

estimated their sleep durations. The tendency to underestimate one's sleep duration has been documented, but our data revealed that actigraphic sleep duration may be less variable among good sleepers. Unexpectedly, Blacks and Whites did not differ in terms of actigraphic or subjective sleep durations, although a greater percentage of Blacks were categorized as good sleepers, relative to their counterparts. This could not be explained by inconsistencies in their habitual sleep durations. Rather, Blacks may be experiencing sleep problems differently than do Whites.

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Detecting Sleep Apnea in Older Adults in the Primary Care Setting

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Introduction: Sleep apnea is generally under-detected in general practice. This may be particularly so for women. In a previous study we placed posters in medical waiting areas. The posters sought to recruit older individuals who are sleepy or fatigued during the day, and/or experience sleep problems at night. The ratio of men to women in this self-referred sample was 1:1.4. This is a very different referral rate from the 7:1 ratio often observed in sleep laboratories. These participants were found to be at high risk for sleep disorder. Furthermore, the ratio of men to women subsequently diagnosed with sleep apnea/hypopnea syndrome was 1.3:1. Men in our self-referred sample subsequently diagnosed with apnea generally endorsed the usual apnea-related signs on a questionnaire (e.g., daytime sleepiness, snoring). Women subsequently diagnosed with apnea also generally endorsed these apnea related signs. They, however, also endorsed numerous other items which indicated overall poor health satisfaction. Based on these data we hypothesized that the pattern of presenting symptoms in women might predispose the primary care physician to focus on medical aspects other than apnea. Thus, women's style of symptom presentation may be the basis for the dramatic under-referral of women for assessment in sleep laboratories. It was the objective of the present study to investigate possible male/female differences in presentation of apnea-related signs and symptoms in the medical setting directly.

Methods: Participants were 26 men and 30 women recruited from the waiting area of a large hospital-based family practice center. Consenting patients completed the Sleep Study Checklist immediately following their appointment with their general practitioner. This instrument, designed for the present study, contains a list of characteristic sleep apnea/hypopnea signs and symptoms (e.g. daytime sleepiness, snoring, waking with a dry mouth) embedded in a longer list of symptoms related to insomnia, daytime fatigue, psychological maladjustment, and health dissatisfaction. Respondents indicate whether they are experiencing each symptom currently, and whether the symptom was discussed with their physician at the current appointment or within the past year.

Results: Both men and women indicated many more symptoms that they were currently experiencing than those they had discussed with their physician at their current appointment or within the previous year. When symptoms were ranked in frequency, the hierarchy of experienced symptoms did not correspond to the hierarchy of symptoms presented to their physician, either for men or for women. The two most frequently presented symptoms were bodily pain and fatigue for both groups. Approximately 1/2 of the men and 1/4 of the women experienced some of the classic apnea-related signs and symptoms. About half of the male participants presented some of these to their physician (e.g., unwanted daytime sleep episodes). None of the women did so.

Conclusion: In this primary care setting, the ratio of men to women who experience apnea-related symptoms is approximately 2:1. However, women presented none of the symptoms which might direct a physician to investigate potential sleep disorder.

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Sleep During a Bedrest Extension Protocol in Older and Younger Individuals

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Introduction: As part of an investigation of homeostatic sleep and wake changes with aging, we studied sleep during increased bedrest opportunities in younger and older individuals.

Methods: Healthy older (target 60-80 years) and younger (target 18-30 years) men and women were studied. None were recruited by habitual bedrest duration (HBD). All were healthy by history, physical exam, EKG and laboratory tests of blood and urine and all passed a clinical sleep screen. None were using any prescription or non-prescription medications. Average data from 3 weeks of self-selected sleep-wake times were used to calculate the schedule for the week before admission. The actual sleep and wake times, as determined by self report and actigraphy, during that last week were used to schedule the timing and duration of the first nocturnal sleep episode (SP1) after admission to the inpatient portion of the protocol and to compute HBD. On the second inpatient day, subjects underwent 5 Multiple Sleep Latency Tests (MSLTs). For the next three days, the subjects were placed on a bedrest extension protocol with 16 hours of sleep opportunity: 12 hours centered at mid-habitual nocturnal sleep episode and 4 hours centered 12 hours opposite this. All sleep was polysomnographically recorded and scored according to standard criteria. T-tests were performed for differences between the age groups.

Results: HSD for 7 older subjects ranged from 7.0-8.9 hours; therefore we chose the 9 of the 17 younger subjects studied whose HSD was in the same range. During SP1, younger subjects had significantly higher amounts of NREM stage 4, REM sleep, Total Sleep Time (TST) and Sleep Efficiency; older subjects had significantly more Wake. During the MSLTs, all subjects fell asleep on all 5 MSLTs; there were no differences in the number of tests on which subjects fell asleep in < 5 minutes, or in the minimum, maximum or median sleep latencies. During the 3 days with 16-hr sleep opportunity, both younger and older subjects had declining average values of TST, SWS and REM sleep from day 1 -> day 2 -> day 3: TST 11.4 hr -> 9.1 hr -> 8.3 hr for older and 12.8 hr -> 11.1 hr -> 10.2 hr for younger subjects. All subjects had more TST during the first day of extended bedrest than during SP1. All younger subjects and all but one older subject had more SWS and more REM sleep during the first day of extended bedrest than during SP1. The younger subjects had more TST and more REM sleep on all three days, and more SWS on days 2 and 3 than older subjects.

Conclusion: These results suggest that both older and younger subjects will increase their sleep over their HBD when given the opportunity, though differences in TST between the age groups persist. The amount of increased sleep decreases progressively over days of increased sleep opportunity, suggesting recovery from a sleep debt. The increased sleep seen in older persons is less than that seen in younger, suggesting that older persons have less homeostatic pressure given the same bedrest history.