

Referanser til E13 – palpasjon og manipulasjon – hvor spesifikke kan og må vi være?

Forskningsartikler

Abbott JH, Flynn TW, Fritz JM, et al. Manual physical assessment of spinal segmental motion: intent and validity. *Man Ther* 2009; 14: 36-44. 20071107. DOI: <https://doi.org/10.1016/j.math.2007.09.011>.

Alais D, Xu Y, Wardle SG, et al. A shared mechanism for facial expression in human faces and face pareidolia. *Proc Biol Sci* 2021; 288: 20210966. 20210707. DOI: <https://doi.org/10.1098/rspb.2021.0966>.

Bereznick DE, Pecora CG, Ross JK, et al. The refractory period of the audible "crack" after lumbar manipulation: a preliminary study. *J Manipulative Physiol Ther* 2008; 31: 199-203. DOI: <https://doi.org/10.1016/j.jmpt.2008.02.002>.

Beynon AM, Hebert JJ and Walker BF. The interrater reliability of static palpation of the thoracic spine for eliciting tenderness and stiffness to test for a manipulable lesion. *Chiropr Man Therap* 2018; 26: 49. 20181204. DOI: <https://doi.org/10.1186/s12998-018-0218-7>.

Billis EV, Foster NE and Wright CC. Reproducibility and repeatability: errors of three groups of physiotherapists in locating spinal levels by palpation. *Man Ther* 2003; 8: 223-232. DOI: [https://doi.org/10.1016/s1356-689x\(03\)00017-1](https://doi.org/10.1016/s1356-689x(03)00017-1).

Brismée JM, Gipson D, Ivie D, et al. Interrater reliability of a passive physiological intervertebral motion test in the mid-thoracic spine. *J Manipulative Physiol Ther* 2006; 29: 368-373. DOI: <https://doi.org/10.1016/j.jmpt.2006.04.009>.

Carmichael JP. Inter- and intra-examiner reliability of palpation for sacroiliac joint dysfunction. *J Manipulative Physiol Ther* 1987; 10: 164-171. PMID: 3655566

Cascioli V, Corr P and Till Ag AG. An investigation into the production of intra-articular gas bubbles and increase in joint space in the zygapophyseal joints of the cervical spine in asymptomatic subjects after spinal manipulation. *J Manipulative Physiol Ther* 2003; 26: 356-364. DOI: [https://doi.org/10.1016/s0161-4754\(03\)00075-7](https://doi.org/10.1016/s0161-4754(03)00075-7).

Christensen HW, Vach W, Vach K, et al. Palpation of the upper thoracic spine: an observer reliability study. *J Manipulative Physiol Ther* 2002; 25: 285-292. DOI: <https://doi.org/10.1067/mmt.2002.124424>.

Cooperstein R and Hickey M. The reliability of palpating the posterior superior iliac spine: a systematic review. *J Can Chiropr Assoc* 2016; 60: 36-46. PMID: 27069265

Côté P, Hartvigsen J, Axén I, et al. The global summit on the efficacy and effectiveness of spinal manipulative therapy for the prevention and treatment of non-musculoskeletal disorders: a systematic review of the literature. *Chiropr Man Therap* 2021; 29: 8. 20210217. DOI: <https://doi.org/10.1186/s12998-021-00362-9>.

Degenhardt BF, Snider KT, Snider EJ, et al. Interobserver reliability of osteopathic palpatory diagnostic tests of the lumbar spine: improvements from consensus training. *J Am Osteopath Assoc* 2005; 105: 465-473. PMID: 16314679

Downey BJ, Taylor NF and Niere KR. Manipulative physiotherapists can reliably palpate nominated lumbar spinal levels. *Man Ther* 1999; 4: 151-156. DOI: <https://doi.org/10.1054/math.1999.0196>.

Dunning J, Mourad F, Barbero M, et al. Bilateral and multiple cavitation sounds during upper cervical thrust manipulation. *BMC Musculoskelet Disord* 2013; 14: 24. 20130115. DOI: <https://doi.org/10.1186/1471-2474-14-24>.

French SD, Green S and Forbes A. Reliability of chiropractic methods commonly used to detect manipulable lesions in patients with chronic low-back pain. *J Manipulative Physiol Ther* 2000; 23: 231-238. DOI: <https://doi.org/10.1067/mmt.2000.106101>.

Fryer JC, Quon JA and Vann RD. A proposed in vitro model for investigating the mechanisms of 'joint cracking': a short report of preliminary techniques and observations. *J Can Chiropr Assoc* 2017; 61: 32-39. PMID: 28413221

Haneline M, Cooperstein R, Young M, et al. An annotated bibliography of spinal motion palpation reliability studies. *J Can Chiropr Assoc* 2009; 53: 40-58. PMID: 19421352

Haneline MT, Cooperstein R, Young M, et al. Spinal motion palpation: a comparison of studies that assessed intersegmental end feel vs excursion. *J Manipulative Physiol Ther* 2008; 31: 616-626. DOI: <https://doi.org/10.1016/j.jmpt.2008.09.007>.

Haneline MT and Young M. A review of intraexaminer and interexaminer reliability of static spinal palpation: a literature synthesis. *J Manipulative Physiol Ther* 2009; 32: 379-386. DOI: <https://doi.org/10.1016/j.jmpt.2009.04.010>.

Harlick JC, Milosavljevic S and Milburn PD. Palpation identification of spinous processes in the lumbar spine. *Man Ther* 2007; 12: 56-62. 20060615. DOI: <https://doi.org/10.1016/j.math.2006.02.008>.

Hebert JJ, Stomski NJ, French SD, et al. Serious Adverse Events and Spinal Manipulative Therapy of the Low Back Region: A Systematic Review of Cases. *J Manipulative Physiol Ther* 2015; 38: 677-691. 20130617. DOI: <https://doi.org/10.1016/j.jmpt.2013.05.009>.

Heiderscheit B and Boissonnault W. Reliability of joint mobility and pain assessment of the thoracic spine and rib cage in asymptomatic individuals. *J Man Manip Ther* 2008; 16: 210-216. DOI: <https://doi.org/10.1179/106698108790818369>.

Holmgren U and Waling K. Inter-examiner reliability of four static palpation tests used for assessing pelvic dysfunction. *Man Ther* 2008; 13: 50-56. 20070108. DOI: <https://doi.org/10.1016/j.math.2006.09.009>.

Humphreys BK, Delahaye M and Peterson CK. An investigation into the validity of cervical spine motion palpation using subjects with congenital block vertebrae as a 'gold standard'. *BMC Musculoskelet Disord* 2004; 5: 19. 20040615. DOI: <https://doi.org/10.1186/1471-2474-5-19>.

Jonsson A and Rasmussen-Barr E. Intra- and inter-rater reliability of movement and palpation tests in patients with neck pain: A systematic review. *Physiother Theory Pract* 2018; 34: 165-180. 20171107. DOI: <https://doi.org/10.1080/09593985.2017.1390806>.

Karas S, Schneiders A, Reid D, et al. Factors affecting confidence and knowledge in spinal palpation among International Manual Physical Therapists. *J Man Manip Ther* 2016; 24: 166-173. DOI: <https://doi.org/10.1080/10669817.2015.1125082>.

Kawchuk GN, Fryer J, Jaremko JL, et al. Real-time visualization of joint cavitation. *PLoS One* 2015; 10: e0119470. 20150415. DOI: <https://doi.org/10.1371/journal.pone.0119470>.

Kranenburg HA, Schmitt MA, Puentedura EJ, et al. Adverse events associated with the use of cervical spine manipulation or mobilization and patient characteristics: A systematic review. *Musculoskelet Sci Pract* 2017; 28: 32-38. 20170123. DOI: <https://doi.org/10.1016/j.msksp.2017.01.008>.

Maher C and Adams R. Reliability of pain and stiffness assessments in clinical manual lumbar spine examination. *Phys Ther* 1994; 74: 801-809; discussion 809-811. DOI: <https://doi.org/10.1093/ptj/74.9.801>.

Marcotte J, Normand MC and Black P. The kinematics of motion palpation and its effect on the reliability for cervical spine rotation. *J Manipulative Physiol Ther* 2002; 25: E7. DOI: <https://doi.org/10.1067/mmt.2002.126472>.

Marcotte J, Normand MC and Black P. Measurement of the pressure applied during motion palpation and reliability for cervical spine rotation. *J Manipulative Physiol Ther* 2005; 28: 591-596. DOI: <https://doi.org/10.1016/j.jmpt.2005.08.003>.

McHugh ML. Interrater reliability: the kappa statistic. *Biochem Med (Zagreb)* 2012; 22: 276-282. PMID: 23092060

Nielsen SM, Tarp S, Christensen R, et al. The risk associated with spinal manipulation: an overview of reviews. *Syst Rev* 2017; 6: 64. 20170324. DOI: <https://doi.org/10.1186/s13643-017-0458-y>.

Nim CG, Downie A, O'Neill S, et al. The importance of selecting the correct site to apply spinal manipulation when treating spinal pain: Myth or reality? A systematic review. *Sci Rep* 2021; 11: 23415. 20211203. DOI: <https://doi.org/10.1038/s41598-021-02882-z>.

Nolet PS, Yu H, Côté P, et al. Reliability and validity of manual palpation for the assessment of patients with low back pain: a systematic and critical review. *Chiropr Man Therap* 2021; 29: 33. 20210826. DOI: <https://doi.org/10.1186/s12998-021-00384-3>.

Picchiottino M, Leboeuf-Yde C, Gagey O, et al. The acute effects of joint manipulative techniques on markers of autonomic nervous system activity: a systematic review and meta-analysis of randomized sham-controlled trials. *Chiropr Man Therap* 2019; 27: 17. 20190312. DOI: <https://doi.org/10.1186/s12998-019-0235-1>.

Puentedura EJ, March J, Anders J, et al. Safety of cervical spine manipulation: are adverse events preventable and are manipulations being performed appropriately? A review of 134 case reports. *J Man Manip Ther* 2012; 20: 66-74. DOI: <https://doi.org/10.1179/2042618611y.0000000022>.

Puentedura EJ and O'Grady WH. Safety of thrust joint manipulation in the thoracic spine: a systematic review. *J Man Manip Ther* 2015; 23: 154-161. DOI: <https://doi.org/10.1179/2042618615y.0000000012>.

Reggars JW. The manipulative crack. Frequency analysis. *Australas Chiropr Osteopathy* 1996; 5: 39-44. PMID: 17987137

Reggars JW. The therapeutic benefit of the audible release associated with spinal manipulative therapy. A critical review of the literature. *Australas Chiropr Osteopathy* 1998; 7: 80-85. PMID: 17987158

Robinson HS, Brox JI, Robinson R, et al. The reliability of selected motion- and pain provocation tests for the sacroiliac joint. *Man Ther* 2007; 12: 72-79. 20060712. DOI: <https://doi.org/10.1016/j.math.2005.09.004>.

Robinson R, Robinson HS, Bjørke G, et al. Reliability and validity of a palpation technique for identifying the spinous processes of C7 and L5. *Man Ther* 2009; 14: 409-414. 20080914. DOI: <https://doi.org/10.1016/j.math.2008.06.002>.

Roston JB and Haines RW. Cracking in the metacarpo-phalangeal joint. *J Anat* 1947; 81: 165-173. PMID: 17105029

Rubinstein SM, de Zoete A, van Middelkoop M, et al. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. *Bmj* 2019; 364: l689. 20190313. DOI: <https://doi.org/10.1136/bmj.l689>.

Rubinstein SM, Terwee CB, Assendelft WJ, et al. Spinal manipulative therapy for acute low-back pain. *Cochrane Database Syst Rev* 2012; 2012: Cd008880. 20120912. DOI: <https://doi.org/10.1002/14651858.CD008880.pub2>.

Rubinstein SM, van Middelkoop M, Assendelft WJ, et al. Spinal manipulative therapy for chronic low-back pain. *Cochrane Database Syst Rev* 2011; Cd008112. 20110216. DOI: <https://doi.org/10.1002/14651858.CD008112.pub2>.

Sabini RC, Leo CS and Moore AE, 2nd. The relation of experience in osteopathic palpation and object identification. *Chiropr Man Therap* 2013; 21: 38. 20131112. DOI: <https://doi.org/10.1186/2045-709x-21-38>.

Seffinger MA, Najm WI, Mishra SI, et al. Reliability of spinal palpation for diagnosis of back and neck pain: a systematic review of the literature. *Spine (Phila Pa 1976)* 2004; 29: E413-425. DOI: <https://doi.org/10.1097/01.brs.0000141178.98157.8e>.

Simmonds MJ and Kumar S. Health care ergonomics Part II: Location of body structures by palpation - A reliability study. *International Journal of Industrial Ergonomics* 1993; 11: 145-151. DOI: [https://doi.org/10.1016/0169-8141\(93\)90008-2](https://doi.org/10.1016/0169-8141(93)90008-2).

Smedmark V, Wallin M and Arvidsson I. Inter-examiner reliability in assessing passive intervertebral motion of the cervical spine. *Man Ther* 2000; 5: 97-101. DOI: <https://doi.org/10.1054/math.2000.0234>.

Stochkendahl MJ, Christensen HW, Hartvigsen J, et al. Manual examination of the spine: a systematic critical literature review of reproducibility. *J Manipulative Physiol Ther* 2006; 29: 475-485, 485.e471-410. DOI: <https://doi.org/10.1016/j.jmpt.2006.06.011>.

Stolz M, von Piekartz H, Hall T, et al. Evidence and recommendations for the use of segmental motion testing for patients with LBP - A systematic review. *Musculoskelet Sci Pract* 2020; 45: 102076. 20191031. DOI: <https://doi.org/10.1016/j.msksp.2019.102076>.

Stovall BA and Kumar S. Anatomical landmark asymmetry assessment in the lumbar spine and pelvis: a review of reliability. *Pm r* 2010; 2: 48-56. DOI: <https://doi.org/10.1016/j.pmrj.2009.11.001>.

Triano JJ, Budgell B, Bagnulo A, et al. Review of methods used by chiropractors to determine the site for applying manipulation. *Chiropr Man Therap* 2013; 21: 36. 20131021. DOI: <https://doi.org/10.1186/2045-709x-21-36>.

van Trijffel E, Anderegg Q, Bossuyt PM, et al. Inter-examiner reliability of passive assessment of intervertebral motion in the cervical and lumbar spine: a systematic review. *Man Ther* 2005; 10: 256-269. 20050701. DOI: <https://doi.org/10.1016/j.math.2005.04.008>.

van Trijffel E, Oostendorp RA, Lindeboom R, et al. Perceptions and use of passive intervertebral motion assessment of the spine: a survey among physiotherapists specializing in manual therapy. *Man Ther* 2009; 14: 243-251. 20080401. DOI: <https://doi.org/10.1016/j.math.2008.02.005>.

Podcast

Swallow your pride podcast:

Episode 22. Walt Fritz. The inter- and intra-rater reliability of palpation, myofascial release, and manual therapy using a patient directed approach

The Modern Pain Podcast:

Research Review: Specificity in Spinal Manipulation

Youtube

Rahim Gonstead:

Soccer player with stuck neck and pain gets helped with dr. Rahim Gonstead Chiropractor

<https://www.youtube.com/watch?v=hMHDTieK8dY>

The evidence-informed Chiropractor:

The Reliability of motion palpation

<https://www.youtube.com/watch?v=lAxKesoXPOM>

Madrid School of Osteopathy:

Physical examination in Osteopathy according to scientific literature part 2, static palpation

<https://www.youtube.com/watch?v=PITLS6OOoM8>

OMT training:

Palpation for spinal movements

<https://www.youtube.com/watch?v=xGBZkmTfMGA>