

## **Course details and program**

**Title of course:** "Miofasciālas sāpes un disfunkcija: novērtēšana un terapija: B līmenis"

,,Myofascial Pain and Dysfunction: Assessment and Therapy: Level B"

**Parts of course:**

### **Day I**

- 9:00 – 10:00 Introduction to course and principles of treatment of myofascial pain. Trigger points and visceral symptoms.
- 10:00 – 11:00 Functional assessment of patient within the context of myofascial chains – perspective of functional anatomy.
- 11:00 – 13:00 Assessment of specific muscle in the context of myofascial chains (functional anatomy and kinesiology). Practical application, by applying the principles of reciprocal inhibition (RI), PIR. Specific muscles: Trapezius, Levator scapulae.
- 13:30 – 14:30 Lunch.
- 14:30 – 16:00 Assessment of specific muscle in the context of myofascial chains. Practical application, by applying the principles of reciprocal inhibition (RI), PIR. Specific muscles: Subscapularis, Diaphragm
- 16:00 – 16:10 Break
- 16:15 – 17:00 Assessment of specific muscle in the context of myofascial chains. Practical application, by applying the principles of reciprocal inhibition (RI), PIR. Specific muscles: Multifidus

### **Day II**

- 9:00 – 10:45 Assessment of specific muscle in the context of myofascial chains. Practical application of reciprocal inhibition (RI), PIR. Specific muscles: Iliocostalis cervicis, thoracis, lumborum; Semispinalis capitis et cervicis.
- 11:00 – 12:30 Assessment of specific muscle in the context of myofascial chains. Practical application of reciprocal inhibition (RI), PIR. Specific muscles: Obturator internus et externus; Adductor longus brevis et magnus.
- 12:30 – 13:30 Lunch.
- 13:30 – 15:30 Assessment of specific muscle in the context of myofascial chains. Practical application of reciprocal inhibition (RI), PIR. Specific muscles: Piriformis, Tensor Fascia Latae
- 15:30 – 15:45 Break.
- 15:45 – 17:00 Assessment of specific muscle in the context of myofascial chains. Practical application of reciprocal inhibition (RI), PIR. Specific muscles: Masseter, Temporalis. Discussion.

## **Description:**

The Course “**Myofascial Pain and Dysfunction: Assessment and Therapy: Level B**” is a comprehensive and practical course, which focuses on myofascial chains, kinesiological, biomechanical, neurological principles of human motion system, its application in assessment of patient and therapy.

### **Theory part will focus on the following themes:**

- Examination of the patient by inspection – first impression, muscle imbalance and segmental instability.
- Link between trigger points and viscera – pathophysiology mechanism of viscerosomatic patterns and somato- visceral patterns. Visceral symptomatology and presentation.
- Tonic and phasic muscle system.
- Evaluation of trigger points chaining in the context of muscle chains - model of agonists, synergistic and antagonists muscles.

**Practical part** focuses on myofascial trigger points and pathological musculoskeletal changes related to trigger points. Trigger points affects proximal and distal musculoskeletal structures, affects muscle coordination, joint kinesiology, and biomechanics.

**Practical part** includes include techniques which inhibits trigger points through activation of reciprocal myofascial chain. Those techniques are using the principles of Reciprocal inhibition, The post-isometric relaxation (PIR) according to prof. K. Lewit, AEK (Agonic Eccentric Contraction) techniques according to the Brugger concept.

## Sources

### Books

1. Kolar, P., et al. Clinical Rehabilitation. Prague Rehabilitation School, 2014. ISBN 978-80-905438-0-5.
2. Liebenson, C. Rehabilitation of the Spine: A Patient-Centered Approach. LWW; 3rd edition, 2019. ISBN 978-1496339409
3. Donnelly, Joseph M., et al. Travell, Simons & Simons' Myofascial pain and dysfunction: the trigger point manual, 3rd edition. Lippincott Williams and Wilkins, 2018. ISBN 0781755603.
4. Lewit , K. Manipulative Therapy: Musculoskeletal Medicine. Churchill Livingstone; English ed. Edition, 2009. ISBN 978-0702030567.

### Reseaches

1. Arjun MV, Rajaseker S. **Association between subscapularis trigger point and frozen shoulder:** A cross sectional study. J Bodyw Mov Ther. 2021 Oct;28:406-410. doi: 10.1016/j.jbmt.2021.06.025. Epub 2021 Jun 17.
2. Marizeiro DF, Florêncio ACL, Nunes ACL, Campos NG, Lima POP. **Immediate effects of diaphragmatic myofascial release on the physical and functional outcomes in sedentary women: A randomized placebo-controlled trial.** J Bodyw Mov Ther. 2018 Oct;22(4):924-929. doi: 10.1016/j.jbmt.2017.10.008. Epub 2017 Oct 25.
3. Srijessadarak T, Arayawichanon P, Kanpittaya J, Boonprakob Y. **Diaphragmatic Mobility and Chest Expansion in Patients with Scapulocostal Syndrome: A Cross-Sectional Study.** Healthcare (Basel). 2022 May 20;10(5):950. doi: 10.3390/healthcare10050950.
4. Hebert JJ, Koppenhaver SL, Teyhen DS, Walker BF, Fritz JM. **The evaluation of lumbar multifidus muscle function via palpation: reliability and validity of a new clinical test.** Spine J. 2015 Jun 1;15(6):1196-202. doi: 10.1016/j.spinee.2013.08.056. Epub 2013 Oct 4.
5. Ożóg P, Weber-Rajek M, Radzimińska A, Goch A. **Analysis of Muscle Activity Following the Application of Myofascial Release Techniques for Low-Back Pain-A Randomized-Controlled Trial.** J Clin Med. 2021 Sep 7;10(18):4039. doi: 10.3390/jcm10184039.
6. Roldan CJ, Huh BK. **Iliocostalis Thoracis-Lumborum Myofascial Pain: Reviewing a Subgroup of a Prospective, Randomized, Blinded Trial. A Challenging Diagnosis with Clinical Implications.** Pain Physician. 2016 Jul;19(6):363-72.
7. Xu J, Chen K, Ding B, Zhu M, Yao S, Ren M, Shen Y. **Effectiveness of self-myofascial release combined with biofeedback and electrical**

- stimulation for the management of myofascial pelvic pain: A randomized controlled trial.** Eur J Pain. 2022 Feb;26(2):405-416. doi: 10.1002/ejp.1867. Epub 2021 Oct 10. PMID: 34592023.
8. Dalmau-Carola J. **Myofascial pain syndrome affecting the piriformis and the obturator internus muscle.** Pain Pract. 2005 Dec;5(4):361-3. doi: 10.1111/j.1533-2500.2005.00039.x. PMID: 17177771.
9. Fulvio Dal Farra, Francesca Buffone, Roberta Giulia Risio, Andrea Gianmaria Tarantino, Luca Vismara, Andrea Bergna. **Effectiveness of osteopathic interventions in patients with non-specific neck pain: A systematic review and meta-analysis.** Complementary Therapies in Clinical Practice, Volume 49, 2022, 101655, ISSN 1744-3881, <https://doi.org/10.1016/j.ctcp.2022.101655>.
10. Oliva-Pascual-Vaca Á, González-González C, Oliva-Pascual-Vaca J, Piña-Pozo F, Ferragut-Garcías A, Fernández-Domínguez JC, Heredia-Rizo AM. **Visceral Origin: An Underestimated Source of Neck Pain.** A Systematic Scoping Review. Diagnostics (Basel). 2019 Nov 12;9(4):186. doi: 10.3390/diagnostics9040186.
11. Diercks R, Bron C, Dorrestijn O, Meskers C, Naber R, de Ruiter T, Willems J, Winters J, van der Woude HJ; Dutch Orthopaedic Association. **Guideline for diagnosis and treatment of subacromial pain syndrome: a multidisciplinary review by the Dutch Orthopaedic Association.** Acta Orthop. 2014 Jun;85(3).
12. Chen Z, Wu J, Wang X, Wu J, Ren Z. **The effects of myofascial release technique for patients with low back pain: A systematic review and meta-analysis.** Complement Ther Med. 2021 Jun;59:102737. doi: 10.1016/j.ctim.2021.102737. Epub 2021 May 10. PMID: 33984499.
13. Ughreja RA, Venkatesan P, Balebail Gopalakrishna D, Singh YP. **Effectiveness of myofascial release on pain, sleep, and quality of life in patients with fibromyalgia syndrome: A systematic review.** Complement Ther Clin Pract. 2021 Nov;45:101477. doi: 10.1016/j.ctcp.2021.101477. Epub 2021 Aug 27.
14. De Groef A, Van Kampen M, Vervloesem N, Dieltjens E, Christiaens MR, Neven P, Vos L, De Vrieze T, Geraerts I, Devoogdt N. **Effect of myofascial techniques for treatment of persistent arm pain after breast cancer treatment: randomized controlled trial.** Clin Rehabil. 2018 Apr;32(4):451-461. doi: 10.1177/0269215517730863. Epub 2017 Sep 15.
15. Arguisuelas MD, Lisón JF, Sánchez-Zuriaga D, Martínez-Hurtado I, Doménech-Fernández J. **Effects of Myofascial Release in Nonspecific Chronic Low Back Pain: A Randomized Clinical Trial.** Spine (Phila Pa 1976). 2017 May 1;42(9):627-634. doi: 10.1097/BRS.0000000000001897.
16. Kalamir A, Pollard H, Vitiello A, Bonello R. **Intra-oral myofascial therapy for chronic myogenous temporomandibular disorders: a randomized, controlled pilot study.** J Man Manip Ther. 2010 Sep;18(3):139-46. doi: 10.1179/106698110X12640740712374.
17. Hains G, Descarreaux M, Hains F. **Chronic shoulder pain of myofascial origin: a randomized clinical trial using ischemic compression therapy.** J Manipulative Physiol Ther. 2010 Jun;33(5):362-9. doi: 10.1016/j.jmpt.2010.05.003.

18. Valiente-Castrillo P, Martín-Pintado-Zugasti A, Calvo-Lobo C, Beltran-Alacreu H, Fernández-Carnero J. **Effects of pain neuroscience education and dry needling for the management of patients with chronic myofascial neck pain: a randomized clinical trial.** Acupunct Med. 2021 Apr;39(2):91-105. doi: 10.1177/0964528420920300. Epub 2020 May 5.
19. Mansoori SS, Moustafa IM, Ahbouch A, Harrison DE. **Optimal duration of stretching exercise in patients with chronic myofascial pain syndrome: A randomized controlled trial.** J Rehabil Med. 2021 Jan 11;53(1):jrm00142. doi: 10.2340/16501977-2781. PMID: 33367925; PMCID: PMC8772376.
20. Zago J, Amatuzzi F, Rondinel T, Matheus JP. **Osteopathic Manipulative Treatment Versus Exercise Program in Runners With Patellofemoral Pain Syndrome: A Randomized Controlled Trial.** J Sport Rehabil. 2020 Dec 17;30(4):609-618. doi: 10.1123/jsr.2020-0108.
21. Cuesta-Barriuso R, Pérez-Llanes R, Donoso-Úbeda E, López-Pina JA, Meroño-Gallut J. **Effects of myofascial release on frequency of joint bleedings, joint status, and joint pain in patients with hemophilic elbow arthropathy: A randomized, single-blind clinical trial.** Medicine. 2021 May 21;100(20):e26025. doi: 10.1097/MD.00000000000026025.
22. Arjona Retamal JJ, Fernández Seijo A, Torres Cintas JD, de-la-Llave-Rincón AI, Caballero Bragado A. **Effects of Instrumental, Manipulative and Soft Tissue Approaches for the Suboccipital Region in Subjects with Chronic Mechanical Neck Pain. A Randomized Controlled Trial.** Int J Environ Res Public Health. 2021 Aug 16;18(16):8636. doi: 10.3390/ijerph18168636.
23. Birinci T, Mustafaoglu R, Kaya Mutlu E, Razak Ozdincler A. **Stretching exercises combined with ischemic compression in pectoralis minor muscle with latent trigger points: A single-blind, randomized, controlled pilot trial.** Complement Ther Clin Pract. 2020 Feb;38:101080. doi: 10.1016/j.ctcp.2019.101080. Epub 2019 Dec 18. PMID: 32056816.
24. Rodríguez-Huguet M, Rodríguez-Almagro D, Rodríguez-Huguet P, Martín-Valero R, Lomas-Vega R. **Treatment of Neck Pain With Myofascial Therapies: A Single Blind Randomized Controlled Trial.** J Manipulative Physiol Ther. 2020 Feb;43(2):160-170. doi: 10.1016/j.jmpt.2019.12.001. Epub 2020 Apr 18.
25. Lytras DE, Sykaras EI, Christoulas KI, Myrogiannis IS, Kellis E. **Effects of Exercise and an Integrated Neuromuscular Inhibition Technique Program in the Management of Chronic Mechanical Neck Pain: A Randomized Controlled Trial.** J Manipulative Physiol Ther. 2020 Feb;43(2):100-113. doi: 10.1016/j.jmpt.2019.03.011. Epub 2020 May 30.
26. Cabrera-Martos I, Rodríguez-Torres J, López-López L, Prados-Román E, Granados-Santiago M, Valenza MC. **Effects of an active intervention based on myofascial release and neurodynamics in patients with chronic neck pain: a randomized controlled trial.** Physiother Theory Pract. 2020 Sep 15:1-8. doi: 10.1080/09593985.2020.1821418.

27. Lindfors E, Magnusson T, Ernberg M. **Effect of Therapeutic Jaw Exercises in the Treatment of Masticatory Myofascial Pain: A Randomized Controlled Study.** J Oral Facial Pain Headache. 2020 Fall;34(4):364-373. doi: 10.11607/ofph.2670.
28. Rodríguez-Huguet M, Gil-Salú JL, Rodríguez-Huguet P, Cabrera-Afonso JR, Lomas-Vega R. **Effects of Myofascial Release on Pressure Pain Thresholds in Patients With Neck Pain: A Single-Blind Randomized Controlled Trial.** Am J Phys Med Rehabil. 2018 Jan;97(1):16-22. doi: 10.1097/PHM.0000000000000790.
29. Rodríguez-Fuentes I, De Toro FJ, Rodríguez-Fuentes G, de Oliveira IM, Meijide-Faílde R, Fuentes-Boquete IM. **Myofascial Release Therapy in the Treatment of Occupational Mechanical Neck Pain: A Randomized Parallel Group Study.** Am J Phys Med Rehabil. 2016 Jul;95(7):507-15. doi: 10.1097/PHM.0000000000000425.
30. La Touche R, París-Alemany A, Mannheimer JS, Angulo-Díaz-Parreño S, Bishop MD, Lopéz-Valverde-Centeno A, von Piekartz H, Fernández-Carnero J. **Does mobilization of the upper cervical spine affect pain sensitivity and autonomic nervous system function in patients with cervico-craniofacial pain?: A randomized-controlled trial.** Clin J Pain. 2013 Mar;29(3):205-15. doi: 10.1097/AJP.0b013e318250f3cd. PMID: 22874091.
31. Ramos-González E, Moreno-Lorenzo C, Matarán-Peña-rocha GA, Guisado-Barrilao R, Aguilar-Ferrández ME, Castro-Sánchez AM. **Comparative study on the effectiveness of myofascial release manual therapy and physical therapy for venous insufficiency in postmenopausal women. Randomized-controlled trial.** Complement Ther Med. 2012 Oct;20(5):291-8. doi: 10.1016/j.ctim.2012.03.005. Epub 2012 May 3.
32. Hsieh CY, Adams AH, Tobis J, Hong CZ, Danielson C, Platt K, Hoehler F, Reinsch S, Rubel A. **Effectiveness of four conservative treatments for subacute low back pain: a randomized clinical trial.** Spine (Phila Pa 1976). 2002 Jun 1;27(11):1142-8. doi: 10.1097/00007632-200206010-00003.
33. Ajimsha MS, Al-Mudahka NR, Al-Madzhar JA. **Effectiveness of myofascial release: systematic review of randomized controlled trials.** J Bodyw Mov Ther. 2015 Jan;19(1):102-12. doi: 10.1016/j.jbmt.2014.06.001.
34. Huang H, Young W, Skaper S, Chen L, Moviglia G, Saberi H, Al-Zoubi Z, Sharma HS, Muresanu D, Sharma A, El Masry W, Feng S; International Association of Neurorestoratology and The Chinese Association of Neurorestoratology. **Clinical Neurorestorative Therapeutic Guidelines for Spinal Cord Injury (IANR/CANR version 2019).** J Orthop Translat. 2019 Nov 11;20:14-24. doi: 10.1016/j.jot.2019.10.006. PMID: 31908929; PMCID: PMC6939117.
35. Bussières AE, Stewart G, Al-Zoubi F, Decina P, Descarreaux M, Haskett D, Hincapié C, Pagé I, Passmore S, Srbely J, Stupar M, Weisberg J, Ornelas J. **Spinal Manipulative Therapy and Other Conservative Treatments for Low Back Pain: A Guideline From the Canadian Chiropractic Guideline Initiative.** J Manipulative Physiol Ther. 2018 May;41(4):265-293. doi:

- 10.1016/j.jmpt.2017.12.004. Epub 2018 Mar 30. PMID: 29606335.
36. Wilke, J., & Krause, F. (2019). **Myofascial chains of the upper limb: A systematic review of anatomical studies.** Clinical Anatomy. doi:10.1002/ca.23424.
37. Burk C, Perry J, Lis S, Dischiavi S, Bleakley C. **Can myofascial interventions have a remote effect on ROM? A systematic review and meta-analysis.** Journal of sport rehabilitation. 2019 Oct 18;29(5):650-6.