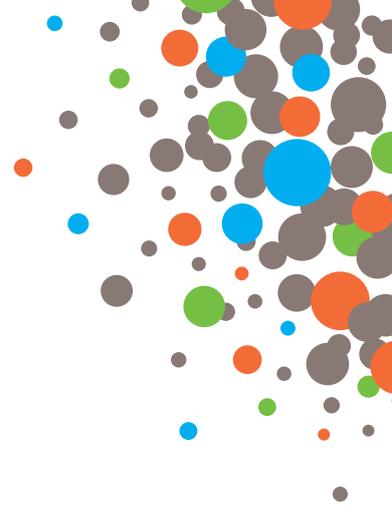




The National Centre of Excellence  
in Youth Mental Health



Evidence to Practice

# Assessing and responding to sleep problems in young people seeking help for mental health difficulties

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A guide for clinicians

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## Introduction

The importance of sleep to individuals' health and wellbeing is increasingly being recognised and understood. Yet, many young Australians are not getting enough sleep, with some experiencing significant sleep problems.<sup>1</sup> Detecting and treating problematic sleep in young people is critical, since it is associated with impaired functioning (e.g., school attendance, school/work performance and relationships) and mental health difficulties.<sup>2</sup> In contrast, optimal sleep is associated with good quality of life and wellbeing<sup>3</sup> and reduced experiences of anxiety<sup>4</sup> and depression.<sup>5</sup>

This resource is designed to assist those working clinically with young people to understand the risk factors that are associated with problematic sleep, many of which are modifiable. Interventions with demonstrated effectiveness in young people with sleep disturbances will be discussed.

## Normal vs abnormal sleep

During adolescence (ages 10–19), young people experience a combination of biological, social and cultural influences that may alter their sleep.<sup>6</sup> Biological changes associated with puberty, including a delay in melatonin secretion and the circadian rhythm, cause adolescents to feel sleepy later in the evening.<sup>2</sup> In addition, social and developmental factors – including increased school demands, access to engaging social activities (e.g., via the internet, mobile phones), use of substances and reduced parental influence – are likely to exacerbate these biological changes.<sup>6–8</sup>

## What helps and harms young people's sleep?

Table 1: Risk and protective factors for adolescent sleep.<sup>9</sup>

Risk factors	Protective factors
Evening caffeine use (e.g., energy drinks, coffee, black and/or green tea, chocolate)	<b>A positive family environment (calm, organised)</b>
Tobacco use	<b>Good sleep hygiene (dim light, low activity, low noise before bedtime)</b>
Computer, internet use, or gaming*	<b>Parents/carers setting a regular bedtime for adolescents on school nights</b>
Evening light	
Pre-sleep worry	

\* Whilst blue light emitted from devices has been proposed as a mechanism through which sleep is negatively affected, evidence to support this hypothesis is currently lacking.<sup>10</sup> Factors that have been linked to significantly delayed or shorter sleep time are: using multiple devices at bedtime (i.e., more than four), more interactive media (e.g., gaming), and the duration of evening use (i.e., >90 minutes).<sup>11–15</sup>

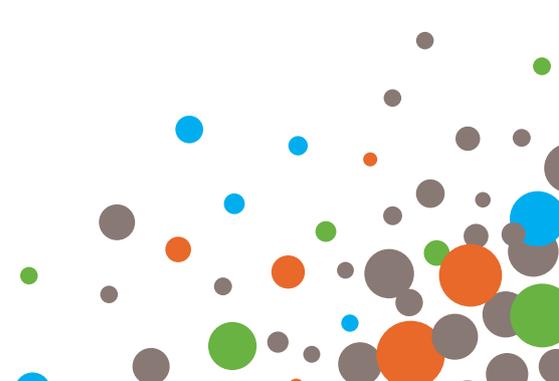
Problematic sleep typically presents as daytime sleepiness (i.e., the desire to have more sleep, morning sleepiness and oversleeping), difficulty falling asleep and/or staying asleep and not getting enough sleep. Generally, less than seven hours' sleep per night is considered to be insufficient for adolescents (age 14–17 years) with a recommended amount of eight to 10 hours, whilst anything less than six hours is insufficient for young adults (18–25 years), with a recommended guide of seven to nine hours.<sup>16</sup> Problematic sleep may present in the absence of mental health difficulties, or can co-occur with a mental health disorder. Sleep problems are considered to be clinically significant when they persist for some time (i.e., more than three months) and impair daily functioning.<sup>17</sup>

Some young people experiencing problematic sleep may meet criteria for a *sleep disorder*. Insomnia disorder and delayed sleep phase disorder (DSPD) are the most prevalent sleep disorders among young people.<sup>17</sup> One in five young people can meet diagnostic criteria for one of these sleep disorders,<sup>18,19</sup> with the most common symptom being *difficulty falling asleep*.

In addition to difficulty falling asleep (i.e., sleep-onset insomnia), the key symptoms of insomnia are difficulty maintaining sleep, an inability to return to sleep after early morning awakening and 'unrefreshing' sleep. The onset of insomnia is usually early adulthood but it can be in childhood or adolescence.<sup>17</sup>

DSPD is a circadian rhythm (i.e., 'body clock') disorder,<sup>17</sup> characterised by difficulty getting to sleep at a desired time, difficulty waking in the morning and excessive sleepiness during the day (especially the morning). When a person with DSPD is free to sleep when they want, they show improved sleep quality and duration for their age, just at a later time of the night (e.g., after midnight and/or weekend bedtimes more than two hours later than weekday bedtimes). They will also wake much later in the morning when free to do so.

There are currently no quantitative criteria to easily distinguish 'normal' from 'abnormal' or pathological sleep disturbance.<sup>20</sup> The distinction ultimately comes down to the severity of symptoms, and the degree of distress and functional impairment associated with the symptoms.<sup>17</sup>



## How prevalent are sleep problems among young people?

Overall, about 20% of adolescents report difficulty with daytime sleepiness (e.g., falling asleep in school, being too sleepy to do things, oversleeping) and 20–26% struggle to get to sleep.<sup>2</sup> Sleep disturbance appears to be considerably more common among adolescents seeking help for mental health difficulties; one study reported a prevalence of 71%.<sup>21</sup> A challenge for clinicians is that young people who are experiencing clinically significant sleep problems often don't report them as a concern.<sup>21</sup> Instead, young people and their parents may perceive sleep disturbances to be a 'normal' part of adolescence.<sup>21</sup> Therefore, young people should be routinely asked about the quality of their sleep in assessments. For more detail around sleep assessments, see the section in this resource called 'A clinical framework for assessing and treating young people presenting with comorbid sleep problems'.

## Which comes first for young people – sleep problems or mental health difficulties?

There is evidence of an association between sleep problems and mental health difficulties across all ages.<sup>21</sup> Sleep problems have usually been considered to be symptomatic of adolescent mental health difficulties, but recent evidence suggests the relationship is bidirectional, and that they likely share neurobiological, genetic, psychological, social and age-related risk factors.<sup>22–25</sup> Sleep problems are suggested to be a risk factor for the development of depression<sup>26</sup> and escalating anxiety symptoms in adolescence.<sup>27, 28</sup> For this reason, clinicians should directly target sleep problems within treatment, rather than assuming that they will resolve as a side effect of mental health intervention.<sup>20, 23</sup>

## Does worry about sleep, or preoccupation with sleep, make things worse?

When young people lie awake for extended periods, this is an ideal environment for them to worry. Worry about sleep<sup>29</sup> and an individual's *perception* of how well or badly they sleep, plays an important role in the development and maintenance of sleep difficulties.<sup>8, 30</sup> For adolescents with DSPD, specific worries about how sleep difficulties will impact on their school performance, relationships, mood, family relationships and health contribute more to difficulty falling asleep than generalised worrying.<sup>8</sup> Adolescents who worry a lot about their sleep, and perceive themselves as experiencing sleep difficulties, *even when they do not*, may be at risk of developing 'a genuine sleep deficit' due to a cycle of worrying about their sleep.<sup>30</sup> Therefore, targeting worries that occur when the young person goes to bed – either directly or indirectly – form an important part of treatment.

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**Sleep quality should be assessed in all young people presenting to mental health services. Careful assessment is necessary to detect problematic sleep**

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## A clinical framework for assessing and treating young people presenting with comorbid sleep problems

### Assessing sleep problems and engaging in treatment planning with young people

- Sleep quality should be assessed in all young people presenting to mental health services. Careful assessment is necessary to detect problematic sleep.
- Ask brief screening questions about the young person's time spent awake, both at the beginning and during the night, using the Brief Sleep Screening model (Figure 1). This model suggests how to differentiate sleep patterns associated with two common sleep disorders (insomnia and DSPD). This screening can take place following broader clinical assessments of the young person's mental health, level of functioning and wellbeing.
- Ask very specific questions based on the last few nights' sleep, in addition to broad questions about sleep patterns over a longer time period.
- It is essential that the young person completes a sleep diary to prospectively monitor their sleep. Stress that there is no need for them to 'clock watch'; rather, they should note their sleep estimates based on their best guess.<sup>23</sup> A sleep diary template and more guidance on how to use one are provided [here](https://www.sleepfoundation.org/sites/default/files/inline-files/SleepDiaryv6.pdf) (sleepfoundation.org/sites/default/files/inline-files/SleepDiaryv6.pdf). In assessing functioning, it can be helpful to ask 'how would your life and your ability to do your day-to-day tasks change if your sleep problems were to completely go away?'<sup>31</sup>

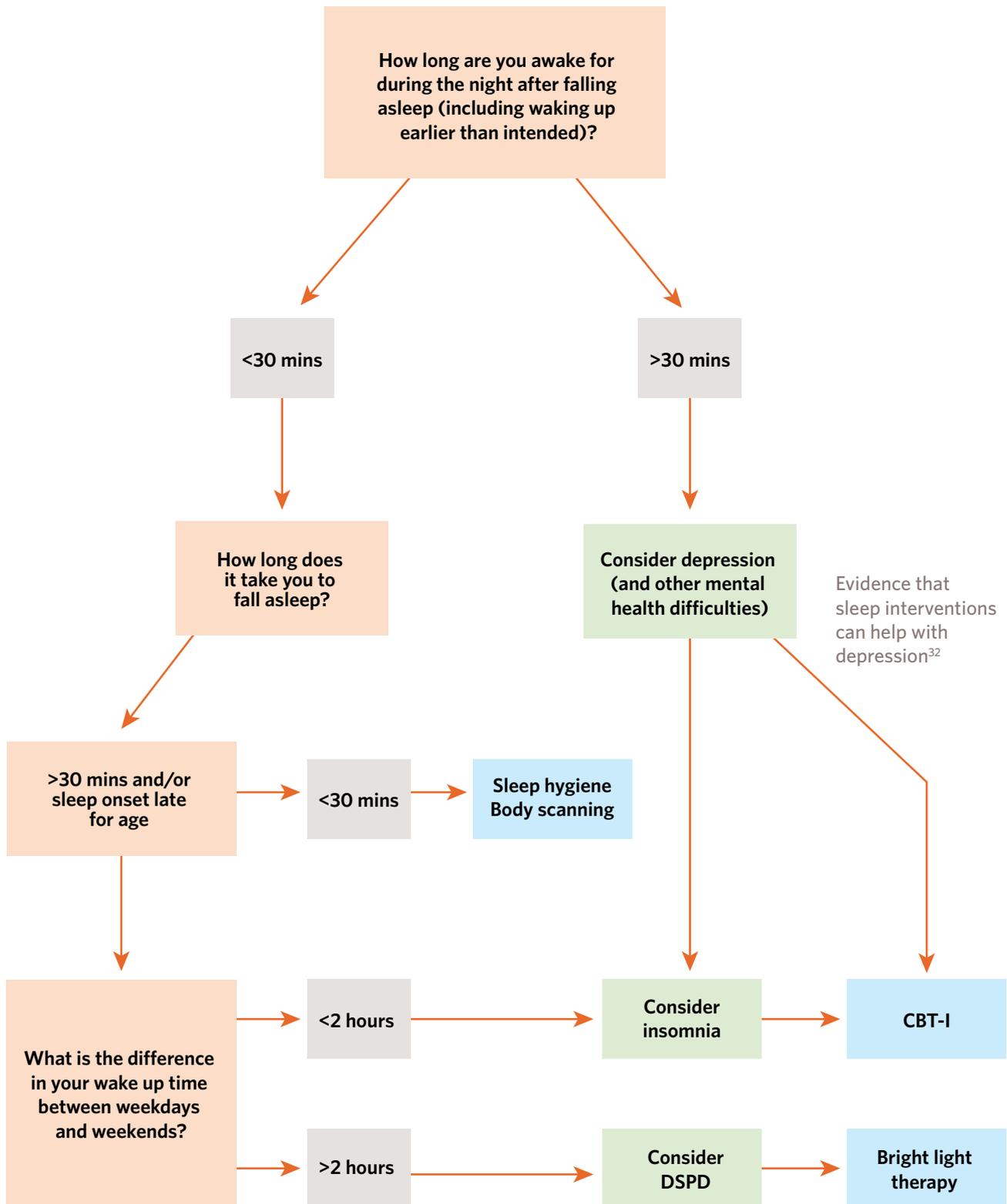
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**“Implementing and maintaining a sleep diary is crucial to any sleep assessment or intervention.”**

Clinician.

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Figure 1: Brief Sleep Screening Questions and Potential Treatments



## Treating sleep problems experienced by young people

### What works for DSPD?

As DSPD's major contributing factor is a delayed circadian rhythm, treatment aims to help the young person to change their behaviours around bedtime and wake-up time, so that they move their sleep time earlier. The treatment with the best evidence for use in young people with DSPD is bright light therapy.<sup>1, 33-35</sup> This requires the person to get up gradually earlier each day and expose their eyes to bright light immediately after waking up (i.e., outdoor light [without looking directly at the sun] or artificial light devices). This helps to reset the circadian rhythm to an earlier time, so that the young person can fall asleep earlier and wake up more easily (for more guidance on how to treat DSPD see the 'Helpful resources' section).

It's important to note that young people may struggle to adhere to the 'best-treatment' protocol for bright light therapy. It has been suggested that planning a more gradual shift in bedtimes (moving to 15-20 mins. earlier per week) may better promote mastery and control.<sup>20</sup>

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**“ It is important to set realistic expectations of treatment and in particular to let the young person know your sleep may get worse before it gets better”**

Clinician

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### What works for insomnia?

Cognitive behavioural therapy for insomnia (CBT-I) is the best practice treatment for adult insomnia.<sup>36, 37</sup> CBT-I has been adapted for young people with demonstrated effectiveness and can be delivered in individual, group and online formats.<sup>1, 6</sup> Each element of CBT-I is described below. Behavioural strategies are usually offered first. More detailed guidance about how to use CBT-I can be found in the 'Helpful resources' section.

#### 1. Sleep restriction

Sleep restriction therapy aims to reduce the amount of time spent awake in bed and involves reducing time spent in bed so that it equals the amount of time actually spent asleep.<sup>31</sup> The young person can achieve this by significantly delaying their bedtime, but maintaining a fixed wake-up time, using a range of steps. While there is evidence to demonstrate the effectiveness of this therapy for young people,<sup>38</sup> sleep restriction should nonetheless be used cautiously<sup>7</sup> and is not recommended for young people who have – or who are suspected to have – bipolar disorder, or who experience seizures.<sup>31</sup>

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**“ Emphasise that when things get worse, it's really important to keep going with the intervention. Your body is learning to reset to a better sleeping pattern”**

Clinician

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#### 2. Stimulus control

Stimulus control aims to reduce the amount of time the young person spends awake in bed, engaging in non-sleep related activities.<sup>31</sup> Typical instructions include:

1. going to bed only when sleepy
2. bed is only to be used for sleep and sexual activity
3. if sleep does not occur within 15-20 minutes, or the person is becoming irritable or anxious about not sleeping, then get up from bed, *go to another room* and perform a calm activity (e.g., reading, practising a mindfulness activity) until feeling sleepy. Avoid 'clock-watching'
4. return to the bedroom when feeling sleepy, turn the light off and attempt sleep. Repeat these steps as much as needed
5. get up at the same time seven days a week, regardless of how much sleep has been achieved.

#### 3. Sleep hygiene education

Sleep hygiene education provides an important rationale for treatment strategies and may help in increasing a young person's treatment adherence.<sup>31</sup> Good sleep hygiene refers to habits that promote good quality sleep (e.g., getting up and going to bed around the same time each day, avoiding caffeine close to bedtime etc.). The goal of sleep hygiene is not 'to fall asleep' but rather to establish an environment that is conducive to sleep.

#### 4. Relaxation exercises

Targeting physiological reactivity before bedtime with relaxation exercises (e.g., deep breathing, progressive muscle relaxation) may be particularly beneficial for young people who describe difficulties 'switching off' and those presenting with somatic complaints (e.g., deep muscle pain, headaches).<sup>31</sup>

#### 5. Cognitive strategies

Assess the young person's worry related to their sleep patterns, along with any generalised worrying at night. Behavioural experiments are strongly recommended, particularly targeting cognitions related to the relationship between sleep, energy levels and daytime impairment.<sup>7</sup> Ideally this can support young people to shift from catastrophic and black-and-white thinking patterns toward

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more helpful cognitions (e.g., 'daytime energy levels are like elastic: they can be stretched quite easily'). This shift then creates room to explore lists of 'energy-generating' and 'energy-sapping' activities, empowering young people to take more control in managing daytime tiredness.<sup>7</sup> It can also be helpful to target rumination, thought-suppressing attempts and self-criticism using cognitive and mindfulness-based strategies.<sup>27</sup>

## Scaffolding and adapting sleep interventions for young people

Implementing recommended strategies can be difficult and often requires an already sleep-deprived young person to initially sleep even less. The following approaches may be helpful in scaffolding treatment for young people with DSPD or insomnia. They may also be helpful in treating young people with sub-threshold sleep disturbance.<sup>1</sup>

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**“ The step-by-step treatment plans for sleepy young people can be hard to remember when they leave. Write the plan down on a piece of paper or on a whiteboard, and have them take a photo of it with their phone”**

Professor Michael Gradisar, sleep expert

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### Motivational interviewing

- Goal setting and motivational interviewing can be important to increase adherence.
- Adolescents may particularly benefit from the support of their family and friends when implementing sleep intervention strategies. If involved, family and friends also need to understand the rationale of treatments and expect that things may get worse initially.
- Highlight and praise any treatment gains and problem-solve barriers together.

### Activity scheduling to build wind-down and wake-up routines

- To aid night-time sleepiness, maximise exposure to daytime light, and reduce stimulating activity before bed. Try to cease interactive electronic use (including phones, computers and internet) one hour before bedtime<sup>39</sup> and turn devices to bedtime mode.

- Wake-up routines can support the shift to fixed wake times and are particularly important if the young person is spending too much time in bed. Normalise 'grogginess' on waking and introduce activity scheduling and goal setting to support getting out of bed.
- It is important to ensure the young person has 'something to get up for', particularly if they are feeling depressed and unmotivated.

### Creating an individualised treatment summary

- Collaboratively decide five changes the young person can make to improve their sleep within an individualised treatment summary. This can be shared with family members.

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**“ If possible, I always try to include parents in a sleep intervention for adolescents to ensure they understand the rationale and everyone is on the same page”**

Professor Michael Gradisar, sleep expert

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### What role should sleep medications and supplements have in treating sleep disorders?

Current evidence indicates that sleep medications are not recommended for young people. When sleep medications have been compared against CBT-I in adults, they produce similar sleep improvements to CBT-I, but their therapeutic effect ceases as soon as the medication stops.<sup>40</sup> In contrast, long-term sleep improvements are found with CBT-I.<sup>40</sup> Risks associated with a young person becoming dependent on sleep medication, or experiencing side effects, need to be considered.<sup>20</sup> Prescribing sleep medications may ultimately exacerbate sleep problems, as maintaining factors are unlikely to be addressed.<sup>20</sup>

### Melatonin use and young people

Melatonin has been used for young people with DSPD and delayed sleep timing.<sup>29,33,35</sup> However, there is limited evidence for its effectiveness in treating DSPD and there are some safety concerns about using it with adolescents.<sup>1</sup> Therefore, bright light therapy is considered a preferable first-line treatment.<sup>1</sup>

The use of prescribed melatonin needs to be carefully tailored to the individual's delayed sleep, and taken gradually earlier each evening. The young person also needs to remain in dim light for many hours in the evening, so as not to counteract the effects of the melatonin. In Australia, Circadin (sustained release melatonin) is the only Therapeutic Goods Administration approved form

of melatonin available via a GP, although Circadin has no evidence of effectiveness and safety in young people and is unlikely to benefit people with DSPD. Over-the-counter versions of melatonin do not contain therapeutic levels to treat sleep disorders but may still cause adverse side effects.

### When to refer a young person on to specialist sleep services/clinicians?

If the strategies in this resource do not work for an individual young person, or fall outside the individual clinician's scope of practice, referral to a specialised sleep service should be considered. Onward referral is also recommended if another form of sleep disorder is suspected (e.g., sleep apnoea, restless leg syndrome), or if significant sleep disturbance persists following an episode of treatment.

## Helpful resources

### For young people and families/carers

- For a range of fact sheets and resources, see the [Sleep Health Foundation \(Australia\) website](https://www.sleephealthfoundation.org.au/) (https://www.sleephealthfoundation.org.au/).
- For a fact sheet on sleep for young people, see the ([https://oyh.org.au/sites/oyh.org.au/files/factsheets/OYH\\_sleep\\_youngpeople.pdf](https://oyh.org.au/sites/oyh.org.au/files/factsheets/OYH_sleep_youngpeople.pdf))
- For a snapshot of the latest research on young people's sleep, see [https://www.vichealth.vic.gov.au/media-and-](https://www.vichealth.vic.gov.au/media-and-resources/publications/sleep-and-mental-wellbeing)

[resources/publications/sleep-and-mental-wellbeing](https://www.vichealth.vic.gov.au/media-and-resources/publications/sleep-and-mental-wellbeing).

The summary report may be of particular interest.

- To learn more about DSPD, watch this [short YouTube video](https://www.youtube.com/watch?v=agnbTrD7uAo&t=1s) (youtube.com/watch?v=agnbTrD7uAo&t=1s).
- For an evidence-based approach to some myths about young people's sleep see <https://www.orygen.org.au/Education-Training/Resources-Training/Resources/Free/Mythbusters>

### For clinicians

- For treating insomnia it is best to adapt adult insomnia texts– e.g., *Cognitive behavioral treatment of insomnia: A session-by-session guide*.<sup>41</sup>
- For guidance on treating DSPD in adolescents see 'Assessment and treatment of delayed sleep phase disorder in adolescents: recent innovations and cautions'.<sup>31</sup>
- For more guidance on how to use sleep diaries and to access expert-consensus templates consult this free-to-access article by Carney and colleagues (2012): 'The consensus sleep diary: Standardizing prospective sleep self-monitoring' ([academic.oup.com/sleep/article/35/2/287/2558899](http://academic.oup.com/sleep/article/35/2/287/2558899)).
- For a detailed example of a transdiagnostic sleep intervention for young people see 'A transdiagnostic intervention for youth sleep and circadian problems'.<sup>7</sup>

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