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Sleep

Michigan State University Extension Service

Fitness 7

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# SLEEP

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## How can sleep affect your health?

## What can you do about it?

All of nature sleeps in one way or another. Throughout the centuries man has discovered that he functions best and feels best when he has gotten enough sleep. In the last 45 years scientists have been studying sleep and have begun to unravel some of the mysteries of the night.

There are two main stages of sleep, each serving a particular function. One stage is called Rapid Eye Movement (REM) sleep. During this stage, the eyes move rapidly and dreaming occurs. Both the mind and body functions are active. The other main stage of sleep is termed Non Rapid Eye Movement (Non-REM) sleep. During this time, body functions slow down. Dreaming does not occur during this stage. Non-REM sleep is further divided into stages 1, 2, 3, and 4. Stage 1 occurs when a person first drifts off to sleep, and stages 3 and 4 indicate the deepest sleep of the night. Throughout the night, dreaming and non-dreaming sleep alternate, with dreams becoming more intense and lasting longer as the night progresses.

It has been determined that the body is rested and restored during

Non-REM sleep while the mind is restored during REM (dreaming) sleep. Psychiatrists say that dreaming allows us to consolidate events and work out traumatic experiences while ridding our minds of the things we don't need to remember.

### Sleep Patterns

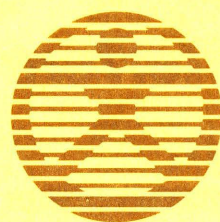
Sleep patterns can change due to age, food intake, alcohol intake, and sleep medications.

#### Age

During infancy, half of sleep time is spent dreaming. As we grow older, dreaming time tends to decrease. Sleep becomes lighter as we age because there is less deep sleep and less total sleep time.

#### Food Intake

Heavy meals before bedtime can interfere with sleep since digestion is a physiologically-demanding process and excites the system. Food allergies can cause insomnia. A high caffeine intake will disturb sleep because it acts as a stimulant. Tryptophan, one of the building blocks of protein, has



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been found to help a person fall asleep more quickly. A glass of warm milk may help bring sleep since it contains tryptophan.

### Alcohol Intake

A glass of wine before bed helps some tense people to relax and, therefore, fall asleep more easily. However, a heavy alcohol intake disturbs sleep, causing less total sleep time, less deep sleep, and less dreaming sleep. Evidence indicates that alcoholics develop abnormal sleep patterns that can persist for several years even after the alcoholic has quit drinking.

### Sleep Medications

Medications used for sleep include those bought over-the-counter (OTC) and those prescribed by physicians. OTC medications usually contain an antihistamine. Recommended dosages should not be exceeded since overdoses can cause confusion, memory disturbances, worsening of glaucoma and, in rare cases, death.

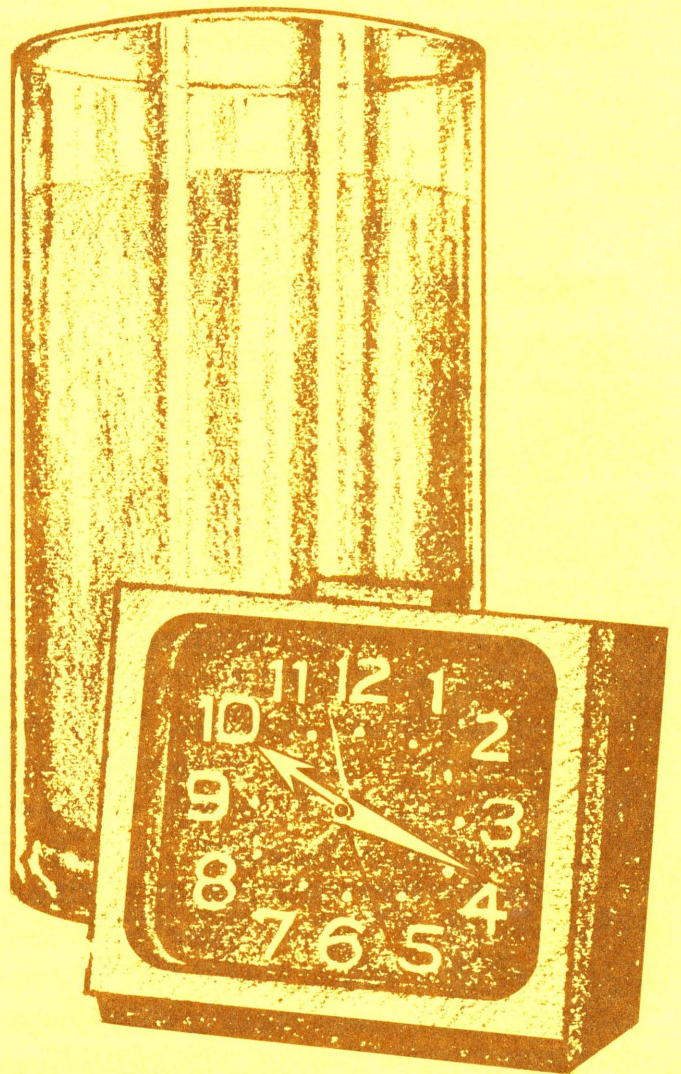
Two types of medications are prescribed by physicians—barbituates and benzodiazepines. Seconal and Nembutal are barbituates. These drugs, when consumed in large doses (especially with alcohol), can cause kidney failure, breathing failure, coma, and death. They are physically addictive. The three major benzodiazepines are Valium, Librium, and Dalmane. Their effects are evident during the day as well as the night. Large doses of these drugs by themselves are not dangerous, but when combined with alcohol, they can cause impaired functioning and even death. They, too, can be physically addictive.

It should be stressed that these medications are frequently worthwhile and beneficial when used on a short-term basis and under a physician's supervision. The doctor's instructions regarding their use should be followed very carefully. To stop using them, cut down on the dosage gradually. Stopping suddenly can cause vivid dreams and nightmares.

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***Stress at home  
or work can interfere  
with sleep.***

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### Sleep Disorders

Many sleep disorders have been recognized and treatments developed in recent years. Disorders have been classified in four categories: insomnia, hypersomnia, dyssomnia, and parasomnia.

Insomnia is the chronic inability to get the amount of sleep needed for efficient daytime functioning. Hypersomnia is defined as excessive sleep. Dyssomnia occurs in people who are unable to establish 24-hour sleep/wake cycles, such as airline pilots who cross time zones and night shift workers. In parasomnia, activities occur that are considered normal during waking hours but abnormal during sleep (talking, walking, urinating).

Sleep disorders are termed primary or secondary depending on their cause. Primary sleep disorders are those in which sleep disturbances are the only symptoms. Included in this group are narcolepsy, sleep apneas, nocturnal myoclonus, primary insomnia, and primary hypersomnia.

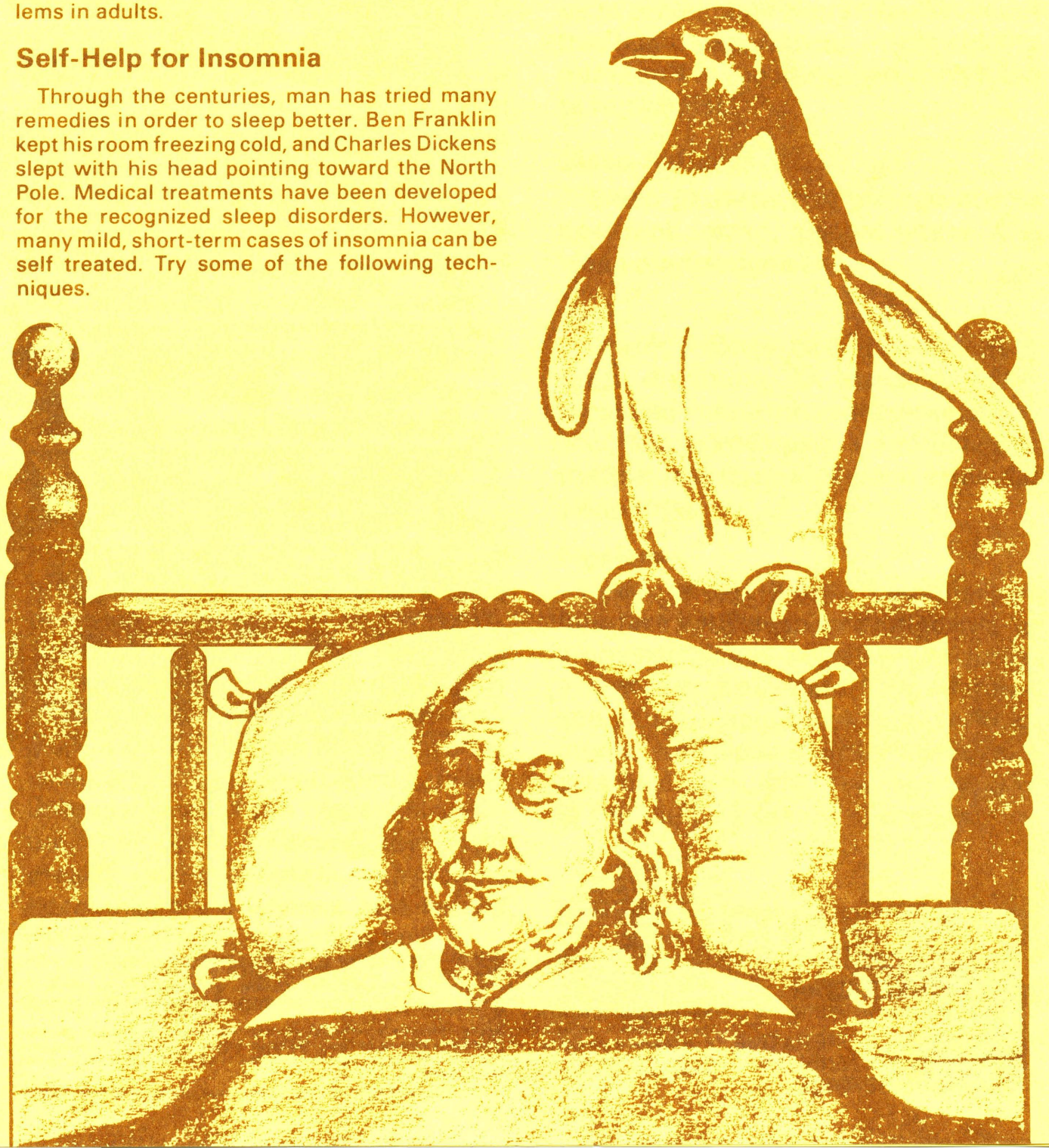
Secondary sleep disorders are those in which sleep disturbances are only one of the symptoms in a medical problem. Grouped in this category are sleep disturbances caused by kidney disease, thyroid dysfunction, pain, fever, and certain medications. Snoring can be caused by enlarged adenoids and tonsils, excessive smoking and drinking, allergies, and sleep apneas. Some sleep problems are the result of mental disorders and will disappear when the mental problem is treated. Bedwetting in children can be the result of medical or psychological problems. Sleepwalking is considered normal in children but can indicate psychological problems in adults.

### Self-Help for Insomnia

Through the centuries, man has tried many remedies in order to sleep better. Ben Franklin kept his room freezing cold, and Charles Dickens slept with his head pointing toward the North Pole. Medical treatments have been developed for the recognized sleep disorders. However, many mild, short-term cases of insomnia can be self treated. Try some of the following techniques.

### Exercise

Regular exercise has been found to improve sleep in some persons. Aerobic exercise, such as jogging or brisk walking, produces a more beneficial effect than calisthenics. Exercise should be done in the late afternoon or early evening since exercise done right before bed excites the system and hinders sleep. Start an exercise program gradually and follow it regularly. Current research shows that an excessive amount of exercise in one day will not produce sleep that night, but rather will produce aches and pains that may hinder sleep.



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# *Caffeine in the evening disturbs sleep, even in people who do not feel it does.*

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## **Food**

A person who is having trouble sleeping should examine his caffeine intake. Caffeine is found in coffee, tea, cola, chocolate, aspirin, aspirin compounds, and some diet pills. As little as two cups of coffee drunk in the afternoon or evening can hinder sleep.

Hunger can make it difficult to fall asleep, as can overeating. Light, protein snacks before bedtime may be all that is needed to bring sleep. Protein foods are a wise choice since they contain tryptophan.

## **Relaxation Techniques**

Stress at home or work can interfere with sleep. Solving the problems may restore sleep. Relaxation techniques such as meditation have helped some people.

## **Regular Bedtime**

Establishing a regular bedtime and awakening can restore normal sleep in some people. Routines such as brushing the teeth and saying prayers can bring drowsiness in others because, through years of constant practice, they have become associated with sleep.

## **Environment**

Sleep surface has not been found to affect sleep unless it is an extremely hard surface. Sleeping in a room that is too cold can cause dreams to be emotional and unpleasant. Sleeping in a room above 75°F. can cause fitful sleep with less dreaming.

## **Summary**

Adequate, refreshing sleep is necessary for health, well being, and fitness. If you have trouble sleeping, look at some of your habits and see where improvement can be made in your lifestyle. If you still have problems, see a physician. Treatments have been developed for many sleep problems and can result in improved health and well being. Sweet Dreams!



## Guides to Better Sleep Hygiene

1. Sleep as much as you need to feel refreshed and healthy during the following day, but not more. Limiting the amount of time you spend in bed seems to solidify sleep. Too much time in bed seems related to fragmented and shallow sleep.
2. A regular wake-up time in the morning seems to strengthen a regular 24-hour sleep-wake cycle and will finally lead to regular times of going to sleep.
3. A steady daily amount of exercise probably deepens sleep over the long run, but occasional one-shot exercise does not directly influence sleep during the following night.
4. Occasional loud noises, such as airplanes overhead, disturb sleep even though you may not awaken and cannot remember the noises in the morning. Insulating the bedroom to reduce noise or having a steady noise, such as an air conditioner or fan, to mask sudden noises might be advisable if you have to sleep close to excessive noise.
5. Although being too warm disturbs sleep, there is no evidence that an excessively cold room solidifies sleep, as has been claimed.
6. Hunger may disturb sleep. A light bedtime snack (especially warm milk or a similar drink) seems to help many people sleep.
7. An occasional sleeping pill may be of some benefit, but the **chronic** use of sleep medications is not helpful and may be harmful in some insomniacs.
8. Caffeine in the evening disturbs sleep, even in people who do not feel it does.
9. Alcohol helps tense people fall asleep fast, but that sleep is then fragmented if an excessive amount is used.
10. Rather than trying harder and harder to fall asleep during a poor night, switch on the light and do something else. This may help if you feel angry, frustrated, or tense about being unable to sleep.

Adapted from: *Current Concepts: The Sleep Disorders* by Peter Hauri (Kalamazoo: The Upjohn Company, 1977, p. 26).

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