Cognitive Behavioral Therapy for Headache Diseases

Therapist Manual

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Portions of this manual were influenced by the Behavioral Management for Migraine Headaches manual (Holroyd, Cottrell, and Echelberger-McCune, 2000) and inspired by the Cognitive Behavioral Therapy for Chronic Pain manual (Murphy, McKellar, Raffa, Clark, Kerns and Karlin, 2014). Information in the sleep session was informed by the Cognitive Behavioral Therapy for Insomnia Therapist Manual (Manber et al., 2014).

Introduction

Cognitive behavioral therapy for headache diseases (CBT-HA)

Headache diseases have a long history of treatment with behavioral methods. Early non-pharmacologic treatment focused on relaxation response training and biofeedback (Andrasik, 2010; Andrasik, Blanchard, Neff, & Rodichok, 1984; Blanchard et al., 1982). Further research demonstrated that many of the effects attained by biofeedback were not merely physiologic, but included changing cognitions such as self-efficacy and locus of control (Blanchard et al., 1984; K. A. Holroyd et al., 1984; Mizener, Thomas, & Billings, 1988). Since that time, cognitive behavioral therapy (CBT), including both lifestyle modification and cognitive restructuring, has been utilized to treat headache diseases (Penzien, Irby, Smitherman, Rains, & Houle, 2015; Penzien, Rains, & Andrasik, 2002; Sullivan, Cousins, & Ridsdale, 2016).

CBT refers to psychological treatments that incorporate both cognitive (thought-based) and behavioral (action-based) intervention components to treat disease. Several large well-controlled trials have found evidence that CBT for headache diseases (CBT-HA) reduces both headache symptoms (frequency, pain intensity) and headache-related disability in people with tension-type headache (K.A. Holroyd et al., 2001) and migraine (K. A. Holroyd et al., 2010). Recent evidence has shifted the field's conceptualization of "triggers" to promote active management and discourage avoidance as the primary (or only) method of managing lifestyle/contributing factors associated with headache symptom onset (Martin, 2010). CBT-HA also appears to be effective in individuals with comorbid anxiety and depressive symptoms (Martin et al., 2015; Seng & Holroyd, 2012). Emerging evidence suggests CBT for specific lifestyle factors associated with headache, such as insomnia (Calhoun & Ford, 2007; Smitherman et al., 2018; Smitherman et al., 2016) and physical activity (Kroll, Hammarlund, Linde, Gard, & Jensen, 2018) may also be effective. In addition, mindfulness-based cognitive therapy, which combines elements of CBT with mindfulness-based stress reduction, has shown promise to reduce headache-related disability (Day et al., 2014; Seng et al., 2019).

People with migraine and tension-type headache are good candidates for CBT-HA if they have 1) lifestyle factors that could be modified to improve headache, such as dysregulated stress, poor sleep, inconsistent meals, high intake of caffeine or alcohol, or poor medication adherence, 2) cognitive factors such as anticipatory anxiety or catastrophizing which are interfering with quality of life, or 3) have contraindications for pharmacotherapy, are pregnant, and/or show a preferences for non-pharmacological treatments. Importantly, people with comorbid psychiatric symptoms seem to receive at least as much, if not more, benefit from preventive headache therapies in general and CBT-HA specifically (Seng & Holroyd, 2012). People with post-traumatic headache may be good candidates for CBT-HA if they have symptoms that align with other primary headache diseases like migraine or tension-type headache and have either lifestyle or cognitive factors that could be modified to improve headache in those conditions. People with other headache diseases, such as cluster headache, may be referred if they are experiencing challenges coping with headache and/or psychiatric comorbidities.

Headache Classification

Over the past 30 years, the classification of headache diseases has continued to evolve as more scientific evidence has become available. The current gold-standard classification system, known as the International Classification of Headache Disorders, 3rd edition (ICHD-3) was most recently updated in 2018 by the Headache Classification Committee (Headache Classification Committee of the International Headache Society, 2018) (see *Appendix A*).

Headache diseases are categorized as either primary or secondary dependent on their etiology.

Headache Diagnoses, Epidemiology, and Burden

How To Tell the Difference Between the Major Types of Headache Diseases

Symptoms	Migraine	Tension-Type	Cluster
Timing	4-72 hours	30 min-7 days	15-180 minutes
Pain Location	Unilateral	Bilateral	Unilateral orbital, supraorbital and/or temporal
Pain Quality	Pulsing Throbbing	Pressing Pounding	Shooting Stabbing "Ice pick"
Pain Intensity	Moderate – Severe	Mild – Moderate	Severe – Very Severe
Other Symptoms	Nausea/Vomiting Sensitivity to Light, Sound, Smell Aura		Eye reddening Tears flowing Stuffy nose Runny nose Swollen eyelid Forehead or facial sweating Pupil dilation or constriction Restlessness Agitation
Etiology	Idiopathic	Idiopathic	Idiopathic

†See Appendix A for complete list of relevant headache criteria

Primary Headache Diseases

Migraine

Migraine is a common, disabling neurologic diseases characterized by severe head pain and associated neurologic symptoms such as nausea, and sensitivity to light and sound (Headache Classification Committee of the International Headache Society, 2018). It is the most common reason most people bring up headache symptoms with their doctor. People with migraine experience episodic disabling symptoms; a person with migraine may experience a sudden and significant reduction in their ability to perform role functions because of the often unpredictable nature of migraine. Because it is fairly common (~12% of the population, 18% of women and 6% of men), and so disabling (Burch, Rizzoli, & Loder, 2018; Buse et al., 2012; Lipton et al., 2007; Lipton, Stewart, Diamond, Diamond, & Reed, 2001). In 2017, the World Health Organization ranked migraine as the 2nd highest cause of disability worldwide (GBD 2016 Neurology Collaborators, 2019). The World Health Organization estimates migraine impacts over a billion people (GBD 2016 Neurology Collaborators, 2019). Approximately 16% of Veterans within the Veterans Health Administration (VHA) have a documented headache disease (Fenton, Lindsey, Grinberg, Koo, Seng, & Sico, 2020).

Migraine symptom onset is sometimes preceded by temporary sensory disturbances called "aura." The most common type of aura is visual and often described as flashing lights, blurred vision, lines across the vision, or spreading areas of darkness. Aura occurs in approximately 20% of people with migraine. Migraine and tension-type headache are typically classified as either episodic (1-14 days per month) or chronic (15 or more days per month) depending on the number of headache days per month a person experiences (Headache Classification Committee of the International Headache Society, 2018).

Tension-type Headache (TTH)

Tension-type headache (TTH) is the most common type of primary headache disease. Because tension-type headache is typically less disabling individually, and the vast majority of people with TTH experience episodic TTH, fewer people seek medical care for these diseases. The exception is chronic TTH, which because of its frequency (15 or more days per month) can be very disabling and for which medical attention is often sought.

Trigeminal Autonomic Cephalalgias (TACs)

Trigeminal Autonomic Cephalalgias (TACs) are much less common than migraine and TTH. They all share autonomic symptoms, like stuffy nose and fullness in the ear. Of these, cluster headache is the most common, but is still very rare (1/1200) (Fischera, Marziniak, Gralow, & Evers, 2008). Unlike most headache diseases, cluster headache is more common in men than women (M:F = 6-7:1). Data from the US Cluster Headache Survey, reported that suicidal ideation occurred in 55% of 1134 individuals surveyed (Rozen & Fishman, 2012). The pain from a cluster headache attack is considered to be one of the most painful conditions. Cluster headache is characterized as episodic when cluster periods last from 7 days to 1 year untreated, and are separated by pain-free remission periods of 3 months or more; chronic cluster headache lasts for at least 1 year with any remissions lasting fewer than 3 months (Headache Classification Committee of the International Headache Society, 2018).

Secondary Headache Disorders

Headache attributed to trauma or injury to the head and/or neck

This group of secondary headache diseases are commonly called "post-traumatic headache" (PTH) because they occur after physical trauma, such as a traumatic brain injury (TBI). TBI is common in Veteran populations broadly and in the OEF/OIF/OND cohort specifically. Headache is the most common persistent symptom after a concussion, therefore it is likely that thousands of Veterans in the VHA are living with PTH of some severity. Notably, PTH is characterized by history, not symptoms. Approximately half of people with PTH present with criteria that are consistent with migraine, whereas the other half report non-migraine symptoms. PTH is one of potentially many persistent post-concussive symptoms, which can include dizziness, fatigue, irritability and anxiety, difficulty sleeping, cognitive difficulty, tinnitus, and sensory changes. Even after concussion symptoms resolve, many Veterans report persistent neck pain and may benefit from further evaluation from their medical team. Managing PTH must take place in the context of the holistic picture of post-concussive symptoms experienced by the Veteran.

Headache attributed to a substance or its withdrawal

Many substances (or their withdrawal) are associated with headache. Almost everyone who drinks coffee or tea regularly has experienced a caffeine-withdrawal headache when they forget to grab their beverage in the morning. Withdrawal of certain illicit substances are also associated with headache, and managing headache may be part of a recovery plan. However, these headache diseases are unlikely to be managed with cognitive behavioral therapy.

On the other hand, medication overuse is likely to be among the headache conditions managed by a CBT therapist. Almost all acute headache medications (medications taken to reduce symptom severity and onset), when overused, can produce a secondary headache that is typically less severe, more chronic, and more treatment refractory. Medication overuse is a common cause of high frequency headache (see Appendix A for specific ICHD-3 criteria). For this reason, acute medication adherence is emphasized for the treatment of all primary headache diseases, regardless of frequency. As you will see below, overuse of certain medications can occur well below the threshold for chronic migraine and TTH, including the most commonly-used migraine medications which are limited to 10 days per month. For Veterans receiving these types of medication, it is critical for them to have a plan to limit the number of days on which they will use these types of medications. Working with a CBT-HA therapist can be beneficial for Veterans who struggle with medication adherence.

Other Secondary Headache Diseases

Headache can be a troubling symptom secondary to a number of dangerous diseases, including stroke, cancer, infection, encephalitis, raised intracranial pressure, or intracranial hypotension. The following criteria are commonly used "red flags" to indicate that a headache might be secondary and that explanations alternative to primary headache diseases should be evaluated.

Concerning Symptoms "Red Flags"

Keep an eye out for when Veterans report any of the following symptoms listed below. You may need to co-ordinate care with the Veteran's medical team to identify whether further medical follow-up or emergent workup is needed.

"Red Flags" SNOOP(4) E
Systemic Symptoms: Fever, weight loss or secondary risk factors
Neurological Signs or Symptoms: Confusion, impaired alertness or consciousness
Onset Sudden, severe, abrupt
Older Age New Onset: Especially > 50 yrs.
Pattern Change: Headache frequency, severity, or clinical features
Precipitated by Valsalva
Postural Aggravation
Papilledema
Exertion

(Dodick, 2010)

Are There Other Symptoms Commonly Associated with Migraine?

Cutaneous allodynia and cognitive difficulties are other symptoms that are commonly associated with migraine that may be a target of, or interfere with treatment:

1. **Cutaneous Allodynia**. Allodynia is a hypersensitization of touch sensation such that non-painful stimuli (like brushing hair or light touch) is perceived as painful. The presence of allodynia suggests heightened central sensitization and can be a poor prognostic indicator (Bigal et al., 2008). Allodynia may occur primarily during headache symptom onset or may be present all the time.
2. **Cognitive difficulties**. Dealing with headache and associated symptoms appears to reduce attention and executive functioning (Gil-Gouveia, Oliveira, & Martins, 2015). However, many people with headache also report difficulty thinking and concentrating in-between symptom onset, which is inconsistently demonstrated in neuropsychological testing (Suhr & Seng, 2012). Perhaps more importantly, many people with headache perceive cognitive exertion ("thinking hard") to be a potential precipitant (Borkum, 2016). Therapists should be aware of the current cognitive status of the Veteran with headache, as well as the Veteran's perceptions about how headache impacts their cognition, and how their cognition may impact their headache symptom onset and course.

Treatment of Headache Diseases

Headache treatment is usually categorized as either **preventive** or **acute** (see Appendix B for specific medication names and classes). Medications used to manage headache diseases can come in many different forms including pill, injection, and nasal spray. Neuromodulation devices may also be used either preventively or acutely.

Preventive medical treatment

Preventive medical treatment includes strategies used to help decrease the frequency, severity, and duration of headache and associated symptoms. Preventive medications are most often taken daily, even on days when a Veteran does not have a headache. Devices used for prevention are also typically recommended to be used on a daily basis. Most injections, including onatotulinum toxin A (commonly referred to as Botox) and nerve blocks, are also used preventively and are most often given on a quarterly basis. It typically takes around 2-3 months to see if a preventive treatment is working well. Preventive treatments are usually indicated if the Veteran experiences a minimum of 4 headache days per month with functional impairment.

Acute medical treatment

Acute medical treatment includes strategies that are used as needed in order to abort acute symptom onset and reduce its severity. Taking acute medications too often can actually lead to a worsening of a Veteran's headache symptoms, known as medication overuse headache (MOH). Work with the Veteran and their prescriber to know what the prescribed dosage is and how often they are to use each medication. To avoid causing MOH, the Veteran should limit the number of days on which they take acute medications each month. Later on in the treatment manual, we will provide a worksheet to help the Veteran create an acute treatment plan, which will include adherence to acute medication.

Trigger point and nerve block injections can also be used acutely as can certain neuromodulation devices. Devices are attractive because there is currently no evidence for an overuse threshold, therefore they can be used for as many headache days per month that the Veteran experiences headache and associated symptoms. Medication overuse thresholds are unclear for the newer classes of medications (ditans and small molecule CGRP antagonists), and the hope is that they too will provide an acute treatment that can be used more frequently than earlier medications (nonsteroidal anti-inflammatory drugs or NSAIDs, analgesics, and triptans). New classes of migraine specific medications are continually being approved by the Food and Drugs Administration (FDA).

Neuromodulation Devices

Neuromodulation devices have begun to receive much attention as non-invasive, non-drug, treatments for migraine and cluster headache. In general, the devices can be placed into categories including: non-invasive vagal nerve stimulation (nVNS), transcranial magnetic stimulation (TMS), transcutaneous electrical nerve stimulation (TENS), and remote electrical neuromodulation (REM). The nVNS modality is currently one of the few recommendations that is available for cluster headache. TENS is often viewed as the first line modality to trial first with subsequent trials of other neuromodulation devices depending on the headache type. All devices should be provided by a trained health care professional. If interested in options of each device please consult a trained and qualified health care professional such as a neurologist, OT or PT.

Empowering Veterans

Many of the medical treatments for headache position the Veteran as a "passive" recipient of treatment, whereas within CBT-HA the Veteran is much more of an "active" participant as they gain various self-management skills. This is an important distinction to highlight to the Veteran to empower them during their CBT-HA treatment.

Setting Yourself Up for Success

Throughout CBT-HA the Veteran will learn various self-management strategies for their headache disease. At the end of each appointment you will provide the Veteran with supplemental worksheets to complement their home practice. Included within the worksheets is a section titled; "Set yourself up for success," which provides the Veteran tips to consider for them to maximize their CBT-HA skills. Below are some things that you, as a CBT-HA therapist, may consider to set yourself up for success before beginning CBT-HA treatment.

"But it's Just a Headache" – Reducing Stigma

Headache diseases are complex neurological diseases – they are more than *"just a headache."* Headache-related stigma dates back for decades (Parikh & Young, 2019). Many people often minimize the symptoms that people with headache diseases experience, which can contribute to a Veteran's experience. People with comorbid psychiatric conditions may experience additional stigma, which can negatively impact a Veteran's self-esteem and capacity to fully engage in their treatment.

One of your roles as a CBT-HA therapist is to work on ways to try to reduce headache-related stigma. Given that you are not a medical provider, their referral to you may cause many Veterans to think that their reports of headache pain and symptoms are not believed. One of the first things you can do is to ensure that the Veteran is aware that you believe their pain is real and is exactly as they describe it. Since it is common for those with pain to not feel heard or believed, listening to the Veteran's headache story and validating their experience is essential. Establishing rapport and explaining why the Veteran was referred to a mental healthcare provider for their headache disease while providing a solid rationale for treatment is key. You may also find it helpful to address headache-related stigma by including the Veteran's social support system within aspects of your treatment or providing the Veteran with resources they can share with their loved ones.

Language to Reduce Stigma

Language and word choices can carry a lot of power in our perceptions, communication, and treatment. The language we use to communicate both with our Veterans and colleagues is another key factor to consider when thinking about different ways to reduce headache-related stigma. The term "attack" is commonly used in the literature and among headache experts when referencing an onset or escalation in headache symptoms or severity. Similar to an asthma attack, it can be used to differentiate the acute symptoms from the ongoing chronic disease. While you will read the term "attack" and may find yourself using it when discussing headache diseases with other professionals, there are some questions as to whether this may denote an external locus of control. The term "attack" could carry an even stronger meaning and weight within the Veteran population and could result in unintended impacts on their ongoing progress. In order to balance communicating the severity, impact, and fluctuating nature of these symptoms while supporting a self-management based approach, we

recommend using phrases such as "onset of symptoms" or "escalation of symptoms" rather than "attack" and we will be modelling that language throughout the manual. We recommend using the term the terms tension type headache (TTH), migraine, and cluster headache when referring to the headache disease. In order to communicate to the Veteran that you understand the nature and severity of their symptoms and to provide Veteran-centric care, it can be helpful to adapt your verbiage as indicated to match the terminology that they feel most accurately captures their experiences. This can be very empowering for the Veteran and can aid in building rapport.

The table below includes some additional recommendations for how to speak about a Veteran with a headache disease both in spoken and written communication with Veterans and providers.

Instead of this...	Try this...
Illness/Disorder	Disease
Headache sufferer	Person with headache
Migraineur	Person with migraine
Migraines	Migraine
Attack	Symptom onset
Disability	Barrier to function

Understanding Headache Diseases- What Do I Need to Know?

Headache diseases are chronic neurologic diseases characterized by head pain as well as other neurologic symptoms with episodic manifestations. The etiology, mechanisms, and course of disease differs across headache diseases and can impact the selection of behavioral treatment targets in CBT-HA. While it is not expected that clinicians providing CBT-HA be headache experts, a basic understanding of the mechanisms of various headache diseases can guide effective treatment. For example, for episodic migraine and TTH, the gate control theory of pain may be less relevant (and therefore less clinically useful) framework than the neuromatrix theory of pain, which we present in this manual using a threshold model. Similarly, although "pushing through the pain" may be appropriate in some circumstances, many people with headache may experience a litany of symptoms that truly prevent role engagement during symptom onset. On the other hand, because behavioral targets for CBT-HA have evidence that are linked with headache pain and symptom onset, we have confidence that this treatment can help reduce the actual disease activity (pain and associated symptom elevation) for several primary headache diseases. Further, the techniques we present in this manual can improve quality of life in people living with a variety of headache types. This is one major difference between CBT-HA and in CBT for chronic pain – in CBT-HA Veterans

can expect to see a decrease in the actual disease activity.

The following published articles can provide resources to deepen your knowledge of our current understanding of the pathophysiology of common headache diseases and how CBT can play a role in ameliorating headache.

VA Resources

VHA Pain Management Home Page includes both provider and patient tools and references

VA/DoD Clinical Practice Guideline on Headaches and TMS module *Introduction to the New VA/DoD CPG: The Primary Care Management of Headache* (available through 11-9-2023)

More Advanced Headache Neuroscience Articles

Neural Plasticity in Common Forms of Chronic Headaches

A Systems Neuroscience Approach to Migraine

Migraine: Multiple Processes, Complex Pathophysiology

The pathophysiology of migraine: implications for clinical management

Migraine and the trigeminovascular system-40 years and counting

Tension-Type Headache

Chronic Headaches And The Neurobiology Of Somatization

Diagnosis, pathophysiology, and management of cluster headache

Pathophysiology, prevention, and treatment of medication overuse headache

Narrative Review of the Pathophysiology of Headaches and Photosensitivity in Mild Traumatic Brain Injury and Concussion

Can a Veteran Have More Than One Type of Headache Disease?

It is common for Veterans to be diagnosed with more than one headache disease (e.g., migraine and TTH). A detailed headache history can aid your differential diagnosis. Throughout this manual we highlight specific components of the treatment that are more applicable to certain headache diseases. It is helpful to understand the types of headache diseases the Veteran has especially when the Veteran decides when and how to treat their headache and associated symptoms. Remember that Veterans can be prescribed preventive treatment, acute treatment, or a mixture of both. From a review of the Veteran's electronic medical record you will be able to gather information about their current prescribed medical regimen. It may not be necessary for the Veteran to know exactly the specific medications they are prescribed, but you will want to ensure that the Veteran knows whether their medications, injections and/or devices are prescribed to be used preventatively and/or acutely (see *Appendix B* for more details).

Throughout the clinical interview, you may find it beneficial to provide the Veteran with education about the pathophysiology of their headache diseases this helps when presenting the rationale for CBT-HA. For migraine and TTH, research shows that people who combine behavioral treatments with medication have the best treatment outcomes compared to using one treatment modality alone (K. A. Holroyd et al., 2010). There is currently limited evidence on the use of CBT for cluster headache. However, when working with a Veteran with cluster headache it can be more beneficial to target treatment on reducing the impact of their headache on their quality of life rather than on preventing their headache in the first place. You may also want to explain to the Veteran that "treatment success" for preventive medications is typically defined as approximately 50% reduction in headache frequency, so it can be more productive to focus on improving functioning in areas such as sleep, social engagement, and activity tolerance through CBT-HA.

Headache Types and CBT-HA Focus

While not exhaustive, the following table can help you frame your focus based on the type(s) of headache disorder your Veteran presents with.

Headache Type	Unique CBT-HA Focus
Migraine	Focus on modifiable lifestyle factors such as hydration, sleep, nutrition, and exercise as well as sensory input- balancing exposure without avoidance to optimize tolerance and quality of life; education on pre-monitory, aura, headache, and postdrome phases increases insight and aids Veterans in activating tools sooner
Tension Type Headache	Muscle activation related to stress/ relaxation responses; prolonged positioning (e.g. work, driving, sleep); role of movement and exercise
Cluster Headache	Symptoms are often correlated with disruptions in sleep and daily routines; emphasize consistent routines and patterns; focus is largely on distress tolerance rather than prevention

CBT-HA Treatment Orientation & Rationale

Veterans who play an active role in their treatment greatly increase the likelihood of treatment success. Many Veterans who are referred for CBT-HA have tried several types of treatments for their headache disease and understandably may be skeptical of how CBT-HA could help them. One way to address a Veteran's concerns is to provide a clear rationale for each component of the treatment. To help the Veteran understand what CBT-HA entails and decide whether they would like to engage in this treatment, the therapist should orient the Veteran to what CBT-HA involves and the expectations for treatment. Review any questions or concerns that the Veteran may have about in engaging in CBT-HA and provide affirmations on the Veteran's willingness to engage in CBT-HA. Ensure that you are genuinely expressing empathy and consider the use of other motivational interviewing strategies.

The following topics can be useful to discuss:

- CBT-HA is short-term and time limited: Length and frequency of appointments (60-minute initial intake, six 50-minute follow-up visits every 2 weeks).
- Appointments occur approximately once every two weeks so it is important that the Veteran practices the skills learned at home between visits – this helps with skill mastery and allows the Veteran to see how the skills may apply to their everyday life. It also allows for identification of implementation challenges that can be discussed in subsequent appointments.
- Veterans who practice the skills learned during CBT-HA can expect to see a decrease in the frequency and severity of their headache pain and symptoms.
- Since CBT-HA is a non-pharmacological treatment, it will focus on areas that have likely not been addressed before in the Veterans past treatment for their headache disease.
- CBT-HA incorporates self-management skills including relaxation training, management of contributing factors, optimization of acute headache management, understanding how thoughts, emotions, and behaviors may impact headache related disability and quality of life, and creating a headache management plan that incorporates both acute and preventive strategies.
- Emphasize that the therapist will share several skills and that the Veteran will trial these skills to determine what combination of tools will work best in their personal "recipe" or "formula."
- Highlight that the skills learned will help the Veteran to minimize and manage their headache symptoms in addition to enhancing any medications they are using (if applicable). The Veteran will not need to stop taking their prescribed headache medications and some Veterans are able to reduce their use of their headache medications.

What Is My Role As A CBT-HA Therapist?

Therapeutic alliance is an integral part of CBT-HA. As a CBT-HA therapist you will:

1. Provide education
2. Utilize motivational interviewing techniques
3. Individualize care to the Veteran's specific headache disease and personal factors
4. Teach the Veteran specific skills to manage their headache disease
5. Empower the Veteran to take an active role in living with a headache disease in order to enhance their self-efficacy and improve their quality of life
6. Aid the Veteran in identifying and tackling barriers to treatment engagement

Coordinating Care

It is encouraged that the CBT-HA therapist has regular communication with any other relevant providers involved in the Veteran's care (e.g., neurologist, primary care provider, other mental health providers, rehab therapists like occupational and physical therapists). Communication may include adding providers onto notes within the electronic medical record, sending encrypted emails, and having conference calls and/or face-to-face meetings as necessary. It is also encouraged that the CBT-HA therapist assess Veterans' individual needs for referral and recommendation during and following CBT-HA treatment. Coordinating with other providers is especially important if medication overuse is a concern and weaning off medications is needed.

Primary Care: Many Veterans receive their headache care within the primary care setting and may have other medical comorbidities. You may find it helpful to reach out to the Veteran's primary care provider to see if there are any considerations that the therapist should be aware of when treating the Veteran.

Neurology: It can be helpful for the CBT-HA therapist to communicate with the Veteran's neurologist in order to know how certain medications have been prescribed and if there are any considerations that the therapist should be aware of when treating the Veteran.

Mental Health: Psychiatric disorders are often comorbid with headache diseases, so it is likely that many Veterans may already be engaged in mental health services. It is recommended that the therapist coordinate with other mental health providers to establish whether CBT-HA is an appropriate mode of treatment to be provided simultaneously with the Veteran's ongoing mental health treatment.

Rehab Therapy: Multidisciplinary care can be a key component to a Veteran's success in optimizing function and long-term headache management. The complexity of a headache diagnosis will often require this approach for long term success. Specialists including Occupational Therapists (OTs) and Physical Therapists (PTs) are important contributors to a patient's care and identifying appropriate referrals and recommendations may be an important complement to CBT-HA treatment. CBT principles are included in most entry level OT education and more advanced

training is sought by some OTs and included in their treatment of headache diseases. Partnering with therapies whether in a formalized program or more informal care coordination can improve outcomes. For additional information on the role of rehab therapy in headache treatment this article published in Headache in 2017 may be helpful.

Multidisciplinary Team Treatment Approaches to Chronic Daily Headaches

Self-Monitoring & Headache Diary

Headache diaries can be completed in an electronic or paper format and are often helpful to aid diagnosis. Veterans are typically asked to complete the diary daily for a specific time period. For women Veterans, it is helpful to have at least one month of monitoring to capture a full menstrual cycle. A headache diary is a core component of any headache care plan. For physicians, the headache diary primarily serves as a method to confirm diagnosis and evaluate effectiveness of treatments. For these goals, merely tracking headache activity is sufficient. However, for the goal of behavior change, we strongly recommend Veterans track both headache and behaviors when appropriate. For example, participants could track medication adherence (pain intensity at the time of acute medication dosing, with the goal of dosing while the pain is still mild), sleep behaviors, skipped meals, stress management, activity level, or caffeine use. You can use the headache diary to identify potential behavioral targets and to track progress toward behavior modification. It is important for the therapist to clearly explain the rationale for diary use to the Veteran and identify and problem solve any barriers to adherence with completing the headache diary. If the Veteran is unwilling to self-monitor their headache (ideally through a headache diary), then the likelihood of successfully treating their headache pain and symptoms is significantly reduced. Highlight to the Veteran that it is adequate to complete the headache diary once per day. Some suggestions that you can offer to the Veteran to help them with adherence in filling out their headache diary is to set an alarm as a reminder or combine their monitoring with a routine activity such as before bedtime or upon awakening.

Headache diaries are particularly helpful tools that can help a Veteran:

1. Monitor the frequency and severity of their headache and associated symptoms
2. Track use of any preventive and acute medications and the Veteran's response to treatment
3. Identify all the contributing factors that might impact the onset and development of their headache symptoms (e.g., stress level, sleep quality, missed meals.) and the different situations that they may occur
4. Identify "early warning signs" of a headache onset
5. Assess current management strategies and areas for skill development

There are certain situations where you may want to modify a headache diary to meet a Veteran's needs. Individuals with significant generalized anxiety disorder may experience an increase in anxiety and stress when monitoring headache symptoms closely. In this case, it may be preferable for patients to focus on monitoring **behaviors** rather than **symptoms** (headache, psychiatric, or otherwise). For example, rather than assessing headache activity, you may have a patient assess

how frequently they use paced breathing. There are numerous website and app-based tools for tracking symptoms which may be preferred by some Veterans and aid in adherence for completion as well as having results with them at their appointments.

Assessment Measures

The experience of pain and the associated symptoms of headache diseases are largely subjective so the therapist will often rely on self-report assessment tools to further assess symptoms and track changes over the course of treatment. It is expected that some Veterans may be reluctant to complete the assessment measures as they view them as time-consuming or burdensome to complete. Address any concerns that the Veteran may have about the assessment measures and provide feedback on each measure given as appropriate. It is up to the CBT-HA therapists clinical judgement to decide how frequently to administer measures and which ones would be most beneficial to use. Below are the most commonly used measures in CBT-HA which are available for free, public-domain use by VA clinicians.

The main domains measured include (1) headache related disability/quality of life, (2) beliefs and cognitions (3) psychiatric symptoms (4) other related constructs/topics.

Headache Related Disability/Quality of Life:

- Migraine Disability Assessment (MIDAS), which is a 5-item, self-report measure of life disruption due to headache (Stewart, Lipton, Dowson, & Sawyer, 2001).
- Headache Related Disability Index (HDI) is a 25-item, self-report questionnaire that assess emotional and functional impacts of headache on daily activities (Jacobson, Ramadan, Aggarwal, & Newman, 1994).

Beliefs and Cognitions

- Headache Management Self-Efficacy Scale (HMSE), includes 25 items that measures a person's confidence in their ability to manage their headache (French et al., 2000).
- Headache-specific Pain Catastrophizing Scale (HPCS) is a modified version of the 13-item Pain Catastrophizing Scale that focuses on catastrophizing thoughts related to headache.
- The Headache Pain Acceptance Questionnaire (HAQ) is a 6-item, self-report scale of headache acceptance (Hamer, Sackey, Maack, & Smitherman, 2020)
- Headache Triggers Sensitivity and Avoidance Questionnaire (HTSAQ), which includes items on 24 triggers for which respondents had to indicate whether a potential trigger could precipitate headache for them, how sensitive they are to the trigger, and whether they tried to avoid the trigger (Kubik & Martin, 2017).

Psychiatric Symptoms:

- Patient Health Questionnaire (PHQ-9) is a 9-item self-report measure of depressive symptoms (Kroenke, Spitzer, & Williams, 2001).
- Generalized Anxiety Disorder Screener (GAD-7) is a 7-item self-report measure of anxiety symptoms (Lowe et al., 2008).
- Post-Traumatic Stress Disorder Checklist (PCL) is a 17-item self-report measure of PTSD symptoms (Blevins, Weathers, Davis, Witte, & Domino, 2015).

Other Related Constructs/Topics:

- Insomnia Severity Index (ISI) includes 7 items that measure an individual's perceptions of their insomnia, such as severity of sleep-onset and sleep maintenance difficulties (Bastien, Vallieres, & Morin, 2001).

Treatment Outline & Content

Appointment Structure

Each appointment will follow a similar structure:

1. Agenda setting
2. Home practice check in
3. Learning a new skill
4. Goal setting for home practice

Appointment		Content
1	Intake	Biopsychosocial clinical interview, assess headache history, gather baseline assessment measures, and review headache diary Orient to CBT for headache, headache pathophysiology and treatment rationale Introduce threshold theory and contributing factors
2	Relaxation Training	Introduce and teach relaxation strategies (progressive muscle relaxation, visual imagery)
3	Contributing Factors & Managing the Headache Threshold	Review SMART goal setting Review trigger management: stress, sleep, diet/substance, weight management, physical activity
4	Optimizing Acute Management	Review early warning signs Introduce strategies for optimizing acute management (STAY CALM!)
5	Combating Unhelpful Thoughts	Automatic thoughts, common unhelpful thoughts, ABC model Catch it, check it, change it (3C's) and coping statements
6	Planning Ahead	Skill consolidation and creating management plan: preventive strategies and acute strategies Anticipating obstacles, moving and planning ahead

Appointment 1

Intake Interview and Assessment

This initial intake appointment will focus on conducting a comprehensive biopsychosocial clinical interview, assessing the Veteran's headache history, reviewing baseline assessment measures, and providing the rationale for CBT-HA by introducing the threshold theory. This appointment provides the Veteran an opportunity to share the ways that living with a headache disease has impacted their lives.

Agenda

1. Establish rapport
2. Conduct a comprehensive biopsychosocial clinical interview, assess headache history, and gather baseline assessment measures
3. Orient the Veteran to CBT-HA and introduce the headache threshold
4. Goal setting for home practice

Worksheets

1. Headache Diary
2. Headache Overview

Establishing Rapport

As with all other psychotherapy treatments, therapeutic alliance is an integral part of CBT-HA. Collaboration is critical as the therapist and Veteran will work together to help the Veteran accomplish their personal goals.

What is my role as a CBT-HA therapist?

1. Provide education
2. Teach the Veteran specific skills to manage their headache disease
3. Help the Veteran increase their self-efficacy
4. Aid the Veteran in identifying and tackling barriers to treatment engagement

Listening to Your Veteran's Story

Many Veterans who are referred for CBT-HA have tried several types of treatments for their headache disease and understandably may be skeptical of how CBT-HA could help them. It is important to express empathy and provide affirmations throughout the treatment allowing the Veteran space to share their experience. Here is a recommendation to consider for beginning your intake:

I've read through your chart and some of the questions that I'm going to ask you today I'm sure you've explained to many providers before, but I like to hear directly from you about your experience. Today I'd like to get to know you better. I'm here to understand how your headache pain and symptoms have impacted your quality of life including things such as your mood and sleep. This treatment is going to involve a lot of collaboration between the two of us, so it's helpful for me if you share when things are working for you, but also when they're not. My hope is that you can learn ways to decrease how often you get your headache symptoms and how severe they are when you do get them. We'll be working together to come up with some goals that you'd like to be working on throughout the treatment to make sure we are focusing on the parts of your life that are most important to you. To start can you tell me about when your headache pain and symptoms first started?

I see from your chart that you're currently prescribed [name of Veteran's specific medications, devices, injections] and you've been on [name of medications, devices, injections tried] in the past, but I really want to hear about your experience, so is there anything you think would be helpful for me to know that I may have missed about your current and past headache treatment?

Clinical Interview & Headache History

During the initial clinical interview, the therapist conducts a comprehensive biopsychosocial assessment and obtains the following headache specific information:

- Age of headache onset and if there was a precipitating event (e.g., traumatic brain injury)
- Number of distinct headache diseases
- Number of occurrences of headache onset/escalation ("attacks") and headache days in the past month (episodic < 15 days/month or chronic ≥15 days/month); for cluster headache, number of occurrences/day, days/month, and whether there have been any periods of remittance in the past year
- Average pain intensity in the past month
- Pain free days in the past month (ensure this correlates with the number of headache days in the past month. Often, Veterans will not report a low grade headache (level 1-2/10) when asked for the number of headache days so be sure to ask about those too
- Number of hours headache lasts without medication
- Pain location, quality, and intensity
- Associated headache symptoms
- Headache burden: impact on work, family life, emotional functioning
- Women Veterans: associations between headache and menstrual cycle and/or birth control/ hormone replacement therapies

Assessing Headache Frequency **Ask the Veteran: "How many headache days have you had in the last month?"**	
Discrete symptom onset ("attacks") overlaid atop daily headache	Veteran: *Oh, I think I've had 4-5 days where I had a migraine.* Therapist: *How many headache free days have you had in the last month* Veteran: *I haven't had a day without a headache in years! I always have some kind of headache.*
Episodic cluster headache	*I mean I haven't had any since about 4 weeks ago, but I had six weeks where I was having these horrible headaches almost every single day! It happens about twice a year, and I really can't do anything when it does. It's the worst pain you can imagine.*
Menstrual migraine	*I get them for about five days like clockwork every month.*

Tips On What To Listen For	
Focus on passive strategies	*Acupuncture, chiropractic and medications didn't work for me, so there is nothing left.*
High external locus of control	*All I can do is lay in a dark room and wait for it to go away.* *Nothing works for me or I just have bad luck.* *If only my kids would give me a minute to myself, I think my headache would be better.*
Low self-efficacy	*I can't do any household chores.* *Asks significant other to fill out forms or answer questions.*
Medication overuse	*I pop Motrin like they are candy.* *The only strategy I have is medication.*
Focused on a fix	*I'll try anything that could make this go away.*

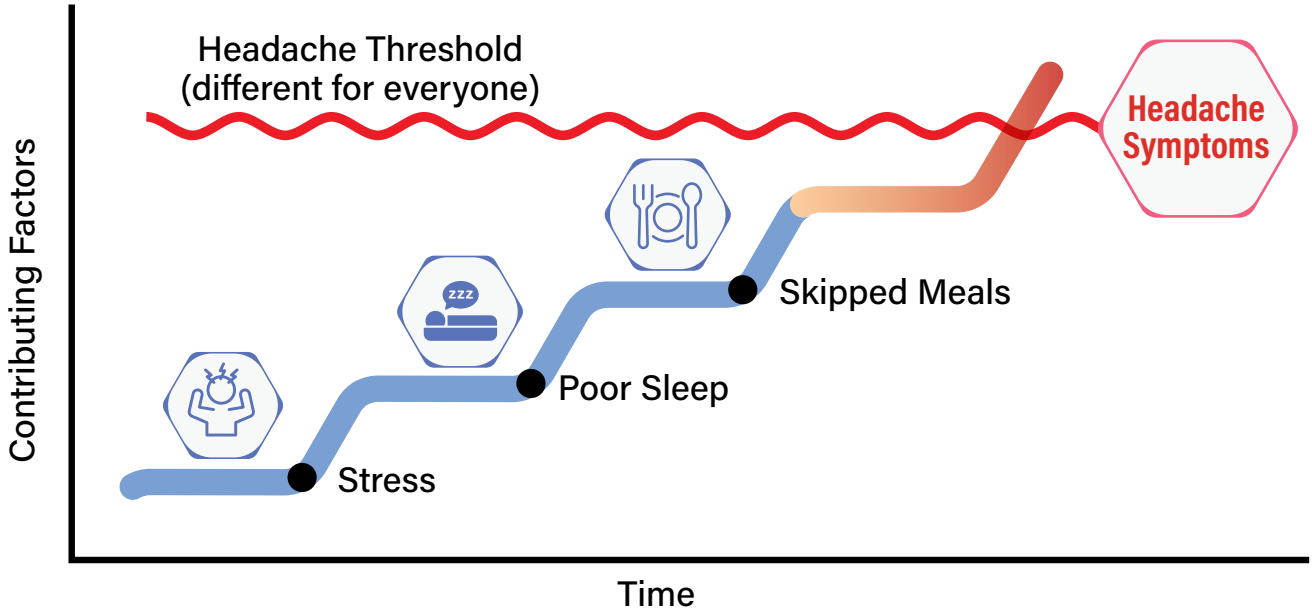
After gathering a headache history, assessing the following information can be useful to help you tailor your CBT-HA treatment to each specific Veteran's needs:

- Comorbid medical conditions including past surgeries, other pain sites, hypertension, diabetes, cancer
- Health behaviors: weight/diet, caffeine, physical activity level, sleep, substance use, existing stress management practices
- Life/activity patterns: sensory and environmental factors, temporal (time of day or seasonal) patterns, task engagement as contributing factor (e.g. prolonged positioning, reading or computer work)
- Mental health history (current and past): psychotherapy, psychopharmacology, psychiatric hospitalizations, substance use treatment, trauma history, self-efficacy and locus of control, level of distress
- Pertinent family, social, and developmental history: family context, military history, education, employment, living situation, spiritual/religious beliefs, social support, current psychosocial stressors.

Pathophysiology & Headache Threshold Theory

Another way to help with treatment buy in and to provide Veteran-centric care is to explain the pathophysiology of headache diseases and introduce the headache threshold. The basis of the theory is that each person has a unique headache threshold and a variety of internal and external factors can serve to amplify or dampen the likelihood of them experiencing a headache on any given day. Try to use specific examples pertaining to the Veteran's health behaviors that you've

just assessed (skipping meals, hydration, physical activity level, sleep, caffeine and alcohol use, sensory and dietary sensitivities and existing stress management practices) when discussing how the combination of factors can move them closer to their headache threshold and increase the likelihood of experiencing the onset of headache and associated symptoms. Each headache disease has certain contributing factors that may be more common. For example, some people find that they are more likely to experience a migraine following high levels of stress, skipping meals, or poor sleep. In cluster headache, changes in a routine like a bedtime or changing seasons may be found to precede a headache experience. It is also of note that while something like stress is common across headache diseases, why the stress is a contributing factor may vary between headache diseases. Stress can heighten the sympathetic nervous system (SNS), increase maladaptive muscle activation, and lead to a diversion from normal daily habits - all of which may contribute to an increased risk. The "recipe" or "formula" of what contributes, and the extent each factor contributes, is unique to the individual and can change over time.



Talking About Headache Pathophysiology & the Headache Threshold

Headache diseases are complex and can make people very sensitive to changes in the environment. When you experience headache pain and associated symptoms, there are changes in the electrical signals sent in your brain, chemicals which cause inflammation are released, and your nerves are activated. All these changes in your body can result in pain and headache symptoms and cause you to become sensitive to your surroundings. Now, even though your biology makes you more likely to develop headache pain and symptoms, there are other important factors both internal and external that can change your likelihood of experiencing headache symptoms on a given day. I'd like to give you some more information about the headache threshold based on what you've shared with me so far – is that ok?

Everyone has their own unique threshold that determines whether they get an increase in their headache pain and symptoms on a given day. Take a look at this picture. I want you to imagine that this line is your own personal headache threshold. Now imagine that every time one of these factors is in your day we add it to the jar. You just shared with me that [add in behavioral factors Veteran shared during the intake e.g., poor sleep, skipped meals, stress], so let's add those to the jar. As you experience more and more of these events, your jar "fills up." When the jar overflows that is when you would notice an onset of your headache symptoms. As we just talked about, your brain is very sensitive to changes in your environment and doesn't always adapt easily which explains how the same factor doesn't always result in you experiencing symptoms - it's usually the combination of factors that move you toward that threshold.

During this treatment we're going to work together while I share skills that you can use to help move that threshold – think of it like opening the tap to the jar or emptying it out. Your threshold doesn't start from zero each day, the previous day can even impact your threshold, so some of the skills we will work on during the treatment will help prevent your headache onset in the first place and others will be for you to use when you have increased headache symptoms.

Do you have any questions for me so far?

Home Practice

As is the case with other types of CBT, the use of home practice is a necessary part of CBT-HA. Appointments for CBT-HA occur once every two weeks, so it is essential for the Veteran to practice the skills learned during appointments at home between visits – this helps with skill mastery and allows the Veteran to see how the skills may apply to their everyday life and help build self-efficacy. At the end of your initial appointment you will introduce the Veteran to the headache diary and guide them in how to complete it.

During the third appointment you will discuss contributing factors in more detail reviewing contributing factors as a part of a formula or recipe that are all precipitating events utilizing the threshold theory vs. thinking of them as a cause or inevitability. If time permits, it can be helpful to choose one to two **contributing factors** that the Veteran shared were salient to them during your intake appointment, provide brief psychoeducation on that topic in relation to headache diseases, and set a goal for the Veteran to work on before the next appointment. This is also an opportunity for you to model how to set SMART goals before you cover goal setting in more detail in a few weeks.

Example Goal Setting Topics

After talking to you today I've heard that [*behavioral factors Veteran shared during the intake e.g., poor sleep, skipped meals, stress] might be contributing to your headache pain and symptoms. Why don't we set a goal together that you'd like to work on before our next appointment.*

1. Sleep: I will set an alarm every day at 6:30am and get out of bed within 5-10 minutes of my alarm going off.
2. Skipping meals: I will eat breakfast every day at 7am.
3. Hydration: I will drink 5 glasses of water daily by setting a reminder on my phone every 4 hours.
4. Physical Activity: I will walk outside every day, twice a day for 10 minutes each time.

Visit Wrap Up

Summarize the main content of the visit and address any remaining questions or concerns that the Veteran has about CBT-HA. Continue to build rapport and express empathy by affirming the Veteran's willingness to share information about their experience living with a headache disorder. Review any questions or concerns that the Veteran may have about engaging in CBT-HA and utilize open-ended questions to understand if the Veteran is interested in participating in CBT-HA.

Thank you for taking the time to talk with me today. I appreciate your willingness to be open about your experience living with a headache disease. I know that we covered a lot of material today. Now that you've heard about what CBT-HA treatment entails, do you think this is a treatment that you would be interested in? What remaining questions do you have about taking part in this treatment?

Appointment 2

Relaxation Strategies

This appointment will focus on teaching the Veteran about stress, the relaxation response, and how relaxation strategies can help them with their headache symptoms. It can be helpful to teach all three relaxation skills (paced breathing, progressive muscle relaxation, and guided visual imagery) so that the Veteran has a choice of different relaxation tools available to manage their headache disease. Of note, progressive muscle relaxation has the most evidence to support its use in headache diseases. Encourage the Veteran to try practicing all the techniques so that they can figure out which one works best for them.

Agenda

1. Home practice check-in
2. Learn a new skill (paced breathing, progressive muscle relaxation, guided visual imagery, self-monitoring of relaxation practice)
3. Goal setting for home practice

Worksheets

1. Relaxation Strategies

Home Practice Check In

Spend a few moments checking in with the Veteran about how their home practice was since their last appointment. Make sure you provide the Veteran with affirmations whether they met the goals or not. Remind the Veteran that small progress is still progress!

Helpful Talking Points

1. *What went well this week?*
2. *How did it go with the goal(s) you set during our last appointment?*
3. *What did you learn since our last appointment?*
4. *What strategies did you use to help you achieve the goal(s) you set?*
5. *What got in the way of you meeting your goal(s)?*
6. *How were the obstacles you faced different from or the same as the ones you anticipated?*
7. *How did the goal(s) you set move you toward your overall treatment goal(s)?*
8. *What did you learn this week that can help you meet your goal(s) for next week?*

Relaxation Training

Research has shown many benefits of relaxation training, including improved sleep, decreased fatigue and muscle tension, and increased energy. Relaxation training is a foundational skill within CBT-HA. Achieving a state of deep relaxation is a skill and takes practice to master, which is why daily home practice is so important. Practicing these skills might feel uncomfortable or unfamiliar for the Veteran at the beginning, but the more they practice the quicker they will be able to activate their relaxation response over time.

Previous Relaxation Training

It can be helpful to first ask the Veteran about their experience with relaxation training before modeling each skill. For example, if a Veteran has learned paced breathing before, ask them to demonstrate it for you – that way you can tailor your treatment plan accordingly and provide praise as well as corrective feedback (e.g., You did a nice job of jumping right in and being sure your breath was coming from your diaphragm. I did notice that you seemed distracted would you feel comfortable seeing how the exercise feels for you with your eyes closed?).

But Relaxation Training Feels Uncomfortable!

As you are slowing your breathing and breathing regularly for several breaths, you may start to feel a little light headed or slightly dizzy. Do not be alarmed because this sensation should only last a few seconds as your body (specifically your heart) starts to become accustomed to your paced breathing. If you stay with the paced breathing, your body will start to feel more relaxed and that uncomfortable sensation should go away. In the beginning, you may want to make sure you are seated or lying down. By practicing your paced breathing each day, your body will start

to recognize the paced breathing allowing you to feel relaxed without any light headedness or dizziness. Of course, if the feeling of light headedness or dizziness does not go away, you may want to consult a medical professional or adjust the speed of your breathing, working your way toward the slower breathing pattern over time.

What Is the Role of Stress and the Autonomic Nervous System?

Stress is a normal part of life and is necessary for survival. Stressors can range from daily hassles (e.g., being stuck in traffic) to major life events (e.g., death of a relative, a new baby). Perceived stress is the appraisal that these stressors could be dangerous and skills may be needed to help the Veteran cope with them effectively. The stress response describes a series of physiologic changes that engage the body's resources to effectively combat perceived threats.

The autonomic nervous system (ANS) controls processes in the body that people usually do not think about (e.g., breathing, digestion, sweating). It is made up of two parts – one that controls the stress response (sympathetic nervous system or SNS) and one that controls the relaxation response (parasympathetic nervous system or PNS).

When the sympathetic nervous system (SNS) is activated during times of threat or stress, there are many different changes that happen in the body to help a person prepare for action. This is often thought of as the "fight or flight" response. More recently "freeze"(Roelofs, 2017) has been added in to communicate the response that occurs in many where systems seem to shut down and the person "freezes" rather than trying to evade or defend from the danger. When the SNS response is activated, blood diverts to larger muscles, heart rate speeds up, and breathing becomes faster. Short-term this is helpful and aids us in survival, however, long-term these processes can result in secondary effects on health, mood, and daily life. Various factors including social and community interactions, emotions such as sadness, anger, and irritability, disturbances in sleep, and heightened pain can all contribute to stress as well as be negatively impacted by the stress response - creating a self-perpetuating unhelpful positive feedback loop.

When the PNS or relaxation response is activated the opposite changes happen in the body (e.g., heart rate and breathing slow down) to prepare the body for rest. Unfortunately, when people are in chronic pain states or have headache pain and symptoms which oscillate between periods of elevated pain and periods of the anticipation of pain, additional conscious effort is often required to activate the PNS.

In the short term, the stress response helps us deal effectively with immediate dangers, like swerving to avoid an oncoming vehicle. However, the same physical responses that help save one's life in that situation, such as blood moving away from the gut to the peripheral muscles, increased heart and respiration rate, and narrowed focus, are maladaptive for most of the common stressors people deal with today. When people experience frequent daily hassles that are perceived as stressful, these responses can be associated with physical symptoms like headaches and body tension or psychological symptoms such as feeling sad, depressed, anxious, or irritable. They might also notice appetite changes, difficulty concentrating, sleep disturbances, or even fatigue.

For headache diseases, both the presence of daily hassles/stressors, as well as the perception of stress, has been associated with headache onset. Interestingly, both high stress, as well as a sudden decrease from high to low stress, has been associated with headache onset. For this reason, we strongly recommend people with headache diseases use techniques to keep their stress at a manageable level (Houle et al., 2017; Turner, Lebowitz, Chtay, & Houle, 2019; Vives-Mestres et al., 2020). For many people, living with a chronic headache disease is considered a significant cause of stress, which impacts both the mind and body. Educating patients about their headache disease(s) and basics about stress can create a helpful foundation to support the other components of CBT-HA (Kindelan-Calvo et al., 2014).

During this treatment you will focus on helping the Veteran understand ways that they typically respond to stress and provide them with tools to increase their introspection including insight into mental, emotional, and physical cues and patterns to anticipate and respond more effectively and proactively. Relaxation techniques help calm the SNS, activating the PNS, to reduce the impact a stressful situation has on one's body and brain. Regular practice of these techniques improves their ability to accomplish these physical changes. This way they will be ready to activate their relaxation response and calm down their mind and body, all of which will impact the severity and duration of their headache symptoms.

Let's Talk About Stress!

Here are a few things to highlight to Veterans when discussing stress and the ANS:

1. Stress is a normal part of life and necessary for survival.
2. Stress is often thought of as mental/emotional, but it's actually a complex physiological experience impacting mental and physical components.
3. Our past experiences influence how our mind and body respond to stressors.
4. The way we react to our environment and our beliefs associated with our ability to cope with a situation can have a major impact on our stress experience.
5. We can't completely control stress, but we can change the way we think about a situation which leads to changes in how we feel and what we do.
6. Although you may not get immediate satisfaction from using stress-management skills, the more you practice them the better you get and the more choice and control you have over helpful responses in the future. It's like eating a healthy diet, you may not feel great every time you eat a salad for lunch but our choices, both healthy and unhealthy, impact our current and long-term health and well-being.
7. The pain and other symptoms associated with your headache condition, the anticipation of the symptoms, and the impact they can have on every other aspect of life are themselves stressors.

What Is a Stress Let-Down Headache?

Many people think that high levels of stress contribute to their headache symptoms, but research has shown that even reductions in the level of perceived stress from one day to the next can increase the risk of headache pain and symptom onset. For example, a stressful work presentation may be associated with symptom onset, but so is the first day of vacation! A key part of CBT-HA will be learning different stress-management techniques and lifestyle recommendations to help the Veteran create balance in their nervous system and increase their coping skills.

- *What types of things in life do you find stressful?*
- *Have you ever noticed that during the week when you are stressed at work, you seem fine, but then on the weekend, when you have a chance to relax your symptoms start?*

How Can Relaxation Strategies Help Veterans With Headache Diseases?

Many Veterans will share that they already engage in many activities that they find relaxing. It can however be helpful to highlight that there is a difference between engaging in relaxing and enjoyable activities such as gardening or reading and the use of relaxation techniques which bring about physiological and psychological changes within the body. A Veteran can still perform these enjoyable activities but in CBT-HA, additional relaxation skills should be added to their daily routine. Relaxation strategies can help a Veteran to modify their physiological and psychological responses, activate the relaxation response to combat stress and tension in the muscles, increase awareness of what situations make them feel stressed, and enhance one's mood, all of which can impact the frequency and severity of a Veteran's headache and associated symptoms as well as their quality of life.

Grounding Exercise for Veterans with PTSD

For some Veterans with PTSD, relaxation techniques can result in re-experiencing and uncomfortable emotions. It is recommended that you offer all Veterans the option to adapt their relaxation practice such as keeping their eyes at a gentle gaze rather than closed during paced breathing. You can also provide specific grounding exercises if a Veteran shows signs of re-experiencing. If this happens, ask the Veteran to look around, using their 5 senses and identify 5 things they see, 4 things they feel, 3 things they hear, 2 things they smell, and 1 thing they taste.

Relaxation Practice Reflections

Many Veterans may share that they notice their mind wandering during the relaxation exercise and often become frustrated. Normalize this experience – emphasize that the aim of relaxation training is not to "clear the mind." At the end of each relaxation demonstration, ask the Veteran to reflect on their practice:

- *How did your body feel at the end of the practice?*
- *What emotions and thoughts did you notice during the exercise?*

Paced Breathing

Paced breathing is a foundational skill that a Veteran can use to activate their relaxation response both as a preventive and an acute management skill. The beauty of this skill is that the Veteran always has their breath available as a tool to use anywhere to decrease tension or pain they may be noticing and to work to keep the tension and pain from escalating. While breathing is automatic, paced breathing involves purposefully engaging the diaphragm, a dome-shaped muscle under the rib cage, which helps us to take slow and regular breaths. As we inhale, the diaphragm contracts and flattens pulling air into the lungs. As we exhale, the diaphragm relaxes, and air is forced out of the lungs. This method of breathing helps to activate the relaxation response in our body (the parasympathetic nervous system) to help us feel calm.

Noticing Changes in Our Breathing

What do you notice happens to your breathing during times of stress? Some people notice that their breathing becomes short and shallow during times of stress – they are likely "chest breathing," which results in less oxygen in the body and tension begins to build up in the muscles. I'm going to teach you some different relaxation techniques that you can use to influence your breathing and ultimately how your mind and body react to stress.

Breathing Demonstration

You can use breathing to activate your relaxation response, and connect your mind and body. It might feel a little uncomfortable at first but try to stick with it. Find the pace that works best for you and trust in your own wisdom.

1. Gently guiding yourself into a comfortable seated position and allowing your body to be fully supported by the chair. Observing any areas of tension in your body.
2. Allowing your hands to rest wherever they are comfortable.
3. Closing your eyes or gently gazing down on a single spot in front of you.
4. Allowing the feelings of tension in your body to be released as you feel a sense of calmness and relaxation.
5. Placing one hand on your chest and one on your belly. Breathing naturally and noticing which hand moves.
6. For some people the hand on their chest moves, for others both their hand on their chest and their belly move.
7. Now slowly inhale allowing your belly to rise and your ribs expand. Some people prefer to inhale through their nose but do what is most comfortable for you. Imagine that your belly is like a balloon expanding with each breath in. Don't force your belly in and out but really focus on allowing your lungs to fill up.
8. Now slowly exhale as your belly deflates.
9. Noticing that only the hand on your belly is moving as your chest remains still.
10. Continuing in this comfortable and relaxed pace, making sure that you continue to breathe slowly and trying to make each breath as similar as possible. A good goal is to inhale for 5 seconds and exhale for 5 seconds.
11. Taking a slow, regular, breath in, and out. Noticing that as you breathe in your belly expands, and when you breathe out your belly contracts.
12. Continuing in this regular, slow, relaxed way of breathing. Enjoying the sensations of relaxation within your body as your chest only moves a little as you become more and more relaxed.
13. Your body knows what's right for you. Gently allowing your body to guide you as you become more and more relaxed. Breathing in and out, in and out.
14. I'm now going to count down from 3 to 1 as you prepare to become more alert. 3– and when you are ready, gently opening your eyes, 2– bringing your attention back to your current surroundings and 1– feeling fully refreshed as you continue to notice the benefits of this relaxed state throughout the rest of your day.

Progressive Muscle Relaxation

Most people are unaware that they are holding tension in their body until they feel pain and their headache symptoms progress. Tension can be a sign that the sympathetic nervous system is activated. Progressive muscle relaxation is a technique used to create a state of deep relaxation by alternate tensing and relaxing of muscles in the body. By practicing the tension-release cycle, the Veteran can learn to distinguish the sensations of a tensed muscle and a relaxed one.

Tensing Muscle Groups

During progressive muscle relaxation, many Veterans often try to tense their muscles as much as possible rather than lightly tightening their muscles in order to understand what tension feels like. The aim is for the Veteran to try to lightly tense each muscle to a medium-pressure to help them really notice what tension feels like; that way the Veteran can be more aware of what even small amounts of muscle tension built up throughout the day feel like so that they can act to decrease the muscle tension in their body.

Progressive Muscle Relaxation Demonstration

This exercise will help you create a deep state of relaxation as you release the tension that you've been holding in your body. By practicing the tension-release cycle, you can learn to distinguish the sensations of a tensed muscle and a relaxed one

1. Gently guiding yourself into a comfortable and supported position, either lying down or in a chair that fully supports your body.
2. Scanning your whole body and observing any areas of tension.
3. Gently closing your eyes or resting your gaze.
4. Focusing on your breath.
5. Slowly breathing in and exhaling at a regular rate, letting go of all the tension in your body
6. Breathing in and imagining the word "relax" or "calm" or any phrase that helps you feel relaxed.
7. Continuing for a few more breaths in and out
8. Now, tensing the muscles in both hands and arms by clenching your fists and bringing them toward your shoulders as you bend your arm at the elbow. Focusing on the sensations as you build the tension up. PAUSE. Breathing in, and as you exhale, slowly letting the tension go and allowing your fists to open and your arms to gently rest by your side. Feeling the sensations of warmth. Noticing the sensations as you relax
9. Breathing in and imagining the word "relax" as you exhale slowly. Feeling all the sensations of relaxation throughout your body. Noticing your muscles becoming heavier, warmer, and relaxed. Enjoying these sensations of relaxation.

10. Next, focusing on tensing the muscles in your face, neck, and shoulders, by raising your eyebrows as high as you can, squeezing your eyes tightly shut, wrinkling up your nose, clenching your teeth, making a tight smile, pulling in your chin, and raising your shoulders up. Focusing on the sensations as you build the tension up. PAUSE. Breathing in, and as you exhale, slowly letting the tension go and letting all the tension fade away, allowing your body to return to a resting position. Feeling the sensations of warmth. Noticing the sensations as you relax

11. Taking slow, regular breaths in, as the relaxation spreads throughout your body. Imagining the word "relax" as you exhale slowly. Feeling all the sensations of relaxation throughout your body. Noticing your muscles becoming heavier, warmer, and relaxed. With each breath, sinking into a deeper state of relaxation. Enjoying these sensations of relaxation.

12. Now, focusing on tensing the muscles in your back, abdomen, and chest, by arching your back and sticking out your chest. Taking a breath in and pulling in your stomach toward your spine. Focusing on the sensations as you build the tension up. PAUSE. Breathing in, and as you exhale, slowly letting the tension go as all the tension fades away, allowing your body to return to a resting position. Feeling the sensations of warmth. Observing the softness in your body. Noticing the sensations of relaxation spreading throughout your body.

13. Taking slow breaths in, as the relaxation spreads throughout your body. Imagining the word "relax" as you exhale slowly. Feeling all the sensations of relaxation throughout your body. Noticing your muscles becoming heavier, warmer, and relaxed. With each breath, sinking into a deeper state of relaxation. Enjoying these sensations of relaxation.

14. Finally, focusing on tensing both legs, calves, and ankles, by extending both of your legs out, flexing your feet, and bringing your toes up. Focusing on the sensations as you build the tension up. PAUSE. Breathing in, and as you exhale, slowly letting the tension go as you lower your legs to the floor. Feeling the sensations of warmth and heaviness. Melting and completely letting go. Noticing the sensations as you relax and how enjoyable these feelings are compared to those of tension.

15. Taking slow, regular breaths in, as the relaxation spreads throughout your body. Imagining the word "relax" as you exhale slowly. Feeling all the sensations of relaxation throughout your body. Noticing your muscles becoming heavier, warmer, and relaxed. With each breath, sinking into a deeper state of relaxation. Enjoying these sensations of relaxation.

16. Taking a few more breaths in and out, imagining the word "relax" and enjoying the sensations of this deep state of relaxation. Feeling comfortable, safe, warm, and relaxed.

17. Scanning your body starting from the top of your head letting a wave of relaxion flow through your body all the way down to the tips of your toes.

Find any remaining tension and let that tension go.

Special Place Visual Imagery

Special place visual imagery is another relaxation technique that can be beneficial for Veterans with any type of headache disease. Many Veterans find that practicing visual imagery distracts them from their headache pain and any other uncomfortable or distressing symptoms, thoughts, and emotions, to help bring about feelings of relaxation. During visual imagery, the Veteran will learn to focus their mind by creating a "special place" and visualizing a peaceful mental image to create a state of deep relaxation. Encourage the Veteran to pair their special place visualization with paced breathing for the greatest benefits. The **Imagery Log** can help Veterans to create a mental image using all 5 senses.

Special Place Visual Imagery Demonstration

1. Visual imagery is a relaxation technique that can help distract you from your headache pain and any other uncomfortable or distressing symptoms, thoughts, and emotions.
2. Gently guiding yourself into a comfortable and supported position, either sitting up in a chair or laying down. Closing your eyes and focusing on your breath.
3. Slowly breathing in and exhaling at a regular rate, letting go of all the tension in your body.
4. Breathing in and imagining the word "relax" or "calm" or any phrase that helps you feel completely relaxed. Continuing for a few more breaths in and out.
5. If you notice your mind wondering to your pain or any other uncomfortable sensations just gently guiding your attention back to your breath.
6. Visually scanning your body for any areas of tension, breathing in, and as you breathe out letting that tension go, becoming more relaxed and noticing all the sensations of relaxion.
7. Now, imaging yourself walking down a path to your special place, a location where you feel calm, safe, and secure. This could be a place that you have been to before and felt relaxed, or a place that you have always wanted to visit.
8. As you walk down the path, noticing your surroundings and feeling the warmth in your body.
9. Taking another breath in, and as you exhale, letting go of any remaining tension in your body as you prepare to enter your special place.
10. Allowing yourself permission, imagining yourself entering your special place, using all of your senses as you feel that you are in your special place.
11. Noticing the ground beneath your feet as you walk through your special place.

12. Focusing on your surroundings and all that you can see. Paying attention to the different colors and shapes. Observing the sounds that you can hear and the things that you can taste. Reaching out and touch something.
13. Paying attention to how the different textures feel on your skin.
14. Smelling the air and any other fragrances that are soothing.
15. Letting your mind drift away from the present moment to your special place, feeling at peace and completely relaxed.
16. Letting the tension melt away and finding a comfortable place to sit or lie down in your special place as you focus on the sights, sounds, and smells around you.
17. Again, noticing the sensations in your body as the tension continues to melt away.
18. Taking care of yourself and enjoying your special place, as you feel more deeply relaxed and regenerated. Knowing that you can stay in your special place as long as you need. When you are ready, slowly walking back along the path you came in on, feeling the warm and relaxing sensations in your body.

Home Practice

In order to help maximize the Veteran's self-efficacy, it is important to set Veteran-centric personalized goals. Explain to the Veteran that home practice helps with skill mastery – the more they practice the easier it will become to use the skill.

The Veteran will be focusing on practicing relaxation strategies for their home practice before their next appointment. When discussing the use of relaxation strategies for headache be sure to emphasize the following points (1) Veterans will need to engage in daily relaxation practice not only when their headache pain and symptoms are present or coming on (2) the benefits of relaxation practice on headache pain and symptoms may take several weeks to appear, so the Veteran should not stop practicing or feel discouraged if they do not notice quick results.

The next appointment will focus on goal setting, so this week provides an opportunity for the therapist to model how to set a SMART goal. Ideally, we would like the Veteran to practice the relaxation techniques at least once per day, with the ultimate goal to engage in 30 minutes of relaxation practice daily. Ask the Veteran which of the relaxation strategies (breathing, progressive muscle relaxation, and guided imagery) they learned during today's appointment they would like to work on before the next appointment and use the relaxation practice log to set a SMART goal for 15 minutes of daily relaxation practice. Provide the Veteran with the CBT-HA step-by-step audios to guide their relaxation practice.

Self-Monitoring: Relaxation Practice Logs

The relaxation practice logs are a useful tool to help the Veteran track their practice and progress. Walk the Veteran through the 4 steps to complete their relaxation practice logs:

What we have found is that it is most beneficial to practice relaxation strategies for 30 minutes per day, but don't worry, we will work toward that goal throughout the treatment. For now, though I would like you to focus on starting off with 15 minutes of relaxation practice per day – you can break this up throughout the day, you do not have to do it all in one go. These strategies are the most helpful when you use them preventatively, so let's work together to find ways that you can include this in your everyday routine. What do you think would be reasonable? Are there times in your day you could practice your relaxation strategies (e.g., once you've parked your car before going into the grocery store, or after brushing your teeth at night)?

1. Set a SMART goal for your relaxation practice:
    a. "I will practice [relaxation strategy] for 15 minutes every day"
2. Rate your level of relaxation before and after you practice
3. Record the total time you engaged in the practice
4. Reflect on your practice - take note of any thoughts or emotions you experienced, any preferences for the time of day you practice, and any barriers to practice

Visit Wrap Up

End the appointment by summarizing the main content of the visit:

During today's appointment you learned

1. What stress is and how it can impact your physical and psychological wellbeing
2. Three relaxation strategies that activate your relaxation response (breathing, progressive muscle relaxation, and visual imagery)
3. The importance of tracking your progress

What remaining questions do you have for me today?

Appointment 3

Contributing Factors & Managing the Headache Threshold

This appointment will focus on taking a deeper look at the headache threshold theory that you introduced during the intake appointment and ways that the Veteran can manage the most commonly reported headache contributing factors (stress, inadequate sleep, skipped meals, caffeine, alcohol, weather changes, hormonal changes in women, and comorbid pain/medical conditions). If a particular factor is salient for a Veteran, aim to spend additional time on that skill. Additionally, during this appointment you will formally introduce the Veteran to goal setting and how to make weekly SMART goals.

Agenda

1. Home practice check-in
2. Learn a new skill (Headache threshold and contributing factors)
3. Goal setting for home practice

Worksheets

1. Contributing Factors
2. Goal Setting

Home Practice Check In

Spend a few moments checking in with the Veteran about how their home practice was since their last appointment. Make sure you provide the Veteran with affirmations whether they met the goals or not. Remind the Veteran that small progress is still progress!

Helpful Talking Points

1. What went well this week?
2. How did it go with the goal(s) you set during our last appointment?
3. What did you learn since our last appointment?
4. What strategies did you use to help you achieve the goal(s) you set?
5. What got in the way of you meeting your goal(s)?
6. How were the obstacles you faced different from or the same as the ones you

7. How did the goal(s) you set move you toward your overall treatment goal(s)?
8. What did you learn this week that can help you meet your goal(s) for next week?

Headache Threshold Theory

Refer to the image of the headache threshold theory you first introduced during the intake appointment.

What Are Contributing Factors?

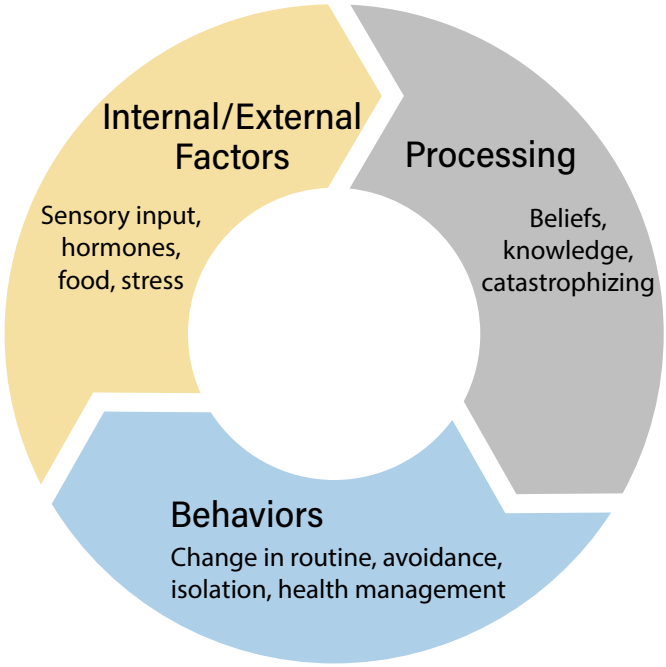
Contributing factors (also known as "triggers" or precipitating factors) are factors that increase the likelihood of the onset of headache and associated symptoms (Zagami, 2006). Traditionally, people with headache diseases were advised to avoid all potential contributing factors, even going so far as to eliminate certain food groups from their diets just in case they were associated with symptom elevation. However, we now understand that contributing factor differ for each person and avoiding all these factors can actually lead to a restricted lifestyle (Kelman, 2007) and can be stressful (Marcus, 2003). Encourage the Veteran to use their headache diary to track internal, external, and behavioral factors known to commonly be associated with headache. The headache diary can help the Veteran identify a list of all the factors that the Veteran believes are associated with their headache. Often Veterans focus on finding the one factor that "triggers" their headache symptoms every time so it can be helpful to emphasize that multiple factors may contribute to their headache pain and symptoms in different situations. Avoid going down a "rabbit hole" of chasing down low-likelihood or not useful potential contributors, like foods the Veteran rarely eats. Focusing on high value, likely factors like stress, sleep, skipping meals, and caffeine and alcohol will help the Veteran start to make connections between their lifestyle, their environment, their bodies and their headache and associated symptoms.

Talking About Contributing Factors

Using your headache diary can help you track all the different lifestyle and environmental factors commonly associated with your headache. This doesn't mean though that you need to always avoid all situations that might be associated with your headache pain and symptoms. Sometimes that is not even possible such as when you have a menstrual cycle or if weather impacts your headache pain and symptoms. The diary can, however, show you that that your headache is not always unpredictable, and you can act to influence how often they occur and how much they impact your life. The best way that you can help prevent your headache symptoms is by keeping a ***consistent schedule****. Remember though, it is usually the combination of internal, external, and behavioral factors that contribute to you experiencing a headache (think back to the threshold model we just talked about). While we want you to become aware of your personal factors, the rest of the appointment is going to focus on the factors that have the most evidence for them and specific lifestyle recommendations that can help your headache.*

Internal, External, and Behavioral Factors

When thinking about how contributing factors increase the likelihood of headache pain and associated symptoms, it can be helpful to conceptualize how the internal, external, and behavioral factors are all inter-related and cyclical. The Mature Organism Model (MOM) is one framework that can be used to help with this (Gifford, 1998).



Focus on Function: Is Avoidance the Best Plan?

Avoiding external factors like light and sound can at first seem like a good strategy but this behavioral strategy can escalate to Veterans who come into the clinic wearing sunglasses indoors or tell you they avoid any places with unpredictable sounds or smells. This can serve to limit a person's social, occupational, and community engagement and it can also over time make them more sensitive to the sensory input further isolating them and resulting in more frequency symptom onset. Graded, paced exposure to sensory input can help to balance the short-term risk of contributing to a headache experience with the long-term risk of further sensitizing the system.

Stress Impacts Other Contributing Factors

Stress can impact other potential contributing factors. For example, if the Veteran is stressed, it is likely that they are not eating or sleeping well, which can all impact a Veteran's headache frequency and severity. Try to elicit ways that stress has impacted other daily routines or factors in the Veteran's life.

Sleep

Sleep is a restorative process for the body. Insomnia is the most common sleep disorder in people with chronic migraine and it has been shown that treating insomnia can result in decreased headache frequency in those with chronic migraine. While not all Veterans with headache diseases will have a formal sleep disorder, it is important to assess everyone's sleep habits and whether they meet criteria for insomnia and/or sleep apnea, since treating these conditions can positively impact headache symptoms. The Insomnia Severity Index (ISI) is administered during the intake assessment to evaluate the presence and severity of sleep difficulties. For Veterans who meet criteria for clinical insomnia based on the ISI, a referral to the sleep clinic may be needed and specific CBT for insomnia treatment (Manber et al., 2014) may be clinically indicated. For Veterans with a formal sleep apnea diagnosis who are prescribed a CPAP machine, it can be helpful to ask additional questions about any barriers to adherence and either use the supplemental worksheets or refer the Veteran for additional health psychology or occupational therapy treatment to help with adherence and sensitization as necessary.

Assessing Sleep Habits

If the Veteran identifies sleep as an issue for them, then it likely could be a contributing factor for them:

Have you noticed any relationship between your sleep and headache symptoms?

Consider the following questions to assess whether sleep initiation and/or maintenance is an issue for your Veteran:

- *What time do you typically go to bed at night?*
- *Once in bed, how long does it take you to fall asleep?*
- *How many times do you wake up in the night? What do you think causes you to wake? How long do the awakenings last?*
- *What time do you wake up in the morning?*
- *What do you do if you have trouble falling asleep?*
- *How would you describe your sleep environment?*
- *How do you feel in the morning when you wake? Are you rested? How often do you wake with a headache?*

Two key concepts from CBT-insomnia can be helpful to discuss in further detail: stimulus control and sleep hygiene.

Stimulus control is based on the principles of operant condition. The aim of stimulus control is to create a positive association between the bed and sleep which can help the circadian cycle.

Tips For Stimulus Control

- *Go to bed when sleepy*
- *The bed should only be used for sleep and sexual activities*
- *After being in bed for 15-20 minutes if you still cannot sleep, get out of bed and only go back to bed when you are sleepy*
- *Set an alarm to wake up at the same time every day (even on the weekends)*
- *Get out of bed within 5-10 minutes of your alarm ringing*
- *Do not nap. It is common for people with headache to nap in order to find relief when their headache symptoms are elevated, which can have a downstream effect for their sleep. It is therefore recommended that the Veteran sleep only for the length of time that they need to experience pain relief*

Sleep hygiene includes different habits that help the Veteran set themselves up for a better night sleep and can help them feel more alert in the daytime.

Tips For Improving Sleep Hygiene

- *Ensure your bedroom is free from noise, is dark, and not too hot or too cold temperature (think goldilocks!)*
- *Avoid caffeine and nicotine close to bedtime (these are stimulants and can negatively impact your sleep)*
- *Avoid vigorous exercise before bed, light aerobic exercise can be helpful though*
- *Avoid using screens in bed (TV, tablets, computers, phones)*
- *Try not to have a heavy meal close to bedtime, a light snack is ok*
- *Try to have a regular bedtime routine, that includes time to wind down – take a warm shower, read a book, write down your worries in a journal so that you do not spend time in bed worrying*

Focus on Function: Sleep and TTH

Sleeping position can impact TTH for some Veterans. Recommend the Veterans consider simple low cost options such as a simple towel roll under their neck or exploring whether their pillow is too thin or too thick. While there is no one perfect sleep position, maintaining a neutral spine can reduce over-activation of muscles. Also consider listening for signs that the Veteran may clench their jaw or grind their teeth at night as this can also contribute to TTH. If you suspect either of the above may be a contributing factor consult with the PCP for consideration of an OT or PT consult.

Diet & Substances

Skipping/Delaying Meals

Many people report that fasting, missing, or delaying meals is a common factor that can contribute to their headache or cause the symptoms to be more severe. The following recommendations can be helpful, keeping in mind to be sensitive of any cultural or religious considerations which may impact fasting:

Missing Meals

1. *Try not to skip or delay meals*
2. *Try to space your meals out so that you are eating at regular intervals*
3. *Ensure you are adequately hydrated (drink 64oz of water a day)*

Caffeine

Many people turn to caffeinated beverages or over the counter medications containing caffeine to ease their headache symptoms. However, consuming too much caffeine can actually lead to a worsening of headache symptoms (medication overuse headache). It is recommended that caffeine intake is limited to about 200mg/day (that's around 2 cups of coffee) for people with episodic migraine and ideally should be avoided in those with chronic migraine. It is important to advise the Veteran to decrease caffeine intake slowly so that they do not experience withdrawal symptoms. Additionally, remind them that the amount of caffeine differs by brand of beverage and type of coffee so it can be very hard to actually estimate how much caffeine they are consuming in a day. An online caffeine calculator can help the Veteran calculate how much caffeine they consume.

Isn't Caffeine Used To Treat Headache?

Caffeine is a vasoconstrictor which means that it can be helpful during headache symptom onset and is commonly used in some over the counter headache medications. However, daily caffeine use should be limited as it can increase the likelihood of a Veteran having a headache. Remember, since some medications have caffeine in them you'll need to take that into account when calculating how much caffeine a Veteran is using on a regular basis.

Alcohol

Some Veterans may share that alcohol triggers their headache and associated symptoms within a few hours (30 minutes to 3 hours) or they may experience a delayed alcohol induced headache (the next day). While red wine is commonly reported as a contributing factor, all alcoholic drinks could potentially lead to an onset of headache symptom frequency, severity, and intensity. Again, it is important to note other factors that occurred around the time of drinking alcohol (e.g., stress levels) and the impact alcohol can have on sleep quality.

Specific Foods

Many Veterans report that chocolate and nitrates are contributing factors to their headache and associated symptoms, but this does not mean that they impact everyone. It is helpful to remember that it is usually a combination of factors that impact a headache (think threshold theory). It is also important to note that just because a Veteran thinks that something is a specific food trigger it does not necessarily mean that their perception is accurate. It is likely that there were a number of other contributing factors (like a stressful day, poor sleep, or eating off schedule) that went along with eating the food.

Should I Watch Everything I Eat?

While identifying potential food triggers can be helpful, we do not want Veterans to be too strict in their diet as this may not necessarily help their headache symptoms. For most Veterans with headache diseases, it is best to focus on "high value" contributing factors described above, rather than worrying too much about identifying numerous specific foods which can lead to a restricted lifestyle.

Weight Management

Being overweight or obese can contribute to a worsening of symptoms in terms of headache frequency, severity, and functional deficits. Obesity also increases the risk of migraine chronification (a change from episodic to chronic). Weight management treatment is outside of the scope of CBT-HA, so you may wish to consider a referral to MOVE! or additional individual health psychology treatment when weight management or nutrition services are clinically indicated.

Physical Activity

Engaging in frequent physical activity (e.g., jogging or taking a brisk walk) at a moderate intensity has been shown reduce stress, pain, and decrease the frequency of headache and associated symptoms. Minimizing sedentary behavior (e.g., getting up routinely throughout the day rather than sitting or lying down for long stretches of time) also appears to be useful for headache management. Make sure you communicate with the Veteran's medical team to determine whether the Veteran has any restrictions on engaging in routine physical activity. Remind the Veteran that if they feel dizzy, experience chest pain, or other significant pain while engaging in physical activity they should stop exercising and check in with their medical provider. Some quality general resources to help encourage movement can be found on the *NIH National Institute on Aging site*.

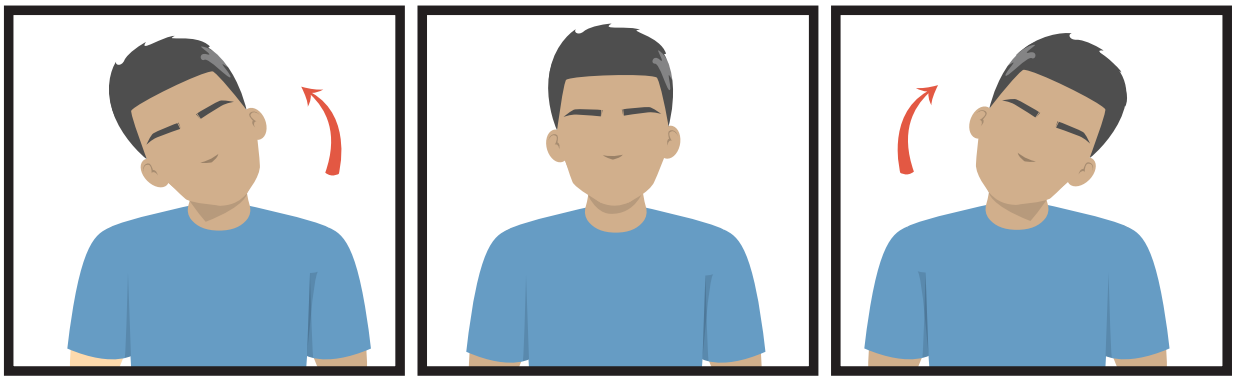
One common recommendation more specific to exercise and headache treatment is neck stretching. No universal rules apply and a referral to a physical therapist may be indicated if a more in-depth physical exam and home exercise program for the neck is warranted. There are, however, some general stretches that are typically safe and often presented as the "go-to" in basic neck stretches. The images below provide some examples of these exercises.

Muscle Stretches

During muscle stretching, the key is to gently stretch your muscles with smooth and slow motions. Never force a tight, tense muscle with sudden movements. Your muscles will let you know if you are treating them with the gentleness they like—or if you are not!

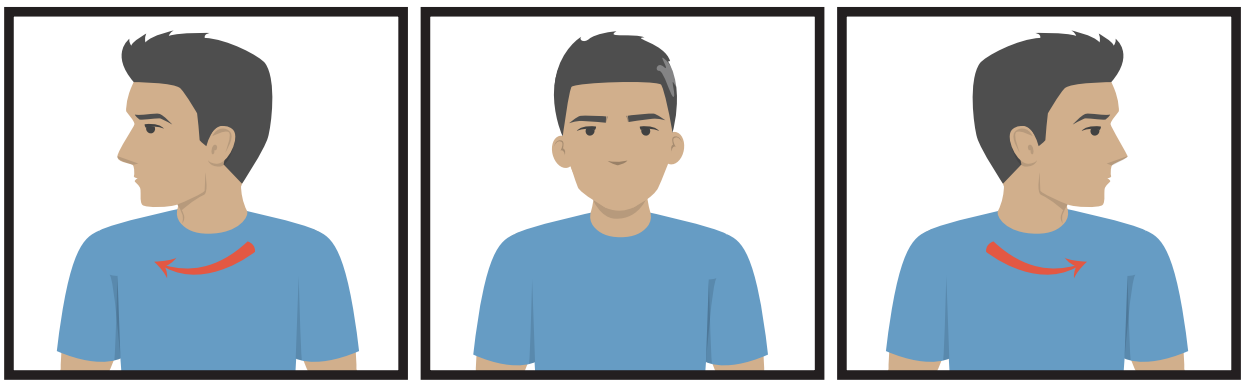
Exercise No. 1 - Side Bend

This exercise is designed to help stretch the upper shoulder muscles. While sitting or standing, gently bend your head to one side, trying to bring the ear as close as possible to the shoulder without raising the shoulder. Avoid turning your head while stretching it. Hold this position for six seconds, then relax. Repeat to other side.



Exercise No. 2 - Side Turn

This exercise stretches the upper back and shoulder muscles. Turn your head about half way to the side and bend the head forward. You can use one hand and gently pull down on your head to increase the stretch. Hold for six seconds, then relax. Repeat.



Holroyd et al., 2000

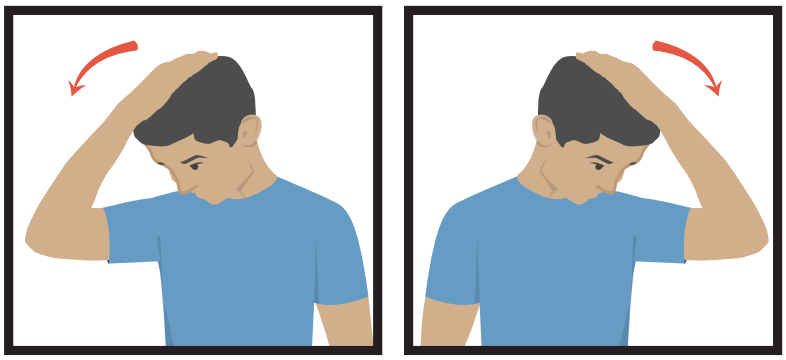
Muscle Stretches

Exercise No. 3 - Forward Bend

This exercise is designed to stretch the muscles at the base of the neck and around the top of the spine. While sitting or standing, bend your head forward and try to touch your chin to your chest. You can place your hands behind your head and gently pull forward to increase the stretch. Hold for six seconds, then relax. Repeat.

Exercise No. 4 - Diagonal Bend

This exercise stretches the upper back and shoulder muscles. Turn your head about half way to the side and bend the head forward. You can use one hand and gently pull down on your head to increase the stretch. Hold for six seconds, then relax. Repeat.



Holroyd et al., 2000

Focus on Function: What Do You Mean By Moderate-Intensity Physical Activity?

When we ask a Veteran to engage in physical activity at a moderate intensity, the Veteran should be working hard enough that they can still speak but that they find it hard to carry on a normal conversation or sing. We often call this the "talk test". We would like the Veteran to aim for 30 minutes a day of physical activity – it does not have to be all at once, it can be broken up throughout the day. In fact, activity paced throughout the day can often be more beneficial. Activity provides blood flow to the nerves and just like you would not drink a gallon of water in the morning and expect not to be thirsty the rest of the day, providing paced movement often works better. Teaching Veterans to use a pre-determined time or amount of activity, rather than using pain, is the most effective way to increase the frequency and intensity of their activity over time at their own pace. Also remember that activity does not have to mean traditional exercise. Many daily household, yard, community, and active leisure tasks can help people meet their activity levels as long as they are working hard enough to meet the "talk test". If the Veteran is having difficulty, a referral to PT for a home exercise program or to occupational or recreational therapy to help reengage the person in valued life roles that help motivate them to meet these activity levels may be beneficial.

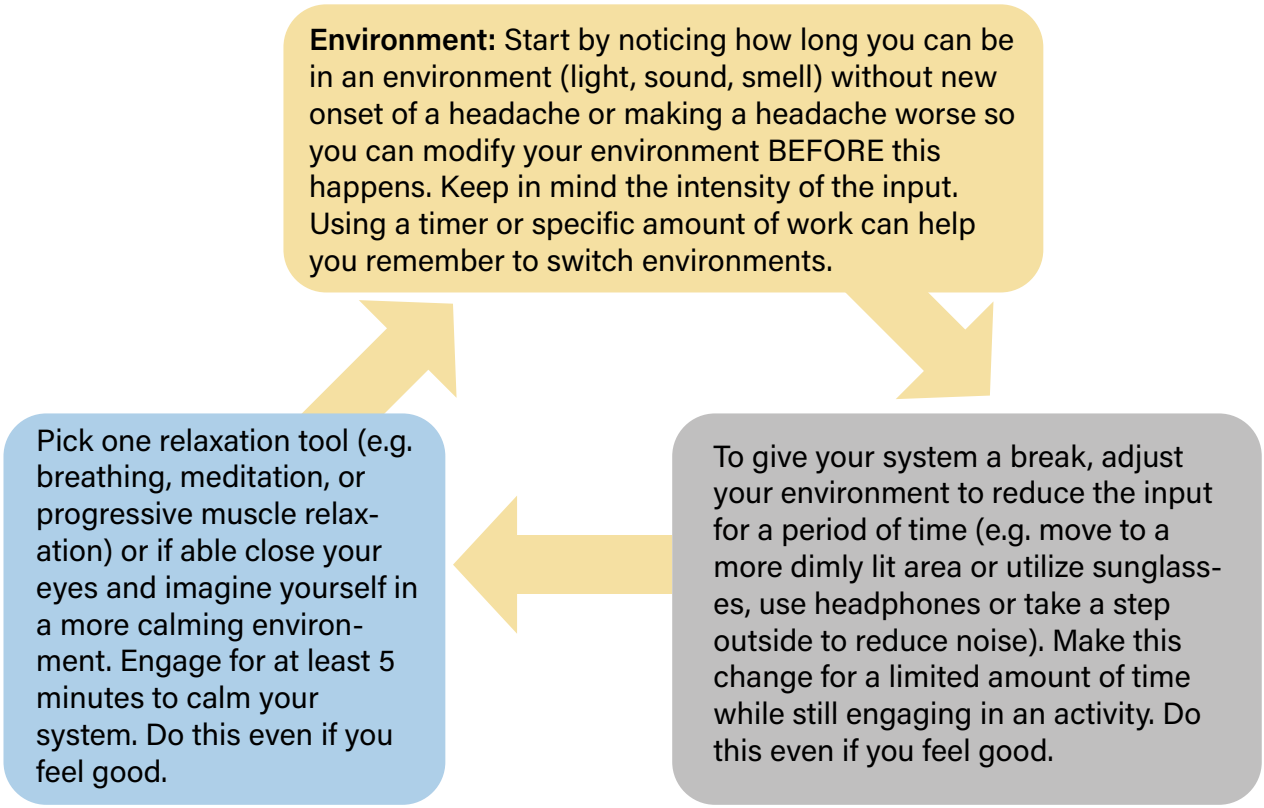
But I Don't Want To Make My Pain Worse!

It is likely that you are working with a Veteran who also experiences chronic pain in other parts of their body (e.g., chronic low back pain, fibromyalgia, osteoarthritis). It is not uncommon that they may be reluctant to engage in physical activity due to a fear of making their pain worse. Being physically active can actually help with their pain and increase their flexibility and strength; however, the goal is to give the nerves in the body movement, space, and blood flow without over-activating them and causing a flare. Also remember, that activity which may be gentle for some people may not be for others so tailoring the activity to the person is important. Encourage the Veteran to prioritize frequency, then duration, then intensity. In other words, have them pick how much activity they feel confident they could do day after day without experiencing an acute onset of headache pain and symptoms or a flare in their other pain site(s). Over time, increase slowly how long they do the activity for. The focus is not on working the body really hard. High intensity activity is not recommended until the person can tolerate daily activity and moderate exercise consistently over the course of several weeks without triggering a flare. A deeper understanding of the neuroscience of pain can help you to communicate to your patients why this type of activity plan will help them and a referral to rehab therapy like OT or PT may be beneficial in many cases.

Focus on Function: Activity Circuits

Working with Veterans to notice contributing factors is step number one. Step number two includes being mindful of any avoidance patterns that are limiting engagement in their lives. Physical activity and sensory input can be common factors where people use avoidance as a coping strategy. As stated before, contributing factors cannot always be avoided and if they are, the Veteran can actually become more sensitive. Therefore, the aim is to help set the Veteran up for success with functioning in their environment while participating in an activity rather than avoiding it.

Tools like activity circuits can help the Veteran set up a thoughtful plan to avoid either over or under exposing them to input as either can impact pain and headache frequency and can hinder long-term treatment success. Skilled rehab therapy from an OT or recreation therapist can help patients learn to increase their daily activity through engagement in daily tasks at home and in the community.



The example above focuses on external contributing factors in the environment, but the same idea can be used for other factors. For example, if a Veteran with TTH finds that working overhead or on a computer for a prolonged period increases their likelihood of a headache, have them pre-determine a time or amount of task they can do then have them rotate positions for another activity, then use a relaxation skill, then return to the position.

SMART Goals & Personalized Home Practice

Collaboratively setting treatment goals with the Veteran is key and can help guide treatment. In order to help maximize the Veteran's self-efficacy, it is important to set Veteran-centric personalized goals. Overall treatment goals should be realistic and something that the Veteran can achieve over the course of the treatment. It can be helpful for both the therapist and Veteran to refer back to the overall treatment goal throughout the sessions to help the Veteran remain motivated by a clear, purposeful aim. Weekly home-practice **behavioral** goals should be set at the end of each CBT-HA appointment.

For the past few appointments, the therapist has modeled to the Veteran how to set a SMART goal, for example "I will practice relaxation strategies for 15 minutes each day by Friday". During this appointment, you will be teaching the Veteran about the importance of setting SMART goals using the **SMART Goal Setting** worksheet.

S	M	A	R	T
SPECIFIC	MEASURABLE	ACTION-ORIENTED	REALISTIC	TIME-BOUND

GOAL SETTING

S	SPECIFIC	Goals should be concrete and specific. Who, Where, When, Why, How? E.g., "I will drink one cup of coffee at 8am daily" vs. "I will drink less coffee"
M	MEASURABLE	There should be an easy way to measure your progress toward your goal. E.g., "I will walk for 30 minutes per day" vs. "I will get in better shape"
A	ACTION-ORIENTED	Action goals help create actual change. What action do you need to take? E.g., "I will write down my symptoms using my headache diary" vs. "I will notice my symptoms"
R	REALISTIC	Goals should be realistic. Unrealistic goals can lead to giving up. E.g., "I will practice PMR for 20 minutes a day" vs "I will meditate for 3 hours a day."
T	TIME-BOUND	Set the time period for accomplishing the goal. E.g., "I will set my alarm for 6am each day by Friday" vs. "I will set my alarm for 6am"

During the intake appointment you worked with the Veteran to set a goal on a specific contributing factor. This week, you will be guiding the Veteran in setting a SMART goal related to any of the other contributing factors discussed today (sleep, skipping meals/hydration, caffeine, alcohol, specific foods, physical activity). Again, setting Veteran-centric goals is important, so engaging in shared decision making around working on the same contributing factor related goal set in week one or adding in another goal can be helpful.

Additionally, remind the Veteran that it takes time to see the direct benefits of relaxation practice and therefore daily relaxation practice is still important. The Veteran has been working on practicing relaxation strategies for 15 minutes a day since the last appointment. Now that you have introduced the concept of SMART goals to the Veteran, ask them to set a SMART goal for their relaxation practice (breathing, progressive muscle relaxation, and/or guided imagery). Encourage the Veteran to build upon their relaxation goal set at the last appointment (e.g., increase frequency of practice).

Helping Veterans Set SMART Goals

It can be helpful to think of goals like the finish line in a race – they help give direction for treatment and let the Veteran and therapist know that they are moving in the right direction. Some Veterans may struggle with setting goals. When setting goals, it can be helpful to explore what the Veteran's values in life so that they can start to see the connection between their goals and values – using motivational interviewing skills may be particularly helpful. The following are recommendations for eliciting goals:

- *If I had a magic wand and could take away all your pain, how would life look different?*
- *What would you like to do in your life that you are not doing now?*
- *When you think about a day where you knew you wouldn't have a headache, what would that day look like?*
- *What are the things you most look forward to each day?*

Many Veterans may share that they want to "have less headaches" or "do more" encourage the Veteran to utilize the SMART goal setting format when setting behavioral goals and to think about what they would be able to do differently if their headache pain and symptoms were better managed.

SMART goals must be Veteran-centric to increase chance of goal attainment and to increase the Veterans' self-efficacy. Utilizing motivational interviewing skills spend a few moments asking their Veteran about the importance and confidence for meeting the goals set:

On a scale of 0 to 10, with 0 being not at all important and 10 being extremely important, how important is it for you to [Veteran's personalized goa]. On that same scale 0 to 10, how confident are you that you can achieve [Veteran's personalized goal]?

If the Veteran's goal is low on importance, then you may wish to encourage the Veteran to set a different goal that is more important to them. It can be helpful to briefly explore the Veteran's values and to highlight the goals they are setting in the larger context of what is important to them in life. Ask the Veteran to think about the reasons why setting this goal is important to them, what obstacles they anticipate might get in the way of achieving their goals, and what potential solutions they can think of to help them achieve their goals.

Visit Wrap Up

End the appointment by summarizing the main content of the visit:

During today's appointment you learned

1. About the headache threshold theory
2. What contributing factors are and how they differ for each person
3. The importance of keeping a consistent schedule
4. Different ways that you can improve your sleep
5. The role that diet and physical activity can play in your headache
6. SMART goal setting

What remaining questions do you have for me today?

Appointment 4

Optimizing Acute Management

This appointment will focus on helping the Veteran understand the "early warning" signs of headache symptom onset, so that the Veteran can utilize their skills to decrease the severity and duration of their headache and associated symptoms. Many of the skills so far in CBT-HA aim to help prevent the onset of headache and associated symptoms. In this appointment you will introduce the **STAY CALM!** self-management strategies that the Veteran can use to minimize the impact of those headache symptoms that could not be prevented.

Agenda

1. Home practice check-in
2. Learn a new skill (identifying early warning signs and optimizing acute management strategies)
3. Goal setting for home practice

Worksheets

1. Getting to Know You!

Home Practice Check In

Spend a few moments checking in with the Veteran about how their home practice was since their last appointment. Make sure you provide the Veteran with affirmations whether they met the goals or not. Remind the Veteran that small progress is still progress!

Helpful Talking Points

1. *What went well this week?*
2. *How did it go with the goal(s) you set during our last appointment?*
3. *What did you learn since our last appointment?*
4. *What strategies did you use to help you achieve the goal(s) you set?*
5. *What got in the way of you meeting your goal(s)?*
6. *How were the obstacles you faced different from or the same as the ones you anticipated?*
7. *How did the goal(s) you set move you toward your overall treatment goal(s)?*
8. *What did you learn this week that can help you meet your goal(s) for next week?*

Early Warning Signs

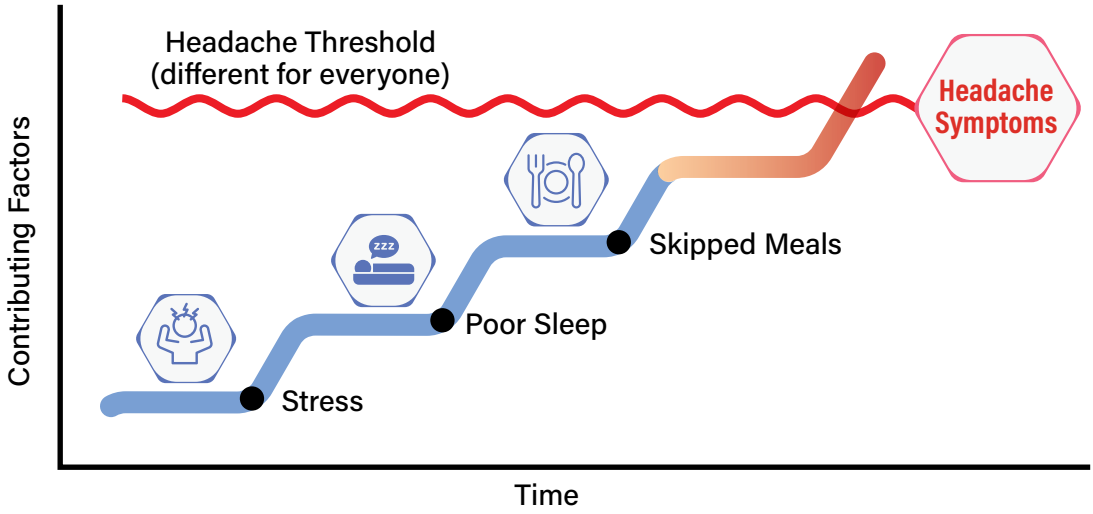
Many of the skills so far in CBT-HA aim to help prevent the onset of a Veteran's headache and associated symptoms. There will however be times where the onset of these symptoms is inevitable. Remind the Veteran that the skills learned in CBT-HA are still developing because they may be under the misperception that their headache pain and symptoms should be "cured" by this point. It is common for some Veterans to feel anxious or frustrated knowing that they will experience headache and associated symptoms. Maybe they have thoughts such as "here we go again, today is going to be ruined". The first step in decreasing the severity and duration of those symptoms that could not be prevented involves identifying "early warning" signs related to headache symptom onset. These signs suggest headache pain and symptoms are escalating and are an opportunity for the Veteran to act before their symptoms progress.

We have the most evidence of early warning signs for migraine and migraine-type headache. Researchers have been able to identify specific phases of migraine, prior to pain onset, with distinct neurologic symptoms. These symptoms range from sensory disturbances to yawning. Refer to the ***Getting to Know You! worksheet*** and discuss potential early warning signs that the Veteran has noticed. If your Veteran does not have migraine or migraine-type headache, the profile of warning signs will likely be different. Listen to the Veteran's experience to determine whether identification of warning signs could be useful for them, otherwise proceed to the STAY CALM! strategies. Keep an open mind, remembering that warning signs may come in many different presentations.

Migraine Early Warning Signs & The Premonitory Phase

The image below can help illustrate the different phases of a migraine experience.

Migraine comprises different phases. The first stage, also known as the premonitory phase, happens a few hours to one day before your headache begins. You might notice that you feel more tired, irritable, have difficulty concentrating, or even yawn more than usual. Although the early warning signs can be different for each person, the good news is that they don't really change within the same person. Sometimes you might find it easy to identify your early warning signs and other times the signs may not be as obvious. This handout (Getting to Know You!) shows you common symptoms people might experience in the day leading up to their headache. Are there any things on here that you have noticed that you experience in the day leading up to your symptoms developing? You might not always notice that these symptoms and feelings are signs that your headache pain and symptoms are developing. Your headache diary can help you track any patterns in the symptoms that you experience so that you can act early on to reduce the severity and duration of your headache and associated symptoms.



Strategies for Optimizing Acute Management

1 WARNING SYMPTOMS
Fatigue, irritability, concentration difficulties, food craving, yawning
Hours/Days Before onset

2 AURA
Sensory changes, flashing lights or zig zag lines, changes in speech, numbness or body weakness
15-30 mins

3 HEADACHE
One-sided, pulsating head pain, nausea/ vomiting, sensitivity to light and sound
4 hours – 3 Days

4 RECOVERY
Fatigue, concentration difficulties
Hours-Days

The STAY CALM! strategies can be used by the Veteran to help decrease the severity of their headache and associated symptoms and how long they last when they do experience them.

STAY CALM!

Shift your focus away from the pain and headache symptoms
Take your medications as prescribed
Activate your relaxation response
You are the expert!
Challenge unhelpful thoughts and use coping statements
Always keep a consistent schedule
Listen to your early warning signs
Make time for self-care

Shift Your Focus Away from the Pain & Headache Symptoms

The Veteran has a choice of what they pay attention to. Focusing your attention on something other than their headache symptoms can be helpful in providing acute relief. This strategy can be beneficial since we can only pay attention to one thing at a time. Focusing our attention on something else does not mean discounting what you are experiencing, but it can be helpful in the short-term. While we want the Veteran to take an active role in managing their headache disease, there are times when changing their physical environment, their mental focus, or the activity they are engaging in can be helpful as it can impact the onset and intensity of the symptoms they experience. Often a Veteran can think of the simple activity of taking a break from what they are currently doing.

Ways to Shift Your Focus

1. Imagine a calm place (or use visual imagery)
2. Listen to enjoyable music
3. Do a crossword puzzle
4. Go shopping, take a walk, or sit outside
5. Call a friend

Take Your Medications as Prescribed

The Veteran's physician has likely prescribed different types of medications for headache management. Headache treatment is usually categorized as either **preventive** or **acute.** Medications used to manage headache can come in many different forms including pill or injection. Many Veterans have shared that they do not like using medications to manage their headache and associated symptoms. Reasons for this can include:

- fear of or negative previous experiences with the side-effects
- difficulty or confusion around medication management
- numerous previous medication trials have been ineffective
- reluctance to taking acute medications, try to "save" their medications for the days when their headache symptoms seem unmanageable to try to prevent MOH

Find out how the Veteran feels about using medications. Ask the Veteran about any medications purchased over the counter, the number of medications, and frequency of their use. Encourage the Veteran to talk with their doctor about what medications have worked or have not worked so that they can work together to find a medication that can work well for their own needs. Research has shown us that combining medications with the behavioral self-management skills you have been and will continue to work on leads to the best outcomes.

Preventive vs. Acute Treatment

Remember, preventive treatment includes strategies used daily to help decrease the frequency, severity, and duration of headache and associated symptoms, whereas acute treatment includes strategies that are used as needed to abort headache and associated symptom progression or to reduce the severity of them. Work with the Veteran to identify and problem solve any barriers to medication adherence.

Activate Your Relaxation Response

Over the past several weeks the Veteran has been focusing on practicing different relaxation strategies (progressive muscle relaxation, paced breathing, and visual imagery). These relaxation strategies can be helpful as an acute self-management strategy. Some additional quick relaxation strategies that help the Veteran calm their nervous system and manage their acute pain include shorter progressive muscle relaxation, relaxation by recall, cue-controlled relaxation, and autogenic phrases. Remind the Veteran to use the CBT-HA step-by-step audio to guide their relaxation practice.

Relaxation by Recall

Learning to identify areas of tension and how to relax the muscles without tensing them first is called relaxation by recall. Recall the sensations of your relaxed muscles. Work your way through relaxing each of the four muscle groups one at a time and let the tension go.

- Both arms
- Face, neck, and shoulders
- Back, chest, and abdomen
- Both legs

If a muscle group is not fully relaxed, try again. If it is still not relaxed then practice your tension-relaxation cycle by tensing, then relaxing the muscle group.

Cue Controlled Relaxation

Cue controlled relaxation allows you to relax tense muscles in only a few minutes. Begin by using your relaxation by recall skill (relaxing your muscle groups without tensing them first). Then, take 1 to 3 regular breaths using your paced breathing skill. With every exhale think the word “RELAX.” You can now use the word “RELAX” along with paced breathing to “cue” the relaxation response in the body.

Autogenic Phrases

Autogenic phrases are statements that you repeat to yourself to help you relax. Examples include: "I am calm," "I am relaxed," "My body is warm and relaxed." When you start to notice any tension in your body, you can use an autogenic phrase to stop your tension from building up.

You Are the Expert!

The Veteran is now becoming an expert about their own headache disease(s) and has gained several skills available to them. Empower the Veteran to decide which of the self-management skills they have gained will be most helpful for them to manage their headache and associated symptoms. If they find themselves in a stressful situation it can be helpful to work on ways to remove themselves from that situation even if it is just temporary.

Coping Statements

Coping statements can be particularly helpful in combating any unhelpful thoughts that often pop up. The Veteran may wish to make a list of coping statements with you and carry the list around with them so that they can refer to them when needed. Here are some common examples:

- I've handled this before; I can do it again
- I can only do my best
- The pain will pass
- I have lots of skills I can use to manage my headache
- I am confident in my ability to utilize my migraine management plan

Always Keep A Consistent Schedule

It is important to continue to keep a consistent schedule even when experiencing an acute onset of headache and associated symptoms. It is important for the Veteran to continue to eat regular meals, stay hydrated, keep a consistent sleep-wake schedule, and manage their stress, as these all have the potential to impact their headache symptoms. When experiencing symptom elevation, the Veteran may find it beneficial to drink a large bottle of water and eat a light snack to provide relief from their headache symptoms. Written schedules, checklists, or calendars can help to support Veterans in maintaining these routines when their symptoms or stress are elevated as well as during periods of symptom remission when adherence to helpful strategies can decline.

Listen to Your Early Warning Signs

Becoming more aware of their early warning signs can allow the Veteran to act appropriately and utilize their self-management skills to decrease the severity and duration of their headache and associated symptoms. After the Veteran has tried all the tools in their toolbox and they still do not have relief from their headache they can try adding in more passive strategies that may help make their symptoms more tolerable, including, using an ice pack, lying down in a dark and quiet room, or gently rubbing their temples.

Make Time for Self-Care

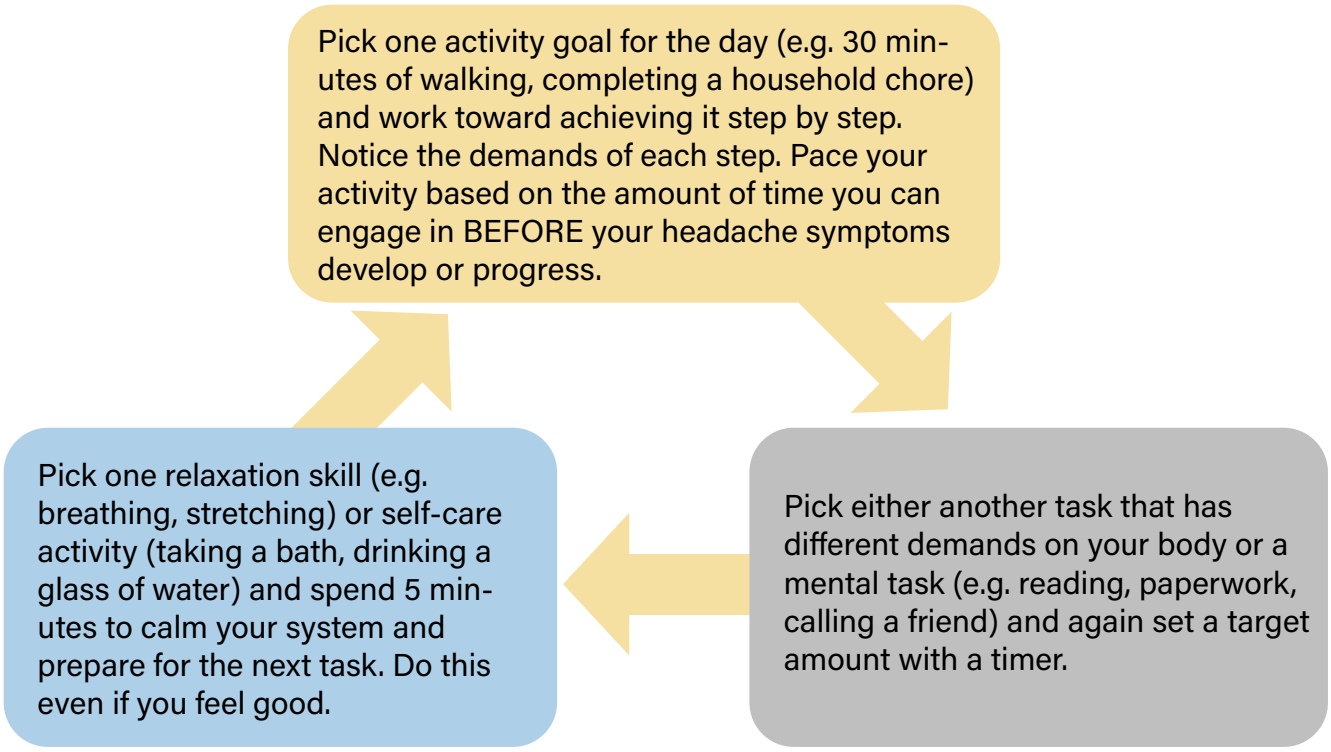
When working with Veterans with migraine, it can be helpful to review the different phases of migraine. The final phase of a migraine is known as the **postdrome phase** and it usually lasts up to a day after the headache phase is over. Some people notice that they feel fatigued and have a hard time concentrating. During this time, it is important that the Veteran is especially kind to themselves, keeps practicing their relaxation skills, continues to manage their stress, and keeps a consistent eating and sleeping schedule to help their body stay in a balanced state.

Why Is Self-Care So Important During the Postdrome Phase?

The 24-hour period after the headache phase, when the pain ends, and associated symptoms dissipate is when there is the highest likelihood of your headache symptoms recurring. By taking care of yourself during this period of time you can reduce the frequency of your headache-related symptoms over time. At the same time, just like we now know that gentle regular movement is better for a flare in back pain than bed rest, introducing light activity and tolerable amounts of lights, sounds, or other factors that impact your threshold is better than avoiding life altogether.

Focus on Function: Staying Active Despite Symptom Elevation

While the amount of activity a Veteran does may vary on days where pain and other headache symptoms are increased, the goal is to keep baseline activity as consistent as possible and avoid boom bust patterns. This is important for the treatment of their headache as well as their quality of life and functioning. Consider use of an activity circuit like the one below to help the Veteran make a plan.



Personalized Home Practice

Remember, in order to help maximize the Veteran's self-efficacy, it is important to set Veteran-centric personalized goals. Remind the Veteran that it takes time to see the direct benefits of relaxation practice and therefore daily relaxation practice is still important. Ask the Veteran to set a SMART goal for their relaxation practice (paced breathing, progressive muscle relaxation, and guided imagery). Encourage the Veteran to build upon their relaxation goal set at the last appointment (e.g., increase frequency of practice).

In addition, work with the Veteran to identify a goal related to where they can incorporate some STAY CALM! strategies.

Example Goal Setting Topics

- Medications: *I will set an alarm on my phone at [specific time] to take my preventive medications daily.*
- Relaxation strategies*: I will practice paced breathing for 15 minutes and use autogenic phrases during the onset of my headache symptoms.*
- Coping statements: *I will write down a list of 3 coping statements and put them in my wallet so I can read them when my headache symptoms start.*
- Hydration: *I will drink a large glass of water and have a light snack when I notice my headache symptoms are starting.*
- Early Warning Signs: *I will use the* ***Getting to know you!*** *worksheet to track my early warning signs.*

Visit Wrap Up

End the appointment by summarizing the main content of the visit:

During today's appointment you learned

1. *How to identify your early warning headache signs*
2. *How to STAY CALM! when your headache symptoms progress by using many different strategies to manage those headaches that were inevitable*

What remaining questions do you have for me today?

Appointment 5

Combating Unhelpful Thoughts

This appointment will focus on helping the Veteran identify, challenge, and change any unhelpful thoughts related to their headache. The Veteran will become more aware how their thoughts impact their emotions and behaviors. By the end of this appointment, the Veteran should feel empowered to change the way they think about their headache disease(s).

Agenda

1. Home practice check-in
2. Learn a new skill (understand the ABC model, how to catch, check, and change automatic thoughts, and coping statements)
3. Goal setting for home practice

Worksheets

1. Combatting Unhelpful Thoughts
2. Thought Log

Home Practice Check In

Spend a few moments checking in with the Veteran about how their home practice was since their last appointment. Make sure you provide the Veteran with affirmations whether they met the goals or not. Remind the Veteran that small progress is still progress!

Helpful Talking Points

1. *What went well this week?*
2. *How did it go with the goal(s) you set during our last appointment?*
3. *What did you learn since our last appointment?*
4. *What strategies did you use to help you achieve the goal(s) you set?*
5. *What got in the way of you meeting your goal(s)?*
6. *How were the obstacles you faced different from or the same as the ones you anticipated?*
7. *How did the goal(s) you set move you toward your overall treatment goal(s)?*
8. *What did you learn this week that can help you meet your goal(s) for next week?*

Automatic Thoughts

Throughout the day our minds are filled with many thoughts that help us navigate our daily lives. Some of the time we are aware of what we are thinking. Other times we are not aware, and our thoughts happen automatically, but they can still impact us. Our previous experiences influence the automatic thoughts we have and the way that we interpret situations. While some of the thoughts a Veteran may have in response to their headache symptoms might be accurate or to some degree based on fact, they often become distorted, all-encompassing, and unhelpful. These automatic thoughts are powerful and can increase the severity and duration of headache and associated symptoms.

Many Veterans commonly think that the event or situation leads them to feel and behave in a particular way. For example, *Having a headache and cancelling my plans makes me feel frustrated.* One way to help a Veteran gain more confidence in their ability to manage their headache disease and the way they respond to a situation is to consider the impact of their automatic thoughts.

Your Thoughts Impact How You Feel

Imagine that you are in the doctor's office waiting for an appointment at the VA and your doctor is running late:

1. *What are you thinking?*
2. *What are you feeling?*

Now imagine that you find out that the reason that your doctor is running late is because she/he had to take care of an emergency with a Veteran who was scheduled before you?

1. *What are you thinking?*
2. *Does this additional information change the way you feel?*

Spend some time discussing how in both cases the scenario was the same – but once the Veteran had additional information, their thoughts likely changed and consequently the way that they felt changed. Reinforce, how the Veterans' thoughts are powerful in shaping how they feel and that this is also the case when thinking about their headache.

Now that you have explained to the Veteran how their thoughts impact their emotions, you can present the ABC model to highlight how our thoughts (also known as cognitions) can impact how we feel (affect/emotions) and how we respond to a situation (behavior/actions). Walk the Veteran through the two examples below to illustrate the ABC model.

A Activating Event	B Belief	C Consequence
Running late to work	*"This is going to be my worst headache. I should be able to manage but I can't."*	Emotions: frustration, anger Physical sensations: tense muscles Unhelpful behaviors: skip meals, push through
Woke up with a headache	*"Here we go again, another day that I have to deal with this migraine and let my friend down."*	Emotions: anger, stress, sadness, frustration, irritability Physical sensation: increased muscle tension, fatigue, nausea, pain Unhelpful behaviors: cancelling plans to see friends, avoiding responsibilities, going to bed

In the scenario above, it is actually the unhelpful thought *("this will be my worst headache , I should be able to manage but I can't"*) that leads to emotions (frustration) and physical sensations in the body (muscle tension), which results in unhelpful behaviors (pushing through, skipping meals) that make headache and associated symptoms worse.

Personalizing the ABC Model

Once the Veteran understands the ABC model it is time to highlight the ABC model using the Veteran's own experiences. Ask the Veteran to pick a time over the past two weeks that they used their STAY CALM! acute management strategies and discuss any automatic thoughts, emotions, physical sensations, and unhelpful behaviors they noted. The following questions can be helpful to stimulate discussion:

- *What thoughts did you notice?*
- *What emotions did you notice?*
- *What physical sensations did you experience?*
- *What actions did you take?*

Common Unhelpful Thoughts

We all have thoughts that can be unhelpful – they make us feel sad or angry, stop us from doing the things we enjoy and make our headache symptoms worse. There is tendency for thoughts to become negative in relation to headache pain and symptoms and encouraging the Veteran to become more aware of the unhelpful thoughts will allow them to make adjustments in a more helpful way. Here are some examples of common unhelpful thoughts related to headache:

Label	Explanation	Example	Consequence
Catastrophizing	Expecting the worst possible outcome of a situation	*"It would be the worst thing if I got a migraine today"*	When we expect the worst it is common to ask ourselves "What if.." questions. This can lead us to feel fearful and helpless
Overgeneralization	Coming to a general conclusion based on a single event	"I didn't get asked back for a second job interview, no one will ever want to hire me, I must be useless"	This type of thought can be unhelpful since you may start to predict the outcome of a situation based on your previous experience. This can lead you to avoiding pleasurable situations, which can make you feel worse
Disqualifying The Positive	Paying attention to only the negative parts of a situation	"I could only play with my kids for 30 minutes today"	By paying attention to the negative aspects of a situation you end up missing out on the positive aspects too
All or nothing Thinking	Thinking in extreme terms "always" or "never" with no middle ground	"I can't take my kids/ grandkids to the movies so I'm no good and nothing is worthwhile"	This thinking is unhelpful as it often makes you feel frustrated and stop doing the things you enjoy
Should Statements	Sometimes we create rigid rules about how one "should" be without thinking about the circumstances	"I should be able to play with my kids even if I have a migraine"	Thinking about how things are supposed to be often leads to feelings of guilt

A common thread that runs through many unhelpful thoughts in headache is pain-related fear. Pain-related fear can be conceptualized as an intermediate belief ("B") in the ABC model that leads to the unhelpful thoughts. Fear can lead to avoidance-based coping, like avoiding perceived specific headache contributing factors. This may not be unhelpful in every circumstance, but evidence suggests that beliefs about specific contributing factors are not often associated with actual triggering of headache pain and associated symptoms. In our clinical experience, many Veterans start avoiding so many perceived contributing factors or "triggers," they end up avoiding all of their valued activities as well, and still experience frequent disabling headache pain and associated symptoms. In these common instances, the avoidance itself is contributing to disability. Helping the Veteran combat these unhelpful thoughts head on can begin to expose the ways in which pain-related fears have minimized engagement in valued experiences, and can pave the way for approach-based coping.

Identifying Unhelpful Thoughts

When discussing common unhelpful thoughts with Veterans it is not necessary to use the correct label or terminology. Many Veterans may find these labels and the terminology (e.g., catastrophizing) confusing and stigmatizing. You may wish to discuss these patterns of thinking without using the labels. Additionally, it can be helpful to share with the Veteran that engaging in unhelpful thinking (specifically catastrophizing) sensitizes the brain and can increase pain. Sharing this information with the Veteran highlights that we are not blaming them or saying "just think differently and the pain will go away" but that thoughts are powerful and should be addressed.

Having talked about the ABC model and how it relates to acute headache symptoms, and common unhelpful thoughts that people may notice, ask the Veteran to identify some unhelpful thoughts that they have noticed globally in relation to their headache disorder or even anticipatory thoughts about the onset of their headache pain and symptoms. For example

1. *Why me?*
2. *My headaches are the worst thing ever*
3. *I'll never be able to do anything I enjoy*
4. *I know I'll have a headache if I go to my friend's house tonight*

Highlight to the Veteran that unhelpful thoughts may arise during acute headache symptom onset, but are likely also there on days when they are not experiencing symptoms, or in the case of someone with chronic migraine, on days when their headache pain and symptoms are not as severe in intensity.

Combating Unhelpful Thoughts

The 3 C's (**Catch** it, **Check** it, **Change** it) can help a Veteran identify and change their unhelpful thinking patterns. Using the Thought Log can help the Veteran recognize their automatic thoughts and how they impact the way they feel. Encourage the Veteran to look for patterns with the types of automatic thoughts and emotions they have in response to different situations.

The 3 C's

The first step in understanding the impact of your automatic thoughts on your headache pain and symptoms is to become a detective; to learn how to investigate and change your thinking by using the 3 C's (**Catch** it, **Check** it, **Change** it).

Catch it	Check it	Change it
■ Become aware of the thought that you are having in response to a situation ■ What was happening in the environment or going through your mind at the time? ■ At times it can be hard to know what you were thinking, so try paying attention to any emotions (e.g., irritability, sadness) or physical sensations in your body (e.g., muscle tension) to cue you in to your thoughts.	■ Is what you were thinking true? Remember, do not always believe everything you think! ■ Was it a helpful thought? ■ Can you find any evidence for or against your thought? ■ Is there another explanation for what happened in the situation? ■ What would you say to a friend in this situation? ■ What is the worst thing that would happen if this thought were true?	■ Replace your unhelpful thought with a more accurate and helpful one ■ Sometimes the thought you are having is true but not necessarily a helpful thought. Coping statements can be beneficial in this situation.

How Changing Your Thoughts Can Help

Combatting unhelpful thoughts during headache symptom onset can help the Veteran shape their emotions and the way that they act.

Let's go back to the scenario we heard about earlier

A Activating Event	→	B Belief	→	C Consequence
Running late to work		*"This is going to be my worst headache. I should be able to manage but I can't"*		Emotions: frustration, anger Physical sensations: tense muscles Unhelpful behaviors: skip meals, push through

Using the 3 C's imagine that you considered a different thought and how that changes the consequences of the situation to something more helpful.

A Activating Event	→	B Belief	→	C Consequence
Running late to work		"I've handled this before, I can do it again."		Emotions: calm, confident Physical sensations: less muscle tension behaviors: prioritizing task, eating frequent meals, using relaxation strategies

As you can see, by catching the unhelpful thought *("This is going to be my worst migraine. I should be able to manage but I can't"*) and changing it to (*"I've handled this before I can do it again"),* the Veteran was able to change the consequence of the situation and as a result felt calmer, more confident, noticed less muscle tension, and was able to problem solve their tasks more efficiently, and keep their schedule consistent (eating frequently and managing stress).

Coping Statements

Positive coping statements can be useful when a Veteran is having a hard time changing their unhelpful thinking. You first introduced the Veteran to coping statements when you discussed the STAY CALM! acute management strategies. Here are some common examples:

- "I've handled this before, I can do it again"
- "I can only do my best"
- "The pain will pass"
- "I am confident in my ability to utilize my migraine management plan"

Coping Statements

Coping statements are helpful to have prepared and ready to use during symptom onset. Make a list of statements that you can use to help change your unhelpful thoughts. Try writing these down in your phone or on a piece of paper and keep them in your wallet so that you can refer to them when you need.

Identifying Emotions

Many people share that identifying what they were thinking is challenging and that it is easier to identify what they were feeling. For others, recognizing the emotion that they are experiencing is particularly difficult or they have a limited range of the emotions they can describe.

This is often the case for Veterans who have a history of TBI. For those Veterans who struggle to label the emotions they experience, you may find it helpful to introduce them to an emotion wheel to help expand their emotional vocabulary.

Personalized Home Practice

Walk the Veteran through the steps to complete the **Thought Log** - including taking note of (1) the situation they were in (2) the automatic thoughts they had (3) the consequences of their thoughts – emotions, physical sensations, and behaviors (4) challenging their automatic thought, and (5) changing the automatic thought.

Using the **SMART Goal Setting** worksheet guide the Veteran in setting a SMART goal to help them Catch, Check, and Change their unhelpful thoughts:

1. During headache symptom onset
2. In between headache symptom onset to commit to practices to reduce their symptoms.

Continue to remind the Veteran of the importance of daily relaxation practice and encourage them to continue practicing these skills.

Visit Wrap Up

End the appointment by summarizing the main content of the visit:

During today's appointment you learned

- *What automatic thoughts are*
- *Common unhelpful thoughts*
- *How your thoughts can impact how you feel and the actions you take*
- *Ways that you can combat your unhelpful thoughts*

What remaining questions do you have for me today?

Appointment 6

Planning Ahead

This appointment will focus on reviewing all the acute and preventive self-management strategies that the Veteran has learned over the course of the treatment. You will also spend some time helping the Veteran identify obstacles they may face after treatment discharge and problem solve ways that they can plan ahead to create a headache self-management plan moving forward.

Agenda

1. Home practice check-in
2. Learn a new skill (planning ahead and creating a headache management plan)

Worksheets

1. Headache Management Plan

Home Practice Check In

Spend a few moments checking in with the Veteran about how their home practice was since their last appointment. Make sure you provide the Veteran with affirmations whether they met the goals or not. Remind the Veteran that small progress is still progress!

Helpful Talking Points

1. *What went well this week?*
2. *How did it go with the goal(s) you set during our last appointment?*
3. *What did you learn since our last appointment?*
4. *What strategies did you use to help you achieve the goal(s) you set?*
5. *What got in the way of you meeting your goal(s)?*
6. *How were the obstacles you faced different from or the same as the ones you anticipated?*
7. *How did the goal(s) you set move you toward your overall treatment goal(s)?*

Treatment Reflection

Congratulate your Veteran! Over the past few weeks they have learned a lot about headache, but more importantly they have learned a lot about themselves – they have worked hard to tune in to their bodies and learned many different skills (both preventive and acute) to help them treat their headache disease(s). It can sometimes be hard to notice progress on a weekly basis so spend some time asking the Veteran to reflect on their treatment overall.

Reflecting on Treatment Experience

What have you learned about yourself over the course of the treatment?

Provide specific affirmations and positive reinforcement of the behavioral change that the Veteran has achieved during their engagement in CBT-HA. Remind the Veteran that it may take time for them to see changes in their headache symptoms, but that they should keep practicing their skills even though their treatment is complete.

Anticipating Obstacles

It is very common for Veterans to stop using the skills that they learned after completing CBT-HA. It is important for the Veteran to be kind to themselves. We often hear Veteran say that they were too stressed to use their skills and then they blame themselves when a headache does occur. It can be helpful to remind the Veteran that their biological make-up means that their nervous system is sensitive to changes in their environment and that it is likely several factors together that contribute to their headache and associated symptoms. Even if the Veteran does everything right they will likely still experience symptom onset or escalation, they can influence this process to reduce the frequency and severity but they cannot control it.

What Can I Do When Faced with a Setback?

Setbacks can happen, maybe you have stopped using your headache management strategies because your headache is not as frequent or intense, or maybe your schedule is so busy and you are feeling stressed. Instead of feeling guilty for not practicing your skills or feeling like a failure, which remember can actually negatively impact your headache symptoms in the long run, it can be helpful to ask yourself what got in the way of you using your self-management skills. Be kind to yourself – remember, setbacks are temporary and an opportunity to learn how to keep moving forward. Look at your headache management plan and decide which of the skills you have learned throughout the treatment may be helpful.

1. *Now that you have completed the treatment, what obstacles do you anticipate?*
2. *What would you feel if you were faced with a setback?*
3. *What strategies that you've learned so far could help you deal with a setback?*

Prevention Strategies

There are several prevention strategies that you have introduced the Veteran to throughout the treatment:

1. Relaxation training – paced breathing, progressive muscle relaxation, special place visual imagery, cue controlled relaxation, and autogenic phrases
2. Management of contributing factors– sleep, stress, hunger/hydration
3. Preventive medications (if applicable) – taken daily
4. Stress management – challenge thoughts, coping statements, distraction

Acute Strategies

STAY CALM!

Shift your focus away from the pain and headache symptoms

Take your medications as prescribed

Activate your relaxation response

You are the expert!

Challenge unhelpful thoughts and use coping statements

Always keep a consistent schedule

Listen to your early warning signs

Make time for self-care

Support from the Team

If you suspect your Veteran may benefit from additional reinforcement, education, or skill building remember to bring in rehab therapy, dieticians, or other services either during or following their course of CBT-HA. Many disciplines can reinforce and expand on the training provided to optimize the long-term effectiveness.

Visit Wrap Up

Thank you for allowing me to share this treatment experience with you. You've worked hard over the past several months to gain many self-management skills, both acute and preventive, that you can use to navigate your life living with a headache disorder. Do you have any remaining questions for me?

Special Considerations

Tips for Involving Caregivers and Social Support Networks

In addition to support for Veterans with headache diseases, providing tools, language, and resources to friends and family of those Veterans can also be important. Options for education include providing written materials, videos, or in some cases having the support person attend one or more CBT-HA appointments. There are some key concepts that can be helpful to focus on including: awareness of the associated symptoms the Veteran may experience, insight into the wide range of functional impacts the symptoms may have, and hope that while a cure may not be available there are strategies that can help. Encouraging open communication and active participation with the Veteran in healthy routines and self-management tools is key. In addition, support and empathy during heightened symptoms while being thoughtful to not inadvertently reinforce avoidance patterns or the "sick role" can all be helpful suggestions. Work to empower the support person to be an active part of the team, to be thoughtful of how their words and actions can support or hinder progress, and to find creative ways to keep the Veteran involved and included. It can also be important to provide the support person with validation and caregiver *resources* to ensure they are taking care of themselves along the way.

Spotlight on Telehealth

Telehealth has been growing in popularity and has resulted in improved access to headache-related care. Veterans with various headache diseases have highlighted that telehealth has allowed for greater flexibility in their daily schedule as they are able to access care at a time and place that is convenient for them (Grinberg et al., 2020). CBT-HA is particularly amenable to telehealth delivery.

To bolster Veteran engagement, interaction, and understanding of topics covered in CBT-HA, you may wish to consider utilizing the screen-share function during your telehealth appointment, especially for those Veterans who are visual learners.

The patient educational supplemental resources may be used during each appointment. We recommend tailoring your examples for each Veteran's personal needs - for example, when providing education on the headache threshold, you may wish to edit the resources to reflect the personal examples pertaining to your Veteran. Sending the handouts either digitally or by mail following the appointment can also reinforce learning and provide a reminder to complete homework and identified SMART goals.

Spotlight on Biofeedback

As mentioned in the beginning of this manual, biofeedback is a modality commonly used with people who have headache diseases. While biofeedback training is beyond the scope of this manual, biofeedback may be used in conjunction with, before, or after CBT-HA. Veterans struggling with relaxation techniques or CBT-HA treatment "buy-in" may be good candidates for individualized biofeedback training.

Biofeedback has been found to be helpful in providing people with tools to make changes and influence their health. Biofeedback is a process that uses feedback from a person's own body to improve their health. Equipment is used to measure physiological information such as, heart rate, skin temperature, and muscle tension. This information can be used to better understand a person's typical reaction to pain and stress. The patient and health care provider can then select what tools are the most helpful. Knowledge of biofeedback is important for CBT-HA therapists, so they are able to successfully make referrals and describe the treatment to prospective Veterans.

Conclusion

Thank you for taking the opportunity to read this manual and to invest in improving the treatment Veterans with headache diseases. We hope this tool has provided beneficial background knowledge as well as practical skills to aid you in your direct clinical care as well as your collaboration other healthcare providers along the way. Consider this manual one piece to the puzzle to add onto your existing knowledge and experience which will continue to build and evolve with growing evidence and the insights you gain through clinical use.

Appendices

Appendix A: Most Relevant Headache Diagnostic Criteria

Primary Headache Disorders:

1. Migraine
2. Tension-type headache
3. Trigeminal autonomic cephalalgias
4. Other primary headache disorders

Secondary Headache Disorders:

1. Headache attributed to trauma or injury to the head and/or neck
2. Headache attributed to cranial and/or cervical vascular disorder
3. Headache attributed to non-vascular intracranial disorder
4. Headache attributed to a substance or its withdrawal
5. Headache attributed to infection
6. Headache attributed to disorder of homeostasis
7. Headache or facial pain attributed to disorder of the cranium, neck, eyes, ears, nose, sinuses, teeth, mouth, or other facial or cervical structure
8. Headache attributed to psychiatric disorder

Migraine

Migraine without aura

A. At least 5 attacks fulfilling criteria B-D
B. Headache attacks lasting 4-72 hours (when untreated or unsuccessfully treated)
C. Headache has at least two of the following four characteristics:
    1. Unilateral location
    2. Pulsating quality
    3. Moderate or severe pain intensity
    4. Aggravation by or causing avoidance of routine physical activity (e.g., walking or climbing stairs)
D. During headache at least one of the following:
    1. Nausea and/or vomiting
    2. Photophobia and phonophobia
E. Not better accounted for by another ICHD-3 diagnosis

Migraine with aura

A. At least two attacks fulfilling criteria B and C
B. One or more of the following fully reversible aura symptoms:
    1. Visual
    2. Sensory
    3. Speech and/or language
    4. Motor
    5. Brainstem
    6. Retinal
C. At least three of the following six characteristics
    1. At least one aura symptoms spreads gradually over ≥5 minutes
    2. Two or more aura symptoms occur in succession
    3. Each individual aura symptom lasts 5-60 minutes
    4. At least one aura symptom is unilateral
    5. At least one aura symptom is positive
    6. The aura is accompanied, or followed within 60 minutes by a headache

Chronic Migraine

A. Headache on ≥ 15 days/month for > 3 months and fulfilling criteria B and C
B. Occurring in a patient who has had at least five attacks fulfilling criteria B-D for *Migraine without aura* and/or criteria B and C for *Migraine with aura*
C. On ≥ 8 days/month for > 3 months, fulfilling any of the following:
    a. Criteria C and D for *Migraine without aura*
    b. Criteria B and C for *Migraine with aura*
    c. Believed by the patient to be migraine at onset and relieved by a triptan or ergot derivative
D. Not better accounted for by another ICHD-3 diagnosis

Tension-type Headache (TTH)

Infrequent episodic TTH

A. At least 10 episodes of headache occurring on < 1 day/month on average (< 12 days/year) and fulfilling criteria B-D
B. Lasting from 30 minutes to 7 days
C. At least two of the following four characteristics:
    1. Bilateral location
    2. Pressing or tightening (non-pulsating) quality
    3. Mild or moderate intensity

4. Not aggravated by routine physical activity such as walking or climbing stairs

D. Both of the following:
   1. No nausea or vomiting
   2. No more than one of photophobia or phonophobia

E. Not better accounted for by another ICHD-3 diagnosis

Frequent episodic TTH

As Infrequent TTH except

A. At least 10 episodes of headache occurring on 1-14 days/month on average for > 3 months (≥12 and <180 days/year) and fulfilling criteria B-D.

Chronic TTH

As Infrequent episodic TTH except:

A. Headache occurring on ≥ 15 days/month on average for > 3 months (≥180 days/year) fulling criteria B-D
B. Lasting hours to days, or unremitting
C. Both of the following:
   1. No more than one photophobia, phonophobia, or mild nausea
   2. Neither moderate or severe nausea or vomiting

Trigeminal Autonomic Cephalalgias (TACs)

Cluster Headache

A. At least five attacks fulfilling criteria B-D
B. Severe or very severe unilateral orbital, supraorbital and/or temporal pain lasting 15-180 minutes (when untreated)
C. Either or both of the following:
   1. At least one of the following symptoms or signs, ipsilateral to the headache:
      a. Conjunctival injection and or lacrimation
      b. Nasal congestion and/or rhinorrhea
      c. Eyelid oedema
      d. Forehead and facial sweating
      e. Miosis and/or ptosis
   2. A sense of restlessness or agitation
D. Occurring with a frequency between one every other day and 8 per day
E. Not better accounted for by another ICHD-3 diagnosis

Episodic cluster headache

A. Attacks fulfilling criteria for *Cluster headache* and occurring in bouts (cluster periods)
B. At least two cluster periods lasting from 7 days to 1 year (when untreated) and separated by pain-free remission periods of ≥ 3 months

Chronic cluster headache

A. Attacks fulfilling criteria for *Cluster headache* and criterion B below
B. Occurring without a remission period, or with remissions lasting < 3 months, for at least 1 year

Hemicrania continua

A. Unilateral headache fulfilling criteria B-D
B. Present for >3 months, with exacerbations of moderate or greater intensity
C. Either or both of the following:
    1. At least one of the following symptoms or signs, ipsilateral to the headache:
        a. Conjunctival injection and/or lacrimation
        b. Nasal congestion and/or rhinorrhoea
        c. Eyelid oedema
        d. Forehead and facial sweating
        e. Miosis and/or ptosis
    2. A sense of restlessness or agitation, or aggravation of the pain by movement
D. Responds absolutely to therapeutic doses of indomethacin
E. Not better accounted for by another ICHD-3 diagnosis

Secondary Headache Disorders

General diagnostic criteria for secondary headache:

A. Any headache fulfilling criterion C
B. Another disorder scientifically documented to be able to cause headache has been diagnosed
C. Evidence of causation demonstrated by at least two of the following:
    1. Headache has developed in temporal relation to the onset of the presumed causative disorder
    2. Either or both of the following:
        a. Headache has significantly worsened in parallel with worsening of the presumed causative disorder
        b. Headache has significantly improved in parallel with improvement of the presumed causative disorder
        c. Headache has characteristics typical for the causative disorder

d. Other evidence exists of causation

D. Not better accounted for by another ICHD-3 diagnosis

Headache attributed to trauma or injury to the head and/or neck

Persistent headache attributed to traumatic injury to the head

1. Any headache fulfilling criteria C and D
2. Traumatic injury to the head has occurred
3. Headache is reported to have developed within 7 days after one of the following:
   a. The injury to the head
   b. Regaining of consciousness following the injury to the head
   c. Discontinuation of medication(s) impairing ability to sense or report headache following the injury to the head
4. Headache persists for >3 months after its onset
5. Not better accounted for by another ICHD-3 diagnosis

Persistent headache attributed to moderate or severe traumatic injury to the head

A. Headache fulfilling criteria for *Persistent headache attributed to traumatic injury to the head*

B. Injury to the head associated with at least one of the following:
   1. Loss of consciousness for >30 minutes
   2. Glasgow Coma Scale (GCS) score <13
   3. Post-traumatic amnesia lasting >24 hours
   4. Alteration in level of awareness for >24 hours
   5. Imaging evidence of a traumatic head injury such as skull fracture, intracranial hemorrhage and/or brain contusion.

Headache attributed to a substance or its withdrawal

Medication-overuse headache (MOH)

A. Headache occurring on ≥15 days/month in a patient with a pre-existing headache disorder

B. Regular overuse for >3 months of one or more drugs that can be taken for acute and/or symptomatic treatment of headache

C. Not better accounted for by another ICHD-3 diagnosis.

Ergotamine-overuse headache

A. Headache fulfilling criteria for *MOH*

B. Regular intake of ergotamine on ≥10 days/month for >3 months

Triptan-overuse headache

A. Headache fulfilling criteria for *MOH*

B. Regular intake of one or more triptans, in any formulation, on ≥10 days/month for >3 months

Non-opioid analgesic-overuse headache Paracetamol (acetaminophen)-overuse headache

A. Headache fulfilling criteria for MOH

B. Regular intake of paracetamol on ≥15 days/month for >3 month

Non-steroidal anti-inflammatory drug (NSAID)-overuse headache

A. Headache fulfilling criteria for *MOH*

B. Regular intake of one or more NSAIDs (other than acetylsalicylic acid) on ≥15 days/month for >3 months

Acetylsalicylic acid-overuse headache

A. Headache fulfilling criteria for *MOH*

B. Regular intake of acetylsalicylic acid on ≥15 days/month for >3 months

Opioid-overuse headache

A. Headache fulfilling criteria for *MOH*

B. Regular intake of one or more opioids on ≥10 days/month for >3 months

Combination analgesic-overuse headache

A. Headache fulfilling criteria for *MOH*

B. Regular intake of one or more combination-analgesic medications on ≥10 days/month for >3 months

MOH attributed to multiple drug classes not individually overused

A. Headache fulfilling criteria for *MOH*

B. Regular intake of any combination of ergotamine, triptans, non-opioid analgesics and/or opioids on a total of ≥10 days/month for >3 months without overuse of any single drug or drug class alone

Appendix B: Acute and Preventive Medical Treatment

Migraine: Acute Medical Treatment		
Drug Category Generic (Brand)	Recommended Dosage	Considerations
Analgesics Acetaminophen (Tylenol)	1000 mg every 6 hours	Typically for milder pain. Limit to no more than 15 days per month to prevent MOH
NSAIDS Aspirin Diclofenac (Voltaren) Ibuprofen (Advil, Motrin) Naproxen (Aleve)	 325 – 650 mg every 4 hours 50 – 100 mg 400 – 800 mg every 6-8 hours 250-550 mg twice daily	For mild to moderate pain. Limit to no more than 15 days per month to prevent MOH
Triptans Almotriptan (Axert) NF Eletriptan (Relpax) Frovatriptan (Frova) NF Naratriptan (Amerge) NF Rizatriptan (Maxalt)* Sumatriptan (Imitrex) Zolmitriptan (Zomig)*	 12.5 mg Oral: 20-40 mg; can repeat after 2 hrs Oral: 2.5 mg Oral: 1 mg or 2.5mg Oral: 5 mg or 10mg; can repeat after 2 hrs Oral: 25-100 mg; can repeat after 2 hrs SC: 6 mg/0.5 ml; can repeat after 1 hr Nasal: 5-20 mg; can repeat after 2 hrs Oral: 1.25 –5 mg; can repeat after 2 hrs Nasal: 5mg spray; can repeat in 2 hrs	For moderate to severe pain. Limit to no more than 10 days per month to prevent MOH. *Available in regular and dissolvable tablets (ODT), which do not necessarily have faster absorption but not interchangeable. Many sites restrict nasal form due to cost
Ergots Dihydroergotamine (DHE, Mifranal) NF	Nasal: 4 mg spray in each nostril; repeat 15 mins	Limit use to less than 10 days/month to prevent MOH. Cardiac concerns and cannot be used within 24 hr of Triptan

Migraine: Acute Medical Treatment		
Drug Category Generic (Brand)	Recommended Dosage	Considerations
Combination Analgesics Acetaminophen/caffeine Aspirin/caffeine Acetaminophen/Aspirin/ Caffeine (Excedrin)	 500 mg/ 65 mg; 1-2 every 6 hours 400 mg/ 32 mg every 6 hours 250 mg/ 250 mg/ 65 mg; 2 every 4-6 hours	Limit use to less than 10 days/month to prevent MOH
Antiemetics Chlorpromazine (Thorazine) Metoclopramide (Reglan) Prochlorperazine (Compazine) Promethazine (Phenergan)	 Oral: 10-25 mg every 4-6 hours Oral: 5 – 10 mg every 4-6 hours Oral: 5 – 10 mg every 4-6 hours Oral: 25mg every 4-6 hours	Can target nausea but also migraine, often used in combo with triptan or analgesic. Infrequently can cause abnormal movements or muscle rigidity.
CGRP Antagonist (small molecule) Ubrogepant (Ubrelvy) NF	50mg or 100mg; can repeat in 2 hrs	Safety of treating more than 8 migraines/ month has not been established
Rimegepant (Nurtec) NF	75 mg (as a single dose in 24 hr)	Safety of treating more than 15 migraines/ month has not been established
5-HT_{1F} agonist Lasmiditan (Reyvow) NF	50-, 100-, or 200 mg single dose (max 1 dose in 24 hr)	Should not be taken unless the patient can wait at least 8 hours between dosing and driving or operating machinery. Safety of treating more than 4 migraines/ month has not been evaluated.
Devices Cefaly Dual Device Single-pulse (s)TMS (SAVI; eNeura) Non-invasive (n)VNS (Sapphire) Nerivivo	 Program 1; 60 minutes; once per day, can repeat after 2 hrs 3 consecutive pulses; may repeat 2 x Two 2 minute stimulation; may repeat 2 x	

Migraine: Acute Medical Treatment		
Drug Category Generic (Brand)	Recommended Dosage	Considerations
Opioids Tramadol (Ultram) Butalbital cpntaining analgesics (Fioricet, Fiornal)		Recommend against use. Butalbital may predispose to MOH with chronic use of 5 days/month or more.

SC = Sub cutaneous, NF = Non-formulary

Migraine: Preventive Medical Treatment		
Drug Category Generic (Brand)	Recommended Dosage	Considerations
Antidepressants Amitriptyline (Elavil) Venlafaxine (Effexor)	 Oral: 25–100 mg; once per day Oral: 75-225 mg; once per day	Amitriptyline is sedating; take before bedtime
Antiepileptics Divalproex (Depakote) Topiramate (Topomax) Valproic acid capsule (Depakene)	 Oral: 500mg; one per day Oral: 25mg; once daily Oral: 250 mg twice per day	Divalproex/ valproic acid can cause weight gain. Topiramate can cause weight loss. Either can be sedating, so slow titration is recommended. Do not stop abruptly, especially if at risk for or history of seizures. Caution in women of childbearing potential.
Antihistamine Cyproheptadine (Pericactin)	 Oral: 4-8 mg; twice per day	

Antihypertensives Clonidine (Catapres) Lisinopril (Prinivil) Guanfacine (Tenex) Candesartan (Atacand)	 Oral: 0.1 mg; twice per day Oral: 10-20 mg; once per day Oral: 0.5-1 mg; once per day Oral: 16 mg; once per day	ACE inhibitors and ARBs are first-line BP meds. Clonidine and guanfacine are last-line BP meds and can be associated with significant side effects and rebound hypertension if abruptly withdrawn
Beta-Blockers Metoprolol (Lopressor, Toprol-XL) Propranolol (Inderal) Atenolol (Tenormin) Nadolol (Corgard)	 Oral: 50 – 200 mg Oral: 40 – 240 mg Oral: 50 – 100 mg Oral: 20 – 160 mg	
Botulinum Toxin Onabotulinum (Botox) NF Abobotulinum (Dysport) NF Incobotulinum (Xeomin) NF Rimabotulinum (Myobloc) NF	Given in clinic by provider, generally every 3 months. Standard protocol involves 31 injections per round	Administration by providers with training and expertise in using these meds. Preferred formulations may vary by VA site.
CGRP Targeted Monoclonal Antibodies Erenumab (Aimovig) Fremanezumab (Ajovy) NF Galcanezumab (Emgality) NF Eptinezumab (Vyepti) NF	70 mg or 140 mg monthly injection 225 mg monthly injection or 675 mg quarterly injection 240 mg initial then 120 mg injection monthly 100 mg monthly IV infusion	Can cause injection site reactions (eg, rash) but depending on clinician assessment, can often continue therapy. Constipation seems more unique adverse event associated with erenumab (~3% in trials.)

Dietary Supplements (Nutraceuticals) Coenzyme Q10 NF Magnesium (Hydroxide, Oxide) Riboflavin (Vitamin B2) Petasites (Butterbur) NF	 Oral: 300mg per day Oral: 400-1200 mg per day Oral: 400 mg once per day Oral: 50-75 mg twice per day	Magnesium can cause GI upset or diarrhea. Riboflavin may cause bright yellow or orange urine discoloration
Devices Cefaly Dual Device Single-pulse (s) TMS (SAVI; eNeura) Non-invasive (n)VNS (Sapphire) Nerivivo	 Program 2; 20 minutes 1 x per day 2 rounds of 2 consecutive pulses; 2 x per day Two 2 minute stimulations 3 x per day	
Triptans (menstrual migraine only) Frovatriptan (Frova) NF Naratriptan (Amerge) NF Zolmitriptan (Zomig)	2.5 mg QD or BID 1 mg BID 2.5 mg BID or TID	

Tension-Type Headache: Preventive Medical Treatment

Drug Category Generic (Brand)	Recommended Dosage	Considerations
Antidepressants Amitriptyline (Elavil) Clomipramine (Anafranil) Desipramine (Norpramin) Imipramine (Tofranil) Nortriptyline (Pamelor) Mirtazapine (Remeron) Venlafaxine (Effexor)	 Oral: 25 – 100 mg; once per day Oral: 25 – 150 mg; once per day Oral: 25 – 100 mg; once per day Oral: 25 – 100 mg; once per day Oral: 25 – 100 mg; once per day Oral: 30 mg; once per day Oral: 150 mg; once per day	
Opioids Tramadol Muscle relaxants Butalbital containing analgeesics Triptans		Recommend against use

Tension-Type Headache: Acute Medical Treatment		
Drug Category Generic (Brand)	Recommended Dosage	Considerations
Analgesic Acetaminophen **Combination Analgesics** Acetaminophen/caffeine Aspirin/caffeine Acetaminophen/Aspirin/ caffeine	 Oral: 650-1000 mg every 4-6 hours Oral: 500 mg/ 65 mg; 1-2 every 6 hours Oral: 400 mg/ 32 mg every 6 hours Oral: 250 mg/ 250 mg/ 65 mg; 2 every 4-6 hours	
NSAIDS Aspirin Ibuprofen (Advil, Motrin) Naproxen (Aleve)	 Oral: 650-1000 mg every 4-6 hours Oral: 400 – 800 mg every 6-8 hours Oral: 250-550 mg twice daily	Limit to no more than 10 days per month to prevent MOH
Opioids Tramadol Muscle relaxants Butalbital containing analgesics Triptans		Recommend against use

Cluster Headache: Acute Medical Treatment		
Drug Category Generic (Brand)	Recommended Dosage	Considerations
Oxygen	100% oxygen 6-12 l/minute for 15 minutes	High flow compared with what is used for respiratory conditions
Triptans Sumatriptan Zolmitriptan	 SC: 6mg/0.5 ml; may repeat in 1 hour Nasal: 5-20 mg/spray; may repeat after 2 hours Nasal: 5mg/spray; may repeat after 2 hours	Injectable form preferred for cluster headache, or nasal if cannot or will not do injection
Opioids Tramadol Butalbital containing analgesics		Recommend against use

Cluster Headache: Preventive Medical Treatment		
Drug Category Generic (Brand)	Recommended Dosage	Considerations
Antiepileptic Topiramate Divalproex sodium Sodium Valproate	 Oral: 100-200 mg per day Oral: 1000 mg daily 500-750 mg twice per day	
Antihypertensive Verapamil	Oral: 240-960 mg per day	electrocardiogram (ECG) monitoring for cluster HA dosing, esp at 480 mg/day or higher
Antispasmodic Baclofen	Oral: 5-10 mg 2-3 times per day	

CGRP Targeted Monoclonal Antibodies Galcanezumab (Emgality) [NF]	300 mg SC monthly or until cluster period ends (for episodic cluster)	
Dietary Supplements (Nutraceuticals) Melatonin	Oral: 10 mg per day	
Mood Stabilizer Lithium	Oral: 600-900 mg daily	
Opioids Tramadol Butalbital containing analgesics		Recommend against use

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Handouts

Headache Diseases

What you will learn

1. What the different types of headache diseases are
   - Migraine
   - Tension-Type Headache
   - Cluster Headache
   - Post-Traumatic Headache
2. What the headache threshold is
3. What the difference between preventive and acute treatment is

Headache Diseases

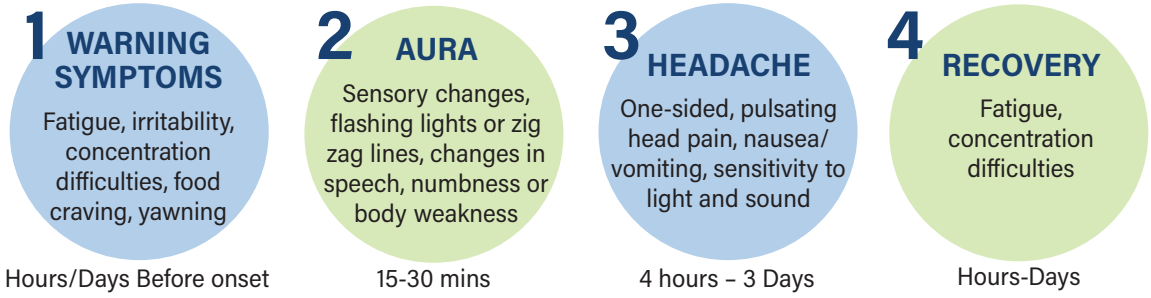
- Headache diseases are complex neurological diseases.
- They commonly run in families meaning that your genetics likely play a role.
- You may have one type of headache disease or more than one.

What is Migraine and Why do I have it?

- Migraine is more than a headache – it is a complex neurological disease.
- The exact cause of migraine is not known. Your nervous system is sensitive to changes in the environment. There are many internal and external factors that change the likelihood of you experiencing headache pain.
- When you experience headache pain and associated symptoms (nausea, sensitivity to light and sounds), there are changes in the electrical signals in your brain, inflammation increases, and your nerves are activated.

What are the stages of migraine

There are many stages of migraine and not everyone experiences all the different stages. Understanding the different stages and early warning signs allows you to act before your symptoms progress.



What is tension-type headache and why do I have it?

- Like other headache diseases, the exact cause of tension-type headache is not known.
- Having muscle tenderness is common in people with tension-type headache but it does not cause tension-type headache.
- When you experience tension-type headache symptoms, there are changes in the electrical signals in your brain, inflammation increases, and your nerves are activated.

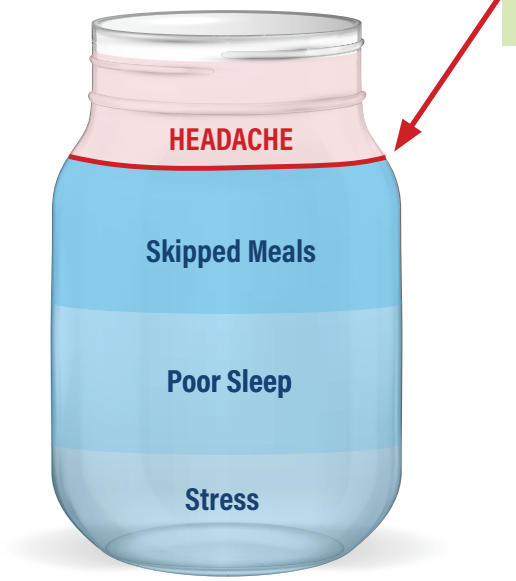
What is cluster headache and why do I have it?

- Cluster headache is a complex and rare neurological disease.
- While we do not know exactly what causes cluster headache, it is thought that many parts of the brain and nervous system play a role.
- Cluster headache onset is usually brief and can last anywhere from 15 minutes to 3 hours. Symptoms can happen every other day up to 8 times a day.
- In addition to severe pain on one-side of your face (usually around your eye) you may also notice, tearing or redness in your eye, lid drooping, stuffiness in your nose, or sweating on your face. It is common to also feel restless and agitated and want to move around a lot.
- You may have times when your cluster headache symptoms last for weeks or months followed by times when you do not have any symptoms for months to years.

What is post-traumatic headache and why do I have it?

- Headache is the most common symptom after an injury to your head or neck. You might also have other symptoms such as difficulty concentrating, or feeling tired, anxious and irritable.
- It is thought that your nervous system plays a role in the symptoms you experience.
- The symptoms of post-traumatic headache are different for each person. You might have symptoms that look like migraine or tension-type headache or even cluster headache.

What is the headache threshold?



This red line represents your own personal headache threshold.

- Every time you are exposed to a potential headache contributing factor (e.g., poor sleep, missed meals, stress) imagine adding it to your jar.
- As you experience more and more events your jar "fills up".
- When the jar overflows that is when your headache symptoms might progress.
- Remember, it is usually the **combination** of factors that move you toward that threshold.
- You can use your headache management skills to move your threshold or "empty out the jar" so you can live life more fully.

What is the difference between preventive and acute medical treatment?

Headache treatment is either **preventive** or **acute**. Medical treatments used to manage your headache pain and symptoms can come in different forms including pill, injection, or devices.

Preventative -

Use daily to reduce how often you have a headache

Acute -

Use at the onset of a headache to treat your symptoms

Setting Yourself Up for Success!

1. It usually takes around 2-3 months to see if your preventive medication is working well for you.
2. Keep taking your preventive medications even if your headache symptoms improve.
3. Make sure you know how much and how often you can use your acute medications.
4. Taking your acute medications too often can make your headache symptoms worse. Limit the number of acute medications you take to avoid causing Medication Overuse Headache.

Headache Diary

Example

Day	Prevention	Headache	Symptoms	Warning Signs	Acute Medication/ Device	Lifestyle	Behavioral Coping
Mon Feb Day 17	Medication: Y ☑ N ☐ Device Y ☑ N Behaviors: deep breathing 10min	Y ☑ N ☐ Pain (0-10): 6 Start time: 7 End time: 9	Sensitive to Light: Y ☑ N ☐ Sound: Y ☑ N ☐ Nausea: Y ☑ N ☐ Vomit: Y ☐ N ☑ Worse with activity: Y ☑ N ☐	Aura: Y ☐ N ☑ Neck pain Tired Couldn't concentrate	Medication: Sumatriptan Time & Dosing: 100mg @ 4pm Device: Cefaly Time: 4:30pm	Stress (0-10): 6 Hours slept: 7 Sleep quality: Good Physically active: Y ☐ N ☑ Skipped meal: Y ☐ N ☑ Hydration: Y ☑ N ☐ Caffeine: Y ☑ N ☐ Headache interference (0-10): 9	Used coping statements Practiced relaxation

Headache Diary

Day	Prevention	Headache	Symptoms	Warning Signs	Acute Medication/ Device	Lifestyle	Behavioral Coping
	Medication: Y ☐ N ☐ Device Y ☐ N ☐ Behaviors:	Y ☐ N ☐ Pain (0-10): Start time: End time:	Sensitive to Light: Y ☐ N ☐ Sound: Y ☐ N ☐ Nausea: Y ☐ N ☐ Vomit: Y ☐ N ☐ Worse with activity: Y ☐ N ☐	Aura: Y ☐ N ☐	Medication: Time & Dosing: Device: Time:	Stress (0-10): Hours slept: Sleep quality: Physically active: Y ☐ N ☐ Skipped meal: Y ☐ N ☐ Hydration: Y ☐ N ☐ Caffeine: Y ☐ N ☐ Headache interference (0-10):	
	Medication: Y ☐ N ☐ Device Y ☐ N ☐ Behaviors:	Y ☐ N ☐ Pain (0-10): Start time: End time:	Sensitive to Light: Y ☐ N ☐ Sound: Y ☐ N ☐ Nausea: Y ☐ N ☐ Vomit: Y ☐ N ☐ Worse with activity: Y ☐ N ☐	Aura: Y ☐ N ☐	Medication: Time & Dosing: Device: Time:	Stress (0-10): Hours slept: Sleep quality: Physically active: Y ☐ N ☐ Skipped meal: Y ☐ N ☐ Hydration: Y ☐ N ☐ Caffeine: Y ☐ N ☐ Headache interference (0-10):	

Relaxation Strategies

What you will learn

1. What stress is
2. How your body responds to stress
3. Three relaxation strategies
   - Paced breathing
   - Progressive muscle relaxation
   - Special place visual imagery

What is stress?

- Stress is a normal part of life.
- Living with a chronic headache disease can be very stressful.
- Stress can impact your body and mind and make your headache symptoms worse.

How Does My Body Respond to Stress?

- The autonomic nervous system controls processes in your body that you usually do not think about (e.g., breathing, digestion, sweating).
- It is made up of two parts - one that controls your stress response (sympathetic nervous system) and the other that controls your relaxation response (the parasympathetic nervous system).
- When you are stressed, feel angry, or anxious your **stress response** is active. Many things in life including headache pain can activate this response.
- Lots of changes happen in your body to help you prepare for action ("fight, flight, or freeze") (1) Heart rate and blood pressure speed up (2) faster breathing (3) increase in blood sugar and fat.
- When you activate our **relaxation response** the opposite changes happen in the body to prepare your body for rest and relaxation (1) Heart rate slows down (2) slower breathing.
- While we cannot always control our stress and relaxation response, we can influence them. By learning what tools activate your relaxation response you can influence your headache symptoms.

Setting Yourself Up for Success!

After practicing each relaxation strategy, think about the following questions:

1. Did you notice the difference between a tense muscle and a relaxed one?
2. How did your body feel at the end of the practice?
3. What emotions did you experience during the exercise?
4. What thoughts did you notice come in your mind?

Paced Breathing

- Involves engaging the diaphragm, a dome-shaped muscle under the rib cage, which helps us to take slow, regular, and paced breaths
- Helps keep the system calm and reduce how often you get a headache
- Activates your relaxation response
- Reduces your muscle tension
- Decreases your heart rate and blood pressure
- Improves your mood
- Helps you become aware of what you are thinking and feeling

Setting Yourself Up for Success!

1. Find a time and comfortable place to practice where others will not disturb you
2. Sit in a comfortable chair and allow your body to be supported
3. When you breathe out, say a phrase such as “I am relaxed”
4. Be consistent – when you first learn this still practice at the same time every day (e.g., after brushing your teeth, before breakfast)
5. Practice, practice, practice!
6. When you get better using your skills you can start to practice them in other settings like at work or out in the community

Progressive Muscle Relaxation

- Most people do not realize they are holding tension in their body until they feel pain
- You might not even recognize what being relaxed feels like
- Progressive muscle relaxation can help you
  - » Activate your relaxation response
  - » Feel a state of deep relaxation by tensing and relaxing the muscles in your body
  - » Learn to tell the difference between feelings of tension and relaxation

Setting Yourself Up for Success!

1. Find a time and comfortable place to practice where you can minimize interruptions
2. Sit in a comfortable chair and allow your body to be supported
3. Lightly tense one muscle group for 5-7 seconds
4. Focus on what you feel as the muscles tense and relax
5. Enjoy how it feels when your muscles relax
6. The more you practice the quicker and easier it will be for you to activate your relaxation response, so keep at it

Visual Imagery

- Distracts you from your headache pain
- Relieves stress, tension, and physical discomfort
- Decreases headache frequency
- Improves your mood
- Brings harmony between your mind and body

Setting Yourself Up for Success!

1. Use your visual imagery log to identify and explore your "special place"
2. Notice any sensations in your body
3. Use your paced breathing during your visualization
4. Use all five senses - take note of what you hear, see, smell, touch, and taste
5. Set a timer for the length of time you want to practice so that you can focus on your special place rather than on how long you have left to practice
6. Let any thoughts or emotions that arise pass by
7. Remember, this is YOUR special place–return whenever you need to

Imagery Log

My **special place** is: _____

I can **see**: _____

I can **smell**: _____

I can **hear**: _____

I can **feel**: _____

I can **taste**: _____

Other **feelings** or **thoughts**: _____

Relaxation Practice Log

Steps to complete your relaxation practice log:

1. Goal: I will practice _____ for____ minutes____ times per day by_____
2. Rate your level of relaxation before and after you practice using the scale below
3. Record the total time you practiced
4. Reflect on your practice - note any thoughts or emotions you experienced, any preferences for the time of day you practice, and any barriers to practice

Rating Scale

0 1 2 3 4 5 6 7 8 9 10

Not Relaxed ⟶ **Very Relaxed**

Day/Date	Relaxation Rating **Before** practice (0-10)	Relaxation Rating **After** practice (0-10)	Total Practice Time (minutes)	Type of Relaxation Skill	Notes

Contributing Factors

What you will learn

1. What contributing factors are
2. Common contributing factors including sleep, caffeine, missing meals, physical activity, and stress

What are contributing factors?

- Contributing factors differ for each person.
- The combination of factors can move you toward your headache threshold.
- Avoiding all potential contributing "trigger" factors is unhelpful and can stop you from doing the things that bring you pleasure.
- Your headache diary can help you look for patterns to identify your own contributing factors.
- The best way to prevent your headache symptoms from increasing is to keep a consistent schedule.

Sleep

Understanding the different stages and early warning signs allows you to act before your symptoms progress.

- Sleep is a restorative process for your body.
- Your sleep may be impacted when you have headache pain.
- Stimulus control and sleep hygiene can help improve your sleep.

Caffeine

- Caffeine is found in many over the counter headache medications.
- It is all about finding the right balance – a little caffeine can help your headache symptoms, but too much can make your headache worse.
- Try to limit the amount of caffeine you use in a day (200mg/day).
- The amount of caffeine differs by brand and type of coffee.

Missing Meals

- Missing or delaying meals can impact the onset of your headache pain and symptoms and make them worse.
- Try not to miss meals.
- Space out your meals so you are eating at regular times throughout the day.
- Make sure you are drinking enough water throughout the day, too.

Physical Activity

- Physical activity at a moderate intensity can help you reduce stress and pain, as well as decrease the frequency of your headache pain and symptoms.
- You want to be exercising hard enough that you can still speak but it's hard to carry on a normal conversation.
- Aim for 30 minutes a day of physical activity – it doesn't have to be all at once, you can break it up throughout the day.
- Many daily active leisure tasks can help you meet your activity levels.

Stress

- Stress can impact other factors – your sleeping and eating habits may change when you are feeling stressed which can make your headache worse.
- Keep an eye out for any unhelpful thoughts or behaviors when you are stressed.
- Even reductions in the level of stress from one day to the next can increase the likelihood of a headache onset (stress-let down headache).
- Remember, consistency is key.

Goal Setting

S	M	A	R	T
SPECIFIC	MEASURABLE	ACTION-ORIENTED	REALISTIC	TIME-BOUND

GOAL SETTING

S	SPECIFIC	Goals should be concrete and specific. Who, Where, When, Why, How? E.g., "I will drink one cup of coffee at 8am daily" vs. "I will drink less coffee"
M	MEASURABLE	There should be an easy way to measure your progress toward your goal. E.g., "I will walk for 30 minutes per day" vs. "I will get in better shape"
A	ACTION-ORIENTED	Action goals help create actual change. What action do you need to take? E.g., "I will write down my symptoms using my headache diary" vs. "I will notice my symptoms"
R	REALISTIC	Goals should be realistic. Unrealistic goals can lead to giving up. E.g., "I will practice PMR for 20 minutes a day" vs "I will meditate for 3 hours a day."
T	TIME-BOUND	Set the time period for accomplishing the goal. E.g., "I will set my alarm for 6am each day by Friday" vs. "I will set my alarm for 6am"

practice progressive muscle relaxation

(What **Specific** activity will you do? Think who, where, when, why and how)

For 20 minutes each day

(How will you **Measure** your progress? How much? How often?)

Is my goal **Action-Oriented**? YES ☑ NO ☐

Is my goal **Realistic**? YES ☑ NO ☐

I will complete my goal by... *By Friday*

(What is your **Time**-frame?)

S M A R T

SPECIFIC | MEASURABLE | ACTION-ORIENTED | REALISTIC | TIME-BOUND

Why is this goal important to me?

(What **Specific** activity will you do? Think who, where, when, why and how)

(How will you **Measure** your progress? How much? How often?)

Is my goal **Action-Oriented**? YES ☑ NO ☐

Is my goal **Realistic**? YES ☑ NO ☐

I will complete my goal by:

(What is your **Time**-frame?)

Why is this goal important to me?

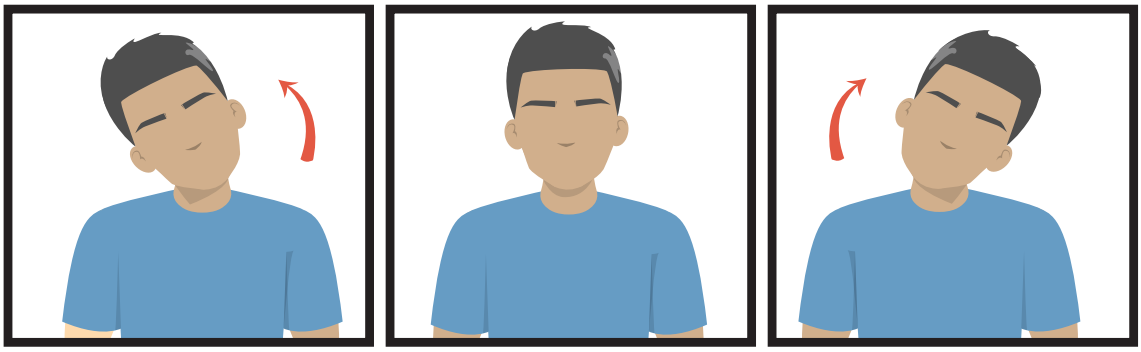
Potential Obstacles:	Potential Solutions:
1.	1.
2.	2.

Muscle Stretches

During muscle stretching, the key is to gently stretch your muscles with smooth and slow motions. Never force a tight, tense muscle with sudden movements. Your muscles will let you know if you are treating them with the gentleness they like—or if you are not!

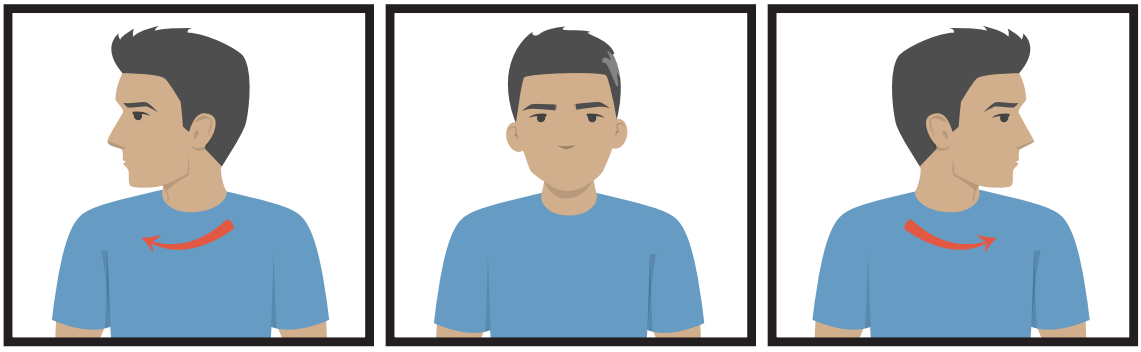
Exercise No. 1 - Side Bend

This exercise is designed to help stretch the upper shoulder muscles. While sitting or standing, gently bend your head to one side, trying to bring the ear as close as possible to the shoulder without raising the shoulder. Avoid turning your head while stretching it. Hold this position for six seconds, then relax. Repeat to other side.



Exercise No. 2 - Side Turn

This exercise stretches the muscles that turn your head. While sitting or standing, gently turn your head to one side, looking as far over your shoulder as you can. Hold for six seconds, then relax. Repeat to the other side.



Holroyd et al., 2000

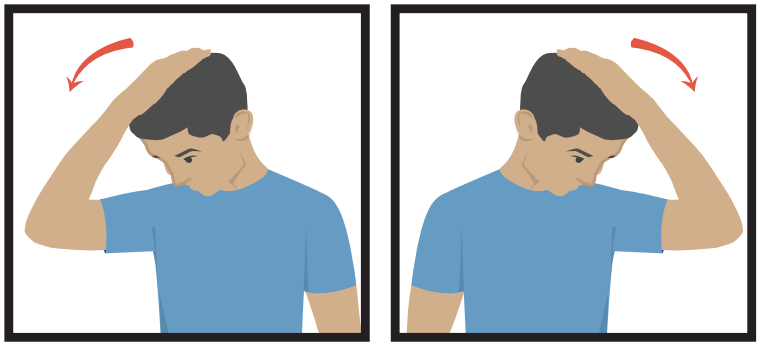
Muscle Stretches

Exercise No. 3 - Forward Bend

This exercise is designed to stretch the muscles at the base of the neck and around the top of the spine. While sitting or standing, bend your head forward and try to touch your chin to your chest. You can place your hands behind your head and gently pull forward to increase the stretch. Hold for six seconds, then relax. Repeat.

Exercise No. 4 - Diagonal Bend

This exercise stretches the upper back and shoulder muscles. Turn your head about half way to the side and bend the head forward. You can use one hand and gently pull down on your head to increase the stretch. Hold for six seconds, then relax. Repeat.



Holroyd et al., 2000

Getting To Know You

What you will learn

1. Different types of early warning signs
2. STAY CALM! strategies to use during headache and symptom onset

What are my early warning signs?

- Looking out for those early warning signs that can happen a few hours to days before the onset of your headache pain and symptoms can help you act before your symptoms progress.
- The following lists symptoms you might notice before your headache pain and symptoms start.

☐ Confusion ☐ Depression ☐ Drowsiness ☐ Euphoria ☐ Irritability ☐ Restlessness ☐ Talkativeness	☐ Concentration difficulties ☐ Sensitivity to light ☐ Sensitivity to odors ☐ Sensitivity to sound ☐ Word finding difficulties ☐ Yawning
☐ Bloating ☐ Constipation ☐ Diarrhea ☐ Feeling cold ☐ Food cravings ☐ Increased urination ☐ Increased thirst ☐ Loss of appetite ☐ Stiff neck	☐ Blurred vision ☐ Bright shapes ☐ Confusion ☐ Flashing colors ☐ Numbness ☐ Problem understanding ☐ Wavy lines ☐ Weakness ☐ Word finding difficulties

I will STAY CALM! during the onset of headache symptoms by: _____

_____

Shifting my focus (e.g., crossword puzzle, calling a friend) _____

_____

Taking my medications (e.g., take acute medications early) _____

_____

Activating my relaxation response (e.g., paced breathing, PMR, special place imagery) _____

_____

You are the expert! (e.g., decide which skills to use, remove self from stress) _____

_____

Challenging unhelpful thoughts and using coping statements (e.g., I can only do my best)

_____

Always keeping a consistent schedule (e.g., avoid napping, eat frequently, drink regularly)

_____

Listening to my early warning signs (e.g., yawning, rub temples) _____

_____

Making time for self-care (e.g., be kind to myself) _____

_____

My STAY CALM Coping Card

Shift focus away from pain

Take medications as prescribed

Activate your relaxation response

You are the expert!

Challenge unhelpful thoughts

Always keep a consistent schedule

Listen to your early warning signs

Make time for self-care

Combating Unhelpful Thoughts

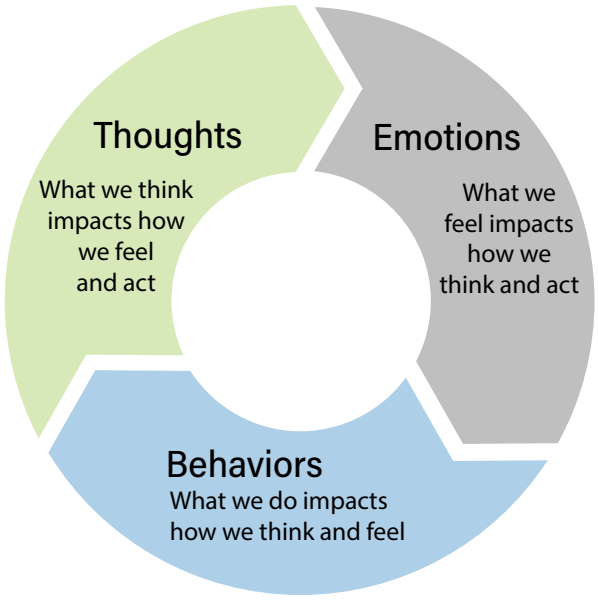
What you will learn

1. What automatic thoughts are
2. How your thoughts impact how you feel and behave
3. The 3 C's to catch, check, and change unhelpful thoughts

What Are Automatic Thoughts?

- Your mind is filled with many thoughts throughout the day.
- Sometimes you are aware of what you are thinking and other times you are not.
- Your past experiences impact the thoughts you have and the way you interpret a situation.
- Some thoughts you have in response to your headache pain and symptoms are unhelpful and increase the duration and severity of your headache pain and symptoms.

How Are My Thoughts, Feelings, and Behaviors Connected?



How Do I feel?

- Many people find it difficult to realize what they are feeling.
- An emotion wheel can help you recognize and label your emotions

How can I use the 3C's to help my headaches?

CATCH IT

- Become aware of the thought you're having
- What was happening in the environment or going through your mind?
- Focus on your body sensations to cue you in to your thoughts

CHECK IT

- Is what you were thinking true? Don't always believe everything you think!
- Was it a helpful thought?
- Is there another explanation for what happened?

CHANGE IT

- Replace your unhelpful thought with a more accurate and helpful one
- Sometimes the thought is true but not always helpful
- Use a coping statement

Thought Log

Day/ Date	Situation	CATCH your Automatic Thought	Consequence	CHECK your Automatic Thought	CHANGE your AT New Adaptive Response
			Emotion: Physical Sensations: Behaviors:		New AT: Emotion: Physical sensations: Behaviors:
THOUGHT PROMPTS					
	Where were you? What were you doing? Who were you with?	What was going through your mind?	What did you feel? What sensations did you notice? How did you act?	Evidence for AT? Evidence against AT? Is this AT helpful? What's the most realistic outcome? What is an alternative explanation?	What is going through your mind? How do you feel? What sensations do you notice? What actions are you taking?

Planning Ahead

Use this worksheet to create a headache management plan.
Feel free to keep it with you or refer back to it whenever you need.

Relaxation Techniques that I found helpful:	
My **Contributing Factors** and how I can manage them:	
Ways I can remember to practice **Behavioral Preventive Strategies** and take my **Preventive Medications** (refill prescriptions, schedule injections):	
I can use my **3C's to Catch, Check, and Change** my helpful thoughts by:	
The **Coping Statements** I find helpful are:	

Managing My Headache Symptoms When They Start (STAY CALM!)

Shifting you Focus	
Taking your medications as prescribed	
Activating your relaxation response	
Y ou are the expert	
Challenge unhelpful thoughts and use coping statement	
Always keep a consistent schedule	
Listen to your early warning signs	
Make time for self-care	

My STAY CALM Coping Card

Shift focus away from pain

Take medications as prescribed

Activate your relaxation response

You are the expert!

Challenge unhelpful thoughts

Always keep a consistent schedule

Listen to your early warning signs

Make time for self-care