

TURUN YLIOPISTO
Lääketieteellinen tiedekunta

SAHLBERG, LASSI: Normative values for sleep parameters in pre-schoolers using actigraphy.

Syventävien opintojen kirjallinen työ, 11 s., 4 liites.
Kliininen neurofysiologia
Maaliskuu 2017

Summary

There are no previous reference values for actigraph-measured sleep applicable to a general population of pre-school children. In this study we aimed to create standardized actigraphy parameters using a community based sample of 98 children (56 boys and 42 girls) aged between 2 and 6 years (4.7 ± 1.3 years).

The subjects wore the actigraph on their non-dominant wrist for seven days whereafter the data was extracted and converted to activity counts, which were then scored as sleep by Actiwatch Activity & Sleep analysis 7 version 7.31. Subjects were divided into three groups based on developmental similarity of sleep structure: 2-3-year-olds, 4-5-year-olds and 6-year-olds. Mean and standard deviation were calculated for each parameter. Reference values were created using the 2.5th percentile ($\text{mean} - 1.96 * \text{SD}$) and the 97.5th percentile ($\text{mean} + 1.96 * \text{SD}$).

By implementing this definition, the following reference intervals for the whole sample were calculated: total sleep time, 7:23-9:47 (hh:mm), sleep latency 0.2-48.4 minutes, sleep efficiency 0.69-0.87, fragmentation index 0.23-0.53, circadian rhythm 23:39-24:24 hh:mm, cosine peak 12:37-15:53 hh:mm and light/dark ratio 1.14-5.63. Many structural changes of sleep were observed between the age groups including the decrease of daily sleep time, sleep latency, and napping with age.

Through using an ambulatory and objective method we succeeded in obtaining reference intervals for several sleep parameters based on a large community based sample.

Keywords children, nocturnal, activity, guidelines, pediatric