

1. van Dillen LR, Lanier VM, Steger-May K, Wallendorf M, Norton BJ, Civello JM, Czuppon SL, Francois SJ, Roles K, Lang CE (2020) Effect of Motor Skill Training in Functional Activities vs Strength and Flexibility Exercise on Function in People With Chronic Low Back Pain A Randomized Clinical Trial. *JAMA Neurol.* doi:10.1001/jamaneurol.2020.4821
2. NVI 2017 Kurzfassung, 2. Auflage. Version 1. Träger: Bundesärztekammer, Kassenärztliche Bundesvereinigung, Arbeitsgemeinschaft der Wissenschaften medizinischen Fachgesellschaften, <https://www.leitlinien.de/mdb/downloads/nvl/kreuzschmerz/kreuzschmerz-2aufl-vers1-kurz.pdf>)
3. G-I-N net: Form: Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. Methods paper: Qaseem A, Snow V, Owens DK, Shekelle P. The Development of Clinical Practice Guidelines and Guidance Statements of the American College of Physicians: Summary of Methods. *Annals of Internal Medicine.* 2010;153(3):194-9.
4. Tulder van MW, Hayden JA, Malmivaara A, Koes B W (2005) Exercise therapy for treatment of non-specific low back pain (2005) *Cochrane Database of Systematic Reviews*, (3). Doi: 10.1002/14651858.CD000335.pub2
5. Tulder van MW, Malmivaara A, Esmail R, Koes B. (2000) Exercise therapy for low back pain: a systematic review within the framework of the cochrane collaboration back review group. *Spine (Phila Pa 1976)*. 2000 Nov 1;25(21):2784-96.
6. Searle A, Spink M, Ho A, Chuter V (2015) Exercise interventions for the treatment of chronic low back pain: a systematic review and meta-analysis of randomized controlled trials. *Clinical Rehabilitation* 2015, Vol. 29(12) 1155–1167 DOI: 10.1177/0269215515570379.
7. Saragiotto BT, Maher CG, Yamato TP, Costa LO, Menezes Costa LC, Ostelo RW, Macedo LW (2016). Motor Control Exercise for Non-specific Low Back Pain: A Cochrane Review. *SPINE*. 41. 1. Doi: 10.1097/BRS.0000000000001645.
8. Wieland LS, Skoetz N, Pilkington K, Vempati R, D'Adamo CR, Berman BM. (2017) Yoga treatment for chronic non-specific low back pain. *Cochrane Database Syst Rev* 2017; (1): CD010671.
9. Owen PJ, Miller CT, Mundell NL, Verswijveren SJJM, Tagliaferri SD, Brisby H, Bowe SJ, Belavy DL (2019) Which specific modes of exercise training are most effective for treating low back pain? Network meta-analysis. *Br J Sports Med* 2019; 0:1–12. Doi:10.1136/bjsports-2019-100886.
10. de Zoete RMj, Armfield NR, McAuley JH, Chen K, Sterling M (2020) Comparative effectiveness of physical exercise interventions for chronic non-specific neck pain: a systematic review with network meta-analysis of 40 randomised controlled trials. *Br J Sports Med.* 2020 Nov 2;bjsports-2020-102664. doi: 10.1136/bjsports-2020-102664. Online ahead of print. PMID: 33139256.
11. Hayden JA, Ellis J, Ogilvie R, Stewart SA, Bagg MK, Stanojevic S, Yamato TP, Saragiotto BT (2021) Some types of exercise are more effective than others in people with chronic low back pain: a network meta-analysis. *J Physiother.* 2021

Oct;67(4):252-262. doi: 10.1016/j.jphys.2021.09.004. Epub 2021 Sep 16.
PMID: 34538747.

12. Huang R, Ning J, Chuter VH, Taylor JB, Christophe D, Meng Z, Xu Y, Jiang L (2020) Exercise alone and exercise combined with education both prevent episodes of low back pain and related absenteeism: systematic review and network meta-analysis of randomised controlled trials (RCTs) aimed at preventing back pain. *Br J Sports Med.* 2020 Jul;54(13):766-770. doi: 10.1136/bjsports-2018-100035. Epub 2019 Oct 31. PMID: 31672696.
13. Hecht S (2012) Evaluation einer multimodalen Präventivintervention: Die Neue Rückenschule. Dissertation, technische Universität Chemnitz, i.Br.
14. Jensen MC, Brant-Zawadzki MN, Obuchowski N, Modic MT, Malkasian D, Ross JS (1994) Magnetic resonance imaging of the lumbar spine in people without back pain. *N Engl J Med.* 1994 Jul 14;331(2):69-73. Doi: 10.1056/NEJM199407143310201. PMID: 8208267.
15. Chou R, Fu R, Carrino JA, Deyo RA (2009) Imaging strategies for low-back pain: systematic review and meta-analysis. *Lancet.* 2009 Feb 7; 373(9662):463-72. Doi: 10.1016/S0140-6736(09)60172-0.
16. Brinjikji W, Luetmer PH, Comstock B, Bresnahan BW, Chen LE, Deyo RA, Halabi S, Turner JA, Avins AL, James K, Wald JT, Kallmes DF, Jarvik (2015) Systematic literature review of imaging features of spinal degeneration in asymptomatic populations. *AJNR Am J Neuroradiol.* 2015 Apr;36(4):811-6. Doi: 10.3174/ajnr.A4173. Epub 2014 Nov 27.
17. Kjaer P, Leboeuf-Yde C, Korsholm L, Sorensen JS, Bendix T (2005) Magnetic resonance imaging and low back pain in adults: a diagnostic imaging study of 40-year-old men and women. *Spine (Phila Pa 1976).* 2005 May 15;30(10):1173-80. Doi:10.1097/01.brs.0000162396.97739.76. PMID: 15897832.
18. Kim C, Nevitt MC, Niu J, Clancy MM, Lane NE, Link TM, Vlad S, Tolstykh I, Jungmann PM, Felson DT, Guermazi A (2015) Association of hip pain with radiographic evidence of hip osteoarthritis: diagnostic test study. *BMJ.* 2015 Dec 2; 351:h5983. Doi: 10.1136/bmj.h5983.
19. Chenot JF, Greitemann B, Kladny B, Petzke F, Pflingsten M, Schorr SG (2017) Clinical practice guideline: Non-specific low back pain. *Dtsch Arztebl Int* 2017; 114: 883–90. Doi: 10.3238/arztebl.2017.0883.
20. Tran G, Cowling P, Smith T, Bury J, Lucas A, Barr A, Kingsbury SR, Conaghan PG (2018) What Imaging-Detected Pathologies Are Associated With Shoulder Symptoms and Their Persistence? A Systematic Literature Review. *Arthritis Care & Research* Vol. 70, No. 8, August 2018, pp 1169–1184 Doi 10.1002/acr.23554.
21. Lewis JS (2009) Rotator cuff tendinopathy/subacromial impingement syndrome: is it time for a new method of assessment? *Br J Sports Med.* 2009 Apr;43(4):259-64. Doi: 10.1136/bjsm.2008.052183. Epub 2008 Oct 6.
22. Traeger AC, Lee H, Hübscher M, Skinner IW, Moseley GL, Nicholas MK, Henschke N, Refshauge KM, Blyth FM, Main CJ, Hush JM, Lo S, James H McAuley JH (2019) Effect of Intensive Patient Education vs Placebo Patient Education on Outcomes in Patients With Acute Low Back Pain: A Randomized Clinical Trial. *JAMA*

- Neurol. 2019 Feb 1;76(2):161-169. Doi: 10.1001/jamaneurol.2018.3376.
PMID: 30398542. PMCID: PMC6440280.
23. Ryyänen K, Oura P, Simula A-S, Holopainen R, Paukkunen M, Lausmaa M, Remes J, Booth N, Malmivaara A, Karppinen J (2021) Effectiveness of training in guideline-oriented biopsychosocial management of low-back pain in occupational health services - a cluster randomized controlled trial. *Scand J Work Environ Health*. 2021 Jul 1;47(5):367-376. Doi: 10.5271/sjweh.3959. Epub 2021 Apr 13. PMID: 33847366. PMCID: PMC8259706.
 24. Marin TJ, Van Eerd D, Irvin E, Couban R, Koes BW, Malmivaara A, van Tulder MW, Kamper SJ (2017) Multidisciplinary biopsychosocial rehabilitation for subacute low back pain. *Cochrane Database Syst Rev*. 2017 Jun 28;6(6):CD002193. Doi: 10.1002/14651858.CD002193.pub2. PMID: 28656659. PMCID: PMC6481490.
 25. Mai J, Paxinos G (Hrsg) (2012), *The Human Nervous System*, 3rd Edition, Academic Press (Elsevier), London UK, Waltham USA, San Diego USA.
 26. Kandel ER, Schwarz JH, Jessel ZM (2000) *Principles of neural science*, 4. Aufl. McGraw-Hill.
 27. Lephart SM, Fu FH (2000) *Proprioception and neuromuscular control in joint stability*, Human Kinetics Pittsburgh USA.
 28. Solomonow M (2006) Sensory-motor control of ligaments and associated neuromuscular disorders. *J Electromyogr Kinesiol*. 2006 Dec;16(6):549-67. Doi: 10.1016/j.jelekin.2006.08.004. Epub 2006 Oct 11. PMID: 17045488.
 29. Johansson H, Sjolander P, Sojka P (1991) Receptors in the knee joint ligaments and their role in the biomechanics of the joint. *Crit Rev Biomed Eng*. 1991; 18(5):341-68. [PubMed] [Google Scholar].
 30. Vardeh D, Mannion RJ, Woolf CJ (2016) Towards a mechanism-based approach to pain diagnosis. *J Pain*. 2016 Sep; 17(9 Suppl): T50-T69. Doi: 10.1016/j.jpain.2016.03.001. PMCID: PMC5012312, NIHMSID: NIHMS808867, PMID: 27586831.
 31. Bogduk N, Aprill C, Derby R (2013) Lumbar Discogenic Pain: State-of-the-Art Review. *Pain Medicine*, Volume 14, Issue 6, June 2013, Pages 813-836, <https://doi.org/10.1111/pme.12082>.
 32. Panjabi MM, White AA (2001) *Biomechanics in the Musculoskeletal System*. Churchill Livingstone, Philadelphia, 123-125.
 33. Prabu Raja G, Shyamasunder Bhat N, César Fernández-de-las-Peñas, Ranganath Gangavelli, Fiddy Davis, Ravi Shankar, and Anupama Prabhu (2021) Effectiveness of deep cervical fascial manipulation and yoga postures on pain, function, and oculomotor control in patients with mechanical neck pain: study protocol of a pragmatic, parallel-group, randomized, controlled trial *Trials*. 2021; 22: 574. Published online 2021 Aug 28. doi: 10.1186/s13063-021-05533-w. PMCID: PMC8399821. PMID: 34454582.
 34. Raja PG, Fernandes S, Cruz AM, Prabhu A (2020) The plausible role of deep cervical fascia and its continuum in chronic craniofacial and cervicobrachial pain. A case report. *Heliyon*. 2020;6:e04560. doi: 10.1016/j.heliyon.2020.e04560.

35. Yan Hu, Xiao Chen, Sicheng Wang, Yingying Jing, Jiaca Su (2021) Subchondral bone microenvironment in osteoarthritis and pain. *Bone Res.* 2021 Mar 17;9(1):20. Doi: 10.1038/s41413-021-00147-z. PMID: 33731688. PMCID: PMC7969608.
36. Li, G., Yin, J., Gao, J. *et al.* Subchondral bone in osteoarthritis: insight into risk factors and microstructural changes. *Arthritis Res Ther* 15, 223 (2013). <https://doi.org/10.1186/ar4405>.
37. Shouan Zhu, Jianxi Zhu, Gehua Zhen *et al.* (2019) Subchondral bone osteoclasts induce sensory innervation and osteoarthritis pain. *J ClinInvest.* 2019 Mar 1; 129(3): 1076–1093. doi: 10.1172/JCI121561. PMCID: PMC6391093. PMID: 30530994.
38. Kennedy DJ, Mattie R, Nguyen Q, Hamilton S, Conrad B (2015) Glenohumeral Joint Pain Referral Patterns: A Descriptive Study. *Pain Med.* 2015 Aug;16(8):1603-9. doi: 10.1111/pme.12797. Epub 2015 Jul 16. PMID: 26184392.
39. Clohisy JC, Knaus ER, Hunt DM, Leshner JM, Harris -Hayes M, Heidi Prather H (2009) Clinical Presentation of Patients with Symptomatic Anterior Hip Impingement. *Clin Orthop Relat Res.* 2009 Mar; 467(3): 638–644. Published online 2009 Jan 7. Doi: 10.1007/s11999-008-0680-y. PMCID: PMC2635448. PMID: 19130160.
40. Bayam L, Arumilli R, Horsley I, Bayam F, Herrington L, Lennard Funk L (2017) Testing Shoulder Pain Mapping *Pain Med.* 2017 Jul 1;18(7):1382-1393. Doi: 10.1093/pm/pnw326. PMID: 28339752.
41. Dong-Gyun Han (2009) The other mechanism of muscular referred pain: the "connective tissue" theory. *Med Hypotheses.* 2009 Sep;73(3):292-5. Doi: 10.1016/j.mehy.2009.02.040. Epub 2009 May 9. PMID: 19433346.
42. Leshner JM, Dreyfuss P, Hager N, Kaplan M, Furman M (2008) Hip joint pain referral patterns: a descriptive study. *Pain Med.* 2008 Jan-Feb;9(1):22-5. Doi: 10.1111/j.1526-4637.2006.00153.x.
43. Yang DS, Li NY, Mariorenzi MC, Kleinhenz DT, Cohen EM, Daniels AH (2020) Surgical Treatment of Patients With Dual Hip and Spinal Degenerative Disease: Effect of Surgical Sequence of Spinal Fusion and Total Hip Arthroplasty on Postoperative Complications. *Spine (Phila Pa 1976).* 2020 May 15;45(10):E587-E593. Doi: 10.1097/BRS.0000000000003351. PMID: 31809465.
44. Yin T-C, Wegner AM, Lu M-L, Yang Y-H, Wang Y-C, Kung W-M, Lo W-C (2021) Do Orthopedic Surgeons or Neurosurgeons Detect More Hip Disorders in Patients with Hip-Spine Syndrome? A Nationwide Database Study. *Brain Sci.* 2021 Apr 11;11(4):485. Doi: 10.3390/brainsci11040485. PMID: 33920497. PMCID: PMC8070546.
45. Liu N, Goodman SB, Lachiewicz PF, Wood KB (2019) Hip or spine surgery first? A survey of treatment order for patients with concurrent degenerative hip and spinal disorders. *Bone Joint J* 2019;101-B(6 Supple B):37–44.-Published Online:31 May 2019<https://doi.org/10.1302/0301-620X.101B6.BJJ-2018-1073.R1>.
46. Yin T-C, Wegner AM, Lu M-L, Yang Y-H, Wang Y-C, Kung W-M, Lo W-C (2021) Do Orthopedic Surgeons or Neurosurgeons Detect More Hip Disorders in Patients with Hip-Spine Syndrome? A Nationwide Database Study. *Brain Sci.* 2021 Apr 11;11(4):485. doi: 10.3390/brainsci11040485. PMID: 33920497. PMCID: PMC8070546.

47. Liu N, Goodman SB, Lachiewicz PF, Wood KB (2019) Hip or spine surgery first? A survey of treatment order for patients with concurrent degenerative hip and spinal disorders. *Bone Joint J* 2019;101-B(6 Supple B):37–44. Published Online:31 May 2019 <https://doi.org/10.1302/0301-620X.101B6.BJJ-2018-1073.R1>.
48. Lephart SM, Fu FH (2000) Proprioception and neuromuscular control in joint stability, Human Kinetics Pittsburgh USA.
49. Hopkins JT, Ingersoll CD (2000) Arthrogenic muscle inhibition: a limiting factor in joint rehabilitation. *J Sport Rehabil* 9: 135–159.
50. Horre T (2008) Einfluss von Gelenkdysfunktion auf die Muskelfunktion. *Manuelle Therapie* 12: 60–71.
51. Solomonow M (2006) Sensory-motor control of ligaments and associated neuromuscular disorders. *J Electromyogr Kinesiol.* 2006 Dec;16(6):549-67. Doi: 10.1016/j.jelekin.2006.08.004. Epub 2006 Oct 11. PMID: 17045488.
52. Comerford MJ, Mottram SL (2001) Movement and stability dysfunction – contemporary developments. *Manual Therapy* (2001) 6(1), 15–26 Doi:10.1054/math.2000.0388.
53. Hopkins JT (2002) Within and between session reliability of the peak quadriceps H-reflex. *Med Sci Sports Exerc* 34: 118.
54. Freeman S, Mascia A, McGill S (2013) Arthrogenic neuromusculature inhibition: a foundational investigation of existence in the hip joint. *Clin Biomech (Bristol, Avon)*. 2013 Feb;28(2):171-7. Doi: 10.1016/j.clinbiomech.2012.11.014. Epub 2012 Dec 20.
55. Freke MD, Crossley K, Sims K, Russell T, Weinrauch P, Gamboa G, Semciw A (2019) Acute and Subacute Changes in Hip Strength and Range of Movement After Arthroscopy to Address Chondrolabral Pathology. *Am J Sports Med.* 2019 Jul;47(8):1939-1948. Doi: 10.1177/0363546519850816. Epub 2019 Jun 3.
56. Mumbleau AM, Schilaty ND, Hewett TE (2020) Hip muscle inhibition after hip arthroscopy: A role for neuromuscular electric stimulation. *Int J Sports Phys Ther.* 2020 Dec; 15(6): 1222–1228. Doi: 10.26603/ijspt20201222. PMID: 33344037.
57. Sueki DG, JA, Wainner RS (2013) A regional interdependence model of musculoskeletal dysfunction: research, mechanisms, and clinical implications. *J Man Manip Ther.* 2013 May; 21(2): 90–102. doi: 10.1179/2042618612Y.0000000027. PMID: 24421619.
58. Prather H, van Dillen L (2019) A narrative review of the links between the hip and the lumbar spine (hip spine syndrome) as they relate to clinical decision making for patients with lumbopelvic pain. *PM R.* 2019 May 10. doi: 10.1002/pmrj.12187. PMID: 31074168.
59. Offierski CM, McNab I (1983) Hip-spine syndrome. *Spine (Phila Pa 1976)*. 1983 Apr;8(3):316-21.
60. Redmond JM, Gupta A, Nasser R, Domb BG (2015) The hip-spine connection: understanding its importance in the treatment of hip pathology. *Orthopedics.* 2015 Jan;38(1):49-55. doi: 10.3928/01477447-20150105-07. PMID: 25611411.
61. Mendis MD, Hides JA (2016) Effect of motor control training on hip muscles in elite football players with and without low back pain *J Sci Med Spor.* 2016

- Nov;19(11):866-871. doi: 10.1016/j.jsams.2016.02.008. Epub 2016 Mar.
PMID: 27012726.
62. Bade M, Cobo-Estevéz M, Neeley D, Pandya J, Gunderson T, Cook C (2017) Effects of manual therapy and exercise targeting the hips in patients with low-back pain-A randomized controlled trial *J Eval Clin Pract.* 2017 Aug;23(4):734-740. doi: 10.1111/jep.12705. PMID: 28127827.
 63. Redmond JM, Gupta A, Hammarstedt JE, Stake CE, Domb BG (2014) The hip-spine syndrome: how does back pain impact the indications and outcomes of hip arthroscopy? *Arthroscopy.* 2014 Jul;30(7):872-81. doi: 10.1016/j.arthro.2014.02.033.
 64. Pourahmadi M, Asadi M, Dommerholt J, Yeganeh A (2020) Changes in the macroscopic morphology of hip muscles in low back pain *J Anat.* 2020 Jan;236(1):3-20. doi: 10.1111/joa.13086. Epub 2019 Sep 1.
 65. Reiman MP, Weisbach PC, Glynn PE (2009) The Hip's Influence on Low Back Pain: A Distal Link to a Proximal Problem. *Journal of Sport Rehabilitation.* 18, 24-32 *Human Kinetics.*
 66. Geraedts P (2018) *Physiotherapeutisches Training bei Rückenschmerzen – Motorische Befunderhebung und Behandlung.* Springer Verlag Berlin.
 67. Ghamkhar L, Arab AM, Nourbakhsh MR, Kahlaee AH, Zolfaghari R (2020) Examination of Regional Interdependence Theory in Chronic Neck Pain: Interpretations from Correlation of Strength Measures in Cervical and Pain-Free Regions. *Pain Med.* 2020 Feb 1;21(2):e182-e190. doi: 10.1093/pm/pnz206. PMID: 31504861.
 68. Seo YG, Park WH, Lee CS, Kang KC, Min KB, Lee SM, Yoo JC (2019) Is Scapular Stabilization Exercise Effective for Managing Nonspecific Chronic Neck Pain?: A Systematic Review. *Asian Spine J.* 2020 Feb;14(1):122-129. doi: 10.31616/asj.2019.0055. Epub 2019 Nov 1.
 69. Takasaki H, Hall T, Kaneko S, Iizawa T, Ikemoto Y (2009) Cervical segmental motion induced by shoulder abduction assessed by magnetic resonance imaging. *Spine (Phila Pa 1976).* 2009 Feb 1; 34(3):E122-6.
 70. Kang JI, Choi HH, Jeong DK, Choi H, Moon YJ, Park JS (2018) Effect of scapular stabilization exercise on neck alignment and muscle activity in patients with forward head posture. *J Phys Ther Sci.* 2018 Jun;30(6):804-808. doi: 10.1589/jpts.30.804.
 71. Falla D, Bilenkij G, Jull G (2004) Patients with chronic neck pain demonstrate altered patterns of muscle activation during performance of a functional upper limb task. *Spine (Phila Pa 1976).* 2004 Jul 1;29(13):1436-40. doi: 10.1097/01.brs.0000128759.02487.bf. PMID: 15223935.
 72. Falla D, Jull G, Hodges P (2007) Training the cervical muscles with prescribed motor tasks does not change muscle activation during a functional activity. *Man Ther.* 2008 Dec;13(6):507-12. doi: 10.1016/j.math.2007.07.001. Epub 2007 Aug 27
PMID: 17720609.
 73. Seo YG, Park WH, Lee CS, Kang KC, Min KB, Lee SM, Yoo JC (2019) Is Scapular Stabilization Exercise Effective for Managing Nonspecific Chronic Neck Pain?: A

Systematic Review. *Asian Spine J.* 2020 Feb;14(1):122-129. doi: 10.31616/asj.2019.0055. Epub 2019 Nov 1.

74. Lee Y, Myong Sook Shin M, Lee W (2015) Effects of shoulder stabilization exercise on pain and function in patients with neck pain. *J Phys Ther Sci.* 2015 Dec;27(12):3619-22. doi: 10.1589/jpts.27.3619. PMID: 26834317. PMCID: PMC4713756.
75. Jeong-Il Kang, Hyun-Ho Choi, Dae-Keun Jeong, Hyun Choi, Young-Jun Moon, Joon-Su Park (2018) Effect of scapular stabilization exercise on neck alignment and muscle activity in patients with forward head posture. *J Phys Ther Sci.* 2018 Jun;30(6):804-808. doi: 10.1589/jpts.30.804. Epub 2018 Jun 12.