Hi! I'm Kirsty Vant, I am a nurse and a sleep therapist.

This presentation is about how to get your body clock working well so you get the best performance out of your body and also get to sleep well.
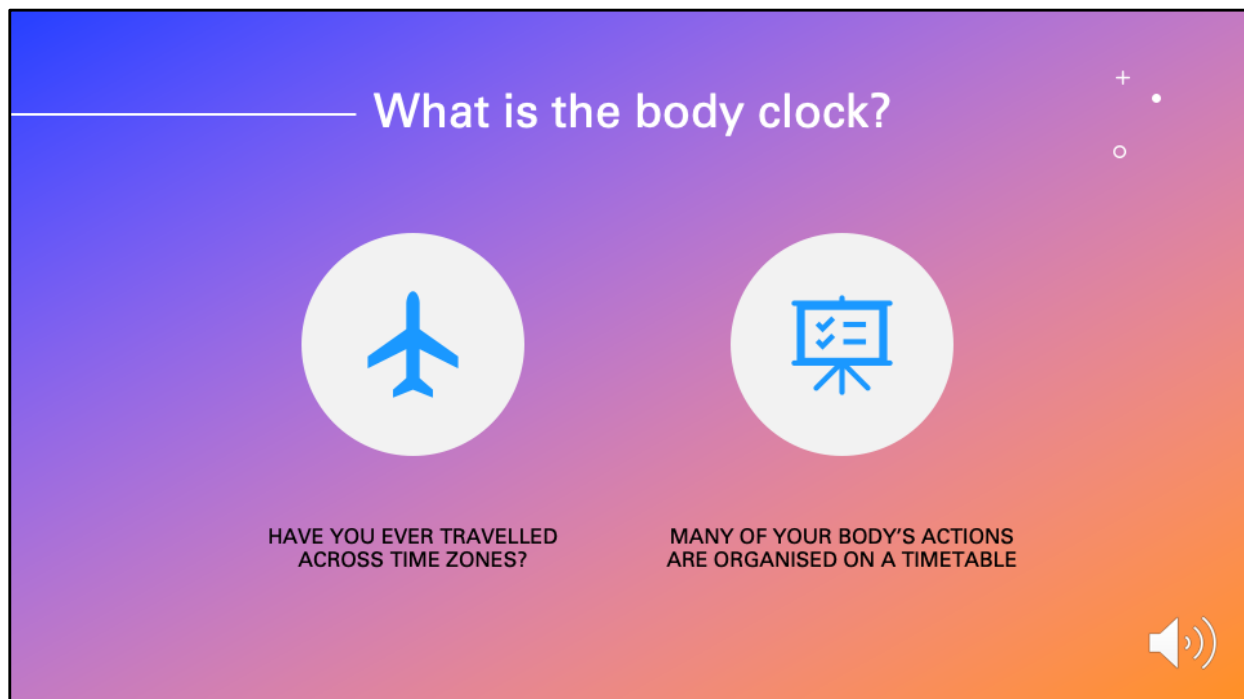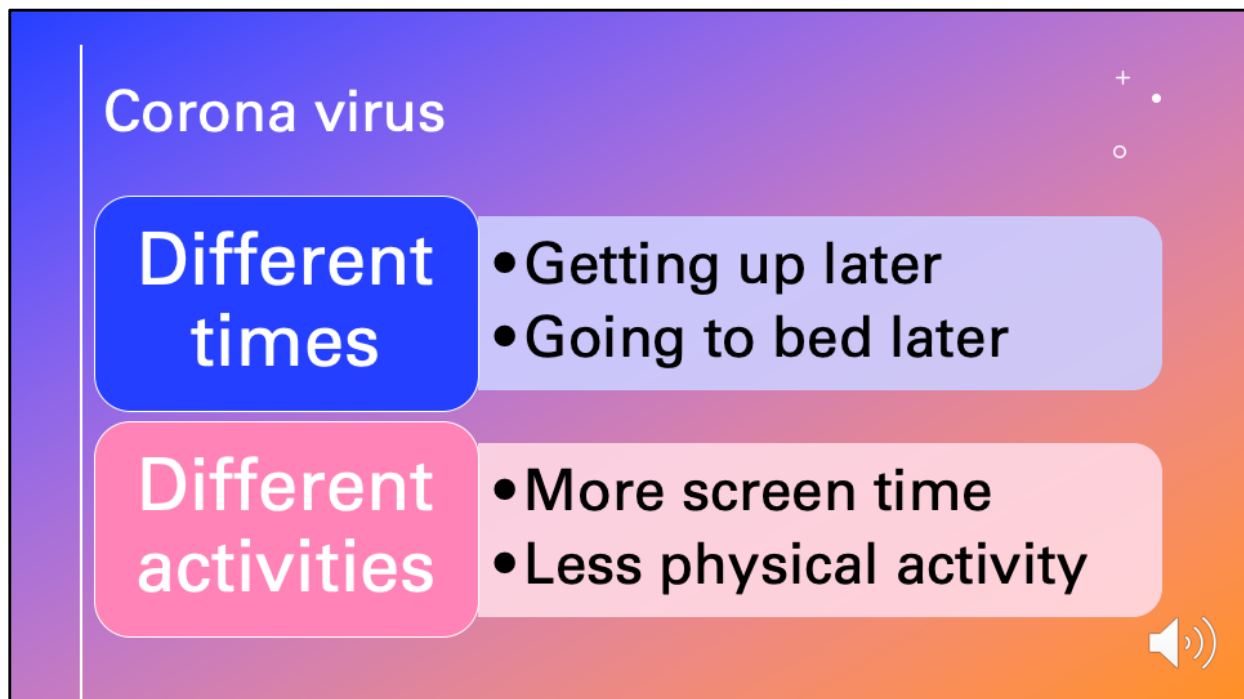
Your body is made up of trillions of cells and inside each cell is a clock gene. The clock genes are co-ordinated by a special area of the brain called the Suprachiasmatic nucleus (or SCN for short). The SCN acts like a master clock sending and receiving messages to and from the clock genes.

If you've ever been on a long haul flight or travelled across time zones you may have been jet lagged, this is when your body clock is out of sync with where you are, and it can feel pretty uncomfortable.

Many of the actions that your body does automatically (such a digesting your food) are linked to your body clock. If you were to wake up at 3am and trying to eat a full roast dinner you would be likely to get indigestion, because that's when your body clock expects you to be asleep not eating, so it's not prepared.

Corona virus

Different times
- Getting up later
- Going to bed later

Different activities
- More screen time
- Less physical activity

Many people have found that their body clock has been effected by the Corona Virus lockdown measures. Perhaps this means that you don't have to get up at the same time as you did before lockdown and you might be going to bed a lot later.

It's not just the timings, the things that you are doing during the day may also be different from before lockdown. You may be doing school work online and perhaps you're also socialising online so your overall screen time may have increased.

Changes in daily timings and activities mean your body clock has to adjust to using different clues to work out where you're at in the 24 hour clock. Luckily Humans are very adaptable so by giving your body clock the right cues it should easily be able to adjust.

Worry and sleep

Stress hormones stop you sleeping

- Worries about the virus
- Worries about friends
- Worries about school
- Worries about sleep

In the last slide we thought about some of the practical effects of the Corona virus on sleep, but there are also some psychological factors to take into consideration. When Humans are worried, we produce stress hormones to help us deal with whatever problem we are facing. When we have high levels of stress hormones we can't sleep. This is actually a great safety feature for humans; the last thing you want to happen when you're being chased by a predator is for you to feel tired and drop off to sleep! However, we can release stress hormones in response to anything that is really worrying us, not just when we're being chased.

There has been a big increase in worry for lots of people over the past few months; maybe you're worried about catching the virus, or worrying about someone who has it. You might be worried about the effects of lockdown on your friendships or on your studies. You might even be worried about your sleep, and the more you worry, the more stress hormones you produce and the harder it is to sleep.

We will think a bit more about how to manage these worries later in the presentation.

Understanding about how your body works

HOW TO GIVE YOUR BODY THE RIGHT CLUES TO SET THE CLOCK

HOW TO MANAGE YOUR WORRIES

There are two main parts to this presentation, the first is identifying the easiest clues that you can give your body clock to help it tell the right time. This will mean you're ready to wake up when you need to and ready to go to sleep when you needs to. The second is thinking about some of the techniques you can try to help manage your worries and keep your stress hormones low.

Setting the clock - Zeitgebers

- Light
- Routine
- Environment
- Food and drink
- Exercise
- Temperature

We call the clues that the body clock is looking for "Zeitgebers", which means "time givers" in German.

There are hundreds of "time givers" hidden throughout our day but I'm going to focus on the ones that are easiest for you to identify and use to help you sleep. The ones I will talk about today are:
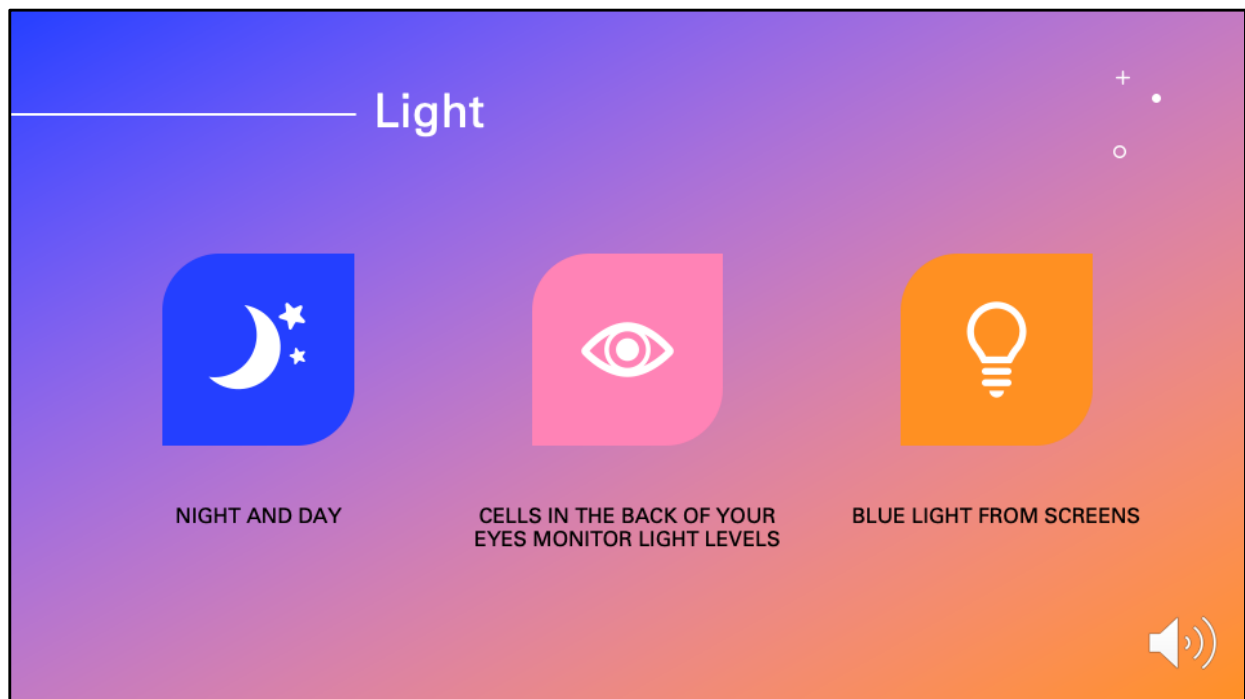
Light

Routine

Environment

Food and Drink

Exercise

Temperature

Perhaps not surprisingly, light is the biggest clue your body clock has as to whether it's night or day.

Specialised cells in the back of your eyes monitor the light levels around you and this is communicated to the SCN in the brain, which helps to set the clock.

The specialised cells are very sensitive to blue light which makes up the light from screens. When the cells sense this light they send a powerful message to the brain which can confuse the body clock and make it react as if it is day-time even if it's not.
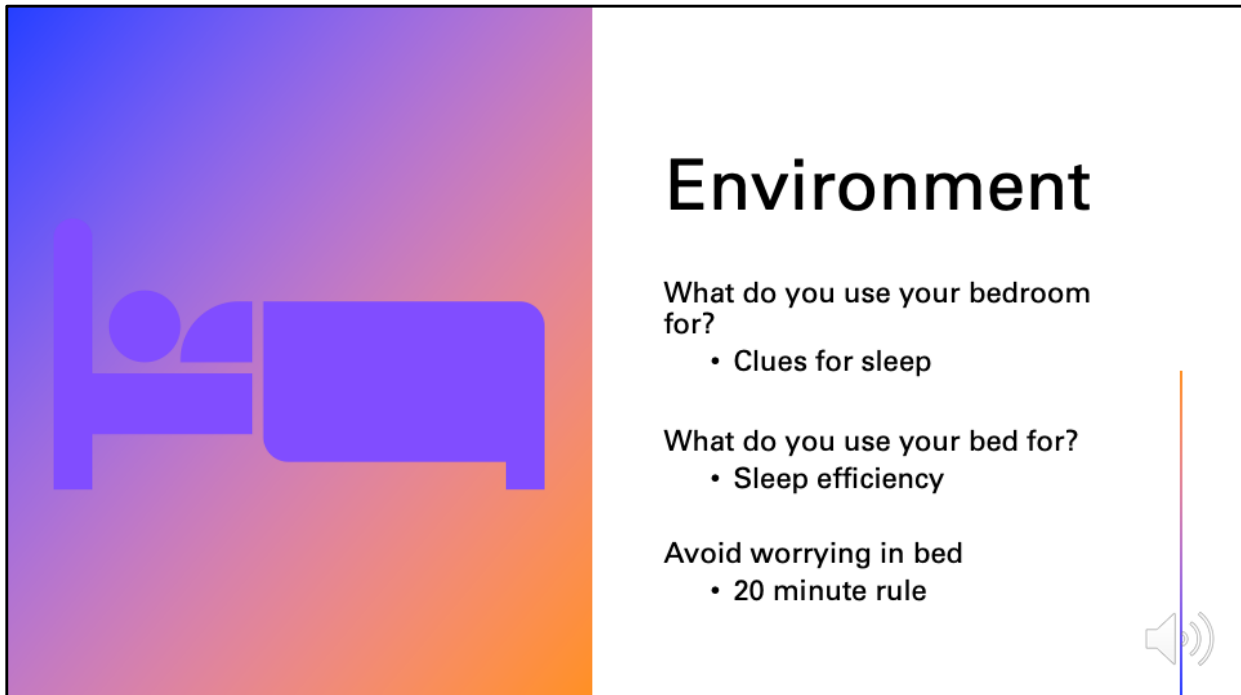
If you can, it is best to stay away from screens for at least 60 minutes before you try to go to sleep. However, many people use their screens as a way to switch off and unwind at the end of the day and if this is you, then using the night mode is a really good way to cut down on the blue light.
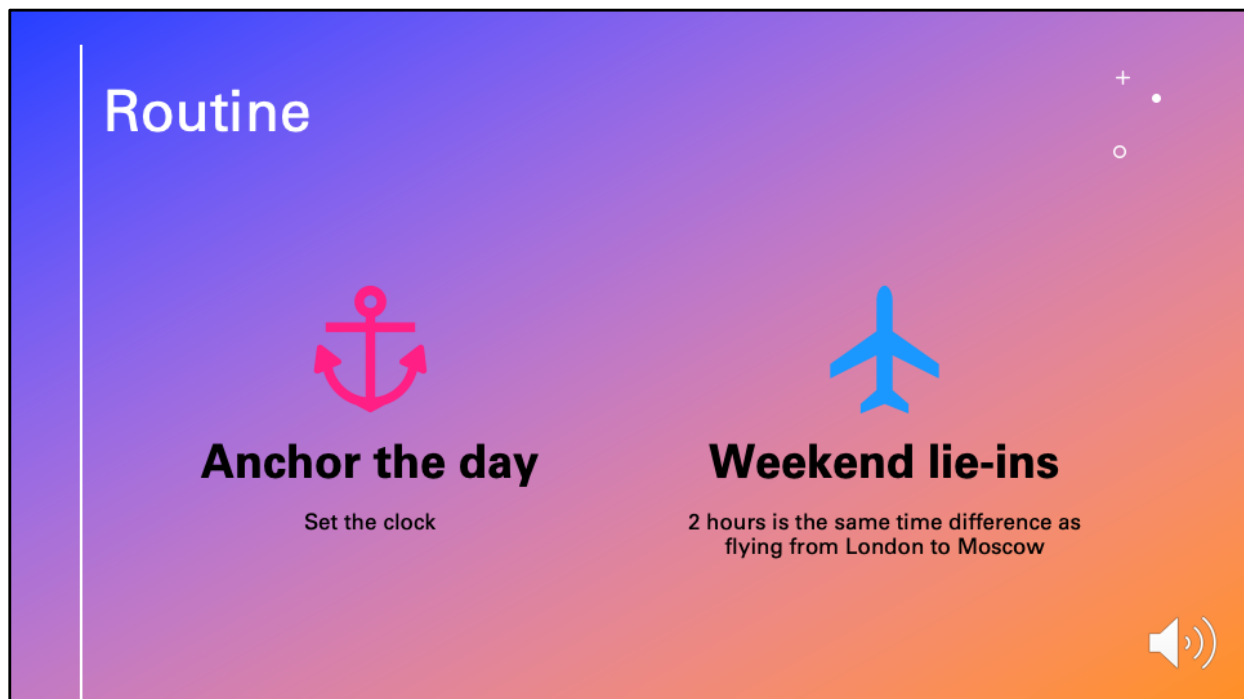
The next big clue for the body clock is routine. If you always do the same things at the same time, then your body knows what to expect and this helps to keep time.

Sometimes your routine needs to change and our body clocks need to adapt. One of the ways you can help your body clock to adjust is to make an anchor for your day, this means that even if other parts of your routine change, this bit stays the same. The best part of the day to anchor is the morning. Although you can choose when you get into bed, you can't always control what time you drop off to sleep, but you can choose what time to wake up.

Weekend lie-in are something that many of us enjoy and if you're sleeping well they are a great way to relax and catch up after the week, but if you're having difficulty sleeping you should probably give up lie-ins for a few weeks as they do make it harder for the body clock to adjust. Did you know that a lie-in of 2 hours is the same time difference as if you flew from London to Moscow? No wonder some of us feel a bit jet-lagged on a Monday morning!

Environment

What do you use your bedroom for?
- Clues for sleep

What do you use your bed for?
- Sleep efficiency

Avoid worrying in bed
- 20 minute rule

Your environment give you lots of clues about what time it is. If I was to ask you what item of furniture first comes into your mind when you think of your bedroom, you might well say "Bed", this shows the way in which your brain is looking for connections all the time between where you are and what you will be doing. One of the difficulties of lockdown is that many people are spending more time in their bedrooms socialising or studying than they do sleeping.
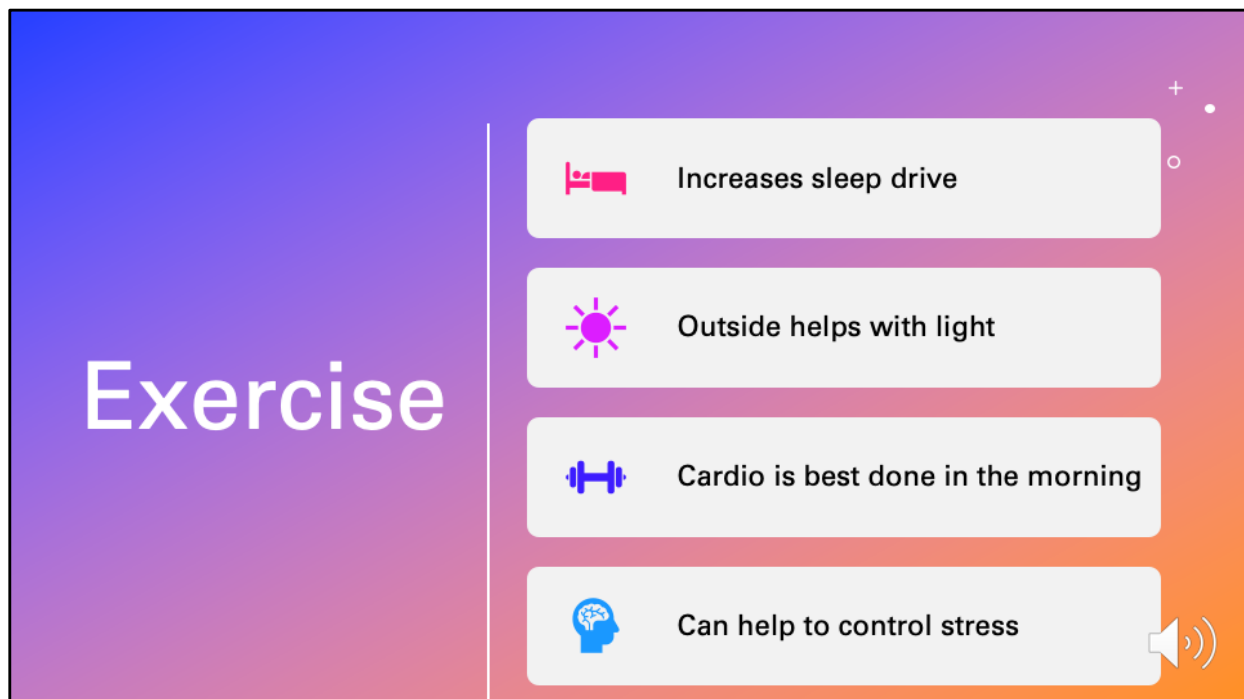
This is also true of the bed. Beds can be a comfortable place to be while you're chatting to friends, watching YouTube or even studying. You may find that you are spending more time in your bed not sleeping. Some people find that when they then get into bed to try and sleep their brain doesn't feel tired at all, and this can be frustrating and worrying. Lying in bed in the dark feeling stressed about not sleeping makes the problem worse.

To help the body clock try to only lie in your bed when you want to sleep and if you're trying to sleep and can't for more than 20 minutes, get out of bed and do something calm for a bit (like reading) until you feel sleepy and ready to try again.

Food and drink

Regular mealtimes

Snacks vs hunger

Caffeine and sugar

Eating meals at regular times is one of the main clues for your body clock about what time of day it is. The human digestion system seems to work best if it has a bit of time when it's off duty, that's why we call it "break-fast" because we have fasted overnight.
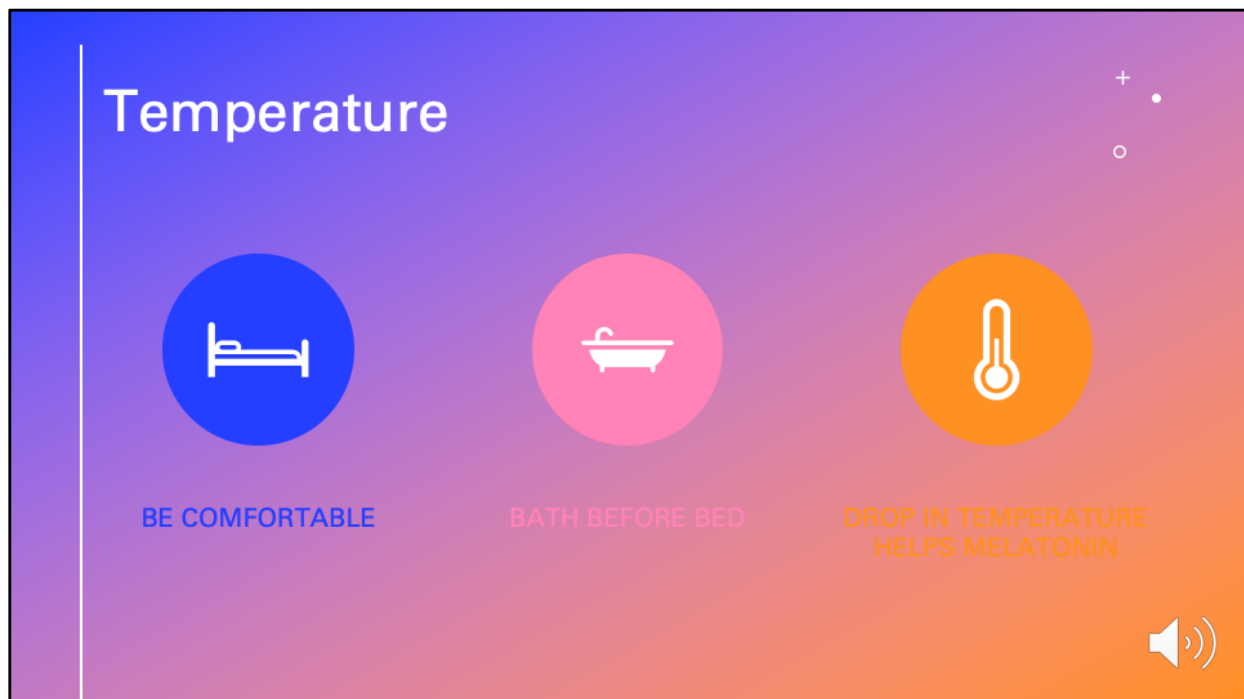
Being really hungry when you're trying to sleep isn't very helpful either, if you're hungry your body may release the stress hormones to give you the energy to go and find food and that can stop you sleeping. If you're having difficulty getting to sleep and you feel a bit hungry it could be an idea to have a snack BUT make sure you choose something to snack on that's not going to make it harder to sleep. Some food and drink are high in caffeine and sugar which can confuse the body clock as they hide the signs of tiredness.

Exercise

- Increases sleep drive
- Outside helps with light
- Cardio is best done in the morning
- Can help to control stress

Exercise is great for helping the body clock. A lot of the exercise our bodies get each day doesn't really feel like exercise, for example if you imaging a day at school, you may be walking to the bus stop, you will walk between lessons (maybe carrying a heavy book bag), you may kick a ball about on the field at lunchtime etc. and all of this activity adds up. Now imagine in lockdown, how far you have to walk to get from your bedroom to the kitchen or the bathroom and you can see how many of us are moving a lot less since lockdown began!

Some people have used the lockdown to work on fitness and this really helps the sleep drive, whatever time of the day you do it, however it will have the most beneficial effect on you body clock if you do it in the morning, especially if you're doing cardio work. If you're able to exercise outside this will increase the benefits.

After you have exercised your body will release endorphins which help you to relax and this also has a positive effect on sleep.

Temperature

BE COMFORTABLE   BATH BEFORE BED   DROP IN TEMPERATURE
                                       HELPS MELATONIN

It's really important to feel comfortable when you go to sleep, that means not too hot and not too cold.

Did you know that as you drop off to sleep your core body temperature drops a little? Scientists have found that this drop in body temperature is one of the clues your body clock looks for to tell it to start releasing the hormone melatonin which helps you get off to sleep at the start of the night.

If you're having trouble getting that sleepy feeling it can help to have a warm bath around 30 minutes before you want to go to sleep, when you get out the bath your body temperature will drop a little bit and this can remind the body clock that it should be releasing your sleep hormones.
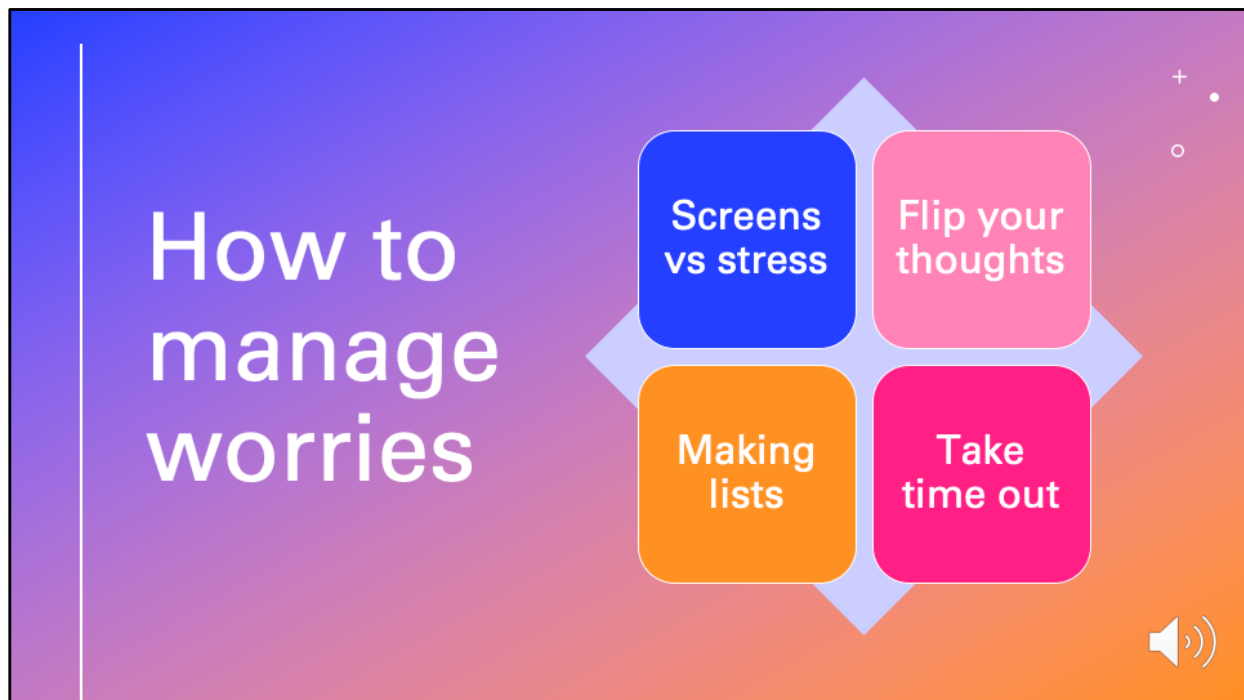
Although you know that screens have blue light which confuses the body clock, the impact of the light is not as bad as the impact of the stress hormones. This means that if you're feeling worried and looking at your screen helps to calm you down, you shouldn't rule it out. If you're going to use your screen think carefully about what you want to watch, social media is not a good idea and neither is anything really loud or scary. You should also make sure you have night mode on.

When your worries are going round and round in your head it can be very hard to see the balanced view. And you get caught up in the negatives, "flipping the thought" is when you try to think how you would describe the worry from a positive point of view e.g. If you are worried that you haven't had enough sleep in the last few days, you might start thinking about everything you have still managed to do even though you were tired.

When it's late at night it is sometimes best to give your mind a break from working on your worries, if you have a pen and paper by your bed you can write the worry on it and then "park" it, that means not going back over it in your head until the morning. In the morning, look at it and decide if this something you need to act on or is something you can let go of.

Finally, in the day time, make time for relaxing and doing things you enjoy. The more time off you give your stress system in the day, the more it gets used to relaxing!

TOP TIPS
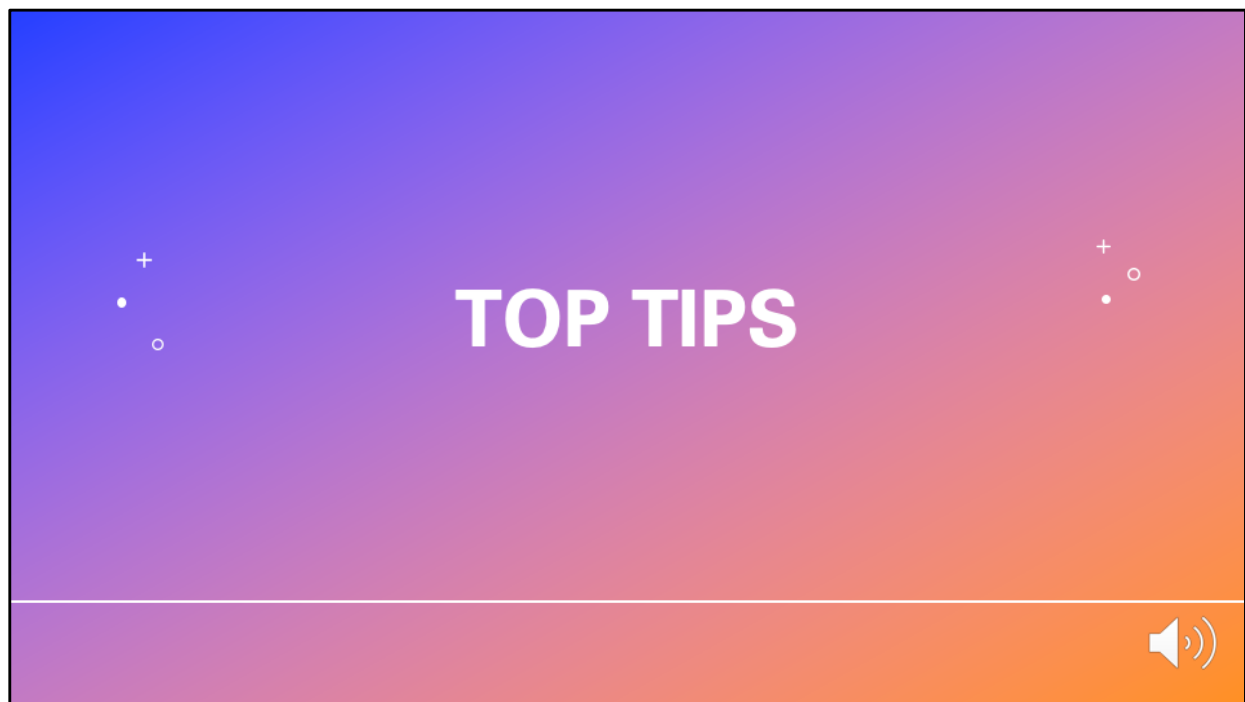
Help your body clock

- Anchor your day in the morning
- Have meals at regular times
- Get exercise every day
- Keep a good relationship with your bed
- Remember the 20-minute rule
- Use night mode for screens and avoid social media at night
- Make time to relax
- Keep on top of worries