



Neck and Shoulder Pain

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An Increasing Problem

Chronic neck and shoulder pain are two conditions often classified together, as the clinical phenotype has multiple similarities and can be difficult to differentiate. Neck and shoulder pain are, after low back pain, the most prevalent musculoskeletal pain conditions. In fact, pain arising from the neck and shoulder is highly prevalent in younger individuals, working populations, and the retired population. These pain conditions may be on the rise, highlighting the increasing burden on the global society. Neck and shoulder pain can be detrimental for the individual where a significant proportion are unable to maintain their previous work capabilities, have decreased physical function, and are at increased risk of experiencing psychological disturbances such as depression, anxiety, and vice versa [3,8].

A Multifactorial Problem

Chronic neck and shoulder pain encompasses a wide range of diagnoses, such as mechanical/insidious neck pain, whiplash, rotator cuff-related shoulder pain, frozen shoulder, and many more. Naturally, the development of chronic neck and shoulder pain is complex and can have multiple mechanisms of action, including, to a varying degree, biomechanical, immunological, genetic, psychological, and sociological mechanisms. While the role of biomechanical mechanisms, such as posture, is often debated, repetitive movements and overuse of the muscles and joints in the neck and shoulder region have been coined as key factors for developing pain [5]. Immunological and genetic factors may also contribute to the development of chronic neck and shoulder pain. Inflammatory conditions, such as rheumatoid arthritis, can affect the joints and tissues in the neck and shoulders, leading to persistent pain. Genetic predispositions to chronic neck and shoulder pain are a topic of increasing interest since they may lead to individualized strategies for the prevention and treatment of these pain syndromes [4,7]. Furthermore, psychological factors can play a role in the experience and perpetuation of chronic pain. Psychological stress, anxiety, and

depression can influence pain perception and further contribute to the development of chronic pain states [6]. Additionally, social and cultural factors may influence the expression and management of pain, including access to healthcare resources and social support systems. The interplay of these mechanisms underscores the complexity of chronic neck-shoulder pain, leading to the maintenance of altered nociceptive pain processing [9,10] and emphasizing the need for a multidimensional approach to its assessment and management [2].

One Size Does Not Fit All

Neck and shoulder pain is often treated through a plethora of different interventions ranging from non-invasive (e.g., exercise, manual therapy) to invasive interventions (e.g., surgery, injections, or medications). Exercise is often considered as the first line of care for most diagnoses of shoulder pain [11] and most diagnoses concerning neck pain [1]. However, it seems that exercise has limited effectiveness on pain and function for a substantial proportion of the affected individuals with neck and shoulder pain. Pain medications, including nonsteroidal anti-inflammatory drugs (NSAIDs), may provide temporary relief, but their long-term efficacy in managing chronic neck and shoulder pain is still under debate. Injectional therapies and surgery have shown to have limited to no benefits over placebo or sham groups, depending on the diagnosis. However, because of the potential for adverse events, these are rarely recommended unless other modalities have been tried for a longer period of time without success. Alternative therapies like acupuncture and massage therapy have gained popularity as adjunct treatments, but the evidence supporting these therapies is mixed, and more rigorous studies are needed to establish their efficacy [1,11]. Despite the available treatment options, our lack of understanding in terms of the underlying mechanisms complicates the effective tailoring of treatments to individual patients.

Secondly, the evidence base for many interventions is limited, with variations in study design, small sample sizes, and heterogeneous patient populations. More high-quality randomized controlled trials are needed to provide robust evidence for the efficacy and comparative effectiveness of different treatments. Furthermore, personalized approaches to treatment are lacking. Factors such as individual patient characteristics, comorbidities, and psychosocial aspects are important considerations that should be integrated into treatment plans. Developing targeted interventions that consider these factors can lead to more effective and tailored treatments for individuals with neck and shoulder pain. In conclusion, treating neck and shoulder pain requires a multifaceted approach, considering the specific needs and preferences of each individual.

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