



INFORMATION FOR PROFESSIONALS

# Tranquillizers and Sleeping Pills

## Introduction

Tranquillizers and sleeping pills are drugs that slow down the central nervous system (CNS). They are medically classified as sedative-hypnotic agents. Although not used medically, alcohol and solvent/inhalants, which are also CNS depressants, are often classed as sedative-hypnotics. (See AADAC's *Beyond the ABCs* series, on *Alcohol* and *Solvent/Inhalants*.)

Most tranquillizers and sleeping pills prescribed today belong to a chemical group of drugs called the benzodiazepines (e.g. Valium,<sup>®</sup> Ativan<sup>®</sup>, Restoril<sup>®</sup>). However, in the past, many sleeping pills belonged to another chemical group called the barbiturates (e.g. Seconal,<sup>®</sup> Tuinal<sup>®</sup>) which are well known as drugs of abuse.

In usual doses, tranquillizers produce a sense of calm well-being and are used to treat anxiety. In larger doses, they will also induce sleep and even unconsciousness. Sleeping pills cause greater depression of the nervous system and, as the name implies, are used to induce and maintain sleep.

As with other mind-altering drugs, the effects of the tranquillizers and sleeping pills depend on a number of factors, including the drug, the set, and the setting. The specific drug, the amount taken, and how it was taken all determine the effect. The set, i.e. what the person expects and previous exposure of the body to this and other drugs, can alter effects. The setting (location, user's mental state, and other drugs being used) can also influence drug effects.

## *Guidelines for use*

Tranquillizers and sleeping pills are widely used prescription drugs. They are generally recommended for short-term treatment of anxiety and insomnia because they become less effective when taken for more than a few weeks or, at most, a few months. Also, tolerance can develop, so larger doses are required to achieve the same effect. Dependence can also occur, making it difficult to discontinue use.

Tranquillizers and sleeping pills are drugs that are both misused and abused. People with a history of abusing alcohol or other drugs are particularly prone to having difficulty controlling their use of these drugs.

Increasingly, doctors and their patients are seeking other ways to deal with stress and sleeplessness. Alternatives to drug use include exercise, biofeedback, relaxation techniques, and counselling.

For more information, contact your local AADAC office, or call 1-866-33AADAC, or visit our Web site [www.aadac.com](http://www.aadac.com).

**AADAC** Alberta Alcohol and Drug Abuse Commission  
An Agency of the Government of Alberta

### *Toxic effects*

The effects of tranquillizers and sleeping pills include incoordination and impaired mental functioning. As a result, driving a car or operating machinery can be dangerous when taking them. If used together with alcohol, other depressant drugs, or antihistamines (in cold, cough, and allergy remedies), these effects are greatly increased.

What would usually be considered small doses of any nervous system depressant, including tranquillizers and sleeping pills, can cause confused states in the elderly. Rapid improvement can occur if the drug is discontinued or the dose decreased.

Overdoses of the benzodiazepine tranquillizers and sleeping pills are common and can cause serious effects, including unconsciousness, but rarely result in death. However, if taken with alcohol or other nervous system depressant drugs, the results can be fatal. The drug flumazenil (Anexate®), which blocks the depressant effects of the benzodiazepine drugs can help in treating overdoses. A danger of sleeping pills belonging to the barbiturate class is that, even when taken alone, an overdose can result in death and no specific antidote is available.

### **Tranquillizers, sleeping pills and pregnancy**

Babies whose mothers used tranquillizers and sleeping pills regularly during pregnancy may experience withdrawal symptoms. These symptoms are similar to those seen during withdrawal from alcohol and other depressant drugs. They can include feeding difficulties, sleep problems, sweating, irritability, and fever.

Studies linking use of some of the barbiturate sleeping pills with birth defects and behavioural abnormalities in babies have yet to be confirmed.

### **Tranquillizers**

Over the years, people suffering from anxiety and stress have been treated with drugs such as opium and alcohol, the early sedative-hypnotics such as paraldehyde and the bromides, and, more recently, with the barbiturates.

The benzodiazepines have increasingly become the most widely used tranquillizers since the release in 1960 of chlordiazepoxide (e.g. Librium®). Other members of this group include: diazepam (e.g. Valium), oxazepam (e.g. Serax®), lorazepam (Ativan), alprazolam (Xanax®), clorazepate (Tranxene®), and bromazepam (Lectopam®). Benzodiazepines used mainly as sleeping pills will be discussed below.

Buspirone (Buspar®), a tranquillizer that has gained some popularity recently, has a different chemical structure than the benzodiazepines. Whether it is effective and non-addicting, when widely used, remains to be proven. No doubt other new drugs that have fewer side effects than the ones currently available will become available to treat anxiety.

### **Medical use/effects**

The benzodiazepines are now the drugs used most commonly to treat anxiety. Librium, Valium and Ativan are also used to relieve the symptoms of alcohol withdrawal and are sometimes given to hospital patients to help relax them before a general anesthetic. In addition, Valium is widely used for relieving muscle spasms and in controlling seizures. In some people, tranquillizers may induce a loss of inhibition and a feeling of well-being. Others report lethargy, drowsiness, or dizziness. As the dose is increased, so is sedation and impairment of mental function and physical coordination. To avoid these effects, lower doses are recommended in older people and those with certain chronic diseases. Since their bodies tend to metabolize these drugs more slowly, they develop higher blood levels than are normally associated with larger doses.

Long-term users may experience lack of energy, decreased motivation, irritability, headaches, sexual problems, and menstrual irregularities. Those who abuse tranquillizers may experience confusion, slurred speech, and muscle weakness, and problems with thinking, memory and judgment. Anxiety, insomnia, hostility or even rage can also occur.

## Side effects

Other than drowsiness and poor coordination, the side effects of commonly prescribed doses of tranquillizers are relatively mild. In some people, an increase in hostility and irritability, and vivid or disturbing dreams can occur. A variety of uncommon side effects can occur, including skin rash, headache, and impaired sexual function.

## Tolerance and dependence

Even at prescribed doses, tolerance can develop to the anti-anxiety and other effects of the tranquillizers. As a result, over a period of time patients will often increase the dose they take. Persons abusing these drugs to get "high" frequently end up taking very large doses.

Some patients develop psychological dependence when taking prescribed doses of tranquillizers. They crave the drug and feel a compulsive need to continue taking it. Anxiety and even panic can occur if it is stopped. These symptoms can be confused with the problem for which the drug was originally prescribed. Using tranquillizers for extended periods, instead of exploring alternate drug-free means of coping with stress, can contribute to the development of psychological dependence.

Patients taking tranquillizers can also develop physical dependence and experience withdrawal symptoms if use is stopped abruptly. At prescribed doses, symptoms are usually relatively mild: sleep problems, restlessness, tremor, loss of appetite, and a variety of flu-like complaints. These symptoms are minimized if the dose is gradually decreased.

Severe withdrawal, which is much less common, can occur when large doses of a tranquillizer have been taken for extended periods of time. Depression, paranoia, hallucinations, convulsions, and even death have resulted, so these patients are usually withdrawn in a detoxification centre or a hospital.

## Who uses tranquillizers?

The benzodiazepine tranquillizers are among the most prescribed psychoactive drugs in the world. Women, as a group, use tranquillizers more

frequently than men, and older adults are more likely than young adults to use these drugs.

A national survey conducted in 1996/97 found that 2.7% of all Canadians and 1.9% of Albertans aged 15 years or older had used tranquillizers in the past year. In a 2001 study of Ontario students in Grades 7 to 13, 3.2 % reported medical use and 2.2 % reported non-medical use in the previous 12 months.

Valium is the tranquillizer most widely available on the illicit market. In larger doses, it can produce a degree of pleasurable intoxication attractive to street drug users. Valium is also popular with narcotic addicts and is taken by users of amphetamines or cocaine users to help them relax or sleep. The numerous other benzodiazepine tranquillizers are also abused to varying degrees.

In 1998/99, 2% of adult (18 years or older) clients admitted to AADAC reported tranquilizers or barbituates/sedatives as the drugs they most frequently used.

## Sleeping pills

Sleeping pills are classed medically as sedative-hypnotics. In general usage, however, drugs used to calm or sedate (sedatives) are in the tranquillizer class and those used to induce sleep are called sleeping pills.

Most sleeping pills used today are members of the benzodiazepine group of drugs. Newer drugs, such as zopiclone (Imovane®), may prove to be superior to the benzodiazepines.

Because of their anti-anxiety effects, any of the benzodiazepines can be helpful in treating sleep problems. Flurazepam (Dalmane®), triazolam (Halcion®), temazepam (Restoril), and nitrazepam (Mogadon®) are strongly promoted as sleeping pills.

Barbiturates still marketed include secobarbital (Seconal® or reds, red devils), pentobarbital (Nembutal® or yellow jackets), amobarbital (Amytal® or blue heavens), a combination of amobarbital and secobarbital (Tuinal or Christmas trees, rainbows), and phenobarbital. Amongst drug abusers, barbiturates are referred to as "downers" because they slow the user down.

## Medical use/effects

### *Benzodiazepines*

As noted above, members of the benzodiazepine group are the drugs most commonly used to treat anxiety. When medication is considered appropriate, they are considered the drugs of choice to assist in the short-term treatment of sleep problems. They are safer, have fewer interactions with other drugs, and have a lower abuse potential than the barbiturates and other available drugs.

The effects of the benzodiazepine drugs are included above in the introduction and in the discussion of the tranquillizers.

### *Barbiturates*

The barbiturates (e.g. Seconal, Tuinal) are still prescribed to treat sleeplessness, anxiety, and tension but much less often than in the past. They are also used to prevent and treat epileptic seizures and some are used to induce and maintain surgical anesthesia.

A small dose of a barbiturate (e.g. 50 mg or less) may relieve anxiety and tension while a larger dose (e.g. 100 to 200 mg) will help induce sleep in quiet surroundings. In a social setting, the larger dose may produce effects similar to drunkenness, including a "high" feeling, slurred speech, and slowed reactions. Larger doses cause greater depression of the body and can result in death from respiratory arrest.

The long-term effects of taking barbiturates are similar to those of other nervous system depressants such as alcohol and the tranquillizers. As tolerance develops, commonly prescribed doses become less and less effective in helping induce sleep. As a result, users tend to increase the amount taken. This practice can be dangerous because tolerance to the intoxicating effects develops more rapidly than does tolerance to the lethal effects. If very high doses are taken, death can result.

Long-term use of high doses of a barbiturate can cause anemia, impairment of liver function, and chronic intoxication. Symptoms can include impairment of memory and judgment; hostility, depression, or mood swings; chronic fatigue; and stimulation of pre-existing emotional disorders.

## Side effects

The information presented earlier on tranquillizers includes the side effects of the benzodiazepine drugs. When compared with the benzodiazepine sleeping pills, a usual dose of a barbiturate taken to help induce sleep probably causes more hangover the next day. Driving or flying skills can be impaired for as long as 10 to 22 hours. Barbiturates can also cause excitement, pain, and allergic reactions. As well as adding to the effects of other depressants such as alcohol, they interact with various drugs usually speeding up the breakdown of these drugs by the body.

## Tolerance and dependence

As for the benzodiazepine tranquillizers and sleeping pills, tolerance and physical and psychological dependence can develop to the barbiturates. When doses are increased to overcome tolerance and obtain the desired effects, death from overdose can result.

When chronic high doses of barbiturates are suddenly stopped, serious withdrawal and even death can result. Symptoms range from restlessness, anxiety, insomnia, and irritability to delirium and convulsions in severe cases. Hospitalization is usually recommended. There is no doubt that these are dangerous drugs of abuse.

## Who uses sleeping pills?

Like tranquillizers, sleeping pills are commonly prescribed drugs. In 1996/97, 3.5% of Canadians and 3.5% of Albertans 15 years and older, had used sleeping pills in the past year. In a 2001 study of Ontario students in Grades 7 to 13, 11.8% reported that they had taken barbiturates for medical use and 3.9% for non-medical use.

Sleeping pills are commonly abused drugs. The benzodiazepine sleeping pills are taken by street users to get high and by cocaine and amphetamine users to relax and sleep. Barbiturate sleeping pills are used similarly. Although less prescribed today, barbiturates remain easily available to abusers through both licit and illicit sources.

**ADDITIONAL READING:**

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1. Brands, B., Sproule, B., & Marshman, J. (Eds.). (1998). *Drugs and drug abuse: A reference text* (3rd ed.). Toronto: Addiction Research Foundation.
2. Inaba, Darryl S., Cohen, William. (2000) *Uppers, Downers, All-Arounders*. 4th Ed. Ashland, Oregon: CNS Publications.