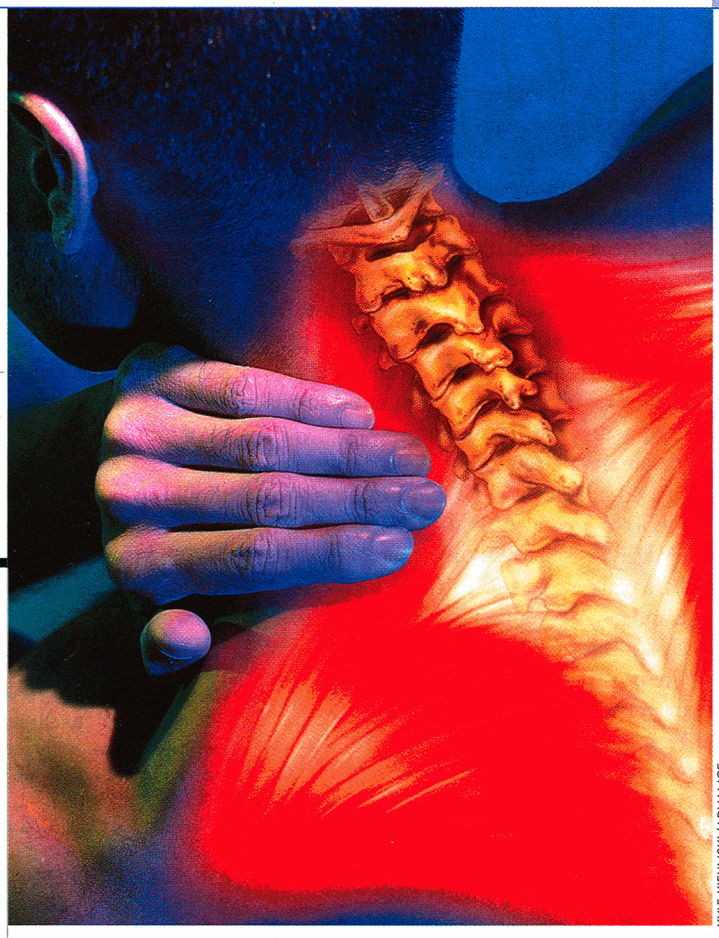
PAIN IN THE NECK

Neck sprains and strains are costly problems. Can you treat these injuries effectively and efficiently?



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Automobile accidents in the United States cost money.

Just take a look at the facts and figures. In 2000, approximately 5.5 million nonfatal injuries occurred and over $230 billion was spent because of automobile accidents. The costs of medical and productivity losses alone account for approximately $90 billion, which is almost 40 percent of total medical costs.[1]

Neck sprains and strains are among the most frequently reported injuries in auto insurance claims. In 2002, the National Highway Traffic Safety Administration reported that an estimated two-thirds of all insurance claimants with bodily injury liability coverage and approximately 50 percent with personal injury protection coverage reported a minor neck injury. Of those who reported a neck injury, one in three suffered a neck sprain or strain.

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The cost of the claims in serious neck pain cases exceeded $7 billion, according to the Insurance Research Council. In a Swedish study, one out of every two people who had neck pain following a motor vehicle accident continued to report pain and disability 17 years later.[2]

For rehab clinicians, these statistics illustrate the importance of applying the best methods of diagnosis and treatment, and then alleviating the burden that neck injuries place on patients, the health care system and society. Clinicians must find the most effective, efficient and fiscally responsible ways to hasten the healing process for patients with neck pain.

Patients who are suffering from a neck injury seek treatment at various stages of their condition, and clinicians need to recognize the characteristics associated with these stages. The term "whiplash" typically carries negative connotations, and it's often incorrectly used as a diagnosis. However, whiplash more accurately describes the mechanism of injury. Barnsley was one of the first researchers to define the term whiplash to accommodate various injuries associated with motor vehicle accidents.[3]

Whiplash and associated disorders (WAD) is now the more appropriate and accepted term.[3] Aside from the physical manifestations that arise from whiplash injuries, there may also be a concomitant negative psychological and social stigma that can affect a patient's outlook. In turn, this also affects a therapist's ability to treat the overall disorder.

WAD is difficult to treat because numerous tissues and structures may have been injured. After reviewing randomized controlled trials, the Australian Physiotherapy Association (APA) released a position statement supporting the use of a multi-modal approach and active exercise therapy to treat neck pain. (However, the APA didn't recommend using a cervical collar.)[4]

In addition, a systematic review by Kay et al. on 31 study subjects reported that 60 percent of neck pain patients responded positively to exercise therapy. Researchers saw an even stronger response from those who were treated with a multi-modal approach.[5]

To help treat patients with neck pain, some clinicians are turning to hi-tech options to diagnose and treat the condition. A multi-cervical unit that focuses on functional isotonic testing can evaluate cervical strength and range of motion by identifying direction-specific weakness of the cervical musculature. This type of device can also map the data into an appropriate treatment plan.

Robert DeNardis, BSc, a physiotherapist from Melbourne, Australia, developed the Melbourne protocol (TMP) to work in conjunction with a multi-cervical unit. He spent more than a year working with researchers at Latrobe University perfecting the construct validity of TMP and ensuring proper inter-rater and intra-rater reliability. The protocol measures strength of isometric flexion, extension and lateral motion, and range of motion for flexion, extension, lateral flexion and rotation.

A follow-up study at the Hong Kong Polytechnic University confirmed the initial reliability claims.[6] DeNardis also performed clinical studies to support the validity of evaluating strength loss of the cervical musculature. And his studies also demonstrated the effectiveness of neuromuscular re-education. Preliminary results showed that nearly two-thirds of people with neck dysfunction and pain improved over 60 percent of their perceived disability and more than doubled strength in the cervical musculature.

Recent reported outcomes by Keating confirmed that up to 56 percent of patients with chronic neck pain make statistically significant improvements by using a multi-cervical unit.[7] The Keating study used scoring tools, such as the neck disability index[8] and the symptom intensity rating tool. Clinicians were able to predict the most likely candidates who

would respond positively to this method of isotonic strengthening, with a 70 percent degree of accuracy.

This level of functional change achieved with the Melbourne protocol has proven to be twice as effective as other traditional therapeutic exercises and manual therapy techniques.[9-10]

As a treatment device and evaluation tool for cervical dysfunction, a multi-cervical unit promotes improved treatment outcomes and creates the opportunity for better, more advanced research-supported treatment.

But are chronic cervical problems the result of decreased strength alone? When clinicians have the tools to accurately assess cervical strength objectively and efficiently, the logical answer is yes. If a person presents with pain, loss of function and range of motion, most therapists generally conclude that there's a strong possibility of the presence of concomitant strength and neuromuscular deficits. Research shows that using technology-assisted evaluation and rehab devices enables clinicians to place more of a focus on safety, biomechanics and neuromuscular re-education.

In a University of Queensland study, investigators found that patients with neck pain demonstrated greater activation of accessory neck muscles during a repetitive upper limb task compared to asymptomatic controls. Greater activation of the cervical muscles in patients with neck pain may represent an altered pattern of motor control to compensate for reduced activation of painful muscles.[11]

It's important to emphasize correct muscle balance and postural symmetry to build a foundation that will allow strengthening to take place. During a strength progression, emphasis should be on maintaining an appropriate velocity of movement, along with postural stabilization of the deep cervical neck flexors. Clinicians should encourage patients to remain in control of weight and posture at all times.

With a proper evaluation and exercise program, patients can eliminate neck pain for good. ■

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