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On the relation between the CSI-7 and central sensitization

Letter to the Editor regarding *"Development of a Central Sensitization Inventory short form using data from twenty-three countries"* by Neblett et al., 2026 (DOI: 10.1016/j.jpain.2026.106256)

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To the Editor,

Neblett et al. developed a 7-item Central Sensitization Inventory (CSI-7), based on a large international sample. We commend the authors for this effort, which will facilitate patient profiling in clinical settings. We also value their explicit statement that the CSI *"does not directly measure central sensitization (CS)"* and the use of "*CS-assumed*" to avoid mechanistic over-interpretation. This letter offers two brief clarifications to further prevent equating CSI-7 scores with CS and proposes a more cautious stance in interpreting its results.

First, the validation strategy used in the original CSI[1] and in the present CSI-7 study relies on comparing groups *"with presumed different levels of CS-related symptoms"*. The finding that people with fibromyalgia, multisite chronic pain, chronic spinal pain, single-site non-spinal chronic pain and healthy controls show progressively lower CSI-7 scores demonstrates discriminative validity.

Nevertheless, this design does not identify which constructs drive these differences. As we have argued elsewhere[2], assuming that some groups have more CS, then observing higher CSI scores in those groups, and thus concluding that the CSI measures CS-related symptoms risks a circular interpretation (*Figure 1.a*). In sum, the study demonstrates that the CSI-7 differentiates between clinical populations, but not that it measures CS-related symptoms (*Figure 1.b*).

Second, CSI scores appear to predominantly reflect psychological symptom burden rather than pain sensitivity. A 2023 meta-analysis concluded that CSI scores are more associated with psychological variables than with pain sensitivity[3]. A subsequent meta-analysis by Neblett et al. reported significant correlations between CSI scores and sensory tests, suggesting that CSI is not completely independent of pain sensitivity[4]. However, a recent large cohort study again found that CSI scores correlate mainly with psychological variables[5]. This is also expected to be the case of CSI-7, as only 2 of its 7 items refer to pain perception, with the rest concerning phenomena such as anxiety, poor sleep or low energy.

The authors do not explicitly state which definition of CS they employ. If the current IASP definition of CS is used[6], there is no evidence causally linking CS to a symptom profile, psychological or sensory[2]. If Woolf's alternative definition is used instead[7], then pain hypersensitivity related to central alterations would be indicative of CS, though this has never been demonstrated in humans, and again CSI scores appear to reflect mainly psychological symptom burden.

In practice, "CS-related symptoms" thus means "symptoms thought to be associated with CS", and rests largely on belief and tradition: it is unknown what symptoms CS produces in humans. We agree with Neblett et al. that CSI-7 scores should be associated with biological markers of CS. Until then, there is no stronger basis for linking CSI scores to CS than for any other questionnaire grading patient subgroups, such as the quality-of-life questionnaire SF-36[8].

It concerns us that describing CSI-7 as assessing "CS-related symptoms", together with its name "Central Sensitization Inventory", will invite clinicians to read its scores as a proxy for "amount of central sensitization", despite the authors' disclaimer that CS is not directly measured. This has happened before with the CSI-25 (Table 2 in[2]). Consequently, we propose a more cautious stance in which CSI-25 and CSI-7 are understood as measures of symptom burden, and linkage to CS is avoided until appropriate evidence supports it.

We hope this letter is received in the constructive spirit intended and helps prevent conflation of patient-reported outcomes with neurophysiological mechanisms.

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The authors have no conflict of interest to declare.

Figure legends

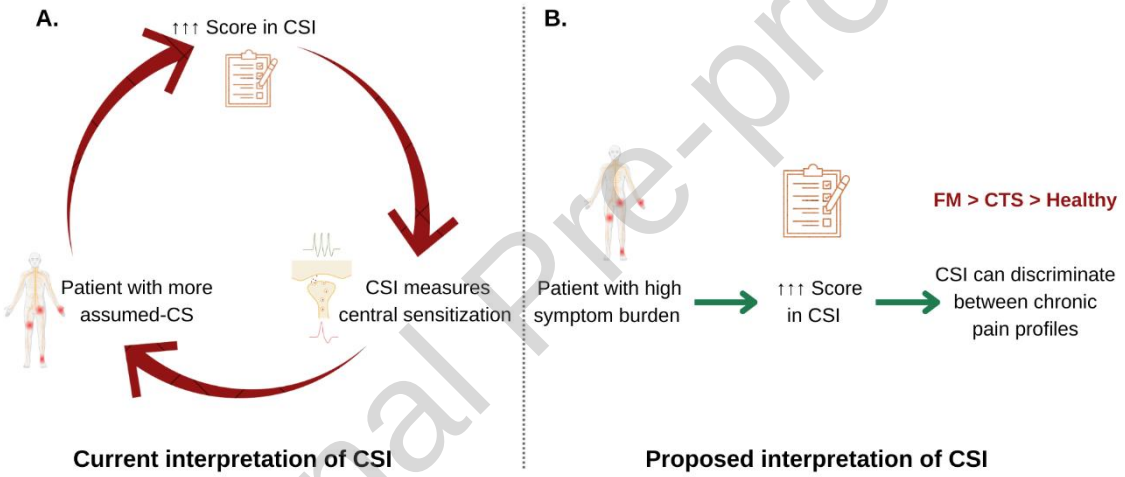

Figure 1. **Current and alternative interpretation of the central sensitization inventory.** CS: central sensitization; CSI: Central Sensitization Inventory; CTS: Carpal Tunnel Syndrome; FM: Fibromyalgia. These conceptual interpretations applied to both CSI-25 and CSI-7.

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