

## The Epworth Sleepiness Scale (ESS)

By: Carole Smyth MSN, APRN, BC, ANP/GNP, Montefiore Medical Center

**WHY:** A good sleep at night promotes health. Daytime sleepiness can be an antecedent to falls, vehicular accidents, household fires, decreased quality of life, and decreased functional recovery in older adults. Sleepiness during the day may also signal uncontrolled hypertension and diabetes (Cuellar & Ratcliffe, 2008; Goldstein, Ancoli-Israel, Shapiro, 2004), unrecognized depression (Magliore, et al, 2012) and/or sleep disordered breathing (Khan, 2013). Assessment of daytime sleepiness enables the nurse to intervene by conducting further nursing assessments, educating and implementing interventions with the client and/or caregiver, or by referring the client for further assessment.

**BEST TOOL:** The Epworth Sleepiness Scale (ESS) is an effective instrument used to measure average daytime sleepiness. The ESS differentiates between average sleepiness and excessive daytime sleepiness that requires intervention. The client self-rates on a four point Likert scale how likely it is that he/she would doze in eight different situations. Scoring of the answers is 0-3, with 0 being “would never doze” and 3 being “high chance of dozing.” Scoring of the ESS was modified in 1997 to reflect greater accuracy; scores above 10 indicate excessive daytime sleepiness (Johns, 1997).

**TARGET POPULATION:** The ESS may be used for both initial assessment and ongoing comparative measurements with older adults across the health care continuum. The ESS is not an appropriate tool for measuring changes in sleep over a period of hours.

**VALIDITY AND RELIABILITY:** There is a high level of internal consistency between the eight items in the ESS as measured by Cronbach’s alpha, ranging from 0.73 to 0.90. Numerous studies using the ESS have supported high validity and reliability. Cross-cultural use of the ESS has required adaptations in items 3 and 8 due to concerns that respondents do not drive or use a car, but have maintained the high level of internal consistency (Bajpai et al., 2016; Zhang et al., 2011)

**STRENGTHS AND LIMITATIONS:** The ESS is a subjective measure of daytime sleepiness. Self reporting by clients though empowering, may be limited by perception and may reflect inaccurate information if the client has difficulty understanding what is written, or cannot see or physically write out responses. The ESS has been translated into Spanish, Portuguese, Italian, German, Swedish, Finnish, Greek, French, Mandarin, Japanese, Hindu, Thai, Amharic, and Turkish. Baldwin emphasized differences in translation between Mexican-Americans and other Spanish speaking populations. Pictorial and written versions of the ESS for online distribution has been created in English and maintained reliability and validity (Boyes, et al, 2017; Drakatos, et al. 2015). The tool has not been validated for phone interviews.

### MORE ON THE TOPIC:

Best practice information on care of older adults: <https://consultgeri.org>.

Johns, M.W. The Epworth Sleepiness Scale: The Official Website of the Epworth Sleepiness Scale: <http://epworthsleepinessscale.com>.

Bajpai, G., Shukla, G., Pandey, R.M., Gupta, A., Afsar, M., Goyal, V., Srivastava, A., & Bhari, M. (2016). Validation of a modified Hindi version of the Epworth Sleepiness Scale among a North Indian population. *Annals of Indian Academy of Neurology*, 19(4):499-504.

Baldwin, C., Choi, M., McClain, D.B., Celaya, A., & Quan, S.F. (2012). Spanish Translation and Cross-Language Validation of a Sleep Habits Questionnaire for Use in Clinical and Research Settings. *Journal of Clinical Sleep Medicine*, 8(2), 137-146.

Boyes, J., Drakatos, P., Jarrold, I., Smith, J., & Steier, J. (2017). The use of an online Epworth Sleepiness Scale to assess excessive daytime sleepiness. *Sleep Breath*, 21(2), 333-340.

Cuellar, N.G., & Ratcliffe, S.J. (2008). A comparison of glycemic control, fatigue, and depression in Type 2 diabetes with and without restless legs syndrome. *Journal of Clinical Sleep Medicine*, 4(1), 50-56.

Drakatos, P., Ghiassi, R., Jarrold, I., Harris, J., Abidi, A., Douiri, A., Hart, N., Kosky, C., Williams, A. J., Partridge, M.A., & Steier, J. (2015). The use of an online pictorial Epworth Sleepiness Scale in the assessment of age and gender specific differences in excessive daytime sleepiness. *Journal of Thoracic Disease*, 7(5), 897-902.

Gelaye, B., Lohsoonthorn, V., Lertmecharit, S., Pensuksan, W.C., Sanchez, S., Lemma, S., Berhane, Y., Zhu, X., Carlos Velez, J., Barbosa, C., Anderade, A., Tadesse, M. G., & Williams, M.A. (2014). Construct validity and factor structure of the Pittsburgh Sleep Quality Index and Epworth Sleepiness Scale in a multi-national study of African, South East Asian and South American College Students. *PLoS One*, 9(12), e116383.

Goldstein, I.B., Ancoli-Israel, S., & Shapiro, D. (2004). Relationship between daytime sleepiness and blood pressure in healthy older adults. *American Journal of Hypertension*, 17, 787-792.

Johns, M.W. (1991). A new method for measuring daytime sleepiness: The Epworth sleepiness scale. *Sleep*, 14, 540-545.

Johns, M.W. (1992). Reliability and factor analysis of the Epworth Sleepiness Scale. *Sleep*, 15, 376-381.

Johns, M.W. (1994). Sleepiness in different situations measured by the Epworth Sleepiness Scale. *Sleep*, 17, 703-710.

Johns, M.W., & Hocking, B. (1997). Daytime sleepiness and sleep habits of Australian workers. *Sleep*, 20(10), 844-849.

Johnson, K.D., Patel, S.R., Baur, D. M., Edens, E., Sherry, P., Malhotra, A., Kales, S.N. (2014). Association of Sleep Habits with Accidents and Near Misses in United States Transportation Operators. *Journal of Occupational and Environmental Medicine*, 56(5), 510-515.

Khan, A., Harrison, S.L., Kezirian, E.J., Ancoli-Israel, S., O’Hearn, D., Orwoll, E., Redline, S., Ensrud, K., & Stone, K.L., (2013). Obstructive sleep apnea during rapid eye movement sleep, daytime sleepiness, and quality of life in older men in osteoporotic fractures in men (MrOS) sleep study. *Journal of Clinical Sleep Medicine*, 9(3), 191-198.

Magliore, J.E., Ancoli-Israel, S., Peters, K.W., Paudel, M.L., Yaffe, K., Ensrud, K.E., & Stone, K.L. (2012). Depressive symptoms and subjective and objective sleep in community-dwelling older women. *JAGS*, 60(4), 635-643.

Zhang J.N., Peng, B., Zhao, T.T., Xiang, M., Fu, W., & Peng, Y. (2011). Modification of the Epworth Sleepiness Scale in Central China. *Quality of Life Research*, 20, 1721-1726.

# The Epworth Sleepiness Scale (ESS)

How likely are you to doze off or fall asleep in the following situations, in contrast to feeling just tired? This refers to your usual way of life in recent times. Even if you have not done some of these things recently try to work out how they would have affected you. Use the following scale to choose the **most appropriate number** for each situation:

- 0 = would **never** doze
- 1 = **slight chance** of dozing
- 2 = **moderate chance** of dozing
- 3 = **high chance** of dozing

SITUATION	CHANCE OF DOZING (0-3)
Sitting and reading	
Watching television	
Sitting inactive in a public place (e.g. a theater or meeting)	
As a passenger in a car for an hour without a break	
Lying down to rest in the afternoon when circumstances permit	
Sitting and talking to someone	
Sitting quietly after a lunch without alcohol	
In a car, while stopped for a few minutes in the traffic	
TOTAL SCORE	

## Score Results:

- 1-5 Lower Normal Daytime Sleepiness
  - 6-10 Higher Normal Daytime Sleepiness
  - 11-12 Mild Excessive Daytime Sleepiness
  - 13-15 Moderate Excessive Daytime Sleepiness
  - 16-24 Severe Excessive Daytime Sleepiness
- Scoring was modified in 1997

<http://epworthsleepinessscale.com>; accessed 1/29/2018.

Permission for single-use of the information contained in this material was obtained from the Associated Professional Sleep Societies, LLC, September 2006.

Copyright © MW Johns 1990-1997. Used under license.