
BBC LEARNING ENGLISH

6 Minute English

When do you feel sleepy?

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This is not a word-for-word transcript

Alice

Hello and welcome to 6 Minute English. I'm Alice...

Neil

And I'm Neil. And I feel terrible!

Alice

You look terrible, Neil – if you don't mind me saying so!

Neil

It's because I had to get up really early this morning.

Alice

Oh dear! What time did you have to get up?

Neil

Eight o'clock.

Alice

Oh, Neil! That isn't early! I get up at six every day. It's so peaceful early in the morning.

Neil

Hmm. Well, some people are morning people and others... aren't!

Alice

Yes. Well, today we're talking about the biological reason for this – it's all about **circadian rhythms**. They are produced by a so-called body clock in our brains that regulates our body functions: our body temperature, sleepiness and alertness, hunger, and hormone levels. Plants, animals, and many microbes have circadian rhythms.

Neil

You know a lot about circadian rhythms.

Alice

And I'll ask you a question related to them. What does the word 'circadian' mean? Is it...

a) around a day?
b) every day?
or c) twice a day?

Neil

Hmm. I'm going to say a) around a day.

Alice

Well, we'll find out whether you got the answer right or not later on in the show. Now let's talk about circadian rhythms and our internal clock.

Neil

Why do our bodies need an internal clock to tell us where we are in the day? Isn't it obvious?

Alice

No, it isn't – take jet lag, for example. We rely on the predictable cycle of light or dark in a 24-hour period to **synchronise** – or adjust – our body clocks to the environment – and if we mess about with the light and dark cycle by flying into a new time zone, it makes us feel really bad!

Neil

Good point – **jet lag** is the disruption of our circadian rhythms caused by high-speed travel across different time zones, which can cause tiredness and sleep problems. But Alice, if we rely on day turning to night to adjust our body clocks, what happens to blind people? – Because I assume their body clocks can't do this.

Alice

Blind people who have some light perception are able to synchronise their circadian rhythms to the light-dark cycle. But those who have no light perception at all... well, let's listen now to Debra Skene, Professor of Neuroendocrinology at the University of Surrey. She can explain what happens.

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Debra Skene, Professor of Neuroendocrinology at the University of Surrey

Totally blind people – they've lost that connection between the light-dark cycle and the clock. So there isn't anything wrong with the clock but the clock ticks and oscillates at its own endogenous period just the same as if I were to put you in a dark cave. Your biological internal clock would oscillate at your endogenous circadian period.

Neil

So if you're totally blind – or able to see but living in a dark cave – you have a ticking clock but with no connection to the outside world. The clock oscillates at its own **endogenous**, or internal, period.

Alice

Oscillate means to move back and forth in a regular rhythm – like the pendulum on a clock.

Neil

Do you think my endogenous clock ticks faster than yours, Alice?

Alice

It isn't a competition, Neil. And actually, mine probably ticks faster than yours since I'm a morning person. Anyway, the normal range in humans is between 23.8 to 24.8 hours. And this is also true for totally blind people.

Neil

But their clocks are free-running – they don't get cues from the outside environment telling them when to wake up, when to eat, when to feel sleepy. So that means they might feel sleepy at the wrong time of day – for example, when they're at work. Or alert in the middle of the night when they should be asleep.

Alice

It's worth talking about people who do **shift work** too – which means work that takes place outside the traditional 9 to 5 day.

Neil

Shift workers may suffer similar problems to blind people because they are trying to sleep against the clock. They might sleep in the day and work at night for example – which goes against the light-dark pattern.

Alice

There are some long-term health problems associated with shift work – certain cancers, heart disease, and obesity.

Neil

So what can people do to help adapt their circadian rhythms to a night shift schedule?

Alice

Well, let's hear what Professor Debra Skene has to say about it.

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Debra Skene, Professor of Neuroendocrinology at the University of Surrey

We do think that exercise and food, caffeine, may be able to modulate in some way, so has some influence on circadian timing, but not as strongly as the light-dark cycle.

Neil

So the strongest influence over our circadian rhythm is the light-dark cycle. We can't alter night and day, after all!

Alice

Debra Skene says that other cues such as food and exercise will **modulate** – or adjust – the body clock. So eating three well-balanced meals at regular times each day can help your body clock adapt to an unusual schedule.

Neil

Taking **naps** – or short sleeps – just before you start a night shift can help you feel more alert. And keeping to the same sleep schedule every day will also help.

Alice

And don't forget caffeine – my old friend! A cup of coffee works wonders for me in the morning. Now remember I asked: What does 'circadian' mean? Is it... a) around a day, b) every day or c) twice a day?

Neil

And I said around a day.

Alice

And you were... right! Well done, Neil. The term 'circadian' comes from the Latin *circa*, meaning 'around' (or 'approximately'), and *diēm*, meaning 'day'. Now, let's hear the words we learned today.

Neil

They are:
circadian rhythms
synchronise
jet lag
oscillate
endogenous
shift work
modulate
naps

Alice

That's the end of today's 6 Minute English. Don't forget to join us again soon!

Both

Bye!

Vocabulary

circadian rhythm

a cycle that tells our bodies among other things when to sleep, get up, and eat

synchronise

adjust

jet lag

disruption of our circadian rhythms caused by high-speed travel across different time zones, which can cause tiredness and sleep problems

oscillate

move back and forth in a regular rhythm

endogenous

internal

shift work

work that takes place outside the traditional 9 to 5 day

modulate

adjust or change

naps

short sleeps