

Schwindel durch übermäßige Kopfbewegungen

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Literatur

1. Cooksey FS. Physical medicine. Practitioner 1945; 155: 300e 305.
2. Cawthorne T. The physiological basis for head exercises. J Chart Soc Physiother 1944; 29: 106e 107
3. Hall CD, Herdman SJ, Whitney SL et al. Vestibular Rehabilitation for Peripheral Vestibular Hypofunction: An Evidence-Based Clinical Practice Guideline: FROM THE AMERICAN PHYSICAL THERAPY ASSOCIATION NEUROLOGY SECTION. J Neurol Phys Ther 2016; 40: 124-155. doi:10.1097/NPT.000000000000120
4. Schädler S. Kapitel 13: Schwindel In: Muskuloskelettal Physiotherapie, 23 Fälle aus der evidenzbasierten Praxis. Thieme 2019. 216-235
5. schädler S. Schwindel durch übermäßige Kopfbewegungen - Erkenntnisse aus der Forschung und Implikationen für die Praxis. Pt Zeitschrift für Physiotherapeuten 2023.
6. Yacovino DA, Hain TC. Clinical characteristics of cervicogenic-related dizziness and vertigo. Semin Neurol 2013; 33: 244-255. doi:10.1055/s-0033-1354592
7. Hauswirth J. Zervikogener Schwindel: Diagnose und manualtherapeutische Behandlung. Manuelle Therapie 2008. 80-93
8. Wrisley DM, Sparto PJ, Whitney SL et al. Cervicogenic dizziness: a review of diagnosis and treatment. J Orthop Sports Phys Ther 2000; 30: 755-766. doi:10.2519/jospt.2000.30.12.755
9. Reid SA, Rivett DA. Manual therapy treatment of cervicogenic dizziness: a systematic review. Man Ther 2005; 10: 4-13. doi:S1356689X04000384 [pii] 10.1016/j.math.2004.03.006
10. Wiest G. Der sogenannte zervikogene Schwindel aus neurologischer Sicht. J Neurol Neurochir Psychiatr 2016; 17: 7-12
11. Devaraja K. Approach to cervicogenic dizziness: a comprehensive review of its aetiopathology and management. Eur Arch Otorhinolaryngol 2018; 275: 2421-2433. doi:10.1007/s00405-018-5088-z
12. Seemungal BM, Agrawal Y, Bisdorff A et al. The Bárány Society position on 'Cervical Dizziness'. Journal of Vestibular Research. 1-13
13. Alqahtani MM, Kashoo FZ. Physical therapy in cervicogenic dizziness. Physical therapy 2020; 9: 1-6
14. Reiley AS, Vickory FM, Funderburg SE et al. How to diagnose cervicogenic dizziness. Arch Physiother 2017; 7: 12. doi:10.1186/s40945-017-0040-x
15. Lystad RP, Bell G, Bonnevie-Svendsen M et al. Manual therapy with and without vestibular rehabilitation for cervicogenic dizziness: a systematic review. Chiropr Man Therap 2011; 19: 21. doi:10.1186/2045-709X-19-21 2045-709X-19-21 [pii]
16. De Vestel C, Vereeck L, Reid SA et al. Systematic review and meta-analysis of the therapeutic management of patients with cervicogenic dizziness. J Man Manip Ther 2022. doi:10.1080/10669817.2022.2033044: 1-11. doi:10.1080/10669817.2022.2033044
17. Regauer V, Seckler E, Muller M et al. Physical therapy interventions for older people with vertigo, dizziness and balance disorders addressing mobility and participation: a systematic review. BMC Geriatr 2020; 20: 494. doi:10.1186/s12877-020-01899-9
18. Bronstein AM, Hood JD. The cervico-ocular reflex in normal subjects and patients with absent vestibular function. Brain Res 1986; 373: 399-408
19. Heimbrand S, Bronstein AM, Gresty MA et al. Optically induced plasticity of the cervico-ocular reflex in patients with bilateral absence of vestibular function. Exp Brain Res 1996; 112: 372-380. doi:10.1007/BF00227943
20. Huygen PL, Verhagen WI, Nicolaisen MG. Cervico-ocular reflex enhancement in labyrinthine-defective and normal subjects. Exp Brain Res 1991; 87: 457-464
21. Kelders WP, Kleinrensink GJ, van der Geest JN et al. Compensatory increase of the cervico-ocular reflex with age in healthy humans. J Physiol 2003; 553: 311-317. doi:10.1113/jphysiol.2003.049338 jphysiol.2003.049338 [pii]

22. Lennerstrand G, Han Y, Velay JL. Properties of eye movements induced by activation of neck muscle proprioceptors. *Graefes Arch Clin Exp Ophthalmol* 1996; 234: 703-709
23. Strupp M, Arbusow V, Dieterich M et al. Perceptual and oculomotor effects of neck muscle vibration in vestibular neuritis. Ipsilateral somatosensory substitution of vestibular function. *Brain* 1998; 121 (Pt 4): 677-685
24. Alund M, Ledin T, Odkvist L et al. Dynamic posturography among patients with common neck disorders. A study of 15 cases with suspected cervical vertigo. *J Vestib Res* 1993; 3: 383-389
25. Fransson PA, Karlberg M, Sterner T et al. Direction of galvanically-induced vestibulo-postural responses during active and passive neck torsion. *Acta Otolaryngol* 2000; 120: 500-503
26. Hlavacka F, Njiokiktjien C. Postural responses evoked by sinusoidal galvanic stimulation of the labyrinth. Influence of head position. *Acta Otolaryngol* 1985; 99: 107-112
27. Lund S. Postural effects of neck muscle vibration in man. *Experientia* 1980; 36: 1398
28. Wyke B. Cervical articular contribution to posture and gait: their relation to senile disequilibrium. *Age Ageing* 1979; 8: 251-258
29. Hülse M, Hölzl M. [Vestibulospinal reactions in cervicogenic disequilibrium. Cervicogenic imbalance]. *HNO* 2000; 48: 295-301
30. Karlberg M, Magnusson M, Malmstrom EM et al. Postural and symptomatic improvement after physiotherapy in patients with dizziness of suspected cervical origin. *Arch Phys Med Rehabil* 1996; 77: 874-882. doi:S0003999396001554 [pii]
31. Biguer B, Donaldson IM, Hein A et al. Neck muscle vibration modifies the representation of visual motion and direction in man. *Brain* 1988; 111 (Pt 6): 1405-1424
32. Bove M, Courtine G, Schieppati M. Neck muscle vibration and spatial orientation during stepping in place in humans. *J Neurophysiol* 2002; 88: 2232-2241. doi:10.1152/jn.00198.2002
33. Bove M, Diverio M, Pozzo T et al. Neck muscle vibration disrupts steering of locomotion. *J Appl Physiol* (1985) 2001; 91: 581-588
34. Karnath HO, Reich E, Rorden C et al. The perception of body orientation after neck-proprioceptive stimulation. Effects of time and of visual cueing. *Exp Brain Res* 2002; 143: 350-358. doi:10.1007/s00221-001-0996-2
35. Schmid M, Schieppati M. Neck muscle fatigue and spatial orientation during stepping in place in humans. *J Appl Physiol* (1985) 2005; 99: 141-153. doi:00494.2004 [pii] 10.1152/jappphysiol.00494.2004
36. Gosselin G, Fagan MJ. The effects of cervical muscle fatigue on balance - a study with elite amateur rugby league players. *J Sports Sci Med* 2014; 13: 329-337
37. Schieppati M, Nardone A, Schmid M. Neck muscle fatigue affects postural control in man. *Neuroscience* 2003; 121: 277-285. doi:10.1016/s0306-4522(03)00439-1
38. Abdelkader NA, Mahmoud AY, Fayaz NA et al. Decreased neck proprioception and postural stability after induced cervical flexor muscles fatigue. *J Musculoskelet Neuronal Interact* 2020; 20: 421-428
39. Saleh MSM, Rehab NI, Sharaf MAF. Effect of deep cervical flexors training on neck proprioception, pain, muscle strength and dizziness in patients with cervical spondylosis: A randomized controlled trial. *Phys Ther Rehabil* 2018; 5: 14
40. Persson L, Karlberg M, Magnusson M. Effects of different treatments on postural performance in patients with cervical root compression. A randomized prospective study assessing the importance of the neck in postural control. *J Vestib Res* 1996; 6: 439-453. doi:S0957427196000973 [pii]
41. Iatridou K, Mandalidis D, Chronopoulos E et al. Static and dynamic body balance following provocation of the visual and vestibular systems in females with and without joint hypermobility syndrome. *J Bodyw Mov Ther* 2014; 18: 159-164. doi:10.1016/j.jbmt.2013.10.003
42. Khademolhosseini Y, Pirouzi S, Ghanbari A et al. Head and neck extension more than 30 degrees may disturb standing balance in healthy older adults. *Geriatr Nurs* 2020; 41: 490-495. doi:10.1016/j.gerinurse.2020.02.002
43. Schädler S. Dehnungen für die Nackenmuskulatur – kann das schädlich sein? *Pt Zeitschrift für Physiotherapeuten* 2022. 38-41

44. Schädler S. Gleichgewicht und Schwindel, Grundlagen - Untersuchung - Therapie. Elsevier, Urban & Fischer, München 2016.
45. Schädler S. Das Central Cord-Syndrom. Pt Zeitschrift für Physiotherapeuten 2021. 42-44
46. Reid SA, Callister R, Katekar MG et al. Utility of a brief assessment tool developed from the Dizziness Handicap Inventory to screen for Cervicogenic dizziness: A case control study. Musculoskelet Sci Pract 2017; 30: 42-48. doi:10.1016/j.msksp.2017.03.008
47. Whitney SL, Marchetti GF, Morris LO. Usefulness of the dizziness handicap inventory in the screening for benign paroxysmal positional vertigo. Otol Neurotol 2005; 26: 1027-1033. doi:10.1097/01.mao.0000185066.04834.4e
48. Schädler S. Der Body Roll-Test – ein neuer Test für den BPLS des horizontalen Bogenganges. Pt Zeitschrift für Physiotherapeuten 2023. 34-37
49. schädler S. Neue Ansätze in der Behandlung bei Persistent Postural-Perceptual Dizziness. Pt Zeitschrift für Physiotherapeuten 2021. 30-35
50. Dannenbaum E, Paquet N, Hakim-Zadeh R et al. Optimal parameters for the clinical test of dynamic visual acuity in patients with a unilateral vestibular deficit. J Otolaryngol 2005; 34: 13-19. doi:10.2310/7070.2005.03105
51. Humphriss RL, Baguley DM, Sparkes V et al. Contraindications to the Dix-Hallpike manoeuvre: a multidisciplinary review. Int J Audiol 2003; 42: 166-173
52. Miniconi P. Réponse posturale du réflexe vestibulospinal lors d'un mouvement dynamique actif dans le plan des six canaux semicirculaires. . Clinical Neurophysiology 2016; 46: 269.270
53. Goldman D. Die Rehabilitation nach Neuritis Vestibularis. physioactive 2021. 14-21
54. Han BI, Song HS, Kim JS. Vestibular rehabilitation therapy: review of indications, mechanisms, and key exercises. J Clin Neurol 2011; 7: 184-196. doi:10.3988/jcn.2011.7.4.184