

# Sleep & ASC

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# Overview

- Brief introduction to sleep
- Sleep hygiene, and good habits
- ASC – specific recommendations
- Questions?

# “Sleep”

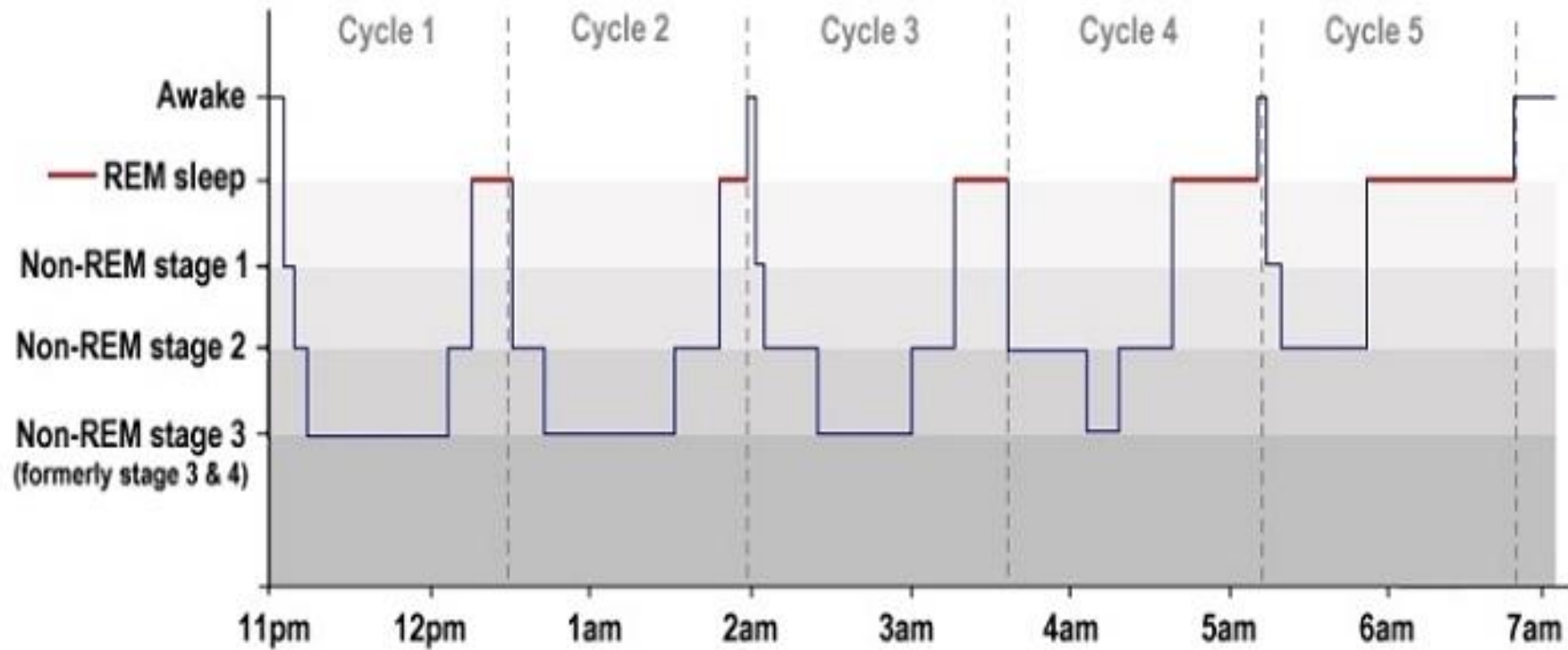
*A reversible neurobehavioural state of reduced activity associated with a typical posture (e.g. lying down with closed eyes) that results in reduced responsiveness to stimuli.*

– Cirelli & Tonioni, 2008

# Why do we sleep?

- Adaptive / evolutionary theory
  - Protection from nocturnal predators?
- Energy conservation theory
  - Save energy when less needed
- Restoration theory
  - Tissue repair, +growth hormone, immune function
- Plasticity theory
  - Brain development, memory consolidation

# Stages of sleep



# Sleep processes – S & C

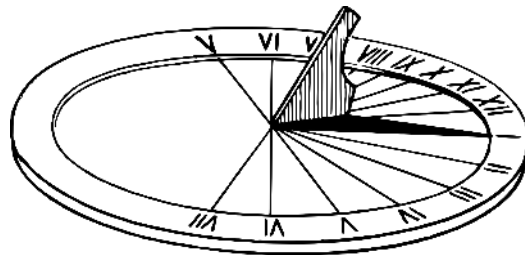
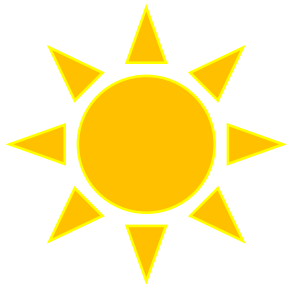


## Process S – sleep pressure

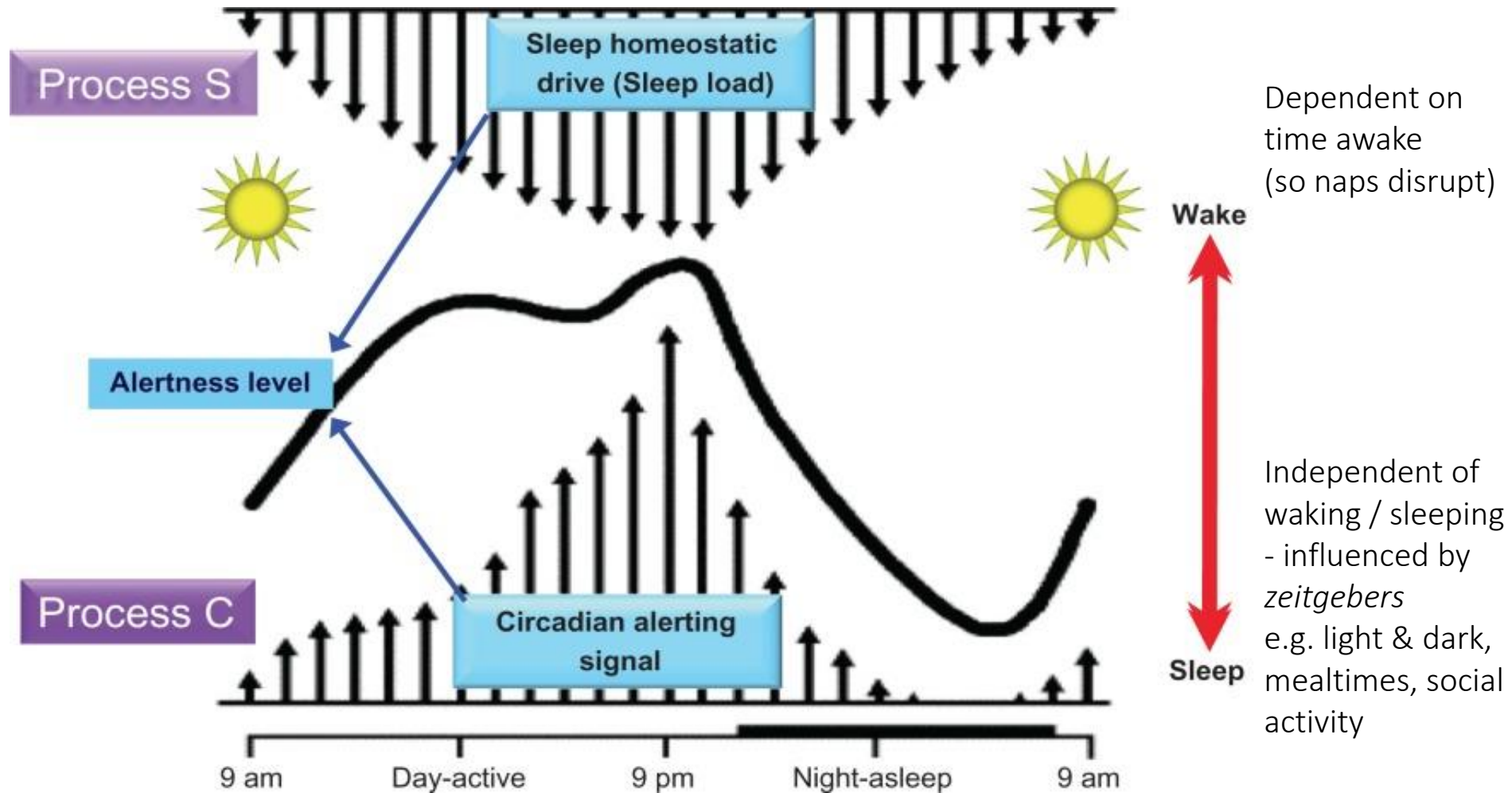
Dependent on  
time awake  
(so naps disrupt)

## Process C – circadian rhythm

Independent of  
waking / sleeping  
- influenced by  
*zeitgebers*  
e.g. light & dark,  
mealtimes, social  
activity



# Sleep processes – S & C



## Signs of lack of sleep

- Falling asleep at inappropriate times
- Needing waking and taking >15m to get going
- Sleeping >2h more at weekends or holidays
- Mood / behavioural changes after ++sleep



# Impacts of lack of sleep

- Difficulty regulating behaviour (Gruber et al., 2012)
  - Angry outbursts
  - Low mood / anxiety
  - Hyperactivity
- Difficulties with memory & executive function
- Detrimental to health & immune function
  - Hypertension, insulin resistance, obesity
  - More infections e.g. common cold

# Sleep in children with ASCs

- 40-80% of children with ASCs experience sleep problems (vs 25-40% in TD)(Richdale, 1999;Reynolds et al, 2011)(meta analysis Elrod and Hood, 2015)
  - Circadian rhythm disorders more common
  - Sleep onset insomnia – taking longer to fall asleep
  - Sleep fragmentation
  - Sleeplessness, sleep maintenance
  - Behaviour at night
  - Shorter sleep duration
  - ASC → More vulnerable to anxiety

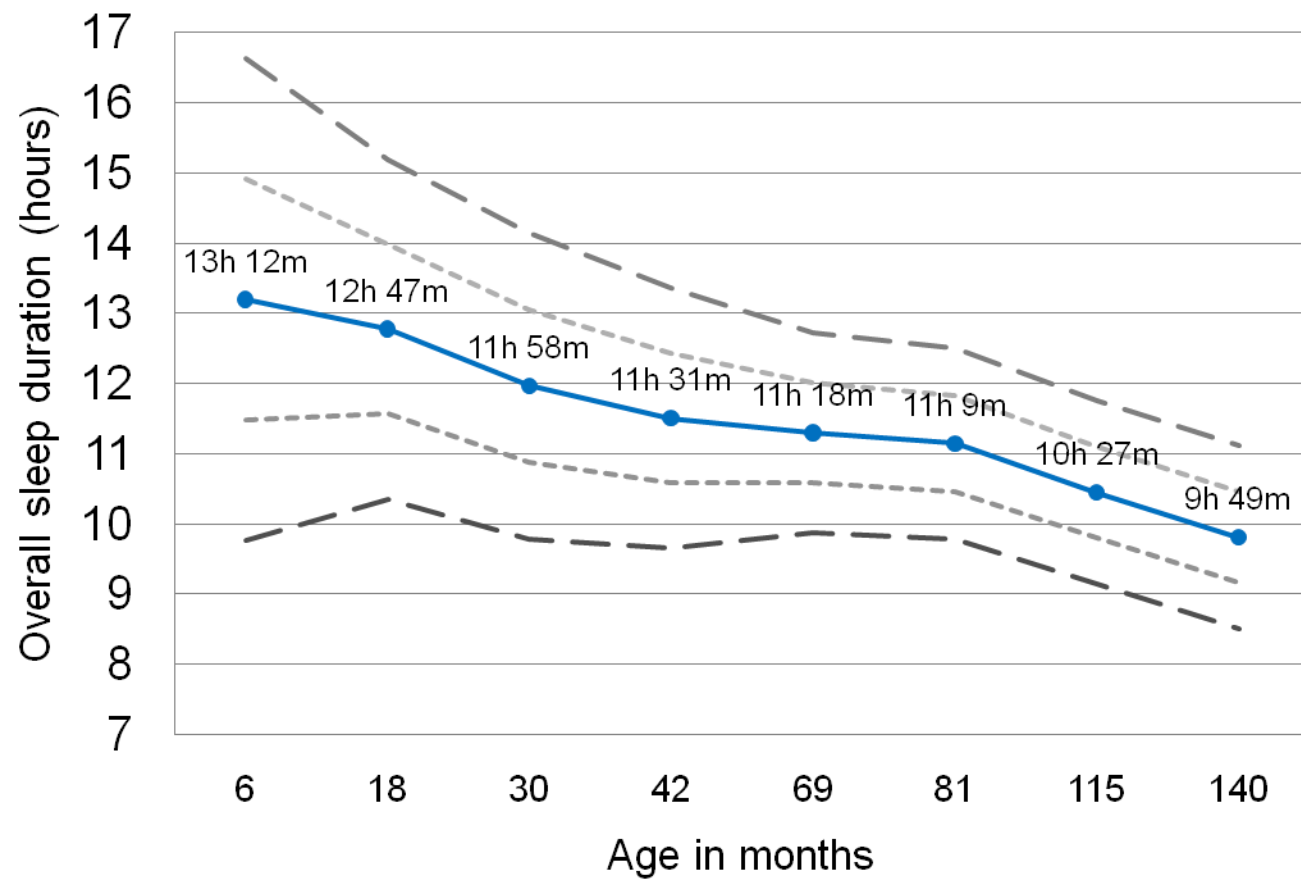
# Essential foundations

Consistent sleep schedule

Regular bedtime routine

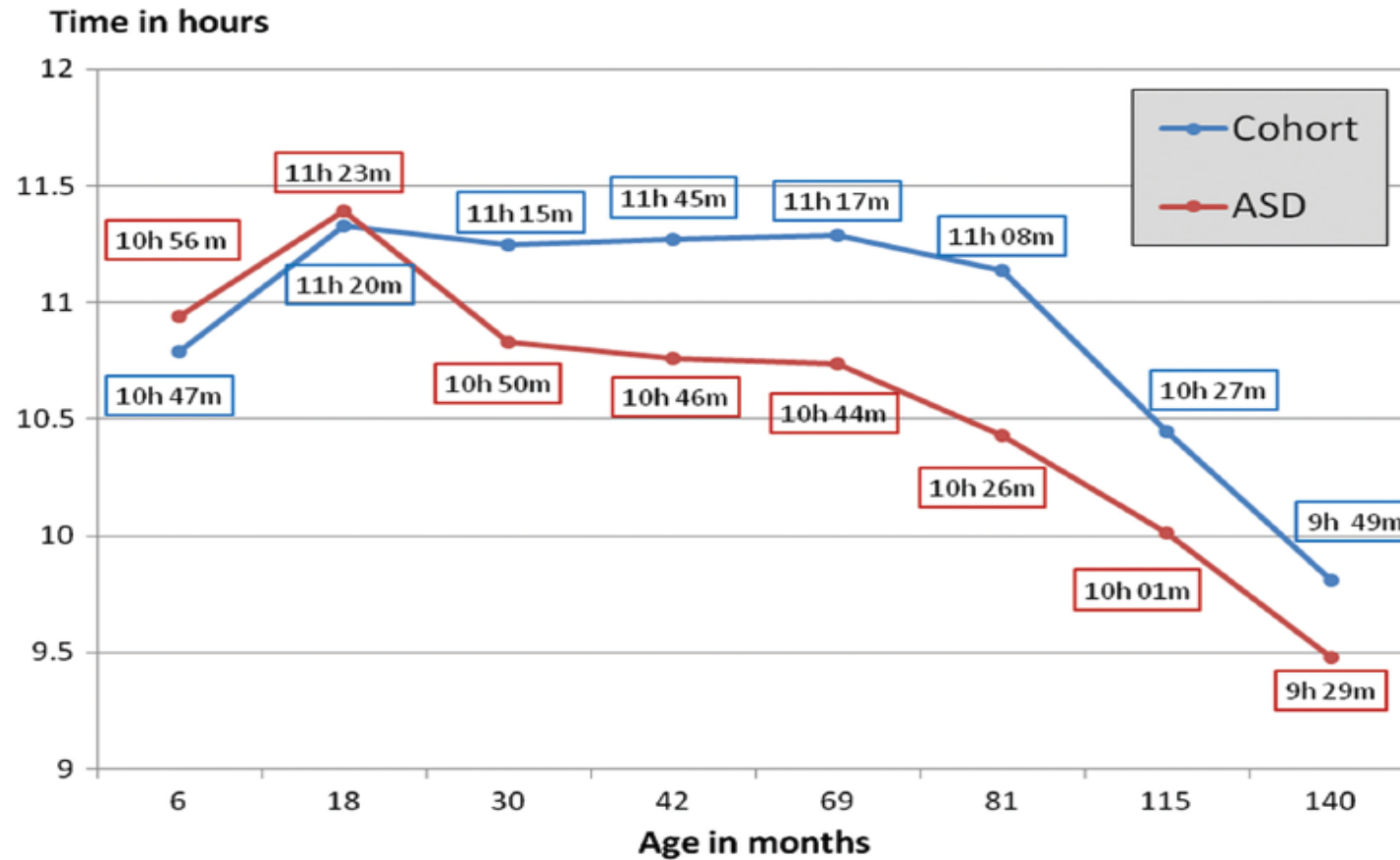
Appropriate bedtime

## Total sleep duration amongst children (Mean $\pm$ 1 and 2 Standard Deviations)

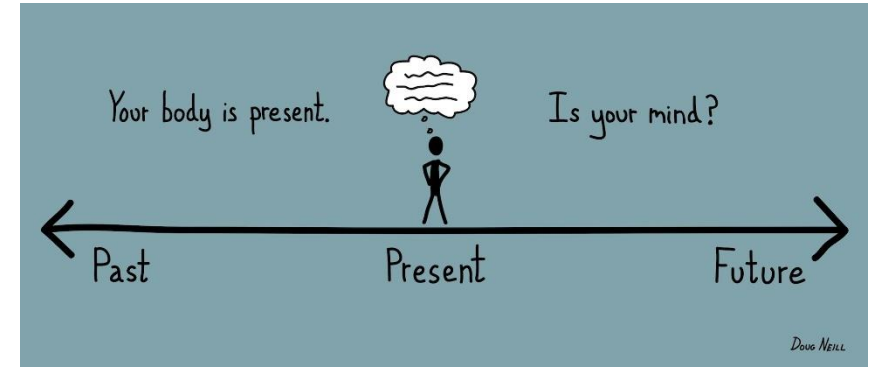


Blair PS, Humphreys JS, Gringras P, et al  
Childhood sleep duration. *Sleep*. 2012  
Mar 1;35(3):353-60.

## Sleep duration in children with autistic spectrum conditions



**Figure 2** Night-time mean sleep duration in children with autistic spectrum disorders (ASDs) compared with the rest of the cohort.







# Which contain caffeine?

- 7UP
- Regular tea
- Paracetamol
- Aspirin
- Solpadeine Headache
- Panadol Extra
- Lemonade
- Lucozade
- Choc cake
- Coffee
- Anadin Original
- Sudafed
- Sprite
- Green tea
- Irn-Bru
- Cola
- Drinking Choc
- Anadin Extra
- Decaf coffee
- Aqua Ban Original Diuretic





# “Streaming instead of dreaming” ?

- Parents estimate <sup>1</sup> >2/3 15-17y/olds leave a device on whilst sleeping
- 43% read/send electronic messages after initially falling asleep
- Systematic review <sup>2</sup> of screen-based media device access or use in the sleep environment, and sleep quantity and quality – 20 studies, n >125k children:
  - Children who used media devices at bedtime
    - --sleep quantity, --sleep quality, ++daytime sleepiness
  - **AND** children who had access to (but did not use) media devices at night
    - --sleep quantity (c.1hr), --sleep quality, ++daytime sleepiness

<sup>1</sup> <http://jamanetwork.com/journals/jamapediatrics/article-abstract/2571463>

<sup>2</sup> <http://jamanetwork.com/journals/jamapediatrics/article-abstract/2571467>





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THE GIELEN FAMILY  
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1

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*Credit is subject to status. Ts & Cs apply.*







# Stimulus control





# Stimulus control

- Only use bed for sleep
- If you cannot get to sleep within about 15 minutes, get up and go to another room
- Follow this 'quarter of an hour rule' during the night too if you waken
- Avoid napping
- **Try and stay away from bed until you feel 'sleepy tired'**



# Exercise

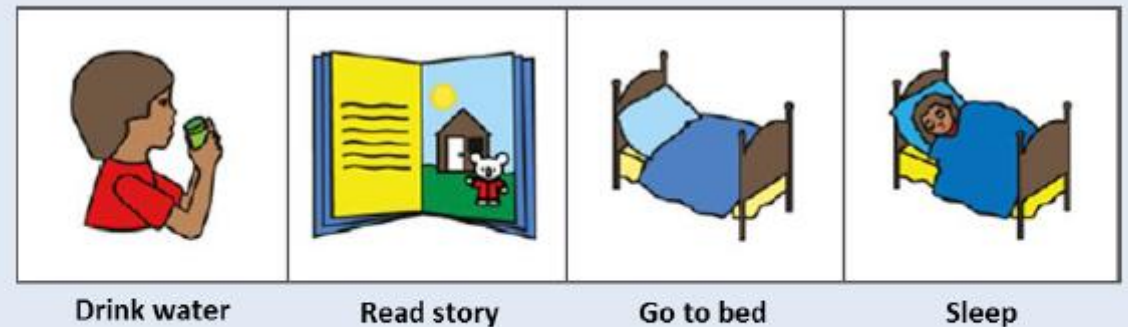
- Fit people have a better quality of sleep.
- Exercising 3/7 for 20-30 minutes
- Exercise should get heart pumping
- Exercising *too late* → reawakening - 5h between exercise and bed

# Pre-bed wind-down

- Starts about 60 to 90 minutes before bed
- **Winding down:** slowing down activity, brushing teeth, setting alarm, putting on pyjamas
- **Relaxing:** listening to music, playing with Lego, bath, reading, having a hot caffeine-free drink



## Example Bedtime Routine & Visual Schedule



Make the routine *calming, short, predictable, & expected.*

# Other tools

- Determine what calms / stimulates person
- Sensory sensitivities
  - are clothes comfy?
  - light levels
  - sounds
  - scents
  - massage
  - swinging/rocking
- Expose to sun in day & keep it dark at night
- Avoid napping

*[www.safespaces.co.uk](http://www.safespaces.co.uk)  
- for night wakings*



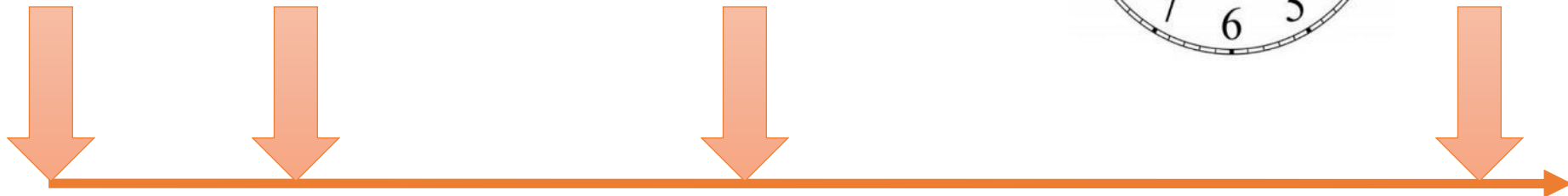
# Questions?

# Approaches to sleep training- what suits you?

- Extinction
- Gradual retreat / bedtime fading / Camping Out
- Controlled checking
- Quick return
- Sleep hygiene and routine

# Controlled Checking and Quick Return

- Put your child to bed awake
- If they cry
  - Leave 5 minutes before going in
  - When go in, say “it’s bed time” and leave again (robot voice)
  - Repeat after 10 minutes
  - Repeat after 15 minutes



# Controlled Checking

- Length of time to allow child to cry is up to you but generally no longer than 50 mins
- You are not aiming to calm your child down when you go in: just reassure them you are there
  - Helping develop the child's own ability to **self-soothe**



# Controlled Checking

- What to expect?
  - Several bad nights initially - extinction burst
  - Important to keep going – consistency is key!
  - Child will adapt and it will gradually become easier
  - Can give lots of **praise and attention in the morning** for their hard work and good sleeping!

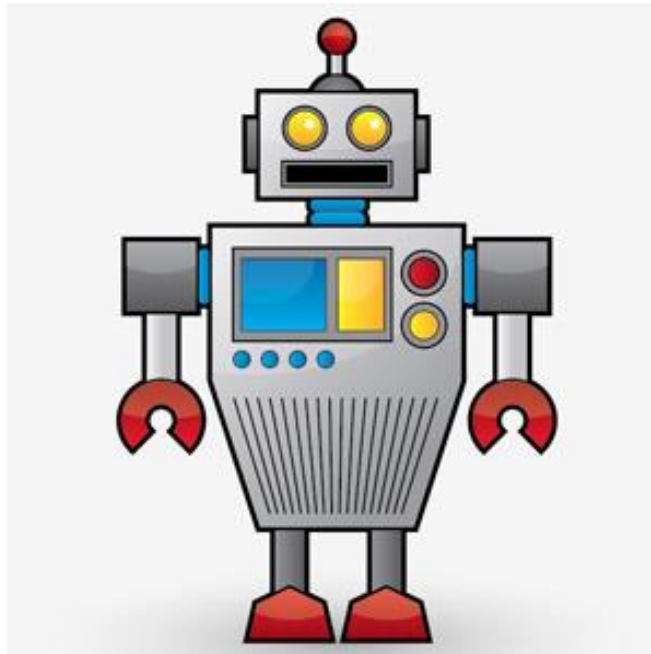
# Quick Return

- When children get up and leave room
  - If no stair gate, can use wind chimes / bell on the door to alert you
- Turn them around and back into bed
- Leave the room promptly



# Robotic parenting

- Aim: to reduce social reinforcement for wakings and give attention at other more appropriate (i.e., non-sleep) times



# Gradual retreat / Camping Out

- Gentler approach, takes longer time for a result
- Parents distance themselves from the child in small steps
  - e.g. lying on bed, sitting on edge of bed, chair next to bed, across room, outside room
- Robotic parenting



# Gradual retreat contd

- Repeat each step for 3-7 nights
- Each stage must be consolidated
  - i.e. child must fall asleep before you move on to the next stage
- Reward system (older children)
- Can take weeks
  - patience!
  - plan for the right time



# Gradual Retreat contd

- Why some people prefer this approach
  - Less crying
  - Less stressful for the parent
  - Less disruptive (e.g., if child shares bedroom with a sibling)
  - When child is anxious