Sleep problems are extremely common. In most cases they are short-term and often related to psychosocial stressors and can usually be managed by simple advice. If sleep problems are more persistent or recurrent, they are best termed as Insomnia.

**Definition**

Insomnia (sleep disorder):  
1. Disrupted sleep episodes in falling asleep, night-time wakening and or early wakening  
2. Subsequent daytime impairment, for example, daytime sleepiness, problems concentrating, tiredness  
3. Recurrent: At least one episode of 30 minutes duration, three times a week for three months.

**Importance**

One in ten people have Insomnia. It is linked to adverse effects on physical health (e.g. cardiovascular disease), mental health (e.g. depression, substance abuse) and daily functioning (cognitive, social and occupational). Some individuals seem resilient to the effects of poor sleep, however, this should be approached with caution as self-reported daytime impairment is not always reliable.

**Causes**

Both genetic and environmental factors usually contribute. Insomnia is sometimes termed Primary or Secondary (for example, in the case of sleep apnoea, restless leg syndrome, chronic pain and menopause). The relationship between Insomnia and mental health is discussed separately.

**Sleep processes**

Sleep is a dynamic process - three key underlying processes affect sleep and often clearly map to sleep problems; however, more than one sleep process may be involved and interact.

1. **Circadian** - a 24-hour intrinsic rhythm. Disruption can be recognised by a pattern of either delayed sleep onset/ delayed wakening (“evening-type” e.g. in late adolescence) or early sleep onset/wake earlier (“morning-type” e.g. in the elderly). This is rarely genetic and extreme.

2. **Sleep drive** - related to hours awake and previous sleep disruption but large inter-individual variation in sleep need (i.e. sleep the body/mind need for optimal functioning).

Sleep and mental health

The relationship between sleep and mental health is often complex. In many cases there are bidirectional or common genetic links. Circadian rhythm disruption is common in schizophrenia, attention-deficit hyperactive disorder (ADHD) and depression.

Diagnosis and sleep processes

Key to diagnosis is careful structured assessment, including onset, family history, sleep pattern, key sleep problems, and other symptoms related to possible causes (for example, snoring, pain, mood, stress, and use of a sleep diary) - see below. There is wide variability in individual sleep needs and across the lifespan (especially until early adulthood). Important to review medication and employment as drugs may impact on sleep and drowsiness.

Top Tips for Insomnia

Suggested management approach:

1. **Initial assessment** → 2. **Two week sleep diary** → 3. **Reassessment and implement management plan** → 4. **Two week sleep diary** → 5. **Reassess and implement follow up plan**

1. **Sleep diary** - may be helpful for making a diagnosis and involving the patient.

Provide personalised advice based on history and sleep diary. May just be simple reassurance on sleep pattern. Highlight resources (see below).

2. **Behavioral Therapy for Insomnia**

Behavioural therapy for Insomnia should be first line therapy for most types of Insomnia (part of cognitive behaviour therapy for Insomnia (CBT-I)). Although a referral may be needed for CBT-I, brief guidance on core behavioural strategies could be provided in a GP consultation and should take the place of other sleep hygiene advice for most people.

   - Core elements are: 1. **Stimulus control** (e.g. bedroom generally only for sleep, get out of bed if not sleeping after around 15 minutes (especially if agitated), controlling stimulant intake such as coffee) and 2. **Sleep restriction** (limit time in bed to time actually sleeping - from sleep diary). Other components can be tailored to individual sleep issues (e.g. changing maladaptive thinking patterns if high sleep worry), other sleep hygiene advice (e.g. [https://www.sleepfoundation.org/sleep-topics/sleep-hygiene](https://www.sleepfoundation.org/sleep-topics/sleep-hygiene)) e.g. avoiding use of alcohol and drugs to self-medicate, avoiding daytime naps (but see point 7 below).

CBT-I is either delivered via a therapist (limited NHS availability in many regions) or self-managed using a web-based approach. Free, basic phone apps are also available (e.g. "CBT-I Coach"). "Sleepstation" is an online, free (only in England currently) service on the NHS where GPs can refer patients for a tailored, supported 6-week CBT-I programme. ([https://sleepstation.org.uk/nhs_options](https://sleepstation.org.uk/nhs_options)). May be a helpful adjunct when withdrawing long-term hypnotics.

3. **Look out for Obstructive Sleep Apnoea (OSA)**

Common but unrecognised (both in children and adults). Higher risk groups include:

   - Obesity and snoring in adults
   - Mental health disorders, for example, neurodevelopmental disorders like ADHD in childhood and depression.

4. **For individuals with Insomnia and co-existing mental health problems** both the sleep disturbance and the mental health problems may need separate treatment.

   - Needs an especially careful history about timing i.e. when both problems arose relative to each other.
If sleep problems preceded onset of mental health problems, both problems need separate treatment.

- Use CBT-I for Insomnia first-line (as sleep problems initial difficulty).
- If unhelpful, hypnotic medication (preferably short-term) could be tried (research suggests use of Zopiclone). Needs careful follow-up.

If the onset of sleep problems is subsequent to or concurrent with onset of mental health problems

- Treat the mental health problem (e.g. low mood, anxiety) initially at normal treatment doses for the mental health problem. Mirtazapine has been found in some studies to have a faster onset of action than other antidepressants if Insomnia is present.

Low dose Doxepin (a Tricyclic antidepressant), is approved in the USA but not in the UK (by NICE) for those with sleep onset and sleep maintenance problems and some evidence of efficacy. However use in the UK is contentious: specialist initiation with shared care agreements may be needed in some NHS regions in the UK. Low doses of other antidepressants (Amitryptylline and Mirtazapine) are sometimes used but generally not approved and not rigorously evaluated.

Prolonged release melatonin licenced by NICE for use in adults over 55 with persistent Insomnia (but not accepted by some Clinical Commissioning groups in the UK). NICE guidance (ADHD) states melatonin may be helpful for sleep problems in children with ADHD (but using unlicensed preparations) thus if sleep problems in children with neurodevelopmental disorders liaise with community paediatrics.

Over the counter preparations (e.g. Valerian (“Kalms”), “Nytol”/antihistamines) are widely used but efficacy studies are inconclusive and safety concerns have been raised especially for antihistamines - long-term use is not recommended by NICE.

5. Prevention strategies should be used to prevent adverse effects of Insomnia on mental health problems in adults and adolescents.

- Research on adults has found that online CBT-I may be effective in reducing future depression symptoms in adults with depression symptoms and Insomnia.

- For adolescents, there is some evidence that CBT-I based approaches are effective at improving sleep and reducing anxiety symptoms. For younger adolescents with anxiety using a CBT-I based approach with other elements such as encouraging positive ruminations (“savouring”-focus on past successes rather than failures) improved sleep problems more than anxiety management alone. For older adolescents (12-16 years old) using a CBT-I based approach has been found to improve both sleep problems and subsequent anxiety. Added peer support may be especially beneficial to help with school relationships.

6. Mindfulness and yoga-based approaches may help sleep in some populations (children with neurodevelopmental problems, individuals with chronic pain).

Free phone apps using these approaches have been developed with modules for children (e.g. “Smiling Mind” (free), “Headspace” (costs incurred), and these may be helpful, but these have not been rigorously evaluated for efficacy.

7. Daytime naps may enhance performance in certain groups prone to accumulate sleep deficits including older adolescents or young adults (especially males), shift workers, the elderly and high-performance athletes.

Naps are generally discouraged in guidelines mainly because they reduce the sleep drive. However, when impairing sleep deficits are difficult to avoid for some populations (e.g. related to circadian phase shifts (older adolescents, elderly) or in shift workers) there is some evidence to suggest that short naps may reduce cognitive and performance impairments associated with sleep deficits and may not have a significant detrimental effect on sleep (naps ideally should be under 20 minutes and in the first two-thirds of the wake cycle).
8. Limited number of NHS specialist sleep clinics (but increasing)

As there are not many sleep assessment centres particularly for non-respiratory sleep problems, GPs should contact their CCG to find out where to refer someone and even where centres exist should advise patients that there could be a long wait of more than one year sometimes to be seen.

Useful resources for GPs

- The Sleep Council: UK based site - resources e.g. educational leaflets, 30-day sleep better plan, useful sleep diary, different sleep problem scenarios https://sleepcouncil.org.uk/
- National Sleep Foundation. American site. Lot of discussions around sleep issues, educational resources and useful sleep diary and for CBTI: https://sleepfoundation.org/
- Sleep apnoea. Useful information on sleep apnoea. http://www.britishsnoring.co.uk/
- NICE guidance on management of insomnia in the short and long term https://cks.nice.org.uk/insomnia
- NICE guidance on sleep disorders in children and young people with attention deficit hyperactivity disorder: melatonin. https://www.nice.org.uk/advice/esuom2/chapter/Key-points-from-the-evidence

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Conflicts of interest

The authors declare no conflicts of interest.

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