

Wake up to the importance of sleep



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What Is Sleep?

“Sleep is the intermediate state between wakefulness and death; wakefulness being regarded as the active state of all the animal and intellectual functions, and death as that of their total suspension”

*Robert MacNish
The Philosophy of Sleep (1834)*

What Is Sleep?

“A reversible behavioural state of perceptual disengagement from and unresponsiveness to the environment.

A complex amalgam of physiological and behavioural processes, typically (but not necessarily) accompanied by postural recumbency, behavioural quiescence, closed eyes etc.”

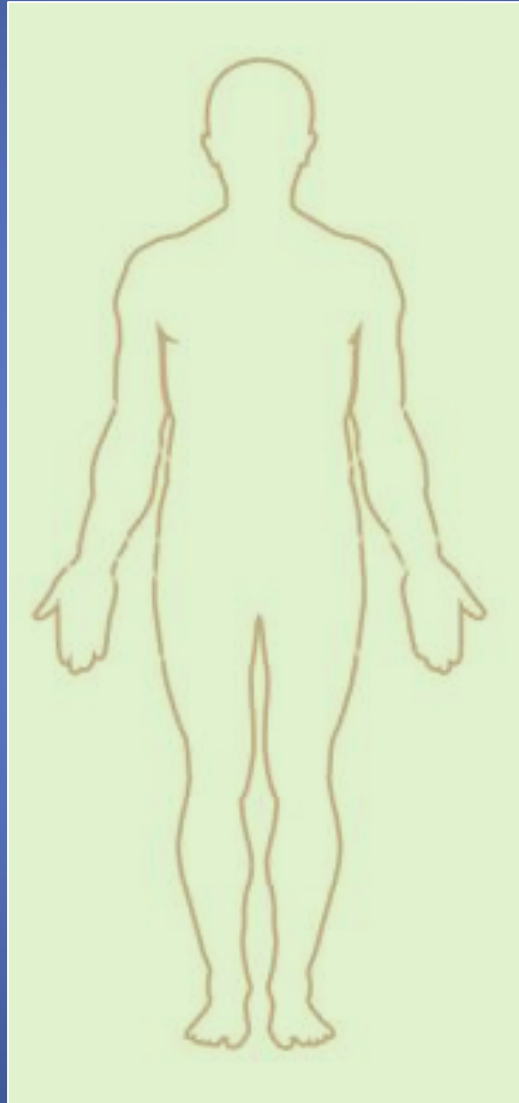
Carskadon and Dement (2005)

What we know

Memory consolidates

Development of vocabulary, pronunciation and the ability to remember words and sounds

During sleep, the body and brain are very busy



Growth hormone released

Muscle mass builds and bone density increases

Repair and renewal of cells

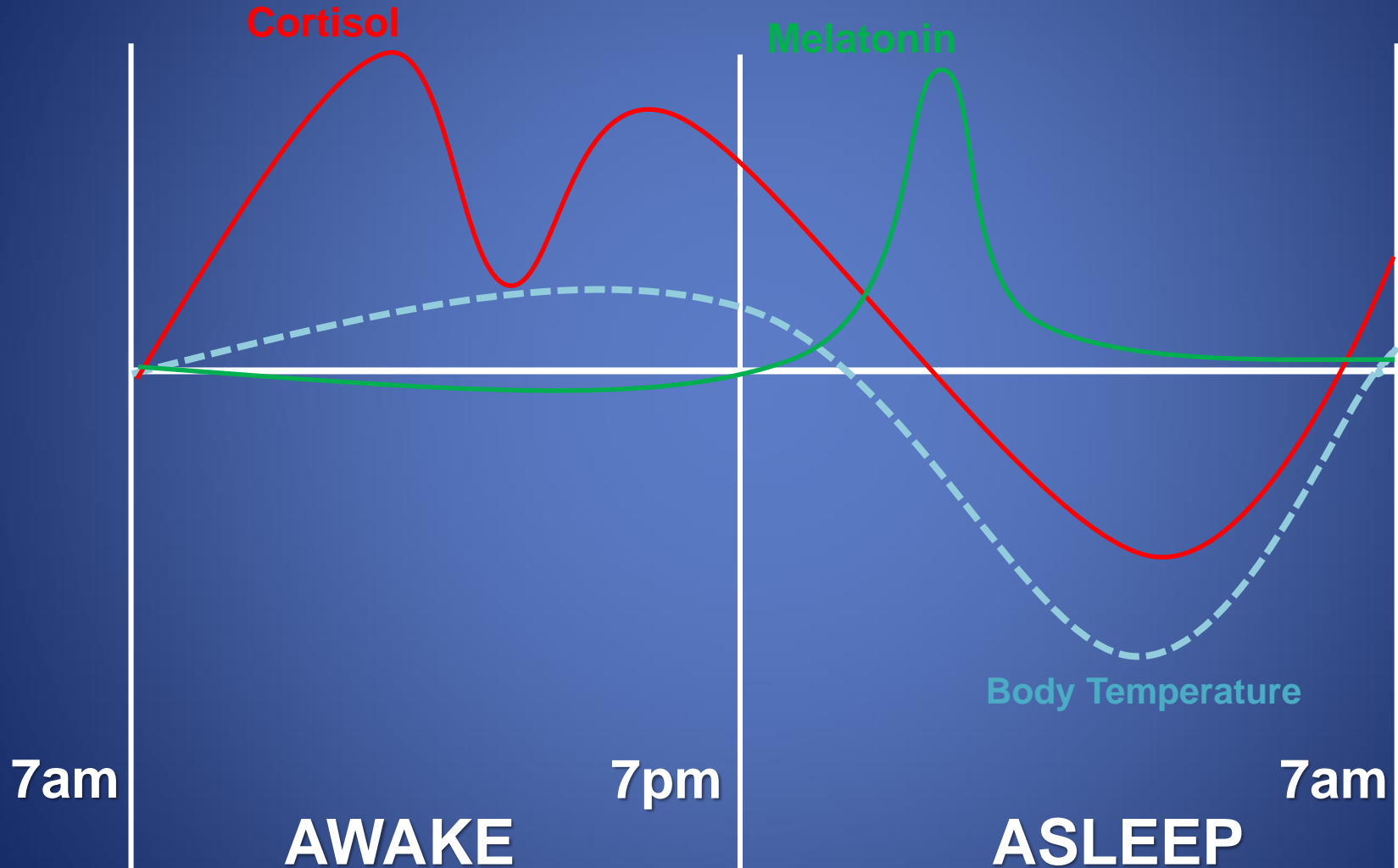
Immune system strengthens

Hormones released to maintain a healthy appetite

Circadian Rhythm

- Body Clock
- 24hr cycle
 - Sleep / Wake
 - Core body temperature
 - Hormones
 - Growth Hormone
 - Cortisol
 - Melatonin
 - Leptin (Ghrelin)

Circadian Rhythm & Sleep



Melatonin & Cortisol

Hormone production triggered by change from light → dark or dark → light

■ Cortisol

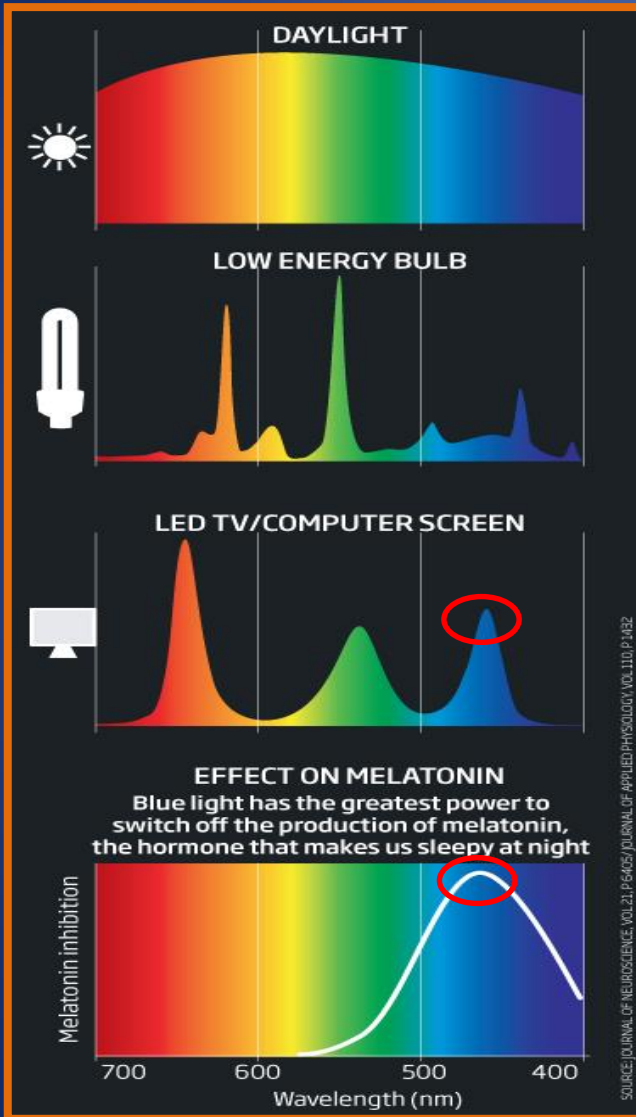
- Wakes us up and inhibits sleep
- Also produced in response to stress

■ Melatonin

- Makes us feel sleepy
- Can be suppressed or disrupted



Blue Light



- Cortisol production may continue
- Melatonin production is switched off
- Sleep onset is delayed

Normal Sleep

Who sleeps for how long?



13 hours

- 2 hours
- 8 hours
- 13 hours
- 19 hours



8 hours



19 hours

Humans are the only ones
who 'mess around' with
their sleep



2 hours

Who sleeps for how long?



18 hours



9½ - 12 hours

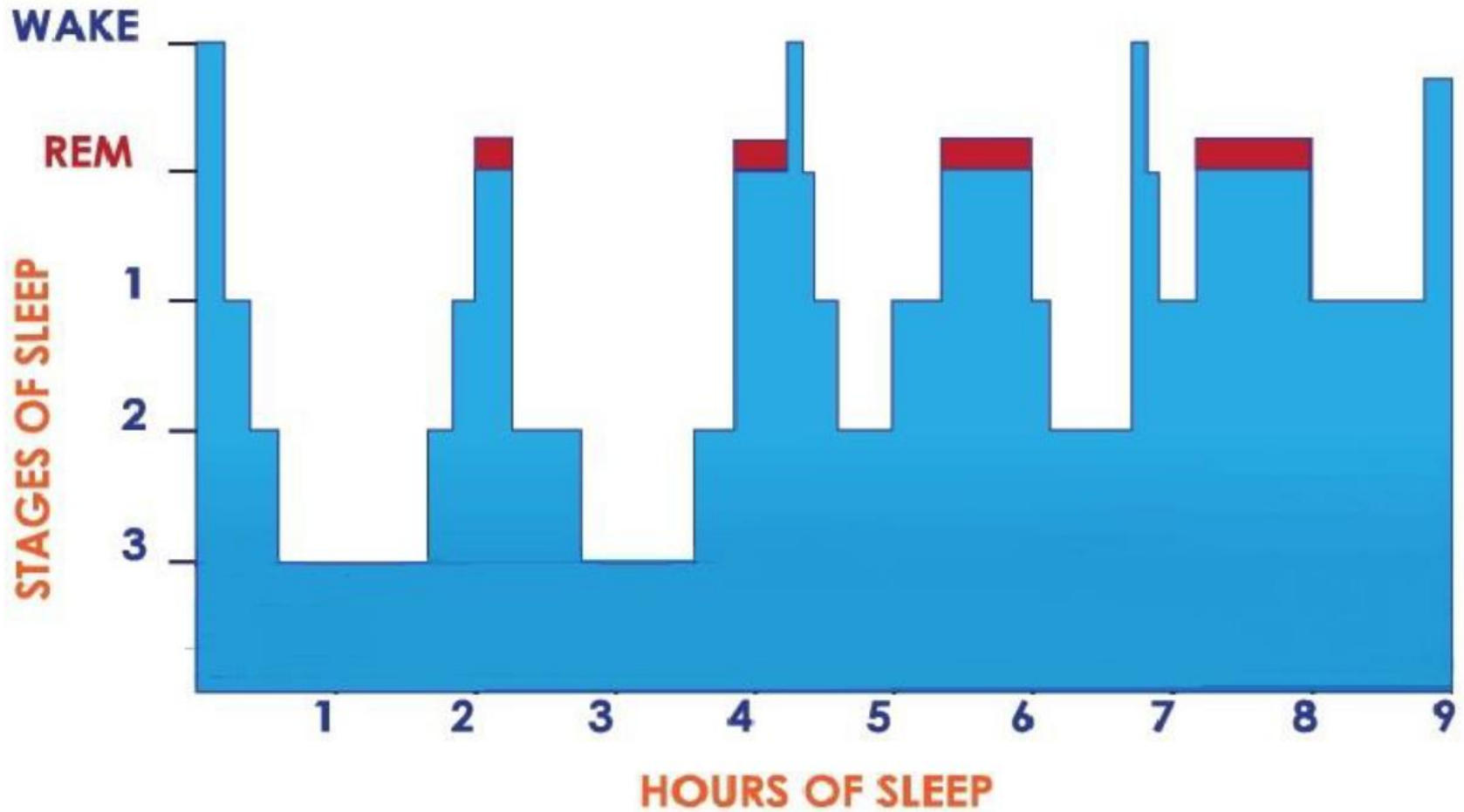


7 - 8 hours

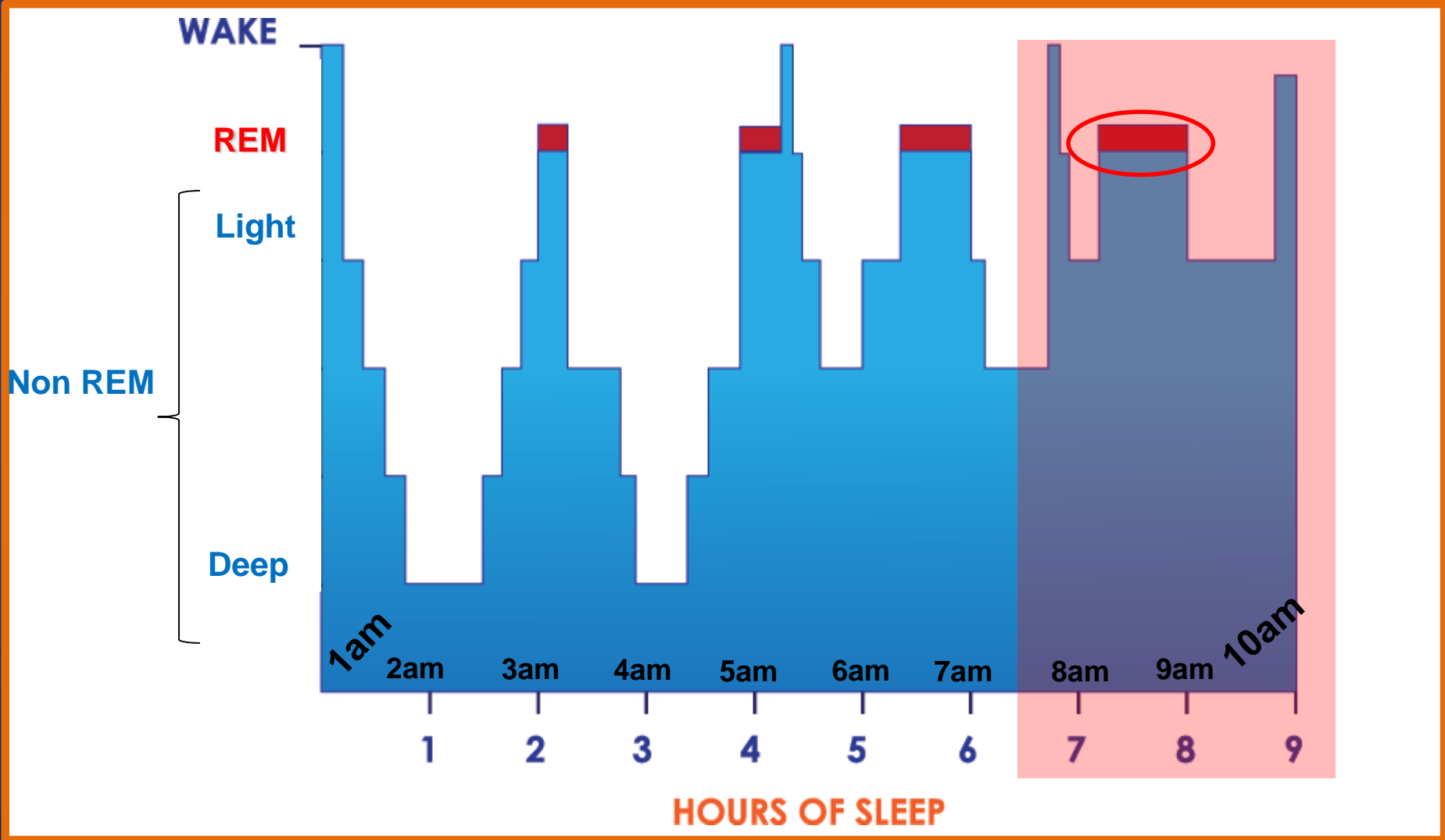


9 - 9¼ hours

Hypnogram



Delayed Sleep



Outcomes of poor sleep

Include....

- Impaired daytime function
- Mood changes / depression
- Immune dysfunction
- Behavioural problems

Impaired Daytime Function

Academic Performance

- Up to 40% of pupils may be sleep deprived
- Poor sleepers average lower grades

Impaired Daytime Function

Academic Performance

- Questionnaire study of over 3000 high school students
- Students with higher grades reported more total sleep, earlier school night bedtimes and reduced weekend delays of sleep schedule
- Students who described themselves as struggling or failing school (**C's, D's / F's**) slept ~25 min less and went to bed an average of 40 min later than **A** and **B** students

Impaired Daytime Function

Croydon Tram Crash 2016

- 7 passengers killed
- 62 injured (19 seriously)
- Suggested that driver may have experienced a 'micro sleep'



Mood Changes / Depression

- Emotions stronger and less controllable
 - Anger
 - Anxiety
 - Stress
 - Sadness

Mood Changes / Depression

- Sleep deprivation affects the medial temporal lobe, where emotions are rooted
- Negative memories tend to be stored in the amygdala
- Positive memories are stored in the hippocampus which is more directly affected by sleep deprivation



Mood Changes / Depression

- Teenagers sleeping less than 8hrs per night are more likely to feel unhappy or depressed
- Teenagers sleeping less than 5hrs per night are **71%** more likely to suffer from depression
- The risk of self-harming can be **4** times higher among the 16-19 year old adolescents with insomnia



Mood Changes / Depression

- Young people sleeping less than 8 hours per night are 3 times more likely to attempt to take their own lives.
- **88%** of young people suffering from anxiety and **72%** of those with depression regularly report that sleep disturbances contribute to their worries.



Immune Dysfunction

- Growth Hormone released during sleep helps repair and maintain the body – sleep deprivation impairs this process
- Studies show that lack of sleep can affect the number and duration of colds that people catch

Behaviour

- Lack of concentration, motivation and engagement
- Poor decision making
- Impulsive or irrational
- Hyperactive

Adolescent sleep

Physiological
changes

Personal
space

Exam stress

School

Independence

Peer
pressure

Sleep
disorders

Social
constraints

Alcohol,
smoking &
drugs

Social
life

Relationships

Adolescent sleep

- Teenagers use bedroom as “their space” - more like bedsit than a bedroom



Adolescent sleep

- Less total sleep time: 9 - 9.5 hours
- Body Clock shift by around 2 hours
- Adolescents more sensitive to the effect of blue light from screens
- Stimulating activities keep mind active
- Students with ≥ 4 devices in room average 30min less sleep
- Sleep onset further delayed

Adolescent sleep

- Alcohol, tobacco & recreational drugs
- Prescription drugs



How to sleep well

- Consider what you do during the day
- Consider what you do in the evening
- Get into a strong evening routine to help your body and mind to subconsciously recognise that it's almost time for sleep
- Have the hour before bed set aside as a 'Wind Down Hour'



Sound Sleep







Aim...

To encourage pupils to take responsibility for their health and wellbeing by understanding the role and value of healthy sleep.

The lessons will teach pupils...

- What sleep is, what it is for and why it is important to physical and emotional wellbeing.
- Why teenagers need 9 ¼ hours sleep per night.
- The consequences of poor sleep
- Barriers to achieving the right amount of good quality sleep
- How to make good choices that will help improve their sleep pattern

Sound Sleep Materials

Name	Date modifi...	Type	Size
 01 Introduction	11/09/2018 ...	File folder	
 02 Background Reading	04/09/2019 ...	File folder	
 03 Curriculum Guidelines	11/09/2018 ...	File folder	
 04 Lessons	11/09/2018 ...	File folder	
 05 Resources	05/03/2019 ...	File folder	
 06 Further Information and Support	11/09/2018 ...	File folder	

Sound Sleep Materials

Lesson Resources

S1/S2

Aims and Objectives

Lesson 1 plan

Lesson 1 powerpoint overview

Handouts for lesson 1

- Sleep quiz*
- Teachers' notes for 'sleep quiz'
- Sleep diary*

Lesson 2 plan

Lesson 2 powerpoint overview

Handouts for lesson 2

- Your body clock
- Teachers' notes for 'your body clock'
- Sleepiness graph*
- Teachers' notes for 'sleepiness graph'
- Sleep diary (9 hours)*

Lesson 3 plan

Handouts for lesson 3

- How to sleep well*
- Teachers' notes for 'how to sleep well'
- Case studies
- Teachers' notes for case studies

S3/S4

Aims and Objectives

Lesson 1 plan

Lesson 1 powerpoint overview

Handouts for lesson 1

- Cleveland adolescent sleepiness assessment
- 'Are you a lark, an owl, or neither?' quiz
- Sleep diary*

Lesson 2 plan

Lesson 2 powerpoint overview

Handouts for lesson 2

- How to sleep well*
- Teachers' notes for 'how to sleep well'
- Relaxation techniques*
- Sleep diary (9 hours)*

Lesson 3 plan

Lesson 3 powerpoint overview

Handouts for lesson 3

- Checklist for sleepy teenagers*

Sound Sleep Materials

S1/S2 Aims and objectives

Aim:

To encourage pupils to take responsibility for their health and wellbeing by understanding the role and value of healthy sleep.

Objectives - these lessons will teach pupils:

- What sleep is, what it is for and why it is important to physical and emotional wellbeing.
- What the circadian rhythm is and its relationship to sleep.
- Why teenage sleep is different to adults and why teenagers need 9 - 9¼ hours.
- How to monitor their sleeping pattern and improve it.
- Who to go to for further support about sleep.

Outcomes - pupils will be able to:

- Describe what happens during sleep and how the body and brain benefit from sleep.
- Understand the role of the circadian rhythm.
- Explain why teenagers need 9 - 9¼ hours sleep a night.
- Keep a sleep diary.
- Understand and discuss techniques they can use to manage and improve their sleep patterns.
- Know who to go to for further support about sleep.

Sound Sleep Materials

S1/S2 Lesson 1: What is sleep and why we do it?

Lesson Content:

1. Discussion on what the students know about sleep – what it does, what happens during sleep, how much they get, how they sleep during the week and at the weekend. Note responses on board or flip chart, then check against what they learnt from the powerpoint. This discussion can be done either through small groups or as a whole class. (10 minutes)
or
Take the sleep quiz and discuss answers. (10 minutes)
2. Powerpoint presentation – what is sleep, what it does for us, how much we need and teenage sleep. (25 minutes)
3. Response from the group – compare what they now know about sleep with what they knew at the beginning of the lesson. (10 minutes)
4. Sleep diaries – pupils to keep a diary for a week and monitor how much sleep they are getting. When are they going to sleep and waking up, what are they doing at the weekend etc. (10 minutes)

Background reading

- Chapter 1 Sleep
- Chapter 3 Sleep and Our Wellbeing
- Chapter 8 Adolescent Sleep

Materials required

- Flip chart/board
- Sleep quiz
- Powerpoint – S1/S2 lesson 1
- Blank sleep diaries

Sound Sleep Materials

Becoming an adult

Teenagers need 9 – 9¼ hours sleep

Lots going on during adolescence

- physical changes during puberty
- learning more complex information
- more creative thinking
- sleeping helps process all these complex tasks

Less than 9 hours may affect your physical and mental health



Sound Sleep Materials



Becoming an adult

Teenagers need 9 – 9½ hours sleep

Lots going on during adolescence

- physical changes during puberty
- learning more complex information
- more creative thinking
- sleeping helps process all these complex tasks

Less than 9 hours may affect your physical and mental health



See Chapters 1&8 for further information.

Teenagers require different amounts of sleep from children or adults.

Adolescents have to cope with a lot of changes that occur during puberty and the physical changes that happen to their bodies as a result of this.

Teenagers are also learning more complex information, becoming more creative in their thinking processes and developing their social skills.

Lack of sleep will prevent teenagers from processing what is happening in their lives and also creates other problems for their physical and psychological wellbeing. This can include:

- erratic behaviour
- low mood
- depression
- anxiety
- obesity

In some cases this can lead to diabetes and heart conditions in later life.

Sleep Diary



	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
Time I went to bed last night							
Time I got up this morning							
How many hours sleep I got							
How sleepy I feel today	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5

1. Not at all
2. Not really
3. OK
4. Quite a bit
5. Very much

Sound Sleep Mentors

- Recognised within the school as 'experts' on sleep
- Raise awareness of the benefits of good sleep and the effects of poor sleep
- Attend Parent Evenings, Curriculum Evenings and other school events
- Assist with the delivery of Sound Sleep lessons
- Offer information, advice and sleep guidance to pupils who have been 'referred' due to sleep issues
- Identify new Sleep Mentor recruits



Any questions?

