Program Committee Disclosures

**Program Chair: Dawn C. Buse, PhD, FAHS**
Dr. Buse has received consulting fees and/or honoraria from Allergan, Inc., and Zogenix.

**Program Chair: Richard B. Lipton, MD, FAHS**
Dr. Richard B. Lipton holds stock options in eNeura Therapeutics (a company without commercial products); serves as consultant, advisory board member, or has received honoraria from: Alder, Allergan, Inc., Autonomic Technologies, Boston Scientific, Bristol Myers Squibb, Colucid, Dr. Reddy’s, ElectroCore, Eli Lilly, Endo, eNeura Therapeutics, Informa, Labrys, Merck, Novartis, Teva, Vedanta.

**Frank Andrasik, PhD**
Dr. Andrasik has nothing to disclose.

**Donna Gutterman, PharmD**
Dr. Gutterman has received consulting fees and/or honoraria from NuPathe, Teva Pharmaceuticals, Dr. Reddy Pharmaceuticals.

**Robert A. Nicholson, PhD, FAHS**
Dr. Nicholson has nothing to disclose.

**Todd Smitherman, PhD, FAHS**
Dr. Smitherman is the recipient of a research grant from Merck and Co., Inc.
Behavioral Seminar Course Developers

Dawn C. Buse, PhD, FAHS
Richard B. Lipton, MD, FAHS
Robert A. Nicholson, PhD, FAHS
Todd A. Smitherman, PhD, FAHS

Learning Objectives

At the conclusion of this presentation, participants will be better able to:

- Understand the science and art of communication
- Enhance motivation and adherence among patients being managed for migraine
- Be familiar with and able to apply empirically supported behavioral treatments in clinical practice
- Incorporate behavioral strategies into treatment plans that are tailored to the needs of their patients

Overview of Program

- The Science and Art of Communication
- Motivation and Adherence for Managing Migraine
- Empirically Supported Behavioral Treatments: Overview and Empirical Data
- Tailoring Behavioral Strategies and Treatment Plans
Behavioral Interventions Include a Range of Techniques From a Range of Providers

<table>
<thead>
<tr>
<th></th>
<th>HCPs Can Provide</th>
<th>Behavioral Specialist Needed</th>
<th>Useful for All</th>
<th>Needed for Some</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education (triggers, healthy lifestyle)</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Effective communication</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Adherence enhancement strategies</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Relaxation training</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Stress Management</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cognitive Behavioral Therapy</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dialectic Behavioral Therapy</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Biofeedback</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Clinician = Coach  
Patient = Player

Clinician
- Uses experience and expertise to teach patients the skills and tools to manage migraine
- **Most effective when:**
  - Communicating what is important to the players
  - Enhancing their skills by addressing areas needing improvement

Patient
- Puts the principles and tools provided by the clinician “in play” on a daily basis for migraine management
- **Most effective when:**
  - Absorbing what the coach teaches
  - Practicing to build their skills
  - Getting more instruction from the coach as needed

**Why Is Effective Communication Essential for Migraine Management?**

**Why Is Effective Communication Essential for Migraine Management?**

No external measure (eg, MRI, blood test) to assess pain that is more reliable or valid than the patient’s report

Any breakdown in patient-physician communication negatively impacts treatment quality


**American Migraine Communication Studies**

<table>
<thead>
<tr>
<th>AMCS-1</th>
<th>AMCS-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessed ictal impairment (%)</td>
<td>10</td>
</tr>
<tr>
<td>Assessed interictal impairment (%)</td>
<td>0</td>
</tr>
<tr>
<td>Addressed need for migraine prophylaxis (%)</td>
<td>50</td>
</tr>
<tr>
<td>Patient-physician agreement on frequency (%)</td>
<td>45</td>
</tr>
<tr>
<td>Patient-physician agreement on impairment (%)</td>
<td>49</td>
</tr>
<tr>
<td>Length of visit (minutes)</td>
<td>11</td>
</tr>
</tbody>
</table>

Benefits of Effective Communication

<table>
<thead>
<tr>
<th>Percentage</th>
<th>HCPs</th>
<th>Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better than prior visits</td>
<td>89%</td>
<td>94%</td>
</tr>
<tr>
<td>Valuable information they would not have learned otherwise</td>
<td>69%</td>
<td>67%</td>
</tr>
</tbody>
</table>


Ask-Tell-Ask in Migraine

Ask:
- How many headache attacks do you get each month?
- On average, how long do your headaches last?

Tell (Rephrase):
- So you have 5 headache attacks per month that last 2 days each on average?

Ask:
- So you are having headaches on about 10 days per month on average?
- Can you tell me about how headaches are impacting your life?


Behavioral ARS Question 1

Which of the following provider characteristics is most predictive of patient’s trust?

A. Where you attended medical school
B. Your empathy towards the patient
C. You and the patient having the same ethnicity
D. Your years of experience
Influence of Empathy and Trust

Patients who perceive their physician as being empathetic have:

- Less distress about their disease
- Greater confidence in their ability to cope with treatments and symptoms

Patients who trust their doctors more:

- Are more likely to be prescribed needed migraine medication
- Have less disability

Show Empathy, Increase Trust

Collaborative Decision-Making

Open Ended Questions

Active Listening

Behavioral ARS Question 2

Migraine patients are often ambivalent about making needed changes to improve their condition.

A. True
B. False
Motivational Interviewing

Involves:
• Recognizing a problem
• Identifying the patient’s readiness for change
• Tailoring interventions to the patient’s stage of readiness for change

Collaborative
Guiding*

*To elicit/strengthen motivation for change

Strategies For Change

Show empathy
Increase patient trust

Help patient see discrepancies in their thoughts vs behaviors

Use the patient’s words to help move towards change

Stages of Change

### Readiness to Change: Precontemplation

<table>
<thead>
<tr>
<th>Description</th>
<th>Principles to Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not motivated to change</td>
<td>Challenge disabling beliefs</td>
</tr>
<tr>
<td>Doesn’t see the need or disagrees about the need</td>
<td>Set treatment expectations</td>
</tr>
</tbody>
</table>


### Tools to Use: Precontemplation

- Make patients aware of the need to actively manage migraine

  • Recommend tools that clarify treatment needs
    - Headache diary
    - MIDAS questionnaire
    - Address denial of chronic illness
  
  • A “plan of action” will NOT work—patients are not yet motivated to actively manage their condition


### Readiness to Change: Contemplation

<table>
<thead>
<tr>
<th>Description</th>
<th>Principles to Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient has some motivation to change, however</td>
<td>Explore consequences of</td>
</tr>
<tr>
<td>has some motivation to change, however . . .</td>
<td>changing or not changing</td>
</tr>
<tr>
<td>Lacks the skills needed to change and/or</td>
<td></td>
</tr>
<tr>
<td>Remains unsure it is worth the time and effort</td>
<td></td>
</tr>
</tbody>
</table>

Use Motivational Interviewing

### Readiness to Change: Preparation

<table>
<thead>
<tr>
<th>Description</th>
<th>Principles to Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivated to change, but motivation may be impeded by . .</td>
<td>Identify and address skills deficits</td>
</tr>
<tr>
<td>Lack of skills and/or barriers to successful change</td>
<td>Develop plans to address barriers</td>
</tr>
</tbody>
</table>


### Readiness to Change: Action

<table>
<thead>
<tr>
<th>Description</th>
<th>Principles to Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient is actively making changes, but . .</td>
<td>Reinforce adaptive changes</td>
</tr>
<tr>
<td>Barriers could diminish motivation</td>
<td>Facilitate self-maintenance</td>
</tr>
</tbody>
</table>


### Readiness to Change: Maintenance

<table>
<thead>
<tr>
<th>Description</th>
<th>Principles to Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change is part of his/her ongoing routine</td>
<td>Reinforce gains</td>
</tr>
<tr>
<td>Continued success will reinforce motivation</td>
<td></td>
</tr>
</tbody>
</table>

**Tools to Use: Action or Maintenance**

Focused problem-solving—

How to...

- Choose when to use a migraine-specific medication
- Remember to take preventative medication daily
- Manage triggers


---

**Cognitive Influences in Migraine:**
Self-Efficacy

**Patient’s belief that:**

- He/she can successfully engage in a course of action
- Action will produce a desired outcome

**Individuals possess self-efficacy belief for various behaviors:**

- Managing triggers
- Adhering to treatment regimens
- Coping with pain
- Limiting disability


---

**How Self-Efficacy Can Influence Migraine Management**

**Potential mediator and moderator of headache treatment response**

Predicts response to combined pharmacologic and behavioral treatment

Higher self-efficacy leads to lower disability

How Self-Efficacy.

## Locus of Control

<table>
<thead>
<tr>
<th>Internal</th>
<th>Healthcare Professionals</th>
<th>Fate/Chance</th>
</tr>
</thead>
<tbody>
<tr>
<td>“What can I do to manage these migraines?”</td>
<td>“You need to do something to manage these migraines”</td>
<td>“There is nothing anyone can do to manage these migraines”</td>
</tr>
</tbody>
</table>


## Behavioral ARS Question 3

What type of locus of control is associated with improved headache outcomes?

A. Internal  
B. External  
C. Chance  
D. Locus of control is unrelated to headache outcomes

## Consequences of a Locus of Control

<table>
<thead>
<tr>
<th>Internal locus of control</th>
<th>External locus of control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are aware of and actively manage their environment</td>
<td>Do not attempt to actively manage their situation</td>
</tr>
<tr>
<td>Improved management of triggers such as stress</td>
<td>Feel “helpless” and/or “hopeless” about their situation</td>
</tr>
<tr>
<td>Value skill development and achievement reinforcement</td>
<td>Do not develop skills for headache management</td>
</tr>
</tbody>
</table>

- Better treatment outcomes[^1-3]  
- Less disability[^3]  
- Less distress[^4]  
- Poor treatment outcomes[^1-3]  
- More disability[^3]  
- More distress[^4]

Adherence

- Definition: The extent to which a patient’s behavior matches the agreed-upon treatment regimen
- Preferable to the term “compliance” which is less collaborative

Medication Adherence Facts

- <60% of migraineurs adhere to prescription regimen
- 10–20% of migraine prescriptions are never filled
- 20–50% of patients are noncompliant with prophylactic medications

Assessing and Addressing Adherence

Ask the Patient

- Are you taking medication the way I directed?
- Have you had any trouble with taking your medication?

Normalize Non-Adherence

2 Hahn. Ophthalmology 2006;113: Suppl 937-42
### Factors Driving Medication Adherence in Migraine

<table>
<thead>
<tr>
<th>Medication</th>
<th>Important</th>
<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective and Safe</td>
<td>Adherence very likely</td>
<td>Address disease perception</td>
</tr>
<tr>
<td>Not Effective and/or Safe</td>
<td>Address medication perception</td>
<td>Adherence very unlikely</td>
</tr>
</tbody>
</table>


### Putting it All Together Use Case...5 Things from the “Choosing Wisely Campaign”

1. Don’t perform neuroimaging in patients with stable headaches that meet criteria for migraine
2. Don’t perform computed tomography (CT) imaging for headache when magnetic resonance imaging (MRI) is available, except in emergency settings
3. Don’t recommend surgical deactivation of migraine trigger points outside of a clinical trial
4. Don’t prescribe opioid or butalbital-containing medications as first-line treatment for recurrent headache disorders
5. Don’t recommend prolonged or frequent use of over-the-counter (OTC) pain medications for headache

[Choosing Wisely Campaign](http://bit.ly/1xJSrjm)
Summary

The Science and Art of Communication
- Establishing empathy
- Collaborative care
- Communication strategies (AMCS)

Motivation and Adherence for Managing Migraine
- Motivational interviewing and stages of change
- Self-efficacy and locus of control
- Enhancing adherence

Part II
Overview: Part 2

• The biopsychosocial model of migraine
• Behavioral interventions for migraine: the evidence
• Behavioral interventions for migraine: the nuts and bolts
• Behavioral interventions for migraine for all healthcare professionals
• Behavioral interventions for migraine for the behavioral specialists
• How to identify appropriate patients for behavioral treatments for migraine
• Tips on how to make referrals
• Conclusions, Q &A

Factors in Migraine Management

Pathophysiology

Migraine

Medication Overuse/Use
Psychiatric Co-Morbidities
Nociception
Genetics
Cognitive Beliefs
Affective State
Headache-related Disability and Impact

Behavioral Interventions Include a Range of Techniques From a Range of Providers

<table>
<thead>
<tr>
<th></th>
<th>HCPs Can Provide</th>
<th>Behavioral Specialist Needed</th>
<th>Useful for All</th>
<th>Needed for Some</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education (triggers, healthy lifestyle)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Effective communication</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Adherence enhancement strategies</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Relaxation training</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Stress Management</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Cognitive Behavioral Therapy</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Dialectic Behavioral Therapy</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Biofeedback</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
**Brief Behavioral Strategies for ALL Healthcare Professionals**

Education About Behavioral Factors in Migraine

Triggers

Exacerbating/maintaining factors

Proper medication use and timing

**Headache Self-Monitoring**

Diaries for triggers

Lifestyle factors

Sleep

Medication use (paper-pencil, web-based or Smartphone apps)

**Promote Healthy Lifestyle Behaviors**

- Stress reduction/management
- Consistent, adequate sleep
- Regular exercise
- Smoking cessation
- Healthy diet
- Maintain a healthy weight or weight loss

**Behavioral Techniques for Migraine and Common Psychiatric Comorbidities**

- Relaxation Training
- Biofeedback
- Cognitive Behavioral Therapy

**Emerging Therapies**

- Acceptance and Commitment Therapy reduces\(^1,2\):
  - Headache-related disability
  - Emotional distress
  - Two small studies

---

Emerging Therapies

- Acceptance and Commitment Therapy\textsuperscript{1,2}
  - Two small studies
    - Reduced headache-related disability
    - Reduced emotional distress
- Mindfulness Meditation\textsuperscript{3,4}
  - Two pilot studies
  - Effects on headache frequency merit study with larger samples
    - Improvements in self-efficacy, disability, and acceptance of pain


Targets of Behavioral Interventions

- Migraine symptoms, pain
- Migraine-related disability
- Migraine attack triggers
- Comorbidities

American Academy of Family Physicians
American Headache Society
American Academy of Neurology
American College of Emergency Physicians
National Headache Foundation
American College of Physicians
American Osteopathic Association

US Headache Consortium
US Headache Consortium
Guidelines for Non-pharmacologic Treatment

• Grade A evidence
  - Relaxation
  - Thermal BF + relaxation
  - EMG Biofeedback
  - CBT

• Grade B evidence:
  - Behavioral therapy improves drug outcomes
  - 2010 Holroyd data would qualify as Grade A

Clinically Significant Reductions in Headache Frequency Across 3 Combination Trials

Outcomes at 5-8 months

<table>
<thead>
<tr>
<th>Placebo</th>
<th>Preventive Medication</th>
<th>Behavioral Therapy</th>
<th>Medication + Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>20</td>
<td>40</td>
<td>38</td>
</tr>
<tr>
<td>38</td>
<td>34</td>
<td>36</td>
<td>35</td>
</tr>
<tr>
<td>34</td>
<td>36</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>64</td>
<td>77</td>
<td>77</td>
<td>66</td>
</tr>
</tbody>
</table>


Stress, Arousal and Migraine

- Perceived stress (and "let down" following stress) are common triggers.
- CBT, Mindfulness Based Stress Reduction/Mindfulness Based Cognitive Therapy, Biofeedback, Relaxation training target cognitive and physiological responses to stress


Progressive Muscle Relaxation
Identifying Patients Who Will Benefit from Specialized Behavioral Interventions

• Consortium guideline recommendations

• Additional factors to consider:
  – Headache-related disability
  – Headache Impact
  – Quality of life

Behavioral ARS Question 1

Among individuals with chronic migraine, about ____% experience little or no migraine-related disability, but approximately ____% have severe or very severe disability?

A. 5, 20  
B. 10, 25  
C. 25, 33  
D. 40, 40
**Identifying Patients Who Will Benefit from Specialized Behavioral Interventions**

- Consortium guideline recommendations
- Additional factors to consider:
  - Headache-related disability
  - Impact
  - Quality of life
  - Psychiatric comorbidities

**Why Are Psychiatric Comorbidities Important?**

- Have serious consequences (e.g., suicide)
- May share underlying biologic mechanism(s)
- Risk factors for progression from episodic to chronic migraine (depression, anxiety, etc.)
- Contribute to: Problems with adherence, Treatment refractoriness, Poor treatment outcomes
- Significantly affect patient’s quality of life
Common Psychiatric Comorbidities Can Influence Headache Management

Depression | Anxiety Disorders
---|---
Migraine | PTSD
| Personality Disorders

Rates of Depression and Anxiety Among Migraineurs (US Population)

- Depression (SR-PD): 41.2%
- Depression (PHQ-9): 25.6%
- Anxiety (SR-PD): 30.2%

Data from American Migraine Prevalence and Prevention (AMPP) study, 2005


Behavioral ARS Question 2

I use psychiatric screening instruments in my clinical practice_____.

A. Rarely, if ever
B. On some patients
C. On most patients
D. On all/nearly all patients
**Depression and Anxiety: Assessment Instruments**

<table>
<thead>
<tr>
<th>PRIME-MD</th>
<th>PHQ-9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screens most DSM-IV Axis I disorders</td>
<td>Depression</td>
</tr>
<tr>
<td>GAD-7 Anxiety</td>
<td>GAD-4 Brief depression and anxiety screen</td>
</tr>
</tbody>
</table>

- All are available for use and distribution free of charge
- See [www.phqscreeners.com](http://www.phqscreeners.com) for measures, manuals, validation manuscripts, and versions in multiple languages
- Additional information listed in the printed “Resource Guide”
- More information available through the online AHS CME CMEP programs “Behavioral Tools You Can Use”

**Options for Treating Psychiatric Comorbidities**

- Tailor treatment to the comorbid disorder
- Pharmacologic “two-fers” are often unrealistic
  - SSRIs and SNRIs lack strong efficacy for migraine
  - Antidepressant dose higher than antimigraine dose
  - Separate agents are usually indicated
    - Risk of serotonin syndrome likely overblown
    - Beware drug-drug interactions
    - Use a staggered start
- The effect on comorbid depression of antidepressants prescribed for headache prophylaxis is largely unknown


**Pharmacologic Treatment: Comorbidities**

- Tailor treatment to the comorbid disorder
- Pharmacologic “two-fers” are often unrealistic
  - SSRIs and SNRIs lack strong efficacy for migraine
  - Antidepressant dose higher than antimigraine dose
  - Separate agents are usually indicated
    - Risk of serotonin syndrome likely overblown
    - Beware drug-drug interactions
    - Use a staggered start
- The effect on comorbid depression of antidepressants prescribed for headache prophylaxis is largely unknown

**General Pharmacologic Strategies**

**Depression**  
Roughly 2/3 respond to an SSRI/SNRI within 2 months.  
Consider a second SSRI/SNRI if failure with first.  
Another failure—try drug with a different or dual mode of action.

**Anxiety**  
SSRIs are effective; require higher doses than for depression.  
Benzodiazepines are a short-term option but contribute to:  
- Addiction potential  
- Avoidant coping


---

**Brief Behavioral Interventions:**  
**Depression**

- Encourage depressed patients to be active
- Don’t wait—activate!

  - Write an “Activity Prescription”
  - Be specific—do X activity Y times/week for Z duration
    - Walk around the neighborhood for 30 minutes each day
    - Go to the church you’ve been thinking about visiting
    - Engage in 30 minutes of brisk walking 3 times a week, stopping only if your pain becomes severe

Refer to mental health professional for clinically significant depression

---

**Brief Behavioral Interventions:**  
**Stress and Anxiety**

- Educate patients about maladaptive consequences of avoidance
- Recommend patient workbook or relaxation exercises  
  - PMR, visual imagery, diaphragmatic breathing
  - Available as smartphone apps, podcasts, CD
- “Prescribe” activities for stress management  
  - Pleasant activities
  - Daily relaxation time
  - Exercise/yoga

Refer for clinically significant anxiety, non-response to medication or concerns about addiction
Identifying Patients Who Will Benefit from Specialized Behavioral Interventions

- Consortium guideline recommendations
- Additional factors to consider:
  - Headache-related disability
  - Impact
  - Quality of life
  - Psychiatric comorbidities
  - Medication overuse or misuse

Opioid Use by Migraineurs

- Opioids are not:
  - Migraine-specific
  - Recommended by US Headache Consortium

- Still commonly used for migraine
- Frequent use related to negative outcomes
  - More frequent attacks
  - Greater headache-related disability
  - High rates of psychiatric comorbidities
  - More healthcare resource utilization

Headache-Related Disability by Opioid Use Group

**ICHD-III β MOH**

**New Diagnostic Criteria**

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

B. Regular overuse for >3 months of ≥1 acute/symptomatic treatment

1. Ergotamine, triptans, opioids, or combination analgesic medications on ≥15 days/month

2. Simple analgesics or any combination of ergotamine, triptans, analgesics, or opioids on ≥15 days/month on a regular basis without overuse of any single class alone

*If attributed to substance withdrawal, sub-classify as caffeine withdrawal headache; opioid withdrawal headache; estrogen withdrawal headache


---

**Presence of Comorbid Psychiatric Disorders in Migraine With and Without MOH**

<table>
<thead>
<tr>
<th>Disorder</th>
<th>With MOH (%)</th>
<th>Without MOH (%)</th>
<th>Odds Ratio</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All mood disorders</td>
<td>85</td>
<td>51</td>
<td>4.5</td>
<td>0.007</td>
</tr>
<tr>
<td>Major depressive episode</td>
<td>39</td>
<td>2</td>
<td>21.8</td>
<td>0.004</td>
</tr>
<tr>
<td>All anxiety disorders</td>
<td>83</td>
<td>54</td>
<td>3.5</td>
<td>0.02</td>
</tr>
<tr>
<td>Panic disorder</td>
<td>24</td>
<td>2</td>
<td>12.1</td>
<td>0.02</td>
</tr>
<tr>
<td>Generalized anxiety disorder</td>
<td>42</td>
<td>10</td>
<td>6.0</td>
<td>0.004</td>
</tr>
<tr>
<td>Social phobia</td>
<td>34</td>
<td>12</td>
<td>4.3</td>
<td>0.02</td>
</tr>
<tr>
<td>All substance disorders</td>
<td>44</td>
<td>15</td>
<td>7.6</td>
<td>0.001</td>
</tr>
</tbody>
</table>


---

**Behavioral Therapy Combined with Medication Management in MOH**

Adding behavioral therapy to medication withdrawal and prophylaxis for MOH can improve outcomes and reduce relapse¹-⁴

Behavioral sleep intervention yields improvement in MOH and reversion to episodic migraine⁵

Adding biofeedback-assisted relaxation training to medication withdrawal and prophylaxis reduced relapse rates and analgesic use at 3-year follow up⁶

Behavioral vs Pharmacologic Treatment of MOH: A 3-Year Outcome Study

Quasi-randomized trial

- Asses medication + behavioral intervention for MOH
- Subjects: n = 61; 83% women
- Group 1
  - Medication withdrawal
  - Tailored medication prophylaxis
- Group 2
  - Medication withdrawal
  - Tailored medication prophylaxis
  - Biofeedback-assisted relaxation training
    - PMR
    - EMG biofeedback (total 8 sessions) with home practice

Headache Days Per Month
Over Time and by Treatment Group

<table>
<thead>
<tr>
<th></th>
<th>Pretreatment</th>
<th>12 Months</th>
<th>36 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharm alone</td>
<td>30</td>
<td>18.3</td>
<td>18.1</td>
</tr>
<tr>
<td>Combined Therapy</td>
<td>30</td>
<td>18.4</td>
<td>11.2</td>
</tr>
</tbody>
</table>

P < 0.01


Analgesic Consumption
Over Time and by Treatment Group

<table>
<thead>
<tr>
<th></th>
<th>Pretreatment</th>
<th>12 Months</th>
<th>36 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharm alone</td>
<td>59.2</td>
<td>18.4</td>
<td>20.1</td>
</tr>
<tr>
<td>Combined Therapy</td>
<td>55</td>
<td>14.3</td>
<td>4.9</td>
</tr>
</tbody>
</table>

P < 0.01

Identifying Patients Who Will Benefit from Specialized Behavioral Interventions

- Consortium guideline recommendations
- Additional factors to consider:
  - Headache-related disability
  - Impact
  - Quality of life
  - Psychiatric comorbidity
  - Medication overuse or misuse
- Risk factors for progression

Risk Factors for CM/CDH

<table>
<thead>
<tr>
<th>Comorbidities</th>
<th>Exogenous Factors</th>
<th>Treatment-related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>Stressful life events</td>
<td>Poor treatment efficacy</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Head/Neck injury</td>
<td>Medication overuse</td>
</tr>
<tr>
<td>Other pain disorders</td>
<td>Caffeine</td>
<td></td>
</tr>
<tr>
<td>Obesity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asthma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snoring</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Headache Features

- Attack frequency (headache days)
- Persistent, frequent nausea with migraine
- Allodynia

Exogenous Factors

- Stressful life events
- Head/Neck injury
- Caffeine

Clinical Considerations for CM Onset Prevention

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Treatment/ Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment patterns</td>
<td>Monitor and modify medication use, consider preventive other non-oral treatments, and behavioral interventions*</td>
</tr>
<tr>
<td>Attack frequency</td>
<td>Reduction/Prevention with pharmacologic and behavioral interventions</td>
</tr>
<tr>
<td>Obesity</td>
<td>Weight loss, Exercise, Behavioral Interventions</td>
</tr>
<tr>
<td>Stress</td>
<td>Behavioral Interventions, Exercise, Lifestyle modification</td>
</tr>
<tr>
<td>Snoring</td>
<td>Diagnose and treat sleep apnea, Weight loss</td>
</tr>
<tr>
<td>Allodynia</td>
<td>Manage migraine attack frequency and treat migraine early</td>
</tr>
<tr>
<td>Depression</td>
<td>Assess, Treat/Refer with pharmacologic and behavioral therapies</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Assess, Treat/Refer with pharmacologic and behavioral therapies</td>
</tr>
</tbody>
</table>

*Biofeedback, cognitive behavioral therapy, relaxation training, stress management
Insomnia Treatment in Chronic Migraine

- Single 20-minute session(s)
- Treatments
  - 5 behavioral insomnia instructions
  - Placebo instructions
- Results at 6 weeks
  - 35% of treated subjects reverted to episodic migraine
  - 0% of placebo group


How to Make a Referral for Behavioral and Psychological Treatment

Terminology:

- Biobehavioral training
- Behavioral medicine
- Stress management
- Relaxation training
Reassure Patients...

<table>
<thead>
<tr>
<th>You are not &quot;abandoning&quot; them—you will work in collaboration with a mental health provider</th>
<th>You believe they have a biological condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are not judging—this is a common response to chronic pain</td>
<td>Treatment may help management of headache and improve quality of life</td>
</tr>
</tbody>
</table>

Useful Websites: Referrals and Info

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Site address</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Headache Society membership and referral database</td>
<td><a href="http://www.achenet.org">www.achenet.org</a></td>
</tr>
<tr>
<td>American Psychological Association</td>
<td><a href="http://locator.apa.org">http://locator.apa.org</a></td>
</tr>
<tr>
<td>Association for Behavioral and Cognitive Therapies</td>
<td><a href="http://www.abct.org">www.abct.org</a></td>
</tr>
<tr>
<td>Association for Applied Psychophysiology and Biofeedback</td>
<td><a href="http://www.aapb.org/providers.html">http://www.aapb.org/providers.html</a></td>
</tr>
<tr>
<td>Society for Behavioral Medicine</td>
<td><a href="http://www.sbm.org">http://www.sbm.org</a></td>
</tr>
</tbody>
</table>

Websites for finding referrals are listed in "Resource Guide"