



# Day-time naps promote vocabulary growth in early childhood

By Dr Jessica K Edwards

Cross-sectional studies have indicated that daytime napping enhances cognitive processes, including word learning, in early childhood.<sup>1,2</sup> Now, Klára Horváth and Kim Plunkett at the University of Oxford have investigated the longitudinal relationship between sleep and cognitive development, specifically vocabulary development in a cohort of 246 infants and toddlers. The researchers monitored day-time and night-time sleeping patterns using a uniquely designed sleep diary (Sleep and Naps Oxford Research Inventory; SNORI<sup>3</sup>) and made vocabulary assessments at baseline and on up to eight follow-up occasions. They then used the sleep measures as predictors in a multilevel growth curve analysis of vocabulary development. The data showed that the length of night-time sleep was negatively associated with expressive vocabulary growth. In addition, good quality, un-fragmented night-time sleep was associated with larger predicted receptive vocabulary. Interestingly, the number of daytime naps was positively associated with both predicted expressive and receptive vocabulary growth. The researchers conclude that napping is at least as important, if not more so, than night-time sleep when it comes to vocabulary learning in early childhood. Of note, the number of naps seemed to be more important than the total length of the daytime sleep. The authors thus propose that young children may benefit from more distinct periods of daytime sleep to provide opportunities to consolidate newly learnt words.

Referring to:

Horváth, K. & Plunkett, K. (2016), Frequent daytime naps predict vocabulary growth in early childhood. *J Child Psychol Psychiatr.* 57: 1008-1017. doi: 10.1111/jcpp.12583.

## Study Implications

Lead author Klára Horváth indicates the key implications from the study data:

### Clinical practice:

“Child practitioners should regularly check children’s sleep, as if necessary, early intervention (e.g. improving sleep hygiene) may prevent later hindered cognitive development. The sleep diary (SNORI) developed for this study can be used to obtain information of children’s sleep patterns and is freely available from the Oxford BabyLab website. If practitioners identify slow language development, it is worth looking at children’s sleep alongside usual investigations.”

### Schools/educational practice:

“Parents and nurseries should be advised to promote daytime sleeping. Children should be given the opportunity to have more periods of daytime sleep, should they need it.”

### Recommendations for further science:

“Future research should clarify whether improving sleep in children with language delay or in atypically developing children may result in better cognitive development.”

Further reading:

<sup>1</sup>Horváth, K. et al. (2016), A daytime nap facilitates generalization of word meanings in young toddlers. *Sleep* 39: 203-207. doi: 10.5665/sleep.5348.

<sup>2</sup>Horváth, K. et al. (2015), Napping facilitates word learning in early lexical development. *J Sleep Res.* 24:503-509. doi: 10.1111/jsr.12306.

<sup>3</sup><https://www.psy.ox.ac.uk/research/oxford-babylab>

## Glossary:

**Receptive vocabulary:** words that a person can comprehend and respond to, even if the person cannot produce those words.

**Expressive vocabulary:** words that a person can express or produce in either speaking or writing.