

Does your headache after workouts?

Sports related headache

Headache following exertion has been documented to have been described by Hippocrates¹. The most common differentiation in medicine is defining headaches as migraine or tension-type. The latest research and some top headache experts do not see such a clearly defined distinction. Many headaches people may deem “normal” represent migraine-type headaches. Migraine can be considered an episodic brain issue; anyone at one time or another can experience a migraine headache. It is the ongoing occurrence that sets the migraine patient apart.

Statistics show that 3 % of children can experience migraine, 7-11 % of adolescents. During puberty, migraine occurrence increases in women; by adulthood, migraine in women is nearly 18% while only 6 % in men. Incidence is most significant between the ages of 20-40 and decreases dramatically after age 60.

The **International Headache Society** has set forth the following criteria for migraine: 1.) at least five attacks lasting 4-72 hours (untreated or unsuccessfully treated); 2) two of the following characteristics: unilateral, throbbing, moderate to severe intensity, aggravated by routine activity and 3.) one or more of the following: nausea, vomiting, phonophobia, photophobia².

Understanding what causes migraine headaches. Two theories are accepted: 1.) neurovascular inflammation and 2.) Serotonin dysregulation. Other research shows that the brain is hyper-excitabile between attacks. The cause of this may be magnesium deficiency or mitochondrial dysfunction. Magnesium deficiency is prevalent in most of us, especially athletes. Athletes’ daily magnesium requirements are much higher due to the rigors of exercise on muscle tissue. As many as 30 % of migraine sufferers have been found to have low levels of intracerebral magnesium.³

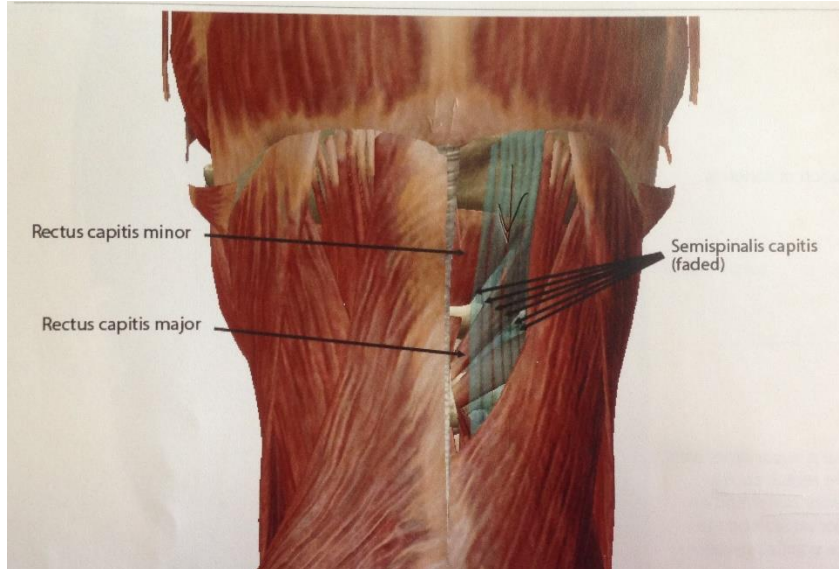
Sports Related Headache

These headache types can be broken down into four categories⁴:

1. Exertional Headache
2. Prolonged exertion as a trigger for migraine
3. Trauma-triggered migraine
4. Posttraumatic headache.

Exertional headache is bilateral, throbbing, often moderate to severe pain behind the eyes. This type is the most common in recreational athletes; we will focus more on this headache type. These typically last 5-24 hours following heavy lifting or strenuous exercise. The mechanism for these headaches is an increase in tightening of the posterior musculature of the neck and the muscles on the sides of the neck (sternocleidomastoid). As these muscles over-tighten, they compress the cervical vertebrae, joints, and discs. More importantly, they can compress the occipital nerves, which sit at the base of the skull within the suboccipital triangle. These triangles sit on either side of the back of the head and are formed by four small muscles forming a triangle at the base of the skull. These muscles attach to the first two

cervical vertebrae and the bottom of the skull, and they are responsible for most of the rotation of your head. These muscles become shortened with prolonged periods of poor posture (think computer guy). Then during a heavy lifting session, they can become even tighter, generating a headache ranging from nagging to seriously painfully nauseating and debilitating.



Computer Guy

Patients over 50 who experience exertional headaches should have a cardiac evaluation to rule out myocardial ischemia (low oxygen flow). Myocardial ischemia is a treatable form of exertional headache.

Effort migraine or prolonged exertional migraine can be seen in some predisposed to migraine due to exercise. Additional triggers like dehydration, low blood sugar, excess heat, and altitude may play a role.

Trauma Triggered Migraine is typically seen in children, adolescents, and young adults after a mild blow to the head. Symptoms include temporary vision changes, changes in the level of consciousness, severe headache, nausea, and vomiting. Symptoms typically start 1-10 minutes after the blow and usually resolve in 24 hours. These posttraumatic attacks may be mistaken for cerebral concussion, contusions, or acute epidural or subdural hematoma.⁵⁻⁷

Posttraumatic Headache implies the onset of headache after injury. Typical onset is within 14 days after injury. As with trauma-triggered migraine, these headaches may need medical evaluation, depending on the persistence of symptoms. Most high school, collegiate, and pro-level athletes undergo a preseason mini-mental evaluation and baseline SCAT3 (Sport Concussion Assessment Tool 3rd edition). Athletic trainers and team physicians can use these baselines to determine return to play status and other treatment options, including monitoring the athlete.

What to do:

Treatments can be divided into nonpharmacological and pharmacological.

Magnesium supplements 200-400 mg daily of a good magnesium supplement that includes a combination of (magnesium aspartate, glycinate, and gluconate).

Active Release Techniques Manual Release treatment, combined with manipulation, is highly effective and safe in reducing the soft tissue and joint dysfunction contributing to exertional headaches.

Corrective exercises to rehabilitate posture and strengthen deep flexor muscles of the neck are also very important.

On the medical side, some medications can temporarily modulate headache symptoms if headaches are at least twice per week and are not quickly aborted. Many patients often do exceptionally well combining conservative manual treatment/manipulation with short-term medication use.

Some types of medication prescribed:

Calcium channel blockers: are typically used to address pain generators by decreasing the irritability of tissues. Nifedipine and Verapamil are commonly used.

Selective Serotonin Reuptake Inhibitors

Indomethacin: acts as an anti-inflammatory and antagonist for nitric oxide to address vasodilation.

Post Workout Exertional Headaches can affect many athletes. Conservative treatment is highly effective and should be first in line for treatment options. The key is to seek a practitioner skilled at soft tissue treatment, manipulation, and functional rehabilitative exercises. Combining all three of these components leads to the best outcomes.

References

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