

Manual Therapy and Exercise in the Management of Chronic Neck Pain: A Review

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ABSTRACT

Chronic neck pain is a common musculoskeletal disorder associated with significant disability and reduced quality of life. Physiotherapy, particularly manual therapy and exercise, is central to its conservative management. This review synthesises current evidence on manual therapy and exercise in the management of chronic neck pain. It examines the principal interventions, including manual therapy techniques such as mobilisation, exercise therapy and strengthening, postural and motor control training, and education and self-management, and reviews evidence regarding their effects on pain, disability and function. The literature indicates that both manual therapy and exercise are effective in reducing pain and disability in chronic neck pain, and that their combination is generally more effective than either alone, supporting a multimodal approach. The review emphasises individualised, multimodal treatment and active patient engagement. It concludes that manual therapy and exercise, particularly in combination, are effective components of musculoskeletal physiotherapy for chronic neck pain, and highlights the need for further research to optimise treatment selection and long-term outcomes

KEYWORDS: *Neck Pain, Manual Therapy, Exercise Therapy, Musculoskeletal Physiotherapy, Disability, Mobilisation, Multimodal Treatment, Rehabilitation*

INTRODUCTION

It affects people across age groups and occupations, and is frequently associated with sedentary work and sustained postures, which contributes to its high prevalence [1], [2].

Neck pain is a common musculoskeletal disorder and a leading cause of disability, with a high

prevalence in the general population and a tendency to recur or become chronic [1]. Chronic neck pain, persisting for twelve weeks or longer, is associated with significant disability, reduced quality of life and substantial healthcare and economic costs [1], [2]. Most chronic neck pain is non-specific, without a clear structural cause, and is managed conservatively, with physiotherapy playing a central role.

Both have a long history of use in musculoskeletal physiotherapy and are supported by clinical guidelines, which increasingly recommend their use in combination [2], [3].

Their prominence reflects both a substantial evidence base and their practical applicability across a wide range of patients [2], [3].

Among physiotherapy interventions, manual therapy and exercise are the most widely used and studied for chronic neck pain [2], [3]. Manual therapy includes techniques such as joint mobilisation and manipulation and soft-tissue techniques, aimed at reducing pain and improving movement, while exercise therapy includes strengthening, endurance, motor control and stretching exercises addressing the muscular and movement impairments associated with neck pain. These approaches are often combined within multimodal programmes [3].

These factors interact, so that pain can drive muscle dysfunction and altered movement, which in turn perpetuate pain, providing several points at which physiotherapy can intervene [2], [3]. The rationale for manual therapy and exercise reflects the multifactorial nature of chronic neck pain, which involves pain, muscle dysfunction, impaired motor control, reduced movement and psychological factors [2], [3]. Manual therapy may provide short-term pain relief and improved mobility, while exercise addresses muscle function, motor control and physical capacity and supports longer-term benefit. Education and self-management are commonly integrated to support active engagement and self-care.

Neck pain frequently follows a fluctuating or recurrent course, and a substantial proportion of patients experience persistent or repeated episodes, which shapes the goals of management toward both symptom relief and longer-term self-management [1], [2]. This chronic, recurring pattern is part of what makes an active, exercise-based approach particularly important.

Although manual therapy and exercise are well established, questions remain regarding their relative effectiveness, the benefit of combining them and the optimal selection of interventions. The problem addressed in this review is the need to synthesise current evidence on manual therapy and exercise in chronic neck pain. Accordingly, this review examines these interventions, evaluates the evidence regarding their effects, and considers the case for a multimodal, individualised approach.

REVIEW METHODOLOGY

This narrative review was based on a structured search of peer-reviewed literature concerning manual therapy and exercise in chronic neck pain. Databases were searched using terms relating to neck pain, manual therapy, mobilisation, exercise therapy, strengthening, motor control and physiotherapy. Systematic reviews, randomised controlled trials and clinical guidelines were prioritised, and findings were organised by intervention and outcome. The principal interventions are illustrated in Figure 1 and summarised in Table 1.

The synthesis considered each intervention both individually and in combination, since the central question in chronic neck pain is less whether any single modality works than how the available interventions are best combined for the individual patient.

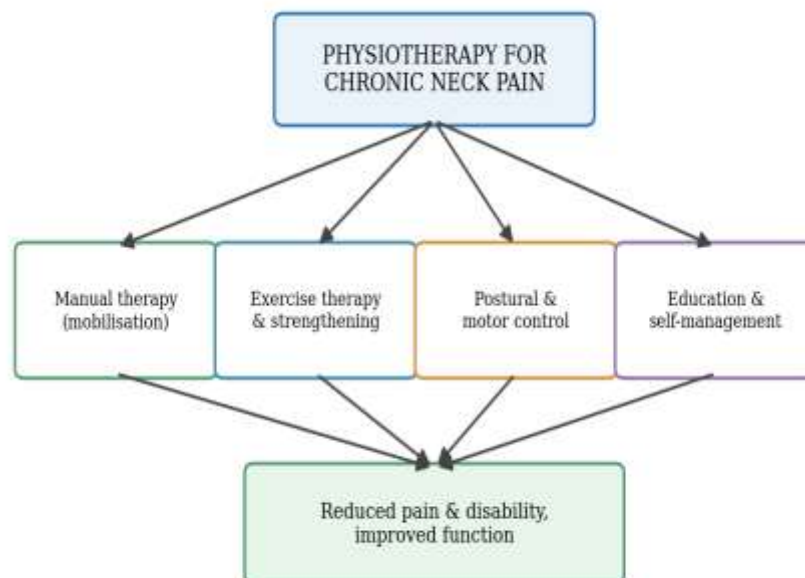


Figure 1: Principal Physiotherapy Interventions for Chronic Neck Pain

Table 1: Physiotherapy Interventions for Chronic Neck Pain

Intervention	Description
Manual therapy	Joint mobilisation, manipulation, soft-tissue techniques
Exercise therapy	Strengthening, endurance and stretching
Motor control / posture	Deep neck flexor and postural training
Education	Advice, reassurance and self-management
Multimodal programme	Combined manual therapy and exercise

INTERVENTIONS AND EVIDENCE

Manual Therapy

The interventions are considered separately below for clarity, but in practice they are usually combined within an individualised, multimodal programme, and much of the evidence concerns such combinations.

Mobilisation involves applied, graded movements to the cervical joints, while manipulation uses a higher-velocity thrust, and the choice between them is guided by clinical judgement and patient factors [2], [3].

It is generally regarded as relatively safe when applied appropriately by trained clinicians, although careful patient selection and screening remain important [2], [3].

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Its role is therefore best understood as facilitating active rehabilitation rather than as a definitive treatment in its own right [2], [3].

Manual therapy, including joint mobilisation, manipulation and soft-tissue techniques, is widely used in chronic neck pain to reduce pain and improve movement [2], [3]. Evidence indicates that manual therapy can provide pain relief and functional improvement, particularly in the short term, and it is often valued for facilitating subsequent active exercise. Mobilisation

and manipulation have broadly similar effects, and manual therapy is generally most effective when combined with exercise rather than used in isolation [3].

The short-term emphasis of manual therapy benefit is an important practical point, since it positions manual therapy as a means of creating a window of reduced pain and improved movement within which active rehabilitation can proceed more readily, rather than as a stand-alone cure [2], [3]. Used in this way, it complements rather than competes with exercise.

EXERCISE THERAPY AND STRENGTHENING

Specific strengthening of the deep cervical flexors and the scapulothoracic muscles is often emphasised, reflecting the patterns of muscle dysfunction commonly found in chronic neck pain [2], [3].

Both supervised and home-based exercise have a role, and supporting adherence to exercise over time is an important determinant of sustained benefit [2], [3].

Exercise therapy is a cornerstone of management for chronic neck pain, with strong evidence supporting its effectiveness [2], [3]. Strengthening and endurance exercise for the neck and shoulder girdle muscles, in particular, is associated with reduced pain and disability. Exercise addresses the muscle dysfunction and deconditioning common in chronic neck pain and supports longer-term benefit and self-management. As with low back pain, the benefits of exercise are relatively consistent across types, supporting individualised selection.

The durability of exercise benefit is a particular strength relative to passive treatments, since the gains in strength, endurance and motor control that exercise produces are inherently retained by the patient and support ongoing self-management [2], [3]. This makes exercise central not only to symptom relief but to the prevention of recurrence.

MOTOR CONTROL, POSTURE AND EDUCATION

Impaired activation and endurance of the deep cervical flexors is a well-documented feature of chronic neck pain, providing a clear target for this form of training [2], [3].

Restoring better cervical posture and control aims to reduce sustained strain on the neck structures during daily activity [2], [3].

Motor control and postural training, including exercises for the deep neck flexor muscles and correction of posture, address the impaired motor control and postural dysfunction associated with chronic neck pain [2], [3]. These approaches aim to improve the control and support of the cervical spine. Education and self-management, including advice, reassurance and guidance on activity and ergonomics, support active engagement and self-care and are commonly integrated within multimodal programmes.

Ergonomic and workplace factors are particularly relevant in chronic neck pain, given its association with sustained postures and computer use, and addressing these through education and activity modification is an important part of comprehensive management [1], [2]. Equipping patients to manage these everyday contributors supports both recovery and the prevention of relapse.

COMBINED AND MULTIMODAL TREATMENT

This finding has been reported across multiple trials and reviews, lending it considerable weight and making it one of the more robust conclusions in the management of chronic neck pain [3], [4].

A consistent finding across the literature is that the combination of manual therapy and exercise is generally more effective than either intervention alone [3], [4]. Multimodal programmes that integrate manual therapy, exercise, motor control and education address the multiple factors involved in chronic neck pain and are widely recommended. The reported benefits of combined versus single-modality treatment across outcomes are summarised in Figure 2 and Table 2.

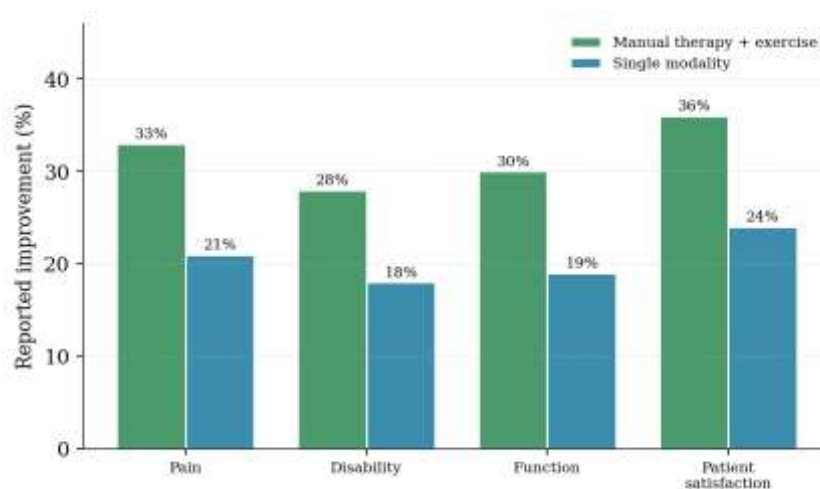


Figure 2: Reported Improvements With Combined Versus Single-Modality Treatment

The consistent advantage of combined over single-modality treatment shown across outcomes reflects the multidimensional nature of chronic neck pain and the complementary actions of manual therapy and exercise [3], [4].

Table 2: Summary of Evidence for Interventions in Chronic Neck Pain

Intervention	Evidence level	Main reported benefit
Manual therapy	Moderate	Short-term pain relief
Exercise therapy	Strong	Reduced pain and disability
Motor control / posture	Moderate	Improved cervical control
Combined treatment	Strong	Greater overall benefit

DISCUSSION

This conclusion aligns with current clinical guidelines, which recommend exercise and manual therapy, used together, as core elements of conservative care for chronic neck pain [2], [3].

The evidence reviewed indicates that both manual therapy and exercise are effective in reducing pain and disability in chronic neck pain, and that their combination is generally more effective than either alone, supporting a multimodal approach [2], [3], [4]. Exercise has the strongest evidence and supports longer-term benefit, while manual therapy provides valuable, particularly short-term, pain relief and may facilitate active exercise. Together they address the multiple factors involved in chronic neck pain.

From a mechanistic standpoint, the breadth of the problem, spanning the joint, the muscles, motor control and the patient's beliefs and behaviour, naturally calls for an equally broad therapeutic response [2], [3].

The superiority of combined treatment is a central and consistent theme [3], [4]. Chronic neck pain involves pain, muscle dysfunction, impaired motor control, reduced movement and psychological factors, and no single intervention addresses all of these. Combining manual therapy and exercise, often with motor control training and education, addresses this

multidimensional problem more comprehensively, which likely underlies the greater effectiveness of multimodal programmes. This supports an integrated approach rather than reliance on a single modality.

This complementary relationship, in which manual therapy eases the path to active exercise and exercise provides lasting benefit, captures much of the rationale for multimodal care in chronic neck pain [2], [3].

This sequencing, using manual therapy to reduce pain early and exercise to build lasting capacity, is a practical expression of how the two modalities can be integrated [2], [3].

The complementary roles of manual therapy and exercise are clinically important [2], [3]. Manual therapy may provide early pain relief and improved mobility that enable patients to engage more readily in active exercise, while exercise builds the muscle function, motor control and physical capacity needed for sustained benefit and self-management. This sequencing and integration reflect skilled clinical practice. The clinical significance lies in the demonstration that an individualised, multimodal programme combining manual therapy and exercise offers the most effective conservative management of chronic neck pain, while engaging patients actively in their care.

Defining the optimal sequence and balance of manual therapy and exercise for a given patient remains as much a matter of clinical reasoning as of protocol, since presentations vary widely in their dominant features [2], [3]. This individualisation is a strength of skilled practice but a challenge for standardised research.

Several challenges and limitations apply. The evidence, while supportive, includes heterogeneity in interventions, populations and outcomes, and the optimal selection and sequencing of interventions for individual patients are not fully defined. The effects of manual therapy in particular tend to be short-term, and long-term outcomes and recurrence are less well characterised. These considerations indicate the need for further research to optimise treatment selection and to establish long-term effectiveness, while a multimodal approach remains well supported.

Empowering patients to take an active role supports both recovery and the longer-term management of a frequently recurrent condition [1], [2].

Active patient engagement is a recurring theme across the effective approaches, since exercise and self-management depend on the patient's sustained participation in a way that passive treatments do not [2], [3].

LIMITATIONS

This review has several limitations. As a narrative review rather than a systematic review with meta-analysis, it is subject to selection bias and does not provide pooled quantitative estimates. The evidence on manual therapy and exercise in chronic neck pain includes heterogeneity in the specific interventions, patient populations and outcome measures used, complicating comparison. The effects of manual therapy in particular tend to be short-term, and data on long-term outcomes and recurrence are more limited. The review combines diverse non-specific chronic neck pain presentations and emphasises widely studied interventions, potentially underrepresenting some approaches.

Standardised reporting of the specific manual therapy and exercise components used would also improve the comparability of future studies and help define optimal combinations [3], [4].

FUTURE SCOPE

Future research should clarify the optimal selection, combination and sequencing of manual therapy and exercise for individual patients with chronic neck pain, and identify which patients benefit most from particular interventions. High-quality trials with longer-term follow-up are needed to establish the durability of benefits and effects on recurrence, given the tendency of neck pain to persist or recur. Research into the integration of motor control training, education and psychological approaches within multimodal programmes would further inform practice, as would studies of home- and technology-supported delivery. Evaluation of patient-centred and quality-of-life outcomes, alongside pain and disability, would strengthen the evidence base for musculoskeletal physiotherapy in chronic neck pain.

CONCLUSION

Manual therapy and exercise are effective components of musculoskeletal physiotherapy for chronic neck pain, reducing pain and disability, and their combination is generally more effective than either alone, supporting a multimodal approach. Exercise has the strongest evidence and supports longer-term benefit, while manual therapy provides valuable short-term pain relief and may facilitate active exercise, and motor control training and education further address the multidimensional nature of the condition. An individualised, multimodal approach with active patient engagement is recommended. Further research is needed to optimise the selection and sequencing of interventions and to establish long-term outcomes in chronic neck pain.

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