



# Musculoskeletal Monthly

*An evidence-based newsletter related to the management of musculoskeletal disorders*

Effective and cost efficient management of patients with neck pain and headache

Painful neck disorders are common, disabling, and costly.<sup>1-3</sup> Approximately 66% of the population will be affected sometime in their lives.<sup>3</sup> The economic burden due to neck disorders is high, second only to low back pain in annual worker's compensation costs in the United States.<sup>4</sup> An additional reason for concern is that the incidence appears to be rising.<sup>5</sup> Headaches, both chronic recurrent and occasional, are also a common complaint with a substantial personal and economic impact.<sup>6</sup> They may arise from musculoskeletal disorders of the cervicothoracic spine (cervico-genic and muscle tension type) and frequently are a concomitant complaint in patients with neck pain.<sup>7</sup>

Although neck pain can be due to serious disorders, the overwhelming majority of neck pain experienced by most patients seen in a primary care setting defies a specific pathoanatomic diagnosis.<sup>8</sup> Similar to low back pain, neck pain is most often attributable to mechanical factors and is frequently referred to as "mechanical neck disorders" or MND.<sup>9</sup> Imaging studies are typically not helpful in patients with non-traumatic MND as 14 – 28% of people without neck pain also demonstrate a wide range of abnormalities.<sup>10</sup>

Diagnostic findings in patients with MND are usually lacking, so what is the best way to manage patients with non-traumatic neck pain and associated headaches? One solution is a treatment based classification approach.<sup>11</sup> The primary goal of a classification approach is to identify subgroups of patients likely to benefit from a specific treatment. This allows clinicians to accurately match an individual patient's key

clinical finding to a specific treatment approach most likely to yield the best clinical outcome. While less developed than the classification system for low back pain, the following subgroups of MND have been proposed and are the topics of continued study: a) mobility intervention, b) directional preference exercise; c) endurance & conditioning exercise d); pain modulation; and e) associated headache intervention.<sup>11</sup>

Treatment of patients with MND varies, as might be expected given the non-homogenous nature of this patient group. The most commonly prescribed intervention for the management of neck pain by primary care practitioners is rest, followed by analgesics.<sup>12</sup> While this may be helpful in some cases, recent studies have shown that several interventions are more effective for reducing pain and disability. Among patients with neck pain, with or without headache, a combination of manipulation and mobilization to the thoracic and cervical spine (manual physical therapy) coupled with exercise is more beneficial than primary care management, medication, manual physical therapy alone, a variety of exercise approaches performed alone, or modalities.<sup>9, 13, 14</sup> Thirty-percent of patients treated with manual physical therapy and exercise experience a clinically important reduction in pain than would have occurred otherwise if patients were receiving an alternative treatment approach.<sup>9, 13</sup> In addition, 10% of patients treated with manual physical therapy and exercise experience a complete reduction in headache frequency than would have occurred if patients were receiving an alternative treatment approach.<sup>15</sup> The risk of serious injury due to cervical spine manipulation

is extremely low (estimates range from 6/10,000,000 to 1/400,000)<sup>16</sup> and may be avoided altogether (while still maintaining beneficial effects) when only the thoracic spine is manipulated.<sup>17</sup>

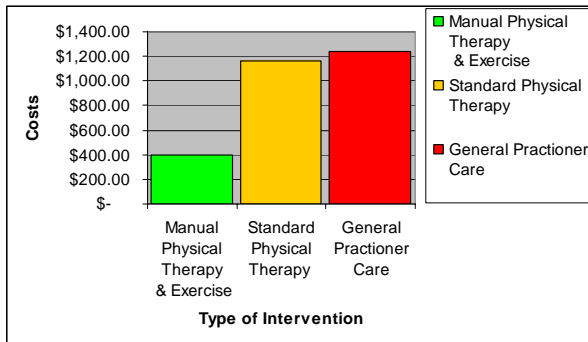
Cost and long-term benefit are two issues that must be considered with regard to treatment effectiveness. The long-term beneficial effects of manual physical therapy coupled with exercise for the treatment of MND continue to be observed 1 year later,<sup>9, 15</sup> and 2 years later more patients remain satisfied with their care compared to alternative treatment approaches.<sup>18</sup> In addition to better clinical outcomes, manual therapy coupled with exercise is **3 times** more cost-effective than primary care management alone or standard physical therapy. A 2003 study published in the *British Medical Journal* reported that over a 1 year period, patients with MND treated with 6 visits of manual physical therapy and exercise experienced a clinically important reduction in symptoms and incurred an average cost of \$402.00, compared to receiving exercise alone (cost=\$1,167.00) or primary care management (cost=\$1,241.00) to (figure)<sup>19</sup> The number needed to treat (NNT) with manual physical therapy and exercise to achieve a clinically important reduction in symptoms= 2.<sup>9</sup> This means that only two patients with neck pain need to be treated with manual physical therapy and exercise before realizing benefits beyond that of those treated with alternative interventions



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**Figure 1: Cost of Care for 1 Year Period**

Korthals-de Bos IB., Hoving JL, van Tulder, MW., et al. , Cost effectiveness of physiotherapy, manual therapy, and general practitioner care for neck pain: economic evaluation alongside a randomised controlled trial. *BMJ*. 2003;326:911-916

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