

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, "A Twin Study of Sleep Duration and Body Mass Index," by Drs. Nathaniel Watson, Dedra Buchwald, Michael Vitiello, Jack Goldberg, and Ms. Carolyn Noonan from the University of Washington. There are increasing number of studies demonstrating that there is an inverse association between sleep duration and obesity. That is to say, decreasing amounts of time spent asleep are associated with increases in body weight. The explanation for this observation is unclear. However, it is noted that over the past 100 years, the amount of time spent asleep has been decreasing. Some of this has been attributed to the introduction of artificial lighting at night, the increasing use of computers, the internet and television viewing as well as a 24-hour economy. Furthermore, experimental studies indicate that sleep restriction results in neurohormonal changes, which in turn increase appetite and hence may lead to weight gain. Although it would appear that reductions in sleep duration are primarily environmental, some aspects of sleep are heritable. Twin studies offer the possibility of being able to separate out heritable versus shared environmental influences on sleep duration.

The study by Watson and colleagues utilized the University of Washington twin registry, which consisted of 2,638 dizygotic and monozygotic twins to try and determine whether the relationship between sleep duration and body-mass index was confounded by familial factors, and also to confirm in this cohort whether sleep duration was associated with body-mass index. Data from the study was obtained from a health survey mailed out to 4,407 twins that included questions on sleep. Information concerning sleep duration, body-mass index, socio-demographics, health habits and chronic disease were obtained from this questionnaire. There were 1,224 twins in the sample consisting of 423 monozygotic, 143 dizygotic and 46 indeterminate pairs. The authors found that twins sleeping less than seven hours per night had a higher body-mass index in comparison to those sleeping 7-8.9 hours per night. When the analysis was restricted to monozygotic twins, those twins who were short sleeping also had a higher body-mass index in comparison to the longer sleeping twins. Overall, the genetic analysis showed

little evidence of shared genetics between sleep duration and body-mass index.

The authors concluded that short sleep was associated with an increased body-mass index and that there was little evidence for a genetic component for this association. Thus, voluntary changes in sleep duration offer the potential for influencing body-mass index.

In the companion editorial entitled, "Healthy Sleep Education – A Salve For Obesity?" by Drs. Stuart Quan, Sairam Parthasarathy and Rohit Budhiraja from Harvard Medical School and The University of Arizona, the authors point out that despite accumulating evidence implicating inadequate sleep as a risk factor for obesity, there has been little attention paid to this in public health campaigns trying to address the epidemic of obesity in this country. They cite the recently-formed Alliance For A Healthier Generation, which is a coalition between the American Heart Association and the Clinton Foundation to combat childhood obesity. The centerpiece of this campaign is a strategy to encourage children to eat better and exercise more. However, there is no mention of getting more sleep. The authors suggest that this relative lack of attention can be attributed to two factors. The first is the lack of longitudinal studies and large-scale intervention studies demonstrating a beneficial effect of improving and lengthening sleep on decreasing obesity risk. The second is the failure of the sleep medicine community to assume an advocacy role in promoting the evidence that insufficient sleep is a risk factor for obesity.

The next article to be highlighted in this podcast is entitled, "Sleep Quality and Motor Vehicle Crashes in Adolescents," by Drs. Fabio Pizza, Sarah Contardi, Alessandro Baldi Antognini, Maroussa Zagoraiou, Mateo Borrotti, Barbara Mostacci, Suzanna Mondini and Fabio Cirignotta from the University of Bologna in Bologna, Italy. Motor vehicle crashes are common in adolescent drivers. Part of this increased risk is related to their relative inexperience, as well as reckless and inappropriate behavior while driving. However, the impact of sleep-related complaints on motor vehicle crashes in this age group is not well studied. In this investigation, questionnaires were distributed to 239 adolescents with a driver's license in Bologna, Italy. The questionnaire included items related to nocturnal sleep habits, sleep symptoms and reports of daytime sleepiness. The authors found that 64% of the adolescents complained of daytime sleepiness as a moderate or severe problem occurring frequently or always. Not surprisingly, self-reported sleep time was significantly less on weekdays as opposed to weekends.

39% indicated that they would always like to go to bed after 12:30 in the morning. Sleep disturbances were noted by 19% of the adolescents. Incidence rates consistent with restless leg syndrome were noted in 3%, periodic limb movements 12%, hypnagogic hallucinations 19%, sleep paralysis 2%, sleep walking 2%, sleep terrors 2% and snoring 8%. 40% of the students reported that they experienced sleepiness while driving but despite the symptoms, 81% of them continued to drive. Subsequent analyses indicated that risk factors for having a self-reported car crash were male sex, sleepiness while driving, bad sleep and the use of alcohol. The authors found odds ratios for sleepiness while driving was 2.1 and for having bad sleep, 1.9. These results indicate that sleep-related symptoms, especially daytime sleepiness, are a risk factor for motor vehicle accidents in adolescents.

Another paper in this issue of the *Journal* is a review article entitled, "Pharmacologic Induced/Exacerbated Restless Leg Syndrome, Periodic Limb Movements of Sleep and REM Behavior Disorder/REM Sleep Without Atonia: Literature Review, Qualitative Scoring and Comparative Analysis," by Drs. Romy Hoque and Andrew Chesson Jr. from Louisiana State University Health Sciences Center in Shreveport, Louisiana. In this paper, 32 articles on drug-induced restless leg syndrome, six articles on drug-induced periodic limb movements of sleep and 15 articles on drug-induced REM sleep behavior disorder/REM sleep without atonia were reviewed for evidence that use of pharmacologic agents induced these conditions. The authors found that evidence for drug-induced restless leg syndrome was strongest for escitalopram, fluoxetine, L-dopa/carbidopa, pergolide, L-thyroxine, mianserin, mirtazapine, olanzapine and tramadol. For periodic leg movements, the strongest evidence for induction of this condition was for bupropion, citalopram, fluoxetine, parox-

etine, sertraline and venlafaxine. For REM sleep behavior disorder and REM sleep without atonia, the following drugs were implicated: clomipramine, selegiline and phenelzine.

This issue of the *Journal* also included a best-practice guide for the treatment of REM sleep behavior disorder from the Standards of Practice Committee consisting of Drs. R. Nisha Aurora, Rochelle Zak, Rama Maganti, Sanford Auerbach, Kenneth Casey, Susmita Chowdhuri, Anoop Karippot, Kannan Ramar, David Kristo, and Timothy Morgenthaler. This paper indicated that clonazepam is the suggested treatment for REM sleep behavior disorder but needs to be used with caution in patients with dementia, gait disorders or concomitant obstructive sleep apnea. Furthermore, the paper indicated that melatonin can also be used to treat REM sleep behavior disorder. Contradictory results have been observed with pramipexole, and there are limited data regarding the efficacy of acetylcholinesterase inhibitors in patients with a concomitant synucleinopathy. Several other medications were listed as possibly having some efficacy, but there was little available data.

Finally, I would call attention to the editorial written by Drs. Charles Reynolds and Susan Redline regarding the DSM-V Sleep-Wake Disorders Nosology. The article indicates that DSM-V is being developed and that a working group has been convened to devise the sleep-wake disorders nosology. The editorial writers invite the sleep medicine community to view the proposed changes on the DSM-V website, which is www.dsm5.org, and provide comments.

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*.