

## Management of Insomnia

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Insomnia is among the most common disorders dealt with in medical practice, yet despite a great deal of research work in recent years, sleep and insomnia are not well understood. However, as a result of detailed observations of the electroencephalogram and electro-oculogram, it is now known that there are two basically different types of sleep, dreaming and non-dreaming sleep. It is on the basis of such research work that some long-established practices in the treatment of insomnia are being questioned and, in some cases, found to be inadequate.

At intermittent periods during a night's sleep our eyes undergo jerking movements up and down and from side to side. These periods last from 5 to 40 minutes and recur every 90 to 100 minutes, that is 4 or 5 times during a normal night's sleep. The majority of people experience dreams during these periods of rapid-eye-movements, called REM sleep, and seldom at other times of the night, although many dreams are forgotten within minutes of their ending. REM sleep and non-REM sleep differ not only from the point of view of mental functioning, but also with respect to many different aspects of physiology including heart rate, respiration rate, muscle tone, cerebral blood flow, and the rate of secretion of various hormones<sup>1</sup>.

Man seems to have requirements for both REM and non-REM sleep, although the detailed nature of these requirements remains obscure. Despite some early experimental reports to the contrary, there is little evidence to substantiate the claim that specific deprivation of REM sleep has serious psychological sequelae. However, total deprivation of sleep leads to an overall reduction in performance, irritability and an increasing urge to sleep. Motivation and

<sup>1</sup> *Johns, M. W.*: Arch. intern. Med. 127: 484-482 (1971).

interesting activities or responsibilities can overcome these effects temporarily, but not in the long-term.

The normal requirements for sleep vary widely between different people. The majority of adults require an average of between 7 and 8 hours per night, but some healthy people seem to get along quite well with 4 hours per night. It appears that the quality of sleep is more important than its duration, beyond a certain minimum of about 4 hours. However, in the absence of a specific measure of sleep quality we must rely on such measurements as the delay before falling asleep, the frequency and duration of night awakenings, early morning awakening, the frequency of nightmares, and morning tiredness. Insomnia may involve any of these aspects of sleep habits, but commonly involves several in the same subject. In the majority of patients insomnia is intermittent, with some good night's sleep following a few nights which have been unusually disturbed. However, a few patients will claim simply that they do not sleep at all. These claims are probably always exaggerated.

There is little evidence upon which to base statements which are frequently made relating specific aspects of insomnia to particular diagnoses. For example, early morning awakening is an uncommon symptom, but it occurs in several categories of psychiatric illness, not only in psychotic depression.

### *1. Factors Associated with Insomnia*

The many factors which are known to be associated with poor quality sleep or insomnia may be classified as follows:

#### 1.1 Factors Intrinsic to the Patient

- a) Age — the elderly have more sleep disturbance than the young;
- b) Sex — more women than men complain of insomnia, especially in middle age;
- c) Psychological tension and emotional distress of any kind — especially neurotic disorders associated with anxiety, depression, hostility or guilt; bereavement; tension of 'high-pressure' living;
- d) Psychotic illness — acute schizophrenia, mania, psychotic depression;
- e) Organic brain disorders of most kinds, especially cerebral arteriosclerosis;
- f) Endocrine disorders — thyrotoxicosis, Cushing's disease;
- g) Cardiac insufficiency — congestive cardiac failure, left ventricular failure;
- h) Pain — especially musculoskeletal; peptic ulcer;
- i) Fever — associated with increased amounts of sleep sometimes, but it may be disturbed.

### 1.2 Factors Extrinsic to the Patient

- a) Noise – with time people can accommodate to many noises and not wake up, but sleep may be less restful;
- b) High environmental temperature and humidity;
- c) Low environmental temperature – inappropriate bed-clothes;
- d) High altitudes – insomnia of mountain sickness;
- e) Rapid changes in day-night schedules such as starting work on night shift; long east-west aeroplane journeys.

### 1.3 Drugs

- a) Stimulants – caffeine, amphetamines etc.
- b) Sedatives and hypnotics – dependence and tolerance developing after prolonged use of high doses.

The most common causes of insomnia in the community are almost certainly psychological in origin. There are some patients who will vehemently deny this possibility in themselves, but psychological testing has usually revealed a close relationship between neurotic disorders and insomnia in such people. Age is an important determinant not only of insomnia but also of other aspects of sleep habits, many elderly people go to bed too early and complain unnecessarily when they wake at 4 am after 7 hours sleep. The factor associated with insomnia which is probably least well understood, is that of tolerance to and dependence on sedatives and hypnotics, particularly barbiturates but probably most non-barbiturates also. This is seen in patients with severe insomnia who are given increasingly large doses, often of several different hypnotics at the same time, and who still cannot sleep restfully. Thus, the problem arises of how to assess the effects of drugs in the treatment of insomnia.

### 2. *The Effects of Hypnotic Drugs*

Most of the commonly used hypnotic drugs are capable of reducing the delay before falling asleep, reducing the frequency and duration of night awakenings, and increasing the duration of sleep of insomniac patients. However, these effects are obtained at a price<sup>2</sup>. The electroencephalographic stages of sleep are often altered when these drugs are taken, initially at least. For example, the amount of REM sleep is often reduced but as mentioned earlier the clinical significance of this is uncertain. The beneficial effects of many hypnotics are short-lived in the treatment of severe insomnia because tolerance develops. In

<sup>2</sup> Johns, M.W.; Hepburn, Mary and Goodyear, M.D.E.: *Med. J. Aust.* 2: 1323–1327 (1971).

the case of some hypnotics, such as chloral hydrate or glutethimide, there may be little objective effect on the sleep of insomniacs after continual use of the usual dosage for only a week<sup>3</sup>. Physical dependence develops after repeated use of high doses of barbiturates and also many non-barbiturates. Such dependence may be common in Australia, eventually producing a syndrome of lethargy, slurred speech, tremor and insomnia which is made worse by suddenly ceasing to take the drugs<sup>4</sup>. To compound the issue still further, several hundred people each year die in Australia from self-administered overdoses of prescribed hypnotic drugs, especially barbiturates but other drugs to some extent too. Hence, the treatment of insomnia by means of drugs is often difficult and fraught with dangers, probably more so than we have been led to believe in the past.

### 3. The Practical Problem of Treating Insomnia

Few patients will complain to a doctor about insomnia caused by the extrinsic factors described in section 1.2 above. Usually they will manipulate the environment themselves to overcome the problem. In most cases requiring management, insomnia is a symptom of a more general disturbance within the patient, the nature of which should be identified. In practice, the common questions to be answered are as follows:

a) Is there a physical disorder such as cardiac failure or severe musculo-skeletal pain which is contributing greatly to the insomnia? If so, treat that disorder appropriately — for example, by prescribing an analgesic at night in the latter case.

b) Is the insomnia part of a response to a short-lived stressful situation? Is it a more long-term disorder involving, for example, old age, social isolation and cerebral arteriosclerosis, or does it portend major psychiatric illness in the form of anxiety neurosis or psychotic depression?

c) How severe is the insomnia? Ask questions to determine at what time the patient usually goes to bed at night, how long it takes him to fall asleep, how often he wakes and for how long during the night. Does the patient often wake too early after insufficient sleep and lie in bed unable to return to sleep?<sup>5</sup>.

d) Is the patient's insomnia to be treated by means of hypnotic drugs or not?

The last question may seem strange to some people, for it is easy to write a prescription for our favourite hypnotic drug for every patient who complains of insomnia. Society has become accustomed to expect a drug for every malady, but this may not be necessary or even the best treatment in some cases.

3 Kales, A.; Allen, C.; Scharf, M.B. *et al.*: Arch. gen. Psychiat. 23: 226–232 (1970).

4 Whitlock, F.A.: Med. J. Aust. 2: 391–396 (1970).

5 Johns, M.W.; Egan, P.; Gay, T.J.A. *et al.*: Brit. med. J. 2: 509–512 (1970).

There are several aspects of the routine (or in some cases the ritual) of daily living which can be modified to improve the quality of sleep at night — regular physical exercise such as walking early in the day but not late at night; a warm bath or hot milk drink before retiring to bed at about the same time each night, and not so early that 10 hours of sleep would be needed to fill in the time before getting up next morning. Afternoon naps are to be discouraged if they are associated with nocturnal insomnia. A quiet period of conscious respiration and relaxation may help many people to fall asleep. Reassurance about the lack of permanent ill-effects from a few sleepless nights may remove some patients' extraordinary fears about not being able to sleep.

Obvious anxiety and not-so-obvious depression as causes of insomnia require the appropriate treatment of those conditions; for instance, with superficial psychotherapy and daytime medication. However, a good case could be made for more widespread use of placebo capsules (e.g. lactose) to which the mild insomnia of many patients will respond.

In those cases for which hypnotic drugs are considered necessary almost any of the commonly available hypnotic drugs may be satisfactory when used intermittently or in the short-term. However, the newer non-barbiturate drugs such as nitrazepam, methaqualone or flurazepam (with or without diphenhydramine) are probable to be preferred because of the more nearly physiological sleep which they seem to provide compared with barbiturates or glutethimide. However, liquids such as chloral hydrate or triclofos may be preferred by some patients.

When a patient's insomnia has persisted despite regular use of hypnotics then a warning should be sounded. To increase the dosage above the normal and then to add a second and third type of drug may be dangerous. It may have little effect on the insomnia after a few nights, and it may even become a major cause of insomnia as a result of drug dependence and tolerance. In addition, we should have on our conscience our contribution towards the many suicides and suicidal attempts with hypnotic drugs which we have prescribed. In the light of presently available evidence, the hypnotic drugs which are least likely to cause serious complications or death in overdose are nitrazepam or flurazepam. The treatment of long-term insomnia with barbiturates is to be discouraged if they are being used more than occasionally. In cases of dependence on such drugs, patients will usually sleep better after gradual withdrawal over a period of a few weeks, perhaps substituting a drug like nitrazepam initially to help overcome the problem of worsened insomnia and excessive dreams or nightmares during the withdrawal period.

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