



MULLIGANTM

Manual Therapy Concept

LAST UPDATE: JANUARY 2019

SPINE REFERENCE LIST

Reference lists have been prepared concerning indexed articles focusing on the Mulligan Concept. These lists are updated regularly. The last update was in January 2019.

REFERENCE LIST

SPINE



1. Aiken, D. L. and D. Vaughn (2013). "The use of functional and traditional mobilization interventions in a patient with chronic thoracic pain: a case report." *Journal of Manual & Manipulative Therapy* (Maney Publishing) **21**(3): 134-141.
2. Ali, A., S. Shakil-ur-Rehman and F. Sibtain (2014). "The efficacy of sustained natural apophyseal glides with and without isometric exercise training in non-specific neck pain." *Pakistan journal of medical sciences* **30**(4).
3. Anandkumar, S. (2015). "The effect of sustained natural apophyseal glide (SNAG) combined with neurodynamics in the management of a patient with cervical radiculopathy: a case report." *Physiotherapy Theory & Practice* **31**(2): 140-145.
4. Andrews, D. P., K. B. Odland-Wolf, J. May, R. Baker and A. Nasypyany (2018). "THE UTILIZATION OF MULLIGAN CONCEPT THORACIC SUSTAINED NATURAL APOPHYSEAL GLIDES ON PATIENTS CLASSIFIED WITH SECONDARY IMPINGEMENT SYNDROME: A MULTI-SITE CASE SERIES." *International Journal of Sports Physical Therapy* **13**(1): 121-130.
5. Andrews, D. P., K. B. Odland-Wolf, J. May, R. Baker, A. Nasypyany and E. M. Dinkins (2018). "Immediate and short-term effects of mulligan concept positional sustained natural apophyseal glides on an athletic young-adult population classified with mechanical neck pain: an exploratory investigation." *Journal of Manual & Manipulative Therapy* (Maney Publishing) **26**(4): 203-211.
6. Bisset, L., W. Hing and B. Vicenzino (2011). "The efficacy of mobilisations with movement treatment on musculoskeletal pain: a systematic review and meta-analysis." *Physiotherapy (united kingdom)*. **97**: eS134.
7. Bonnery, K. (2014). "Manipulation of the cervico-thoracic junction accompanied by mobilisation with movement and exercise in a patient with medial epicondylalgia." *Manuelle Therapie* **18**(1): 29-37.
8. Bowler, N., P. Browning and I. Lascurain-Aguirrebena (2017). "The effects of cervical sustained natural apophyseal glides on neck range of movement and sympathetic nervous system activity." *International journal of osteopathic medicine. (no pagination)*, 2017 **Date of Publication: June 04**.
9. Browning, P. and K. Gangwal (2011). "The effect of a cervical rotational snag on median nerve extensibility in an asymptomatic population, a within subjects randomised design." *Physiotherapy (united kingdom)*. **97**: eS162-eS163.
10. Buyukturan, O., B. Buyukturan, S. Sas, C. Karati and I. Ceylan (2018). "The Effect of Mulligan Mobilization Technique in Older Adults with Neck Pain: a Randomized Controlled, Double-Blind Study." *Pain research & management* **2018**(no pagination): 2856375.
11. Çelik, D., G. D. Canan and P. Ödevoğlu (2017). "Is mulligan movement with mobilization effective in orthopedic rehabilitation?...Second World Congress of Sports Physical Therapy, October 6-7 2017, Belfast." *Physical Therapy in Sport* **28**: e16-e16.

REFERENCE LIST

SPINE



12. Cherian, K., N. Cherian, C. Cook and J. A. Kaltenbach (2013). "Improving tinnitus with mechanical treatment of the cervical spine and jaw." *J Am Acad Audiol* **24**(7): 544-555.
13. Chhabra, S., D. Chhabra, J. Sachdeva and A. Chaudhary (2008). "The effectiveness of self SNAGS over conventional physiotherapy management in chronic neck pain among computer professionals." *Indian Journal of Physiotherapy & Occupational Therapy* **2**(3): 30-34.
14. Chu, J., D. D. Allen, S. Pawlowsky and B. Smoot (2014). "Peripheral response to cervical or thoracic spinal manual therapy: an evidence-based review with meta analysis." *Journal of Manual & Manipulative Therapy (Maney Publishing)* **22**(4): 220-229.
15. Copurgensli, C., G. Gur and V. B. Tunay (2017). "A comparison of the effects of Mulligan's mobilization and Kinesio taping on pain, range of motion, muscle strength, and neck disability in patients with Cervical Spondylosis: a randomized controlled study." *Journal of back and musculoskeletal rehabilitation* **30**(1): 51-62.
16. da Rocha, R. C. G., R. Nee, T. Hall and R. Chopard (2006). "Treatment of persistent knee pain associated with lumbar dysfunction: a case report." *New Zealand Journal of Physiotherapy* **34**(1): 31-35.
17. Dinkins, E. M. and J. Stevens-Lapsley (2013). "Management of symptoms of Restless Legs Syndrome with use of a traction straight leg raise: a preliminary case series." *Man Ther* **18**(4): 299-302.
18. Duymaz, T. and N. Yagci (2018). "Effectiveness of the mulligan mobilization technique in mechanical neck pain." *Journal of clinical and analytical medicine* **9**(4): 304-309.
19. El-Sodany, A. M., M. S. M. Alayat and A. M. I. Zafer (2014). "Sustained natural apophyseal glides mobilization versus manipulation in the treatment of cervical spine disorders: a randomized controlled trial." *International journal of advanced research* **2**(6): 274-280.
20. Elrazik, R. K. A., S. M. Samir, L. A. Zaki and G. A. Koura (2016). "Mobilisation with movement versus postero-anterior mobilisation in chronic non specific low back pain." *International journal of pharmtech research* **9**(6) :(pp 9-16), 2016. Date of Publication: 2016.).
21. Eusea, J., A. Nasypyany, J. Seegmiller and R. Baker (2015). "Utilizing Mulligan Sustained Natural Apophyseal Glides Within a Clinical Prediction Rule for Treatment of Low Back Pain in a Secondary School Football Player." *International Journal of Athletic Therapy & Training* **20**(1): 18-24.
22. Exelby, L. (1995). "Mobilisations with movement: a personal view." *Physiotherapy* **81**(12): 724-729.
23. Exelby, L. (2001). "The locked lumbar facet joint: intervention using mobilizations with movement." *Manual Therapy* **6**(2): 116-121.
24. Exelby, L. (2002). "The Mulligan concept: its application in the management of spinal conditions." *Manual Therapy* **7**(2): 64-70.

REFERENCE LIST

SPINE



25. Fitzgerald, D. (2012). "Book review. Mobilisation with movement: the art and the science." *Physiotherapy Ireland* **33**(1): 43-43.
26. Ganesh, G. S., P. Mohanty, M. Pattnaik and C. Mishra (2015). "Effectiveness of mobilization therapy and exercises in mechanical neck pain." *Physiotherapy theory and practice* **31**(2): 99-106.
27. Garcia, J. D., S. Arnold, K. Tetley, K. Voight and R. A. Frank (2016). "Mobilization and Manipulation of the Cervical Spine in Patients with Cervicogenic Headache: Any Scientific Evidence?" *Front Neurol* **7**: 40.
28. Hall, T., H. T. Chan, L. Christensen, B. Odenthal, C. Wells and K. Robinson (2007). "Efficacy of a C1-C2 self-sustained natural apophyseal glide (SNAG) in the management of cervicogenic headache." *Journal of orthopaedic and sports physical therapy* **37**(3): 100-107.
29. Hearn, A. and D. A. Rivett (2002). "Cervical SNAGs: a biomechanical analysis." *Manual Therapy* **7**(2): 71-79.
30. Hegedus, E. J., A. Goode, R. J. Butler and E. Slaven (2011). "The neurophysiological effects of a single session of spinal joint mobilization: does the effect last?" *Journal of Manual & Manipulative Therapy (Maney Publishing)* **19**(3): 143-151.
31. Hidalgo, B., T. Hall, J. Bossert, A. Dugeny, B. Cagnie and L. Pitance (2017). "The efficacy of manual therapy and exercise for treating non-specific neck pain: A systematic review." *Journal of Back & Musculoskeletal Rehabilitation* **30**(6): 1149-1169.
32. Hidalgo, B., L. Pitance, T. Hall, C. Detrembleur and H. Nielens (2015). "Short-term effects of Mulligan mobilization with movement on pain, disability, and kinematic spinal movements in patients with nonspecific low back pain: a randomized placebo-controlled trial." *Journal of manipulative and physiological therapeutics* **38**(6): 365-374.
33. Horton, S. J. (2002). "Acute locked thoracic spine: treatment with a modified SNAG." *Manual Therapy* **7**(2): 103-107.
34. Hussien, H. M., N. A. Abdel-Raoof, O. M. Kattabai and H. H. Ahmed (2017). "Effect of Mulligan Concept Lumbar SNAG on Chronic Nonspecific Low Back Pain." *Journal of chiropractic medicine* **16**(2): 94-102.
35. Izquierdo Pérez, H., J. L. Alonso Perez, A. Gil Martinez, R. La Touche, S. Lerma-Lara, N. Commeaux Gonzalez, H. Arribas Perez, M. D. Bishop and J. Fernández-Carnero (2014). "Is one better than another?: a randomized clinical trial of manual therapy for patients with chronic neck pain." *Manual therapy* **19**(3): 215-221.
36. Jeong-Hyun, S., P. Gi Duck and P. Hoo Sung (2014). "The Effect of Sacroiliac Joint Mobilization on Pelvic Deformation and the Static Balance Ability of Female University Students with SI Joint Dysfunction." *Journal of Physical Therapy Science* **26**(6): 845-848.
37. Konstantinou, K., N. Foster, A. Rushton and D. Baxter (2002). "The use and reported effects of mobilization with movement techniques in low back pain management; a cross-sectional descriptive survey of physiotherapists in Britain." *Manual Therapy* **7**(4): 206-214.

REFERENCE LIST

SPINE



38. Konstantinou, K., N. Foster, A. Rushton, D. Baxter, C. Wright and A. Breen (2007). "Flexion mobilizations with movement techniques: the immediate effects on range of movement and pain in subjects with low back pain." *Journal of manipulative and physiological therapeutics* **30**(3): 178-185.
39. Krzyzanowicz, R., R. Baker, A. Nasypyany, F. Gargano and J. Seegmiller (2015). "Patient Outcomes Utilizing the Selective Functional Movement Assessment and Mulligan Mobilizations With Movement on Recreational Dancers With Sacroiliac Joint Pain: A Case Series." *International Journal of Athletic Therapy & Training* **20**(3): 31-37.
40. Kumar, D., J. Sandhu and A. Broota (2011). "The efficacy of nags on activities of daily living in cervical spine pain and stiffness." *Physiotherapy (united kingdom)* **97**(var.pagings): eS641.
41. Kumar, D., J. S. Sandhu and A. Broota (2011). "Efficacy of Mulligan concept (NAGs) on pain at available end range in cervical spine: a randomised controlled trial." *Indian Journal of Physiotherapy & Occupational Therapy* **5**(1): 154-158.
42. Lawrence, D. (2014). "Mulligan sustained natural apophyseal glides and Maitland mobilisations for cervicogenic dizziness." *Focus on Alternative & Complementary Therapies* **19**(3): 165-166.
43. Lenker, C., N. Larocca, J. Lee and P. Tucker (2012). "The Use of Thoracic Mobilization With Movement to Treat Shoulder Impingement in Older Adults: A Case Study." *Topics in Geriatric Rehabilitation* **28**(3): 195-200.
44. Lewis, C., R. Diaz, G. Lopez, N. Marki and B. Olivio (2014). "A PRELIMINARY STUDY TO EVALUATE POSTURAL IMPROVEMENT IN SUBJECTS WITH SCOLIOSIS: ACTIVE THERAPEUTIC MOVEMENT VERSION 2 DEVICE AND HOME EXERCISES USING THE MULLIGAN'S MOBILIZATION-WITH-MOVEMENT CONCEPT." *Journal of Manipulative & Physiological Therapeutics* **37**(7): 502-509.
45. Lewis, J. S., J. S. Hewitt, L. Billington, S. Cole, J. Byng and S. Karayiannis (2005). "A randomized clinical trial comparing two physiotherapy interventions for chronic low back pain." *Spine* **30**(7): 711-721.
46. Lopez-Lopez, A., J. L. Alonso Perez, J. L. González Gutierrez, R. La Touche, S. Lerma Lara, H. Izquierdo and J. Fernández-Carnero (2015). "Mobilization versus manipulations versus sustain apophyseal natural glide techniques and interaction with psychological factors for patients with chronic neck pain: randomized controlled trial." *European journal of physical and rehabilitation medicine* **51**(2): 121-132.
47. Lystad, R. P., G. Bell, M. Bonnevie-Svendsen and C. V. Carter (2011). "Manual therapy with and without vestibular rehabilitation for cervicogenic dizziness: a systematic review." *Chiropr Man Therap* **19**(1): 21.
48. McNair, P. J., P. Portero, C. Chiquet, G. Mawston and F. Lavaste (2007). "Acute neck pain: Cervical spine range of motion and position sense prior to and after joint mobilization." *Manual Therapy* **12**(4): 390-394.

REFERENCE LIST

SPINE



49. Melcher, M. and F. Löhrer (2014). "Self-Sustained Natural Apophyseal Glide (SNAG)-Techniken zur Behandlung der craniomandibulären Dysfunktion." *Zeitschrift für Physiotherapeuten* **66**(6): 87-89.
50. Miller, J., A. Gross, J. D'Sylva, S. J. Burnie, C. H. Goldsmith, N. Graham, T. Haines, G. Brønfort and J. L. Hoving (2010). "Manual therapy and exercise for neck pain: A systematic review." *Manual Therapy* **15**(4): 334-354.
51. Mittal, M., U. A. Hameed, A. Chaudhary and Ruchika (2011). "Mulligan's Manual Therapy Treatment Dosing for Subacute Mechanical Neck Pain - A Comparison between Loading and Movement Disorders of Cervical Spine." *Indian Journal of Physiotherapy & Occupational Therapy* **5**(2): 89-96.
52. Moutzouri, M., E. Billis, N. Strimpakos, P. Kottika and J. A. Oldham (2008). "The effects of the Mulligan Sustained Natural Apophyseal Glide (SNAG) mobilisation in the lumbar flexion range of asymptomatic subjects as measured by the Zebris CMS20 3-D motion analysis system." *BMC musculoskeletal disorders* **9**: 131.
53. Moutzouri, M., J. Perry, P. Joanna, E. Billis and B. Eudokia (2012). "Investigation of the effects of a centrally applied lumbar sustained natural apophyseal glide mobilization on lower limb sympathetic nervous system activity in asymptomatic subjects." *Journal of manipulative and physiological therapeutics* **35**(4): 286-294.
54. Mulligan, B. R. (1994). "Spinal mobilisations with arm movement (further mobilisations with movement)." *Journal of Manual & Manipulative Therapy (Journal of Manual & Manipulative Therapy)* **2**(2): 75-77.
55. Mulligan, B. R. (1995). "Manual therapy rounds. Spiral mobilizations with leg movement (further mobilizations with movement)." *Journal of Manual & Manipulative Therapy (Journal of Manual & Manipulative Therapy)* **3**(1): 25-27.
56. Mulligan, B. R. (1997). "Manual therapy rounds. Update on spinal mobilisations with leg movement." *Journal of Manual & Manipulative Therapy (Journal of Manual & Manipulative Therapy)* **5**(4): 184-187.
57. Nct (2014). "A Randomized Placebo Controlled Trial on the Efficacy of Sustained Natural Apophyseal Glide (SNAG) in Low Back Pain Patients." [Https://clinicaltrials.gov/show/nct02128607](https://clinicaltrials.gov/show/nct02128607).
58. Nct (2017). "The Effect of Scapulothoracic Mobilization on Cervical Pain and Range of Motion in Patients With Neck Pain and Scapular Dyskinesia." [Https://clinicaltrials.gov/show/nct03046160](https://clinicaltrials.gov/show/nct03046160).
59. Nct (2017). "Maitland Mobilization Versus Mulligan Mobilization in Sub-Acute and Chronic Non-Specific Neck Pain." [Https://clinicaltrials.gov/show/nct03089021](https://clinicaltrials.gov/show/nct03089021).
60. Nct (2017). "Sustained Natural Apophyseal Glides and Mechanical Cervical Traction in the Management of Cervical Radiculopathy." [Https://clinicaltrials.gov/show/nct03362567](https://clinicaltrials.gov/show/nct03362567).
61. Nct (2018). "The Effects of Mulligan Mobilization Technique in Older Adults With Neck Pain." [Https://clinicaltrials.gov/show/nct03507907](https://clinicaltrials.gov/show/nct03507907).

REFERENCE LIST

SPINE



62. Panjwani, K. D. (2016). "To Compare the Effect of MWM v/s MWM along with Neural Tissue Mobilization in Case of Cervical Radiculopathy." *Indian Journal of Physiotherapy & Occupational Therapy* **10**(1): 42-46.
63. Park, J. T. (2011). "Evaluation and treatment of cervicogenic headache: a case study using interventions of soft tissue, joint mobilization, and stabilization exercises." *Orthopaedic Physical Therapy Practice* **23**(4): 190-196.
64. Patra, R. C., P. Mohanty and A. P. Gautam (2018). "Effectiveness of C1-C2 sustained natural apophyseal glide combined with dry needling on pressure point threshold and headache disability in cervicogenic headache." *Asian journal of pharmaceutical and clinical research* **11**(1): 171-174.
65. Pourahmadi, M. R., H. Mohsenifar, M. Dariush, A. Aftabi and A. Amiri (2018). "Effectiveness of mobilization with movement (Mulligan concept techniques) on low back pain: a systematic review." *Clin Rehabil*: 269215518778321.
66. Racicki, S., S. Gerwin, S. DiCarlo, S. Reinmann and M. Donaldson (2013). "Conservative physical therapy management for the treatment of cervicogenic headache: a systematic review." *Journal of Manual & Manipulative Therapy (Maney Publishing)* **21**(2): 113-124.
67. Reid, S., R. Callister, S. Snodgrass, M. Katekar and D. Rivett (2015). "Long-term outcomes of Mulligan sustained natural apophyseal glides and maitland passive joint mobilisations for chronic cervicogenic dizziness: a randomised trial." *Physiotherapy (united kingdom)*. **101**: eS1270-eS1271.
68. Reid, S. A., R. Callister, M. G. Katekar and D. A. Rivett (2014). "Effects of cervical spine manual therapy on range of motion, head repositioning, and balance in participants with cervicogenic dizziness: a randomized controlled trial." *Archives of physical medicine and rehabilitation* **95**(9): 1603-1612.
69. Reid, S. A., R. Callister, S. J. Snodgrass, M. G. Katekar and D. A. Rivett (2015). "Manual therapy for cervicogenic dizziness: long-term outcomes of a randomised trial." *Manual therapy* **20**(1): 148-156.
70. Reid, S. A., D. A. Rivett, M. G. Katekar and R. Callister (2008). "Sustained natural apophyseal glides (SNAGs) are an effective treatment for cervicogenic dizziness." *Manual therapy* **13**(4): 357-366.
71. Reid, S. A., D. A. Rivett, M. G. Katekar and R. Callister (2012). "Efficacy of manual therapy treatments for people with cervicogenic dizziness and pain: protocol of a randomised controlled trial." *BMC musculoskeletal disorders* **13**: 201.
72. Reid, S. A., D. A. Rivett, M. G. Katekar and R. Callister (2014). "Comparison of mulligan sustained natural apophyseal glides and maitland mobilizations for treatment of cervicogenic dizziness: a randomized controlled trial." *Physical therapy* **94**(4): 466-476.

REFERENCE LIST

SPINE



73. Rezkallah, S. S. and G. A. Abdullah (2018). "Comparison between sustained natural apophyseal glides (SNAG's) and myofascial release techniques combined with exercises in non specific neck pain." *Physiotherapy Practice & Research* **39**(2): 135-145.
74. Richardson, C. J. (2009). "Treatment of cervicogenic headaches using Mulligan 'SNAGS' and postural reeducation: a case report." *Orthopaedic Physical Therapy Practice* **21**(1): 33-38.
75. Samir, S., L. Zak and M. Soliman (2016). "Mulligan versus maitland mobilizations in patients with chronic low back dysfunction." *International journal of pharmtech research*. 9 (6) (pp 92-99), 2016. Date of publication: 2016.
76. Shin, E. J. and B. H. Lee (2014). "The effect of sustained natural apophyseal glides on headache, duration and cervical function in women with cervicogenic headache." *J Exerc Rehabil* **10**(2): 131-135.
77. Snodgrass, S. J., J. A. Cleland, R. Haskins and D. A. Rivett (2014). "The clinical utility of cervical range of motion in diagnosis, prognosis, and evaluating the effects of manipulation: a systematic review." *Physiotherapy* **100**(4): 290-304.
78. Waqqar, S., S. Shakil-ur-Rehman and S. Ahmad (2016). "McKenzie treatment versus mulligan sustained natural apophyseal glides for chronic mechanical low back pain." *Pakistan journal of medical sciences* **32**(2): 476-479.
79. Widerstrom, B., N. Olofson and I. Arvidsson (2007). "Manual therapy and a suggested treatment based classification algorithm in patients with low back pain: A pilot study." *Journal of Back & Musculoskeletal Rehabilitation* **20**(2/3): 61-70.
80. Wilson, E. (2001). "The Mulligan concept: NAGS, SNAGS and mobilizations with movement." *Journal of Bodywork & Movement Therapies* **5**(2): 81-89.
81. Yaseen, K., P. Hendrick, A. Ismail, M. Felemban and M. A. Alshehri (2018). "The effectiveness of manual therapy in treating cervicogenic dizziness: a systematic review." *J Phys Ther Sci* **30**(1): 96-102.
82. Yoshikawa, A., Y. Ogata, R. Yanagihashi, T. Fujiwara and K. Abe (2011). "Analysis of a Manual Technique for Cervical Rotation using a Small Three Dimensional Strain Meter." *Rigakuryoho Kagaku* **26**(4): 507-510.