

Sleep, Wellbeing and Mental Health

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1

First things first...

- Thanks to Collina Angus for organising this session
- And thanks to all of you for finding the time to attend
- Please feel free to post a questions at any time

2

This session will consider...

- How best to cope with periods of disturbed sleep (and prevent things becoming worse)
- How best to manage ongoing sleep problems (and make things better)

3

But before we get on to managing sleep...

- We need to understand what sleep is – and how it works
- So this session is also designed to improve your 'sleep literacy'

4

Now we can start...

The session is divided into 5 sections:

1. Why do we sleep?
2. Measuring sleep
3. How sleep works
4. How sleep disturbance works
5. Managing sleep

5

Why do we sleep?

6

Why do we Sleep?

- Without sufficient sleep we experience:
 - Reduced alertness and stamina (tiredness)
 - Impaired memory efficiency (forgetful)
 - Impaired motor performance (clumsy)
 - Emotional dysregulation (tetchy)
- And overall, we feel wretched...

7

Why do we Sleep? An evolutionary answer

- As slow, sight-dependent mammals with few natural 'weapons' and no natural 'armour' – we were very vulnerable at night
- Sleeping kept our genes safe!



8

What follows from this?

1. The need to sleep at night has been hard-wired by natural selection
2. If sleep need is not met, physical and psychological consequences are inevitable

9

Measuring Sleep

The structure of sleep

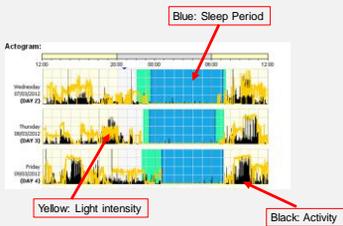
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The Actigraph



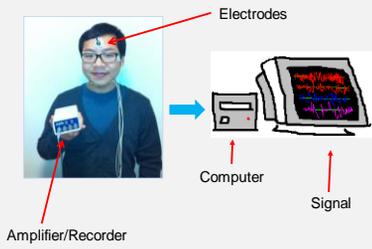
11

The Actogram (+Photometry)



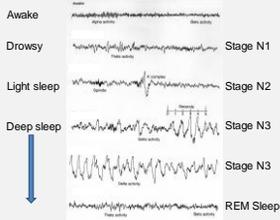
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Polysomnography (PSG)



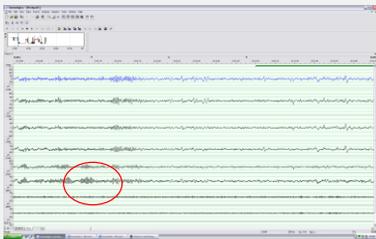
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The Polysomnograph

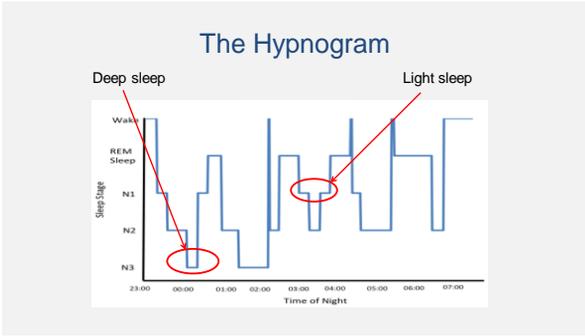


14

Polysomnogram: Transition from 'Awake' (S1) to 'Sleep Onset' (S2)



15



16

How sleep works

The regulation and control of sleep

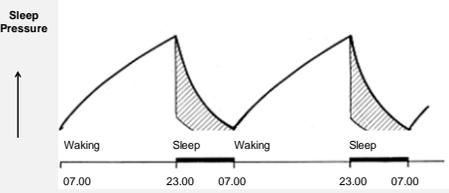
17

Sleep is controlled by 3 processes

- **Homeostatic Processes**
 - Physiological balance
- **Circadian Processes**
 - Biological clock
- **Psychological Processes**
 - Learning
 - Cognitive Arousal
 - Automaticity

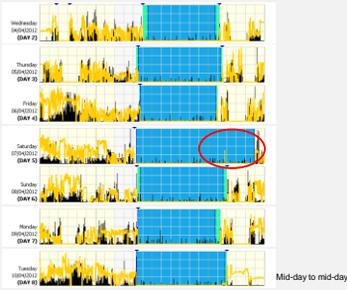
18

Homeostatic Processes: the accumulation of 'sleep pressure'



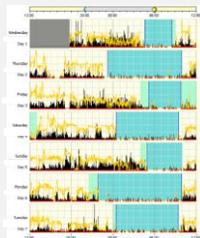
19

Actogram: Elite Athlete (Male aged 30)



20

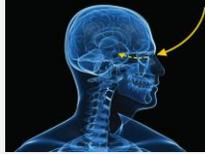
Actogram: Student (Female aged 19)



21

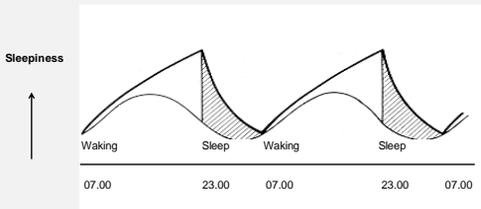
Circadian Processes: The Biological 'Clock'

- Sleep and wakefulness are **entrained** to the 24 hour day
- This entrainment is mediated by special cells on our retina
- These cells control secretion of the hormone melatonin
- Melatonin levels rise in darkness, and fall in light



22

Homeostatic and Circadian processes



23

Psychological Processes: The Psychology of Sleep Onset (falling asleep)

Sleep onset is most probable when:

- we are appropriately sleepy;
- we go to bed at the appropriate time;
- we are appropriately calm; and
- the sleep environment is familiar and associated with restfulness.

24

How Sleep Disturbance Works

The psychology of sleep and insomnia

25

The Psychology of Sleep

3 key psychological factors are influential in the regulation of sleep, and the origins of sleep disturbance:

- Arousal ('alertness')
- Automaticity (things we do 'automatically')
- Learning ('conditioning')

26

Sleep and Arousal

- Falling asleep is most likely when mental calmness allows thinking to 'fade'
- Being 'alert' (or 'cognitively aroused') will delay sleep onset.
- This kind of alertness doesn't have to be anxiety or worry – just **thinking** will help to keep you awake

27

Cognitive Arousal: what people with insomnia say...

"I can't get to sleep because..."

- "...My mind is racing"
- "...I can't seem to 'switch off'"
- "...I've always got things on my mind"
- "...I just can't stop thinking about things"
- "...I'm a bit of a worrier"

28

Arousal and Sleep Onset: The Vicious Cycle

- **In bed – but alert**
- Eventually, we become aware of delayed sleep onset
- So, we 'decide' or 'intend' to fall asleep
- Then we deploy 'sleep effort' ("I must get to sleep")
- But 'sleep effort' is counterproductive and leads to...
- **Frustration, and more alertness in bed**

29

Automaticity and Sleep Onset

- Getting to sleep is not under conscious control – it is "automatic"
 - We can create circumstances which make getting to sleep *likely*, but we can't make ourselves fall asleep
 - All automatic behaviours work best 'automatically'
- So
- **We fall asleep best when we don't 'try'**

30

How we learn to fall asleep

Some sleep arithmetic

- We go to bed and fall asleep about 360 times a year
- For every 10 years of our adult life, then, we have done this about 3600 times
- When behaviours are repeated hundreds and hundreds of times – conditioning happens

31

How we learn to fall asleep

- We get into bed and adopting an internal state which leads to sleep is rewarded (reinforced) by sleep onset
- Through repeated episodes of reinforcement, the bedroom environment becomes a 'cue' for falling asleep
- Going to bed can make us feel sleepier

32

When sleep onset problems become persistent...

But...

- What is learned can also be unlearned
- Persistent sleep disturbance 'extinguishes' learned associations between the bedroom and sleep
- As a result, the ability of the bedroom environment to 'signal' sleep can be diminished

33

In other words...

When GETTING to sleep becomes a regular problem, bedroom environments:

- stop promoting rest and sleep...
- and start promoting 'cognitive arousal'

34

Managing sleep – An outline of approaches

35

Managing Your Sleep

The following points all follow from the science covered in this presentation

36

Managing Your Sleep

- Routine is the guardian of good sleep – try to **keep to a schedule** and maintain pre-sleep habits and rituals.
- Let the light in – try and **spend some time outdoors in daylight** every day (preferably at the same time).
- If you have a sleep problem, then sleepiness is a precious resource – save it for bedtime and **avoid napping**
- Reduce cognitive arousal (alertness) in bed...

37

Managing Your Sleep: The 'worry buffer'

- There's nothing wrong with worrying – but don't take your worries to bed.
 - Try setting aside a fixed time each day to worry
 - List your worries and focus on each one
 - Make notes of possible solutions or approaches
 - At the end of the fixed period – walk away
 - If the worries return at night – tell yourself they're in hand, and that you can return to them tomorrow

38

Managing Your Sleep: Thought blocking

- If really bad thoughts 'erupt' at night – try blocking them
- Repeat the word "The" at **irregular** intervals in your mind – you'll find that thinking about anything else is almost impossible

39

Managing Your Sleep:

Relaxation

- Learn a relaxation technique to practise in bed. These techniques can serve 2 purposes:
 - First (and obviously) they relax your body and generate a useful feeling of pre-sleep tranquillity
 - Second (equally usefully) the relaxation procedures themselves 'block out' troublesome thoughts and promote sleep

40

Sleep Education and Management in Easy Steps

- Content (tests, videos, text) explaining normal and dysfunctional sleep.
- Full sleep management programme (with online sleep diary)



41