

# Publications

## Journal Articles

1. Sourav, S., Feucht, M.E., Kekunnaya, R., & Röder, B. (2026). The temporal stability of visual cortical processing in humans depends on early experience. *Journal of Neurophysiology*. Advance online publication. <https://doi.org/10.1152/jn.00343.2025>
2. Hassett, J.D., Hölig, C., Lingareddy, S., Kekunnaya, R., & Röder, B. (2026). Individuals born with congenital cataracts exhibit both persisting impairment and considerable recovery of white matter microstructure after sight restoration. *Aperture Neuro*, 2026, 6. <https://doi.org/10.52294/001c.158797>
3. Ossandón, J.P., Rossion, B., Dormal, G., Kekunnaya, R., & Röder, B. (2025). Impaired rapid neural face categorization after reversing long-lasting congenital blindness. *Cortex*, 187, 124-139. <https://doi.org/10.1016/j.cortex.2025.04.007>. [For a short summary of this article please click this link \(PDF\)](#)
4. Pant, R., Pitchaimuthu, K., Ossandón, J. P., Shareef, I., Lingareddy, S., Finsterbusch, J., Kekunnaya, R., & Röder, B. (2025). Altered visual cortex excitatory/inhibitory ratio following transient congenital visual deprivation in humans. *eLife*, 13, RP98143. <https://doi.org/10.7554/eLife.98143>. [For a short summary of this article please click this link \(PDF\)](#). [AI assisted podcast on this paper on Spotify](#).
5. Rączy, K., Linke, M., van den Hurk, J., Heitmann, C., Guerreiro, M.J.S., Zhan, M., Kekunnaya, R., Goebel, R., & Röder, B. (2025). Visual and auditory object representations in ventral visual cortex after restoring sight in humans. *Human Brain Mapping*, 46(12), e70316. <https://doi.org/10.1002/hbm.70316>. [For a short summary of this article please click this link \(PDF\)](#)
6. Hötting, K., Shareef, I., Rogge, A.-K., Hamacher, D., Zech, A., Kekunnaya, R., Christy, B., & Röder, B. (2024). Posture control depends on early visual experience. *Journal of Vision*, 24(9), 3. <https://doi.org/10.1167/jov.24.9.3>. [For a short summary of this article please click this link \(PDF\)](#)
7. Sourav, S., Kekunnaya, R., Bottari, D., Shareef, I., Pitchaimuthu, K., & Röder, B. (2024). Sound suppresses earliest visual cortical processing after sight recovery in congenitally blind humans. *Communications Biology*, 7(1), 118. <https://doi.org/10.1038/s42003-023-05749-3>. [For a short summary of this article please click this link \(PDF\)](#)
8. Heitmann, C., Zhan, M., Linke, M., Hölig, C., Kekunnaya, R., van Hoof, R., Goebel, R., & Röder, B. (2023). Early visual experience refines the retinotopic organization within and across visual cortical regions. *Current Biology*, 33(22), 4950-4959.e4. <https://doi.org/10.1016/j.cub.2023.10.010>. [For a short summary of this article please click this link \(PDF\)](#).
9. Hölig, C., Guerreiro, M.J.S., Lingareddy, S., Kekunnaya, R., & Röder, B. (2023). Sight restoration in congenitally blind humans does not restore visual brain structure. *Cerebral Cortex*, 33(5), 2152-

2161. <https://doi.org/10.1093/cercor/bhac197>. [For a short summary of this article please click this link \(PDF\)](#).
10. Ossandón, J. P., Stange, L., Gudi-Mindermann, H., Rimmele, J. M., Sourav, S., Bottari, D., Kekunnaya, R., & Röder, B. (2023). The development of oscillatory and aperiodic resting state activity is linked to a sensitive period in humans. *NeuroImage*, 275, 120171. <https://doi.org/10.1016/j.neuroimage.2023.120171>. [For a short summary of this article please click this link \(PDF\)](#).
  11. Pant, R., Ossandón, J.P., Stange, L., Shareef, I., Kekunnaya, R., & Röder, B. (2023). Stimulus-evoked and resting-state alpha oscillations show a linked dependence on patterned visual experience for development. *NeuroImage: Clinical*, 38, 103375. <https://doi.org/10.1016/j.nicl.2023.103375>. [For a short summary of this article please click this link \(PDF\)](#).
  12. Bruns, P., Li, L., Guerreiro, M.J.S., Shareef, I., Rajendran, S.S., Pitchaimuthu, K., Kekunnaya, R., & Röder, B. (2022). Audiovisual spatial recalibration but not integration is shaped by early sensory experience. *iScience*, 25(6), 104439. <https://doi.org/10.1016/j.isci.2022.104439>
  13. Guerreiro, M.J.S., Kekunnaya, R., & Röder, B. (2022). Top-down modulation of visual cortical processing after transient congenital blindness. *Neuropsychologia*, 174, 108338. DOI: 10.1016/j.neuropsychologia.2022.108338. <https://doi.org/10.1016/j.neuropsychologia.2022.108338>. [For a short summary of this article please click this link \(PDF\)](#).
  14. Ossandón, J., Zerr, P., Shareef, I., Kekunnaya, R., & Röder, B. (2022). Active vision in sight recovery individuals with a history of long-lasting congenital blindness. *eNeuro*, 9(5), ENEURO.0051-22.2022. <https://doi.org/10.1523/ENEURO.0051-22.2022>. [For a short summary of this article please click this link \(PDF\)](#). [For further information, please visit the website of the LVPEI](#).
  15. Rączy, K., Hölig, C., Guerreiro, M.J.S., Lingareddy, S., Kekunnaya, R., & Röder, B. (2022). Typical resting state activity of the brain requires visual input during an early sensitive period. *Brain Communications*, 4(4), fcac146. <https://doi.org/10.1093/braincomms/fcac146>. [For a short summary of this article please click this link \(PDF\)](#)
  16. Guerreiro, M.J.S., Linke, M., Lingareddy, S., Kekunnaya, R., & Röder, B. (2021). The effect of congenital blindness on resting-state functional connectivity revisited. *Scientific Reports*, 11(1), article 12433. <https://doi.org/10.1038/s41598-021-91976-9>. [For a short summary of this article please click this link \(PDF\)](#).
  17. Pant, R., Guerreiro, M.J.S., Ley, P., Bottari, D., Shareef, I., Kekunnaya, R., & Röder, B. (2021). The Size-Weight Illusion is unimpaired in individuals with a history of congenital visual deprivation. *Scientific Reports*, 11(1), 6693. <https://doi.org/10.1038/s41598-021-86227-w>. [For a short summary of this article please click this link \(PDF\)](#).
  18. Pitchaimuthu, K., Dormal, G., Sourav, S., Shareef, I., Rajendran, S. S., Ossandón, J. P., Kekunnaya, R., & Röder, B. (2021). Steady state evoked potentials indicate changes in nonlinear neural mechanisms of vision in sight recovery individuals. *Cortex*, 144, 15-28. DOI: 10.1016/j.cortex.2021.08.001. <https://doi.org/10.1016/j.cortex.2021.08.001>. [For a short summary of this article please click this link \(PDF\)](#).

19. Röder, B., and Kekunnaya, R. (2021). Visual experience dependent plasticity in humans. *Current Opinion in Neurobiology*, 67, 155-162. <https://doi.org/10.1016/j.conb.2020.11.011>
20. Röder, B., Kekunnaya, R., & Guerreiro, M.J.S. (2021). Neural mechanisms of visual sensitive periods in humans. *Neuroscience and Biobehavioral Reviews*, 120, 86-99. <https://doi.org/10.1016/j.neubiorev.2020.10.030>
21. Badde, S., Ley, P., Rajendran, S. S., Shareef, I., Kekunnaya, R., & Röder, B. (2020). Sensory experience during early sensitive periods shapes cross-modal temporal biases. *eLife*, 9, e61238. <https://doi.org/10.7554/eLife.61238>. [For a short summary of this article please click this link \(PDF\)](#).
22. Rajendran, S. S., Bottari, D., Shareef, I., Pitchaimuthu, K., Sourav, S., Troje, N. F., Kekunnaya, R., & Röder, B. (2020). Biological action identification does not require early visual input for development. *eNeuro*, 7(5), ENEURO.0534-19.2020. <https://doi.org/10.1523/ENEURO.0534-19.2020>. [For a short summary of this article please click this link \(PDF\)](#).
23. Sourav, S., Bottari, D., Shareef, I., Kekunnaya, R., & Röder, B. (2020). An electrophysiological biomarker for the classification of cataract-reversal patients: A case-control study. *EClinicalMedicine*, 27, 100559. <https://doi.org/10.1016/j.eclinm.2020.100559>. [For a short summary of this article please click this link \(PDF\)](#).
24. Zerr, P.\*, Ossandon, J.P.\*, Shareef, I., Van der Stigchel, S., Kekunnaya, R., and Röder, B. (2020). Successful visually guided eye movements following sight restoration after congenital cataracts. *Journal of Vision*, 20(7), 3. [\*equal contribution]. <https://doi.org/10.1167/jov.20.7.3>. [For a short summary of this article please click this link \(PDF\)](#).
25. Pitchaimuthu, K., Sourav, S., Bottari, D., Banerjee, S., Shareef, I., Kekunnaya, R., & Röder, B. (2019). Color vision in sight recovery individuals. *Restorative Neurology and Neuroscience*, 37(6), 583-590. <https://doi.org/10.3233/RNN-190928>. [For a short summary of this article please click this link \(PDF\)](#).
26. Sourav, S., Kekunnaya, R., Shareef, I., Banerjee, S., Bottari, D., & Röder, B. (2019). A protracted sensitive period regulates the development of cross-modal sound–shape associations in humans. *Psychological Science*, 30(10), 1473-1482. <https://doi.org/10.1177/0956797619866625>. [For a short summary of this article please click this link \(PDF\)](#).
27. Bottari, D., Kekunnaya, R., Hense, M., Troje, N., Sourav, S., & Röder, B. (2018). Motion processing after sight restoration: No competition between visual recovery and auditory compensation. *NeuroImage*, 167, 284-296. <https://doi.org/10.1016/j.neuroimage.2017.11.050>. [For a short summary of this article please click this link \(PDF\)](#).
28. Sourav, S., Bottari, D., Kekunnaya, R., & Röder, B. (2018). Evidence of a retinotopic organization of early visual cortex but impaired extrastriate processing in sight recovery individuals. *Journal of Vision*, 18(3):22. <https://doi.org/10.1167/18.3.22>. [For a short summary of this article please click this link \(PDF\)](#).
29. Bottari, D. Troje F.N., Ley, P., Hense M., Kekunnaya R., Röder B. (2016). Sight restoration after congenital blindness does not reinstate alpha oscillatory activity in humans. *Scientific Reports*, 6, 24683. <https://doi.org/10.1038/srep24683>. [For a short summary of this article please click this link \(PDF\)](#).

30. Bottari D., Troje N.F., Ley P., Hense M., Kekunnaya R. and Röder B. (2015). The neural development of the biological motion processing system does not rely on early visual input. *Cortex*, 71, 359-367. <https://doi.org/10.1016/j.cortex.2015.07.029>. [For a short summary of this article please click this link \(PDF\)](#).
31. Ley, P., Bottari, D., Shenoy, H.S., Kekunnaya, R., Röder, B. (2013). Partial recovery of visual-spatial remapping of touch after restoring vision in a congenitally blind man. *Neuropsychologia*, 51(6), 1119-1123. <https://doi.org/10.1016/j.neuropsychologia.2013.03.004>. [For a short summary of this article please click this link \(PDF\)](#).
32. Röder, B., Ley, P., Shenoy, B.H., Kekunnaya, R., Bottari, D. (2013). Sensitive periods for the functional specialization of the neural system for human face processing. *PNAS*, 110(42), 16760-16765. <https://doi.org/10.1073/pnas.1309963110>. [For a short summary of this article please click this link \(PDF\)](#).

## Book Chapter

1. Röder, B., & Kekunnaya, R. (2022). Effects of Early Visual Deprivation. In: *Oxford Research Encyclopedia of Psychology* (published online: 18. July 2022). Oxford: University Press. <https://doi.org/10.1093/acrefore/9780190236557.013.839>