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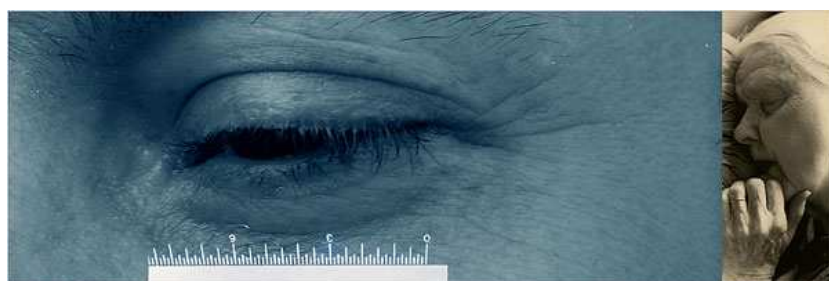
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## The Elderly Always Sleep Worse, and Other Myths of Aging



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By GINA KOLATA  
Published: October 23, 2007

### Correction Appended

As every sleep researcher knows, the surest way to hear complaints about sleep is to ask the elderly.

#### Night Life

A special issue of *Science Times* examines a cascade of research into the science of sleep.

[Times Health Guide: Sleep Disorders in the Elderly](#)

“Older people complain more about their sleep; they just do,” said Dr. Michael Vitiello, a sleep researcher who is a professor of [psychiatry](#) and behavioral sciences at the [University of Washington](#).

And for years, sleep scientists thought they knew what was going on: sleep starts to deteriorate in late middle age and steadily erodes from then on. It seemed so obvious that few thought to question the prevailing wisdom.

Now, though, new research is leading many to change their minds. To researchers' great surprise, it turns out that sleep does not change much from age 60 on. And poor sleep, it turns out, is not because of aging itself, but mostly because of illnesses or the medications used to treat them.

“The more disorders older adults have, the worse they sleep,” said Sonia Ancoli-Israel, a professor of psychiatry and a sleep researcher at the University of California, San Diego. “If you look at older adults who are very healthy, they rarely have sleep problems.”

And new studies are indicating that poor sleep may circle back to cause poor health. At least when it comes to pain, a common cause of disrupted sleep, a restless night can make pain worse the next day. Then with worse pain, sleep may become even more difficult — a vicious cycle common in people with conditions that tend to afflict the elderly, like back pain and [arthritis](#)

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The new view of sleep emerged from two parallel lines of research. The first asked what happened to sleep patterns when healthy people grew old. The second sought to uncover the relationship between sleep and pain.

To find out what happens with aging, some investigators, including Dr. Vitiello, studied older people who reported no sleep problems. They actually make up a large group — nearly half of people over 65. Were these people somehow spared age-related changes in sleep?

They were not. Their sleep turned out to be different from sleep in young people: it was lighter, more often disrupted by brief awakenings, and shorter by a half hour to an hour. Dr. Vitiello reasoned that the age-related changes in sleep patterns might not be an issue in themselves. Something else was making people complain about their sleep.

Dr. Vitiello and his colleagues also asked what normally happened to sleep over the life span. It had long been known that sleep changes, but no one had systematically studied when those changes occurred or how pronounced they were in healthy people.

With analysis of 65 sleep studies, which included 3,577 healthy subjects ages 5 to 102, the investigators had their next surprise. Most of the changes in sleep patterns occurred when people were between the ages of 20 and 60. Compared with teenagers and young adults, healthy middle-aged and older people slept a half hour to an hour less each night, they woke up a bit more often during the night, and their sleep was lighter. But after age 60, there was little change in sleep, at least in people who were healthy.

And even though sleep changed during adulthood, many of the changes were subtle. Middle-aged and older people, for example, did not have more difficulty falling asleep. The only change in sleep latency, as it is called, emerged when the investigators compared latency at the two extremes, in 20- and 80-year-olds. The 80-year-olds took an average of 10 more minutes to fall asleep.

Contrary to their expectations, the investigators found no increase in daytime drowsiness in healthy older people. Nor did aging affect the time it took for people to start dreaming after they fell asleep.

Instead, the biggest change was the number of times people woke after having fallen asleep.

Healthy young adults sleep 95 percent of the night, said Dr. Donald Bliwise, a sleep researcher at [Emory University](#). “They fall asleep,” he said, “and don’t wake up until the alarm goes off.”

By age 60, healthy people are asleep 85 percent of the night. Their sleep is disrupted by brief wakeful moments typically lasting about 3 to 10 seconds. “There is some aspect of sleep that isn’t going to be as good as when you were 20,” Dr. Bliwise said. But he added, “When that crosses the threshold and becomes a significant complaint is difficult to say.”

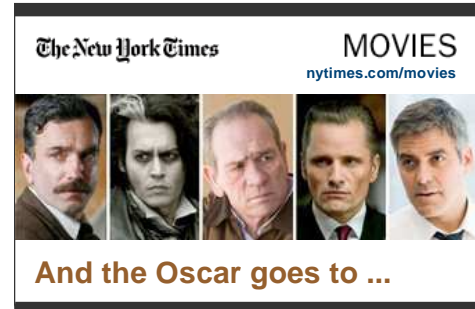
The real sleep problems, he and others say, arise when people have any of a number of conditions that make them wake up in the night, like [sleep apnea](#), chronic pain, restless leg syndrome or urinary problems. That, of course, describes many older people.

“The sheer number of challenges to maintaining solid sleep in old age is just huge,” Dr. Bliwise said. “You come out with the question, Well, what is normal? What should I expect?”

The new frontier of what to expect, and what to do about it, involves studies of the relationship of sleep to pain. It’s no surprise that pain can disrupt sleep. But what is new is that a lack of sleep can apparently increase the sensation of pain.

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Michael T. Smith, the research and training director of the behavioral sleep medicine program at Johns Hopkins School of Medicine, reached that conclusion with a study of healthy young people. One group slept normally for eight hours in the hospital. Another was awakened every hour by a nurse and kept up for 20 minutes. Their sleep pattern was meant to mimic the fragmented sleep of elderly people. A third group was allowed four hours of solid sleep.

Comparing the second and third groups allowed Dr. Smith to tease apart the causes of the problems that arise from fragmented sleep: were they because of the short total sleep time, or because of the disrupted nature of the sleep?

Fragmented sleep, he found, led to severe impairments the next day in pain pathways. The subjects felt pain more easily, were less able to inhibit pain, and even developed spontaneous pain, like mild backaches and headaches.

Timothy Roehrs, director of research at the [sleep disorders](#) research center at Henry Ford Hospital in Detroit, also found that healthy young people became exquisitely sensitive to pain after a night of fragmented sleep.

And getting more sleep, Dr. Roehrs found, had the opposite effect. His subjects were young healthy people who said they were chronically sleepy, just not getting enough time to sleep at night. Dr. Roehrs had them stay in bed 10 hours a night. The extra sleep, he said, reduced their sensitivity to pain to the same degree as a tablet of codeine.

Now, Dr. Smith says, he and others have markedly changed their attitude about sleep problems and aging.

Of course, he said, sleep is different in 20-year-olds and 70-year-olds. But he added, "It's not normal to get a clinical sleep disorder when you get old."

#### **Correction: October 26, 2007**

*An article in Science Times on Tuesday about sleep and aging misidentified the position held by Timothy Roehrs, a sleep researcher at Henry Ford Hospital in Detroit. He is director of research for the hospital's sleep disorders research center; he is not director of the center itself.*

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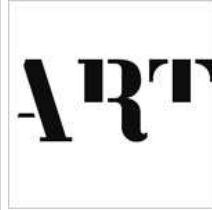
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