Soft Tissue Management of Headaches
By Adrian Repka

In this article Adrian Repka explains how soft tissue therapists are in a good position to not only effectively address headaches, but also educate clients about ways to decrease the frequency and intensity of their headaches.

Headache, defined literally, as a ‘pain in the head’, has been termed the most common medical complaint of civilised humanity. Fifty-seven per cent of men and 76 per cent of women report having at least one significant headache per month, with headache responsible for more than 18 million annual medical visits in the United States, 156 million full time work days lost yearly, and an estimated cost of $25 billion dollars lost in productivity.

Given this level of impact, it is interesting to note that most who suffer headache often do not seek out any form of professional help, beyond occasional assistance from their GP. For many, the initial warning signs of headache are often a trigger to take pain killers, but do little else to address the issue.

This approach is a limiting one, dealing solely with symptoms, and contributes in large to the current excessive consumption of over the counter (OTC) medication, with headache suggested to be the most common reason for use of OTC analgesic medication.

Soft tissue therapists are perfectly placed to not only effectively address headaches, but more importantly, educate clients as to how to significantly decrease the frequency and intensity of their headaches, and in some instances eliminate them completely. The reason for this is because, in the vast majority of cases, headaches are muscular in nature. With a little understanding of the range of different types of headaches, and how to assess for benign versus more serious forms of headache, the soft tissue therapist is well placed to manage this condition.

Headaches can be broadly categorised into 4 groupings:
2. Traction: intracranial tumours, oedema, abscesses, haematomas, haemorrhage.
3. Muscle contraction headaches ie. tension headaches.
4. Other: depression, diseases of the eye/ear/nose/throat/teeth, infection, arteritis/phlebitis, atypical facial pain, temporomandibular joint disease.

The categories other than ‘muscle contraction’ lie outside of the domain of the soft tissue therapist, and are indications for referral. While it is not the intent of this article to differentiate signs and symptoms for all of these groups, the most effective way of determining whether someone suffering headache should be referred is to ask a series of simple questions, and based on response, either refer or treat.

Headaches should be cause for concern, and for referral, when the case history of the sufferer reveals:
1. Any severe sudden headache (rather than gradual onset).
2. Any headache accompanied by convulsions.
3. Any headache followed by fever (headache and fever often go together, but a fever following a headache may imply other more sinister systemic causes).
4. Headache accompanied by mental confusion, drop in conscious awareness, decrease in alertness.
5. Headache accompanied by localised pain (headaches are normally diffuse).
6. Severe headache following a blow on the head.
7. Headache starting in an older person who has not experienced frequent headaches before.
8. Recurring headaches in children. (Occasional headaches in a child are not uncommon, frequent headaches are a concern.)
9. Headaches at any age which interfere, on an ongoing basis, with normal living. (This could be benign, but is a trigger to consider possible sinister causes.)
10. Daily or frequent headaches (especially those that wake the sufferer at night and are not responsive to treatment.)
11. A long standing headache that suddenly changes its pattern.
12. Any headache aggravated by coughing, stooping or straining, and unremitting in nature.
13. Any headache that awakens the patient at night, and is of a consistent nature.

Of these four groups, as mentioned previously, the most common is the muscle contraction headache, with a prevalence ranging from forty to eighty per cent of all headaches, and this is a category that can be dealt with very effectively by soft tissue therapists. Because of this prevalence, referral for headache is normally not necessary due to this low incidence of serious cause.

Muscle contraction headaches have many synonyms and ‘sub’ categories, but the underlying cause, or symptomatology, will have a muscular component. A number of mechanisms of aetiology for muscle tension headaches have been proffered, some with solid research to support claims, others less well researched.

Muscle tension headache can be due to the involvement of a muscle independent of other structures, such as in a trigger point referral (masseter and SCM being two examples), or it may be due to the involvement of the muscle with other structures in the cervical region.

The former, that of trigger point referral, is well understood by soft tissue therapists as a part of their normal training, and therefore will not be dealt with here.

The second category, that of muscle involvement with other cervical structures resulting in headache, is less commonly addressed.

Two structures that have been implicated in muscle tension headache (and have been suggested as being the possible primary causes of muscle tension headache) are that of the involvement of the greater occipital nerve (C2) and of the connective tissue bridge between rectus capitus posterior minor and the dura mater.

Greater Occipital Nerve.
The Greater Occipital Nerve (GON), C2, has long been suggested as a cause of headache, due in part to the typical headache symptomatology that may be elicited when the C2 nerve is compressed.

The GON winds a tortuous course through a number of cervical muscles on its exit from the spine up to the occiput. Along this course, there are a number of soft tissue structures that may result in impingement of this nerve, giving rise to symptomatology typical of muscle tension headaches (pain beginning in the neck, moving to occiput, and in some instances to frontal region).

The GON exits the spine, wraps around the obliquus capitus inferior muscle, travels cephalad and pierces the semispinalis muscle, and then the trapezius at the occiput.

The nerve can become entrapped at one or all of these major locations, creating headache symptomatology.

The mechanism by which the pain is triggered is debatable. Headache frequency has been demonstrated to increase in patients with occipital nerve irritation however, the exact mechanism by which it is suggested that this occurs is not conclusive. What is indicated via research however is that by minimising the restrictions at these locations, headache symptomatology may also be minimised.

Research conducted on chronic headache sufferers had good success in eliminating headaches when applying a nerve ‘block’ (administration of Xylocaine) to the C2 nerve. The effect of the block was short lived however, and symptoms returned as the effect of the block dissipated. This treatment though was then followed up with a surgical ‘neurolysis’ technique to areas of C2 entrapment (in essence, a separation of the nerve from surrounding muscle) which resulted in longer headache free periods. Pain patterns returned to many of the subjects over time, however it was acknowledged that the only areas where the nerve was ‘released’ was at the trapezius and semispinalis levels, not to locations more proximal (i.e. Obliquus capitus inferior).

Other researchers have had similar success with C2 blocks, in some instances obtaining long term relief from headaches.

The Dura Mater
While the spinal cord is in itself a pain insensitive structure, the covering of the cord, the ‘mater’ is highly pain sensitive. The outer layer of this covering, the dura mater, had been believed to be to be an independent structure from the external components of the cervical spinal canal.

However in 1995 the presence of a soft tissue bridge between the rectus capitus posterior minor muscle and the dura mater was reported.

It has been suggested that this connection, the ‘myodural bridge’, acting as a dynamic connection, may transmit abnormal levels of tension from hypertonic suboccipital muscles to the pain sensitive dura, resulting in symptomatology typical of headache.

In chronic headache patients who have been identified as suffering headaches of muscular involvement, surgical treatments that have severed the myodural bridge have resulted in significant relief of symptoms, reinforcing this concept.

The above two suggested aetiologies of muscle tension headaches highlight an important role for the soft tissue therapist.

If relief from muscle tension headache can be obtained by separating adhesions of the C2 nerve from underlying soft tissue structures, and by decreasing tension between muscles and the dural bridge, it is reasonable to suggest that soft tissue therapists may well be able to replicate similar results with their clients by manually decreasing tension between cervical muscle structures and other soft tissue components such as nerve and connective tissue.

Soft tissue therapists have for a long time been aware of the efficacy of their treatments on headache, the above physiological and anatomical descriptions may explain how this occurs.

A typical algorithm for the safe and effective management of a client suffering headache may well proceed as follows:

1. Screen the client for possible ‘sinister’ causes of headache. Refer when appropriate, or decide to treat.
2. Assess for indicators that suggest possible muscle involvement:
   i) decreased range for occipital and cervical joints especially in cervical/occipital rotation and lateral flexion (rectus capitus posterior minor)
   ii) pain upon palpation to muscular structures, especially the suboccipital group taking note of reproduction of symptoms.
3. If positive for number two above, treat with focus to cervical and paracervical musculature, especially to suboccipital group.
4. Re-assess during and at the completion of treatment, taking note of change in occipital and cervical range of motion and decrease to client’s headaches symptoms.
5. Client education:
   i) alert client to the role of posture, stress, inactivity etc and its role in increasing muscle tension and therefore increasing the predisposition to headaches of this nature
   ii) instruct the client on a heat and stretching protocol for the cervical and paracervical musculature to minimise muscle tension and therefore predisposition to headaches of this nature.
6. If no change occurs after a conservative course of treatment – refer the client for further management.

The predominance of headache within our society makes this condition one of the most frequent and consistent reasons that clients present to soft tissue therapists. We are very well placed to assess and treat muscle tension headaches safely and effectively. We also have an important role to play in screening our clients for headaches that may be of a more serious nature, and referring accordingly.

Adrian Repka is a practicing Remedial Massage Therapist and Chiropractor, and is also the Program Co-ordinator of the Myotherapy Program at RMIT.

His special interest area is in the treatment and management of systemic conditions via chiropractic and soft tissue intervention.

References: