

# Summerlea Primary School

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# Why are we here tonight?

We want to understand why sleep is important to our children.

We are going look at;

- Why do we sleep?
- What happens when we don't sleep?
- Common sleep problems and sleep disorders
- The link between sleep and behaviour
- Good sleep practices
- I won't be able to write any sleep management programmes but I can offer some good tips!

# Common sleep problems

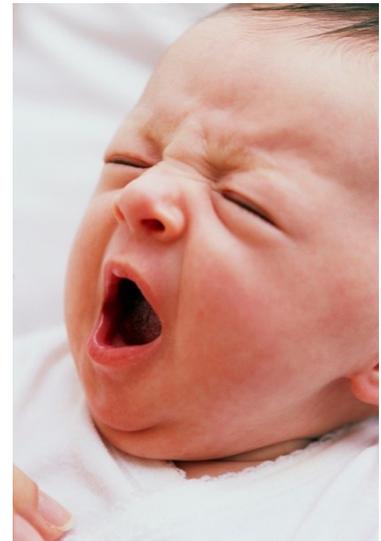
Types of sleep problems we will discuss later

1. Falling asleep
2. Maintaining sleep
3. Early waking
4. Parasomnias – night terrors, night mares and sleep walkers

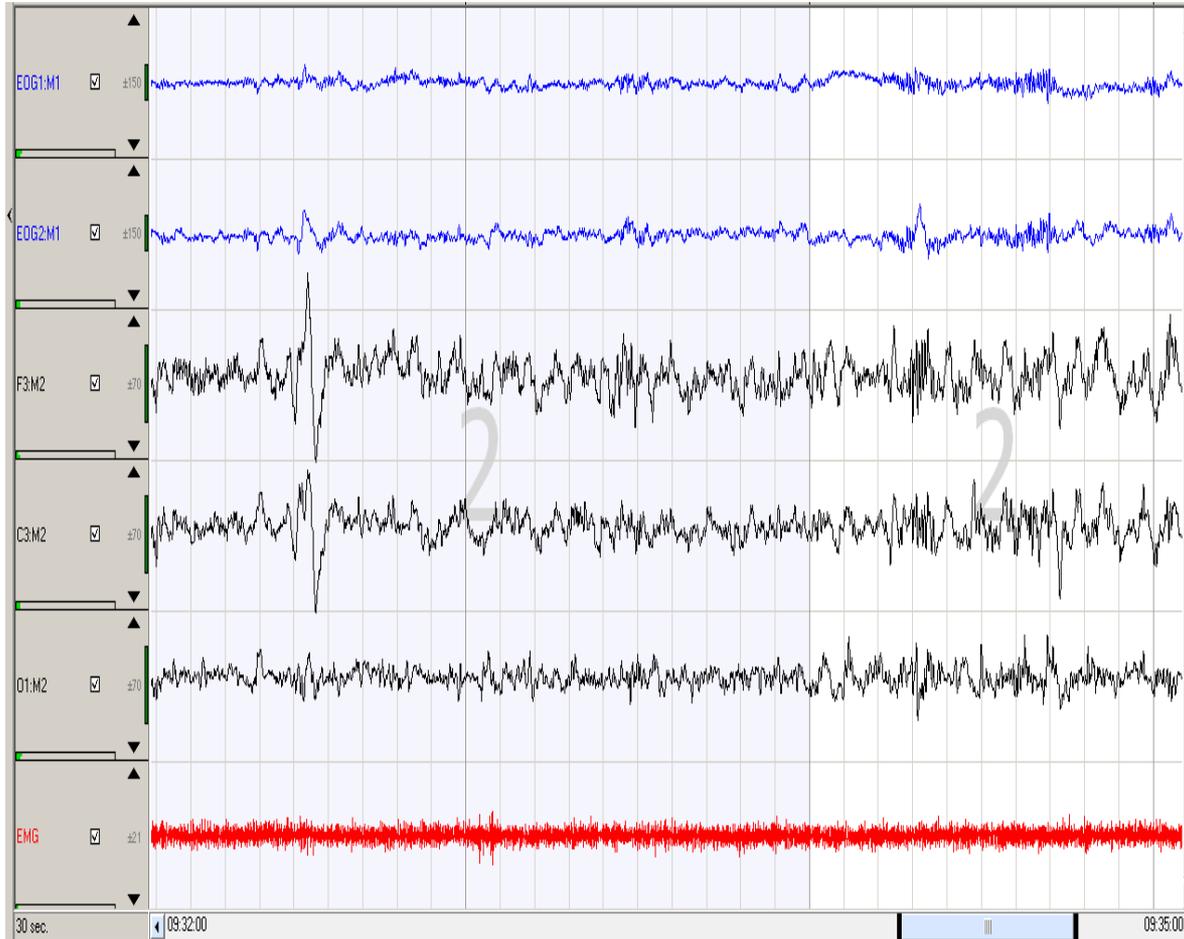


# What is sleep

- A reversible state of reduced awareness and selective responsiveness to the environment.
- Limited awareness persists e.g. a mother can sleep through a thunderstorm but hears her baby crying.
- Sleep is of the brain – we study the brain waves.
- Complex chemically driven process



# Sleeps as brain waves!



# A History of Sleep Medicine

- Pre 1950s very little known about sleep
- The believe was that it was not worthy of study as sleep was considered to be a single state
- Dreams and dream interpretation began
- 1952 REM was discovered
- First sleep research unit opened in 1971
- They had just one question that they needed to answer and that was.....

# Sleep and Vulnerability

***If sleep does not serve an absolutely vital function, then it is the biggest mistake the evolutionary process ever made'.***



***Alan Rechtschaffen***

# Why do we sleep?

- We are extremely vulnerable in sleep
- We spend a third of our adult life doing it
- What is the trade off? Why would mother nature choose for us to be so vulnerable for so long?
- What does sleep do that it is that important?
- That is the question that we are still answering today

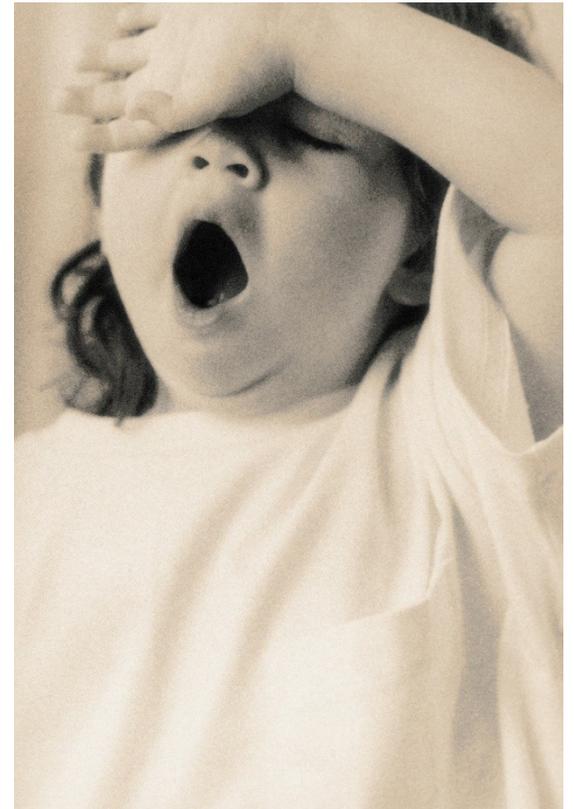
# Why do we sleep?

- We don't know for sure! We don't have all the answers.
- There are a lot of things we do know about sleep
- What happens if we don't sleep?
- We take bits of sleep away so we can work out what it does!
- We are learning more every day.



# What happens when we are sleep deprived?

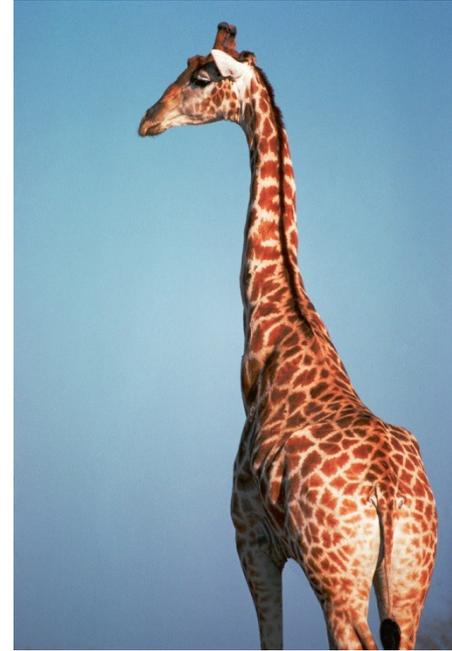
- Grumpy, miserable, emotional.
- Unable to cope with life's stresses so easily
- Dangerous to drive.
- Poor concentration.
- Forgetful
- Impaired learning
- Difficult to hold down a job
- Relationship problems
- Changes in eating patterns
- Increases anxiety etc
- In fact without sleep we die!



# Theories of Sleep

- Restorative
  - allows energy conservation (100-200 calories compared to quiet wake state).
  - anabolic hormones such as growth hormone in pre-pubertal children are uniquely secreted
  - cell division and protein synthesis increase in slow wave sleep.
  - immune system function is boosted
- Neurological: Memory consolidation
- Psychological: may provide respite from daytime stimuli- 're-boot the hard drive'

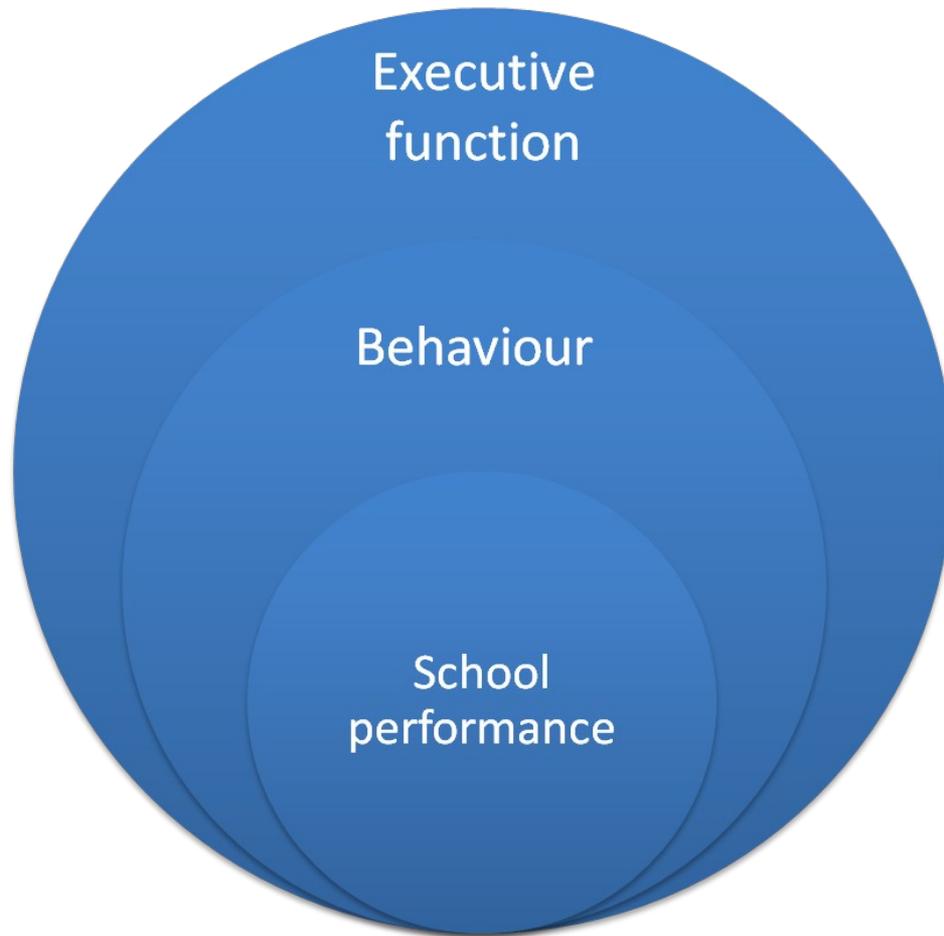
# Do all animals Sleep?



# How much sleep does a primary school child need?

- Average 10 hours
- Small amounts of sleep deprivation will have a knock on effect.
- Before you pay out for extra tutoring for your child take a look at their sleep!

# What does the research say about when things go wrong?



# Sleep and Behaviour

- Short sleep duration associated with both internalizing and externalizing behavioural difficulties



# Sleep and Behaviour cont.

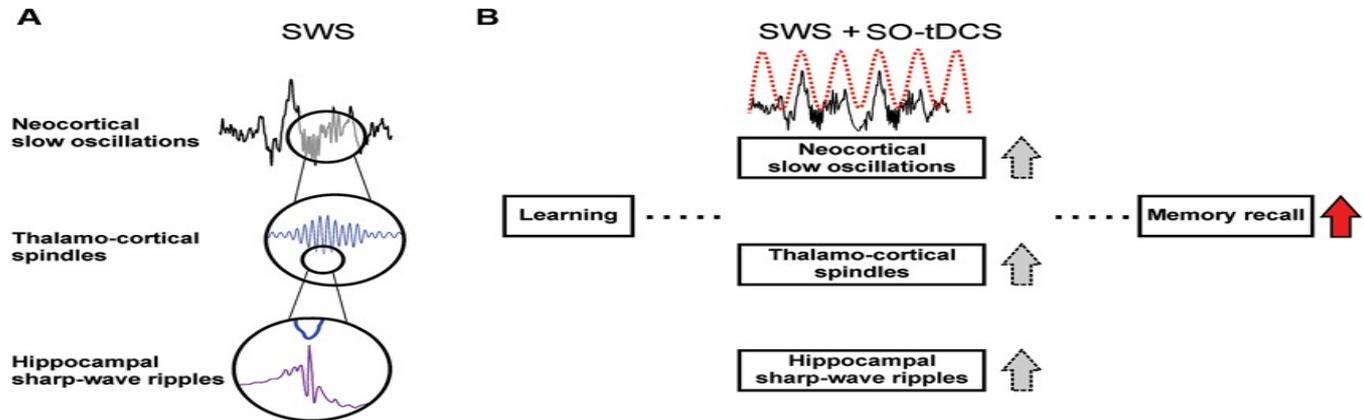
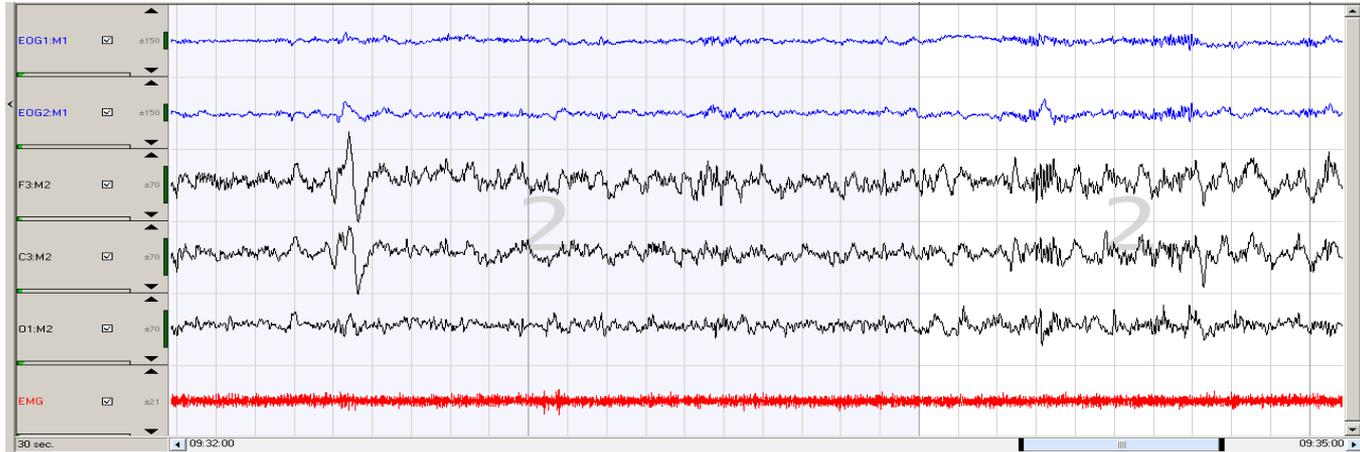
- Research shows that sleep deprived children may present with ADHD symptomology
- Children sleeping almost an hour less than the average child may be at risk of significant conduct difficulties.

# Sleep and Learning

- Memory consolidation takes place during sleep – both declarative and procedural
- If we are sleep deprived we will have difficulties in recalling events, facts, processes etc..



# Memory consolidation

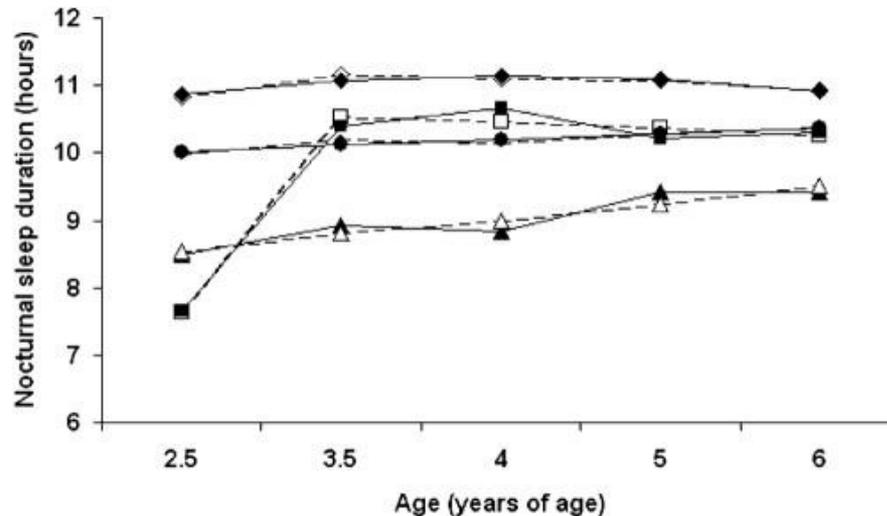


# Sleep and learning cont.

- There is ample research to show that sleep deprivation can have a serious impact on academic achievement.
- But here is the really worrying bit.....

# Long-term outcomes of early sleep problems?

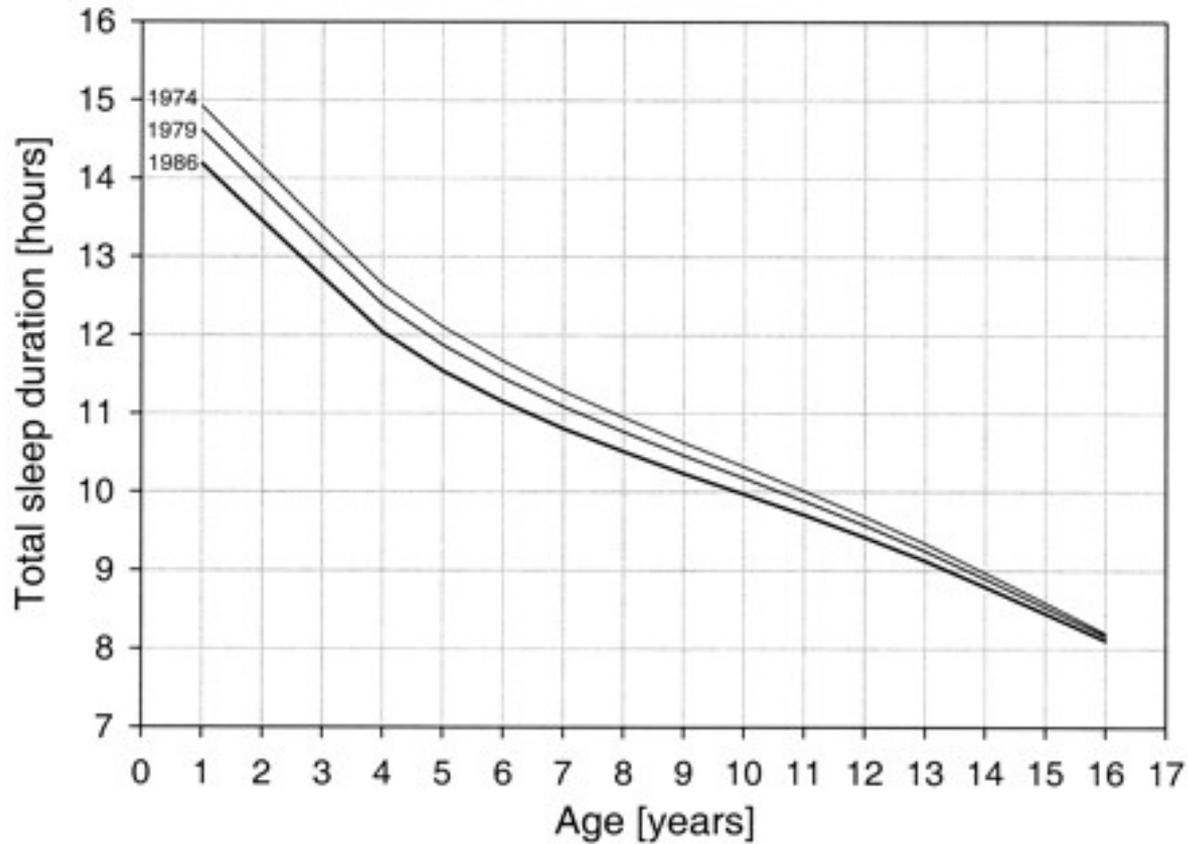
- Quebec Longitudinal Study of Child Development
- 1492 children
- 5 yrs: receptive vocab test
- 6 yrs: block design-WISC III, parent report of hyperactivity & inattention



# Long-term outcomes of early sleep problems cont.

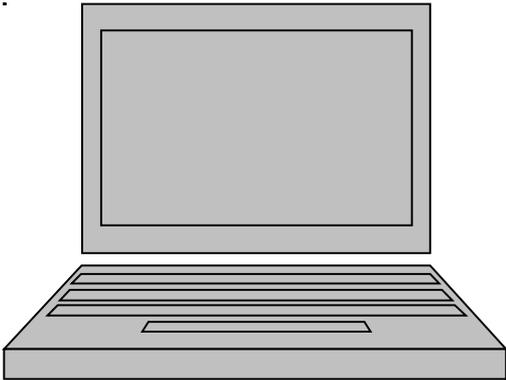
- Children with  $< 10$  hrs sleep at 2.5 yrs regardless of whether they were persistent short sleepers were 3x more likely to have low receptive language scores
- Children with  $< 10$  hrs sleep at 2.5 yrs but more at 3 yrs were still 2.4x more likely to be low scorers on block design tests and 3.2x more likely to have high hyperactivity/impulsivity scores.

# Changes in sleep habits over time



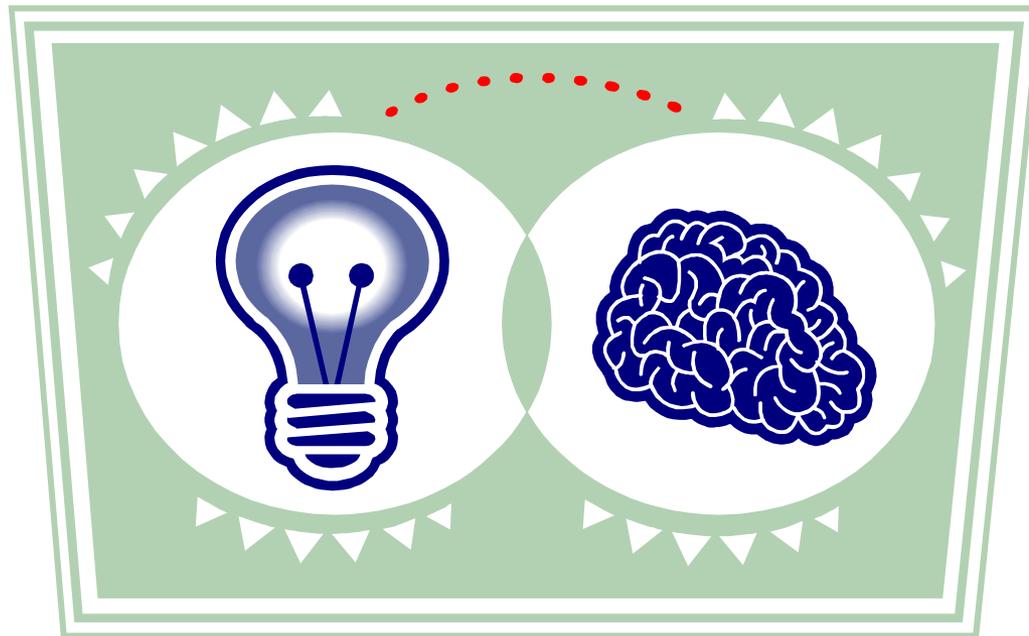
# Why are we getting less sleep?

Well here is one reason.....

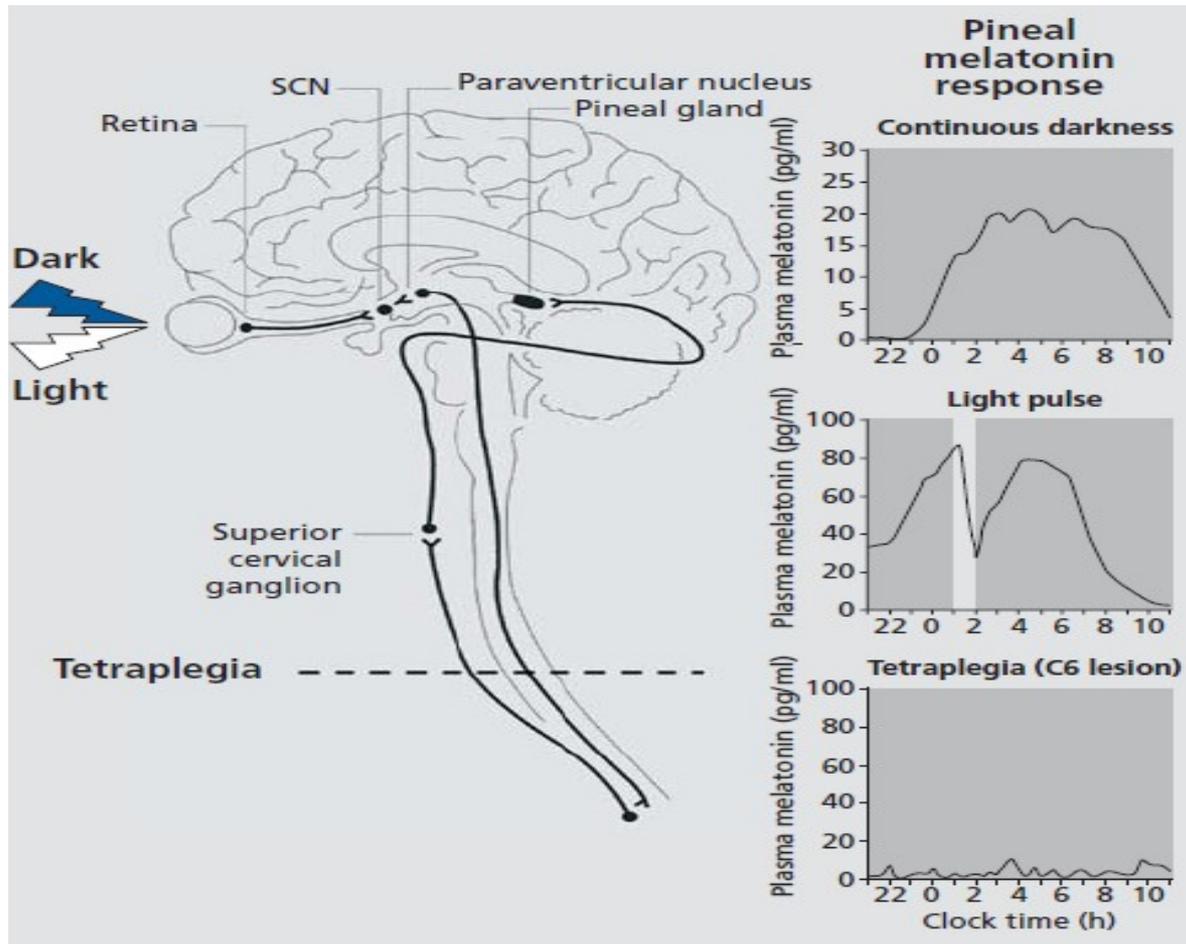


# Blue Light and Melatonin

Blue light suppresses the body's release of melatonin



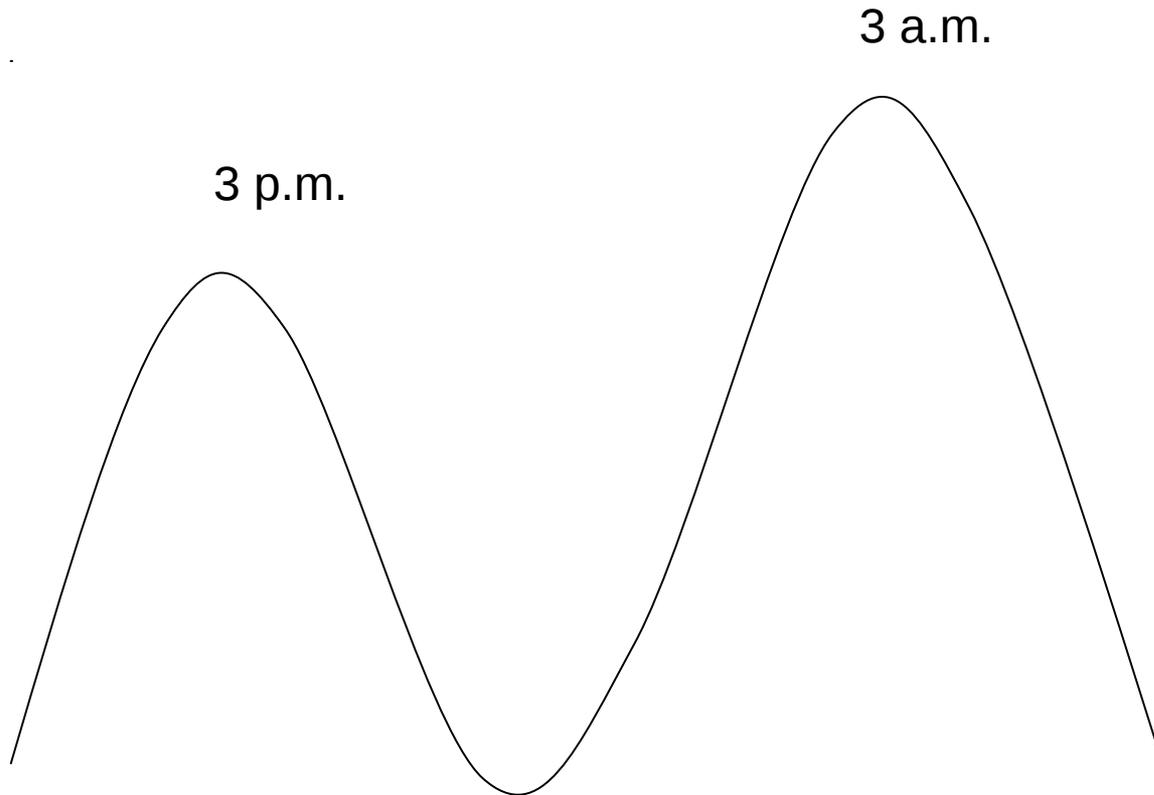
# Melatonin dip with light introduction





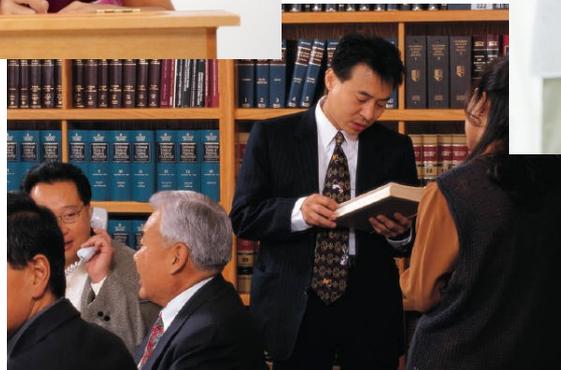
# Circadian Rhythm

Natural Melatonin Levels



# Tinker, tailor, soldier.....?

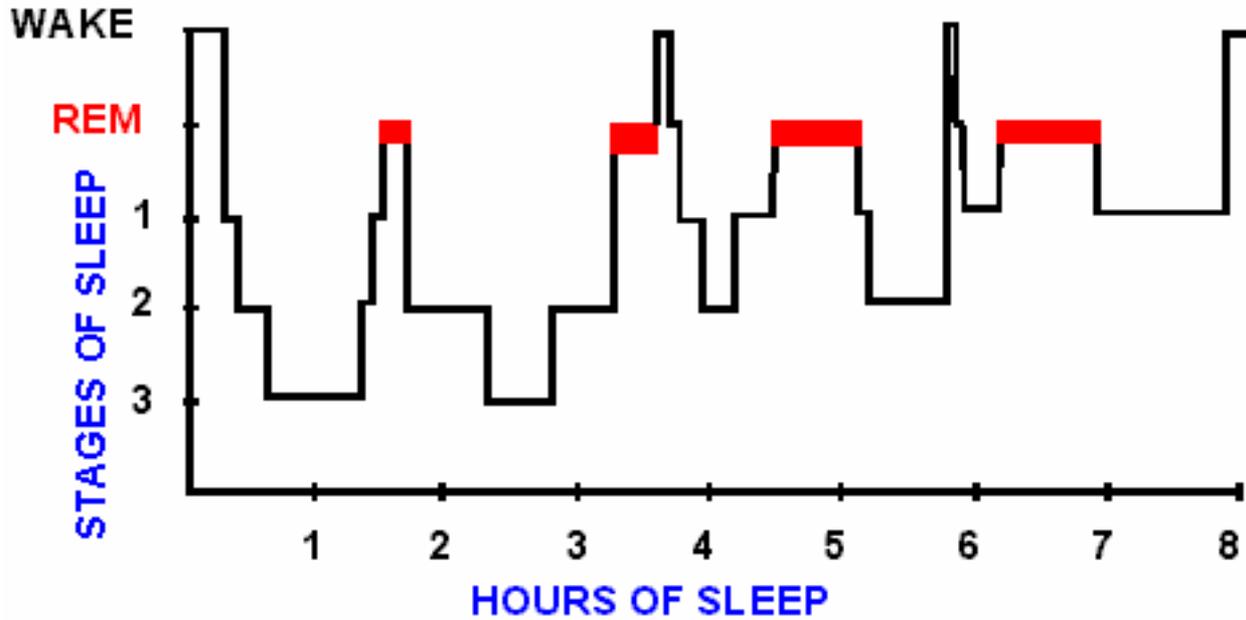
- We must get sleep right for our children if they are going to reach our full potential



# Common sleep problems

# Normal sleep

## HYPNOGRAM

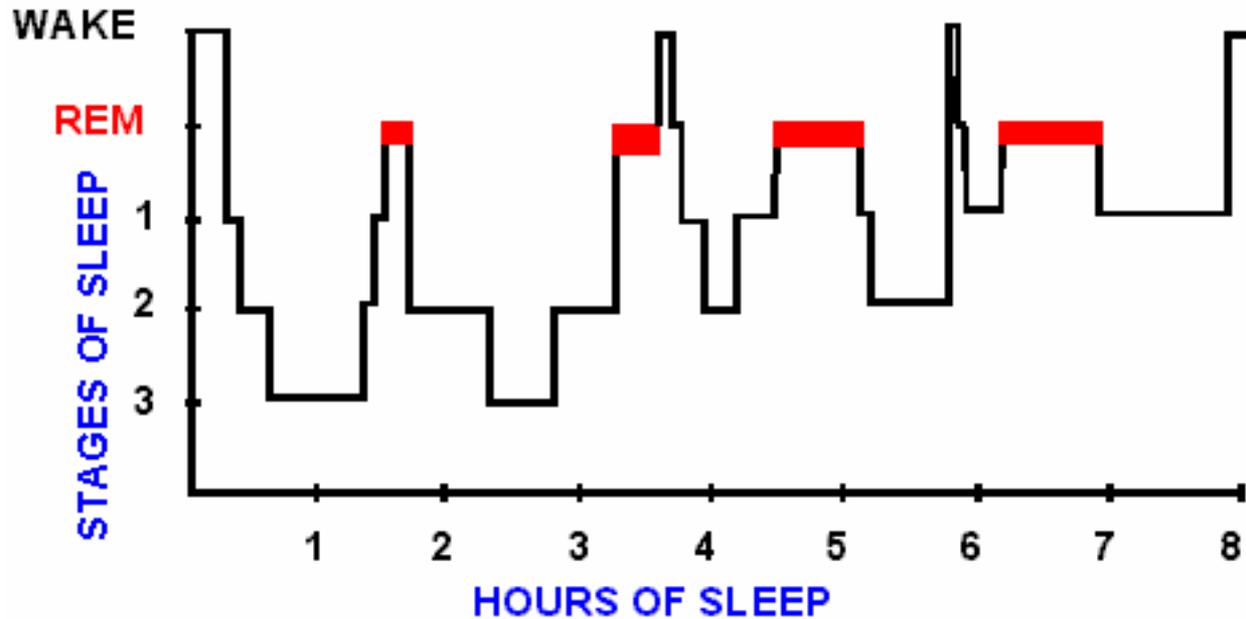


# Sleep Onset Association Disorder

- SOAD is the most common childhood sleep disorder.
- The child has some difficulty going to sleep (usually), sleeps approx three to four hours then wakes regularly throughout the night.
- The child requires an aid/prop to go to sleep.
- When the child wakes in the night the aid or prop is needed in order for the child to resettle.
- These children may be co-sleepers.

# SOAD and normal sleep

## HYPNOGRAM



# SOAD cont

- The child must learn to fall asleep at bed time unaided so that when they have a normal night waking they can do it again
- “If you can ride a bike at breakfast time you can still ride a bike at teatime” Luci Wiggs



# Early wakers

- Anything pre 6am should be considered night time
- How do you know the time when you wake in the night?
- Children need visual cues
- When did your child last eat?
- Hungry children don't sleep

# Night terrors

- Night terrors tend to occur in the first three hours of sleep.
- During an episode the child is moving around and may appear distressed or confused.
- The child is asleep but may interact to some degree.
- The child has no recall.
- They can begin in very young children and even in babyhood.

# Sleep paralysis



# Sleep walking

- Sleep walking tends to occur in the first three hours of sleep.
- The child is asleep but may have some interaction with others
- The child will have no recall

# Night mares

- Nightmares occur in the second two thirds of the night.
- The child is distressed and/or confused.
- The child is awake.
- The child does have recall.
- Nightmares can be experienced by even young babies, although no one knows for sure exactly how soon they may begin.

# Common Sleep Problems cont.

## Managing Night Terrors and Sleep Walking

- Made worse by stress, sleep deprivation and illness.
- TV off one hour before the onset of sleep.
- Calm, regular bedtime routine.
- No caffeinated or fizzy drinks pre bedtime – this includes hot chocolate!
- Minimal input, do not touch etc.
- No discussion the next day.

# Common Sleep Problems cont.

## Managing nightmares

- Made worse by stress, sleep deprivation and illness.
- TV off one hour before the onset of sleep.
- Calm, regular bedtime routine.
- No caffeinated or fizzy drinks pre bedtime – this includes hot chocolate!
- Console and reassure the child.
- Do not “buy into” the nightmare.
- Put the child back in his or her own bed.
- No discussion the next day/night.

# Delayed Sleep Phase Shift

(not to be confused with bedtime resistance!)

- These children go to bed an appropriate bedtime and either lay there and do nothing or are up and down the stairs.
- They sleep all night undisturbed.
- They struggle to get up on a school day
- They lie at weekends
- They are simple living on the wrong time zone!!!

# Good habits

- Good diet and exercise do impact positively on sleep.
- No screens in the hour before sleep onset
- Wind down time is important
- Don't do homework or talk about anxieties just before bedtime
- **BE CONSISTENT** – mean what you say and say what you mean!

# Good bedtime routine

- TV/screens off 15 mins before bath time
- Quiet time and supper if required
- Bath time every night
- Toilet, teeth, pjs etc
- Bedroom
- Story
- Goodnight
- Leave
- 30 mins from bath time to goodnight

# Where to now?

Children's Sleep Disorder Service

Dr Cathy Hill

c/o Sara Bowgen

Patient Pathway Coordinator – Child Health

G Level

University Hospital Southampton NHS Foundation Trust

Tremon Road

Southampton

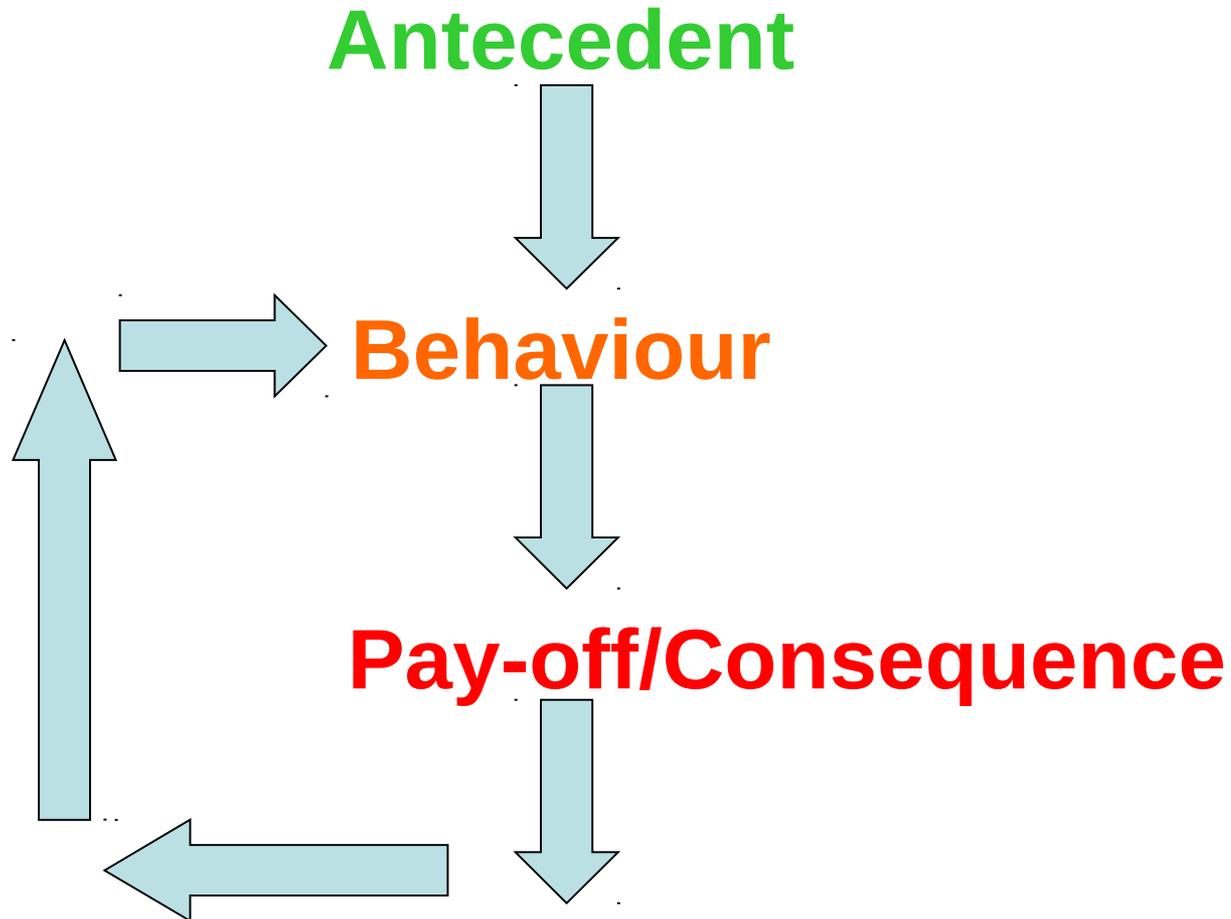
Or

[www.sleep-soundly.co.uk](http://www.sleep-soundly.co.uk)

If we have time.....



# Understanding Behaviour





# Intermittent Reward System

- If the prize is worth having the child will check it out every time
- The most powerful reinforcer of human behaviour
- 1 In 10 is enough



# Questions

