Headache is a common symptom reported in the population. The World Health Organization Global Burden of Disease study estimated that 47% of adults report headache at least once in the past year.\(^1\) Direct and indirect costs associated with headaches is in the billions of dollars in the US.\(^2\) Headache is a frequent reason patients seek out complementary and alternative medicine providers.\(^3\) The diagnosis is commonly reported by CHP providers including chiropractors, naturopathic physicians and acupuncturists.

Headache can result from a wide variety of causes, mostly benign but some life threatening. The International Classification of Headache Disorders, 3rd edition (ICHD), classifies headache broadly in 2 categories: primary and secondary. Primary headache disorders include migraine and tension-type headache. Secondary headaches are caused by a wide variety of mechanisms ranging from serious medical conditions such as meningitis, subarachnoid hemorrhage, ruptured aneurism, and intracranial tumor, trauma, and others due to less serious disorders such as substance use or withdrawal, medication over use (rebound headaches), sinusitis, influenza, “ice cream” headache (brain freeze), hangover, and disordered function of the musculoskeletal elements of the head and neck, which is the focus of this Clinical Pathway.

Sjaastad et al, offered an hypothesis for “cervicogenic headache” in 1983.\(^4\) The diagnosis of “cervicogenic headache” has been somewhat controversial in the conventional medical community.\(^5\) \(^6\) \(^7\) \(^8\) But there is emerging evidence that supports the view commonly held by manual therapists that the neck is a commonly encountered source of headache.\(^9\) The International Classification of Headache Disorders now recognizes cervicogenic headache as a distinct entity and classifies it as a secondary headache, “attributed to a disorder of the neck.”\(^10\) A more descriptive classification defines it as a “chronic headache that arises from the atlanto-occipital and upper cervical joints and perceived in one or more regions of the head and/or face.”\(^11\)

Clinicians have described headaches related to neck problems for 100 years. For the last 3 decades the term cervicogenic headache (CGH) has been used to describe head pain that originates in the cervical spine. Like other non-specific spine pain conditions, there is lack of agreement regarding the etiology. Diagnostic criteria have been proposed\(^12\), but in the absence of definitive objective tests for diagnosis, CGH is ruled in, and treatment chosen, based on the
patient’s subjective report of pain patterns. To confound the clinical picture, neck pain is also common in “primary” headaches such as migraine, making it difficult to determine which came first, neck pain or head pain.

Although the evidence for treatment of CGH is limited in general for both conventional and complementary medical treatment, the evidence for manipulative interventions is greater than that which supports most medications, injections and surgery. A recent trial compared the effects of upper cervical and upper thoracic manipulation to mobilization and exercise in 110 individuals with CH. The results demonstrated that patients with CH who received cervical and thoracic manipulation experienced significantly greater reductions in headache intensity, disability, headache frequency, headache duration, and medication intake as compared to the group that received mobilization and exercise; furthermore, the effects were maintained at 3 months follow-up.

Subjective Findings and History
- May or may not have a history of head/neck trauma
- Intensity, character, location, radiation, and duration
- Frequency, timing, and onset
- Aggravating and alleviating factors
- TCM ten questions: eyes, ears, digestion, urination
- The headache is often described as originating in the upper thoracic or cervical spine with radiation to the head
- A steady, non-throbbing pain at the back and base of the skull, sometimes extending down to the neck and between the shoulder blades
- The pain can also be located in the supraorbital or frontal region
- Pain can start after a neck movement or sustained posture
- Other symptoms can include those usually associated with primary headache including: nausea, vomiting, dizziness, blurred vision, sensitivity to light or sounds and feeling pain down one or both arms

Objective Findings
- Restricted cervical range of motion and increased sensitivity to pressure algometry
- Upper cervical spine tenderness
- Active trigger points in the spine with referral to the head
- Muscular tension of upper trapezius, levator scapulae, scales and suboccipital extensors
- Cervical, upper thoracic, costovertebral dysfunction/subluxation
- Positive flexion/rotation test

Assessment
- Rule out “red flags”. Patients with one or more red flags should be referred for an immediate consultation and further investigation. The mnemonic “SNOOP” can be helpful to remember some of these “red flag” elements:
o **S:** Systemic sign of symptoms - headache associated with fever, neck stiffness, skin rash, and with a history of cancer, HIV, or other systemic illness;

o **N:** Neurologic signs or symptoms - headache associated with focal neurologic signs other than typical aura, e.g. hemiparesis, hemisensory loss, diplopia, dysarthria;

**O:** Onset - sudden onset of a new severe headache “worst headache of life” that reaches peak intensity in seconds to minutes (e.g. “thunderclap headache”).

o **O:** Older Age – new onset headache >40 years of age.

o **P:** Progression of existing headache disorder - a worsening pattern or progression of a pre-existing headache in the absence of obvious predisposing factors;

Most clinical guidelines stress the lack of objective means for testing and diagnosing cervicogenic headache. They rely instead on an experienced clinician to perform accurate and comprehensive physical exam and patient history to differentiate from primary and other forms of headache. In this context, the guidelines frame the consultation as a means to differentiate headaches as:

- **Tension-Type Headache**
  - Bi-lateral, throbbing type pain without nausea
  - Most common type of headache, often not severe enough to warrant physician consultation

- **Migraine Headache, including most “sinus headaches”**
  - Uni-lateral pulsing type pain, with photophobia or nausea
  - Most common reason for patients to consult a physician for headache treatment

- **Cluster Headache**
  - Uni-lateral pain, lasting longer than 60 minutes, with 1-8 attacks per day
  - Moderate or severe headache triggered by cough, exertion, or bearing down;
  - New onset of a headache during or following pregnancy

Identify pain generator, e.g. trigger point location, segmental dysfunction

The TCM view of headache has three primary etiological factors, each with unique pattern diagnoses: 1) external pathogens (e.g. wind-damp-cold), 2) internal disharmony (e.g. liver Qi disharmony), or 3) lifestyle imbalances (e.g. Qi deficiency). Headache pain, as a symptom, indicates a stagnation in the movement of qi and blood. The specific pattern differentiation of these imbalances is based on the nature and location of the pain, along with secondary symptoms that may occur.

**Plan**

- Spinal manipulative therapy (SMT)\(^{20,21}\)
- SMT combined with exercises e.g. deep neck flexor exercises, education may be more effective than SMT alone\(^{22,23}\)
- Analgesics
- Corticosteroid injection\(^{24}\)
- Magnesium
- Trigger point injections
- Consider treating temporomandibular joint adjunctively
- Stress reduction
- Biofeedback
- Postural changes as needed
- Acupuncture

**Outcomes Assessment**
- Visual analog pain scale (VAS)
- Headache diary
- Headache disability index (HDI)
- Patient Specific Functional Scale
- Measure Yourself Medical Outcome Profile (MYMOPS)

**Referral Criteria**
- “Red Flags” require immediate referral
- Failure to respond to 3-6 weeks of treatment, referral to appropriate medical specialist, e.g. neurologist.

**Resources for Clinicians**

DynaMed Headache (requires registration)
[http://web.ebscohost.com.liboff.ohsu.edu/dynamed/detail?vid=3&hid=123&sid=b272789a-177d-4f18-9db2-b32368281e22%40sessionmgr104&bdata=JnNpdGU9ZHluYW1lZC1saXZlJnNjb3BlPXNpdGU%3d&db=dme&AN=114773](http://web.ebscohost.com.liboff.ohsu.edu/dynamed/detail?vid=3&hid=123&sid=b272789a-177d-4f18-9db2-b32368281e22%40sessionmgr104&bdata=JnNpdGU9ZHluYW1lZC1saXZlJnNjb3BlPXNpdGU%3d&db=dme&AN=114773)

**Resources for Patients**

National Center for Complementary and Integrative Health (part of the National Institute of Health) - [https://nccih.nih.gov/](https://nccih.nih.gov/) - Search for “Headache”

**The Evidence**


**Clinical Pathway Feedback**

CHP desires to keep our clinical pathways customarily updated. If you wish to provide additional input, please use the e-mail address listed below and identify which clinical pathway you are referencing. Thank you for taking the time to give us your comments.

Clinical Services Department: providers@chpgroup.com

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14 Haldeman S. Dagenais S. op.cit.
BMC Musculoskeletal Disorders.