

Curing Headaches: Get Your Life Back!

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About...

If you suffer from tension headaches, this guide will help you get your life back: have that glass of wine, play a game of tennis, or put in overtime at the office without worry...

You were up late last night and awoke with an achy head. Now you fear that the headache will worsen and spread through the day, robbing you of enjoying your planned activities. Instead, you spend 15 minutes applying the techniques in this guide to relieve headache tension. Soon there is only a dull ache which vanishes by noon.

Part I of this guide will help you understand why you awoke with a tension headache and why the headache can worsen and spread. You will learn the causes and the anatomy of a tension headache.

Part II turns this understanding into a treatment regimen which halts headache pain and promotes awareness of the tension cycle that may otherwise cause the headache to return. A related prevention procedure will greatly reduce your likelihood of waking with a tension headache or developing one during the course of the day.

The regimen presented here can be applied without outside assistance, at any time. It centers on an easy 10-15 minute *Passive Stretching* technique which relaxes tight muscles to *attack the root cause of tension headaches*. When integrated with common pain-relief remedies and physical and mental relaxation techniques, the result is an effective and wide-ranging solution to tension headaches.

This guide focuses on common tension headaches, which affect most adults at one time or another with varying degrees of intensity. Severe headaches or those of a chronic (daily) nature may require diagnosis and treatment by a medical professional.

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PART I: UNDERSTANDING TENSION HEADACHES

Part I of this guide discusses headache triggers and the anatomical workings of a tension headache. This understanding will help you apply the techniques in Part II, relieving and preventing tension headaches.

1. Types of Headache

- Tension
- Migraine
- Cluster
- Sinus
- Illness and Injury

Medical science does not yet fully understand the mechanisms which cause all headaches, but the following classification is generally agreed upon. This classification is based on the source of headache pain: muscle inflammation, blood vessel dilation, and pressure and inflammation in the sinus cavities.

Tension

This guide focuses on tension headaches, which are caused by *unmanaged tension in the muscles of the neck, face, and scalp*. This is the most common type of headache, affecting most adults at one time or another. About 3% of the population suffers chronic (more than 15 days a month) tension headaches, with the frequency highest among women. While less severe than migraine headaches, tension headaches can last for hours or days and often make it difficult to perform daily activities. The discomfort and stress can cause secondary symptoms such as upset stomach and nausea. Tension headaches are frequently confused with migraines.

Chapter 2 details the mechanism by which tension builds up and produces pain, and Chapter 3 considers several common sources of tension. Part II of this guide presents an effective regimen for the treatment and prevention of tension headaches.

- Cause** : tension in the muscles of the neck, face, and scalp
- Severity** : mild discomfort to constant, moderate pain
- Frequency** : episodic or chronic
- Affects** : most adults
- Treatment** : pain medication, heat, cold, massage

Migraine

Migraine headaches are thought to arise from imbalances in chemicals affecting the nervous system. These result in *inflamed tissues and dilation of blood vessels*, producing pain. This mechanism may be triggered by a variety of sources including stress, hormonal changes, physical exertion, changes in the weather, sensory stimuli, and certain foods and medications. The pain can be incapacitating and accompanied by nausea and extreme sensitivity to light and sound.

Migraines typically begin in childhood or early adulthood, with frequency usually decreasing with age. They affect an estimated 17% of females and 6% of males at one time or another. Chronic sufferers should refer to a medical practitioner for treatment.

Migraines are sometimes accompanied by tension headache, or produce a secondary tension headache as a response to stress and pain. In such case treating the tension headache may help reduce severity. Migraines are also frequently confused with tension headaches.

Cause : inflammation and blood vessel dilation

Severity: moderate to incapacitating

Frequency: episodic or chronic

Affects : about 10% of children and adults, more common among females

Treatment: preventive and pain medications, rest

Cluster

Cluster headache is a rare condition most found in men age 20 to 40. It is characterized by attacks involving a "cluster" of several successive headaches. The cluster period may last for weeks or even months, followed by a lengthy remission period. Each headache may last for 15 minutes to several hours, and is typically described as a very sharp pain on one side of the head.

The root cause of cluster headache is not well understood, but is believed to result in *dilated blood vessels* (as with migraine headaches) in the region of the eye, resulting in intense pain.

Cause : inflammation and blood vessel dilation

Severity: incapacitating

Frequency: chronic in cycles

Affects : rare, most common among men

Treatment: pain medication, oxygen, surgery

Sinus

Sinusitis (sinus infection) results in *pressure and inflammation in the sinus cavities*, often resulting in a sinus headache. Sinusitis itself is usually associated with nasal congestion brought on by allergies or a cold. Less commonly an injury or structural abnormality in the nasal region can result in sinus pressure and headache. Migraine is often mistaken for sinus headache because of the similarity of its symptoms.

The most common treatment for sinusitis is a course of antibiotics, accompanied with pain-relief medication. Once the infection has cleared the pressure and inflammation recedes.

As with other illnesses, the pain and discomfort of sinusitis may trigger a secondary tension headache. In this case partial relief may be obtained by following the techniques outlined in this guide.

Cause : pressure and inflammation in the sinus cavities

Severity: protracted, moderate pain

Frequency: about 10% of the population has at least one sinus infection per year

Affects : some individuals are more prone to sinus infection than others

Treatment: antibiotics, pain medication

Illness and Injury

Many illnesses are accompanied by headache symptoms. *Commonly the stress and discomfort of a cold or influenza result in a tension headache*, which may be treated effectively as such. A cold often results in sinus infection and an accompanying sinus headache, as discussed above. Furthermore, some medications used to treat illness have headache as a side effect.

Some serious illnesses have headache as a primary symptom. **Meningitis** (infection in the brain) is an extremely fast-acting and often fatal illness. *It must be diagnosed and treated with emergency medical care* when symptoms -- such as severe headache and neck stiffness -- become apparent. A **brain tumor** will also produce headache and *must be diagnosed early to improve the chances of successful treatment*. A **stroke** may be accompanied by severe headache as well as affected movement and sensation, and is also an *emergency situation*. These illnesses are rare compared to tension and migraine headaches.

Headache can also be a consequence of head injury such as concussion or cranial bleeding. Such cases may be accompanied by fainting or impaired vision. Serious head injuries can be life-threatening and require immediate medical diagnosis and treatment.

2. Anatomy of a Tension Headache

Inflammation and self-perpetuating tension
Muscles of the face and scalp
Headache pain and muscle tension

Inflammation and self-perpetuating tension

Protracted muscle tension leads to sore, inflamed muscles. This is generally attributed to a buildup of lactic acid and tiny tears in the muscle tissue. As the pain becomes more noticeable the body sometimes reacts involuntarily to **increase** -- rather than decrease -- muscle tension. The increased tension causes more pain and a leads to a *cycle of self-perpetuating pain and tension*.

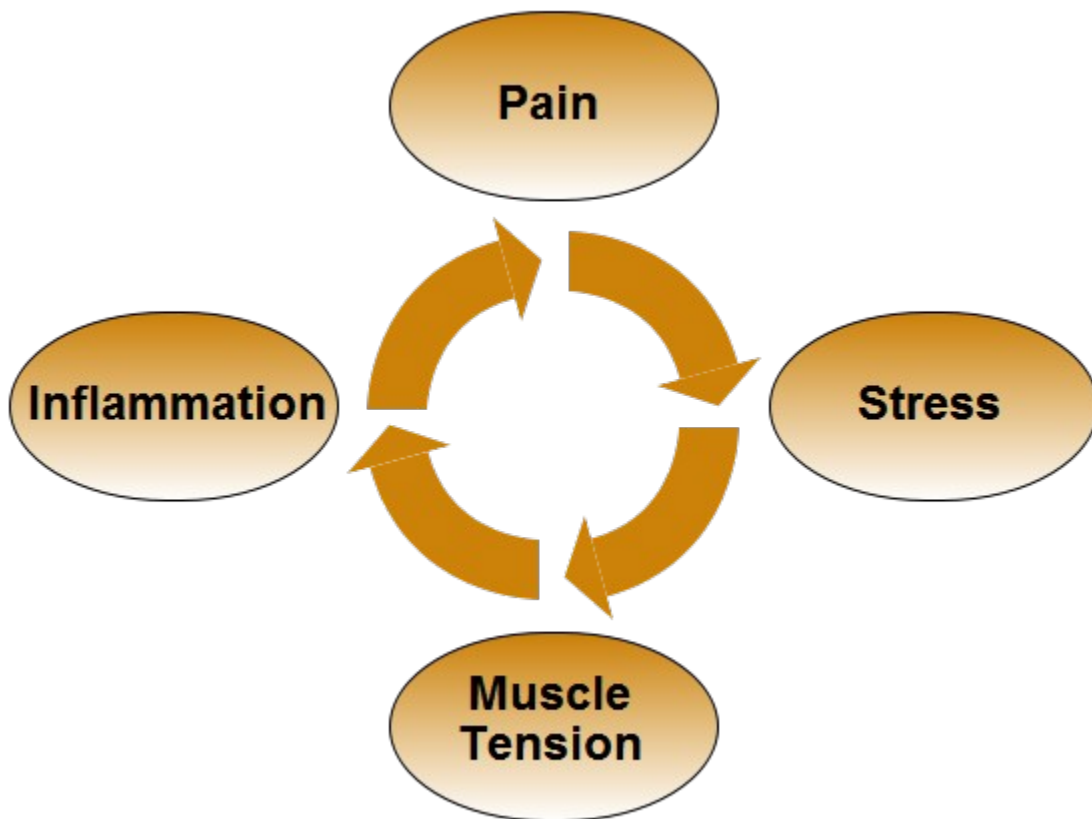


Figure 1. Cycle of self-perpetuating pain and tension

One mechanism for this involuntary increase in muscle tension is emotional stress, which

occurs when physical pain reaches a threshold. *The body's reaction to stress is muscle tension*, often in the region of the brow, jaw, scalp, neck, shoulders, and back. If the original tension and pain was itself in one of these regions, then a self-perpetuating cycle occurs: muscle tension causes pain which causes emotional stress, and this stress elevates muscle tension further.

Another mechanism for involuntary muscle tension is related to muscle cramps. Tense, overused muscles experience restricted blood flow, inflammation, and *confused neural signals*. The nervous system mistakenly escalates muscle tension, manifesting in a muscle cramp. The muscle cramp causes further muscle overuse, perpetuating itself.

Muscles of the face and scalp

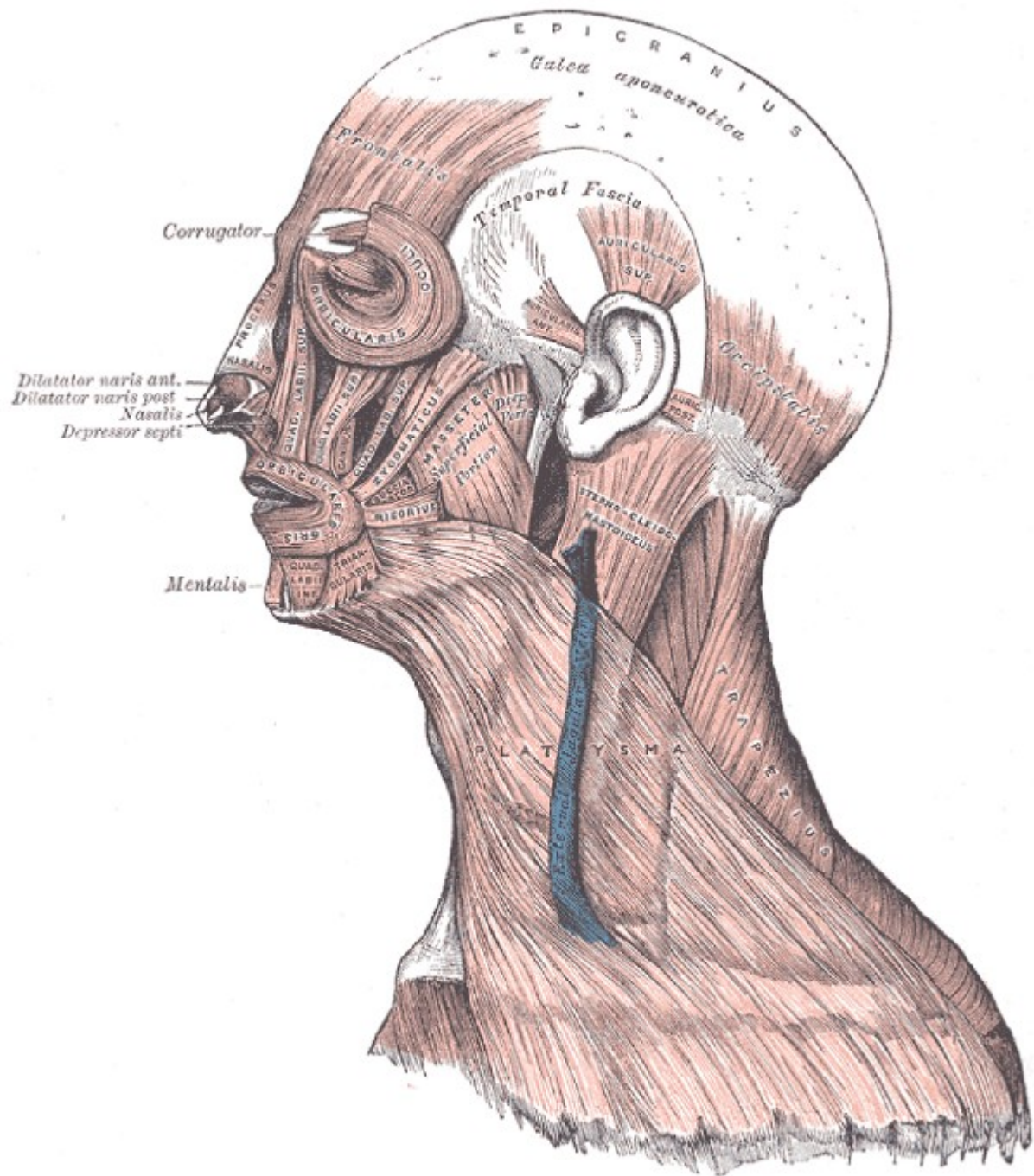


Figure 2. Muscles of the Face and Scalp. From "Anatomy of the Human Body", Henry Gray, 1918

Figure 2 (from Gray's classic medical text) illustrates the muscles of the face and scalp. Most of the head is blanketed by muscles, and pain in any part of the head can often be attributed to inflamed muscles in that region or a neighboring region. Of special interest

are the following muscle groups, which come into play during occasions of pain and stress:

Occipitalis. This muscle attaches the base of the skull to the **galea aponeurotica**, a moveable, fibrous layer covering the top of the skull. It acts to draw the scalp back, and connects indirectly to the frontalis.

Frontalis. The frontalis muscle runs vertically on the forehead, and raises the eyebrows when contracted. It attaches directly to the procerus, corrugator, and orbicularis oculi muscles in the brow and attaches to the galea aponeurotica at the top of the forehead. For this reason *the frontalis experiences secondary tension when muscles in the face or the back of the head are excited.*

Brow muscles: Corrugator, Depressor Supercilli, and Procerus. These muscles attach the brow to the nasal bone. Contraction of these muscles draws the eyebrows down at varying angles, *something which occurs during the act of concentration or during expressions of pain or anger.*

Orbicularis Oculi. This muscle encircles the eye and is responsible for *squinting or wincing*, among other actions.

Zygomatic Major. This muscle is responsible for smiling and *grimacing* actions.

Masseter. The masseter muscle attaches at the cheek bone and the mandible (lower jaw), and is used when *clenching the teeth.*

Temporalis. The temporal muscle is a broad disk-shaped muscle which radiates inward near the ear, and attaches to a tendon which ultimately reaches down to the mandible. In this way tension in the temple is related to *clenching the teeth* as well.

Headache pain and muscle tension

The act of *concentration* is usually accompanied by a furrowed brow (frontalis and brow muscles). A person under *emotional stress* often expresses this with clenched teeth (masseter and temporalis), furrowed brow (frontalis and brow muscles), and stiff shoulders and neck (occipitalis). The *expression of pain* further includes wincing and grimacing actions (orbicularis oculi and zygomatic muscles).

As prolonged use causes these muscles to become fatigued and inflamed, pain in the forehead, face, temple, and/or back of the head arises. Furthermore, many of these muscles are interrelated, causing *tension and pain to spread* to neighboring muscle groups. A tension headache results, and may last for several hours due to its self-perpetuating nature.

The next chapter discusses sources for muscle tension, while Part II of this guide presents

techniques to relieve tension headaches by addressing the tension, pain, and inflammation of the associated muscle group.

3. Sources of Tension

- Emotional stress and worry
- Sleep habits
- Physical exertion
- Mental exertion
- Alcohol
- Illness
- Pain and discomfort

Tension in the muscles of the face, head, and neck is usually an involuntary side-effect of emotional or physical "triggers". Common triggers are emotional stress, altered sleep habits, physical exertion, alcohol, and other sources of pain and discomfort.

Some of these are also considered triggers for migraines, producing direct or indirect dilation of blood vessels in the head rather than or in addition to tension-induced pain.

Emotional Stress

As mentioned in Chapter 2, muscles in the forehead, face, temple, and back of the head are frequently tensed in response to emotional stress: a furrowed brow, clenched jaw, hunched shoulders/stiff neck.

Furthermore, *emotional stress can lead to other forms of physical discomfort* such as upset stomach and racing pulse. This physical discomfort often furthers muscle tension.

Common sources of emotional stress are: schoolwork or career concerns, financial worries, family disputes or tragedies, friends and relationships, and concerns about self-image.

Sleep Habits

Changes in sleeping patterns are a source of physical discomfort and produce heightened muscle tension.

Another source of headache is the absence of conscious awareness of muscle tension during sleep. *Tension which is present when falling asleep often persists through the entire night*, resulting in severely inflamed muscles.

Sleep position and mattress type are also common factors in tension headaches, since these may promote muscle tension or physical discomfort during sleep.

A common pattern is as follows: following an insufficient night of sleep, physical discomfort causes muscle tension in the face and temples to develop during the course of the day. This tension persists during the next long night "catching up" on sleep, and a tension headache is present the following morning -- when the individual had hoped to awaken refreshed.

There is also a strong correlation between disrupted sleep patterns and migraine and cluster headaches.

Physical Exertion

Many types of physical exertion *directly involve the muscles of the shoulders and neck*. Tension in these muscles may cause tension in the neighboring muscles in the head, leading to tension headache.

Poor posture can also cause overuse of the muscles in the upper back and neck, with headache a common side-effect.

Prolonged physical exertion is also a direct cause of physical discomfort and pain, which leads to muscle tension in the head and face as noted earlier.

Mental concentration -- on its own or as part of physical work -- is often accompanied with a "purposeful" furrowed brow, clenched jaw, and tense neck. Thus prolonged concentration may lead to tension headache.

In addition to many sports and labor-intensive occupations, physical activities which are commonly listed as headache triggers include: yardwork, travel, chronic cough, and sexual activity.

Increased blood flow during physical activity is also associated with migraine "exertional headaches".

Mental Exertion

The "purposeful" furrowed brow, clenched jaw, and tense neck accompanying mental concentration involve many of the major facial and scalp muscles detailed in Chapter 2. *Prolonged mental concentration is a common and well-known cause of tension headache.*

Mental activities which are commonly listed as headache triggers include: taking exams, job interviews, working under deadline, prolonged reading, and playing video games.

Alcohol

A frequently-cited cause of headache is *alcohol hangover*. The mechanism is varied, including elements of dehydration, low blood sugar, chemical imbalance, inflammation, nausea, disrupted sleep patterns, dilated blood vessels, and emotional stress. Both tension and migraine headache triggers are present.

The acute stress and discomfort of hangover is a primary cause of secondary muscle tension and tension headache.

In one common scenario, the depressant effect of alcohol masks tense muscles in the face and scalp and contributes to falling asleep very quickly, without the opportunity to first relax these muscles. They remain tense throughout the night, further exacerbated by decreased sleep quality. This results in a tension headache the following morning.

Some people associate headache with even small quantities of alcohol, particularly red wine. This is generally attributed to inflammation and considered a migraine trigger.

Illness

The overall discomfort of any illness can cause tension in the face and scalp, and can lead to tension headache.

The *common cold* is frequently accompanied by headache. Probably the most direct mechanism is tension headache brought on by discomfort, fatigue, and stress. Another contributing factor to cold-related headache is that of sinus headache, due to pressure and inflammation in the sinus cavities. Migraine headache may also result from dilation of blood vessels brought on by inflammation and fever.

Some medications used to treat illnesses list headache as a side effect. As with alcohol, the effects of medications are varied and in many cases can promote tension headaches.

Pain and Discomfort

People express pain and discomfort by tensing the muscles in their face, head, and neck, which can cause tension headache if left unchecked. Many of the sources listed above produce headache through this mechanism. Other common sources of pain and discomfort include:

- Hot and cold weather
- Bright lights
- Loud sounds
- Toothache

Indigestion
Nausea

Bright light is particularly irritating, since the "*squinting*" expression involves tension in the facial muscles and may directly produce a tension headache. Bright light is also considered a trigger for migraine headaches.

Similarly, toothache is frequently responsible for a tension headache located in the neighboring facial muscles. The relationship of the temporalis muscle with the jaw also may result in headache in the temple region.

PART II: TREATMENT AND PREVENTION

Part II of this guide draws upon the understanding of tension headaches presented in Part I. You will combine common headache remedies with the Passive Stretching technique to halt muscle tension. You will also learn daily routines to prevent headaches.

4. Treatment

- Medication
- Cold Therapy
- Heat Therapy
- Rest
- Massage
- Muscle Relaxation
- Mental Relaxation
- Passive Stretching

This chapter describes benefits and drawbacks of common remedies for tension headache, including medication, cold packs, massage, and relaxation techniques. The final section describes a manipulation technique to halt involuntary muscle tension, which we refer to as *passive stretching*. Chapter 5 will describe a treatment regimen which focuses on passive stretching but which combines the strengths of all of these remedies.

Medication



Figure 3. Pain medication

Probably the most commonly-used remedy for headache is pain medication. Pain

medication works on two levels: it directly reduces the pain of the headache and in doing so helps *break the cycle* of discomfort-induced tension which would otherwise perpetuate the tension headache.

Typical over the counter pain medications are acetaminophen (such as Tylenol), ibuprofen (such as Advil and Motrin), and aspirin. (Aspirin is not recommended for children.) Medications require up to an hour to take effect and may have side effects such as dizziness or upset stomach.

Pain medication is an important and powerful first step for treating tension headaches, however it does not directly address the source of tension headache and is often only partially effective or temporary when used on its own.

Cold Therapy



Figure 4. Cold therapy

A classic solution to headache is the cold pack. This works by *numbing the pain* of the headache and helps break the cycle of discomfort-induced tension characteristic of tension headaches. Cold therapy also reduces swelling and irritation in injured muscles. It serves as an effective alternative to pain medication.

A gel-based cold pack with fabric sleeve is particularly effective since it conforms to the head's contours. The sleeve prevents excessive cold, which might otherwise promote tension. If cold produces discomfort, an increase in muscle tension may result and the treatment will be ineffective.

As with pain medication, the beneficial effects of cold are temporary and do not directly address headache tension. Therefore it is most effective as a first step in the headache treatment regimen.

Heat Therapy

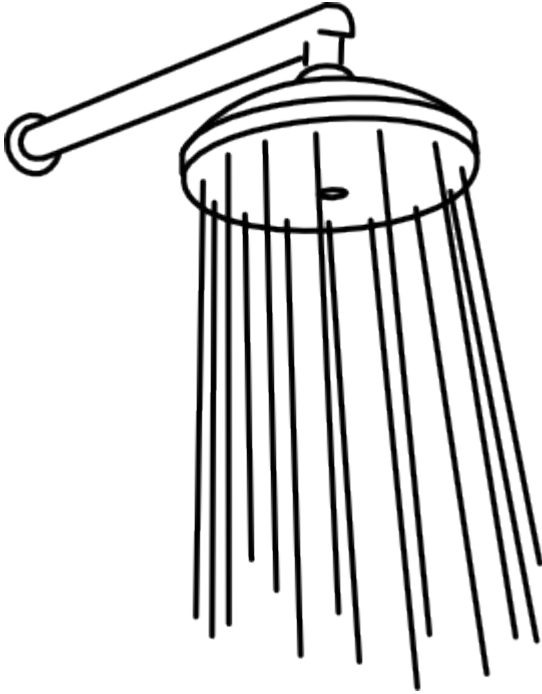


Figure 5. Heat therapy

Heat and cold are both useful for treating different aspects of tension headaches. Heat works by *soothing physical and mental stress* and by *relaxing muscles and increasing circulation to affected areas*.

As with cold treatment, excessive or poorly-administered heat can increase discomfort levels and propagate headache tension and pain.

Heat therapy is an effective step for headache treatment before discomfort has reached the pain threshold, or after topical pain relief (through medication or cold therapy) has taken effect.

Rest

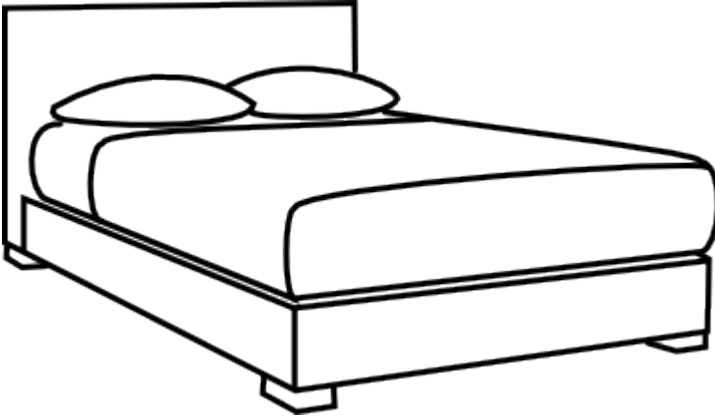


Figure 6. Rest

Time and rest eventually resolves any tension headache, except in chronic cases. *Rest allows inflamed muscles to relax and heal*, and helps break the cycle of pain and tension. In cases where the headache was brought on by illness or injury or fatigue, rest allows the body to remedy the source of the headache.

However, at times sleep may have the opposite effect. If muscles in the face and scalp *remain tense during sleep*, the sufferer awakens with a headache of renewed intensity.

An awareness of the body's ability to heal itself will relieve stress and promote self-confidence. By understanding the amount of time required for healing, you will become more successful applying headache treatments.

Massage



Figure 7. Head massage

Gently massaging tense muscles can help *loosen tension and promote circulation*. This is a well-known remedy and can be very effective, particularly when performed by a trained individual.

Massage is most effective before discomfort has reached the pain threshold or after topical pain relief has been applied. If headache pain is too intense, muscles may be sensitive and massage may produce pain and act to increase tension.

Muscle Relaxation

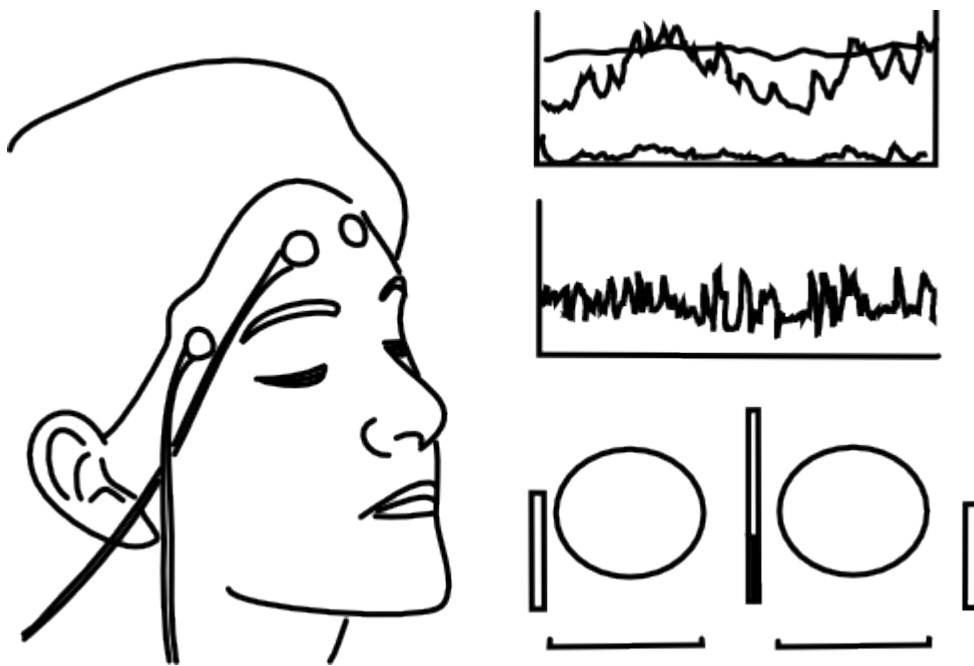


Figure 8. Biofeedback

Relaxation training can help the individual to become conscious of muscle tension and to learn ways of *consciously relaxing muscles*, either directly or indirectly. Techniques go under a variety of names and may fall under the banner of standard medicine, physical therapy, osteopathic manipulation, holistic/alternative medicine, yoga, or massage. Examples include biofeedback (usually by training awareness using scalp electrodes or temperature sensors) and progressive muscle relaxation (learning to tense and relax specific muscles).

Though initially difficult to grasp, the essence of relaxation training -- learning to consciously relax muscles -- is simple and makes for a powerful tool to overcome tension.

Mental Relaxation



Figure 9. Yoga/meditation

Techniques for mental relaxation provide relief from emotional stress and help prevent fatigue. These techniques appear in various settings, such as meditation, prayer, yoga, insomnia treatment, and behavioral therapy and counseling. As with muscle relaxation, the essence is simple: to clear the mind and enter a more relaxed state.

Mental relaxation techniques are learned with practice and self-discipline and may be challenging to young children. They require time to take effect and may be difficult to perform in the presence of pain.

Nonetheless, mental stress is often the root cause of muscle tension. Mental relaxation is an important element throughout the headache relief regimen and is helpful in the prevention of tension headaches.

Passive Stretching



Figure 10. Myofascial release

Passive stretching, as used here, refers to external manipulation of muscles in order to promote relaxation. It is a proven massage technique sometimes referred to as Shiatsu stretching and also falls under the scope of physiotherapy and myofascial therapy.

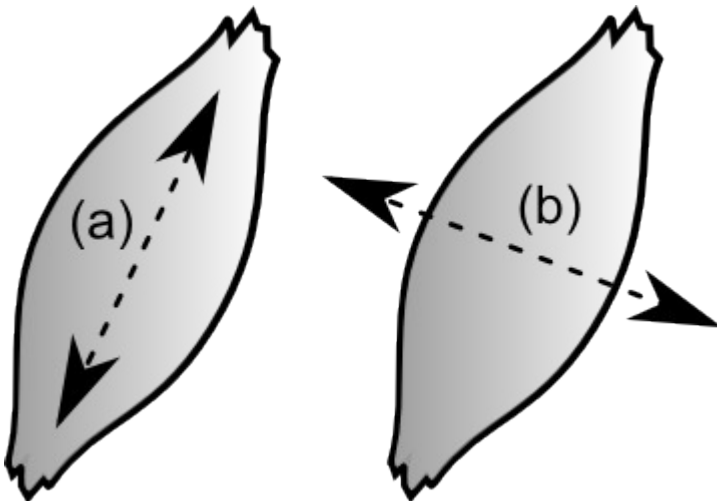


Figure 11. Manipulation to stretch affected muscles, (a) against direction of contraction, (b) lateral to direction of contraction.

Tensed muscles are gently *stretched* using *one or both hands*. The stretching is typically

in the opposite direction of the muscle contraction (Figure 11a) or at a right angle to the direction of contraction (Figure 11b). This serves to counteract the contraction impulse and to force the muscle to relax, in a similar manner to stretching one's calf muscle to halt a leg cramp.

A secondary benefit of this manipulation is greater *awareness of and conscious control over muscle tension*. This helps in learning techniques associated with muscle relaxation.

Passive stretching is only effective in the context of an understanding of the mechanism of tension headaches, as in Part I of this guide. This is important because *muscle pain does not disappear when the muscle stops doing work*. Rather, a period of 10 to 20 minutes is required to begin healing inflamed tissues and to allow pain to subside. Since the presence of pain can cause tension to return, muscle tension must be controlled for at least this period of time for the technique to succeed.

By directly halting muscle tension, passive stretching is central to the relief of tension headaches. It can be effective even during a severe headache, but is most successful as part of a regimen involving topical relief and relaxation. The following chapter details such a regimen.

5. Regimen for Relief

Topical relief
Passive Stretching
Muscle relaxation
Mental relaxation

This chapter presents a regimen for relieving tension headaches, combining the best features of the treatments in Chapter 4. This regimen is broken into four steps:

- **Topical relief.** Before attempting to relax the muscles it is often helpful to numb the pain using medication or a cold pack
- **Passive Stretching.** The muscles are manually stretched to halt their involuntary contraction
- **Muscle relaxation.** Awareness and soothing help muscles remain in a relaxed state until the inflammation has subsided
- **Mental relaxation.** To promote awareness and avoid tensing muscles again

These steps work together to provide relief over a broad range of circumstances. Topical pain relief makes the remaining steps more comfortable and effective. Passive stretching halts muscle tension. Muscle relaxation and mental relaxation allow healing to occur so that pain will not return. These steps may be performed in sequence or simultaneously. It is often possible to skip one or two steps: with practice you will be able to relieve many headaches without need for topical relief. Figure 12 illustrates the relationship between these steps and highlights the cyclical nature of easing headache pain.

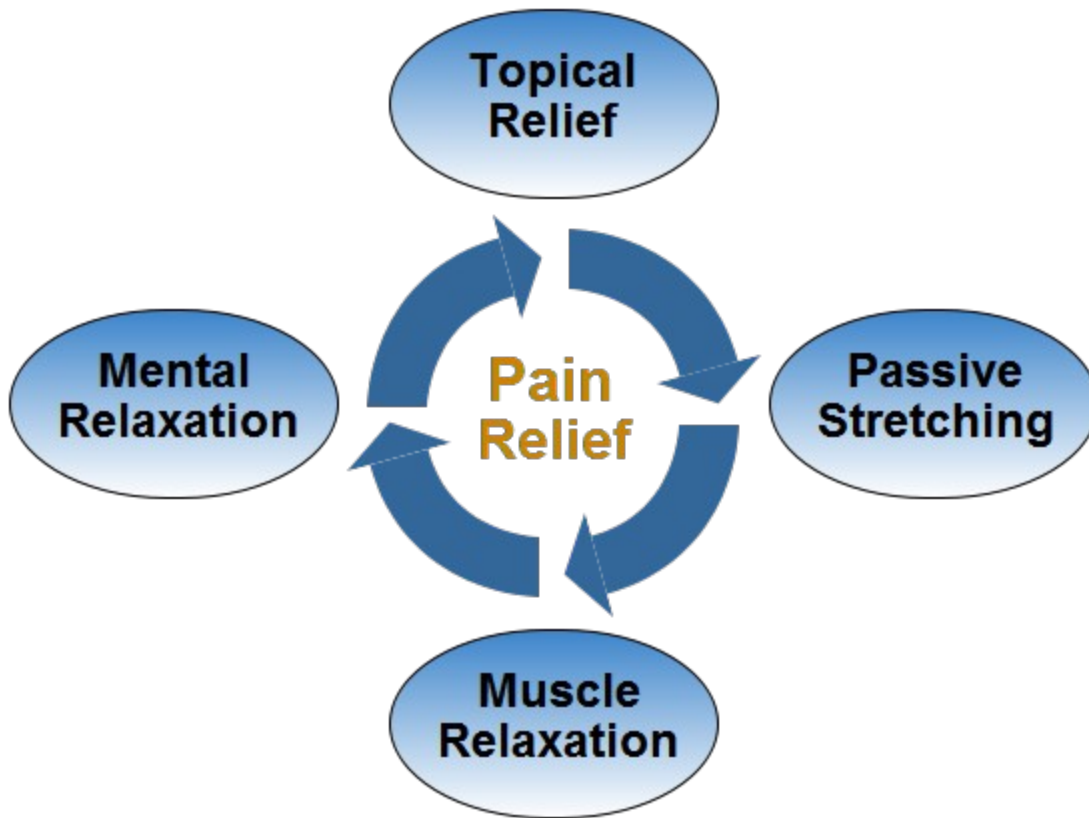


Figure 12. Steps in Regimen for Relief of tension headaches

Step 1. Topical Relief

If the headache is pronounced, then some form of topical pain relief is the first step in relieving tension. Topical relief does not remove the cause of tension headache, but *makes the remaining steps in this regimen more effective by breaking the cycle of pain-induced tension*. In some cases no further treatment is necessary.

Use one or both of these pain remedies:

- Pain medication
- Cold pack

Pain medication (usually acetaminophen, ibuprofen) should be taken at the onset of headache. Most pain medication requires 30 to 60 minutes to become effective.

A gel-based **cold pack** is best used with a thin fabric cover and applied directly to the

part of the head or face where pain resides, for 2-5 minutes. Avoid lengthy application, which may promote discomfort. If the cold causes immediate discomfort and increased tension, then try wrapping the pack in an additional layer such as a thin dish towel. Use a dry washcloth between your hand and the cold pack if it is uncomfortable to hold.

As pain subsides in the treated area, reposition the cold pack to other sources of pain. This treatment will begin numbing the pain in a matter of minutes, but its effect is temporary and the cold pack becomes less effective as it warms.

Step 2. Passive Stretching

Manually stretching the affected muscles will halt their involuntary contraction so that healing can begin. This involves gently *stretching the skin neighboring the muscles* using your fingers or the palm of your hands.

Don't give up if the headache does not immediately subside. Headache pain does not disappear immediately when muscle contraction has ceased. Tension must be controlled for a period of 10 to 20 minutes to begin healing inflamed tissues. It is normal to experience a lingering ache or stiffness even after this period, particularly if a strong headache has just subsided.

Use these guidelines to make passive stretching more effective:

- *Apply a cold pack or pain medication first* (Step 1) if manipulation causes pain
- Dampen your hands with water or use a washcloth to avoid dry hands slipping on the skin of your face or scalp
- *Use a clock or timer* to ensure treatment lasts at least 10 minutes
- For head support, apply the techniques symmetrically to both sides of the face/head even if the headache is localized to one side
- Verify that the stretched muscle has relaxed by consciously tensing and relaxing this muscle (Step 3)
- Have patience and apply mental relaxation (Step 4) during manipulation
- Follow up with muscle relaxation and mental relaxation (Step 3 and Step 4) to allow healing and prevent recurrence

The following are techniques for each of the four regions in which tension headache pain is localized: the temples, the forehead, the eyes/face, and the back of the head. (Refer to Figure 2 for an illustration of the underlying facial and scalp muscles.) Often more than one region is involved, since the tension can spread in response to discomfort.

Temples and Side of Head (Square Pattern). Seated or lying on your back, place the palms of both hands on either side of your head. Gently stretch the scalp toward the top of your head and hold this position for one half minute. Gently stretch toward the forehead for one half minute. Gently stretch down toward your jaw for one half minute.

Gently stretch toward the back of your head and hold for one half minute. Repeat part or all of this cycle as needed, repositioning your palms or fingertips as you become aware of the location of headache pain. Attempt to consciously tense and relax the affected muscles to verify that tension in the temples has ceased. Avoid excessive pressure.

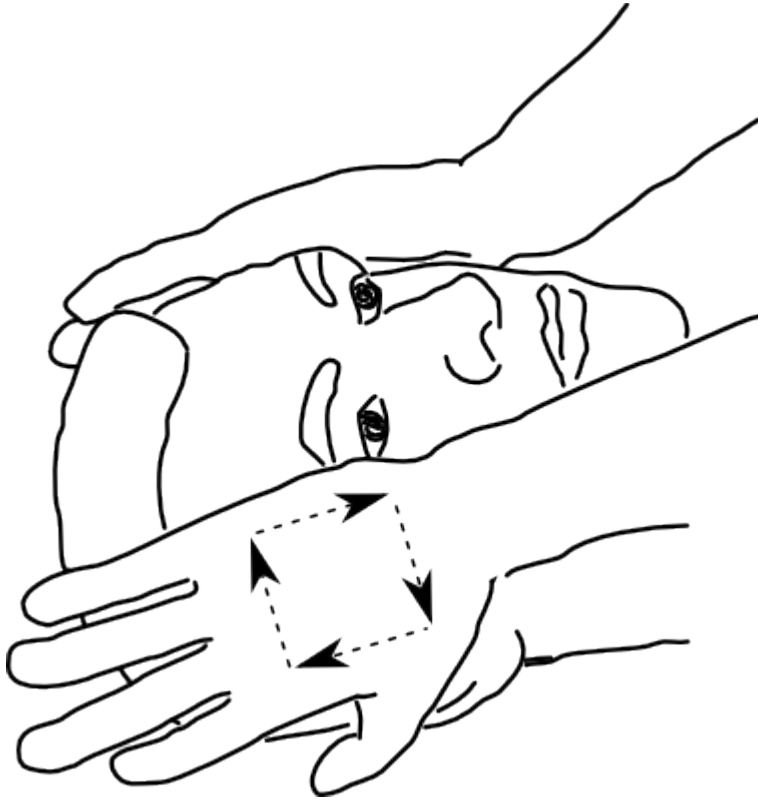


Figure 13. Temple exercise

Forehead (Nose Pinch). Depending on the location of headache pain, try one or more of these techniques. Gently pinch the nose between thumb and forefinger, just below the brow. This places pressure on the muscles controlling the brow, and encourages them to relax.

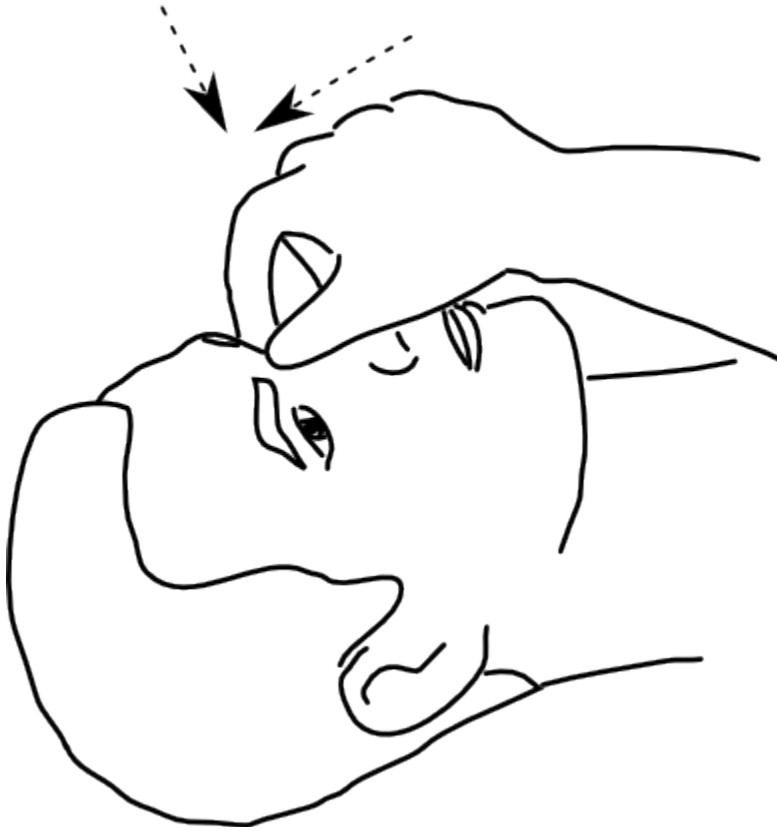


Figure 14. Nose pinch exercise

Another approach to relieving forehead tension is to fan the fingertips of each hand over both eyebrows. Apply gentle pressure to stretch the brow upward for one minute, alternating with applying gentle pressure to stretch the brows toward and away from each other. Fan the fingertips of both hands across your forehead, gently stretching toward the center of your forehead while consciously raising and lowering your brow to *verify that involuntary furrowing of the brow has ceased*. Continue relaxing the brow patiently for 15 minutes until the associated pain begins to subside.

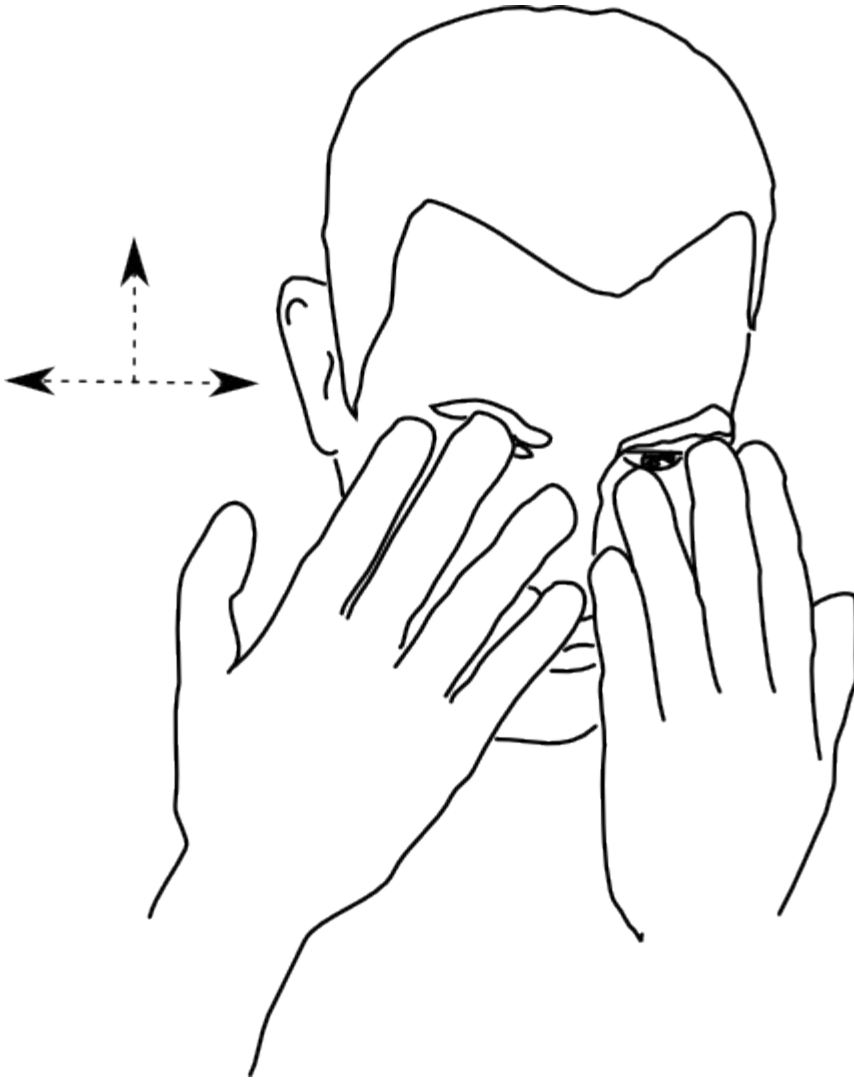


Figure 15. Brow exercise

Eyes and Face. For general facial pain, fan your fingertips on your cheekbones and gently stretch the skin back in the direction of your ears for one minute, and alternate with stretching toward your nose and down toward your jaw for one minute at a time. Continue for 10 to 15 minutes as needed.

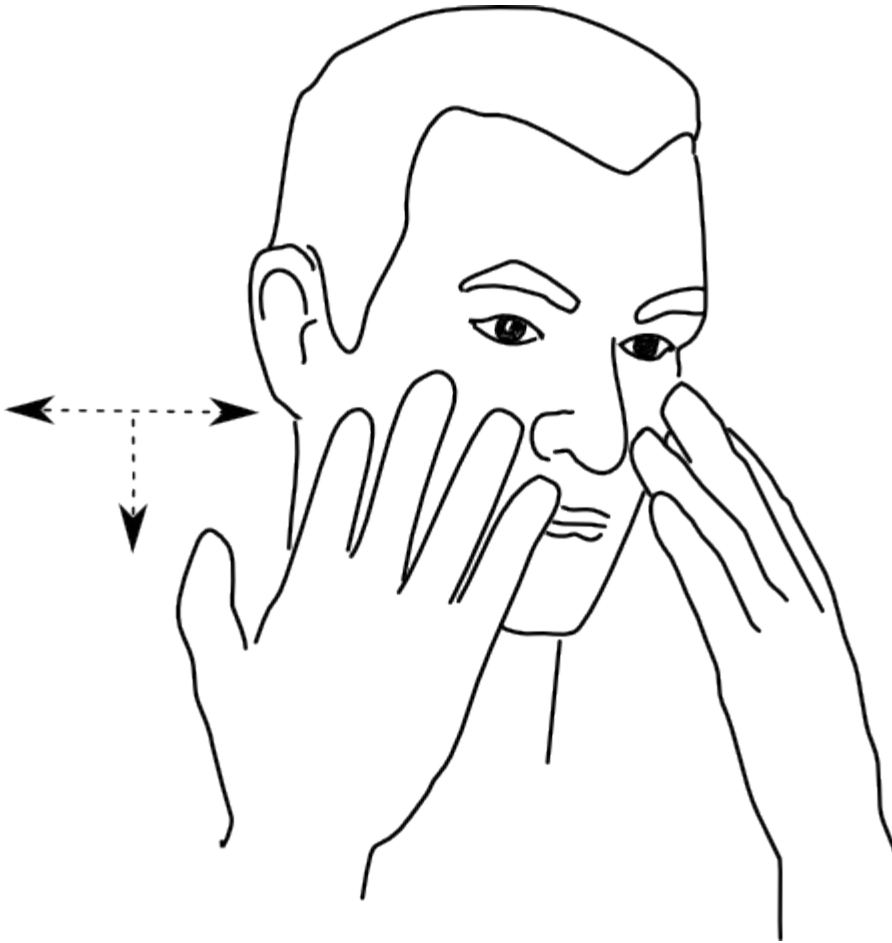


Figure 16. Face exercise

For pain around the eyes you will carefully stretch the muscles encircling the eye. Place your fingertips along the outer bony protrusion of the eye socket and gently stretch the skin toward the temples and up. Slide the fingers around the eye to rest along the eyebrow and stretch the brow up and toward your nose. Continue sliding the fingers down your nose and rest them along the lower protrusion of the eye socket and gently stretch the skin down and away from the nose. Verify that tension in the eye sockets has released by "squinting" and relaxing the eyes and raising the brows. Repeat this process, encircling the eyes for 10 to 15 minutes as pain begins to subside.

Back of Head. Lie on your back to eliminate need for support, and interlock your fingers behind the head over the painful muscle. Slowly rock your head from side to side while keeping hands stationary, to stretch and relax the muscles at the base of the head. Look for associated tension in the temples and forehead, and treat this tension if present.



Figure 17. Back of head exercise

Widespread Pain. If tension is left untreated, the discomfort may induce tension in adjacent areas. The resulting headache is widespread, sometimes involving all four of the regions listed above. Apply passive stretching 5 minutes at a time to each affected area in turn, returning to areas in which tension persists. *Try making tiny circles with your palms while stretching your scalp*, to help gain awareness of areas of tension and to massage sore tissues. The overall treatment time may extend up to 20 or 30 minutes in such cases.

Be aware that some areas of pain – such as the crown of the head – may represent inflamed connecting tissues and not muscles themselves (refer to Fig 2). Relieving neighboring muscle tension will not immediately relieve this pain, but will remove the source of inflammation to begin healing.

Step 3. Muscle Relaxation

Learning to consciously relax muscles puts you in control of tension headaches. This requires some initial effort and practice, since the muscles of the face and scalp are usually activated involuntarily. Here are guidelines to help achieve this control.

- Muscle relaxation will be easier to achieve if headache pain has already subsided (Step 1)
- Take a warm (not uncomfortably hot) shower and lie down on your back

- Focus on a single muscle, such as the temple
- Gently place your hand on the muscle so you can sense when it contracts and releases
- *Alternately tense then relax the muscle*: it is easier to consciously contract muscles than it is to relax them
- Note the effects of contraction, such as movement of the scalp and ears
- Muscles must be relaxed for 10 to 20 minutes for healing to occur
- Muscle relaxation exercises may be performed during the passive stretching treatment of Step 2, which can help you focus on the affected muscles
- Common massage techniques, such as gently kneading affected muscles, can also help you focus on and relieve muscle tension

Practice until you've learned to contract and relax the major facial and scalp muscles. This will help you recognize and deal with a tense and clenched jaw, tension in the cheeks and eye region, tensed brow and forehead, tight temples, or a stiff neck and back of head.

Step 4. Mental Relaxation

Reducing emotional stress is very helpful during the entire course of the headache relief regimen. Headache tension may have been initially brought on by emotional stress, and headache pain can further elevate stress levels. Below are a few ways to help *break the cycle of tension and stress*.

- Cease other activities, if possible
- Listen to calming music
- Empty your mind by focusing on one object or sound for a 5 minute period, or by counting backward from 100
- Splash cool water on your face, or take a warm shower
- Be patient. Remind yourself that the headache will be under control soon, and that stress and haste will delay relief.
- Be aware of the cyclical relationship between your stress and continued tension and of the time required to achieve relaxation

Emotional stress takes time to subside. The chemicals which accompany this state must cease production and dissipate. Therefore *mental relaxation exercises must persist for at least 5 or 10 minutes to be effective*.

6. Prevention

Bedtime routine
Morning routine
Coping with headache triggers
Independence!

It is much easier to halt tension before the onset of muscle fatigue and pain. These are short routines to follow at bedtime and upon rising to remove tension and prevent headaches from developing. This chapter concludes with ways to avoid common tension headache triggers.

Bedtime Routine

Tension headache often appears in the morning upon first waking. In this common scenario muscle tension is present at bedtime and persists through the night, resulting in inflammation in the face, scalp, and/or neck muscles by morning. Follow these steps to help eliminate tension at bedtime:

- Avoid activities requiring prolonged concentration within an hour of bedtime
- Take a warm shower to help relax both mentally and physically before bedtime
- Before falling asleep, lie on your back and perform passive stretching and muscle relaxation exercises on tense muscles
- If you still feel mentally tense and "wired", try a mental relaxation technique such as counting backward from 100
- If you wake partway through the night, use this opportunity to look for remaining muscle tension

If you are very tired at bedtime and fall asleep quickly, there is a greater chance of residual overnight tension and waking with a headache. In this case discipline is required to lie awake and perform passive stretching exercises to ease this tension.

Side to side. An effective muscle relaxation exercise for the scalp and neck muscles involves lying on your back with your head on a soft pillow, and allowing the head to rest first on one side then the other. Repeat this several times, each time resting heavily for 5 to 10 seconds per side. During this exercise, the side of the head and neck facing the pillow are not called upon to provide support and can release involuntary tension.

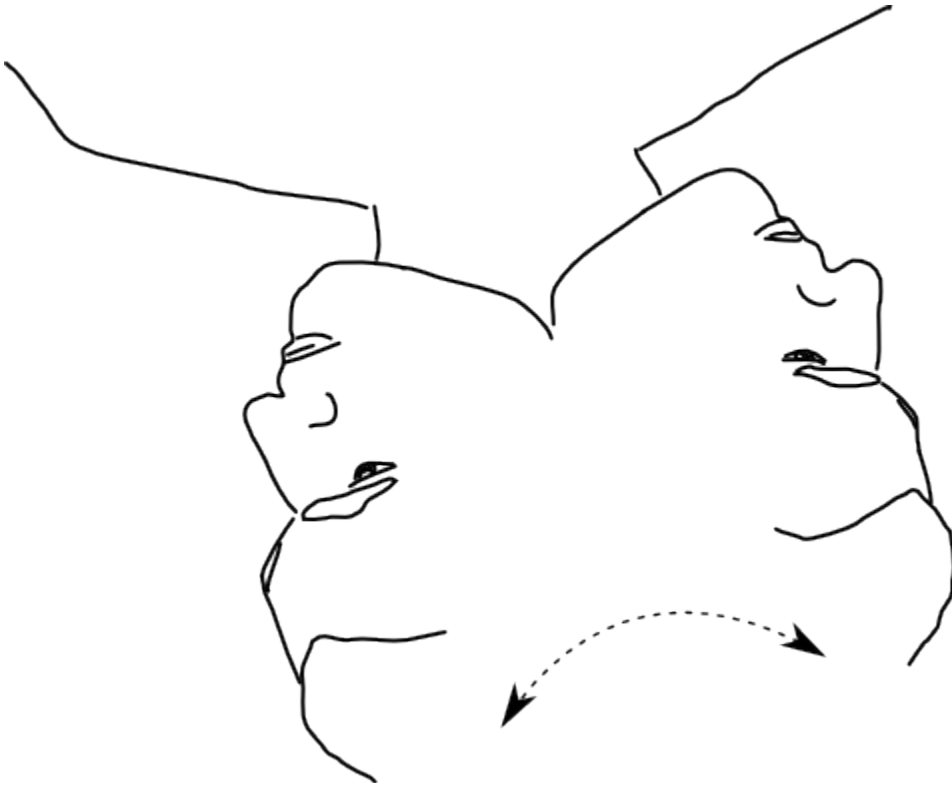


Figure 18. Side to side exercise

To ensure there is no "furrowed brow" tension at bedtime, employ the **nose-pinch** technique described in the Forehead section of Chapter 5: gently pinching the nose where it meets the brow will encourage the brow muscles to relax.

Morning Routine

Another common scenario is waking with mild tension or with the beginning of a tension headache, which then develops into a painful headache as the day progresses. The following steps help prevent this from occurring:

- Before rising, lie on your back and perform passive stretching exercises on any tense muscles in the face or scalp. The temple exercise in Figure 13 is a particularly effective way to recognize and alleviate tension.
- Take a warm shower to relax tense muscles upon rising
- Avoid activities requiring prolonged concentration within an hour of waking

A few minutes spent alleviating morning tension can avert a headache that worsens throughout the day.

Coping with Headache Triggers

The headache triggers listed in Chapter 3 can sometimes be avoided completely. In other cases it may be possible to change your reaction so that muscle tension and inflammation are reduced or eliminated. Failing this, it is important to identify the onset of headache so that the techniques in Chapter 5 can be initiated effectively.

Most of these triggers produce a sense of **discomfort** or involve **concentration** -- both of which may cause involuntary tension in the face, scalp and neck. Prolonged tension leads to headache pain. Understanding this relationship and applying the muscle relaxation techniques in Chapter 4 will provide awareness of and control over muscle tension and help prevent discomfort-induced headache. In particular, it is possible to *control the tendency toward furrowed brow, clenched jaw, and tense face and neck muscles.*

Tape Trick. A trick for becoming aware of forehead tension involves a piece of clear cellophane tape: stick a short piece of tape vertically between your eyebrows, or horizontally above your brow, making sure your brow is relaxed at the same time. Now you will notice any attempt to furrow your brow. *Try this technique next time you begin an activity that triggers headaches,* to see whether forehead tension is responsible.

- **Emotional stress.** Stress is believed to have many damaging effects to the body, and is best dealt with directly by removing the source of the stress or by learning to respond to the source in less stressful ways. Mental relaxation techniques, such as counting backward from 100, may be effective in some cases.

Emotional stress causes tension headache through the mechanism of involuntary tension in the face, scalp, and neck. If stress cannot be eliminated, then muscle relaxation may help control facial muscle tension so that tension headache does not arise. This may have further benefits, since *headache can itself be a source of emotional stress and worry.*

- **Sleep habits.** If a consistent sleep schedule is not possible, then discomfort due to sleep deprivation is likely. In this case you must either reduce discomfort by *taking frequent breaks* or cope with the discomfort by using muscle relaxation techniques. These techniques provide awareness of and control over facial muscle tension during fatigue, to prevent tension from escalating into headache.
- **Physical exertion.** Physical activities such as sports or sex often involve intense concentration, accompanied by the common furrowed brow and clenched jaw. Muscle relaxation techniques can promote awareness of this reaction to consciously limit tension in these facial muscles.

Physical exertion also usually involves some degree of discomfort, which has the potential for head tension and headache pain. *Improving your physical fitness* reduces the discomfort produced by a given activity, as does ensuring you are well-rested, prepared, and take frequent breaks.

It is usually advisable to avoid exertion where the discomfort produces significant

pain. However some people respond with expressions of tension under even mild physical discomfort and are prone to tension headaches during physical activities. Understanding headache mechanisms and applying muscle relaxation techniques can in these cases help control facial muscle tension (furrowed brow, grimacing, clenched teeth, etc) and avoid developing a tension headache.

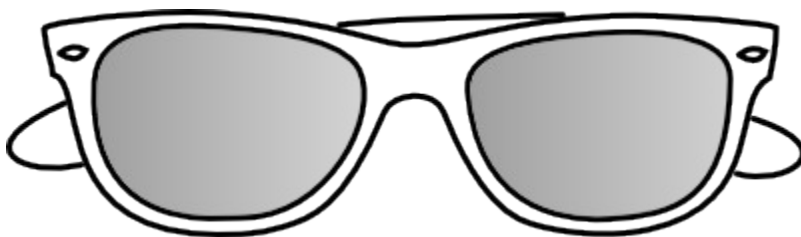
- **Mental exertion.** The act of mental concentration commonly results in such facial expressions as a furrowed brow and clenched jaw. If prolonged mental concentration is required, periodic breaks will allow tense facial muscles to relax and will help prevent inflammation from reaching the pain threshold. Muscle relaxation techniques (particularly the **nose-pinch** technique from Chapter 5) can promote awareness of facial muscles and allow conscious control over tension during prolonged concentration.
- **Alcohol.** Excessive alcohol consumption commonly results in *hangover*, with tension headache as a frequent symptom. Following the bedtime routine prescribed above may help reduce the likelihood of a morning-after headache in this case. Pain medication and cold pack treatments reduce hangover discomfort and can help treat a possible migraine headache. The manipulation and relaxation regimen given in Chapter 5 helps treat tension headache arising from the discomfort of hangover.

Even small amounts of alcohol can trigger headache in some individuals. This mechanism is not well understood and should be referred to a health professional.

- **Illness.** Though some illnesses produce headache by other mechanisms, a common cause of headache is facial tension arising from physical discomfort during illness. Controlling discomfort with pain medication can sometimes stop the onset of headache. Some forms of discomfort, such as nausea, may require other remedies.

As with other sources of discomfort, muscle relaxation techniques can help promote awareness of muscle tension arising from the discomfort of illness. Following the bedtime routine prescribed above helps reduce overnight tension and avoids waking with a tension headache.

- **Pain and Discomfort.** Common-sense solutions to other sources of pain and discomfort include wearing sunglasses to avoid "squinting" tension from sunlight, dressing appropriately to avoid cold-induced tension from excessive air conditioning, consulting a dentist about involuntary tooth grinding, etc. When discomfort cannot be avoided, facial muscle awareness and relaxation can help prevent tension-related headache.



Independence!

Over time you will personalize these techniques and your awareness of oncoming tension will grow. Tension headache will become increasingly rare and easily-managed and you will no longer limit your activities because of headache triggers.

If you haven't yet done so, please pay for this guide:
www.curingheadaches.com

7. Online Resources

Online resources for headache types and treatment:

- Diamond Headache Clinic: <http://www.diamondheadache.com>
- Everyday Health Network: <http://www.everydayhealth.com>
- Mayo Clinic: <http://www.mayoclinic.com>
- MedHelp: <http://www.medhelp.org>
- National Headache Foundation: <http://www.headaches.org>
- National Library of Medicine: <http://www.nlm.nih.gov>
- National Migraine Association: <http://www.migraineawarenessgroup.org/>
- P&G Health Sciences Institute: <http://www.pghealthsciences.com>
- WebMD: <http://www.webmd.com>
- WellSphere: <http://www.wellsphere.com>