Physiotherapy plus a craniocervical training programme was better than physiotherapy alone in tension type headache

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Q In patients with tension type headache (TTH), is physiotherapy plus a craniocervical training programme (CTP) more effective than physiotherapy alone for clinical outcomes?

### METHODS

#### Design
randomised controlled trial.

#### Allocation
(concealed)†

#### Blinding
blinded [data collectors and data analysts]‡.

#### Follow up period
6 months.

#### Setting
7 healthcare centres in the Netherlands.

#### Patients
81 patients (mean age 46 y, 81% female) with a diagnosis of TTH based on the International Headache Society classification (including the episodic and chronic versions). Exclusion criteria were the other headache types, cervical function problems, or previous physiotherapy treatment for TTH within 6 months.

#### Intervention
CTP, 10 min/session, twice a day at home, plus physiotherapy, (1–2 sessions/week, maximum 9 sessions)† (n = 39); or physiotherapy alone (n = 42) for 6 weeks. Physiotherapy included conventional Western massage techniques, oscillation techniques, and instruction on postural correction. The CTP was a craniocervical flexion exercise performed using a 150 cm latex band (Thera-Band, Resistive Exercise Systems; Hygenic Corporation, Akron, OH, USA; blue colour coded level of progressive resistance) that was used as a circular band, with 1 side positioned at the craniocervical region of the patient’s neck and the other side fixed above the horizontal; patients kept a sitting position while performing a slow and controlled craniocervical flexion over various ranges of motion. After 6 weeks of treatment, patients in the CTP group were asked to perform CTP ≥ 2 times per week.

#### Outcomes
headache frequency. Secondary outcomes included headache intensity and duration, and quality of life (Short-Form General Health Survey [SF-36]).

#### Patient follow up
96% (intention to treat analysis).

*See glossary.
†Information provided by author.

### MAIN RESULTS

After 6 weeks’ treatment, groups did not differ for headache frequency, intensity, and duration; CTP decreased headache frequency, intensity, and duration at 6 months (table). CTP also showed statistically significant improvement in 4 of 8 health domains based on SF-36 (mental health, emotional wellbeing, vitality, and bodily pain) at 6 months.

### CONCLUSION

In patients with tension type headache, physiotherapy plus a craniocervical training programme was better than physiotherapy alone for clinical outcomes.

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**Commentary**

The study by van Ettekoven and Lucas shows that a practical home-based exercise can decrease the strength and frequency of TTH. TTHs are common and disabling. How wonderful to have a treatment that the patient can self administer and that ameliorates headaches and reduces the need for medication.

Patients were referred to the study by general practitioners in the Amsterdam area. Referred patients probably tended to have more disabling or severe headaches. Indeed, 50% of patients in the study had chronic headaches. Although the mechanism of TTH is not known and may be multifactorial, the chronic and episodic TTH groups responded similarly in terms of frequency and intensity reduction at 6 weeks. If anything, patients with more frequent TTH may be harder to treat, and the intervention may actually be more helpful than reported.

There were no statistically significant differences between groups at the end of 6 weeks. The active treatment group was advised, however, to continue the craniocervical exercises using the latex band. Although the value of this intervention can be explained mechanically, there was no direct comparison to a placebo—a physical manoeuvre that looked similar. Could patients have done a different, perhaps even an opposite, manoeuvre with the latex band and achieved the same results?

This study builds upon previous work showing the value of physical treatments. Spinal manipulation may be helpful in the treatment of TTHs, and other physical interventions have similar, though weaker, evidence to support their use. But this craniocervical training is cheap and self administered. This exercise offers great potential for people who suffer from TTHs.

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### Headache outcomes

<table>
<thead>
<tr>
<th>Headache outcomes</th>
<th>Mean changes (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>At 6 weeks</strong></td>
<td></td>
</tr>
<tr>
<td>Frequency (d/wk)</td>
<td>0.94 (0.71 to 1.18)</td>
</tr>
<tr>
<td>Intensity (0–10 scale)</td>
<td>−0.04 (−1.09 to 1.01)†</td>
</tr>
<tr>
<td>Duration (h/d)</td>
<td>−0.18 (−2.07 to 1.70)†</td>
</tr>
<tr>
<td><strong>At 6 months</strong></td>
<td></td>
</tr>
<tr>
<td>Frequency (d/wk)</td>
<td>1.95 (1.14 to 2.76)</td>
</tr>
<tr>
<td>Intensity (0–10 scale)</td>
<td>1.78 (0.82 to 2.74)</td>
</tr>
<tr>
<td>Duration (h/d)</td>
<td>2.07 (0.12 to 4.03)</td>
</tr>
</tbody>
</table>

*CI defined in glossary. †Not significant