For the purposes of this study, subjective cognitive decline is defined as a self-perceived cognitive decline in cognitively normal people [[31](https://pmc.ncbi.nlm.nih.gov/articles/PMC11262122/#b31-2712-7672_2022_3_3_45)]. In line with this definition the sample was divided in two subgroups: those who complained about decreased cognitive functions and those who had no cognitive complaints.

This study analyzed the congruence of subjective and objective cognitive performance in a cohort of patients initially presenting with SCC or fatigue as part of PCS. To our knowledge, this is the first study to report domain-specific findings. Other factors that might influence subjective perception of cognition, such as depression, anxiety, sleep, quality of life, demographic variables, and personality factors, were taken into account (stolen from Schild et al. 2023).

Hasting et al. (2023): Cognitive screening using the MoCA failed to reliably detect the presence of cognitive deficits, as it mostly yielded results within the normal range. Moreover, elderly patients with mild cognitive impairment may have an increased risk of converting to dementia status ([Liu et al., 2021](https://econtent.hogrefe.com/doi/full/10.1024/1016-264X/a000376#c34)).

t “long/post-COVID syndrome” (hereinafter jointly referred to as PCS)

For individuals with

PCS, understanding whether their subjective cognitive difficulties or fatigue could be linked

to biological or neurological alterations could be valuable. However, identifying these links

is not trivial. Finding group differences in these frequencies can be at least an indicator for

somewhat abnormal functioning of the brain. Some studies seek to use the EEG for discovering

so called biomarkers, hoping they will facilitate diagnosing, monitoring and treatment

of the respective disease. In differential diagnoses, for example, the location and frequency of

restingstate oscillations could distinguish patients with Parkinson’s dementia from those with

Alzheimer’s (Babiloni et al., 2011).

In the PCS context, it would be for example interesting to evaluate, whether the EEG patterns of Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) that has symptoms similar to PCS (Wong andWeitzer, 2021) align with the EEG patterns of PCS. One study tried this already, comparing Fybromyalgia, ME/CFS, and PCS, but came to the conclusion that for PCS the evidence is still too scarce (Silva-Passadouro et al., 2024). Therefore, one value of

this studies lies in adding to the number of EEG studies in PCS.

While EEG literature in PCS might be scarce, EEG literature in general is plentiful. Here, it

could be insightful to draw on results from EEG studies that investigate similar symptoms, such as cognitive impairment and fatigue.

**Literature**

Birle et al., 2020

Bland et al., 2024

Cambridge Cognition, 2015

Ceban et al., 2022

Eysenck & Brysbaert, 2018

Kwan et al., 2024

Liu, Wang, Xin, Jiang & Meng, 2024

Pais, Ruano, Carvalho & Barros, 2020

Schild, Scharfenberg, Kirchner et al., 2023).

WHO, 2021

Davids et al., 2021

Therefore subjective cognitive complains need to be taken seriously

[Gomzyakova](https://pubmed.ncbi.nlm.nih.gov/?term=%22Gomzyakova%20N%22%5BAuthor%5D): Cognitive impairment is one of the main factors that disrupt daily social functioning and quality of life.

Blackmon et al. (2022): emphasize the importance of assessing both subjective and objective complaints in determining prevalence of cognitive impairment in recovering patients and research participants.

Therefore, identifying early and reliable biomarkers for the detection of SCD is crucial for maintaining cognitive health and delay or prevent its progression to AD (Abdulrab & Heun, 2008).

There is agreement that subjective impairments should be taken seriously, and that changes in experience and behavior not apparent to the clinician should be examined, evaluated, and documented.

. EEG studies can play a role in identifying

abnormal brain signals and linking them to changes in behavior and perception.