

# RELIABILITY AND DETERMINATION OF CUT-OFFS FOR THE DANISH VERSION OF THE TAMPA SCALE OF KINESIOPHOBIA (TSK) IN PATIENTS WITH SEVERE CHRONIC PAIN

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## Background and aims

- Chronic pain is a large burden on society and approximately 20% of the western population live with chronic pain<sup>1</sup>
- Kinesiophobia is associated with the degree of disability in patients<sup>1</sup>. Tampa Scale of Kinesiophobia (TSK), which has recently been translated into Danish, is a valid and reliable tool for identifying kinesiophobic beliefs<sup>2</sup>
- The aims of this study were to investigate test-retest reliability for both the continuous and dichotomous scale at different cut-offs for the TSK-17, TSK-13 and TSK-11 versions, as well as measurement error

## Methods

- The planning, conduction and reporting of this reliability study followed recommendations from COSMIN<sup>3,4</sup>
- Twice, 77 patients with severe chronic pain referred to multidisciplinary pain treatment completed the TSK-17 at home. Their condition was stable
- Mean interval was 8.4 ± 1.9 days between tests
- Intraclass Correlation Coefficient (ICC<sub>2,1</sub>), Standard Error of Measurement (SEM), Smallest Detectable Change (SDC95%) as well as reliability (% stable) and measurement error (κ-values) between classification into high and low TSK scores were calculated



## Results

- Test-retest reliability for the continuous scale for the TSK-17, TSK-13 and TSK-11 was good to excellent

TSK version	TSK-17	TSK-13	TSK-11
ICC <sub>2,1</sub> (CI 95%)	0,86 (0,79 - 0,91)	0,88 (0,82 - 0,92)	0,87 (0,81 - 0,92)
Floor or Ceiling effect %	0,00	1,30	1,95

TSK, Tampa Scale of Kinesiophobia, ICC<sub>2,1</sub>, Intra Class Correlation – two-way random effects, total agreement, CI 95%, Confidence Interval 95%

- Measurement error was calculated as Standard Error of Measurement and Smallest detectable change

TSK version	TSK-17	TSK-13	TSK-11
SEM <sub>agreement</sub>	3,08	2,42	2,10
SDC95%	8,53	6,71	5,82

SEM<sub>agreement</sub>, Standard Error of Measurement with total agreement, SDC95%, Smallest Detectable Change 95% Confidence Interval

- With cut-off scores derived from the median of the population, the test-retest reliability in classification into high and low TSK was good, with moderate to good kappa values that were significant

TSK version	TSK-17	TSK-13	TSK-11
Cut-off score	40	31	27
Stable patients %	80,5 %	84,4 %	78,0 %
Kappa value (p-value)	0,61 (<0,001)	0,69 (<0,001)	0,54 (<0,001)

TSK, Tampa scale of Kinesiophobia, p-value, significans value

- Patients classified as high TSK had higher pain-related disability and were less physically active.

## References:

- Vos et al., 2015, *Lancet*, [https://doi.org/10.1016/S0140-6736\(15\)60692-4](https://doi.org/10.1016/S0140-6736(15)60692-4)
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## Conclusions

- In patients with severe chronic pain, the Danish versions of TSK are reliable**
- With median derived cut-offs, all versions showed good reliability with good κ-values, lending evidence to the clinical relevance of these cut-offs**