

Do Now

Lesson 6: Good quality sleep – why it's important and how to get it



In 1964, a carefully monitored experiment took place to see how long a human being could go without sleeping. Scientists knew that lack of sleep, for this long, could lead to very serious side effects. As expected, their 17-year-old volunteer, Randy Gardner, began to exhibit these symptoms.

**Discuss: How long do you think Randy Gardner went without sleep?
What do you think the record is?**



What do you think the side effects are of long-term sleep deprivation?

I think the side effects of long-term sleep deprivation would be...

Sleep deprivation – the term used when a person has had a lack of sleep, which presents itself through negative physical and mental symptoms.

Cognitive function – a term for the workings of the mind including memory function, concentration and decision making.

Sleep hygiene - having both a bedroom environment and daily routines that promote consistent, uninterrupted sleep.



Learning outcomes:

Describe in detail the benefits of quality sleep and the issues presented by sleep deprivation.

Explain how to keep good sleep hygiene.

Discuss: How long do you think Randy Gardner went without sleep? What do you think the record is?

Answers: Randy was able to manage 11 days without sleep. Since then, no one has been accurately recorded as going 12 days without sleep. Symptoms experienced by Randy included moodiness, problems with concentration and short-term memory, paranoia, and hallucinations. On the eleventh day, when he was asked to subtract seven repeatedly, starting with 100, he stopped at 65. When asked why he had stopped, he replied that he had forgotten what he was doing.

https://www.youtube.com/watch?v=jW1Yx_INP6g



Obviously, this is an extreme case – and shouldn't be imitated. However, many of us have periods where we may not get enough sleep over a longer period of time, by having too little sleep each night. So, what effects might this have? Let's take a look in the next task...

Good quality sleep – why it's important and how to get it



We will now find out more about sleep, why we all do it, the benefits of quality sleep and some tips on what to do if you are struggling to get to sleep.

THORNDEN THREE GUIDED READING

Follow the text in your booklets. Note down any questions on them you have before we move on.



Good quality sleep – why it's important and how to get it

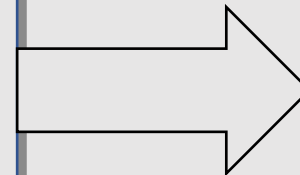


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Now answer the questions in your booklet:

1. What is REM and what happens to the brain during this sleep stage?
2. Explain three things that might happen if you don't get the correct amount of sleep.
3. Explain three benefits of good quality sleep.
4. How does sleep influence the development of your overall physique?
5. Which sleep tip do you think would be the most beneficial to you personally? Why?
6. Explain how sleep reduces stress levels. How does exercise promote better sleep?



6. Get regular exercise: Engaging in regular physical activity can promote better sleep. However, try to avoid intense workouts close to bedtime, as they may make it harder to relax.

7. Get regular exercise: Engaging in regular physical activity can promote better sleep. However, try to avoid intense workouts close to bedtime, as they may make it harder to relax. Manage stress and anxiety: Practice relaxation techniques, such as deep breathing exercises or meditation, to reduce stress and anxiety levels before bedtime.

7. Limit naps during the day: While short power naps can be beneficial for some, excessive daytime napping may interfere with your ability to fall asleep at night. If you need to nap, keep it short and avoid napping too close to your bedtime.

8. Limit liquids before bedtime: To reduce the chances of waking up for bathroom trips during the night, try to limit your intake of liquids, especially caffeine and alcohol, a few hours before bedtime.

9. Get sunlight exposure during the day: Natural light exposure helps regulate your body's sleep-wake cycle. Spend time outdoors during the day, especially in the morning, to signal to your body that it's daytime.

10. Avoid clock-watching: Constantly checking the time when you can't sleep can increase anxiety and make it harder to fall asleep. If you can't sleep, try getting out of bed and engaging in a relaxing activity until you feel sleepy again.

Remember that everyone's sleep needs are different, and it's essential to find what works best for you. By incorporating these sleep hygiene tips into your daily routine, you can significantly improve the quality of your sleep and overall well-being. If you continue to have persistent sleep issues, consider consulting your GP for further advice.

Questions:

What is REM and what happens to the brain during this sleep stage?
Explain three things that might happen if you don't get the correct amount of sleep.
Explain three benefits of good quality sleep.
How does sleep influence the development of your overall physique?
Which sleep tip do you think would be the most beneficial to you personally? Why?
Explain how sleep reduces stress levels.
How does exercise promote better sleep?

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What actually is sleep and why do we do it?

Sleep is a natural and regularly-occurring state in humans and other animals. During sleep, our nervous system becomes less active and our consciousness is diminished, meaning that we're not as aware of or responsive to stimuli from the outside world.

Although scientists are still trying to understand exactly why we sleep, it's clear that sleeping is necessary to survival. Anyone who's been without sleep can confirm that it feels horrible not to have had enough! Sleep is essential for the nervous system; a lack of it can significantly impair a person's memory, physical and cognitive functions. Some scientists believe that sleep allows our neurons to repair themselves.

There are five stages of sleep that most of us go through each night. These are stages 1, 2, 3, 4, and REM (Rapid Eye Movement) sleep. Nearly 50% of our time asleep is spent in stage 2 (except for babies and infants, who spend nearly 50% in REM sleep). Stage 2 sleep is where our brain waves become slower and our eye movements stop. As the sleep progresses into stages 3 and 4, our brains produce very slow waves called delta waves. When we're in this state, it's very hard for anyone to wake us up, and if they do manage to wake us, we feel groggy, sick, confused and disoriented.

We will now find out more about sleep, why we all do it, the benefits of quality sleep and some tips on what to do if you are struggling to get to sleep.



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During REM, breathing changes to become shallower, or more rapid. Our eyes begin to move very rapidly (hence the name Rapid Eye Movement sleep). Heart rates and blood pressure also increase during this phase. It's also during REM sleep that most people experience dreams. Dreams are still very poorly understood by scientists – nobody knows exactly why they happen.

How much sleep do I need?

The amount of sleep needed varies from person to person. A big factor in the amount of sleep a person needs is their age. For example, infants need to sleep for around 16 hours a day. Teenagers need on average 9 hours of sleep per night, and most adults require 7-8 hours of sleep per night.

What happens if I don't get the right amount of sleep?

Prolonged lack of sleep is a very serious problem, and can have extremely negative effects on your body. You can become forgetful, irritable, start having mood swings and/or depression.

A study by the Mental Health Foundation found that people who didn't get enough sleep were four times more likely to suffer from lack of concentration and relationship problems, as well as being 3 times more likely to be depressed and 2.6 times more likely to commit suicide. Researchers at the University of Warwick found that continually getting under 6 hours of sleep can make you 48% more likely to die of heart disease. Sleep has also been linked with life expectancy; adults who sleep for 7-9 hours a night live longer than those who sleep for less or longer. A lack of sleep can also affect your immune system, making you more likely to become ill.

So what are the benefits of sleep?

Sleep will help to improve your memory and sharpen your attention span. It's during sleep that your brain consolidates your learning from the day, so it's important to make sure that you are getting sleep if you want to be able to remember those important skills, facts and other things you'll need in exams! Having had enough sleep will also help you to take in your learning while it's happening in the classroom, as sleep affects your concentration. Sleep reduces stress and is one of the best ways of reducing the impact of stress, thanks to the melatonin that's released during the process of sleep. It also reduces levels of inflammatory proteins in the blood, which reduces the chance of developing conditions like diabetes, heart disease, arthritis and premature ageing.

If you've been working out, then sleep is where your muscles will do their growing: during sleep, your brain sends signals to increase testosterone and growth hormone production, which promotes the growth of muscle. So if you're aiming to develop your physique then sleep is going to be an important part of that process. Similarly, if you're aiming to lose weight, then the increased levels of growth hormone produced during sleep will help in the breakdown of lipids and will help prevent the storage of fat.





1. Create a bedtime routine: Establish a calming routine before going to bed like reading a book, taking a warm bath, practicing relaxation exercises, or listening to soothing music. The routine helps signal your body that it's time to wind down.
2. Make your sleep environment comfortable: Keep the room cool, dark, and quiet. Invest in a comfortable mattress and pillows that support your body properly.
3. Limit exposure to screens before bedtime: The blue light emitted by phones, tablets, and computers can disrupt your body's production of melatonin, a hormone that regulates sleep.
4. Be mindful of your diet: Avoid heavy meals, caffeine, and excessive alcohol close to bedtime.
5. Get regular exercise: Engaging in regular physical activity can promote better sleep.
6. Manage stress and anxiety: Practice relaxation techniques, such as deep breathing exercises or meditation, to reduce stress and anxiety levels before bedtime.
7. Limit naps during the day: Keep it short and avoid napping too close to your bedtime.
8. Limit liquids before bedtime: To reduce the chances of waking up for bathroom trips during the night
9. Get sunlight exposure during the day: Natural light exposure helps regulate your body's sleep-wake cycle.
10. Avoid clock-watching: Constantly checking the time when you can't sleep can increase anxiety and make it harder to fall asleep. If you can't sleep, try getting out of bed and engaging in a relaxing activity until you feel sleepy again.

**What do I
do if I can't
sleep?**

**How do our brains react to a good night's sleep?
Watch the clips below and then complete the table you have
been given. We'll go through the answers together afterwards.**

<https://www.youtube.com/watch?v=lzQ2siryQrM&t=2s>
<https://www.youtube.com/watch?v=A4Zs0NNF9Dc&t=59s>



Positive effects of a good night's sleep on the brain	How the brain is affected by too little sleep	How does sleep affect our learning?



These are just a few of the ideas from the clips you have just watched. You may have picked up on more – if so, please share them now

Positive effects of a good night's sleep on the brain	How the brain is affected by too little sleep	How does sleep affect our learning?
It can organise and store the day's events (forming memories)	You can't remember or concentrate as well, and can even increase risk of dementia	Information is moved from the short to the long-term memory
Vocabulary can be maintained and extended	It can make you moody and irritable	Lack of sleep leads to lack of motivation
Improves reasoning and regulating emotion	It increases the risk of anxiety and depression	It promotes ability to learn
Improves emotional well-being	It impairs judgement and performance	It helps us with problem solving abilities

Need Support? You're Not Alone

If anything in today's lesson has affected you, or you want to talk to someone, there is help available.



Mental Health & Low Mood

YoungMinds – <https://www.youngminds.org.uk>
Kooth – <https://www.kooth.com>
Mind – <https://www.mind.org.uk>

Talk to Someone

Your Tutor or Head of Year – We're here to help.
Wellbeing Team and School Nurse
Report a Concern on Satchel
Safeguarding Team with the Purple lanyards

Healthy Lifestyle

NHS Every Mind Matters – <https://www.nhs.uk/every-mind-matters>
Change4Life – <https://www.nhs.uk/change4life>

Apps That Can Help

Calm – For mindfulness and sleep.
Headspace – Meditation and stress relief.
Clear Fear – Manage anxiety (designed for young people).
MeeTwo – Anonymously talk to other teens, moderated by experts.

Eating Concerns

Beat Eating Disorders –
<https://www.beateatingdisorders.org.uk>
NHS Live Well – Eating Disorders –
<https://www.nhs.uk/mental-health/conditions/eating-disorders/>



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