

Purpose The SSS is a subjective measure of sleepiness, frequently used for both research and clinical purposes. Whereas an instrument like the Epworth Sleepiness Scale (Chap. 29) examines general experiences of sleepiness over the course of an entire day, the SSS evaluates sleepiness at specific moments in time. Consisting of only one item, the scale requires respondents to select one of seven statements best representing their level of perceived sleepiness [1]. As a single-item measure, the scale is best suited for repeated use over the course of a research study or treatment intervention.

Population for Testing The scale has no specified population for testing, though its performance has been evaluated exclusively in adults over the age of 18.

Administration The scale is a self-administered, paper-and-pencil measure requiring 1–2 min for completion.

Reliability and Validity In an early examination of the SSS, Hoddes and colleagues [2] found that average scores on the scale were significantly elevated following 24 h of total sleep deprivation. Researchers have found that the scale can be used to predict performance on tasks related to alertness (e.g., reaction time, vigilance tests) following total sleep deprivation; however, the scale is not as sensitive to partial sleep deprivation, which

most closely mimics the deficits experienced by those with sleep disorders [3]. Though widely used in research settings, some have taken issue with the scale and its unidimensional quality. In their evaluation of the scale, MacLean and colleagues [4] found that sleepiness as measured by the SSS has at least two dimensions – what they referred to as “activation” and “sleepiness” – and that the descriptors used as each level are often not considered equivalent by respondents.

Obtaining a Copy The scale is freely available online.

Scoring Respondents use a scale from 1 to 7 to indicate their current level of sleepiness. Values are assigned as follows:

1. “Feeling active and vital; alert; wide awake.”
2. “Functioning at a high level, but not at peak; able to concentrate.”
3. “Relaxed; awake; not at full alertness; responsive.”
4. “A little foggy; not at peak; let down.”
5. “Fogginess; beginning to lose interest in remaining awake; slowed down.”
6. “Sleepiness; prefer to be lying down; fighting sleep; woozy.”
7. “Almost in reverie; sleep onset soon; lost struggle to remain awake.”

Scores can then be compared longitudinally across different times of day, seasons, and stages of treatment. However, researchers and clinicians

The Stanford Sleepiness Scale (SSS)

Degree of Sleepiness	Scale Rating
Feeling active, vital, alert, or wide awake	1
Functioning at high levels, but not at peak; able to concentrate	2
Awake, but relaxed; responsive but not fully alert	3
Somewhat foggy, let down	4
Foggy; losing interest in remaining awake; slowed down	5
Sleepy, woozy, fighting sleep; prefer to lie down	6
No longer fighting sleep, sleep onset soon; having dream-like thoughts	7
Asleep	X

should be careful when comparing scores between individuals who may possess different baselines for sleepiness.

- MacLean, A. W., Fekken, G. C., Saskin, P., & Knowles, J.B. (1992). Psychometric evaluation of the Stanford sleepiness scale. *Journal of Sleep Research, 1*(1), 35–39.

References

- Hoddes, E., Dement, W., & Zarcone, V. (1972). The development and use of the Stanford sleepiness scale (SSS). *Psychophysiology, 9*, 150.
- Hoddes, E., Zarcone, V., Smythe, H., Phillips, R., & Dement, W.C. (1973). Quantification of sleepiness: a new approach. *Psychophysiology, 10*, 431–436.
- Broughton, R. (1982). Performance and evoked potential measures of various states of daytime sleepiness. *Sleep, 5*, S135-S146.

Representative Studies Using Scale

- Carskadon, M. A. & Dement, W. C. (2007). Cumulative effects of sleep restriction on daytime sleepiness. *Psychophysiology, 18*(2), 107–113.
- Connor, J., Norton, R., Ameratunga, S., Robinson, E., Civil, I., Dunn, R., Bailey, J., & Jackson, R. (2002). Driver sleepiness and risk of serious injury to car occupants: population based case control study. *British Medical Journal, 324*, 1125–1128.