The China Syndrome: Sleep in the Elderly – A World-Wide Problem
Fred W. Turek, PhD
Center for Sleep and Circadian Biology, Northwestern University, Evanston, IL

IN THIS ISSUE OF SLEEP, LIU AND LIU REPORT ON SLEEP PATTERNS IN OVER 1800 ELDERLY CHINESE MEN AND WOMEN LIVING IN AN URBAN ENVIRONMENT. Using a Chinese version of the Pittsburgh Sleep Quality Index, the authors found that symptoms of insomnia are as common among elderly Chinese as they are in western populations, as well as elderly Chinese in Hong Kong and Taiwan. Such results indicate that sleep problems in the elderly are not a culturally driven phenomenon, but instead are like many other age-related illnesses, a problem that increases with age.

The Lius conclude that “Further study is warranted to examine the association between insomnia and aging per se in Chinese elderly.” In addition, as China becomes more industrialized, there may also be a voluntarily curtailment of sleep as has occurred in the United States as it transitioned from a more rural to an urban society. At least 8 independent epidemiological studies in adults and children have indicated that chronic short and/or poor sleep may increase the risk of obesity, and hence diabetes and cardiovascular disease.2-4 When one couples this epidemiological data from western countries with decreased sleep time and/or increased insomnia with age in the world’s largest population of over 1.3 billion people, one foreseea major health problem in a country that not only has the largest (and rapidly aging) population, but the world’s fastest growing economy. An economy that could be derailed if the elderly became an overbearing health and economic problem to society, as I discussed in my October “Bench to Bedside” entitled, “Collapse: Economic Impact of Aging and Sleep on Modern Societies.”

The numbers are staggering. It is estimated that 23 million people in China have diabetes, while in the world’s second largest population, India, the number is estimated to be 33 million.11 The migration of populations to urban environments, and the associated increase in affluence, has been linked to the increase in diabetes in both countries.12 And, as the Director of the University of Virginia Diabetes Center, Eugene J. Barrett, has noted, it is particularly alarming that in China and India, as well as in other populations transitioning from a rural to a more urban life style, relatively modest increases in weight can lead to a deterioration in insulin sensitivity and glucose tolerance.12

In addition to the epidemiological studies from western countries cited above linking inadequate sleep with obesity, there are a number of clinical research studies in humans,3,13 as well as animal studies,14,15 linking inadequate sleep and/or circadian dysregulation with obesity and/or metabolic dysfunction. The call of the Lius to examine the impact of insomnia on the physical health of Chinese elderly takes on a particularly urgency given the numbers involved. China is anticipated to become the second nation after Japan that will suffer a rapid aging of its population in the coming decades, according to the Green Book of Population and Labor published Monday in Beijing.16 China’s public health authorities are trying to curb the rapid increases in deadly illness, such as hypertension and diabetes by encouraging increased physical activity.17 To mark the World Health Day in 2002, “Move for Health” was a major message; however, I was not able to find any indication that “Sleep for Health” has made it to the forefront of any health campaign in China. Of particular concern is the lack of research in China (or India) on metabolic diseases and their causes and consequences. For example, it is estimated that while the diabetic population of India and China account for 26% of the people in the world with diabetes, these countries contribute less than 2% of the world’s research on diabetes.18 I suspect when one compares the numbers for people with sleep problems in China and India, and the percent of research in these countries relative to the rest of the world on the impact of sleep problems on mental and physical health, that one will find a similar mismatch between the burden of the health problem and the research performed in both countries: a mismatch that provides even more immediacy to the Lius’ call for studies on sleep loss and health in the elderly Chinese.

I was surprised to read recently that the number of overweight people in the world, for the first time in human history, rivals that of the number of underweight (350 million).19 The rates of obesity in China and India are increasing rapidly and fast approaching western population, with rates of diabetes in the two populations expected to double every 10 years in the future.19 Is this increase in obesity/diabetes in the world’s two largest countries, with the associated movement from a more rural to a more urban lifestyle, and the decrease in sleep time that comes with such population movements, merely a coincidence? Given the epidemiological evidence cited above, I think not, and I suggest US sleep researchers, perhaps working with other biomedical organizations and international agencies, such as the World Health Organization (WHO), work together to get out the message on the importance of good sleep for good health to other areas of the world. In March, 2005, the National Sleep Foundation will be sponsoring a 2-day Symposium on the subject of “Sleep and Obesity”,20 a Symposium that could be a stepping stone for getting the “Sleep for Health” message out to the world beyond the

Disclosure Statement
Dr. Turek has received research support and consulting fees from Takeda North American Pharmaceuticals, Merck, Inc., and Johnson & Johnson.

Address correspondence to: Fred W. Turek, PhD, Center for Sleep and Circadian Biology, Northwestern University, 2205 Tech Drive, Evanston, IL 60208; Tel: (847) 491-2865; Fax: (847) 647-4065; E-mail: fturek@northwestern.edu

SLEEP, Vol. 28, No. 12, 2005

1502 From the Bench to the Bedside—Turek
western industrialized countries.

A recent report from the WHO attributed the diabetes epidemic in developing countries to “…population growth, ageing, unhealthy diets, obesity and sedentary life styles…” While one does not want to diminish the importance of these factors for the diabetes epidemic, it is noteworthy that sleep loss and/or poor sleep has not made the “A team” list as a possible underlying cause. While we are making some progress in the United States in getting the message to the public about the importance of sleep for good health and successful aging, we must do a better job in getting this message to the underdeveloped countries of the world who are sleeping less while making great economic progress as they become more “Westernized”.22 The Liu’s paper in this issue of Sleep should be a “wake-up” call for health care providers in China (and other developing countries) that sleep problems, and sleep loss, in the population in general, and in the elderly in particular, affects not only the health of individuals, but also the economic health of the entire society.

REFERENCES

SLEEP, Vol. 28, No. 12, 2005