# Better Sleep Tied to Fewer Headaches in Women

BY BETSY BATES
*Los Angeles Bureau*

LOS ANGELES — A structured sleep modification program significantly reduced the frequency and intensity of headaches in women with transformed migraines, University of North Carolina researchers reported at the annual meeting of the American Headache Society.

The strength of the randomized study was reinforced by the inclusion of a "sham" behavioral modification arm and a crossover design.

Dr. Anne H. Calhoun, who serves on the neurology faculty at UNC in Chapel Hill, said that researchers have known for 125 years about the association between sleep problems and migraines, "but whether headaches are the cause or the result of disrupted sleep is unknown."

**Headache frequency declined by 29% and headache intensity dropped by 40% in the women who received behavioral sleep modification.**

She and her associates previously found that nearly 84% of subjects with migraine were tired on awakening, and that well over half had poor "sleep hygiene," watching TV or reading in bed, rising between one to six times a night to urinate, napping during the day, and reporting a difficult time falling asleep.

To see whether improved sleep habits would influence headaches, the investigators recruited 43 women referred to the university for the treatment of transformed migraines: They had a history of episodic migraines that, over time, evolved into daily or near-daily headaches with somewhat decreased severity and fewer typical migraine features, such as photophobia and/or phonophobia.

The women in the cohort were in their early to mid-30s, on average, and had experienced chronic headaches for a mean of 11 years. Three-fourths experienced medication-overuse headaches.

All of the women received usual medical care, which included a tapering of overused headache medications, preventive therapy, and treatment of acute headaches.

The 23 women who were randomly selected to receive sleep behavior modification were instructed to keep a consistent bedtime, spend 8 hours a night in bed, discontinue reading or television watching in bed, and refrain from taking naps. They learned visualization techniques to help them fall asleep, and, to reduce nocturia, they were told to eat dinner at least 4 hours before bedtime and to limit fluid intake within 2 hours of bedtime.

"The sham instructions were selected for their impotence on headache frequency or intensity, but they had to seem plausible to participants," Dr. Calhoun said. The 20 women assigned to the sham group were instructed to schedule a consistent dinner time, apply acupressure for 2 minutes twice a day, keep a record of liquids consumed during the day, and eat some protein as a part of breakfast.

At 6 weeks' follow-up, headache frequency had declined by 29% and headache intensity had dropped by 40% in the women who received behavioral sleep modification, compared with insignificant changes among those who received sham instructions. Moreover, 8 of 23 women in the sleep modification group no longer met the definition for transformed migraine patients. Instead, they now experienced episodic headaches.

All study participants were then enrolled in a 6-week, open-label trial of sleep behavior modification. After 6 weeks, 13 of 23 (58%) of the women in the original sleep modification group had reverted from transformed to episodic headaches and 9 of 20 (43%) of the crossover group had done the same.

Adherence to sleep guidelines was correlated with headache improvement. No subject who still had three to five indicators of poor sleep habits reverted to episodic headaches. In contrast, nearly all of the subjects who had "clean" sleep hygiene at the end of the study reverted to episodic rather than chronic daily or near-daily headaches.

"Quite clearly, further studies are needed to confirm these results and to explore a possible mechanism by which nonrestorative sleep may be involved in headache," Dr. Calhoun said. ■