

COMPACT Research

Sleep Disorders

by Hal Marcovitz

Diseases and Disorders

Contents

Foreword	4
Sleep Disorders at a Glance	6
Overview	8
What Are Sleep Disorders?	20
Primary Source Quotes	28
Facts and Illustrations	32
What Causes Sleep Disorders?	37
Primary Source Quotes	45
Facts and Illustrations	48
How Do Sleep Disorders Affect People?	52
Primary Source Quotes	59
Facts and Illustrations	63
Can People Overcome Sleep Disorders?	68
Primary Source Quotes	77
Facts and Illustrations	81
Key People and Advocacy Groups	85
Chronology	88
Related Organizations	90
For Further Research	95
Source Notes	98
List of Illustrations	100
Index	101
About the Author	104

Sleep Disorders at a Glance

What Are Sleep Disorders?

A sleep disorder is any recurrent change in a normal sleep pattern. A sleep disorder can be as mild as insomnia or as serious as sleep apnea, narcolepsy, or sleepwalking, which can be potentially fatal disorders.

Prevalence

An estimated 70 million Americans suffer from sleep disorders, with the vast majority—60 million—suffering from chronic insomnia.

Causes

Most insomniacs eat late at night, watch TV in bed, drink too much coffee, or violate other rules of so-called good sleep hygiene. Many take their anxieties to bed with them. Other sleep disorder patients suffer from physical ailments that keep them up at night.

Diagnosis

Doctors monitor blood pressure, pulse, brain waves and breathing capacity to diagnose sleep apnea and hypersomnia. To diagnose restless legs syndrome, which causes insomnia, doctors will look for iron deficiencies and low red blood counts.

Costs to Society

Studies show that sleep disorders cost the American economy \$20 billion a year or more in lost productivity and high health-care costs.

What Are Sleep Disorders?

“Recently I began to snore. And not just your cute little snore, mind you. This was loud enough to cause my wife to vibrate next to me in bed and to disturb the kids in the next room. Got the picture? My wife, after being awakened on numerous occasions, became really concerned when she noted that during my sleep I had severe episodes of choking and gasping.”

—Ralph E. Dittman, a sleep apnea patient and research scientist at Baylor College of Medicine in Houston, Texas.

More than 70 million Americans, nearly a quarter of the U.S. population, are believed to suffer from sleep disorders. The sleep disorder that afflicts the most people is insomnia—some 60 million Americans suffer from the inability to consistently get restful sleep. That total does not even count the number of Americans who do not fit the clinical description of insomnia but nevertheless insist that they are dissatisfied with their sleep. According to a 2008 poll by the National Sleep Foundation, 62 percent of the respondents said they get a good night’s sleep a few nights a month only.

In simple terms, insomnia is the inability to fall asleep or stay asleep. Indeed, insomniacs who do manage to fall asleep spend very little time in stages of deep sleep; mostly they drift between wakefulness and sleep stages 1 and 2. They may wake up several times a night or wake up early in the morning, hours before their alarms are set to go off, and find themselves unable to get back to sleep. Since they spend little or no time in the deep sleep stages, they never feel rested the next morning.



Primary Source Quotes*

What Are Sleep Disorders?

“I am really very tired of being told what it’s like to live in my body by people who haven’t a clue. I have come to feel that, when it comes to insomnia, there is truth to the old adage, it takes one to know one.”

—Gayle Greene, *Insomniac*. Berkeley and Los Angeles: University of California Press, 2008.

Greene, a professor of literature at Scripps College in Claremont, California, is an insomnia patient and author of the book *Insomniac*.

“There’s definitely this cyclical nature that goes on where you don’t get a lot of sleep and that triggers a low mood. And then when you have a low mood, it makes your sleep worse, and the two sort of feed off each other.”

—Todd Arnedt, in Neal Conan, “Insomnia Keeps 60 Million Americans Up at Night,” *Talk of the Nation*, National Public Radio, April 20, 2008.

Arnedt is fellowship director of the Sleep Disorder Center at the University of Michigan.

* Editor’s Note: While the definition of a primary source can be narrowly or broadly defined, for the purposes of Compact Research, a primary source consists of: 1) results of original research presented by an organization or researcher; 2) eyewitness accounts of events, personal experience, or work experience; 3) first-person editorials offering pundits’ opinions; 4) government officials presenting political plans and/or policies; 5) representatives of organizations presenting testimony or policy.

“You don’t remember falling asleep and you don’t remember waking up. That’s really hard on a person.”

—Tim Costa, in Cathleen F. Crowley, “Sleep Deprived: A Tired Fisherman Learns His Exhaustion Is Tied to Disorders,” *Albany Times Union*, September 25, 2007.

Costa is a narcolepsy patient and professional bass fisherman who lives in Catskill, New York.

“The primary treatment for sleep apnea is to lose weight and they can’t. There’s no such thing as a 225-pound offensive lineman. We try to make certain that they understand that they’ve got to come down in weight when they retire.”

—Allan Levy, in Clifton Brown, “Ex-Players Dealing with Not-So-Glamorous Health Issues,” *New York Times*, February 1, 2007.

Levy is a team physician for the New York Giants.

“I wasn’t even snoring. I just wasn’t breathing for a whole minute and that was scary when I found out. I always wondered why I needed to drink two to three cups of coffee and Red Bull during the day.”

—Vicente Solano, in Miriam Ramirez, “Affecting 1 in 5 Americans, Sleep Apnea Can Prove Fatal to Sufferers,” *McAllen (TX) Monitor*, November 27, 2006.

Solano, a sleep apnea patient, lives in McAllen, Texas.

Sleep Disorders

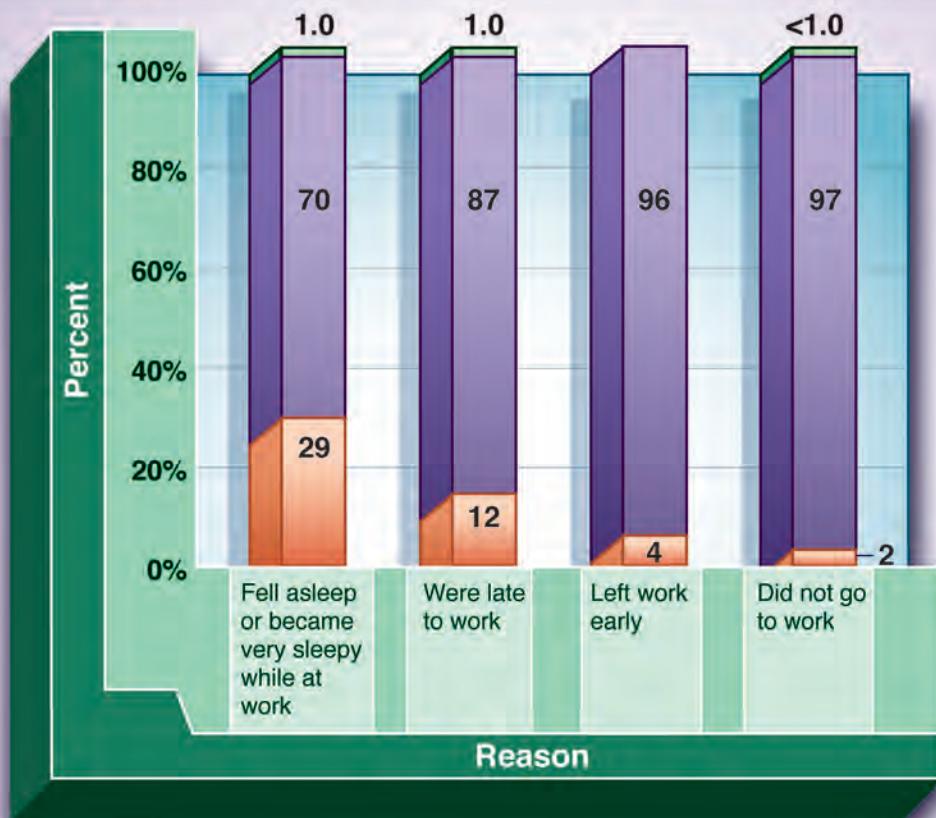
- A national study found that **28 percent** of high school students admit to falling asleep in class at least once a week; **22 percent** say they fall asleep doing their homework.

Sleep Disorders Affect Job Performance

Nearly 30 percent of American workers admit to falling asleep on the job from time to time because they have not gotten enough sleep the night before. A small percentage admit to being late for work because of sleepless nights, leaving early because they didn't feel like working, and even staying home and missing work because of insomnia or other sleep disorders.

Number of Times . . . Due to Sleepiness or Sleep Problems in Past Month

1 or more
None
Don't know/Refused



Most People Do Not Get Recommended Amount of Sleep

Even as young children, people do not get the amount of sleep recommended by experts. The deficit really grows in adolescence: Teenagers are believed to have too many distractions—friends, television, the Internet, and schoolwork—and not enough time for sleep. Indeed, most teenagers get less than 8 hours of sleep a night on school nights although sleep experts insist that young people need 9 hours or more of sleep.

Age	Natural Bedtime	Recommended Hours of Sleep	Actual Hours of Sleep
0–1 years	7–8 PM	14–15 hours	12.8 hours
1–2 years	7–8 PM	12–14 hours	11.8 hours
3–6 years	7–8 PM	11–13 hours	10.3 hours
7–11 years	8–9 PM	10–11 hours	9.4 hours
12–17 years	10:30–11:30 PM	8.5–9.5 hours	7.6 weekdays 8.9 weekends
18–54 years	10 PM–12 AM	7–8.5 hours	6.8 weekdays 7.4 weekends
55–84 years	8–10 PM	7–8.5 hours	6.9 weekdays 7.5 weekends

Source: Lawrence Epstein and Steven Mardon, "Homeroom Zombies," *Newsweek*, September 17, 2007, p. 64.

- Driving by drowsy drivers causes more than **1,500 deaths** and **76,000 injuries** a year, according to statistics compiled by the federal government.
- Some **32 million** people have admitted to falling asleep while driving motor vehicles.
- According to a Rhode Island study, **1 in 5** students between 11 and 17 get the recommended 9 hours of sleep a night, and **50 percent** get less than 8 hours on school nights.

Chronology

Early 1600s

William Shakespeare writes *Macbeth*, a tragedy about a king who commits murder to attain the throne; in the play, Macbeth, tortured by the anxieties of his crime, suffers from insomnia.

1735

Benjamin Franklin, a lifelong insomniac, encourages colonial Americans to get a good night's sleep when he publishes the proverb "Early to bed and early to rise, makes a man healthy, wealthy and wise" in *Poor Richard's Almanack*.

1906

Congress adopts the U.S. Pure Food and Drug Act, essentially putting an end to the patent medicine trade in America, which had produced a number of narcotic and addictive sleep aids, including laudanum, which is composed of alcohol and opium.

1850

1875

1900

1925

1950

1832

In her book *Illustrations of Political Economy*, English essayist Harriet Martineau first suggests counting sheep as a cure for insomnia.

1879

Thomas Edison invents the incandescent lightbulb, making it possible for people to work and do other activities late into the night, thus depriving themselves of sleep.

1913

French physician Henri Piéron publishes a study suggesting sleep problems could be attributed to physiological reasons, thereby establishing sleep disorders as physical illnesses.

1929

Romanian neurologist Constantin Von Economo determines that sleep is regulated by the area of the brain known as the hypothalamus.

1937

The cinema's first narcoleptic, Sleepy, is featured in the Walt Disney Studios animated film *Snow White and the Seven Dwarves*.

1950s

Experimenting on fruit flies, Princeton University biologist Colin Pittendrigh discovers the circadian clock that tells the brain when it is night and day.

1951

Researchers at the University of Chicago discover rapid eye movement (REM) sleep, a stage in which the eyes move rapidly under the closed eyelids and the brain is busy in dream.

1999

By studying the DNA of dogs, researchers at Stanford University discover a common gene that causes narcolepsy in humans.

1996

The American Medical Association recognizes sleep medicine as a specialty; by now, more than 1,000 sleep disorder clinics have been established in the United States.

1970

William Dement establishes the Stanford University Sleep Disorders Clinic in California, the first clinic that performs research into sleep disorders and treats patients who suffer from the disorders.

1989

The first medical textbook devoted to sleep disorders, *Principles and Practices of Sleep Disorders Medicine*, is published.

2007

A study by Case Western Reserve University in Cleveland, Ohio, reports that 1 in 5 middle school and high school students receive less than 6 hours of sleep a night.

1960

1970

1980

1990

2000

1966

Author Jacqueline Susann publishes the best-selling novel *Valley of the Dolls*, telling the story of three young women who seek fame as entertainers. The “dolls” in the title refers to the addictive barbiturate sleeping pills that drive the women to ruin.

1990

The National Sleep Foundation is established.

1997

New Jersey adopts Maggie’s Law, the nation’s first law that enables police to charge drowsy drivers with vehicular homicide in cases of fatal auto accidents.

2004

The death of NFL Hall of Fame defensive lineman Reggie White is attributed to sleep apnea; White’s death garners national headlines as he becomes perhaps the most famous person to die of the disorder.

2008

The National Sleep Foundation reports that 70 million Americans suffer from sleep disorders, including 60 million who are insomniacs.

Related Organizations

American Academy of Sleep Medicine

One Westbrook Corporate Center, Suite 920

Westchester, IL 60154

phone: (708) 492-0930

fax: (708) 492-0943

e-mail: inquiries@aasmnet.org

Web site: www.aasmnet.org

The American Academy of Sleep Medicine is the professional association of physicians who specialize in sleep medicine; the organization provides accreditation to physicians and sleep disorder clinics. Patients in need of sleep disorder treatment can follow a link on the academy's Web site to find physicians and clinics in their hometowns.

American Sleep Association

110 W. 9th St., Suite 826

Wilmington, DE 19801

fax: (940) 234-3357

Web site: www.sleepassociation.org

Founded by physicians, the American Sleep Association serves as a public information resource to educate patients and others about sleep disorders. By accessing the Sleep Encyclopedia on the organization's Web site, students can find explanations for each of the major sleep disorders as well as many more obscure and rare afflictions that interrupt people's sleep.

Association for Behavioral and Cognitive Therapies

305 7th Ave., 16th Floor

New York, NY 10001

Index

- adenoids, 42–43
adenosine, 41
adolescents
 average number of electronic devices in bedrooms of, 63
 melatonin release in, 48
 percent admitting to falling asleep in class, 64
 percent getting recommended/less than recommended hours of sleep, 65
 sleep deprivation among, 52–53
 See also children
adrenaline, 41–42
alcohol consumption, sleep apnea and, 50
Ambien (zolpidem), 70, 78, 81
American Medical Association (AMA), 11
antihistamines, 69
anxiety, 13
Arnedt, Todd, 28
attention deficit/hyperactivity disorder (ADHD), 54
- Baake, Ron, 62
Balzac, Honoré de, 42, 46
barbiturates, 17–18
Basner, Robert, 47
benzodiazepines, 70
Bils, Peter, 18, 68
Boyle, Lauren, 52
brain, areas regulating sleep, 39–40, 49 (illustration), 50 (illustration)
Brooks, Peter, 39
Bulkeley, Kelly, 31
- caffeine, 41–42
Callaghy, Jane, 58
Callaghy, Tom, 58
Chau, Margaret, 61
children
 forms of parasomnia common in, 9–10
 obese, susceptibility to sleep disorders among, 49
 prevalence of sleep apnea in, 32
 prevalence of sleep disorders in, 34 (chart)
- prevalence of sleepwalking in, 33
reasons for insomnia in, 48–49
sleep apnea and attention deficit/hyperactivity disorder in, 54
See also adolescents
circadian rhythm, 13, 15, 79
 disorders of, 9, 24–25
coffee, 46
coffee breaks, 18
cognitive behavioral therapy (CBT), 72–73
 effectiveness of, 83
continuous positive airway pressure (CPAP) mask, 74, 78
 sleep apnea treatment with, 82
Costa, Tim, 22, 29
counting sheep, 82
Czeisler, Charles, 14, 45, 53–54
- Dagnall, Sherry, 38
Dement, William, 79
diagnosis, 6
Dickens, Charles, 10
Dittman, Ralph E., 20, 78
doctors
 percent of adults discussing sleeping disorders with, 35 (chart)
student
 limits on number of hours worked by, 57–58
 mishaps by, by reason, 67 (chart)
dopamine, 42, 71
drivers
 drowsy, deaths/injuries attributed to, 57, 65
 percent experiencing drowsiness, 66 (chart)
Drobnich, Darrel, 62
dyssomnias, types of, 9
- eclampsia, 55
Epstein, Lawrence, 16, 52, 65
eyes, functions of, 14
- Franklin, Benjamin, 10