

# Academic Publications and Public Engagement

(detailed List)

## PUBLICATIONS

Up-to-date publication list: [ORCID](#), [Google Scholar](#); IF refers to 5-year journal impact factor, ISI Journal Citation Reports (JCR)

### Submitted/ Under review/ Preprints (6)

*From womb to crib: How fetal activity patterns in utero reveal postnatal sleep behavior*

Markovic A, Mühlematter C, Blume C, Zimmermann P, **Kurth S**, in revision (at Nature Communications), preprint at bioRxiv

*Charting infant sleep cycle development using actigraphy: Longitudinal evidence for cycle lengthening within the first year of life from 35,000 hours of sleep*

Hammad G, Schoch S, Engelmann M, Spock Z, **Kurth S**, Winnebeck E, preprint at bioRxiv

*The gut microbiota and sleep in infants: a focus on diurnal rhythmicity patterns*

Kerff F, Mühlematter C, Adamov A, Fast D, Plüss S, Zimmermann P, **Kurth S\***, Bokulich NA\*, \*Shared last authorship, preprint at bioRxiv

*Fecal melatonin as a biomarker of emerging circadian maturity and gut microbiota in infancy*

Al-Andoli M, Zimmermann P, Schoch S, Markovic A, Mühlematter C, Beaugrand M, Jenni O, Liamlahi R, Walser JC, Nielsen D, **Kurth S**, preprint at Research Square

*The infraslow fluctuation of sigma power during sleep: links to markers of arousal and memory reactivation across development*

Dimitriades ME, Osorio-Forero A, Fattinger S, von Arx S, **Kurth S**, Pugin F, Jaramillo V, Volk C, Krugliakova E, Furrer M, Leach S, Achermann P, Gerstenberg M, Huber R, preprint at bioRxiv

*Wake EEG oscillation dynamics reflect both sleep need and brain maturation across childhood and adolescence*

Snipes S, Krugliakova E, Jaramillo V, Volk C, Furrer M, Studler M, LeBourgeois M, **Kurth S**, Jenni O, Huber R, preprint at bioRxiv

## Peer-reviewed original articles (55)

### First/ Last authorship (31)

- 1) *Tracing infant sleep neurophysiology longitudinally from 3 to 6 months: EEG insights into brain development*  
Beaugrand M, Jaramillo V, Mühlematter C, Schoch SF, Reicher V, Markovic A\*, **Kurth S\***,  
\*Shared last authorship, 2026, Nature Biological Timing and Sleep
- 2) *Stool dynamics and the developing gut microbiome during infancy*  
Al-Andoli M, Schoch S, Markovic A, Mühlematter C, Beaugrand M, Jenni OG, Liamlahi R,  
Walser JC, Nielsen D, **Kurth S**, 2026, Journal of Biological Rhythms (IF 2.1)
- 3) *Linking gut microbiota rhythmicity to circadian maturation in infants*  
Mühlematter C, Nielsen DS, Castro-Mejía JL, Walser JC, Schoch SF, **Kurth S**, 2025,  
Scientific Reports (IF 4.3)
- 4) *Study protocol for the NapBiome study: Targeting gut microbiota to improve sleep rhythm and developmental and behavioural outcomes in early childhood*  
Zimmermann P\*, **Kurth S\***, Giannoukos S, Stocker M, Bokulich NA, \*Shared first authorship,  
2025, BMJ Open (IF 2.4)
- 5) *Associations between social contact, sleep and dietary patterns among children: A cross-sectional study*  
Mühlematter C, Beaugrand M, Markovic A, **Kurth S**, 2024, Foods (IF 5.1)
- 6) *Not simply a matter of parents — Infants' sleep-wake patterns are associated with their regularity of eating*  
Mühlematter C, Nielsen DS, Castro-Mejía JL, Brown S, Rasch B, Wright KP, Walser JC,  
Schoch S, **Kurth S**, 2023, PLoS One (IF 3.3)
- 7) *Lack of association between behavioral development and simplified topographical markers of the sleep EEG in infancy*  
Beaugrand M, Jaramillo V, Markovic A, Huber R, Kohler M, Schoch S\*, **Kurth S\***, \*Shared  
last authorship, 2023, Neurobiology of Sleep and Circadian Rhythms (IF N/A)
- 8) *Bedtime to the brain: How infants' sleep behaviours intertwine with NREM sleep EEG features*  
Schoch S, Jaramillo V, Markovic A, Huber R, Kohler M, Jenni O, Lustenberger C, **Kurth S**,  
2023, J Sleep Res (IF 4.0)
- 9) *An infant sleep electroencephalographic marker of thalamocortical connectivity predicts behavioral outcome in late infancy*  
Jaramillo V, Schoch S, Markovic A, Kohler M, Huber R, Lustenberger C, **Kurth S**, 2023,  
NeuroImage (IF 6.1)
- 10) *The sleeping brain's connectivity and family environment: Characterizing infant sleep EEG coherence*  
Markovic A, Schoch S, Huber R, Kohler M, **Kurth S**, 2023, Scientific Reports (IF 4.3)
- 11) *Sleep as protective factor of children's executive functions: a study during COVID-19 confinement*  
Beaugrand M, Muehlematter C, Markovic A, Camos V, **Kurth S**, 2023, PLoS One (IF 3.3)
- 12) *From alpha diversity to ZZZ: Exploring associations among sleep, gut bacteria and behavioral development in infancy*  
Schoch S, Castro-Mejía JL, Krych L, Kot W, Leng B, Kohler M, Huber R, Rogler G,  
Biedermann L, Walser JC, Nielsen DS, **Kurth S**, 2022, Progress in Neurobiology (IF 8.7)
- 13) *Association of transportation noise with sleep during the first year of life: a longitudinal study*  
Blume C, Schoch S, Vienneau D, Rösli M, Kohler M, Moeller A, **Kurth S\***, Usemann J\*,  
\*Shared last authorship, 2021, Environmental Research (IF 7.5)
- 14) *Sleep behavior of infants with infantile hemangioma treated with propranolol*  
Theiler M, Knöpfel N, Von Der Heydt S, Schwiieger-Briel A, Luchsinger I, Smith A, Kernland-

- Lang K, Waelchli R, Neuhaus K, Kohler M, Gnannt R, Schoch S, Weibel L, **Kurth S**, 2021, Eur J Pediatr (IF 3.1)
- 15) Severe effects of the COVID-19 confinement on young children's sleep: A longitudinal study identifying risk factors and protective arrangements  
Markovic A, Muehlemitter C, Beaugrand M, Camos V, **Kurth S**, 2021, J Sleep Res (IF 4.0)
  - 16) Which are the central aspects of infant sleep? The dynamic of sleep composites across infancy  
Schoch S, Huber R, Kohler M, **Kurth S**, 2020, Sensors (IF 3.7)
  - 17) Actigraphy in sleep research with infants and young children: current practices and future benefits of standardized reporting  
Schoch S, **Kurth S**\*, Werner H\*, \*Shared last authorship, 2020, J Sleep Res (IF 4.0)
  - 18) A simple sleep EEG marker in childhood predicts brain myelin 3.5 years later  
LeBourgeois M, Dean D, Deoni S, Kohler M, **Kurth S**, 2019, NeuroImage (IF 6.1)
  - 19) Actimetry in infant sleep research: an approach to facilitate comparability  
Schoch S, Jenni O, Kohler M, **Kurth S**, 2019, Sleep (IF 5.7), Accessible [analysis codes](#)
  - 20) Across-night dynamics in traveling slow waves throughout childhood.  
Schoch S, Riedner B, Deoni S, Huber R, LeBourgeois M, **Kurth S**, 2018, Sleep (IF 5.7)
  - 21) Travelling slow oscillations during sleep – a marker of brain connectivity in childhood.  
**Kurth S**, Riedner B, Dean DC, O'Muircheartaigh J, Huber R, Jenni OG, Deoni SC, LeBourgeois MK, 2017, Sleep (IF 5.7)
  - 22) Chronic social stress leads to altered sleep homeostasis in mice.  
Olini N, Rothfuchs I, Azzinnari D, Pryce CR\*, **Kurth S**\*, Huber R\*, \*Shared last authorship, 2017, Behav Brain Res (IF 2.8)
  - 23) Increased sleep depth in developing neural networks: new insights from sleep restriction in children.  
**Kurth S**, Dean DC, Achermann P, O'Muircheartaigh J, Huber R, Deoni SC, LeBourgeois MK, 2016, Front Hum Neurosci (IF 3.0)
  - 24) Development of nap neurophysiology: preliminary insights into sleep regulation in early childhood.  
**Kurth S**, Lassonde JM, Pierpoint LA, Rusterholz T, Jenni OG, McClain IJ, Achermann P, LeBourgeois, MK, 2016, J Sleep Res (IF 4.0)
  - 25) Developmental changes in sleep spindle characteristics and sigma power across early childhood.  
McClain IJ, Lustenberger C, Achermann P, Lassonde J, **Kurth S**\*, LeBourgeois MK\*, \*Shared last authorship, 2016, Neural Plast (IF 3.4)
  - 26) Topography of slow sigma power during sleep is associated with processing speed in preschool children.  
Doucette M\*, **Kurth S**\*, Chevalier N, Munakata Y, LeBourgeois MK, \* Shared first authorship, 2015, Brain Sciences (IF 3.0)
  - 27) Caffeine consuming children and adolescents show altered sleep behavior and deep sleep.  
Aepli A\*, **Kurth S**\*, Tesler N, Jenni OG, Huber R \* Shared first authorship, 2015, Brain Sciences (IF 3.0)
  - 28) Development of brain EEG connectivity across early childhood: does sleep play a role?  
**Kurth S**, Achermann P, Rusterholz T, LeBourgeois MK, 2013, Brain Sciences (IF 3.0)
  - 29) The sleep EEG topography in children and adolescents shows sex differences in language areas.  
Ringli M\*, **Kurth S**\*, Huber R, Jenni OG, \* Shared first authorship, 2013, Int J Psychophysiol (IF 2.9)
  - 30) Mapping the electrophysiological marker of sleep depth reveals skill maturation in children and adolescents.

**Kurth S**, Ringli M, LeBourgeois MK, Geiger A, Buchmann A, Jenni OG, Huber R, 2012, *NeuroImage* (IF 6.1)

- 31) *Characteristics of sleep slow waves in children and adolescents.*  
**Kurth S**, Jenni OG, Riedner BA, Tononi G, Carskadon MA, Huber R, 2010, *Sleep* (IF 5.7)
- 32) *Mapping of Cortical Activity in the First Two Decades of Life: A High-Density Sleep Electroencephalogram Study.*  
**Kurth S**, Ringli M, Geiger A, LeBourgeois MK, Jenni OG, Huber R, 2010, *J Neurosci*, Cover Article (IF 5.3)

#### Co-authorship (24)

- 1) *The infraslow fluctuation of sigma power during sleep in young individuals with schizophrenia*  
Dimitriades ME, Schumacher E, Arudchelvam J, Fattinger S, **Kurth S**, Pugin F, Wehrle F, Jaramillo V, Volk C, Leach S, Buckley A, Driver D, Markovic A, Rapoport JL, Tarokh L, Huber R, 2025, *Schizophrenia Research* (IF 4.6)
- 2) *Sleep spindles across youth affected by schizophrenia or anti-N-methyl-D-aspartate-receptor encephalitis*  
Dimitriades ME, Markovic A, Gefferie SR, Buckley A, Driver DI, Rapoport JL, Nosadini M, Rostasy K, Sartori S, Suppiej A, **Kurth S**, Francini M, Walitza S, Huber R, Tarokh L, Bolsterli L, Gerstenberg M, 2023, *Frontiers in Psychiatry* (IF 3.9)
- 3) *Altered EEG markers of synaptic plasticity in a human model of NMDA receptor deficiency: anti-NMDA receptor encephalitis*  
Gefferie SR, Maric A, Critelli H, Gueden S, Kurlemann G, **Kurth S**, Nosadini M, Plecko B, Ringli M, Rostásy K, Sartori S, Schmitt B, Suppiej A, Van Bogaert P, Wehrle FM, Huber R, Bölsterli BK, 2021, *NeuroImage* (IF 6.1)
- 4) *Characterization of overnight slow wave slope changes across development in an age-, amplitude- and region-dependent manner.*  
Jaramillo V, Volk C, Maric A, Furrer M, Fattinger S, **Kurth S**, Lustenberger C, Huber R, 2020, *Sleep* (IF 5.7)
- 5) *Sleep EEG slow wave activity in medicated and unmedicated children and adolescents with attention-deficit/hyperactivity disorder*  
Furrer M, Jaramillo V, Volk C, Ringli M, Aellen R, Wehrle FM, Pugin F, **Kurth S**, Brandeis D, Schmid M, Jenni O, Huber R, 2019, *Translational Psychiatry* (IF 6.3)
- 6) *The experience-dependent increase in deep sleep activity is reduced in children with attention-deficit/hyperactivity disorder*  
Furrer M, Ringli M, **Kurth S**, Brandeis D, Jenni O, Huber R, 2019, *Sleep Medicine* (IF 4.0)
- 7) *Endocrine responses during CPAP-withdrawal in obstructive sleep apnea: data from two randomized controlled trials*  
Thiel S, Haile SR, Peitzsch M, Schwarz E, Sievi N, **Kurth S**, Beuschlein F, Kohler M, Gaisl T, 2019, *Thorax* (IF 9.2)
- 8) *How do children fall asleep? A high-density EEG study of slow waves in the transition from wake to sleep.*  
Spiess M, Bernardi G, **Kurth S**, Wehrle F, Ringli M, Jenni OG, Huber R, 2018, *NeuroImage* (IF 6.1)
- 9) *Theta waves in children's waking electroencephalogram resemble local aspects of sleep during wakefulness*  
Fattinger S, **Kurth S**, Ringli M, Jenni O, Huber R, 2017, *Scientific Reports* (IF 4.3)
- 10) *High-density electroencephalographic recordings during sleep in children and adolescents with acquired brain injury.*  
Mouthon A, Meyer-Heim A, **Kurth S**, Ringli M, Pugin F, Van Hedel HJA, Huber R, 2017, *Neurorehabil Neural Repair* (IF 4.9)

- 11) *Acute sleep restriction increases dietary intake in preschool-age children.*  
Mullins E, Miller AL, Cherian SS, Lumeng JC, Wright KP, **Kurth S**, LeBourgeois MK, 2017, J Sleep Res (IF 5.6)
- 12) *Sleep moderates the association between response inhibition and self-regulation in early childhood.*  
Schumacher A, Miller A, Watamura SE, **Kurth S**, Lassonde J, LeBourgeois MK, 2016, J Clin Child Adolesc Psychol (IF 5.0)
- 13) *Sleep physiology in toddlers: effects of missing a nap on subsequent night sleep.*  
Lassonde JM, Rusterholz T, **Kurth S**, Schumacher AM, Achermann P, LeBourgeois MK, 2016, Neurobiol Sleep Circ Rhythms (IF N/A)
- 14) *Developmental trajectories of EEG sleep slow wave activity as a marker for motor skill development during adolescence: a pilot study.*  
Lustenberger C, Mouthon AL, Tesler N, **Kurth S**, Ringli M, Buchmann A, Jenni OG, Huber R, 2016, Dev Psychobiol (IF 2.2)
- 15) *High-density electroencephalographic recordings during sleep in children with disorders of consciousness.*  
Mouthon A, Van Hedel HJA, Meyer-Heim A, **Kurth S**, Ringli M, Pugin F, Huber R, 2016, NeuroImage-Clin (IF 4.3)
- 16) *Myelination is associated with processing speed in early childhood: preliminary insights.*  
Chevalier N, **Kurth S**, Doucette MR, Wiseheart M, Deoni SC, Dean DC, O'Muircheartaigh J, Blackwell KA, Munakata Y, LeBourgeois MK, 2015, PLoS One (IF 3.3)
- 17) *Sleep slow-wave activity reveals developmental changes in experience-dependent plasticity.*  
Wilhelm I, **Kurth S**, Ringli M, Mouthon AL, Buchmann A, Geiger A, Jenni OG, Huber R, 2014, J Neurosci (IF 5.3)
- 18) *Spike wave location and density disturb sleep slow waves in patients with CSWS (continuous spike waves during sleep).*  
Bölsterli Heinzle BK, Fattinger S, **Kurth S**, LeBourgeois MK, Ringli M, Bast T, Critelli H, Schmitt B, Huber R, 2014, Epilepsia (IF 6.2)
- 19) *The effects of caffeine on sleep and maturational markers in the rat.*  
Olini N, **Kurth S**, Huber R, 2013, PLoS One (IF 3.3)
- 20) *Topography of sleep slow wave activity in children with attention-deficit/hyperactivity disorder.*  
Ringli M, Souissi S, **Kurth S**, Brandeis D, Jenni OG, Huber R, 2013, Cortex (IF 3.7)
- 21) *Sleep electroencephalography topography and children's intellectual ability.*  
Geiger A, Huber R, **Kurth S**, Ringli M, Achermann P, Jenni OG, 2012, Neuroreport (IF 1.6)
- 22) *Anatomical markers of sleep slow wave activity derived from structural magnetic resonance images.*  
Buchmann A, **Kurth S**, Ringli M, Geiger A, Jenni OG, Huber R, 2011, J Sleep Res (IF 4.0)
- 23) *EEG sleep slow-wave activity as a mirror of cortical maturation.*  
Buchmann A, Ringli M, **Kurth S**, Schaerer M, Geiger A, Jenni OG, Huber R, 2011, Cereb Cortex (IF 3.7)
- 24) *The sleep EEG as a marker of intellectual ability in school age children.*  
Geiger A, Huber R, **Kurth S**, Ringli M, Jenni OG, Achermann P, 2011, Sleep (IF 5.7)

#### Review articles, peer-reviewed (4)

- 1) *Transfer of bacteria from mothers to infants through breast milk – a systematic review*  
Hess D, Cabrera PM, **Kurth S**, Bokulich N, Zimmermann P, 2025, The Pediatric Infectious Disease Journal (IF 2.9)
- 2) *Microbial melatonin metabolism in the human intestine as a therapeutic target for dysbiosis and rhythm disorders*  
Zimmermann P, **Kurth S**, Pugin B, Bokulich N, 2024, npj Biofilms and Microbiomes (IF 8.0)

- 3) *Spatio-temporal properties of sleep slow waves and implications for development*  
Timofeev I, Schoch S, LeBourgeois M, Huber R, Riedner B, **Kurth S**, Invited Review, 2020, Current Opinion in Physiology/ Physiology of Sleep (IF 2.6)
- 4) *Sleep and early cortical development.*  
**Kurth S**, Olini N, Huber R, LeBourgeois MK, 2015, Current Sleep Medicine Reports (IF N/A)

### Book chapters, peer-reviewed (2)

- 1) *Sleep in Humans from Fetus through Adolescence*  
**Kurth S**, Huber R, 2025, invited chapter for *Fundamentals of Sleep and Circadian Science*, Ed Cirelli C, Sleep Research Society, New York: Oxford University Press
- 2) *Sleep slow oscillations and cortical maturation.*  
**Kurth S**, Huber R, 2012, Sleep and Brain Activity Ed Frank, M; Elsevier; ISBN: 9780123849953

### Books and scientific outreach articles (3)

- 1) *Reihe Inhaltsstoffe in der Muttermilch: Muttermilch, Melatonin und Darmmikrobiom*  
Zimmermann P, **Kurth S**, 2025., Deutsche Hebammen Zeitschrift
- 2) *Chronobiologie des Schlafes: Taktgeber bis in die Zellen*  
**Kurth S**, 2025, Deutsche Hebammen Zeitschrift 77(5)
- 3) *Dieses Buch ist zum Einschlafen: Individuelle Tipps für besseren Schlaf*  
**Kurth S**, Lustenberger C, 2024, Beobachter Edition, Ringier

## SCIENCE DISSEMINATION AND OUTREACH ACTIVITIES

- **Media Communication**, *Konflikte im Haushalt sind mit Schlafstörungen verbunden*, 2025, 20 Minuten, CH
- **Media Communication**, *Gute Nacht, Schweiz? Ein Trick soll beim Abschalten helfen*, 2025, SRF, CH
- **Media Communication**, *Früh aufstehen: Macht richtig schlafen schlau und erfolgreich?*, 2025, SRF Einstein, National TV, CH
- **Media Communication**, *Ruhiger Schlaf: Nacht ohne Welt*, 2025, Interview, Good Impact Magazin, EU
- **Media Communication**, *Schlaf, Kindlein, schlaf*, 2024, Interview, Freiburger Nachrichten, CH
- **Media Communication**, *Ein spannendes Buch ... aber zum Einschlafen!*, 2024, Alma&Georges, Online Magazine of the University of Fribourg, CH
- **Media Communication**, *Darm an Hirn*, 2024 Interview, Schweizerische Ärztezeitung, CH
- **Media Communication**, *Warum Erziehungstipps den Schlaf von Kindern verschlechtern können*, 2024, Interview, MDR Wissen, D
- **Media Communication**, *Die Schlaftracker sollte man lieber weglassen*, 2024, Interview, Frankfurter Allgemeine, D
- **Media Release**, *When the digestive system affects baby's sleep*, 2024, Medienmitteilung, Universität Fribourg, CH
- **Media Communication**, *36.9°: SOS mon bébé ne dort pas*, 2023, RTS, National TV, CH

- **Media Release**, *Guter Schlaf, schlechter Schlaf / Bon et mauvais sommeil*, 2023, Medienmitteilung, Universität Fribourg, CH
- **Youtube Media Communication**, *New study: how is baby's sleep related to gut microbiome and brain development?*, 2022, Science dissemination video, International
- **Youtube Science Dissemination**, *The developmental cognitive neuroscience of sleep*, 2022, Scientific presentation at FLUX conference in Paris, F
- **Media Communication**, *Bébé ne dort pas: et si c'était son estomac?*, 2022, Interview, fémina, Tamedia, CH
- **Media Communication**, *Schlafmuster von Babys hängt mit Darmbakterien zusammen*, 2021, Interview, Swiss National Science Foundation, CH
- **Media Release**, *Le sommeil influe sur la flore intestinale dès notre plus jeune âge*, 2021, RTS, National Radio, CH
- **Media Communication**, *Gut Schlafen während der Pandemie*, 2021, Interview, WIBLO, Verein Wissenstransfer und Wissensförderung, CH
- **Youtube Media Communication**, *Which sleep variable to analyse from actimetry and questionnaires? An example from infant sleep.*, 2021, Science dissemination Video, International
- **Media Communication**, *Warum Eltern Yoga machen sollten, damit ihre Kinder besser schlafen*, 2021, Interview, Alma&Georges, Online Magazine of the University of Fribourg, CH
- **Youtube Media Communication (from my trainee)**, *Sleep-COVID, Andjela Markovic*, 2021, Science dissemination Video, International
- **Youtube Media Communication**, *Baby Sleep Lab Research Project*, 2021, Science dissemination and recruitment Video, >25K views, International
- **Media Communication**, *L'enfant a un autre sommeil*, 2020, Interview, La Gruyère, Magazin, CH
- **Media Communication**, *Experiment Lockdown: Auch in Sachen Schlaf*, 2020, Interview, Alma&Georges, Online Magazine of the University of Fribourg, CH
- **Media Release**, *Kinder schlafen anders* *Le sommeil des enfants est différent du nôtre*, 2020, Medienmitteilung, Universität Fribourg, CH
- **Media Communication**, *Kinder schlafen anders*, 2020, Universitas, Magazin Universität Fribourg, CH
- **Cover Article**, *Schlafen wie ein Baby*, 2018, Interview, Polykum ETHZ Magazin, >20K prints, CH
- **Media Release**, *Developing brain regions in children hardest hit by sleep deprivation*, 2016, Medienmitteilungen UZH, CH
- **Media Release**, *Beta Test: Another reason why kids need sleep*, 2014, Colorado Public Radio, USA

## OTHER CONTRIBUTIONS: SCIENCE AND EDUCATION

- **Science BLOG** of the Baby Sleep Laboratory, [www.baby-sleep.ch](http://www.baby-sleep.ch), in English, German and French (2019-)
- **Co-founder** *Monitoring infants sleep by actigraphy – State of the art and future directions*, a student-to-expert approach for research integration, dissemination and publication (2017-2020)
- **Co-Writer**, Sleep & Health Zurich Tweet (2018-2022)