

# An overview of insomnia and its management

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## Abstract

Adequate quality sleep is essential for good health and quality of life. Nevertheless, the prevalence of insomnia disorder, which can be acute (short-term) or chronic, is increasing globally. This article provides an overview of insomnia and its management. The main causes of, and risk factors for insomnia are described, and the criteria for making an accurate diagnosis. The management of insomnia, which is commonly a combination of cognitive behavioural therapy and pharmacological treatment, is discussed as well as the important role pharmacists can play, not only in the management of insomnia but also in identifying the underlying cause/s of sleep disturbances.

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## Introduction

Sleep is an essential biological function, which is crucial for neural development, learning and memory, emotional regulation, cardiovascular and metabolic function, as well as cellular toxin removal.<sup>1,2</sup> Quality sleep is necessary for good health and overall quality of life. Studies have shown that sleep deprivation and circadian clock disruption may lead to altered immune function as well as an increased risk for cardiovascular disease and metabolic disorders such as weight gain, insulin resistance and diabetes.<sup>1-3</sup> An increase in the prevalence of insomnia and other sleep disorders, which, in practice, are often underdiagnosed and undertreated, is a global concern.<sup>4</sup>

## Definition and types of insomnia

Insomnia is defined as difficulties initiating or maintaining sleep, or early morning awakening, associated with impaired daytime functioning, for example, reduced cognitive performance, fatigue or mood disturbances.<sup>5</sup>

The Third Edition of the International Classification of Sleep Disorders (ICSD-3) identifies three distinct types of insomnia namely short-term insomnia, chronic insomnia, and other insomnia (when the patient has insomnia symptoms but does not meet the criteria for the other two types of insomnia).<sup>5-7</sup> Unlike prior editions of the ICSD, the ICSD-3 classification system no longer contains psychophysiological insomnia, idiopathic insomnia, inadequate sleep hygiene and paradoxical insomnia as sub-classifications because they were deemed to be unreliable in terms of reproducibility in clinical practice.<sup>1,2,8</sup> A new umbrella category, referred to as 'insomnia disorder' was introduced, and

is also used in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).<sup>7</sup>

## Epidemiology

Insomnia is a widely prevalent condition that can affect anyone, including children, adults and the elderly.<sup>8,9</sup> Approximately one-third of the adult population occasionally report sleep problems and 6–10% report symptoms that meet the diagnostic criteria for insomnia disorder.<sup>4,10</sup> Insomnia is more prevalent among women, middle-aged and older adults, and individuals with poor physical or psychological health.<sup>4,11,12</sup> Approximately 50% of women experience insomnia as a result of hot flushes and night sweats due to menopause.<sup>8</sup> There is also a higher prevalence of insomnia among those who are unemployed, disabled, divorced, widowed, separated, or persons of lower socioeconomic status and those working irregular shifts.<sup>8,13</sup>

Insomnia co-morbid with a psychiatric disorder is the most common diagnosis for patients with insomnia, occurring in approximately 3% of the general population. Insomnia co-morbid with substance abuse is estimated to occur in about 0.2% of the general population, while insomnia co-morbid with a medical condition occurs in about 0.5% of people.<sup>11,14</sup>

The prevalence of insomnia is inconsistently reported in the scientific literature, due to different perceptions of insomnia and its treatment amongst patients and clinicians.<sup>15</sup> Patients generally describe insomnia in terms of its daytime impairments extending the experience beyond night-time sleep difficulties. On the contrary, clinicians tend to place emphasis on the quantitative descriptors of insomnia, standard diagnostic criteria

and subsequent medical treatment, rather than on the patient's qualitative description and subjective experience of insomnia.<sup>4,11,15</sup>

## Main causes and risk factors

Risk factors for developing insomnia include a previous episode of insomnia, a family history of insomnia and predisposition toward being more easily aroused from sleep.<sup>8,16,17</sup> Environmental causes of insomnia include noise, temperature, light, electronic devices and uncomfortable sleeping positions.<sup>9</sup> Substance abuse and dependence on cocaine, alcohol, nicotine and caffeine contribute to insomnia.<sup>18</sup> Aging is one of the most significant factors associated with changes in sleep.<sup>12,16</sup> Insomnia is prevalent in pregnant women possibly due to discomfort, depression and other pregnancy-related complications.<sup>17,18</sup> Medical conditions e.g. cancer, gastrointestinal problems, respiratory conditions, cardiovascular disease, neurological diseases and certain medicines used in the management of these conditions can impair sleep, leading to insomnia.<sup>14,16</sup> Table I provides a summary of medicines that are associated with insomnia.

**Table I.** Pharmacological causes of insomnia<sup>5,9,18</sup>

Pharmacological class	Drug examples
<b>α-blockers</b>	Tamsulosin
<b>β-blockers</b>	Propranolol, metoprolol
<b>β<sub>2</sub>-agonists</b>	Salbutamol, salmeterol
<b>Corticosteroids</b>	Prednisone
<b>Decongestants</b>	Phenylephrine, pseudoephedrine
<b>Diuretics</b>	Furosemide, hydrochlorothiazide
<b>Dopamine receptor agonists</b>	Levodopa
<b>Monoamine oxidase inhibitors (MAOIs)</b>	Phenelzine, tranylcypromine
<b>Selective serotonin reuptake inhibitors (SSRIs)</b>	Citalopram, fluoxetine, sertraline, fluvoxamine
<b>Central nervous system stimulants</b>	Amphetamine, cocaine, ephedrine, caffeine, modafinil
<b>Other</b>	Phenytoin, nicotine, thyroid supplements, bupropion, venlafaxine, theophylline

## Clinical features and diagnosis

### Diagnosis of insomnia

Insomnia is an important public health problem that requires accurate diagnosis and effective treatment.<sup>19</sup> Insomnia is primarily a clinical diagnosis and is most frequently diagnosed using data obtained from patient histories and sleep diaries.<sup>4,14</sup> The ICSD-3 is the most widely used classification system for sleep disorders, with diagnostic criteria for insomnia disorder summarised in Box I.<sup>5,7</sup>

To meet the diagnostic criteria for chronic insomnia disorder, the patient should have symptoms at least three times per week over a duration of three or more months.<sup>4,5,20</sup> A diagnosis of short-term insomnia must meet the same criteria as chronic insomnia except that the symptoms have been present for less than three months.<sup>5</sup>

Short-term insomnia is often aggravated by stressful situations and is therefore usually resolved when the underlying cause is resolved or when the patient develops coping mechanisms.<sup>21</sup> However, in some cases this may evolve into chronic insomnia.<sup>4,5</sup> The classification referred to as 'other insomnia disorder' includes patients who complain of the typical insomnia features but do not meet the full criteria for either chronic insomnia disorder or short-term insomnia disorder.<sup>5,21</sup>

### Box I. ICSD-3 diagnostic criteria for insomnia disorder<sup>5,7,20</sup>

#### The following criteria (A–F) must be met for the diagnosis of insomnia disorder:

- A. The patient reports, or the patient's parent or caregiver observes, one or more of the following:
  1. Difficulty initiating sleep
  2. Difficulty maintaining sleep
  3. Waking up earlier than desired
  4. Resistance to going to bed on appropriate schedule
  5. Difficulty sleeping without parent or caregiver intervention
- B. The patient reports, or the patient's parent or caregiver observes, one or more of the following related to the night-time sleep difficulty:
  1. Fatigue/malaise
  2. Attention, concentration or memory impairment
  3. Impaired social, family, occupational or academic performance
  4. Mood disturbance/irritability
  5. Daytime sleepiness
  6. Behavioural problems (e.g. hyperactivity, impulsivity, aggression)
  7. Reduced motivation/energy/initiative
  8. Proneness for errors/accidents
  9. Concerns about or dissatisfaction with sleep
- C. The reported sleep/wake complaints cannot be explained purely by inadequate opportunity (i.e. enough time is allotted for sleep) or inadequate circumstances (i.e. the environment is safe, dark, quiet and comfortable) for sleep.
- D. The sleep disturbance and associated daytime symptoms occur at least three times per week.
- E. The sleep disturbance and associated daytime symptoms have been present for at least three months.
- F. The sleep/wake difficulty is not better explained by another sleep disorder.

### Clinical features

The most common symptoms of insomnia are fatigue, irritability, social dysfunction, problems with concentration or memory, reduced motivation, aggression and worry about sleep leading to impaired daytime functioning and possibly accidents or errors.<sup>5,11</sup> Complaints of headaches, gastrointestinal distress, anxiety and depression may often result in absenteeism, poor work ability and social isolation.<sup>12</sup> Patients with chronic insomnia frequently report a sense of reduced alertness and a desire for sleep, but inability to sleep and achieve the relief they seek.<sup>11,19,22</sup>

### Co-morbidities

Insomnia commonly coexists with psychiatric or medical disorders, other sleep disorders or use of certain medicines or substances.<sup>14,18</sup> Addressing and optimising the management of an underlying medical, psychiatric or environmental condition often leads to an improvement in insomnia.<sup>8</sup> In some cases, treatment with cognitive behavioural therapy for insomnia has offered

improvement to co-morbid conditions e.g. depression or chronic pain.<sup>17</sup> Examples of conditions and disorders that may coexist with insomnia are shown in Table II.

Type of condition	Examples of conditions or disorders
<b>Cardiovascular</b>	Angina, congestive heart failure, dysrhythmias
<b>Endocrine</b>	Diabetes mellitus, hyperthyroidism, hypothyroidism
<b>Renal and urinary</b>	Incontinence, nocturia, enuresis, chronic kidney disorders
<b>Psychiatric</b>	Depression, generalised anxiety disorder, panic disorder, post-traumatic stress disorder, schizophrenia, Alzheimer's disease, attention-deficit hyperactivity disorder
<b>Musculoskeletal</b>	Rheumatoid arthritis, osteoarthritis, fibromyalgia
<b>Neurological</b>	Stroke, dementia, Parkinson's disease, seizure, headache, traumatic brain injury, peripheral neuropathy, chronic pain disorders, neuromuscular disorders
<b>Reproductive</b>	Pregnancy, menopause
<b>Sleep</b>	Sleep apnoea, restless legs syndrome, circadian rhythm sleep disorders, parasomnias
<b>Other</b>	Allergies, rhinitis, sinusitis, chronic obstructive pulmonary disorder

## Management of insomnia

The goal of insomnia treatment includes improving the quality and quantity of sleep, reduction of distress and anxiety that occurs with insufficient sleep, as well as an improvement in daytime functioning.<sup>25</sup> A common approach to the management of insomnia is a combination of cognitive behavioural therapy and pharmacological treatment.<sup>25</sup> In all patients, the cause/s of insomnia and possible coexisting disorders should be identified as part of the management strategy.<sup>26</sup> The choice of treatment for

insomnia furthermore depends on the symptoms presented and their severity, the expected duration of treatment, accompanying disorders, the willingness of the patient to engage in behavioural therapies, and the vulnerability of the patient to any adverse effects of medication.<sup>12</sup>

### Non-pharmacological management: Cognitive behavioural therapy

The non-pharmacological management of insomnia is considered the first-line therapy for patients in whom insomnia persists, and has been shown to be effective.<sup>27-29</sup> Cognitive behavioural therapy for insomnia (CBT-i) improves sleep outcomes with minimal adverse effects and is preferred by patients to drug therapy.<sup>30</sup> CBT-i addresses dysfunctional beliefs and behaviours that embed insomnia and is recommended for chronic insomnia, including those with co-morbidities.<sup>27</sup> Therapy usually consists of six to eight individual or group sessions. It is however associated with limitations that may include access difficulties as well as challenges with the availability of suitably qualified facilitators. An alternative to face-to-face CBT-i is internet-based CBT-i, which may be effective.<sup>27</sup>

CBT-i components include sleep hygiene education, cognitive therapy, relaxation therapy, stimulus-control therapy and sleep-restriction therapy (see Table III).<sup>18,31</sup> Sleep diaries are usually kept throughout therapy, as they are useful for the patient and the treating therapist to identify improvements.<sup>18</sup> Research has shown that CBT-i outperforms hypnotic medication and has fewer side-effects.<sup>10,18</sup> It is important that when CBT-i is used, it should be combined with appropriate management of underlying medical and psychiatric disorders, to maximise improvements in sleep.<sup>10</sup> Because CBT-i is recommended as first-line therapy for insomnia, future challenges include increasing its awareness and access for patients.<sup>10,18</sup>

**Table III.** Components of cognitive behavioural therapy for insomnia<sup>12,18,25,28,29,31-33</sup>

Intervention	Implementation
<b>Sleep hygiene</b>	Recommendations to improve sleep hygiene include the following: <ul style="list-style-type: none"> <li>• Reduce alcohol, nicotine and caffeine intake and avoid, especially four to six hours before bedtime. Caffeine and nicotine are stimulants. Alcohol disrupts sleep due to processing of the alcohol.</li> <li>• Avoid rich or fatty foods close to bedtime, as well as spicy, carbonated and citrus foods.</li> <li>• Avoid extreme temperatures and noise.</li> <li>• Bedroom should be well ventilated, quiet and dark.</li> <li>• Exercise regularly but not close to bedtime.</li> <li>• Drinking large volumes of fluids should be avoided before bedtime to avoid interruptions due to the need for restroom use.</li> <li>• Use dim nightlights in bathroom as bright light can make it difficult to go back to sleep.</li> <li>• Remove bedroom clock from sight.</li> </ul>
<b>Stimulus control</b>	Stimulus control may be achieved by application of the following measures: <ul style="list-style-type: none"> <li>• Establish a regular sleep timetable and go to bed only when feeling sleepy.</li> <li>• Get out of bed if unable to sleep.</li> <li>• Daytime naps should be avoided.</li> <li>• Use the bed only for sleep and intimacy; avoid reading and television watching in bed.</li> </ul>
<b>Relaxation techniques</b>	Relaxation techniques involve progressive muscle relaxation to decrease somatic tension.
<b>Sleep restriction</b>	Sleep restriction involves limiting the amount of time spent in bed to the actual time spent sleeping.
<b>Paradoxical intention</b>	This technique is suitable for sleep-initiation insomnia. The patient is advised to remain passively awake with the aim of eliminating anxiety to perform.
<b>Cognitive therapy</b>	Cognitive therapy is directed towards anxiety. Insomnia-related concerns increase insomnia, causing excitation and further exacerbate sleep problems. Changing negative thoughts can reduce concerns about the lack of sleep and break the vicious circle leading to excitation and insomnia.

## Pharmacological management

Pharmacological management approaches to insomnia should be considered after carefully reviewing the risks and benefits of treatment versus no treatment.<sup>29</sup> The addition of medication to CBT-i in patients with persistent insomnia has been shown to produce added benefits during acute therapy, but with long-term treatment the outcome is optimised when medication is discontinued during maintenance CBT-i.<sup>14</sup>

The pharmacological treatment of insomnia includes prescription medicines registered for use, over-the-counter medicines and herbal therapy.<sup>35</sup> Off-label use of non-prescription medicines e.g. antihistamines, is a common practice in the management of insomnia.<sup>35</sup> When the need for pharmacological treatment has been identified, the choice of drug is determined by various factors, including symptom patterns, treatment goals, past treatment responses, patient preference, cost, the availability of other treatments, co-morbid conditions, contraindications, concurrent medication interactions and potential adverse effects.<sup>34</sup>

Guidelines for the use of sleep-inducing medicines, referred to as hypnotics, aim to minimise abuse, misuse and addiction (see Box II).<sup>8,31,36</sup> The main differences between the hypnotics are their onset of action and the elimination half-life. Hypnotics with a short half-life are mostly used for sleep-onset insomnia, while those with a longer half-life are more appropriate for sleep-maintenance insomnia. In the case of hypnotics with a longer half-life, the potential of daytime carry-over effects, should be taken into account.<sup>8,31,36</sup>

### Box II. Guidelines for the use of hypnotics<sup>8,31,36</sup>

- Establish a clear indication and treatment goal.
- Doses for patients should be individualised.
- Therapy should be initiated with a low dose and maintained at the lowest effective dose.
- The duration of treatment should be limited to a few weeks, except for specific hypnotics. Use for more than two to four weeks should be avoided if possible.
- In patients taking central nervous system depressants, doses should be lowered.
- Most hypnotics are respiratory suppressants and can worsen obstructive sleep apnoea or hypoventilation. Avoid if patient presents with these symptoms. Ramelteon can however be given to patients with mild to moderate obstructive sleep apnoea and in chronic obstructive pulmonary disease.
- For patients who need longer-term treatment, consider intermittent therapy.
- Abrupt drug withdrawal should be avoided; doses should be tapered.
- Drug treatment should be re-evaluated regularly with an assessment of efficacy and adverse effects.
- Long-term use may be habit forming and rebound insomnia may occur when some short-acting drugs are discontinued.
- Continued nightly use should be avoided; patients should be encouraged to use them only when necessary.
- In general, pregnancy is a contraindication.
- If the problem is staying asleep, a hypnotic with a slower rate of elimination may be more appropriate (e.g. temazepam, estazolam, flurazepam).

Table IV provides a summary of the pharmacological treatment options for the management of insomnia.

## Patient counselling and the role of the pharmacist

Insomnia affects the quality of life of patients and is often underdiagnosed and undertreated in the practice environment.<sup>4</sup> Research evidence has shown the importance of considering the patient's subjective experience of insomnia, prior experience and perceptions of treatment options, when tailoring insomnia management interventions.<sup>4</sup> Pharmacists are in the ideal position to identify co-morbidities and medicines that are associated with, or may exacerbate, insomnia.<sup>41</sup> From a public health perspective, pharmacists should also be concerned about how much sleep patients are getting per night, considering the increased risks of developing non-communicable diseases such as type-2 diabetes, cardiovascular diseases and cancers, that accompany six or fewer hours of sleep per night.<sup>1-3,42</sup>

Furthermore, pharmacists can assist patients in identifying other causes of sleep disturbances, and provide counselling to help patients make informed choices regarding the management and treatment of insomnia.<sup>41,43</sup> A checklist for insomnia-producing behaviours, shown in Box III, is a useful tool that can be used by the pharmacist to identify underlying causes of insomnia.<sup>43</sup> Changing any behaviour confirmed on the checklist, should be the first step in terms of addressing the patient's sleep disorder.<sup>43</sup>

A sleep diary can help patients to keep track of their morning and end-of-day activities to record the time it takes to fall asleep, how many times they wake up at night, and how they felt when they woke up. The sleep diary can also be used to record other activities e.g. exercise, caffeine and medication intake, and when the patient had supper.<sup>43</sup> Once the underlying cause/s of insomnia has been identified, pharmacists can play a very important role in setting treatment goals and suggesting non-pharmacological measures to address sleep disturbances and improve sleep patterns.<sup>41,42</sup>

Patients with co-morbid conditions such as anxiety or depression may require special considerations with respect to pharmacological management.<sup>43</sup> Those on antidepressants should be counselled about the duration it might take for the antidepressants to have a full effect.<sup>43</sup>

For all patients on pharmacological treatment for insomnia, whether prescription or non-prescription medicines, the pharmacist should provide counselling on the potential adverse effects, drug interactions, contraindications, and special precautions.<sup>41</sup> Patients should always be advised to adhere to the recommended dosage, avoid the use of alcohol, and avoid driving or operating machinery until their response to the treatment is known.<sup>41</sup>

**Table IV.** Pharmacological management of insomnia<sup>12,25,27,33,36-40</sup>

Pharmacological class	Drug examples	Indications	Side-effects and precautions
<b>Benzodiazepine receptor agonists</b>	<b>Flunitrazepam</b> (Hypnor®) <b>Brotizolam</b> (Lendormin®) <b>Triazolam</b> (Halcion®) <b>Loprazolam</b> (Dormonox®) <b>Flurazepam</b> (Dalmadorm®) <b>Nitrazepam</b> (Arem®) <b>*Quazepam</b> (Doral®) <b>Temazepam</b> (Normison®) <b>Lorazepam</b> (Ativan®)	These are preferred for very short courses. The longer acting agents e.g. flurazepam (half-life of 47–100 hours) improve sleep maintenance, but are rarely prescribed because of higher risk of residual daytime effects. Triazolam compared with the others, has a shorter half-life (2.5 hours) and is used in treating issues with sleep onset. Agents with intermediate half-lives, such as temazepam (half-life eight to ten hours), should be reserved for patients with sleep-onset or sleep-maintenance problems.	Adverse effects include daytime sedation, delirium, ataxia, anterograde memory disturbance, and complex sleep-related behaviours. Withdrawal symptoms are similar to those experienced with alcohol.
<b>Non-benzodiazepines: also acting as receptor agonists</b>	<b>Zolpidem</b> (Zolpihexal®, Zolnox®, Stilnox®, Nyxe®, Noxidem®, Medploz®, lvedal®) <b>Zopiclone</b> (Zopigen®, Zopivane®, Z-dorm®, Imovane®, Alchera®, Adco-zopimed®, Lunesta®) <b>*Zaleplon</b> (Sonata®)	These are preferred for use as first-line treatment of acute insomnia with difficulties in falling asleep. These agents have a short biological half-life, and agents such as zolpidem (half-life of 2.5 hours) and zaleplon (half-life of one hour), are recommended for treatment of sleep-onset insomnia.	This class possesses a selective action on the omega-1 receptor, subclass of benzodiazepine receptors and hence does not affect cognition, memory and motor function. They are less likely to produce dependence and withdrawal effects than benzodiazepines. Zolpidem and zaleplon may cause drowsiness and dizziness whilst zopiclone is associated with headaches and unpleasant taste.
<b>Melatonin receptor agonist</b>	<b>Melatonin</b> (Circadin®)	This is useful for sleep-onset insomnia without nocturnal awakenings.	The common adverse effects are fatigue, dizziness, somnolence and weight gain. The drug is not associated with abuse liability.
<b>Tricyclic antidepressants</b>	<b>*Doxepin</b> (Sinequan®, Silenor®)	Doxepin improves sleep efficiency.	The drug has no known potential for abuse.
<b>Orexin receptor antagonists</b>	<b>*Suvorexant</b> (Belsomra®)	The drug is a relatively new agent and is preferred for use in sleep maintenance as well as treatment of sleep-onset insomnia.	Adverse effects include hallucinations, amnesia, anxiety, sleep driving or eating, sleep paralysis. The drug should not be taken with or immediately after a meal, as this may delay its effects.
<b>Antihistamines</b>	<b>Diphenhydramine</b> (Sleepeze®, Mypaid Night Pain®, Betasleep®) <b>Doxylamine</b> (Somnil®)	These are first generation antihistamines and are available over the counter. They possess sedating properties. These may be useful in difficulty in initiating sleep with multiple nocturnal awakenings.	Antihistamines possess anticholinergic properties that include dry mouth, urinary retention, constipation, dry mucous membranes, tachycardia, disorientation, dizziness and drowsiness.
<b>Off-label medicines</b>	<b>Antidepressants:</b> <b>Trazodone</b> (Molipaxin®) <b>Mirtazapine</b> (Remeron®)	Antidepressants are used in patients with certain co-morbid conditions and are used at lower doses.	Dizziness, drowsiness, weight gain, increased suicidal ideation (in young adults), cardiac arrhythmias, orthostatic hypotension, priapism.
	<b>Antiepileptic drugs:</b> <b>Gabapentin</b> (Neurontin®) <b>Pregabalin</b> (Lyrica®)	Antiepileptic drugs are used for treating insomnia in specific patients with conditions such as generalised anxiety disorder, chronic pain, epilepsy and a history of substance abuse.	Dizziness, drowsiness and weakness are common adverse effects.
<b>Herbal treatments</b>	<b>Valerian</b> <b>Kava</b> <b>Chamomile</b>	Herbal treatments possess sedative effects, hence their use. There is however insufficient evidence of effectiveness to support the use of these herbal mono-preparations for the management of insomnia and there is limited evidence to suggest that they are safe and well-tolerated therapy in patients with insomnia.	Adverse effects include dizziness, drowsiness, confusion and difficulty in concentrating.

\*Not available in South Africa

## Conclusion

In conclusion, the burden of insomnia is high and may have negative consequences on an individual's well-being. Despite its high prevalence, insomnia remains an underdiagnosed and undertreated condition. Chronic insomnia has been associated with a higher risk of developing chronic diseases

and therefore the underlying causes should be identified and treated. The management of insomnia includes pharmacological therapy, cognitive behavioural therapy and treating co-morbid conditions. The main goal of therapy is to improve sleep quality and duration, improve daytime function and reduce anxiety. Depending on the severity of insomnia, cognitive behavioural therapy and pharmacological treatment may be used individually

**Box III. Checklist for insomnia-producing behaviours<sup>42,43</sup>**

Insomnia-producing behaviour	Reason and explanation
<input checked="" type="checkbox"/> Going to bed and getting up at a different time every day.	<input type="checkbox"/> Establishing a regular schedule helps to regulate the body's inner clock.
<input checked="" type="checkbox"/> Taking naps during the daytime or in the evenings.	<input type="checkbox"/> Falling asleep in front of the television at 19h00 will make it more difficult to sleep later that night.
<input checked="" type="checkbox"/> Drinking coffee, tea or soft drinks after 15h00 in the afternoon.	<input type="checkbox"/> Many soft drinks, coffee and tea, contain caffeine, a powerful stimulant. Certain medicines also contain caffeine and should be avoided before bedtime.
<input checked="" type="checkbox"/> Smoking cigarette, pipe or cigar before retiring.	<input type="checkbox"/> The nicotine in tobacco is also a stimulant and can keep one awake.
<input checked="" type="checkbox"/> Sleeping in a noisy bedroom.	<input type="checkbox"/> If outside noise cannot be blocked, "cover" it with a familiar noise like the steady hum of a fan.
<input checked="" type="checkbox"/> Sleeping in a room with a lot of light.	<input type="checkbox"/> If street lights shine in the room, or if you must sleep during the day, buy special room-darkening shades.
<input checked="" type="checkbox"/> Drinking alcohol in the evenings.	<input type="checkbox"/> Although a glass of wine can be relaxing, too much alcohol will lead to disturbed sleep. Periods of wakefulness and/or nightmares might be experienced when the alcohol wears off during the night.
<input checked="" type="checkbox"/> Getting into heated arguments with a partner or doing work or assignments right before bedtime.	<input type="checkbox"/> Stirring up strong emotions or feeling stressed before bedtime will make it much more difficult to fall asleep. Instead, try watching a mindless TV show or reading a light novel.
<input checked="" type="checkbox"/> Using electronic devices, such as a cell phone, for the purpose of bedtime reading.	<input type="checkbox"/> Electronic devices can stimulate the brain to stay awake because of the light emission.
<input checked="" type="checkbox"/> Using the bedroom for working or watching TV.	<input type="checkbox"/> The bedroom should be associated with sleep.
<input checked="" type="checkbox"/> Sharing a bed with a snoring, cover-stealing or restless partner.	<input type="checkbox"/> If you do, make temporary sleeping arrangements until you establish a satisfactory sleep pattern.

or in combination, although behavioural therapy is usually recommended as initial therapy. The patient's preferences and values should be considered when selecting treatment options. Hypnotics should be used for the shortest possible period, at the lowest possible dose to avoid developing dependence and tolerance. It is important for the pharmacist to provide information and counselling on the treatment available for insomnia, as well as the side-effects patients may experience. The pharmacist can also play a role in identify underlying causes of insomnia and provide valuable advice that may help with improving sleep habits.

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