



POSTER NO 5

Sleepless in America

AN EDITORIAL from the ARCHIVES OF INTERNAL MEDICINE

Joseph Bass, MD, PhD, and Fred W. Turek, MD, "Sleepless in America, A Pathway to Obesity and the Metabolic Syndrome", (REPRINTED) ARCHIVES OF INTERNAL MEDICINE, Vol. 165, January 10, 2005.

SELECTED TEXT

". . . In recent years, a new and unexpected "obesity villain" has emerged, first from laboratory studies and now, as reported by Vorona, *et al*, in this issue of the ARCHIVES, in population-based studies: insufficient sleep. In a study analyzing 924 patients from 4 primary care practices in Virginia, a reduced amount of sleep was associated with overweight and obese status, and patients in the obese group showed a near inverse linear relationship between weight and reported sleep time. The relationship between obesity (and associated metabolic and cardiovascular disorders often referred to as the metabolic syndrome, or "syndrome X") and insufficient sleep has only emerged in the past 5 years. In a pioneering study in 1999 by Van Cauter and colleagues, it was found that sleep restricted to only 4 hours per night for 1 week led to endocrine and metabolic changes associated with diabetes (insulin resistance) and weight gain in healthy young men. While the effects were reversible with normal sleep times, these remarkable, and at the time surprising findings, led basic and clinical researchers off on the trail to find the physiological linkages between insufficient sleep and metabolic function. This work also renewed interest in the role of insufficient sleep as a cause of many of the metabolic abnormalities associated with sleep apnea. However, while there is a growing awareness among some sleep, metabolic, cardiovascular, and diabetes researchers that insufficient sleep could be leading to a cascade of disorders, few in the general medical profession or in the lay public have yet made the connection. . .

An alarming statistic defines a major problem among American youth: between 1980 and 2000, the rate of obese young people has risen from 5% to 15%, and another 15% has moved into that classification in young adulthood. While this epidemic in our young population has received national attention, less well-known is the finding that children of all ages in America are sleeping 1 to 2 hours less per night than they need, according to a recent poll taken by the National Sleep Foundation. While insufficient sleep has often been associated with the elderly population, the increasing demands and lifestyles of modern society have imposed restricted sleep on our youth as well. . ."

COMMENT

This Editorial represents another important review of the dangers to health of short and poor quality sleep. The authors point out that American children are sleeping two hours less than required and that this alone is sufficient to promote a metabolic profile conducive to diabetes and obesity. The authors make no reference to the potential causes of this effect, and why poor quality/shortened sleep would impact the hormonal response, implicated in metabolic syndrome, but studies on raised cortisol and epinephrine (adrenal stress hormones) have been implicated in metabolic syndrome.

Replenishing the liver glycogen store prior to bedtime with honey may reduce the release of adrenal stress hormones overnight.