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 (10)

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

Rhythms of early life: Gut microbiota rhythmicity and circadian maturation in infants
Mühlematter C, Nielsen DS, Castro-Mejía JL, Walser JC, Schoch SF, **Kurth S**, in revision (At Scientific Reports), 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

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, preprint at bioRxiov

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**, preprint at bioRxiv

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, preprint at bioRxiv

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 (52)

First/ Last authorship (29)

1) *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)
2) *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)
3) *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)
4) *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)
5) *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)
6) *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)
7) *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)
8) *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)
9) *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)
10) *Association of transportation noise with sleep during the first year of life: a longitudinal study*
Blume C, Schoch S, Vienneau D, Röösli M, Kohler M, Moeller A, **Kurth S***, Usemann J*, *Shared last authorship, 2021, Environmental Research (IF 7.5)
11) *Sleep behavior of infants with infantile hemangioma treated with propranolol*
Theiler M, Knöpfel N, Von Der Heydt S, Schwieger-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)
12) *Severe effects of the COVID-19 confinement on young children's sleep: A longitudinal study identifying risk factors and protective arrangements*
Markovic A, Muehlematter C, Beaugrand M, Camos V, **Kurth S**, 2021, J Sleep Res (IF 4.0)
13) *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)
14) *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)

15) *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)

16) *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

17) *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)

18) *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)

19) *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)

20) *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)

21) *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)

22) *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)

23) *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)

24) *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)

25) *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)

26) *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)

27) *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)

28) *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)

29) *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 (23)

1) *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**, Franscini M, Walitza S, Huber R, Tarokh L, Bolsterli L, Gerstenberg M, 2023, Frontiers in Psychiatry (IF 3.9)

2) *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)

3) *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)

4) *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)

5) *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)

6) *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)

7) *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)

8) *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)

9) *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)

10) *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)

11) *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)

12) *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)

13) *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)

14) *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)

15) *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)

16) *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)

17) *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)

18) *The effects of caffeine on sleep and maturational markers in the rat.*
Olini N, **Kurth S**, Huber R, 2013, PLoS One (IF 3.3)

19) *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)

20) *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)

21) *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)

22) *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)

23) *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**, in prep., 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**, *Schafen 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, 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)