

# Cupping Therapy versus Myofascial Release for Mechanical Low Back Pain: A Report of Two Cases

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## ABSTRACT

Inherent abnormalities with the spine, the intervertebral disks, or the surrounding soft tissues are the source of mechanical Low Back Pain (LBP). The present case report presented two cases of mechanical LBP in a 27-year-old and a 26-year-old female, as they complained of LBP that typically began due to prolonged sitting and has lasted for at least two months. The Numerical Pain Rating Scale (NPRS) indicated a pain intensity of seven out of 10 for LBP for both the patients and Modified Oswestry Disability Questionnaire (MODQ) indicated that disability was 54%; consequently. The 27-year-old female patient was provided with a two-week supervised static cupping therapy protocol and 26-year-old female patient was provided with a Myofascial Release (MFR) protocol. After treatment, the NPRS revealed a remarkable reduction in pain intensity to two out of 10 for LBP for cupping therapy intervention and for MFR intervention reduction in pain intensity was marked four out of 10 for LBP. Disability was reduced to 14% for cupping therapy intervention and for MFR intervention disability was reduced to 22%. As static cupping therapy is used to target the deeper musculature of the lower back and MFR treatment used for overall release of fascia, the purpose of the case report was to illustrate the comparison in the effects of cupping therapy and MFR on mechanical LBP in reducing pain intensity and disability.

**Keywords:** Cupping, Fascia, Intervertebral disc

## CASE REPORT

### Case 1

A 27-year-old female patient reported in physiotherapy Outpatient Department (OPD) with lower back discomfort that significantly impacted her daily activities from last two months. Since starting her job, which entailed long periods of sitting, the patient had been in pain. The patient reports discomfort at the beginning of their workday, while going their normal day to day activities and during prolong sitting. Special diagnostic tests, including the Straight Leg Raise Test (SLRT), slump test, and Flexion Abduction External Rotation (FABER) test, were carried out, and the findings were negative [1-3]. A NPRS gave LBP a score of seven out of 10 while the patient was active and two out of 10 while she was MODQ indicated disability was 54%; consequently. Notwithstanding the administration of analgesics, the patient did not achieve complete pain elimination and solely experienced transient alleviation. The intense, sporadic pain primarily affected the L4 and L5 vertebrae. The patient tried many home remedies, including hot water packs on the lower back, which temporarily relieved discomfort. The patient had round shoulders with slight kyphotic posture. Palpating the patient's lower back results in grade 1 tenderness. Before cupping, the patient gave written, informed consent. Two big and two medium sized cups were positioned precisely on the lower back parallel to the L4-L5 area with the patient in the prone laying position for 15 minutes each session for three sessions a week for two weeks [Table/Fig-1]. The location of pain and patient's build determine cup size. Suction strength averaged 300-500 mbar/three or four manual pumps [4]. Cupping greatly decreased pain and disability. Cupping was combined with moist hot pack, interferential treatment, knee to chest, pelvic rolling, and pelvic bridging [Table/Fig-2].

### Case 2

A 26-year-old female patient reported at physiotherapy OPD with lower back discomfort that significantly impacted her daily activities from the last two months. The patient reports experiencing pain in the morning and while going about their normal activities and



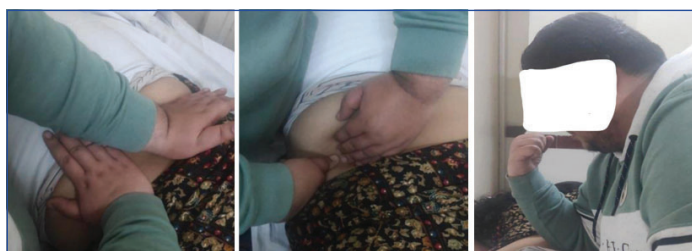
**[Table/Fig-1]:** Two large-sized and two medium-sized cups applied on the lower back with the patient in the prone lying position.

Outcomes	Pretreatment values	Post-treatment values
Pain by Numeric Pain Rating Scale (NPRS)	7 and 2 on NPRS during activity and at rest, respectively	2 and 0 on NPRS during activity and at rest, respectively
Disability by Modified Oswestry Low Back Disability Questionnaire (MODQ)	Disability was 54%	Disability was 14%

**[Table/Fig-2]:** Pretreatment and post-treatment outcome measures in the cupping intervention.

during prolong sitting. Special diagnostic tests, including the SLRT, slump test, and FABER test, were carried out, and the findings were negative [1-3]. The patient took analgesics for LBP. NPRS gave LBP a score which was seven on the NPRS during exercise and two at rest and MODQ indicated disability was 54%; consequently. The local practitioner gave her pain medications,

which relieved the discomfort but did not fix the issue. The patient worked and maintained a household as a housewife. L4-L5 back discomfort was intermittent. The patient stooped with rounded shoulders and with a slight kyphotic posture with grade 2 tenderness. Before commencing, the 26-year-old patient was briefed about MFR intervention and provided written consent. The myofascial convention released the quadratus lumborum, thoracolumbar fascia, and lumbar paravertebral muscles longitudinally [5]. Patient lied prone for 15-minute sessions each week for two weeks [Table/Fig-3-5]. Myofascial relaxation eventually slowly alleviated low back discomfort. Pain and impairment were reduced post-MFR. Conventional treatment comprised MFR, moist hot pack, Interferential Therapy (IFT), and movements including knee to chest, pelvic rolling, and pelvic bridging [Table/Fig-6].



**[Table/Fig-3-5]:** The myofascial convention offered longitudinal sliding of lumbar paravertebral muscles, thoracolumbar fascia release, and quadratus lumborum release.

Outcomes	Pretreatment values	Post-treatment values
Pain by Numeric Pain Rating Scale (NPRS)	7 and 2 on NPRS during activity and at rest, respectively	4 and 1 on NPRS during activity and at rest, respectively
Disability by Modified Oswestry Low Back Disability Questionnaire (MODQ)	Disability was 54%	Disability was 22%

**[Table/Fig-6]:** Pretreatment and post-treatment outcome measures in the MFR intervention.

## DISCUSSION

Mechanical LBP may be the result of repetitive trauma and overactivity, which are most often the result of an accident that occurs at work [6]. Today, work-related ongoing LBP is a major public health and societal issue. Low back discomfort affects 60-80% of people [7]. Children and seniors of all ages are impacted in high-middle-and low-income countries. Worldwide, the number of years that LBP kept people from working grew by five years between 1990 and 2015, mostly as a result of population expansion and a sedentary lifestyle. It is now the main contributor to disability worldwide. LBP is linked to initial pain intensity, psychological stress, and body-wide discomfort [8]. Sitting at work and at home is leading to increasingly sedentary lives. Office employees have greater LBP. Call centre employees, who spend upto 95% of their time seated, have garnered industry attention because of their high stress levels [9].

The use of cupping as a therapy option for musculoskeletal issues is quite prevalent, and it is one of the oldest traditional therapies that is used in many parts of the world. It is particularly common in the medical traditions of Europe, the Middle East, and Asia [10]. Static cupping uses glass, ceramic, or acrylic cups to treat problems. Negative pressure stimulates the skin. Suction pressure creates a partial vacuum within the cupping glass, heating it. This application approach increases tissue blood flow and lymphatic circulation. It reduces muscular tension, which is necessary to relieve pain [11]. A previous case report has demonstrated that the implementation of a guided static cupping therapy resulted in a noteworthy decrease in pain [11]. The present case report aimed to compare the efficacy of both interventions in terms of rapidity of action.

MFR generally involves exerting constant, persistent pressure (120-300s) on a restricted number of fascial layers, either directly (using the direct MFR method) or indirectly (using the indirect MFR approach)

[12]. Direct MFR uses knuckles, elbows, or other objects to contact, tension, or stretch the fascia. Indirect MFR requires a slight stretch to liberate movement. The hands follow fascial restrictions, stretch, and release fascia with a few grams of effort [12]. In a prior study, LBP patients had single MFR session, which had no meaningful benefit. The present case report uses a particular MFR protocol over a longer period [13]. Thus, this case report compares MFR with cupping therapy for pain and disability reduction in mechanical LBP following a controlled procedure. This case study examines cupping treatment and MFR for mechanical LBP. Back pain is a symptom; therefore, several local and systemic reasons might cause it. These include genetic predisposition, inflammatory and immunological responses, excessive static or dynamic loading, emotional state, behavioural and environmental factors, beliefs and expectations about future back pain and whether it can be controlled, and the social consequences of back pain. A person's reaction to a musculoskeletal injury may cause back discomfort [14].

Cupping and MFR should reduce pain by altering the physiological process that increases blood flow to the low back because prostaglandins originally created pain. Numerous studies recommend low-concentration, short-term pharmacological treatments for LBP. It may cause adverse effects. Physical exercise, pain education, and manual therapy increase pelvic blood flow and produce beta-endorphins, which function as non type-specific analgesics [15-18].

Cupping and MFR helps patients recover. Many theories support this therapy. Cupping improves healing by eliminating metabolites quicker [19]. This method also eliminates pain by moving it. Clinical studies show that cupping treatment is helpful to relieve LBP [1,20]. MFR, a low-load, long-duration myofascial stretch with the elbow obliquely oriented toward the spinal column, is often used to treat LBP. MFR and other managements may ease CLBP symptoms [2].

## CONCLUSION(S)

Due to their effectiveness and decrease in pain intensity and impairment, cupping therapy and MFR have been utilised for a long time, but their validation and comparison are exceedingly lacking. The present case study shows that cupping therapy reduces pain and impairment better than MFR. The findings are promising; nevertheless, a larger series is required to validate these findings. These safe, cost-effective, and readily accessible LBP treatments should be used with other conventional treatments.

## REFERENCES

- Nee RJ, Coppieters MW, Boyd BS. Reliability of the straight leg raise test for suspected lumbar radicular pain: A systematic review with meta-analysis. *Musculoskelet Sci Pract.* 2022;59:102529. Doi: 10.1016/j.msksp.2022.102529.
- Ekedahl H, Jönsson B, Annertz M, Frobell RB. Accuracy of clinical tests in detecting disk herniation and nerve root compression in subjects with lumbar radicular symptoms. *Arch Phys Med Rehabil.* 2018;99(4):726-35. Doi: 10.1016/j.apmr.2017.11.006.
- Bagwell JJ, Bauer L, Gradoz M, Grindstaff TL. The reliability of faber test hip range of motion measurements. *Int J Sports Phys Ther.* 2016;11(7):1101-05.
- Moura CC, Chaves EC, Cardoso AC, Nogueira DA, Corrêa HP, Chianca TC. Cupping therapy and chronic back pain: Systematic review and meta-analysis. *Rev Lat Am Enfermagem.* 2018;26:e3094. Doi: 10.1590/1518-8345.2888.3094.
- Arguisuelas MD, Lisón JF, Doménech-Fernández J, Martínez-Hurtado I, Salvador Coloma P, Sánchez-Zuriaga D. Effects of myofascial release in erector spinae myoelectric activity and lumbar spine kinematics in non-specific chronic low back pain: Randomized controlled trial. *Clin Biomech.* 2019;63:27-33. Doi: 10.1016/j.clinbiomech.2019.02.009.
- Will JS, Bury DC, Miller JA. Mechanical low back pain. *Am Fam Physician.* 2018;98:01-08.
- Ozsoy G, Ilcin N, Ozsoy I, Gurpinar B, Buyukturan O, Buyukturan B, et al. The effects of myofascial release technique combined with core stabilization exercise in elderly with non-specific low back pain: A randomized controlled, single-blind study. *Clin Interv Aging.* 2019;14:1729-40. Doi: 10.2147/CIA.S223905.
- Hartvigsen J, Hancock MJ, Kongsted A, Louw Q, Ferreira ML, Genevay S, et al. What low back pain is and why we need to pay attention. *Lancet.* 2018;391(10137):2356-67. Doi: 10.1016/S0140-6736(18)30480-X.
- Volpato MP, Breda ICA, de Carvalho RC, de Castro Moura C, Ferreira LL, Silva ML, et al. Single cupping therapy session improves pain, sleep, and disability in patients with nonspecific chronic low back pain. *J Acupunct Meridian Stud.* 2020;13(2):48-52. Doi: 10.1016/j.jams.2019.11.004.

- [10] Silva HJDA, Saragiotto BT, Silva RS, Lins CADA, de Souza MC. Dry cupping in the treatment of individuals with non-specific chronic low back pain: A protocol for a placebo-controlled, randomised, double-blind study. *BMJ Open*. 2019;22;9(12):01-09. Doi: 10.1136/bmjopen-2019-032416.
- [11] Siddiqui AS, Khan SN, Narwade N, Mhase S, Thorat A, Nagrale W, et al. The effect of static cupping therapy in non-specific low back pain for primary dysmenorrhea. *Cureus*. 2022;14(9):e29771. Doi: 10.7759/cureus.29771.
- [12] Arguisuelas MD, Lisón JF, Sánchez-Zuriaga D, Martínez-Hurtado I, Doménech-Fernández J. Effects of myofascial release in nonspecific chronic low back pain. *Spine*. 2017;42(9):627-34. Doi: 10.1097/BRS.0000000000001897.
- [13] Paulo LR, Lacerda ACR, Martins FLM, Fernandes JSC, Vieira LS, Guimarães CQ, et al. Can a single trial of a thoracolumbar myofascial release technique reduce pain and disability in chronic low back pain? A randomized balanced crossover study. *J Clin Med*. 2021;10(9):2006. Doi: 10.3390/jcm10092006.
- [14] Vlaeyen JWS, Maher CG, Wiech K, Van Zundert J, Meloto CB, Diatchenko L, et al. Low back pain. *Nat Rev Dis Primers*. 2018;4(1):52. Doi: 10.1038/s41572-018-0052-1.
- [15] Ketenci A, Zure M. Pharmacological and non-pharmacological treatment approaches to chronic lumbar back pain. *Turk J Phys Med Rehabil*. 2021;67:01-10. Doi: 10.5606/tftrd.2021.8216.
- [16] O'Keeffe M. Non-pharmacological treatment of low back pain in primary care. *Drug Ther Bull*. 2019;57(7):104-08. Doi: 10.1136/dtb.2018.000015.
- [17] Corp N, Mansell G, Stynes S, Wynne-Jones G, Morso L, Hill JC, et al. Evidence-based treatment recommendations for neck and low back pain across Europe: A systematic review of guidelines. *Eur J Pain*. 2021;25(2):275-95. Doi: 10.1002/ejp.1679.
- [18] Şahin N, Karahan AY, Albayrak İ. Effectiveness of physical therapy and exercise on pain and functional status in patients with chronic low back pain: A randomized-controlled trial. *Turk J Phys Med Rehabil*. 2017;64(1):52-58. Doi: 10.5606/tftrd.2018.1238.
- [19] Al-Bedah AM, Elsubai IS, Qureshi NA, Aboushanab TS, Ali GIM, El-Olemy AT, et al. The medical perspective of cupping therapy: Effects and mechanisms of action. *J Tradit Complement Med*. 2019;9:90-97. Doi: 10.1016/j.jtcme.2018.03.003.
- [20] Furhad S, Bokhari AA. Cupping Therapy. 2023 Jan 2. In: *StatPearls* [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan. PMID: 30855841.

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