



JM Mental Health
Independent Child and
Adolescent Psychiatry



**Why teenagers
need their sleep**



Did you know?

Sleep in young people is important for their current and future mental health.

Contents

- 3 Introduction - sleep and teenagers
- 4 - 5 Why do we sleep and what happens when we sleep?
- 6 - 7 How do we fall asleep?
- 8 - 9 What can interfere with sleep?
- 10 - 11 What can promote sleep?
- 12 Signs your teenager may be sleep deprived
- 13 What to do if you're worried your teenager isn't getting enough sleep
- 14 - 15 Sleep diary

Introduction - sleep and teenagers

We all have a bad night's sleep now and again, tossing and turning, until it's time to get up and then a day of feeling tired, out of sorts and grumpy. Children and teenagers are no different. They can miss out on a good night's sleep too but, for them, it's not just a case of feeling cranky and groggy the next day. It can have a negative impact on their growing brains. Sleep in adolescence is important for current and future mental health.

Sleepless nights are often caused by worry or anxiety so it's no surprise that mental health problems can be linked to sleep difficulties. Equally, difficulty sleeping can impact other symptoms of mental health issues.

So, to understand this and work out what to do if your teenager starts to have difficulty sleeping, let's look at sleep and how it works.

Why do we sleep and what happens when we sleep?

We need sleep in the same way that we need air to breathe and food to eat.

When we sleep our body:

- Flushes out toxins
- Repairs and rebuilds
- Grows if we're not fully grown adults.

Sleep (or lack of it) also affects the following brain functions:

- Learning
- Memory
- Decision-making
- Problem-solving
- Concentration
- Creativity

While we sleep, our brain is busy:

- Storing new (long-term) information in our memory (and gets rid of unwanted information)
- Removing toxic waste that's built up over the day so our brains can work better the next day
- Helping our nerve cells (neurons) to reorganise

By the time we are six years old, our brain is 90-95% of adult size but it still needs a great deal of development before it starts to function as an adult brain. As part of this process, when we reach adolescence, our brain goes through a change called 'pruning'. Basically, it's a 'use it or lose it' process. Unused connections in thinking and processing are pruned away while important connections and memories are strengthened; it's about making the brain efficient and effective and it happens mostly at night. Teenagers are so busy learning, there's a lot for the brain to review when asleep, so this is one of the reasons they need more sleep.

The pruning process

The pruning process can take up to 10 years and starts in the back of the brain, reaching the front part of the brain, the **prefrontal cortex**, last. This means that in adolescence, the prefrontal cortex, the part of the brain responsible for decision-making, planning, understanding the

consequences of actions, problem-solving and controlling impulses is remodelled last. So teenagers often rely on the **amygdala** (at the back of the brain) which is responsible for emotions (such as fear, anxiety, aggression), impulses and instinctive behaviour, to manage their day.

What happens when we don't get enough sleep?

The odd bad night's sleep is one thing. Regularly not getting enough sleep leads to chronic sleep deprivation.

Chronic sleep deprivation can have a dramatic effect on:

- Mental wellbeing – increasing the risk of depression, anxiety and low self-esteem
- Academic performance at school – due to shortened attention span and poor memory
- Emotional development
- Decision-making
- Increased impulsivity

From a physical point of view, lack of sleep can:

- Reduce immunity
- Reduce insulin and increase glucose levels
- Slow our reflexes which leads to clumsiness and a greater risk of accidents, as well as reducing sporting performance



Did you know?

Research has shown that teenagers need at least 9-10 hours' sleep every night.

How do we fall asleep?

We all have a 'body clock' (called a circadian rhythm) which helps us to keep awake and tells us when we need to sleep. The body clock affects our brain, body and hormones.

Two things that help us fall asleep are:

- The release of Melatonin
- The build up of the enzyme Adenosine

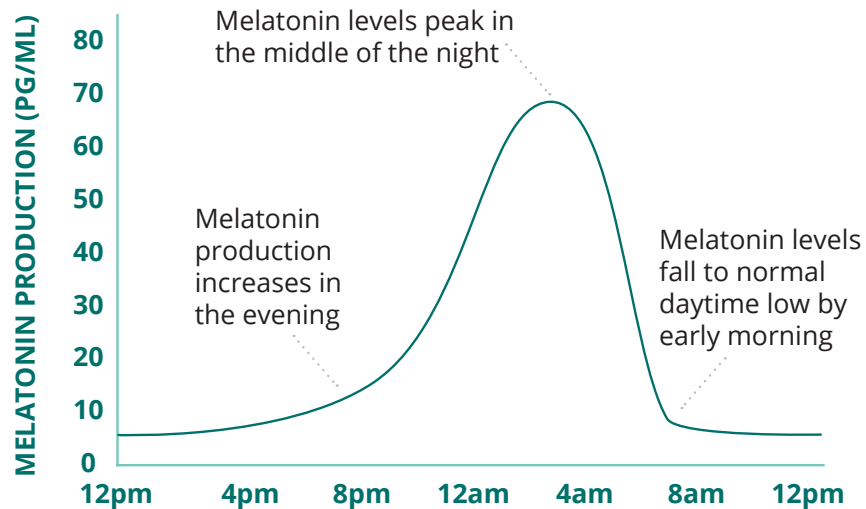
Both Melatonin and Adenosine can affect our body clocks.

Melatonin

Melatonin is a natural hormone, produced in the pineal gland (found in the brain), that helps control our sleep cycle.

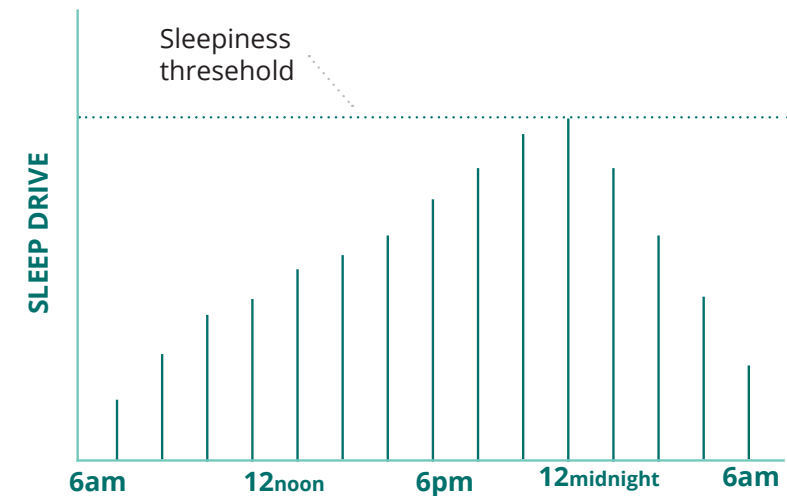
- Reduced light increases Melatonin production which tells the brain that it's time to fall asleep.
- During daylight, Melatonin levels fall

In teenagers, Melatonin is released later than in fully mature adults which is why teenagers tend to want to fall asleep later than their parents.

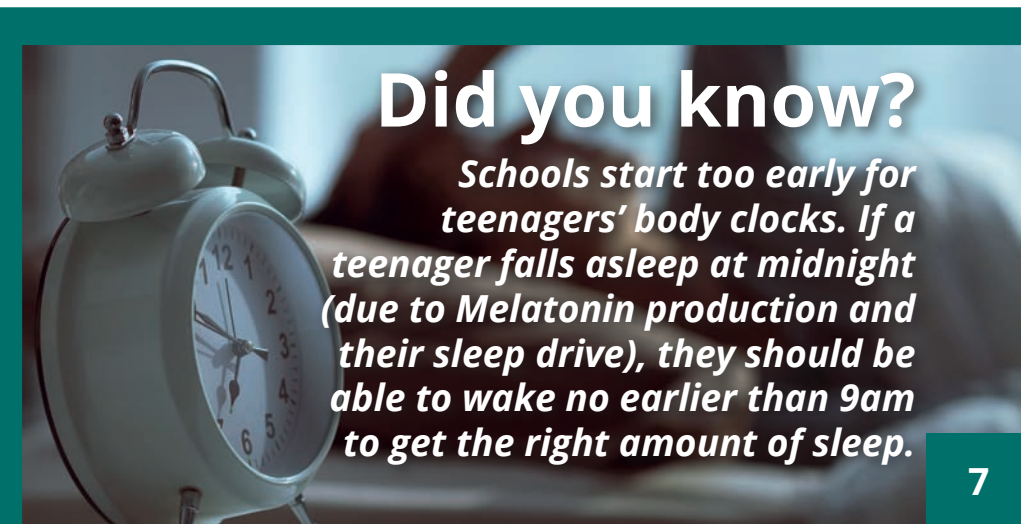


Adenosine

The **sleep drive** is low after we wake up and it increases while we are awake. Then, when we fall asleep, it reduces again. It's caused by the build-up of the enzyme Adenosine. We have to be awake long enough for the (sleep) pressure to build up which is why taking naps during the day can be unhelpful. The sleep drive builds more slowly in teenagers so they start to feel tired much later in the evening.



Research has shown that in schools that have later start times, they see improved behaviour and academic performance. There have also been experiments that demonstrate adolescents perform better in tasks later in the day compared to the morning.



What can interfere with sleep?

Blue light at night

The release of Melatonin relies on daylight and darkness. Being inside all day and using electronic devices, like smartphones (which produce a short wavelength enriched light called 'blue light') in the evening affects our body clocks by delaying the production and release of Melatonin.

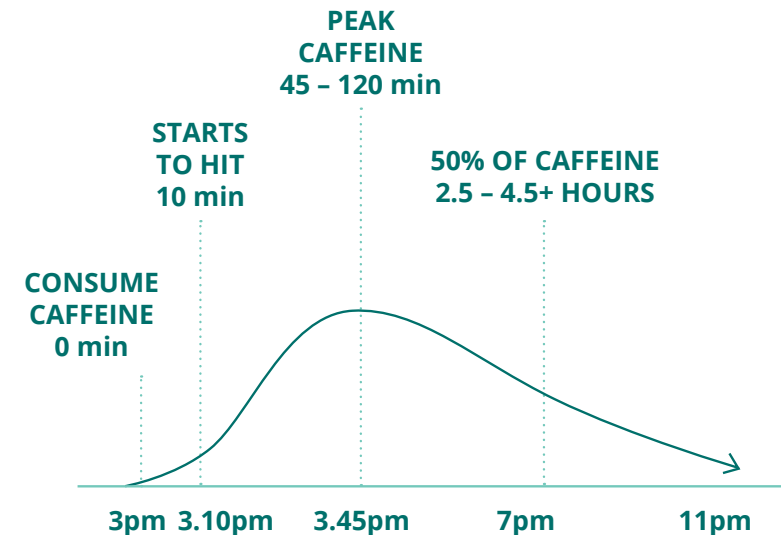
Social media

Remember the prefrontal cortex which helps us consider consequences, promotes self-awareness, logical and rational thinking? It's not yet fully developed in the adolescent brain, whilst the amygdala (responsible for emotion, pleasure seeking and novelty) is well on its way to maturity. Teenagers are more likely to look for immediate gratification and stimulation – rather than a considered good nights' sleep.

Being on social media is the modern day equivalent of what teenagers have always done: chatting with friends about what's happening in their day and their world, trying to make sense of it and where they fit in. That's a natural and necessary part of growing up. The problem is, that at night time, the novelty and stimulation this provides can make it difficult to enter restful sleep. Plus the effect of the blue light from our screens has a negative effect on Melatonin production. So put away electronic devices at least half an hour before bed and either switch off/put on silent to avoid checking on them through the night.

Caffeine

Caffeine is a stimulant that stays in our bodies for 4-6 hours. It blocks Adenosine, the sleep promoting chemical. So, if you take caffeine too near bedtime, you struggle to get to sleep. Ideally, we shouldn't drink caffeinated drinks after lunchtime. Energy drinks can have large amounts of caffeine so always check the label and avoid drinking after lunchtime.



Did you know?

Electronic devices, like phones and tablets, produce around 30-50 lux – that's around half the illumination of a room light.

Remember...

- We need light during the day and a dark bedroom to help us fall asleep at night
- Reduce screen time in the evening
- Reduce or avoid daytime naps
- Avoid caffeinated drinks after lunchtime

What can promote sleep?

'Sleep hygiene' is a term that describes good sleep habits – not just clean sheets and pyjamas! It means the best bedroom environment and daily routines that promote good, uninterrupted sleep.

Be regular

Set a regular sleep/wake schedule as this helps your body clock settle into a good sleep pattern.

Temperature

Body and bedroom temperature can affect our sleep. A drop in body temperature before we fall asleep is a good signal to our bodies to prepare to sleep. We can help our bodies cool down by having a warm bath or shower before bed (the warm water dilates the blood vessels so more heat is lost from our surface skin which cools us down); equally, exercise can have the same effect (but not immediately before bed).

Beds are for sleeping

They are not studies, TV rooms or libraries. The brain is easily conditioned into making associations between environments, thoughts and feelings. So if we study, read, listen to music or watch TV while we're in bed, our brains start to associate that environment (bed) as somewhere to read, listen or watch... not sleep. Ideally, the bedroom should be a cool, quiet, dark and comfortable environment.

Sleepy food

Tryptophan, an amino acid, is found in milk, cheese, bananas, pistachios and seeds (such as pumpkin), turkey, tofu, eggs, oily fish, even morello cherries. Tryptophan eaten one hour before bed turns into Melatonin so, if your teenager is hungry, a small bedtime snack can help them sleep better. A mug of warm milk, a banana milkshake, even cheese on a wholewheat biscuit can help.

Did you know?

For a good night sleep a room temperature of around 70°F (20°C) works for most people.

Remember...

- Try to sleep and wake at consistent times
- Set the temperature – both body and room
- Create the right bedroom environment
- Have a small bedtime snack of a 'sleepy' food

Signs your teenager may be sleep deprived

One night of sleep deprivation can have a negative effect on mood and thinking. Chronic sleep deprivation can have a dramatic impact on a teenager's life, affecting their mental wellbeing and reducing academic performance at school. Signs of sleep deprivation to look out for:

- Taking a long time to wake up
- Over-sleeping
- Feeling sleepy and irritable during the day
- Falling asleep during the day
- Overly impulsive behaviour
- Difficulty concentrating



Did you know?

One night of sleep deprivation can have a negative effect on mood and thinking.

What to do if you're worried your teenager isn't getting enough sleep

- Don't make them go to bed earlier – it can just increase frustration or anxiety
- Allow them to sleep in when they have an opportunity, such as the weekend
- If you feel that they're on their phones too much before bed, talk to them. Find out what they are getting out of being on their phone and what is important to them. There may be other ways for them to achieve the same end but in a different way
- Keep extracurricular activities after school to a reasonable level; they need to have some down time before bed.

We know that teenagers with mental health difficulties and developmental conditions are more likely to experience sleep difficulties. Please discuss this with your clinician to consider additional options.

Useful resources...

www.sleepfoundation.org

The sleep foundation has useful articles reviewed by medical experts as well as having many sleep products

www.sleepstation.org.uk

Sleepstation is a sleep improvement programme delivered online, tailored to personal sleep diaries, after setting up an online account.

www.thesleepcharity.org.uk

The sleep charity runs courses, has articles and has a national sleep helpline where you can talk to someone about your sleep

www.rcpsych.ac.uk/healthadvice/problemsdisorders/sleepingwell.aspx

This leaflet also covers psychological and medication treatments

www.cerebra.org.uk

Cerebra is a national charity supporting families with children with brain conditions. There is information on all sorts of support including sleep.

Daily sleep diary

Use this sleep diary to talk through and monitor your teenagers sleep pattern and behaviours.

Somnia Adaptation: Kevin Morgan, Beverley David, Claire Gascoigne (2007).
Clinical Sleep Research Unit Loughborough University UK

	Day 1	Day 2	Day 3
Enter the weekday (Mon, Tues, Wed. etc.)			
At what time did you go to bed last night?			
After settings down, how long did it take you to fall asleep?			
After falling asleep, how many times were you awake during the night in total?			
At what time did you finally wake up?			
At what time did you get up?			
How long did you spend in bed last night (from first getting in, to finally getting up?)			
How would you rate the quality of your sleep last night?			
1 2 3 4 5			

Day 4	Day 5	Day 6	Day 7



JM Mental Health

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Trust your instincts as a parent or carer

We understand that this is a very stressful time for everyone. We want to support you and work with you to improve the situation.

We make no judgements. We listen to you and your child. We make absolutely sure we understand what is going on. Remember, you are not alone. This is a safe place. We are here to support and care for you all.

If you have concerns about your child's moods and behaviour, then you need to act sooner rather than later. Please discuss any concerns with your clinician.

Dr Julia Moss
Founder of JM Mental Health



Helping children and teenagers and their families with mental health difficulties.

www.jmmmentalhealth.co.uk