Exploratory Analyses Results

Results

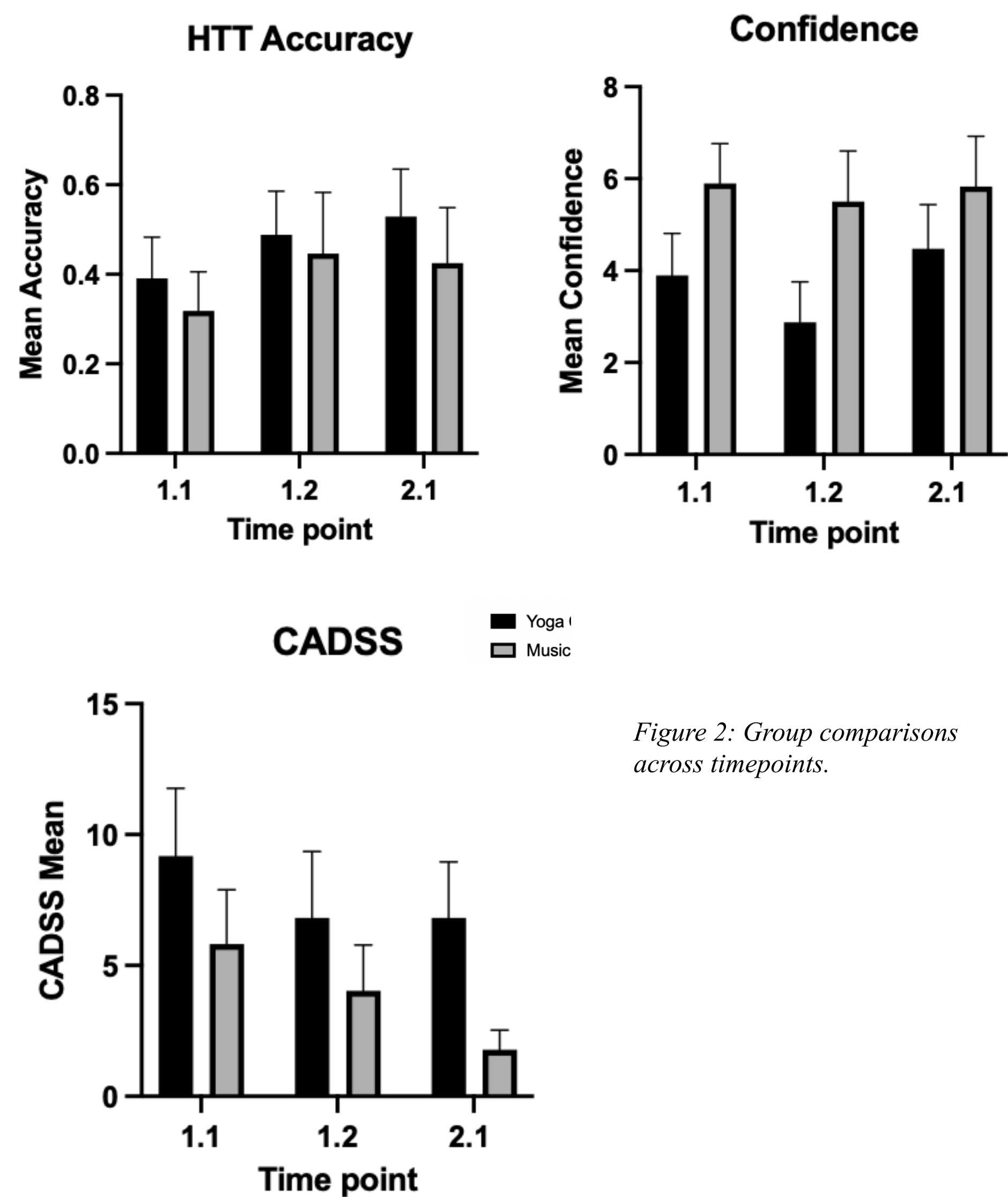


Figure 2: Group comparisons across timepoints.

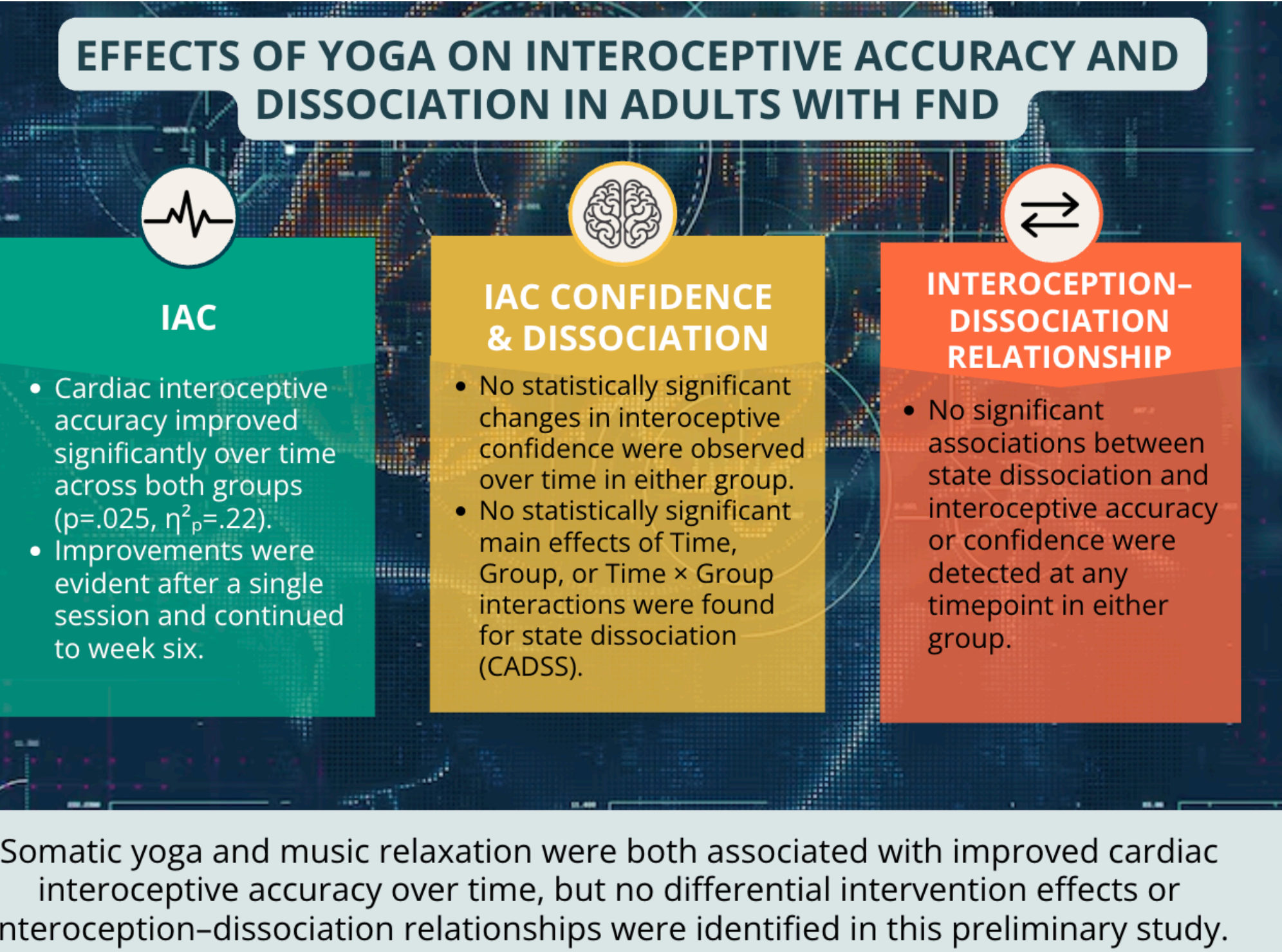


Figure 3: Visual Summary of Results

Summary

- A 6-week somatic yoga program and an active music relaxation intervention were both feasible and acceptable for adults with FND.
- Yoga produced statistically greater gains in interoceptive accuracy and confidence.
- Music produced larger reductions in dissociation; no between-group contrasts reached statistical significance.
- The results of this study suggest that somatic yoga and music relaxation might lead to improvements in cardiac interoceptive accuracy in FND.



Conclusion

- Preliminary results show that somatic yoga & music relaxation were associated with improved cardiac interoceptive accuracy over time but not with improved confidence or dissociation.
- Future, large-scale trials should clarify the clinical impact of mind-body interventions in FND, particularly their role in sensing and detecting bodily signals and in modulating dissociative experiences.

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