

## Podcast of the Journal of Clinical Sleep Medicine

Stuart F. Quan, M.D.

*Division of Sleep Medicine, Harvard Medical School, Boston, MA  
Editor, JCSM Journal of Clinical Sleep Medicine*

Welcome to the regular Podcast of the *Journal of Clinical Sleep Medicine*. I am Dr. Stuart Quan, Editor of the *Journal*. These Podcasts are a regular feature of each issue of the *Journal* and can be downloaded at the *Journal's* website. Each Podcast features summaries of important articles published in the current issue of the *Journal*, as well as occasional interviews with authors of these papers.

On December 2, 2008 a committee commissioned by the Institute of Medicine issued its long-awaited report on resident work hours. This report contains a number of recommendations, which will potentially have an important impact on residency training. The most important of these recommendations are as follows:

1. Duty hours are not to exceed 80 hours per week, averaged over four weeks. This is unchanged from the current ACGME regulations.
2. Continuous duty-hour periods are not to exceed 16 hours, unless a five hour, uninterrupted continuous sleep period is provided between 10:00 p.m. and 8:00 a.m. Following the protected sleep period, the extended duty period may continue up to a total of 30 hours.
3. There can be no new admissions after 16 hours of work during an extended duty period.
4. Extended duty periods cannot be more frequent than every third night.
5. After completing duty periods, there must be a continuous off-duty interval of a minimum of 10 hours following a daytime duty period; a minimum of 12 hours following a night float or night shift duty period and a minimum of 14 hours following an extended duty period with no return to service earlier than 6:00 a.m. on the next day.
6. Night float or night shift duty cannot exceed four consecutive nights and must be followed by a minimum of 48 hours of continuous off-duty after three or four consecutive nights.
7. At least one 24-hour, off-duty period must be provided per week and at least one continuous 48-hour period must be provided off-duty per month.
8. Any internal and external moonlighting for patient care must adhere to the duty hour limits.

In this issue of the *Journal*, three commentaries are provided from different perspectives. Two of the commentaries are from program directors of internal medicine training programs and

the final commentary is provided by a trainee. In the first commentary, Dr. Joel Katz, from the Brigham and Women's Hospital, points out that the ideal format for structuring work hours in residency training is not yet known and that it is premature to make arbitrary rules that may have no clinical benefit, but might undermine physician work life and professional development. He suggests that whether or not the IOM rules improve patient care should be investigated through rigorous studies.

In the second commentary, Dr. Laura Meinke, from the University of Arizona, indicates that with the reduction in work hours there has been no increase in the number of residents provided, and it is unclear how hospitals will provide coverage for their patients. She indicates that hiring additional residents is more complicated than what might appear on the surface, and that even if this were possible more supervising physicians would need to be employed as well. Alternatively, hospitals could forego hiring trainees and hire more senior physicians who, of course, do not have any work hour restrictions. She also points out that another solution would be to extend the length of training for residents. However, this would also require an increase in finances to fund the additional years of training and might even discourage potential physicians into entering the profession.

Finally, Dr. Karen Hsu Blatman, who is a trainee at Northwestern University, points out that the new recommendations have some logistical challenges. She also believes that, in addition to making recommendation on work hours, money needs to be spent on providing better ancillary services for residents. This would then allow them to get more sleep and learn better. She also points out that the work-hour rules should not be rigid and there will be times when "violating" the duty-hour restrictions might be even unsafe.

At this time, it is unclear whether all of the recommendations of the Institute of Medicine will be adopted. Although some of these are within the purview of the Accreditation Council for Graduate Medical Education, other recommendations will require infusion of significant financial resources. It obviously will be up to the payers of graduate medical education to decide whether this is possible. At this time the principal financial source for graduate medical education is the federal government through Medicare and Medicaid designated funding for residency physicians. In the current economic crisis, some in Washington, D.C. are questioning whether this expenditure can be reduced or eliminated. It is the opinion of this editor, how-

ever, that all parties who have an interest in graduate medical education need to step forward to provide adequate funding for this important process. This would include insurance companies, the federal government, state governments, hospitals and other healthcare providers.

The lead article in this issue of the *Journal* is entitled, "Is Sleep Apnea an Independent Risk Factor for Prevalent and Incident Diabetes In the Busselton Health Study?" by Drs. Marshall, Wong, Phillips, Liu, Knuiman and Grunstein from the University of Sydney and the University of Western Australia. Although there is increasing population-based data implicating obstructive sleep apnea as a risk factor for coronary artery disease and hypertension, there is less data that demonstrate sleep-disordered breathing or sleep apnea is a prospective risk factor for the development of diabetes. Busselton is a community in Western Australia. In 1990, approximately 400 individuals underwent a home sleep study with follow-up four years later. Of 399 participants who had adequate data, 295 did not have diabetes at baseline. However, nine incident cases were observed within the four year follow-up. After controlling for age, gender, waist circumference, body-mass index, mean arterial pressure and HDL cholesterol, the odds ratio for developing diabetes if a person had moderate to severe sleep apnea was 13.45 in comparison to those without sleep apnea. Moderate to severe sleep apnea was defined as a respiratory-disturbance index of 15 events or greater.

Although these data are suggestive that sleep apnea can be a risk factor for the development of diabetes, caution needs to be exercised in interpreting this data. Only nine incident cases were observed in the follow-up period and the confidence intervals around the odds ratio were quite high. In fact, the upper bound of the 95% confidence interval was 114.11, indicating that the precision of the actual odds ratio is quite low.

Additional studies will be required before concluding that sleep apnea is a risk factor for incident diabetes. These will need to be performed in larger populations than was available in Busselton.

The next article to be discussed in this Podcast is entitled, "Pain Coping Strategies For Tension-type Headache: Possible Implications For Insomnia." The authors were Drs. Ong, Stepanski and Gramling from Rush University Medical Center in Chicago, IL, Accelerated Community Oncology Research Network in Memphis, TN and Virginia Commonwealth Uni-

versity in Richmond, VA. In this study, self-report data on triggers of headache, pain interference with sleep and pain-related self-management strategies were analyzed in 32 women with tension-type headache and 33 women who served as control and did not have headaches.

Analysis of the data revealed that in the headache group, in comparison to the control group, greater number of subjects reported sleep problems as a trigger of their headaches and going to sleep as a coping strategy for pain. In addition, going to sleep was the most commonly reported self-management strategy for headache subjects and also was the most effective. These data suggest that sleep problems are both a trigger of headaches, as well as the most commonly employed and most effective measure to treat headaches of the tension type.

One way of interpreting this data, as presented by the authors, is that use of sleep as a coping strategy for headaches might promote poor sleep hygiene. This would lead to insomnia and predispose the individual for additional headaches; thus a bi-directional, or circular, pathway could be envisioned. Obviously this is a small study and corroborative data from larger populations needs to be obtained.

The final paper to be discussed on this Podcast is entitled, "Forty- versus 20-minute Trials of the Maintenance of Wakefulness Test Regimen For Licensing of Drivers" by Drs. Arzi, Shreter, El-Ad, Peled and Pillar from the Ranbam Medical Center and Faculty of Medicine in Technion Haifa, Israel. In this study, 164 consecutive subjects who were referred to the sleep laboratory by the Medical Institute for Driving Safety in Israel underwent a full-night polysomnogram, followed by a 40-minute MWT of four trials each. The authors found that 25% of the subjects in the 40-minute MWT fell asleep at least once. In comparison to a study previously conducted by these authors using a 20-minute MWT, this was a significantly greater proportion of subjects. In the 20-minute MWT, the percentage of individuals who fell asleep once was only 9.2%. These data suggest that MWTs with 40-minute naps are more sensitive in detecting individuals with sleepiness than those who use a 20-minute nap.

This concludes the regular Podcast of the *Journal of Clinical Sleep Medicine*. The listener is encouraged to read the contents of the *Journal* for additional information regarding each of the papers summarized in the Podcast, as well as other papers published in this issue of the *Journal*.