Author Response
Jurryt de Vries, Britta K. Ischebeck, Lennard P. Voogt, Malou Janssen, Maarten A. Frens, Gert-Jan Kleinrensink and Jos N. van der Geest

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We read the salient research report by de Vries and colleagues,1 unraveling an important clinical issue on nonspecific neck pain. Indeed, nonspecific neck pain is a common musculoskeletal disease affecting a multitude of people globally. It is reported that 48.5% of adults might experience neck pain during their lifetime.2 The study by de Vries and colleagues provides novel insights for the scientific community on increased cervico-ocular reflex in people with nonspecific neck pain.

We have several comments. First, participants with neck pain in the study experienced neck pain for less than 1 year. They might omit the minimal duration of neck pain. In fact, patients with neck pain for longer than 6 months are considered to have chronic neck pain with various risk factors, including female sex, older age, and high job demands.3,4 The underlying mechanisms of acute and chronic neck pain might be different and thus have an impact that cannot be ignored. Therefore, it might be more convincing to use stratified patient groups in terms of the duration of neck pain.

Second, Lee et al5 noted that cervicothoracic junctional structure is a reliable method predicting chronic neck pain in young adults. Moreover, the anteroposterior diameter of the thoracic cage is significantly smaller in patients with chronic neck pain in comparison with controls, in particular for women. It should be stressed that the thoracic cage acts as a fixed base for head and neck motion. Therefore, specific anatomic structures might contribute to the increase of cervico-ocular reflex in patients with neck pain.

Third, the authors drew the conclusion that people with nonspecific neck pain have an increased cervico-ocular reflex. We would raise the issue of the clinical significance of the conclusions. Given the prevalence of nonspecific neck pain, spinal surgeons might see a number of such patients in their outpatient clinics. Bearing the conclusions in mind, we would like to consult the expert authors: What should we instruct patients during doctor-patient interactive counseling? The issue might be important for both spinal surgeons and patients with neck pain.

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References


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We would like to thank Lan and colleagues for providing feedback on our recent publication in *Physical Therapy*. They raise some interesting points, which we address below.

The first point deals with the duration of neck pain in our patient group. We agree that it would indeed be very interesting to make use of stratified patient groups for factors such as duration of neck pain, age, pain levels, levels of dizziness, levels of disability, or, as mentioned, job demands. However, for this stratification, a larger number of people with neck pain is needed, including patients with chronic pain, as central mechanisms become disturbed in this group of patients in particular.3 This is likely to apply to the cervico-ocular reflex (COR) as well. We would like to mention an upcoming study from our research group in which we report differences in COR between people with chronic neck pain and traumatic neck pain. The focus of our present study was only to investigate possible differences in eye movement reflexes between people with nonspecific neck and controls. As we observed an altered COR, stratification of neck pain duration or a longitudinal design would be recommended in a future study to investigate a causal relationship between neck pain and altered COR.

In our present study, patients had a minimum duration of neck pain of at least 3 weeks, as all participants were recruited via physical therapist practices in Rotterdam, the Netherlands. This recruitment procedure meant that patients with neck pain were seen by a general practitioner and a physical therapist before they were referred to our research group. This minimum duration, therefore, was due to logistical reasons, which we could not control. We did control for age and sex as possible confounders.

The study by Lee et al5 showed that the anatomical aspects of the cervico-thoracic junctional structure are related to chronic neck pain in young adults. Although they did not show a causal relationship between anatomical aspects of the thoracic cage and neck pain, we believe that the suggestion of specific
anatomic structures affecting the COR changes in patients with neck pain is indeed quite interesting. Another interesting anatomical factor is the density of the muscle spindles of the neck muscles situated close to the spine (eg, longus colli and longus capitis muscles). Magnetic resonance imaging has shown that a widespread presence of fatty infiltrates in neck muscles is present in people with neck pain. These factors might be worthwhile to take into account.

Finally, our study did not primarily focus on clinical relevance but rather on changes in neurophysiological parameters such as the COR in patients with neck pain. Indeed, the functional effects of an altered COR in these patients need to be assessed. Moreover, as we observed a group effect, more research is needed before we can introduce individual tests, similar to, for instance, the gaze stability test, the eye-head coordination test, and the saccadic eye movement test described by Treleaven. When individual tests research shows positive results, this could become a part of the diagnosis and therapy in patients with neck pain, in particular for patients with concomitant symptoms such as cervical dizziness and decreased postural control.

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