quality on a regular (predictable) basis especially when the ability to sleep is compromised either by increasing age with its attendant illnesses and possible depletion of psychosocial resources, or by physical and/or mental ill-health.

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0234.E

Do We Practice What We Preach? Shiftwork and Sleepiness in the Association of Polysomnographic Technologists (APT)

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Introduction: Shiftwork is known to contribute to increased sleepiness and reduced sleep quality and quantity. This study examined the prevalence of these problems in APT members working on the frontline of sleep research and medicine. We hypothesized that these problems would persist, despite specialized knowledge and the use of countermeasures.
Methods: A randomly started, systematic survey of the APT was conducted by mail. The response rate was 62%. For preliminary analysis, night shift responses from individuals who worked ³ 13 night shifts (N-group)(n=133) were compared with day shift responses from those who worked <13 night shifts (D-group)(n=95)for the past year.
Results: Results revealed no significant differences between groups in age, gender, weekly hours worked or existing sleep disorders. Ds were more likely to work in a supervisory role (N 38.5%; D 61.5%). Ns worked longer shifts (N mean=11.68 hours, SD=1.5; D mean=9.27, SD=1.39; p<0.05). Stanford sleepiness scores, modified for typical lowest level of alertness at work, were higher for Ns (N median=4, IQR=2-5; D median=2, IQR=2-3, p<0.05). Ns reported significantly more sleepiness driving to and from work, with several admitting to falling asleep driving in the past year (N 10.0%; D 5.0%). Epworth sleepiness scores were not significantly different, with both groups having a high percentage of scores >10 (N 34.8%, D 30.6%). Ns reported fewer hours of sleep between shifts (N mean=6.6, SD=1.5; D mean=7.4, SD=0.9; p<0.05). Ns scored higher on the sleep disturbance scale of the Standard Shiftwork Inventory (N mean=15.6, SD=3.9; D mean=12.5, SD=3.3; p<0.05). Countermeasures were quantified by frequency using a 5-point scale. Combined responses of 'sometimes, frequently, and almost always' are reported. The only countermeasure that differed significantly between groups was the use of bright light for synchronization to work schedule (N 48.1%; D 15.0%). Many used caffeine (N 64.3%; D 58.6%); while few used other stimulants (N 1.5%; D 1.1%), melatonin (N 8.6%; D 7.2%) or hypnotics (N 8.8%; D 7.2%).
Conclusions: These findings support our hypotheses and replicate those of existing studies, that night shiftwork was associated with less sleep between shifts, higher sleep disturbance and increased sleepiness. Regardless of work schedule, roughly 1/3 of APT members were excessively sleepy by conventional scoring standards, and several fell asleep while driving to and from work. While many APT members utilize bright light and caffeine to cope with shiftwork, nearly all work long night shifts, which are known to cause coping problems. Excessive sleepiness and other problems associated with shiftwork appear prevalent in the APT. We propose the inclusion of education and management policies to address these problems in accreditation standards for sleep laboratories.

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0235.E

How Well Do Fixed And Free Sleep Schedules Predict The Dim Light Melatonin Onset In Young Healthy Subjects?

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Introduction: The endogenous melatonin onset in dim light (DLMO) is a commonly used marker of circadian phase, and can be used to determine the time for the administration of light or exogenous melatonin in order to elicit desired circadian phase shifts. In some settings determining the DLMO is not feasible or is prohibitively costly and time-consuming. In this study we examined how accurately the DLMO could be estimated from subjects with free or fixed sleep schedules.
Methods: We analyzed baseline data from 100 young healthy subjects who participated in various studies in our lab. Some subjects slept at times of their own choosing ("free sleepers", N=60, mean age 27.3 y) and others slept on a fixed sleep schedule that closely matched their typical sleep schedule ("fixed sleepers", N=40, mean age 24.2 y). Subjects recorded bedtimes and wake times on sleep logs (verified with wrist actigraphy recordings). Each subject then participated in a phase assessment session, where they remained awake but reclined in dim light (<10 lux). Saliva samples were taken every 30 mins and were later assayed to determine the DLMO (20% of maximum method). We analyzed the sleep log data from the 6 days before the phase assessment session.
Results: The average (± SD) bedtime and wake times for the fixed and free groups were 23:05 ± 0.8 h, 6:38 ± 0.7 h and 00:44 ± 1.2 h, 9:13 ± 1.4 h respectively, and were significantly later in the free group (both p<0.01). As expected, the within subject variance in bed and wake times was significantly higher in the free sleepers than in the fixed sleepers (p<0.05). However, there was no difference between the groups in the interval from the DLMO to average bedtime (2.3 ± 1.3 h for fixed sleepers; 2.2 ± 1.1 for free sleepers). The correlations between bedtime and the DLMO and between wake time and the DLMO were stronger in the free group than the fixed group (free: r=0.65 and r=0.78; fixed: r=0.56 and r=0.47). We derived a regression equation from the relationship between the DLMO and wake time in the free sleepers: DLMO (dec. time) = 0.83 x wake time (dec. time) + 14.90. Using this equation we were able to predict the DLMO to within 1.5 h of when it actually occurred in 96% of subjects from an independent sample of free sleepers (n=26, Martin and Eastman, Chronobiol. Int., 2002).
Conclusions: Our results indicate that when measuring circadian phase is too costly or impractical, wake times (verified with wrist actigraphy) in young healthy subjects who sleep at times of their own choosing, can be used to the predict the DLMO. Requiring subjects to maintain a fixed baseline sleep schedule does not appear to improve the ability to predict the DLMO.

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0236.E

Comparing Bright Light, Dark Sunglasses, and Melatonin to Phase Delay Circadian Rhythms for Night Shift Work

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Introduction: Melatonin and various patterns of bright light and dark have been tested to help phase shift the circadian clock and promote adjustment to night work and day sleep schedules. This study tested various combinations of these interventions to determine their ability to produce phase delays.
Methods: Healthy young adults (32 males, 35 females, 23.9 ± 6.2 yrs) participated in the summer months of 3 years. They worked 5 consecutive simulated night shifts (23:00 to 07:00) followed by sleep at home

This 2003 Annual Meeting abstract supplement contains all of the abstracts to be presented at the APSS 17th Annual Meeting on June 3-8 in Chicago, Illinois. This year we experienced the largest increase in submitted abstracts that has ever occurred, with 1148 submissions. This represents a 51% increase over that submitted in 2002. This likely reflects the combined meeting with the World Federation of Sleep Research Societies, the 50th anniversary of the discovery of REM sleep being celebrated at the meeting, and the sustained increase in science addressing sleep and its disorders. Thus, more science will be presented in Chicago this year than has been presented at any previous meeting addressing this topic.

Of the 1148 abstracts, 169 will be presented in oral format, 51 in poster symposiums, and the remainder as posters. With this number of abstracts being presented as posters, the Program Committee had to make some hard decisions as to how best to handle this. They elected to:

1) Thematically group the posters.
2) Posters will be up for only one day during the meeting, but will be up the entire day.
3) Most importantly, there will be a 90 minute block of time each day (Thursday, Friday, and Saturday, June 5,6, and 7) between 1:30pm and 3:15pm that poster viewing will be unopposed by any other scientific presentation.

Each poster will have a unique 4 digit number within the appropriate category (listed below) which should allow for easy identification.

The categories for this year's science have not changed from last year and are listed here:

A. Basic Neuroscience
B. General Physiology
C. Clinical Pharmacology
D. Dreams
E. Circadian Rhythms
F. Phylogeny
G. Pediatrics
H. Aging
I. Sleep Deprivation
J. Sleep Disorders - Breathing
K. Sleep Disorders - Narcolepsy
L. Sleep Disorders - Insomnia
M. Sleep Disorders - Parasomnias
N. Sleep Disorders - Movement Disorders
O. Sleep Disorders - Neurologic Disorders
P. Sleep in Medical Disorders
Q. Sleep in Psychiatric Disorders
R. Instrumentation & Methodology
S. Sleep Education
T. Molecular Biology & Genetics
U. Sleep & Behavior

Despite the troubled times in America and abroad, we expect this will be the largest APSS meeting to date. It is our hope that this year's Annual Meeting will provide the opportunity for the meaningful exchange of both clinical and basic science related to sleep and its disorders.

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