Abstract Title: A novel approach to head and neck stretching for people with headaches

Poster #: F10

Participants
Victoria E. Karian, MSN, CPNP, Pediatric Headache Program, Boston Children's Hospital, Boston, MA
Jonathan Rabner, MA, Research Coordinator, PHP, Boston Children's Hospital
Olivia Bou, BS, Administrative Assistant, PHP, Boston Children’s Hospital
Alyssa Lebel, MD, Clinical Director, PHP, Boston Children's Hospital

Background: Neck pain is highly prevalent in the general population and even more prevalent in individuals with primary headaches. Patients with headaches of all kinds often have tightness in the occipital area and trapezius/paracervical muscles. For so many people who use hand-held electronics, especially teenagers, posture has been adversely affected from the constantly forward flexion of the head, neck and shoulders. Visits to Physical Therapy can be time-consuming and costly for busy families, leading to decreased compliance. We developed a series of head and neck stretching exercises that can be easily taught in the office setting, with their basis in yoga. The ease and convenience of performing these exercises make them a low-cost adjunct or alternative to formal Physical Therapy. Neck stretching exercises are an effective method for treating primary headaches.

Methods: Participants were 43 patients, ages 13-22 years, with increased tone in the trapezius and paracervical muscles, and/or occipital neuralgia, identified during a routine office visit in the Pediatric Headache Program. A series of 6 exercises are taught, using demonstration/return demonstration, with written instructions given for home, with special instructions to emphasize avoidance of overstretcheshing the neck and shoulder. Patients are instructed to do these exercises (whichever are most helpful to the particular patient) regularly as well as during times of increased headache or neck/shoulder pain as a part of their rescue plan. At their next visit, the patient filled out a brief survey about their compliance and effectiveness of these exercises in reducing their discomfort.

Results: Of the 43 patients taught these exercises, 36 patients reported actually utilizing the exercises. Sixty-seven % of patients reported utilizing the exercises “a couple of times/month,” 11% reported utilizing “1 day/week,” and 22% reported utilizing the exercises “3-4 days/week.” The exercises helped “reduce tightness, stiffness or tension” in 78% of patients, helped “reduce headache pain” in 22% of patients, and helped 30% of patients “feel better.” Finally, significantly more patients reported that the exercises “reduced headache pain” in those who reported weekly usage or greater (41.7%) compared to those utilizing the exercises “a couple of times/month” (12.5%; p < .05).

Conclusion: Head and neck stretching exercises, learned in the office, using a firm ball and written instructions to take home, can be an effective intervention for prevention and treatment of headaches and neck pain. Patients are happy to be taught these exercises and to get a ‘parting gift’ of a firm ball to use. Families are happy with a tool to use at home for prevention and intervention, without having to find time for attending Physical Therapy and the associated costs of the visits. This intervention can be useful for those patients with significant but not debilitating neck pain and headache who are self-motivated to do them on a regular basis. Patients with severe neck issues or other comorbidities should be referred to Physical Therapy.

No funding was received for this initiative.
**OBJECTIVE**
To evaluate the effectiveness of at-home neck stretching exercises for treating primary headaches.

**BACKGROUND**
- Patients with headaches of all kinds (migraine, tension-type, new daily persistent, post-concussion) often have tightness in the occipital area and trapezius/paracervical muscles.
- Neck pain is highly prevalent in the general population from the use of hand-held electronics due to chronic forward flexion of head, neck and shoulders.
- Visits to Physical Therapy can be time-consuming and costly for busy families, leading to decreased compliance.
- A home exercise program of head and neck stretching exercises with their basis in yoga, taught in the office, may be an effective and low-cost alternative to formal Physical Therapy, with better compliance.

**METHODS**

| Participants : | 43 patients, ages 13-22 years, with increased head and neck tone/tenderness, seen for routine office visit in the Pediatric Headache Program. |
| Procedure: | A series of 6 exercises are taught, using demonstration/return demonstration, with written instructions given for home, with special instructions emphasizing avoidance of overstretching the neck and shoulder. A brief survey is filled out about their compliance and the effectiveness of these exercises in reducing their discomfort and headache at their next follow up visit. |

**EXERCISES**

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheek Roll</td>
<td>Sit with your elbows on a table and place your head in your hands, with your palms cradling your cheekbones and fingers on your forehead. Rock your head back and forth in your hands to ease facial or sinus pressure.</td>
</tr>
<tr>
<td>Chair Neck Stretch #1</td>
<td>Sit upright in a straight back chair, legs at 90 degrees. Hold onto the sides of the chair with arms directly under your shoulders. Gently lean first to the left, then to the right, gently stretching your head and neck, keeping yourself in a straight line. Hold for 5 seconds only!</td>
</tr>
<tr>
<td>Chair Neck Stretch #2</td>
<td>Sit upright in a straight back chair, legs at 90 degrees. Hold onto the chair with your hands at the bottom back of the chair. Gently lean forward first towards the left knee, then repeat towards the right knee, stretching your head and neck but not collapsing your back. Hold for 5 seconds only!</td>
</tr>
<tr>
<td>Forehead Roll</td>
<td>Use your firm ball, yoga block or a book wrapped in a towel. Place your forehead on the ball, block or book and slowly roll back and forth to release forehead muscles.</td>
</tr>
<tr>
<td>Back Ball Roll</td>
<td>Using a small firm ball, place the ball at the occipital ridge at the back of your head. Gently move your head back and forth, rolling the ball around under your skull.</td>
</tr>
<tr>
<td>Shoulder Stretch</td>
<td>Stand next to a wall, perpendicular and 6-12 inches away with your arm above your head on the wall and out straight. Allow your shoulders to be soft, bringing your shoulders away from your ears. Hold 5-10 seconds. Then move your arm back to a new position and hold 5-10 seconds. Re-adjust again and hold for 5-10 seconds. Repeat on opposite side. Don’t overstretch; stop and readjust if it causes pain or numbness.</td>
</tr>
</tbody>
</table>

**RESULTS**

- Of the 43 patients taught these exercises, 36 patients reported actually utilizing the exercises.
- Significantly more patients reported that the exercises “reduced headache pain” in those who reported weekly usage or greater (41.7%) compared to those utilizing the exercises “a couple of times/month” (12.5%; p < .05).

**Patient Feedback**

| Patients endorsed that the exercises helped “reduce tightness, stiffness, or tension” | 77.8% |
| Patients endorsed that the exercises helped “reduce headache pain” | 22.2% |
| Patients endorsed that the exercises helped them “feel better” | 30.6% |

**CONCLUSION**
- Head and neck stretching exercises can be an effective intervention for prevention and treatment of headaches and neck pain.
- Patients and families are happy with a tool to use at home for prevention and intervention, without having to find time for attending Physical Therapy and the associated costs of the visits.
- This intervention can be useful for those patients with significant but not debilitating neck pain and headache who are self-motivated to do them on a regular basis.
- Patients with severe neck issues or other comorbidities should be referred to Physical Therapy.

**REFERENCES**


**Acknowledgements**

Thank you to Maggie Sky, MA, RYT for her input and support, and the staff and patients of the Pediatric Headache Program at BCH in Waltham.