

Sleep

- **Resilience** – being able to cope, or find help, when things get tough.
- **Wellbeing** – feeling ok, healthy, and safe, or doing well and feeling good.

Our **'Sleep'** theme looks at how and why you can take steps during the day to sleep better at night. This can also be called 'Healthy Sleep Practices'.

Resilience and Wellbeing!

What does sleeping well mean?

- Feeling sleepy when it is time for bed and feeling awake and energised when it is time to get up.
- Finding it easy to get to sleep at night and then sleeping through the night without waking up.
- All of these can be signs that you are getting enough sleep.

Did you know sleeping well helps you to....

- Focus and think clearly.
- Learn and remember better.
- Have more energy to do more fun things in the day.
- Feel better about yourself and others.
- Be more resilient if you face challenges in the day.

The Science: Sleep-Wake Cycle

Our sleep-wake cycle is what happens inside your bodies to prepare them for sleep. A balanced sleep-wake cycle can help you to build up healthy sleep practices.

When we talk about what is happening inside our bodies, we are talking about our body releasing hormones. Hormones are chemicals inside our bodies which impact how our bodies work and how we feel. Two of the hormones involved in the sleep-wake cycle are...

Cortisol

Gives us energy and wakes us up.

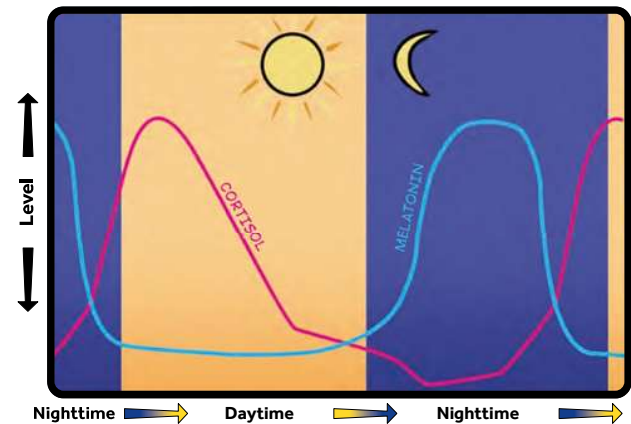
Melatonin

Makes us tired and helps us to sleep.

We want our Cortisol to be high in the morning and then go down at night but we want our melatonin to be low during the day and then go up at night. This cycle can be seen in the graph below.

There are ways we can control these hormones and other processes involved in helping us sleep well, and we have called these our **Sleep Steps**.

Find out more about Sleep Steps below!



This graph shows what happens to our cortisol and melatonin in our sleep-wake cycle during the day.

- In the Morning, our cortisol levels rise to the highest point and our melatonin levels fall to the lowest point, and this gives us energy and signals to our body to wake up. This is the 'wake' part of our sleep-wake cycle.
- Then, during the day, our cortisol levels begin to fall, reaching their lowest point in the evening, as it begins to get dark. This is when our Melatonin rises to its highest point and our cortisol reaches its lowest point. This tells our body it is ready to sleep and is the 'sleep' part of our sleep-wake cycle.
- The next morning, the same cycle continues, as can be seen in the last section of the graph.

There are many different things in our environment that can affect our cortisol levels, and these can be called 'signals'.

What 'signals' impact our body?

Our body reacts to signals that we find in our environment. These can cause our cortisol levels to rise or fall. Some examples of these are....

- Daylight (sunlight)
- Exercise (movement)
- Caffeine (tea, chocolate)
- Food (what we eat and what time we eat)
- Electric lights (phones, indoor lights, TV)
- Darkness
- Body temperature

We can take steps to control these signals, these are called our 'Sleep Steps'.

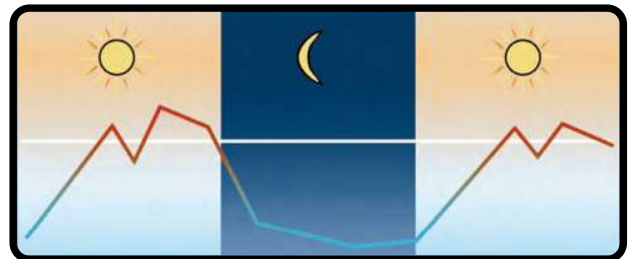
What are sleep steps?

Our sleep steps are steps we can take during the day that science has shown to help our sleep-wake cycle. Here are some examples of how we can follow sleep steps to control the signals that we give our body.

- **Daylight:** We can walk out into the daylight in the morning or even sit by an open window to have breakfast. This sunlight helps to raise our **cortisol** levels in the morning, giving us energy and making us feel awake.
- **Exercise:** We can go for a morning walk or do 20 star jumps after breakfast. Just moving our bodies more in the daytime can give us more energy and help us sleep better at night. This is because in our evolutionary past, we would be active during the day when we were hunting and running and then we would be still at night. Therefore, our sleep-wake cycle still thinks that being active means we are in the 'wake' part of our sleep cycle and that the 'sleep' part must come later.
- **Caffeine:** If we have any caffeine, for example chocolate or tea, this should be at least two hours after waking up and no later than lunchtime. This is because caffeine can get in the way of **cortisol** doing its job and cause our sleep-wake cycle to become imbalanced.
- **Food:** We should try to eat early in the evenings and avoid eating late at night because this can give us too much energy and spike our **cortisol** when we need to be getting our bodies ready to sleep.
- **Electric Lights:** In the evening, we should try to see the last bit of daylight outside and not have too bright lights on inside our houses. This is because our sleep-cycle still thinks it lives in the evolutionary past and doesn't know about electric lights. So, when we see bright lights just

before bed, the body thinks 'hey great, it must be the sun, therefore it's the morning, let's wake up' and the sleep cycle gets confused. It's trying to be helpful, but seeing bright lights makes it wake us up when we need to sleep.

- **Darkness:** A darker environment helps to tell our sleep-wake cycle that we are preparing for sleep. If we are on our phones at night, we can put a blue light filter on because blue light can raise our **cortisol** which stops us from sleeping. If you see the graph above, it shows that our **cortisol** needs to be low for us to sleep.
- **Body Temperature:** Finally, we can help our sleep-wake cycles by keeping our body temperature lower before sleep. A small drop in body temperature can signal to our brain and body that we are ready to sleep. We could do this by taking a shower or bath before bed but leaving enough time for our bodies to cool down to make this small drop happen. It would also be colder at night (when humans lived in the evolutionary past, before houses) compared with the daytime, so when we have a hot room at night, the body-brain thinks 'aha, this must be the daytime'. When our room is a little colder than the daytime, our body-brain thinks 'ooh, now this must be night-time'.



This graph shows what happens to our body temperature throughout the day. We can see that our temperature rises as we wake up and remains higher throughout the day. Then, in the evening when it begins to get dark, our temperature drops. This drop in temperature tells our body we are ready to sleep and then a rise in temperature in the morning tells our body it is time to wake up.

Bigger picture

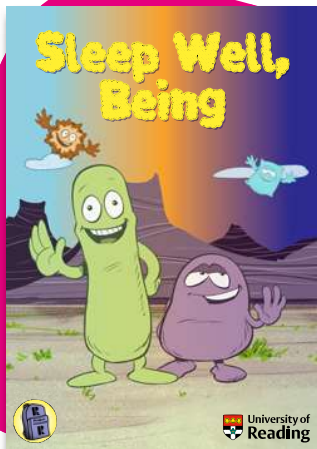
Sleeping well is not a miracle cure for your resilience and wellbeing, there are many other things that can affect you too that are outside of your control. Research does show though that the 'sleep steps' can certainly start to help, and sleeping well can be a key 'ingredient' in improving your wellbeing and resilience.

The Wellbeing Tools

A very important part of our research was our co-production workshops with young people. In these workshops, our research team, professional artists, and young people all worked together to design our 'Wellbeing Tools' for the Resilience Rucksack. For this theme, '**Sleep**', we talked about the 'sleep steps' we can take during the day to sleep well at night and how we can have a better 'sleep-wake' cycle. The young people in our workshops advised us on how to engage young people in the importance of sleep for our wellbeing. They decided on a comic and a professional pop song!

'Sleep Well, Being' Comic

This comic follows the sleep steps of our friends Zlack and Groog, as they discover what we can do during the day to make a difference to our sleep at night. Groog is struggling with his sleep-wake cycle but Zlack helps to guide him through the steps you can take to have more energy during the day and to sleep well at night. This comic is cool because you can learn more science but in a creative, interesting way!



You will have the choice to choose this Comic to go into your rucksack but if you want to find out more then **Click here to go to our website!**

'Somni – the Resilience Rucksack Sleep & Daylight Song'

With young people, we created an upbeat, uplifting and catchy pop song that will make you want to move, will lift your spirits, and motivate you for the day to come. This song is about the 'sleep steps' that we can **do in the day** because it does not help us if we are worrying about our sleep at night. Through this music, we can remember to have a go at the sleep steps in the day, and over time, sleep at nighttime will get better and better.

We have created a quiz on our website, so you can listen to the song by yourself, or with friends, and then take the quiz to link the lyrics of the song to the 'sleep steps'. The young people we have worked with are so excited to share this song with you. This song has also been released on major platforms such as Spotify, Amazon Music, Apple Music, and YouTube!



Listen and play the quiz by clicking here.



To find out more about our Resilience Rucksack Project and all the wellbeing tools, visit our website: click here!