



COGNITIVE BEHAVIOURAL THERAPY FOR INSOMNIA (CBT-I)

- **Cognitive behavioural therapy for insomnia (CBT-I) is evidence-based and the first line treatment for insomnia**
- **CBT-I is a multi-component treatment that usually includes a combination of education, behavioural and cognitive interventions**
- **The CBT-I components are chosen depending on the needs of an individual and help to change behaviours and thoughts that maintain insomnia**
- **CBT-I is highly effective and beneficial for individuals with and without other mental and physical health problems**
- **CBT-I does not improve sleep immediately because changing habits and mastering new skills takes time, but these changes are long-lasting**

Note: All words that are underlined relate to topics in the Sleep Health Foundation Information Library at www.sleephealthfoundation.org.au

Many people experience insomnia at some point in their lives. One in three people at any given time experience some symptoms, which may include difficulty falling asleep, staying asleep, waking up too early and feeling tired during the day. Please see our fact sheet on [Insomnia](#) (also available in Chinese) for more information.

Cognitive behavioural therapy for insomnia (CBT-I) is an evidence-based, short, and structured approach to treating insomnia that provides long-lasting improvements in insomnia symptoms. CBT-I has been recommended as a first-line treatment by the Royal Australian College of General Practitioners and the American College of Physicians.

1. How does CBT-I work?

The length of CBT-I usually varies depending on the individual needs of the person with insomnia, with an average duration of 4 to 8 sessions attended on a weekly or sometimes fortnightly basis.

CBT-I is a multi-component treatment, incorporating different approaches utilised to address underlying psychological, behavioural, and physiological processes and factors that underpin and perpetuate insomnia. The components of CBT-I include psychoeducation, behavioural interventions, and cognitive interventions.



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Psychoeducation

Psychoeducation is an important part of CBT-I that involves education about sleep, insomnia, contributing factors and how insomnia differs from other sleep disorders.

Factors causing and maintaining insomnia, often referred to as the 3Ps, are an integral component of the treatment. Psychoeducation involves discussion and education on each of these 3 factors, which include:

- **Predisposing** or risk factors (e.g., biological factors, genetics, traits)
- **Precipitating** or factors starting insomnia at a given time (e.g., stressful period, odd work schedules, physical or mental health problems)
- **Perpetuating** factors or behaviours that keep insomnia going (e.g., going to bed early or sleeping in late, drinking alcohol, watching TV/eating/reading in bed, trying harder to fall asleep, naps, untreated physical or mental health problems)

The perpetuating factors most often lead to the development of **Hyperarousal** or **Conditioned Arousal**, which means that the bed and/or bedroom become associated with being awake and alert. The conditioned arousal then contributes to insomnia becoming more chronic.

Discussion of the behaviours that help to maintain healthy sleep-wake habits or good sleep hygiene is a vital part of CBT-I. It may help to identify additional factors perpetuating insomnia and provide an opportunity to develop an optimal sleep routine based on the individual's needs.

Psychoeducation may involve learning about the two-way relationship between stress and sleep, and their interconnection with other physical and emotional problems.

It is also usually discussed that CBT-I improves sleep slowly because changing habits and learning new skills requires time and effort, but these benefits are usually long-lasting. Establishing these expectations about CBT-I is an important component of psychoeducation.

Behavioural interventions

Behavioural interventions are the core component of CBT-I and include sleep restriction, stimulus control and relaxation training, which will each be explained in detail below.

Sleep restriction (or sometimes referred to as **sleep efficiency therapy**) involves reducing the time spent in bed. This helps to improve sleep efficiency, which is the percentage of time spent asleep while in bed. Sleep restriction is performed until optimal sleep efficiency is achieved, which is when 85% of the time in bed is spent asleep. Achieving this level of sleep efficiency usually leads to greater sleep satisfaction and improvement in daytime performance. In some situations, however, sleep restriction will not be appropriate, such if the individual with insomnia has another health problem (e.g., bipolar disorder) that could be worsened by sleep restriction.

Stimulus control helps to break the link between the bed and/or bedroom being associated with being awake, which is referred to above as hyperarousal or conditioned arousal. Breaking this link involves re-training the brain to associate the bed and/or bedroom with being asleep as opposed to being awake. This is achieved by avoiding any activities in bed apart from sleeping, getting out of bed when unable to fall asleep within 15-20 minutes, and sleeping only at night and nowhere else but in bed. Stimulus control is performed either alongside sleep restriction, or by itself if sleep restriction is not suitable for the individual.

Stress reduction techniques or relaxation training involves learning techniques that can help to cope with short periods of stress, as well as reducing overall life stress. This may involve learning mindful breathing, visual imagery, or progressive muscle relaxation. These techniques are explained below and can be practised for a few seconds/minutes to help reduce the body's stress response (i.e., the "fight or flight" response), relax muscles, and reduce pain.

- **Mindful breathing** is a simple meditation practice that encourages a calm non-judgmental awareness of the present moment. It involves a gentle focus of attention on the breath while allowing thoughts and feelings to come and go without getting caught up in them, and bringing attention back to breathing when focus starts to drift off.
- **Visual imagery** is helpful for those who want to distract their minds away from thoughts. This technique utilises the concept of the mind-body connection and involves focusing on mental images that evoke feelings of relaxation. Most senses – vision, sound, touch, smell, and taste, can be used to build images in the mind that the body can feel as if they were real events.
- **Progressive muscle relaxation** can be particularly helpful for those who carry stress in their muscles. It involves tensing up and then relaxing different muscle groups one after another, which leads to an immediate feeling of deep relaxation and increased awareness of tension in muscles over time with practice.

The above techniques and training can be done in bed as long as they take less than 15 minutes to complete. If they take longer, they should be performed outside of the bedroom.

Cognitive interventions

Cognitive interventions involve the examination of inaccurate or unhelpful thoughts about sleep. These dysfunctional thoughts and beliefs about sleep can lead to behaviours that make sleep more difficult, which in turn, reinforce and continue these flawed beliefs.

Cognitive restructuring is used to break this cycle by identifying, challenging, and altering the thoughts and beliefs that contribute to insomnia. This may include unrealistic expectations of sleep duration and quality, anxiety about past experiences of insomnia, worry about daytime fatigue or other consequences of sleep loss.



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Homework

Homework is an important part of cognitive behavioural interventions and CBT-I is not an exception. Like any other skills, strategies learned during the CBT-I sessions require practice to become a habit.

A **daily sleep diary** helps to track and understand sleep patterns and treatment progress and determine areas that need more work.

Other homework tasks may include improving sleep hygiene practices and questioning dysfunctional thoughts about sleep when they arise.

2. How effective is CBT-I?

CBT-I can reduce the time it takes to fall asleep and the number of awakenings during sleep. This results in an individual increasing the time they stay asleep while in bed (i.e., their sleep efficiency).

CBT-I has been found to improve insomnia symptoms in up to 80% of individuals with this disorder, and 90% also reduce or stop using sleep medications. It is also beneficial for individuals that do not meet full clinical criteria for insomnia and those with mental health disorders (e.g., depression, anxiety and post-traumatic stress disorder) and other health conditions (e.g., cancer).

CBT-I has very little side effects, so risks are likely to be mild and may include things such as discomfort (e.g., confronting unhelpful thoughts and behaviours). Unlike the use of medication to treat sleep problems (see our fact sheet on Sleeping Tablets), the benefits of CBT-I do not cease at the end of therapy. Instead, sleep continues to improve if the learned strategies are used. In individuals who, in addition to insomnia, have suffered from depression, pain, fibromyalgia, PTSD, substance abuse, and menopausal hot flashes before CBT-I, improvements in these conditions are also observed.

While highly effective in easing insomnia symptoms, CBT-I does not always produce immediate improvements in sleep because changing habits and mastering new skills takes time. Stimulus control and sleep restriction require persistence as often people get less sleep at first before habits slowly change and sleep improves. Therefore, tracking progress with a sleep diary often helps to maintain motivation.

3. Who provides CBT-I?

Trained psychologists provide face-to-face or telehealth CBT-I. Discussing sleep problems with your GP can help to identify appropriate and good quality sleep services suitable for your needs in your area of residence.

Your GP can also help to create a mental health treatment plan, which currently allows to claim up to 20 sessions each calendar year through Medicare. More information about how to obtain a mental health treatment plan can be found at

www.servicesaustralia.gov.au/mental-health-care-and-medicare

Demand for CBT-I usually exceeds the supply of trained professionals, therefore other forms of CBT-I delivery have been developed, which include group, self-help, and digital forms of CBT-I.

4. Digital CBT-I (dCBT-I)

Online resources vary depending on their purpose and the amount of involvement from a provider. There are programs designed to support you while you are working with a sleep clinician (e.g., sleep tracking apps), whereas others are fully automated and require no external input. Some programs offer a mix of both, where individuals work through a pre-set program and have an option for a regular consultation with a professional.

Several evidence-based digital CBT-I programs have been developed that provide online low-cost support. Like CBT-I, dCBT-I has shown to be effective in a variety of populations including adults, children, adolescents, and individuals with co-morbid conditions, such as anxiety, depression, PTSD, substance use and some physical health conditions. Several evidence-based dCBT-I programs have been outlined below.

Sleepio is an online program developed in the UK by Dr Colin Espie. Sleepio provides a tailored 6-week program with a 20-minute session each week guided by an animated cartoon therapist "The Prof.". In between sessions, participants practise learned techniques and complete sleep diaries. The program also includes access to educational materials and an online user community, relaxation audio recordings, progress reports, email reminders and more. www.sleepio.com

Somryst (previously SHUT) is an online program developed in the USA by Dr Charles Morin and Dr Lee Ritterband, which has been tested in several countries, including Australia. It is an interactive and customised program consisting of 6 weekly sessions, which include a sleep diary, personalised sleep schedule, progress reports, Fitbit integration, printable reference materials, interactive quizzes, and homework. www.somryst.com

ThisWayUp Managing Insomnia is an Australian free online 4-lesson self-paced CBT-I program. It was designed to be completed within 2 months, which can be completed either independently or with support of your existing clinician (e.g., psychologist). The self-help version of the program is completely automated and has 5-day lockout periods between lessons to allow time to complete the learning activities and practice new skills. The prescribed version of the program allows your regular clinician to view your progress and check in should you require further assistance. <https://thiswayup.org.au/programs/insomnia-program>

RESTORE is a web-based interactive program developed by Dr Norah Vincent at Cobalt Therapeutics in the USA and is available both in English and Spanish languages. It consists of 7 sessions designed to be completed within 5 weeks, which also include reading downloadable educational materials related to sleep hygiene and between-session practice tasks. www.cobalttx.com/Products/restore.html

A Mindful Way is a 6-week online self-help program developed by Dr Giselle Withers in Australia. It is grounded in CBT-I and Mindfulness training principles. Mindfulness is particularly helpful to individuals with a high level of pre-sleep worry or rumination and helps to let go of trying to sleep. It consists of weekly online interactive 2-hour modules



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that are completed at your own pace, readings, a course workbook for reflective exercises, downloadable meditation recordings, and weekly quizzes. The mindfulness practice of 15-30 minutes is encouraged each day. www.amindfulway.com.au

CBT-I Coach is a free mobile application designed as a digital supplement to assist individuals participating in face-to-face CBT-I therapy. The app is based on a therapy manual, *Cognitive Behavioral Therapy for Insomnia in Veterans*, but can be used by other populations as well. The app features include an interactive sleep diary, a sleep schedule "prescription" that can be adjusted by the sleep clinician, customizable reminders for sleep diary logs and hygiene practices, and additional tools like relaxation exercises.

www.ptsd.va.gov/appvid/mobile/cbticoach_app_public.asp

Note: The above-mentioned dCBT-I programs have published peer-reviewed research supporting their effectiveness. The Sleep Health Foundation does not endorse programs or products, and the above list is provided for information only.

4. Group CBT-I programs

A group setting offers many benefits including reduced treatment cost and the opportunity for clients to share and learn from each other about their insomnia experiences. There are several group CBT-I programs available in Australia.

Towards Better Sleep is a Brisbane-based group CBT-I program that was established in 2002 by Clinical Psychologist Kathryn Smith and Psychiatrist Dr Curt Gray. This program uses evidence-based techniques such as sleep education, behavioural techniques, correcting faulty thinking and relaxation strategies. The group is held in 4 x 1 hour sessions over a 6 week.

The insomnia workshop at Sydney Woolcock Insomnia Clinic is a specialised insomnia program, consisting of 2 group sessions and 2 individual consultations.

Goodnight insomnia at Sleep Matters Insomnia Solutions is a Perth-based CBT-I group program. This program consists of 4 x 2 hour sessions and include regular CBT-I components.

5. Self-help literature

Carney, C. E. & Manber, R. (2013). *Goodnight mind: Turn off your noisy thoughts and get a good night's sleep*. New Harbinger Publications.

Carney, C. E. & Manber, R. (2009). *Quiet Your Mind and Get to Sleep: Solutions to Insomnia for Those with Depression, Anxiety, or Chronic Pain*. New Harbinger Publications.

Jacobs, G. D. (2009). *Say Good Night to Insomnia: The Six-Week, Drug-Free Program Developed at Harvard Medical School*. St. Martin's Griffin.

Silberman S. (2009). *The Insomnia Workbook: A Comprehensive Guide to Getting the Sleep You Need*. New Harbinger Publications.

6. Where can I find out more?

More information about digital CBT-I programs can be found here:

www.tuck.com/sleep/best-online-cbt-programs

More information about CBT-I can be found here:

www.sleepfoundation.org/insomnia/treatment/cognitive-behavioral-therapy-insomnia

For information on other sleep related topics visit the Sleep Health Foundation Information Library at www.sleephealthfoundation.org.au. The underlined topics in this article are covered in detail there.



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