

## Podcast of the Journal of Clinical Sleep Medicine

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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.

The lead article in this issue of the *Journal* is entitled, "Caffeine and Screen Time in Adolescents: Associations with Short Sleep and Obesity," by Dr. Amy Drescher and colleagues at the University of Arizona in Tucson, AZ, Arizona State University in Phoenix, AZ and Harvard Medical School in Boston, MA. There is an epidemic of obesity in this country, including both children and adolescents. This has led to increase in the prevalence of a number of chronic medical conditions, including cardiovascular disease and diabetes mellitus. The issue of obesity is particularly concerning in children and adolescents because obese children have a high likelihood of becoming obese adults. There is increasing evidence to suggest that reductions in sleep time are a risk factor for the development of obesity in children. In this study, data from the Tucson Children's Assessment of Sleep Apnea Study, or TuCASA, were used to determine whether there was an association between adolescent obesity and sleep time.

TuCASA is a longitudinal cohort study, which was designed to investigate the incidence, prevalence and correlates of sleep-disordered breathing in Hispanic and Caucasian children who were originally recruited between the ages of six and eleven. A follow-up exam of this cohort was done approximately five years after the initial recruitment. 319 children, of the original 505 recruited to be in TuCASA participated in the follow-up examination. They were 10-17 years old at the time of this study and underwent polysomnography and completed questionnaires related to dietary habits, amount of physical activity and time spent in front of an electronic screen. The latter included television watching, internet use, and playing video games. The authors found that reductions in parent-reported total sleep time, as well as Hispanic ethnicity, predicted increases in body-mass index. Furthermore, additional analyses found that screen time and caffeine consumption are important predictors of parent-reported total sleep time. This effect was age dependent, in that for children who were less than 13.3 years of age, parent-reported total sleep time was affected by screen time but not caffeine consumption. Whereas, in children who were over 13.3 years of age, caffeine consumption was much more of an important factor in predicting parent-reported total

sleep time than screen time. Thus, the authors conclude that a reduction in sleep time appears to be an important factor in mediating the development of obesity in adolescents and that caffeine consumption and electronic screen time are important factors in determining the amount of time children spend sleeping. Furthermore, electronic screen time was important in younger adolescents and caffeine consumption was a stronger factor in older adolescents.

In an accompanying editorial entitled, "Preventing Childhood Obesity: Wake Up, It's Time For Sleep!" Peña and Tavares from Harvard Medical School, Harvard Pilgrim Healthcare Institute and Children's Hospital in Boston, MA, comment that prevention and treatment of childhood obesity are national priorities and that effective intervention strategies are critically needed. They indicate that targeting caffeine consumption and electronic screen time are two potential intervention strategies that could increase sleep duration amongst children and possibly lead to a decrease in the rate of obesity.

The next article to be summarized in this podcast is entitled, "Caregivers Knowledge, Behavior, and Attitudes Regarding Healthy Sleep in Young Children," by Dr. Judith Owens and colleagues from Hasbro Children's Hospital in Providence, RI and Durham University in the United Kingdom. As mentioned in background information for the previous article, there is increasing concern regarding the role of inadequate sleep and poor sleep quality in adversely impacting health among children in the United States. Increasing amounts of data indicate that poor-sleep hygiene practices are present among a large percentage of children but it is unclear why this is occurring. One explanation might be that parents or caregivers are relatively unaware of good sleep-hygiene practices and the consequences of getting inadequate and poor-quality sleep. In the current study, a community sample of parents and/or caregivers of young children were surveyed as they visited the Children's Museum of Manhattan. The survey consisted of questions related to child sleep habits, basic sleep knowledge, and beliefs and attitudes regarding sleep as a health behavior. 253 parents or caregivers were sampled. Children they cared for were 46% male, with a mean age of 3.4 +/- 2.0 years. Children's sleep habits indicated that 23% of the children had a regular bedtime every night, 23% had some sort of electronic device in their bedroom, 34% had TV watching as a part of their bedtime routine and 5% drank caffeine on a daily basis. Regarding parental-sleep knowledge, 52% of parents underestimated their child's sleep need with only 35% of parents answering more than half of the questions correctly. The authors concluded that parents often are unaware

of what constitutes healthy-sleep practices and the amount of sleep that children need. Thus, educational approaches, targeted toward improving caregiver knowledge about sleep, could be a cost-effective method of improving sleep in young children.

The next article to be discussed in this podcast is entitled, "A Possible Method to Predict Response to Non-pharmacological Insomnia Therapy," by Lisa M. Campana and colleagues from Boston University, Massachusetts Institute of Technology, Phillips Home Healthcare Solutions, Brigham & Women's Hospital and Harvard Medical School, all in Boston, MA, University of Oxford in the United Kingdom and the University of Melbourne, Melbourne, Australia. Insomnia is a disorder which has common symptoms caused by multiple factors. For any specific intervention, some individuals may respond and others may not. Therefore, it might be advantageous to be able to identify who would respond to any specific therapy. Recently, there has been data published indicating that vestibular stimulation may be useful in the treatment of insomnia in selected individuals. Hyper-arousal is a characteristic frequently observed in insomnia patients. It has been suggested that electrocardiographic parameters may be markers of hyper-arousal in these patients. Therefore, the authors hypothesized that use of heart-rate variability analyses, which are able to characterize the amount of sympathetic and para-sympathetic activity present in an individual, could be used to identify which individuals will respond to treatment with vestibular stimulation in a phase-advanced model of insomnia.

Data were derived from subjects who were enrolled in a randomized sham controlled clinical trial of vestibular stimulation in a phase-advanced model of insomnia across six diverse geographic sites in the United States. 168 subjects had adequate ECG and demographic data for analyses. Subjects were stratified on the basis of their response to vestibular stimulation. Those who responded to vestibular stimulation with an improvement in their sleep latency were compared to those who did not. The authors found that responders to therapy had a higher, low-frequency power at baseline during wakefulness and a higher, high-frequency power during therapy. In contrast, there were no differences seen in the sham group, who did not receive vestibular stimulation. The authors conclude that heart-rate variability analyses may be useful in identifying insomnia patients who would benefit from interventions that reduced hyper-arousal.

Finally, I would like to call your attention to two letters to the editor, which are being published in this issue. The first letter

is entitled, "Sodium Oxybate: Updates and Correction to Previously Published Safety Data." This letter was submitted by Wang and colleagues from Jazz Pharmaceuticals, University of Texas Houston, Psychometric Research Institute, University of Arkansas for Health Sciences, Montefiore Medical Center, Albert Einstein College of Medicine and the University of California San Francisco. Approximately two years ago, the *Journal* published in Volume 5, page 365, 2009, an article which was a safety overview derived from post-marketing data of sodium oxybate. In that paper, the authors reported 30 deaths from various causes, including those directly related to use of the drug. However, the company now indicates that they have uncovered 82 new deaths of individuals who were taking sodium oxybate. They attribute this recent discovery to failure to properly record deaths reported to their central pharmacy and not observed through the standard post marketing surveillance safety reports directly to the company. In this letter to the editor, the revised death rate is obviously increased. In addition, there is a revised table of documented or suspected causes of death, as well as a figure showing the revised annual mortality rate by year from 2003 through May 31, 2011. It is recommended that clinicians be aware of the increased mortality rate from using sodium oxybate and consider this information when making decisions about whether to prescribe sodium oxybate for an individual patient.

A second letter published in this issue of the *Journal* is entitled, "Sodium Oxybate Post-marketing Surveillance," by Dr. Neil Feldman from St. Petersburg, FL. In his letter, Dr. Feldman notes that Jazz Pharmaceuticals recently reported to the U.S. Securities and Exchange Commission, the finding of 74 additional deaths of persons using sodium oxybate that were not previously reported. It should be noted that the previous letter by Wang and colleagues report 82 new deaths. He notes that these deaths should "serve as a reminder" that sodium oxybate should be used with caution in patients with risk factors for its use, including sleep-disordered breathing. In addition, he notes that the voluntary reporting of serious adverse events post-marketing, is flawed because of physician underreporting, and that he believes that Jazz Pharmaceuticals should conduct a prospective study, using accurate surveillance, to determine the adverse-event rate and mortality rate for sodium oxybate.

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 articles summarized in this podcast, as well as other papers published in this issue of the *Journal*.