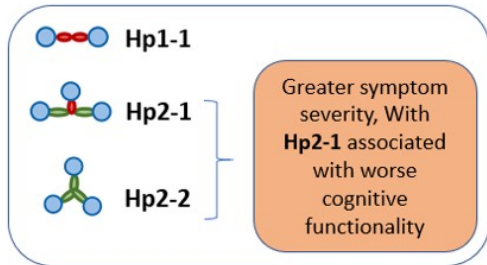


Background

Haptoglobin (Hp) phenotypes are linked to PEM and cognitive impairment in Myalgic Encephalomyelitis (ME), with **Hp1-1** emerging as the protective variant*



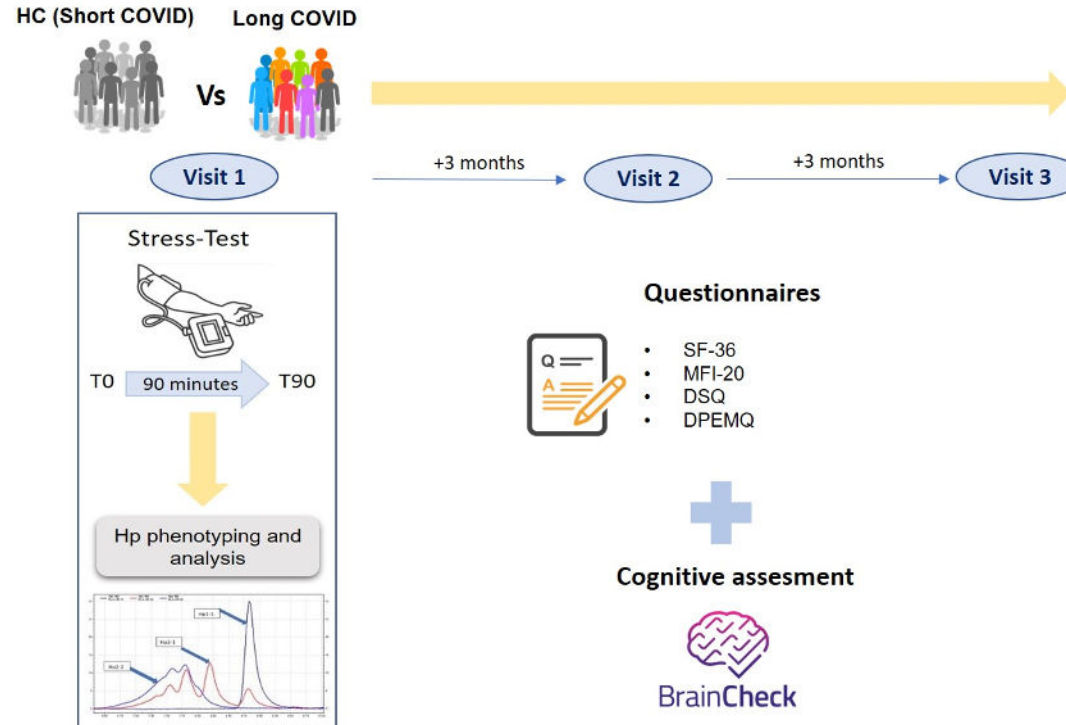
Hp phenotypes and symptom severity in ME

Long COVID and ME, both marked by severe fatigue and PEM, show notable clinical overlap, hinting at a common underlying mechanism.

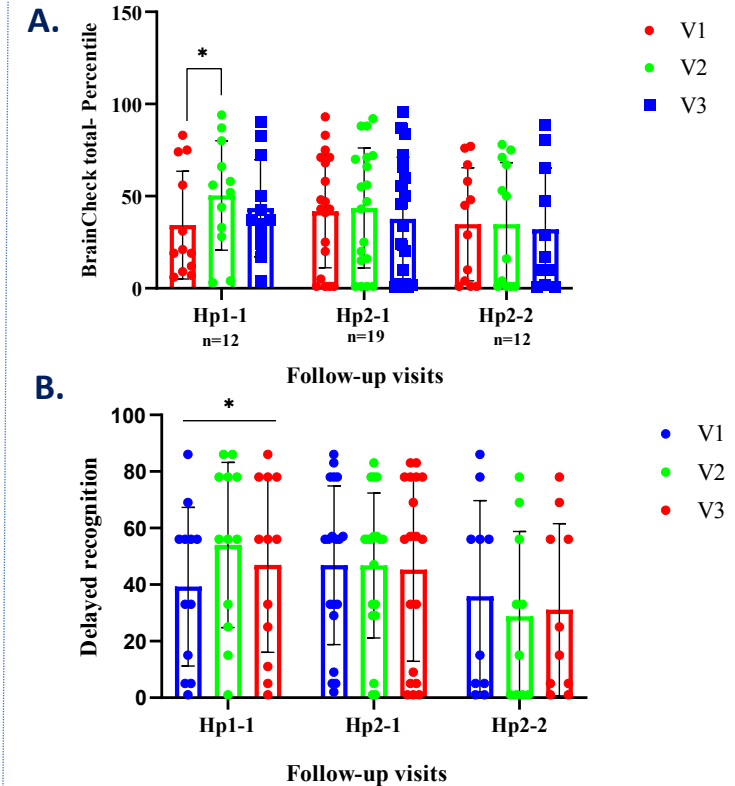
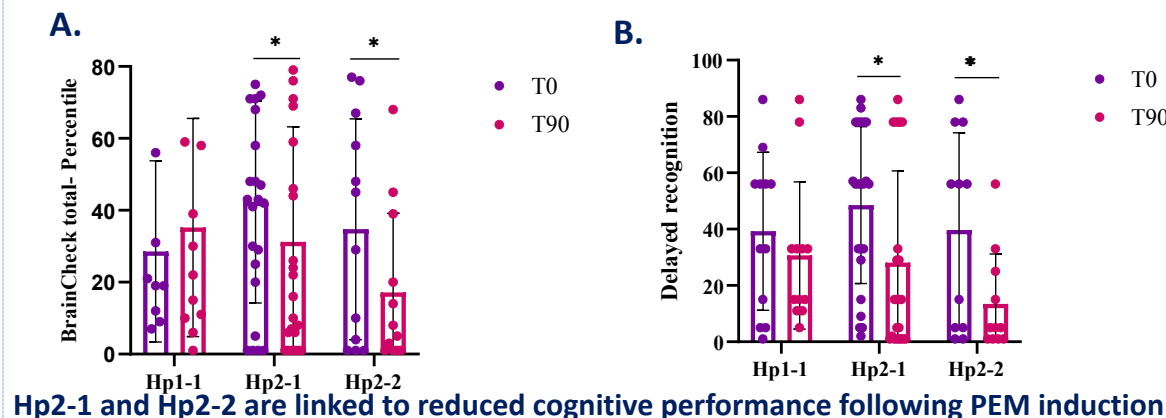
Objective

To investigate **Hp variants** as potential contributor to the cognitive dysfunction in Long-COVID.

Methodology



Results



Patients with Hp2-1 and Hp2-2 phenotypes show no improvement in cognitive function over time

Summary

- Hp2-1 and Hp2-2 phenotypes are contributing to cognitive impairment in Long COVID;
- Hp1-1 is associated with cognitive resilience in Long COVID.

*Moezzi et al., J Transl Med. 2025 Aug 28;23(1):970.