# „Wenn der Schmerz keine Ruhe findet“ – Schlafstörungen bei chronischen Schmerzen

## Ein Update für die klinische Praxis

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**Links zu Fragebögen zur Schlaf-Diagnostik (durch kostenfreie Registrierung zugänglich):**

- PSQI (Pittsburgh Schlafqualitätsindex) erfasst subjektive Schlafqualität und Schlafstörungen: Official PSQI | Pittsburgh Sleep Quality Index distributed by Mapi Research Trust | ePROVIDE
- ISI (Insomnia Severity Index) erfasst Insomnie-Schweregrad: Official ISI | Insomnia Severity Index distributed by Mapi Research Trust | ePROVIDE
- RIS (Regensburg Insomnia Scale) erfasst kognitive, emotionalen und verhaltensbezogenen Aspekte der Insomnie: epub.uni-regensburg.de/28767/
- ESS (Epworth Sleepiness Scale) erfasst Tagesschläfrigkeit: Official ESS | Epworth Sleepiness Scale distributed by Mapi Research Trust | ePROVIDE

**Literatur**

[1] Mathias, J. L., Cant, M. L., & Burke, A. L. J. (2018). Sleep disturbances and sleep disorders in adults living with chronic pain: A meta-analysis. Sleep Medicine, 52, 198–210. https://doi.org/10.1016/j.sleep.2018.05.023

[2] Sun, Y., Laksono, I., Selvanathan, J., Saripella, A., Nagappa, M., Pham, C., Englesakis, M., Peng, P., Morin, C. M., & Chung, F. (2021). Prevalence of sleep disturbances in patients with chronic non-cancer pain: A systematic review and meta-analysis. Sleep Medicine Reviews, 57, 101467. https://doi.org/10.1016/j.smrv.2021.101467

[3] Iliff, J. J., Wang, M., Liao, Y., Plogg, B. A., Peng, W., Gundersen, G. A., Benveniste, H., Vates, G. E., Deane, R., Goldman, S. A., Nagelhus, E. A., & Nedergaard, M. (2012). A Paravascular Pathway Facilitates CSF Flow Through the Brain Parenchyma and the Clearance of Interstitial Solutes, Including Amyloid β. Science Translational Medicine, 4(147), 147ra111-147ra111. https://doi.org/10.1126/scitranslmed.3003748

[4] Tononi, G., & Cirelli, C. (2003). Sleep and synaptic homeostasis: A hypothesis. Brain Research Bulletin, 62(2), 143–150. https://doi.org/10.1016/j.brainresbull.2003.09.004

[5] Spiegelhalder, K., Backhaus, J., & Riemann, D. (2011). Schlafstörungen (2., überarb. Aufl). Hogrefe.

[6] Penzel, T., Peter, H., Peter, J. H., Becker, H. F., Fietze, I., Fischer, J., Mayer, G., Podszus, T., Raschke, F., Riemann, D., Schäfer, T., Sitter, H., & Koch-Institut, R. (2005). Gesundheitsberichterstattung des Bundes.

[7] Song et al. (2024). The global and regional prevalence of restless legs syndrome among adults: A systematic review and modelling analysis. JOGH. https://jogh.org/2024/jogh-14-04113/

[8] Ragnoli, B., Pochetti, P., Raie, A., & Malerba, M. (2021). Comorbid Insomnia and Obstructive Sleep Apnea (COMISA): Current Concepts of Patient Management. International Journal of Environmental Research and Public Health, 18(17), 9248. https://doi.org/10.3390/ijerph18179248

[9] Sweetman, A., Lack, L., & Bastien, C. (2019). Co-Morbid Insomnia and Sleep Apnea (COMISA): Prevalence, Consequences, Methodological Considerations, and Recent Randomized Controlled Trials. Brain Sciences, 9(12), 371. https://doi.org/10.3390/brainsci9120371

[10] van Straten, A., Weinreich, K. J., Fábián, B., Reesen, J., Grigori, S., Luik, A. I., Harrer, M., & Lancee, J. (2025). The Prevalence of Insomnia Disorder in the General Population: A Meta-Analysis. Journal of Sleep Research, 34(5), e70089. https://doi.org/10.1111/jsr.70089

[11] Spiegelhalder, K., Baum, E., Becker, M., Cornaro, C., Crönlein, T., Frase, L., Harth, V., Hertenstein, E., Johann, A., Klose, P., Mertel, I., Kunz, D., Langhorst, J., Maurer, J. T., Mayer, G., Nissen, C., Pietrowsky, R., Pollmächer, T., Schumacher, C., Sitter, H., Steffen, A., Weeß, H.-G., & Riemann, D. (2025). Insomnie – Update 2025 (S3-Leitlinie, AWMF-Registernummer 063-003). Somnologie. https://doi.org/10.1007/s11818-025-00530-6

[12] Riemann, D., Benz, F., Dressle, R. J., Espie, C. A., Johann, A. F., Blanken, T. F., Leerssen, J., Wassing, R., Henry, A. L., Kyle, S. D., Spiegelhalder, K., & Van Someren, E. J. W. (2022). Insomnia disorder: State of the science and challenges for the future. Journal of Sleep Research, 31(4), e13604. https://doi.org/10.1111/jsr.13604

[13] Riemann, D., Spiegelhalder, K., Feige, B., Voderholzer, U., Berger, M., Perlis, M., & Nissen, C. (2010). The hyperarousal model of insomnia: A review of the concept and its evidence. Sleep Medicine Reviews, 14(1), 19–31. https://doi.org/10.1016/j.smrv.2009.04.002

[14] Feige, B., Al-Shajlawi, A., Nissen, C., Voderholzer, U., Hornyak, M., Spiegelhalder, K., Kloepfer, C., Perlis, M., & Riemann, D. (2008). Does REM sleep contribute to subjective wake time in primary insomnia? A comparison of polysomnographic and subjective sleep in 100 patients. Journal of Sleep Research, 17(2), 180–190. https://doi.org/10.1111/j.1365-2869.2008.00651.x

[15] Landry, G. J., Best, J. R., & Liu-Ambrose, T. (2015). Measuring sleep quality in older adults: A comparison using subjective and objective methods. Frontiers in Aging Neuroscience, 7. https://doi.org/10.3389/fnagi.2015.00166

[16] Haack, M., Simpson, N., Sethna, N., Kaur, S., & Mullington, J. (2020). Sleep deficiency and chronic pain: Potential underlying mechanisms and clinical implications. Neuropsychopharmacology, 45(1), Artikel 1. https://doi.org/10.1038/s41386-019-0439-z

[17] Koffel, E., Kroenke, K., Bair, M. J., Leverty, D., Polusny, M. A., & Krebs, E. E. (2016). The bidirectional relationship between sleep complaints and pain: Analysis of data from a randomized trial. Health Psychology, 35(1), 41–49. https://doi.org/10.1037/hea0000245

[18] Runge, N., Ahmed, I., Saueressig, T., Perea, J., Labie, C., Mairesse, O., Nijs, J., Malfliet, A., Verschueren, S., Van Assche, D., de Vlam, K., Van Waeyenberg, T., Van Haute, J., & De Baets, L. (2022). The bidirectional relationship between sleep problems and chronic musculoskeletal pain: A systematic review with meta-analysis. PAIN, 10.1097/j.pain.0000000000003279. https://doi.org/10.1097/j.pain.0000000000003279

[19] Tanguay-Sabourin, C., Fillingim, M., Guglietti, G. V., Zare, A., Parisien, M., Norman, J., Sweatman, H., Da-ano, R., Heikkala, E., PREVENT-AD Research Group, Breitner, J. C. S., Menes, J., Poirier, J., Tremblay-Mercier, J., Perez, J., Karppinen, J., Villeneuve, S., Thompson, S. J., Martel, M. O., … Vachon-Presseau, E. (2023). A prognostic risk score for development and spread of chronic pain. Nature Medicine, 29(7), 1821–1831. https://doi.org/10.1038/s41591-023-02430-4

[20] Husak, A. J., & Bair, M. J. (2020). Chronic Pain and Sleep Disturbances: A Pragmatic Review of Their Relationships, Comorbidities, and Treatments. Pain Medicine, 21(6), 1142–1152. https://doi.org/10.1093/pm/pnz343

[21] Smith, M. T., Mun, C. J., Remeniuk, B., Finan, P. H., Campbell, C. M., Buenaver, L. F., Robinson, M., Fulton, B., Tompkins, D. A., Tremblay, J.-M., Strain, E. C., & Irwin, M. R. (2020). Experimental sleep disruption attenuates morphine analgesia: Findings from a randomized trial and implications for the opioid abuse epidemic. Scientific Reports, 10(1), Artikel 1. https://doi.org/10.1038/s41598-020-76934-1

[22] Burgess, H. J., Burns, J. W., Buvanendran, A., Gupta, R., Chont, M., Kennedy, M., & Bruehl, S. (2019). Associations Between Sleep Disturbance and Chronic Pain Intensity and Function: A Test of Direct and Indirect Pathways. The Clinical journal of pain, 35(7), 569–576. https://doi.org/10.1097/AJP.0000000000000711

[23] Miettinen, T., Sverloff, J., Lappalainen, O.-P., Linton, S. J., Sipilä, K., & Kalso, E. (2022). Sleep problems in pain patients entering tertiary pain care: The role of pain-related anxiety, medication use, self-reported diseases, and sleep disorders. PAIN, 163(7), e812. https://doi.org/10.1097/j.pain.0000000000002497

[24] Whibley, D., AlKandari, N., Kristensen, K., Barnish, M., Rzewuska, M., Druce, K. L., & Tang, N. K. Y. (2019). Sleep and Pain. The Clinical Journal of Pain, 35(6), 544–558. https://doi.org/10.1097/AJP.0000000000000697

[25] Herrero Babiloni, A., De Koninck, B. P., Beetz, G., De Beaumont, L., Martel, M. O., & Lavigne, G. J. (2020). Sleep and pain: Recent insights, mechanisms, and future directions in the investigation of this relationship. Journal of Neural Transmission, 127(4), 647–660. https://doi.org/10.1007/s00702-019-02067-z

[26] Schuh-Hofer, S., Schäfer-Voß, S., & Treede, R.-D. (2016). Schlaf und Schmerz. Aktuelle Neurologie, 43(04), 249–255. https://doi.org/10.1055/s-0035-1569275

[27] Santos, M., Gabani, F. L., de Andrade, S. M., Bizzozero-Peroni, B., Martínez-Vizcaíno, V., González, A. D., & Mesas, A. E. (2023). The bidirectional association between chronic musculoskeletal pain and sleep-related problems: A systematic review and meta-analysis. Rheumatology, 62(9), 2951–2962. https://doi.org/10.1093/rheumatology/kead190

[28] Müller, T., & Paterok, B. (2024). Schlaf erfolgreich trainieren. Hogrefe Verlag. https://doi.org/10.1026/03253-000

[29] Weeß, H.-G. (2018). Insomnien. In B. A. Stuck, J. T. Maurer, A. A. Schlarb, M. Schredl, & H.-G. Weeß (Hrsg.), Praxis der Schlafmedizin: Diagnostik, Differenzialdiagnostik und Therapie bei Erwachsenen und Kindern (S. 87–122). Springer. https://doi.org/10.1007/978-3-662-54383-2_3

[30] Dekker, K., Benjamins, J. S., Maksimovic, T., Filardi, M., Hofman, W. F., van Straten, A., & Van Someren, E. J. W. (2019). Combined Internet-Based Cognitive-Behavioral and Chronobiological Intervention for Insomnia: A Randomized Controlled Trial. Psychotherapy and Psychosomatics, 89(2), 117–118. https://doi.org/10.1159/000503570

[31] Enomoto, K., Adachi, T., Fujino, H., Kugo, M., Tatsumi, S., & Sasaki, J. (2022). Comparison of the effectiveness of cognitive behavioral therapy for insomnia, cognitive behavioral therapy for pain, and hybrid cognitive behavioral therapy for insomnia and pain in individuals with comorbid insomnia and chronic pain: A systematic review and network meta-analysis. Sleep Medicine Reviews, 66, 101693. https://doi.org/10.1016/j.smrv.2022.101693

[32] Selvanathan, J., Pham, C., Nagappa, M., Peng, P. W. H., Englesakis, M., Espie, C. A., Morin, C. M., & Chung, F. (2021). Cognitive behavioral therapy for insomnia in patients with chronic pain – A systematic review and meta-analysis of randomized controlled trials. Sleep Medicine Reviews, 60, 101460. https://doi.org/10.1016/j.smrv.2021.101460

[33] Tang. (2022). CBT-I Protocol for Insomnia Co-morbid with Chronic Pain. https://onlinelibrary.wiley.com/doi/chapter-epub/10.1002/9781119891192.ch15

[34] Tscharaktschiew, N., Ende, L., & Onderka, C. (2022). Besserer Schlaf und weniger Schmerzen? Schlaftraining in der orthopädischen Rehabilitation. Die Rehabilitation, 61(1), 35–42. https://doi.org/10.1055/a-1509-9247

[35] Dreher, Jan. (2017). Psychopharmakotherapie griffbereit. https://content-select.com/de/portal/media/view/58c2b99f-daa4-4583-8bdb-7046b0dd2d03?forceauth=1

[36] Heidbreder A., Trenkwalder C. et al., Restless Legs Syndrom, S2k Leitlinie, 2022; Deutsche Gesellschaft für Neurologie und Deutsche Gesellschaft für Schlafforschung und Schlafmedizin (DGSM) (Hrsg.), Leitlinien für Diagnostik und Therapie in der Neurologie. Online: www.dgn.org/leitlinien (abgerufen am 19.08.2026)

[37] Mignot, E., Mayleben, D., Fietze, I., Leger, D., Zammit, G., Bassetti, C. L. A., Pain, S., Kinter, D. S., & Roth, T. (2022). Safety and efficacy of daridorexant in patients with insomnia disorder: Results from two multicentre, randomised, double-blind, placebo-controlled, phase 3 trials. The Lancet Neurology, 21(2), 125–139. https://doi.org/10.1016/S1474-4422(21)00436-1

[38] Craige, E. A., Tagliaferri, S. D., Ferguson, S. A., Scott, H., Belavy, D. L., Easton, D. F., Buntine, P., Memon, A. R., Owen, P. J., & Vincent, G. E. (2023). Effects of pharmacotherapy on sleep-related outcomes in adults with chronic low back pain: A systematic review and meta-analysis of randomised controlled trials. eClinicalMedicine, 55, 101749. https://doi.org/10.1016/j.eclinm.2022.101749

[39] Puterflam, J. M., Comis, J. J., Lan, Q., Liu, C., Lipschitz, A. J., Grunstein, R. R., Ferreira, P. H., & Gordon, C. J. (2022). The short-term effects of opioid and non-opioid pharmacotherapies on sleep in people with chronic low back pain: A systematic review and meta-analysis of randomized controlled trials. Sleep Medicine Reviews, 65, 101672. https://doi.org/10.1016/j.smrv.2022.101672

[40] Antila, H., Lilius, T. O., Palada, V., Lohela, T., Bell, R. F., Porkka-Heiskanen, T., & Kalso, E. (2022). Effects of commonly used analgesics on sleep architecture—A topical review. PAIN, 10.1097/j.pain.0000000000003201. https://doi.org/10.1097/j.pain.0000000000003201

[41] Cao, M., & Javaheri, S. (2018). Effects of Chronic Opioid Use on Sleep and Wake. Sleep Medicine Clinics, 13(2), 271–281. https://doi.org/10.1016/j.jsmc.2018.02.002.

[42] Rosen, I. M., Aurora, R. N., Kirsch, D. B., Carden, K. A., Malhotra, R. K., Ramar, K., Abbasi, -Feinberg Fariha, Kristo, D. A., Martin, J. L., Olson, E. J., Rosen, C. L., Rowley, J. A., Shelgikar, A. V. (2019). Chronic Opioid Therapy and Sleep: An American Academy of Sleep Medicine Position Statement. Journal of Clinical Sleep Medicine, 15(11), 1671–1673. https://doi.org/10.5664/jcsm.8062

[43] Boyle, J., Eriksson, M. E. V., Gribble, L., Gouni, R., Johnsen, S., Coppini, D. V., & Kerr, D. (2012). Randomized, Placebo-Controlled Comparison of Amitriptyline, Duloxetine, and Pregabalin in Patients With Chronic Diabetic Peripheral Neuropathic Pain: Impact on pain, polysomnographic sleep, daytime functioning, and quality of life. Diabetes Care, 35(12), 2451–2458. https://doi.org/10.2337/dc12-0656

[44] Andersson, E., Kander, T., Werner, M. U., Cho, J. H., Kosek, E., & Bjurström, M. F. (2023). Analgesic efficacy of sleep-promoting pharmacotherapy in patients with chronic pain: A systematic review and meta-analysis. Pain Reports, 8(1), e1061. https://doi.org/10.1097/PR9.0000000000001061

[45] Wu, K., Ho, T. H., Beckenkamp, P. R., Hall, M., Zhang, H., Puterflam, J., Bruun, K. D., Lin, J., Gordon, C., Grunstein, R., Ferreira, M. L., & Ferreira, P. (2026). Efficacy and effectiveness of melatonin for the management of musculoskeletal pain: a systematic review and meta-analysis of placebo and active controlled trials. Pain, 167(9), 2014–2025. https://doi.org/10.1097/j.pain.0000000000004045