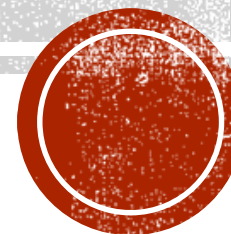


VUODENAJAT JA LASTEN UNI

El Anja Kärki, TAYS KNF, Kuvantamiskeskus ja
apteekkiliikelaitos



SIDONNAISUUDET

- Ei ole



CHILD-SLEEP

- Kansallinen lasten uni ja terveys tutkimus
- <https://thl.fi/fi/tutkimus-ja-kehittaminen/tutkimukset-ja-hankkeet/lapsen-uni-ja-terveys-child-sleep>
- PSG eri ikäryhmissä:
 - 1 ja 8 kk
 - 2 ja 5 v.



MUKANA MENOSSA...

- Sari-Leena Himanen
- Juulia Paavonen
- Outi Saarenpää-Heikkilä
- Anna-Liisa Satomaa
- Antti Saastamoinen
- Heini Huhtala

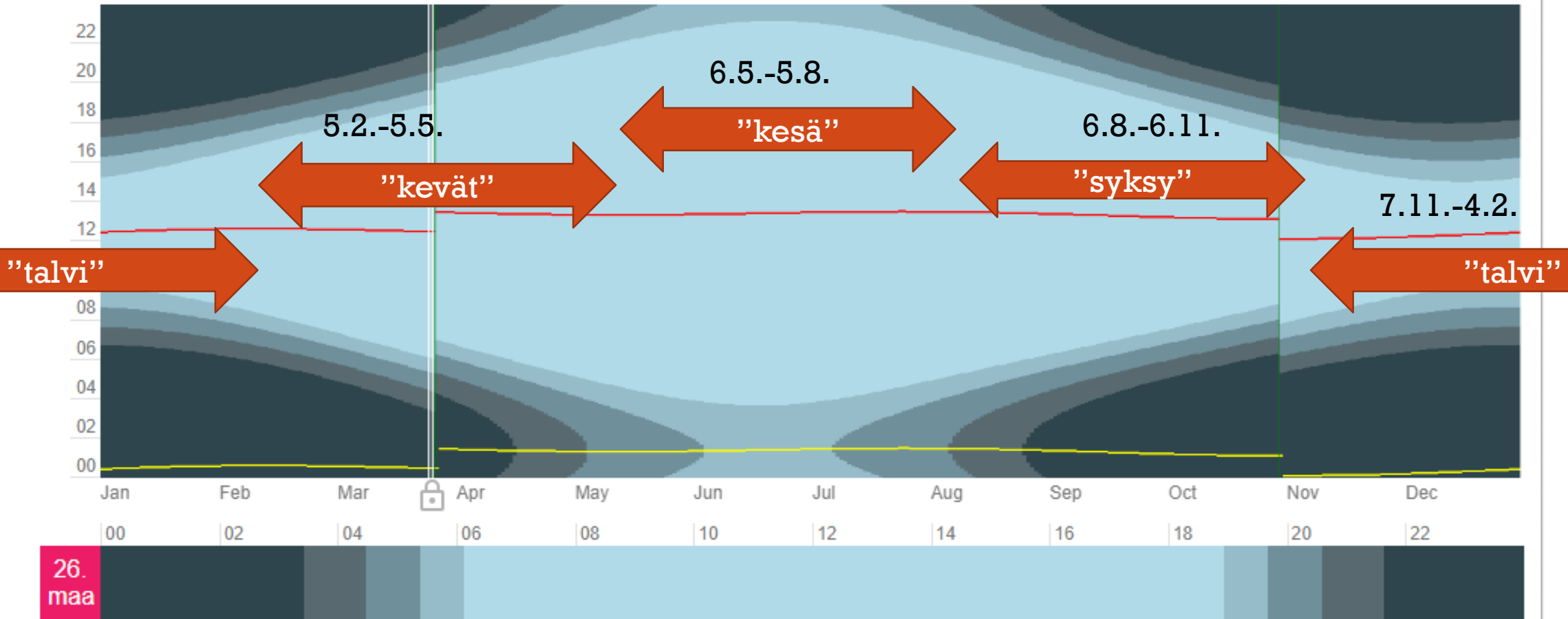


VUODENAJAT JA VALO TAMPEREELLA

2021 Sun Graph for Tampere

Rise/Set Times

Day/Night Length








VUODENAJAT JA VAUVOJEN PSG

- Aiemmat vauvojen PSG-julkaisut (2019, 2020)
 - 1 kk vauvat
 - 8 kk vauvat



Sleep architecture is related to birth season in 1-month-old infants

Anja Kärki^a, E. Juulia Paavonen ^{b,c}, Anna-Liisa Satomaa ^a, Outi Saarenpää-Heikkilä ^d, Heini Huhtala ^e, and Sari-Leena Himanen ^{a,f}

^aDepartment of Clinical Neurophysiology, Tampere University Hospital, Medical Imaging Centre and Hospital Pharmacy, Pirkanmaa Hospital District, Tampere, Finland; ^bPediatric Research Center, Child Psychiatry, University of Helsinki and Helsinki University Hospital, Helsinki, Finland; ^cDepartment of Public Health Solutions, National Institute for Health and Welfare, Helsinki, Finland; ^dDepartment of Pediatrics, Tampere University Hospital, Tampere, Finland; ^eFaculty of Social Sciences, Tampere University, Tampere, Finland; ^fFaculty of Medicine and Health Technology, Tampere University, Tampere, Finland

ABSTRACT

Individual variation in sleep quality, quantity, and architecture is pronounced in small infants. Reasons for this remain largely unclear, even though environmental and genetic factors have been suggested to play a role. In order to study the effect of birth seasons on infant sleep architecture, 85 healthy 1-month-old infants underwent an overnight polysomnography (PSG). The PSGs were conducted in 2011–2013. The cohort was divided into four subgroups according to the amount of seasonal light at the time of birth, with each group covering a period of approximately three months. The groups were labeled IL (increasing light), L (light), ID (increasing darkness), and D (dark), corresponding to spring, summer, autumn, and winter, respectively. We found the amount of stage R sleep (precursor of REM sleep, formerly active sleep) to be the highest in infants born in summer, whereas infants born in winter presented the smallest amount of stage R sleep. Infants born in summer presented the smallest amount of stage T sleep (transitional sleep), while stage T sleep was most abundant in infants born in winter. In addition, infants born in summer showed the shortest total sleep time (TST) and the smallest number of awakenings during the study night. This was the first PSG study to find out that birth season modifies the sleep architecture of infants.

ARTICLE HISTORY

Received 19 April 2019
Revised 5 June 2019
Accepted 5 June 2019

KEYWORDS

Polysomnography; infant sleep; infant polysomnography; birth season; seasonality; stage R sleep; stage T sleep







ABSTRACT

Individual variation in sleep quality, quantity, and architecture is pronounced in small infants. Reasons for this remain largely unclear, even though environmental and genetic factors have been suggested to play a role. In order to study the effect of birth seasons on infant sleep architecture 85 healthy 1-month-old infants underwent an overnight polysomnography (PSG). The PSGs were conducted in 2011–2013. The cohort was divided into four subgroups according to the amount of seasonal light at the time of birth, with each group covering a period of approximately three months. The groups were labeled IL (increasing light), L (light), ID (increasing darkness), and D (dark), corresponding to spring, summer, autumn, and winter, respectively. We found the amount of stage R sleep (precursor of REM sleep, formerly active sleep) to be the highest in infants born in summer, whereas infants born in winter presented the smallest amount of stage R sleep. Infants born in summer presented the smallest amount of stage T sleep (transitional sleep), while stage T sleep was most abundant in infants born in winter. In addition, infants born in summer showed the shortest total sleep time (TST) and the smallest number of awakenings during the study night. This was the first PSG study to find out that birth season modifies the sleep architecture of infants.



Sleep architecture is related to the season of PSG recording in 8-month-old infants

Anja Kärki^a, E. Juulia Paavonen ^{b,c}, Anna-Liisa Satomaa ^a, Outi Saarenpää-Heikkilä ^{d,e}, and Sari-Leena Himanen ^{a,e}

^aDepartment of Clinical Neurophysiology, Tampere University Hospital, Medical Imaging Centre and Hospital Pharmacy, Tampere, Finland; ^bPediatric Research Center, Child Psychiatry, University of Helsinki and Helsinki University Hospital, Helsinki, Finland; ^cDepartment of Public Health Solutions, National Institute for Health and Welfare, Helsinki, Finland; ^dCenter for Child Health Research Tampere University, Tampere University Hospital, Tampere, Finland; ^eFaculty of Medicine and Health Technology, Tampere University, Tampere, Finland

ABSTRACT

To date, little is known about the impact of season on infant sleep. In higher latitudes, the duration of daily light time varies substantially between different seasons, and environmental light is one potential factor affecting sleep. In this cohort study, one-night polysomnography (PSG) was performed on 72 healthy 8-month-old infants in 2012 and 2013 to study the effect of season on the sleep architecture of young infants in Finland. The children were divided into four subgroups, according to the amount of light during their birth season and the amount of light during the season of the PSG recordings, corresponding to spring, summer, autumn, and winter. We found that the season of birth did not have an impact on the infants' sleep architecture at 8 months of age, but the season of the PSG recording did have an effect on several sleep variables. In the PSGs conducted during the spring, there was less N3 sleep and more N2 sleep than in the PSGs conducted during the autumn. In addition, there was more fragmented sleep during spring than autumn. According to our data, the season has an effect on the sleep architecture of young infants and should, therefore, be considered when evaluating the PSG findings of young infants. The exact mechanisms behind this novel finding remain unclear, however. The findings imply that infants' sleep is affected by the season or light environment, as is the case in adult sleep. Since potential explanatory factors, such as direct natural or artificial light exposure and the melatonin levels of the infants, were not controlled, more research is needed in the future to better understand this phenomenon.

ARTICLE HISTORY

Received 12 December 2019

Revised 4 April 2020

Accepted 7 April 2020

KEYWORDS

Infant sleep;
polysomnography; season;
chronobiology; seasonality;
environmental light; SWS;
N3 sleep



ABSTRACT

To date, little is known about the impact of season on infant sleep. In higher latitudes, the duration of daily light time varies substantially between different seasons, and environmental light is one potential factor affecting sleep. In this cohort study, one-night polysomnography (PSG) was performed on 72 healthy 8-month-old infants in 2012 and 2013 to study the effect of season on the sleep architecture of young infants in Finland. The children were divided into four subgroups, according to the amount of light during their birth season and the amount of light during the season of the PSG recordings, corresponding to spring, summer, autumn, and winter. We found that the season of birth did not have an impact on the infants' sleep architecture at 8 months of age, but the season of the PSG recording did have an effect on several sleep variables. In the PSGs conducted during the spring, there was less N3 sleep and more N2 sleep than in the PSGs conducted during the autumn. In addition, there was more fragmented sleep during spring than autumn. According to our data, the season has an effect on the sleep architecture of young infants and should, therefore, be considered when evaluating the PSG findings of young infants. The exact mechanisms behind this novel finding remain unclear, however. The findings imply that infants' sleep is affected by the season or light environment, as is the case in adult sleep. Since potential explanatory factors, such as direct natural or artificial light exposure and the melatonin levels of the infants, were not controlled, more research is needed in the future to better understand this phenomenon.



TAUSTATEORIAA AIHEESTA VUODENAJAT JA UNI

- Vuodenajat Suomessa → luonnonvalon vaihtelu (Tre:lla noin 5-20 h)
- Vuodenajat → myös vaihteleva keinovalon tarve?
- Valo → sirk.rytmi, vireystila, melatoniini, unen rakenne, unen määrä, mieliala...
- Valo/vuodenajat ja vauvojen uni??
 - Kyselytutkimukset (Iwata et al 2017, Paavonen et al 2019)
 - Aktigrafitutkimukset (Cohen et al 2012, Aronen et al 2002)
 - Ja nyt 2 PSG-tutkimusta! (Kärki et al 2019, 2020)

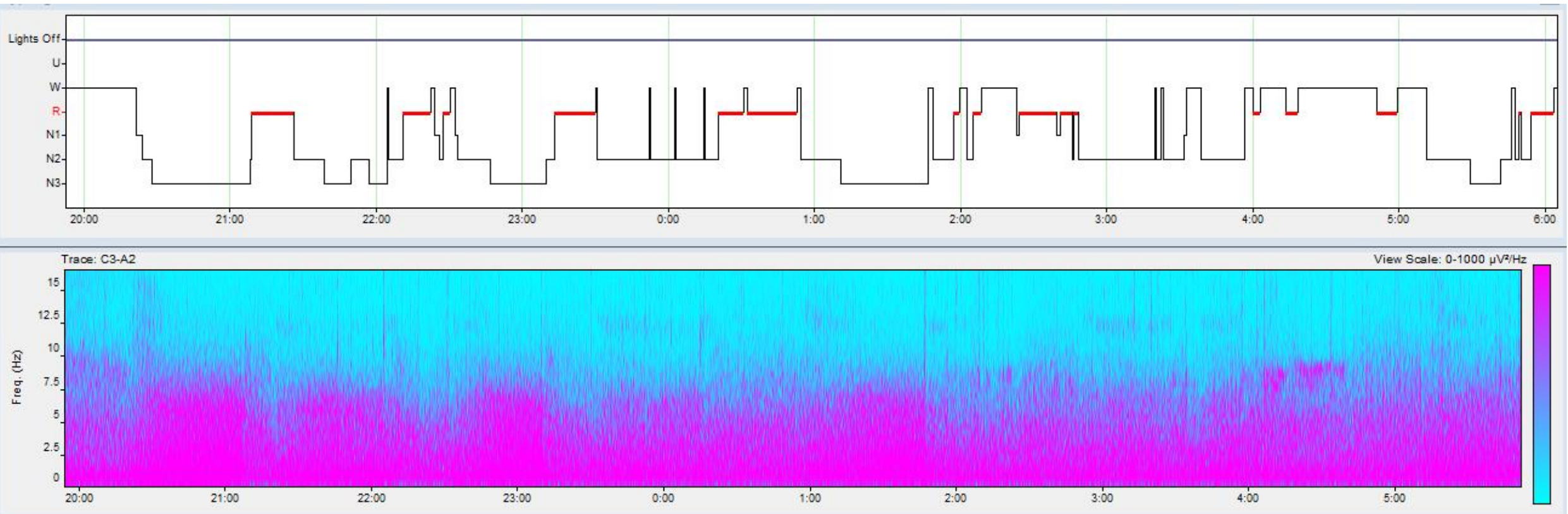


HETKINEN, EI SIINÄ VIELÄ KAIKKI!



3. JULKAISUN TAVOITTEET

- Vuodenaika ja 2 v lasten PSG
- Vuodenaika ja 2 v lasten unen spektri



KIITOS!

- Nukkukaa hyvin ja riittävästi!

