

Effectiveness of Myofascial Release Technique for Trapezitis to Reduce Pain among Computer Users: A Systematic Review

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Abstract: ***Background:** Trapezitis is one of the frequent musculoskeletal conditions in computer users, which typically causes pain, stiffness, and loss of upper trapezius mobility. Myofascial release (MFR) has become popular in the deployment of fascial tension and de-tensioning. **Purpose:** to evaluate the efficacy of Myofascial release in pain management and range of motion (ROM) with computer users with trapezitis in a systematic review. **Methods:** PRISMA guidelines were used to carry out a systematic search in PubMed, Scopus, Web of Science and Google Scholar. Sixty studies were filtered and 16 studies passed the inclusion criteria which dwelled on Myofascial release interventions in computer users. Information on the study design, population, interventions, comparators, outcome, and results were located and synthesized. **Results:** Myofascial release significantly reduced pain and improved range of motion across all included studies. Both manual and instrument-assisted Myofascial release techniques were effective. Combined interventions (Myofascial release with positional release or deep friction techniques) demonstrated additional benefits. **Conclusion:** Myofascial release is a safe and effective intervention for reducing pain and improving range of motion among computer users with trapezitis. Future standardized trials with long-term follow-up are recommended.*

Keywords: Myofascial release, trapezitis, computer users, upper trapezius, pain, range of motion

1. Introduction

Trapezitis is characterized by inflammation of the trapezius muscle, and it is often associated with myofascial pain syndrome.² The trapezius is a broad, trapezoid-shaped muscle originating at the skull and upper spine, extending down to the lower thoracic region, and widening laterally to cover the shoulder area. It plays a key role in movements such as neck extension and shoulder elevation.¹³ Neck pain is a prevalent musculoskeletal issue, with point prevalence estimates ranging from 10% to 15%, affecting over one-third of the population. Prolonged computer use, involving repetitive tasks and non-neutral postures, can place considerable stress on the cervical spine and upper extremities.¹²

Prolonged sitting, repetitive keyboard and mouse use, and poor posture have contributed to an increased prevalence of trapezitis among computer users. Pain, stiffness, and loss of cervical and shoulder range of motion and inability to perform daily activities are the common symptoms.

Trapezitis management policies are conservative, and they usually involve stretching, strengthening exercises, ergonomic interventions, and manual therapy. Myofascial release (MFR) refers to stimulation of the mechanical, neural, psychophysiological adaptation capabilities of the myofascial system. This method is intended to decrease the pressure on the pain-sensitive structures by treating the restrictions in the fascia.¹³ Myofascial release assists in reducing pain, increasing the flexibility as well as the range of motion by breaking down the fascia adhesions using the manual traction and constant stretching of muscles and fascia to a more fluid state. This mechanism could also help to

reduce spasms on the trapezius muscle.¹²

Although myofascial release is widely used, there is insufficient evidence on the efficacy of myofascial release in the treatment of trapezitis among computer users. This systematic review aims to synthesize the most recent research on the effects of myofascial release in improving range of motion and alleviating pain within this population

2. Methodology

Study Design

This review followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to systematically identify and report relevant studies.

Search strategy

A systematic search was performed using databases including PubMed, Scopus, Web of Science, and Google Scholar. Search terms included combinations of keywords such as "trapezitis," "myofascial release," "upper trapezius," "pain," and "computer users".

Selection of Studies

A total of 60 articles were obtained as a result of search using the key words and articles were filtered and sorted according to inclusion and exclusion criteria. Studies were identified through systematic searches of PubMed, Scopus, Web of Science, and Google Scholar. The article which met the inclusion criteria and 16 articles were included in study.

Inclusion Criteria and Exclusion Criteria

This review comprised all clinical trials that include

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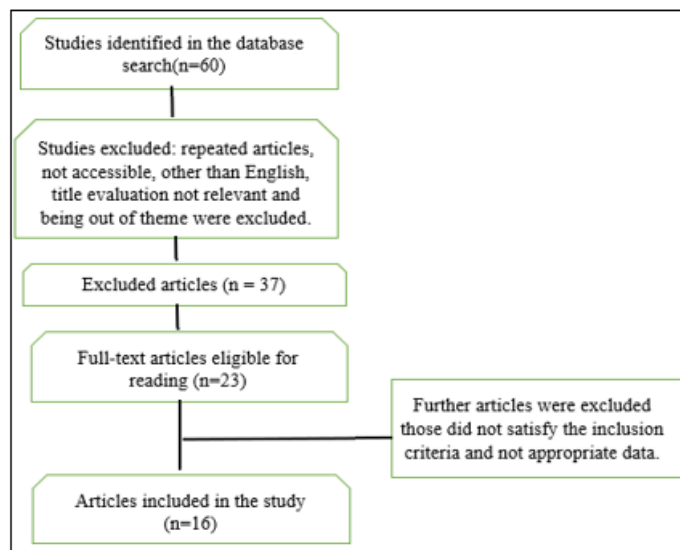
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Computer users with trapezititis or upper trapezius trigger points, Interventions involving Myofascial release (manual or instrument-assisted), Comparative or experimental studies with or without control groups, Outcomes including pain, range of motion, or functional measures. Only English-language publications were evaluated. Study that focused on non-computer users or irrelevant populations, Interventions

unrelated to Myofascial release, Protocols without outcomes, Duplicate studies or unpublished data without results were all eliminated. Research with insufficient or unclear outcome data, as well as those published in languages other than English, were eliminated.

Study Selection Strategy



Summaries of Studies Included

| No. | Author(s) & Year | Study Design | Participants | Objective of Study | Results Obtained | Conclusion |
|-----|------------------------------|-----------------------------------|--|--|--|--|
| 1 | Chaudhary et al., (2013) | Comparative study | Patients with upper trapezius spasm | Compare Myofascial release and cold pack therapy for spasm reduction | Myofascial release provided greater relief of pain and muscle spasm | Myofascial release more effective than cold pack in managing spasm. |
| 2 | Gauns & Gurudut, - 2018 | RCT | Adults with mechanical neck pain | Evaluate gross Myofascial release effect on neck pain and range of motion | Significant reduction in pain and improved range of motion | Myofascial release effective in reducing pain and enhancing range of motion |
| 3 | El Gendy et al., (2019) | RCT | Chronic mechanical neck pain patients | Compare electrotherapy vs Myofascial release on pain and range of motion | Myofascial release reduced pain and improved range of motion significantly | Myofascial release effective for pain relief and range of motion improvement |
| 4 | Pimpalgaonkar et al., (2020) | Comparative study | Sitting-job professionals | Compare Myofascial release vs strain counterstrain on pain and range of motion | Myofascial release produced greater pain relief and range of motion gains | Myofascial release more effective than strain counterstrain |
| 5 | Gupta et al., (2021) | Comparative study | Patients with upper trapezius trigger points | Assess Myofascial release vs combined therapeutic approach on pain and range of motion | Both effective; Myofascial release slightly better for pain | Myofascial release slightly superior for pain reduction |
| 6 | Vispute & Kumar, (2022) | Comparative study | College students with trapezititis | Compare Myofascial release vs positional release on pain and range of motion | Myofascial release showed better pain relief and range of motion improvement | Myofascial release more effective than positional release |
| 7 | Sadriwala & Khan, (2023) | Comparative study | Trapezititis patients | Compare Myofascial release vs phonophoresis + cervical isometrics | Myofascial release produced faster pain relief and improved range of motion | Myofascial release more effective in short-term outcomes |
| 8 | Agarwal et al., (2023) | randomized controlled trial study | Upper trapezius myofascial pain | Compare manual vs instrument- assisted Myofascial release | Both methods effective; no significant difference | Manual and instrument-assisted Myofascial release equally effective |
| 9 | Shaheen et al., (2023) | Comparative study | Chronic neck pain patients | Assess release techniques including Myofascial release | Myofascial release - based techniques effective for pain and range of motion | Myofascial release effective in pain relief and range of motion enhancement |
| 10 | Aljarallah, (2024) | Comparative study | Fibromyalgia / chronic neck pain patient | Evaluate Myofascial release effect on pain and range of motion | Pain reduced and range of motion improved | Myofascial release effective for pain reduction and mobility improvement |

| | | | | | | |
|----|-------------------------|--------------------|---|---|---|--|
| 11 | Mittal & Sharma, - 2024 | Scoping Review | Chronic neck pain patient | Review effectiveness of Myofascial release & muscle energy techniques | Evidence supports Myofascial release in reducing pain and improving range of motion | Myofascial release recommended for pain relief and range of motion improvement |
| 12 | Shekh et al., (2024) | Comparative study | College students | Compare Myofascial release vs cupping for trapezititis | Myofascial release slightly better or comparable to cupping | Myofascial release effective and slightly superior or equivalent to cupping |
| 13 | Yadav & Sharma,- 2024 | Study Protocol | Patients with upper trapezius trigger points | Evaluate Myofascial release vs positional release on pain and range of motion | Data not yet available | Expected to provide evidence on pain and range of motion improvement |
| 14 | Mane et al., (2017) | Comparative study | Patients with upper trapezititis | Assess Myofascial release + deep transverse friction on pain and range of motion | Combined therapy improved outcomes more than Myofascial release alone | Combination therapy enhances pain relief and range of motion |
| 15 | Jhaveri & Gahlot, n.d. | Experimental study | Chronic trapezititis patients | Compare Myofascial release vs muscle energy technique on pain and range of motion | Myofascial release showed significant improvement in pain and range of motion | Myofascial release effective in pain reduction and range of motion improvement |
| 16 | Arya et al., (2025) | Comparative study | Patients with digitalization-related trapezititis | Compare cupping vs Myofascial release for trapezititis pain | Myofascial release more effective than cupping for pain and range of motion | Myofascial release superior for pain reduction and range of motion improvement |

3. Results

A total of 60 articles were found in above mentioned databases. Out of these 60 articles, 37 were excluded based on duplication, not having proper data, unable to access and not relevant to study. 23 articles were fully read out of which 16 met the inclusion criteria. By reviewing the articles included in the study, the following results were obtained.

All 16 studies reported positive effects of Myofascial release on pain reduction. 14 studies also reported improved Range of motion in cervical and shoulder movements. Comparative studies indicated that Myofascial release outperformed passive interventions (cold pack, cupping, electrotherapy).

Combined techniques (Myofascial release + positional release or deep friction) showed additive benefits. Functional outcomes, such as posture and upper trapezius relaxation, improved in eight studies. Both manual and instrument-assisted Myofascial release were effective.

4. Discussion

Gauns and Gurudut (2018) investigated the effects of gross myofascial release (MFR) on individuals suffering from mechanical neck discomfort radiating to upper limb. According to their findings, MFR was more successful than conventional therapy in reducing pain and increasing neck mobility. They proposed that the lifting of fascial restrictions might be connected to these advancements. In order to further understand how MFR works, future research would benefit from larger groups, longer follow - ups, and the use of objective method like EMG of imaging, even though the study's results are encouraging.

Vispute and Kumar et al. (2022) compared the immediate effects of MFR and positional release techniques (PRT) among the college students with trapezititis. While both techniques reduce the pain, discomfort and increased upper trapezius mobility, but MFR showed slightly better results in

the short term. Their study highlights MFR as a helpful, fast – acting option for young adults with trapezititis. Long term research, including different age groups and work backgrounds, would help determine whether these benefits last over time.

In other comparison, Gupta, Negi, et al. (2021) studied MFR versus a combined therapeutic approach for upper trapezius trigger points. Both methods minimized pain and tenderness but MFR provided a bit more immediate relief and muscle relaxation. This helps to prove that MFR can be used to minimize facial tension and enhance tissue flexibility. Future research ought to include longer treatment and follow up sessions as well as objective evaluation such as algometry or ultrasound to be more reflective of the physiological changes that occur.

Sadriwala and Khan (2023) have performed a comparative study in order to compare effects of myofascial release (MFR) and phonophoresis followed by cervical isometrics on pain and range of motion in patients with trapezititis. Comparing MFR and phonophoresis and cervical isometrics, Sadriwala and Khan discovered that both groups had an improvement but MFR did so significantly in pain and neck mobility. This indicates that an interventional manual treatment can be more effective than a modality-based treatment process, at least in the short run. It is also clinically relevant as MFR does not need a lot of equipment and it can be used within a short time. Nevertheless, the study is not able to identify whether the initial benefits of MFR are long-term because of no follow-up or a small sample size. Long-term trials would be useful to test the hypothesis that manual release protocol or electrotherapy- based protocol would be more helpful in sustaining recovery.

Chaudhary et al. (2013) contrasted MFR with the cold-pack therapy in reducing the upper trapezius spasm where both treatment options alleviated discomfort but MFR was much deeper and more functional. The research makes us remember that passive cooling can be relaxing the

symptoms, but MFR does seem to be more relevant to the underlying tightness of the soft tissues. One

however, it has the limitation that it studied the techniques separately. Further studies can be conducted to determine whether a combination of MFR with other physiotherapeutic interventions provides a more comprehensive and permanent decrease in muscle spasm.

Jhaveri and Gahlot had made a comparison between MFR and muscle energy technique on trapezititis that is chronic. Both produced similar results in the reduction of the symptoms, though MFR always resulted in a little better improvement. This slight distinction points to a potential where fascial restrictions are a significant cause of chronic trapezititis and not necessarily just the joint and muscle position problem. To reinforce this observation, future research ought to use bigger samples and track the patients over a period to know whether the two methods are different in the long term results or are merely different in terms of rapidity of response.

Agarwal et al. (2023) compared MFR with instrument-assisted soft-tissue mobilization (IASTM) with persons having pain in the upper trapezius myofascia. Both modalities assisted in pain and mobility as well as in functionality, and even though IASTM demonstrated a slightly better functionality score, MFR had overall similar performance. The results support the fact that MFR can be a cost-effective substitute in cases when special equipment is not available. The future studies may investigate the combination protocols because the manual sensitivity of MFR and the mechanical accuracy of IASTM may have a wider or longer benefit together.

Mane, Pawar, et al. (2017), It was a study on the use of MFR and deep transverse friction massage to augment conventional physiotherapy in unilateral trapezititis. The multimodal method produced greater pain and range of motion improvements in comparison with traditional therapy. These findings indicate that the presence of fascial tension and localized adhesions could be more effectively treated using both methods rather than exercise or stretching alone. The only thing that has not been made clear is the best frequency or sequence of such manual techniques. One of the ways to determine the most effective treatment structure would be long-term studies, assessing the individual and combined effects.

Mittal and Sharma et al. (2024) conducted a scoping review on evidence related to MFR and muscle energy approaches to treating chronic neck pain and concluded that both methods are effective but MFR has a stronger provision of improvements in pain and tissue relaxation. Their work evokes the fact that standard parameters of treatment are not standardized in all studies and it is not easy to compare them. The meta-analytic data would assist in estimating the effect sizes, and establishing whether some duration, pressure, or frequency of treatment has proven to be more effective. This would also help in coming up with more specific clinical guidelines.

The protocol by Yadav and Sharma (2024) preconditions a

carefully designed trial in which MFR and positional release would be compared in terms of their efficacy in upper trapezius trigger-point pain. According to the authors, MFR can have deeper mechanical effects due to fascial restriction, whereas objective outcome measures and double-blinding will be the strength of the study. Future developments of this study may include imaging or EMG to explain the effects of each of the techniques on neuromuscular responses.

Aljarallah et al. (2024) assessed MFR in fibromyalgia and chronic neck pain, and they discovered that the method caused a reduction in pain and increased mobility in chronic presentations of these conditions. This broader usage highlights the applicability of MFR in the non acute or localized dysfunction. Nevertheless, MFR and musculoskeletal conditions are complex and future studies should make comparisons with both exercise-based and multimodal programs to outline whether it should be used as a primary treatment or as a supplement to a more extensive treatment program.

The study by Pimpalgaonkar, Honkalas & Gholhar (2020) investigated the short-term impact of Myofascial release and strain counterstrain method in sitting-job trapezititis on one side. Both groups had been improved, but MFR provided slightly better instant relief. Since the population is occupational, a significant implication is that the ergonomic considerations would have contributed to the occurrence of symptoms. The temporal studies with workplace evaluation or preventive measures may assist in inferences on whether MFR is of lasting advantage or more of temporary symptom management.

Shekh, Joshi and Mehta (2024) Comparison between MFR and cupping therapy among college students in trapezititis, the authors concluded that MFR was more effective in removing pain and restoring cervical and shoulder movements. This implies that although cupping can be used to regulate the circulation or pain perception, MFR can be more specific to mechanical limits of the muscle-fascia system. Future research needs to investigate the suggestion of whether the addition of cupping to MFR enhances its outcomes or merely repeats the effect.

El Gendy, Lasheen & Rezkalla (2019) MFR versus a multimodal electrotherapy method was used in this randomized controlled trial in terms of the chronic mechanical neck pain. Both interventions showed some improvements in symptoms, however, MFR yielded more long-term benefits. This supports the fact that manual release procedures can cause long-term alterations in the behavior of the soft-tissues compared to treatments based on modality. Future investigations may investigate the possibility to use MFR alongside the choice of electrotherapy methods to add or quicken these advantages.

Shaheen, Abu Shameh & Shaheen (2023) compared various release methods of chronic neck-pains rehabilitation processes and discovered that MFR is always instrumental in the reduction of pain and enhancement of cervical functions. Although the study substantiates the clinical use of MFR on the regular basis, it also demonstrates the more general issue of the unstandardization of the procedures of manual therapy.

The direct comparison of the release-based techniques might be used to better understand which strategies are the most effective with specific clinical presentations.

Arya, Srivastava and Kumar, (2025) This research involved a comparison between MFR and cupping in relation to trapezititis caused by the use of digital devices. Initial findings show that MFR was effective in decreasing pain and improving the performance, implying that it is pertinent to present-day, technology-driven postural disorders. To cement these initial results, greater and more heterogenous samples are required to understand whether MFR can also be used as a preventive application to the population subject to long-term digital strain.

In general, the systematic review points to the conclusion that Myofascial release could be considered an effective approach to the alleviation of pain and the enhancement of range of motion among the computer users who have trapezititis. Myofascia release could be used multimodally in order to improve the treatment process. Instrument-assisted and manual techniques offered similar advantages. Myofascial release may relieve pain and improve mobility through Releasing fascial adhesions, normalizing muscle tone in the upper trapezius, increasing local circulation, Modulating pain perception via mechanoreceptor stimulation. Myofascial release can be incorporated into workplace physiotherapy programs for computer users. Early intervention may prevent chronic neck pain, improve posture, and enhance functional capacity. Clinicians may choose manual or instrument-assisted Myofascial release based on patient preference and resources.

However, common Limitations include Heterogeneity in Myofascial release techniques and outcome measures, small sample sizes in many studies, Limited long-term follow-up data, Potential publication bias and future research must focus on developing standardized Myofascial release protocols for computer users, Large-scale multicentre randomized controlled trial's, Long-term follow-up assessing function and quality of life

5. Conclusion

The result of this systematic review clearly shows that Myofascial release is a safe and effective intervention for reducing pain and improving range of motion among computer users with trapezititis. Integration into workplace rehabilitation programs is recommended. Further high-quality research is needed to optimize protocols and evaluate long- term outcomes.

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Conflict of Interest

Authors declare that there is no conflict of interest.

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