



# Effective Health Care

## Sleep Apnea and Headache

### Nomination Summary Document

#### Results of Topic Selection Process & Next Steps

- Treatments for co-occurring sleep apnea and headache is not feasible for a full systematic review due to the limited data available for a review at this time.
- This topic could potentially be considered for new research in comparative effectiveness.

#### Topic Description

**Nominator:** Individual

**Nomination Summary:** The nominator is interested in 1) whether there is a correlation between sleep apnea and headache, and 2) understanding whether there are treatments for sleep apnea that improve associated migraines and headaches.

**Staff-Generated PICO:**

**Population(s):** Patients with sleep apnea who also experience headache or migraines; a subgroup of interest is obese patients

**Intervention(s):** Treatments for sleep apnea, including CPAP, mouth guard, and uvulopalatopharyngoplasty (UPPP)

**Comparator(s):** Above interventions compared to each other

**Outcome(s):** Improvement or exacerbation of headache, impact of headache medication on sleep patterns, control of sleep apnea

**Key Questions**

**from Nominator:** 1. Is there a correlation of sleep apnea and migraine/severe or chronic headaches?

#### Considerations

- The topic meets Effective Health Care (EHC) Program appropriateness and importance criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- Obstructive sleep apnea (OSA), the most common type of sleep apnea, is associated with serious comorbidities and adversely affects quality of life. OSA may be associated with awakening or morning headaches. Improvements in headache with OSA treatment have varied in the limited number of studies that have looked at headache as an outcome.

- No systematic reviews or clinical guidelines on sleep apnea and headache or migraine were identified from a broad literature search and a limited volume of primary research on treatment of the co-occurring conditions was found. This topic is not feasible for a full systematic review at this time.
- A 2011 AHRQ comparative effectiveness review on the Diagnosis and Treatment of Obstructive Sleep Apnea in Adults includes the following key questions:
  1. What is the comparative effect of different treatments for obstructive sleep apnea in adults?
  2. Does the comparative effect of treatments vary based on presenting patient characteristics, severity of obstructive sleep apnea, or other pretreatment factors? Are any of these characteristics or factors predictive of treatment success?
    - Characteristics: Age, sex, race, weight, bed partner, airway, other physical characteristics, and specific comorbidities Obstructive sleep apnea severity or characteristics: Baseline questionnaire (and similar tools) results, formal testing results (including hypoxemia levels), baseline quality of life, positional dependency Other: Specific symptoms
  3. Does the comparative effect of treatments vary based on the definitions of obstructive sleep apnea used by study investigators?
  4. In obstructive sleep apnea patients prescribed nonsurgical treatments, what are the associations of pretreatment patient-level characteristics with treatment compliance?
  5. What is the effect of interventions to improve compliance with device use (positive airway pressure, oral appliances, and positional therapy) on clinical and intermediate outcomes?
    - If headache and migraine had been reported as patient characteristics, comorbidities, or symptoms in the existing literature on treatment, it would have been captured in key question one listed above; however, no such studies were highlighted in the report.
    - This report can be found on the EHC program website at: <http://www.effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/>.

## Importance of New Research

- New research may be important to the topic as there is some agreement that morning headaches are a symptom of OSA and that headache and/or migraine may be more common in patients with sleep-disordered breathing.

## Research Gaps

- There is very limited evidence on the treatment of co-occurring OSA and migraine and/or headache in general and there is limited research studying migraine or headache as an outcome of OSA treatment. There is a high degree of uncertainty surrounding the biological mechanisms and potential pathology of headache with OSA, and the overall prevalence of headache and OSA.