

Sleep And Mental Health

Prof Guy Leschziner

Professor of Neurology and Sleep Medicine

Guy's and St Thomas' Hospitals

IoPPN, King's College London



Guy's and St Thomas'
NHS Foundation Trust





Mental Health or Sleep – Which First?

Both issues very common

Co-occurrence is higher than by chance

Proportions of people with sleep disorders with mental illness

- Insomnia 40%
- Hypersomnia 46.5%
- cf normal sleepers 16.4%

In people with insomnia, current or past diagnosis of psych diagnoses very high – mood vs anxiety



The Orthodox Position

- Sleep disturbance a symptom or consequence of mental health issue
- Sleep is a secondary phenomenon
- Addressing the psych disorder will improve sleep

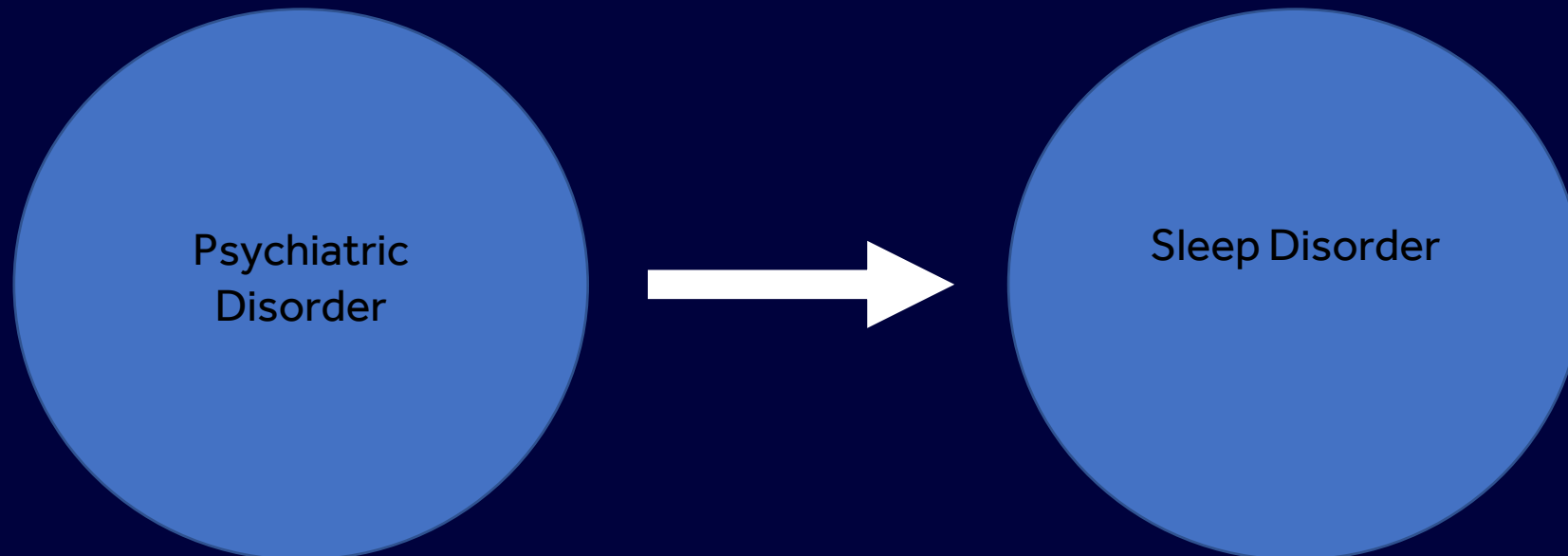


The Orthodox Position

Sleep disturbance a symptom or consequence of mental health issue

Sleep is a secondary phenomenon

Addressing the psych disorder will improve sleep

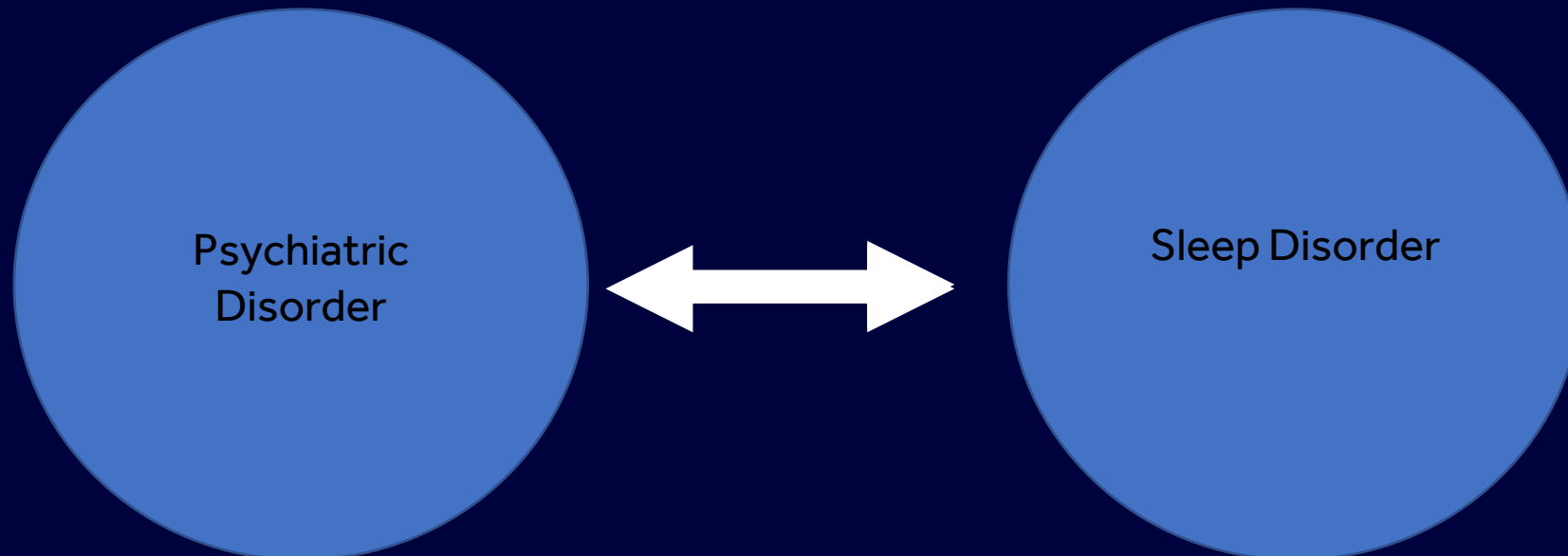


The Orthodox Position

Sleep disturbance a symptom or consequence of mental health issue

Sleep is a secondary phenomenon

Addressing the psych disorder will improve sleep



Could Sleep Be Causative?

Acute sleep loss has negative effects on:

- Emotional regulation
- Interpretation of significance of neutral stimuli
- Perception of pain
- Response inhibition
- Wide array of cognitive functions
- Physiological effects, e.g. endocrine, immune, autonomic



Anxiety

Relationship between anxiety and sleep self-evident

Anxiety about perceived threat

Hypervigilance and Hyperarousal – heightened flight-fright-fight response

Insomnia also a hyperarousal state

Almost complete overlap in genetic contributions

75% of people with anxiety report sleep disturbance



The Role of Sleep In Anxiety

A single night of sleep deprivation enhances expectation of threat

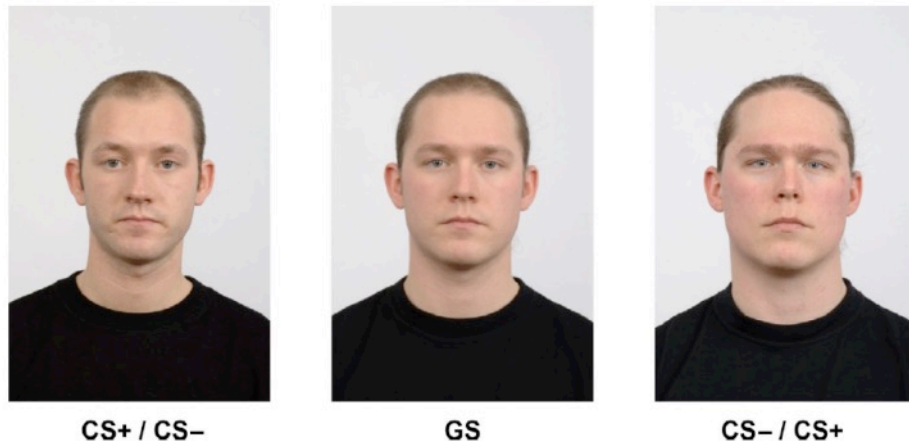
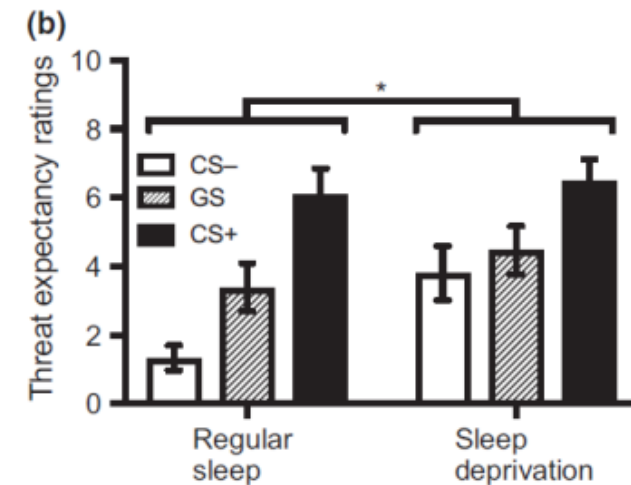


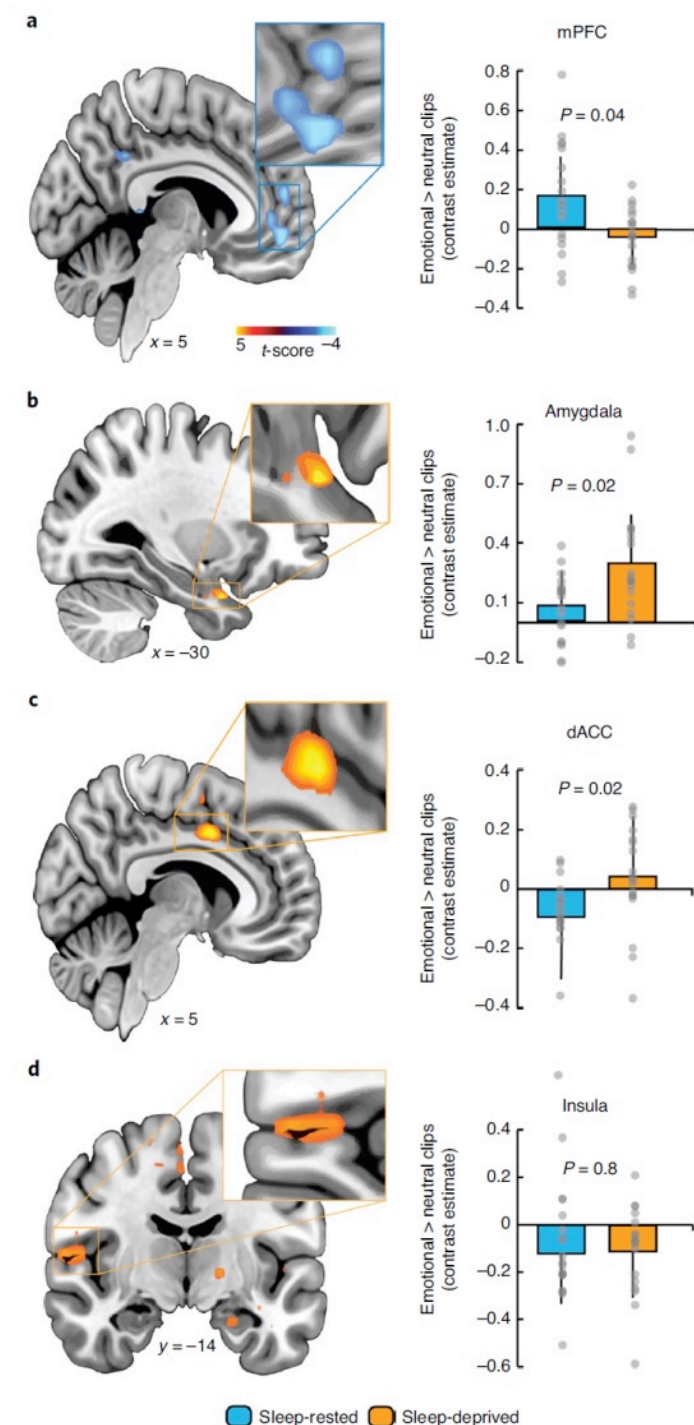
FIGURE 1 Images used as CS+, GS and CS-. The CS+ and CS- images were counterbalanced within sleep conditions. CS, conditioned stimulus; GS, generalization stimulus



The Role of Sleep In Anxiety

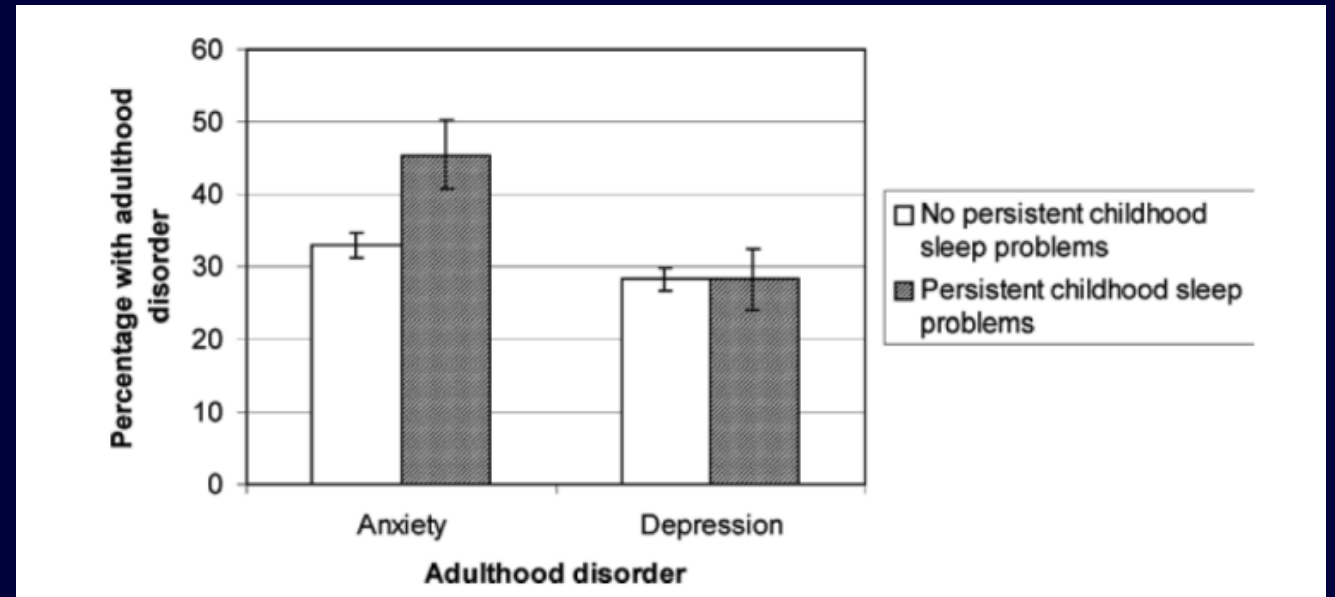
Single night of sleep deprivation causes brain changes similar to anxiety

- Impaired frontal activity
- Increased activity in fear-processing area of amygdala and cingulate



The Role of Sleep In Anxiety

Persistent sleep issues in childhood increase risk of anxiety disorders in adulthood by 60%



PTSD – A Specific Anxiety State

Hyperarousal state

Flashbacks

Sleep Disturbance

Trauma-related
nightmares

90% sleep issues and 50%
nightmares



The Role of Sleep In PTSD

Poor sleep prior to or after trauma predicts development of PTSD

Evidence that sleep, especially REM sleep, important in dissociating emotional components from memories

CBTi helps treat PTSD symptoms

CBT for anxiety results in moderate improvement of sleep – evidence of bidirectional relationship



What About Depression?

Sleep disturbance very common:

- 85% insomnia
- 48% hypersomnia (excessive sleepiness)
- 30% both

Part of the diagnostic criteria

Nature of relationship crucial to understand role of treating sleep disorders



The Nature of This Link

Longitudinal studies:

- Presence of insomnia doubles or triples risk of developing depression
- Circadian rhythm phases linked with risk of depression in children
- Insomnia consistently a risk factor for suicidal ideation and suicide attempts
- Insomnia often persists in remitted depression, but much more common in ongoing depression



Treating Insomnia in General Population

Studies show:

- Treatment of insomnia causes moderate reduction in depressive symptoms
- In an RCT of CBTi v sleep hygiene education, clear benefit
- Treatment of insomnia reduces likelihood of depression for at least the next year



Treating Insomnia in Depressed Patients

Studies show:

- Adding in CBTi vs standard sleep advice on top of normal Rx increase likelihood of remission
- Antidepressants + sleep hygiene v CBTi + placebo – similar impact on depression
- CBTi and CBT-D show similar reductions in depressive symptoms



Treating Insomnia in Depressed Patients

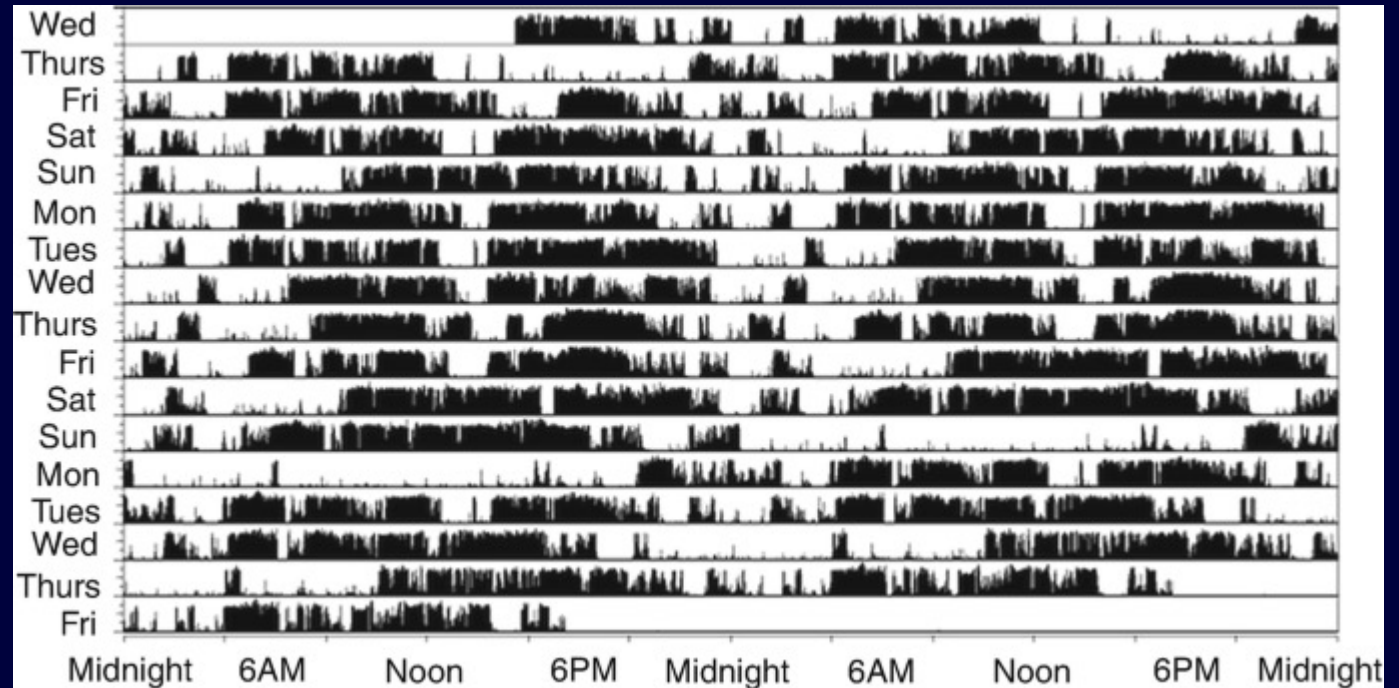
Studies show:

- Improvements in sleep early increase likelihood of depression remission
- Poorer sleep at baseline predicts worse response to treatment
- Circadian rhythm also important – night owls have higher severity, and more suicidal ideation – light therapy and melatonin



Schizophrenia

Sleep disturbance common
Sleep improves delusions
Irregular sleep-wake disorder



Schizophrenia

Clear association between sleep issues and psychosis

- Sleep issues doubles odds of psychotic experience
- Insomnia correlates with psychotic symptoms like paranoia
- 75% report sleep disturbance before onset of psychotic symptoms
- 80% with first episode report a sleep disorder
- High risk patients, sleep and circadian problems predict poor prognosis



Does Sleep Intervention Help?

In normals:

- dCBTi v nothing – big improvement in insomnia, paranoia and hallucinatory experiences
- Reducing sleep to 4 hours per night – increase in psychotic-type symptoms

In patients:

- Limited data
- CBTi show large improvements in sleep, and other symptoms too



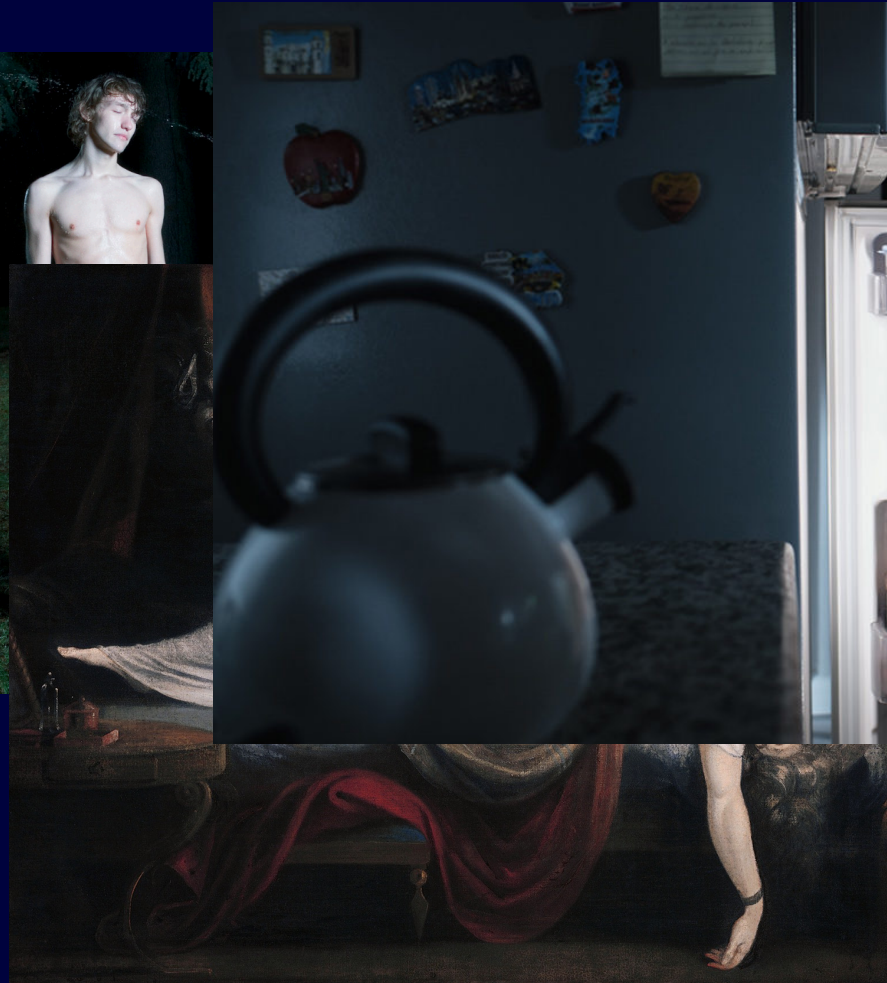
Other Settings

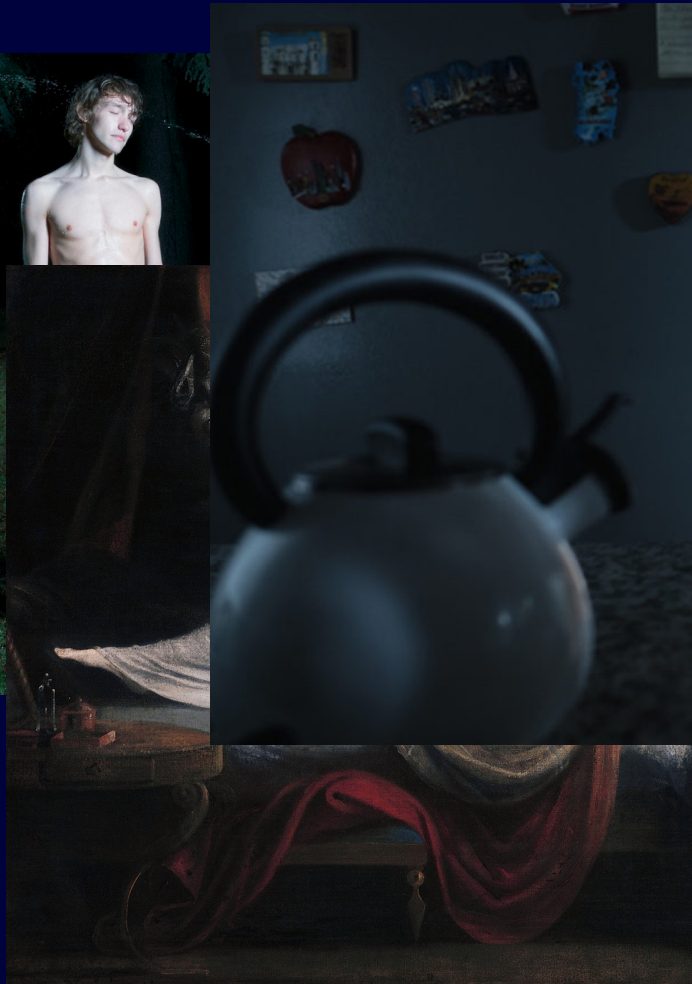


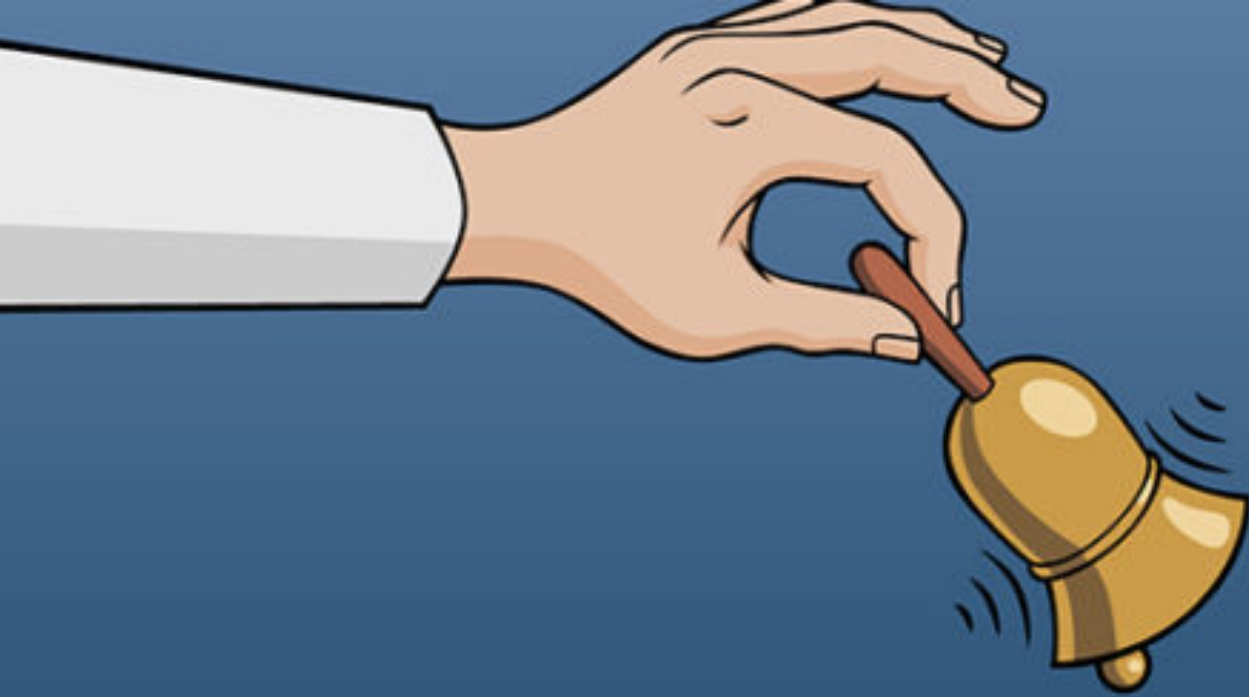
Other Settings



Other Settings







The Basis of Insomnia



Treatment Options

Standard Sleep Hygiene Advice v CBTi

What is CBTi?

Other non-drug-based options

- ACT, autogenic training
- Dream rescripting, lucid dreaming therapy

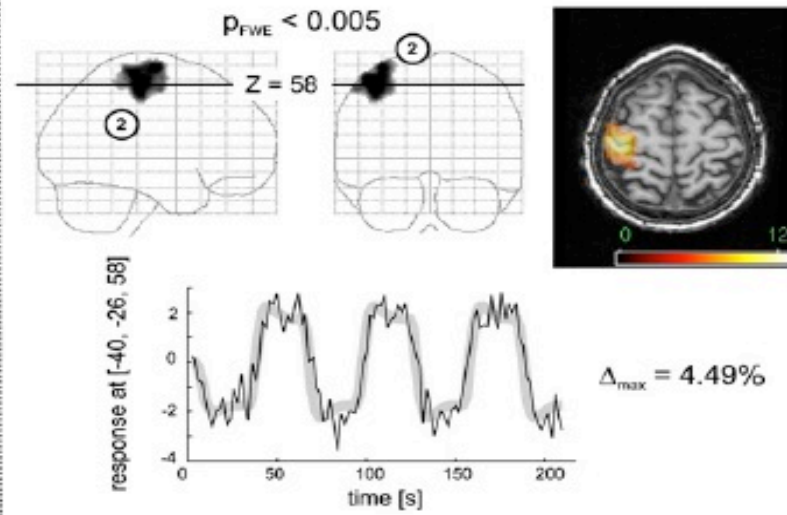
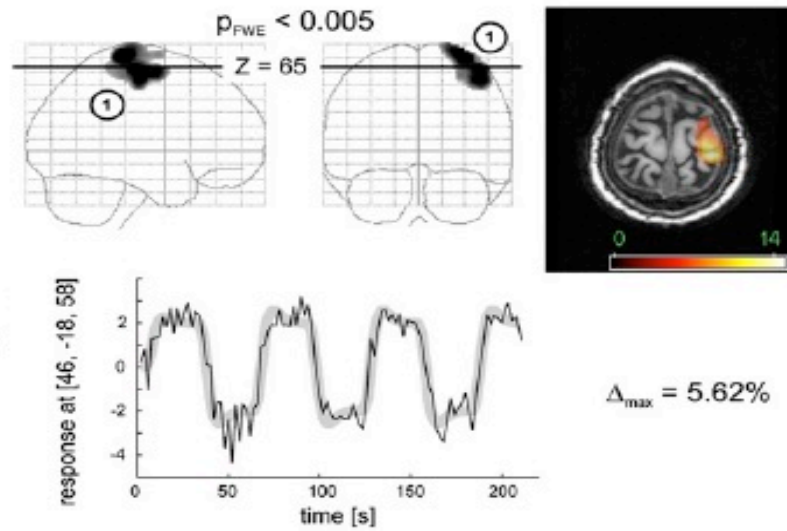


Left hand > right hand

Right hand > left hand

A

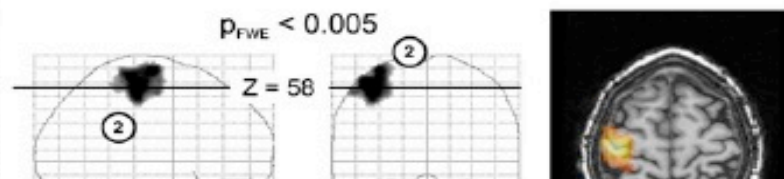
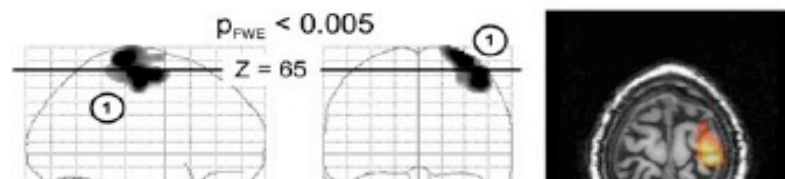
real hand movement
during wakefulness



Left hand > right hand

Right hand > left hand

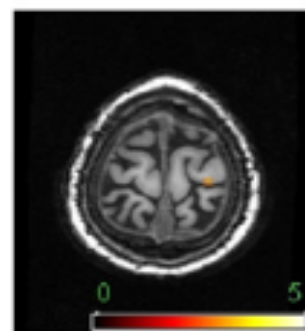
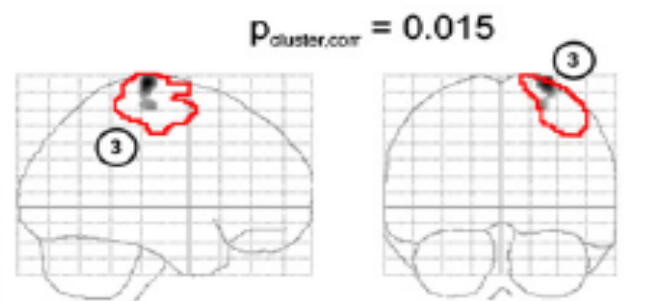
A



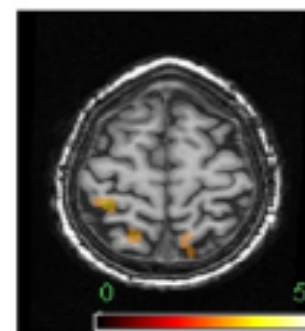
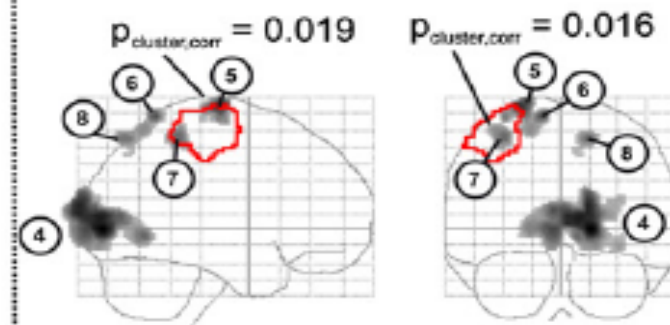
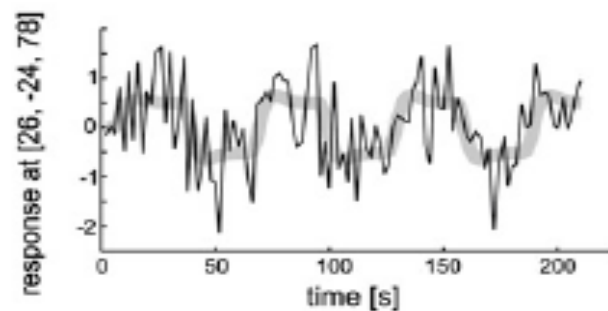
real hand movement
during wakefulness

Imagined hand movement
during wakefulness

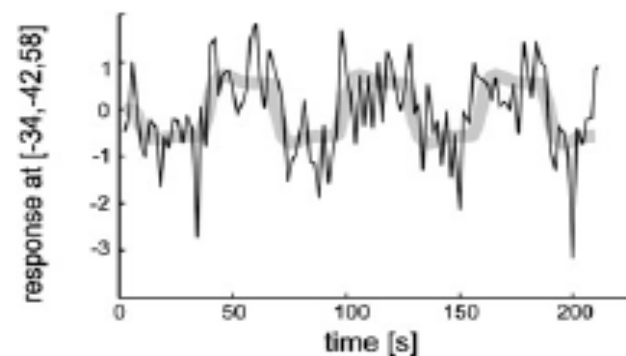
B



$\Delta_{\max} = 1.31\%$



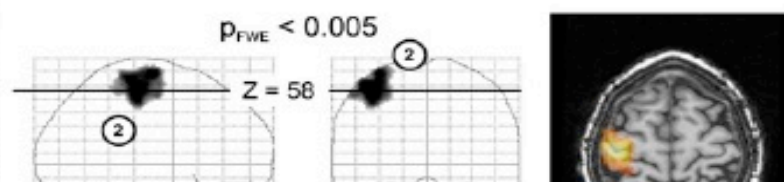
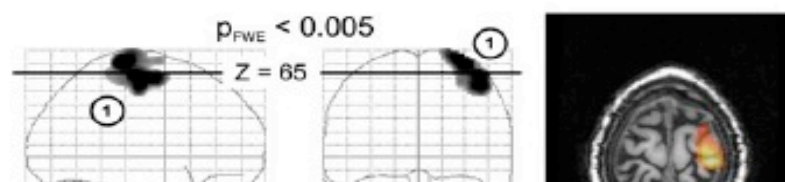
$\Delta_{\max} = 1.44\%$



Left hand > right hand

Right hand > left hand

A

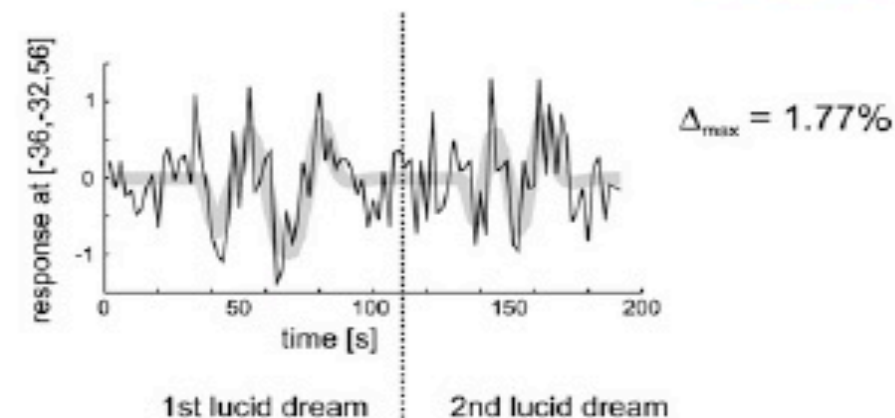
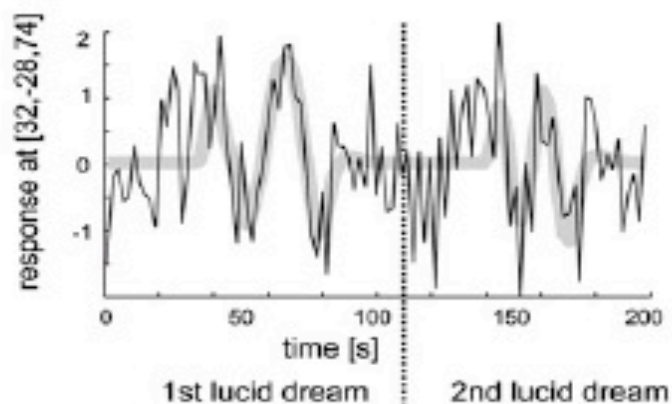
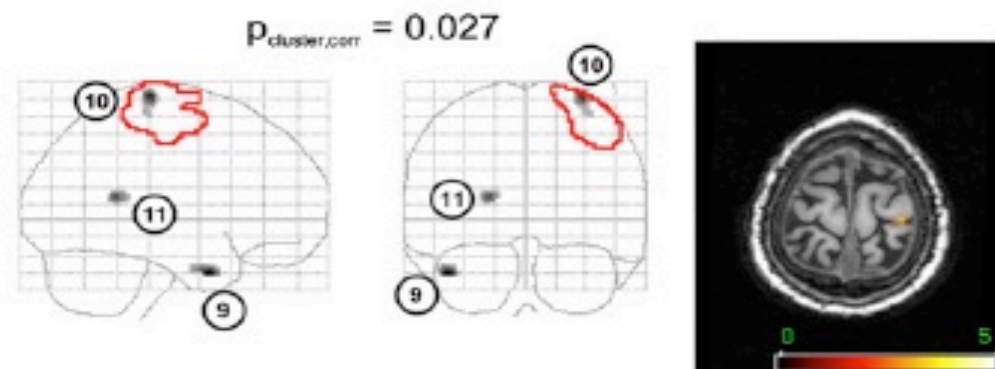


real hand movement
during wakefulness

Imagined hand movement
during wakefulness

C

dreamed hand movement

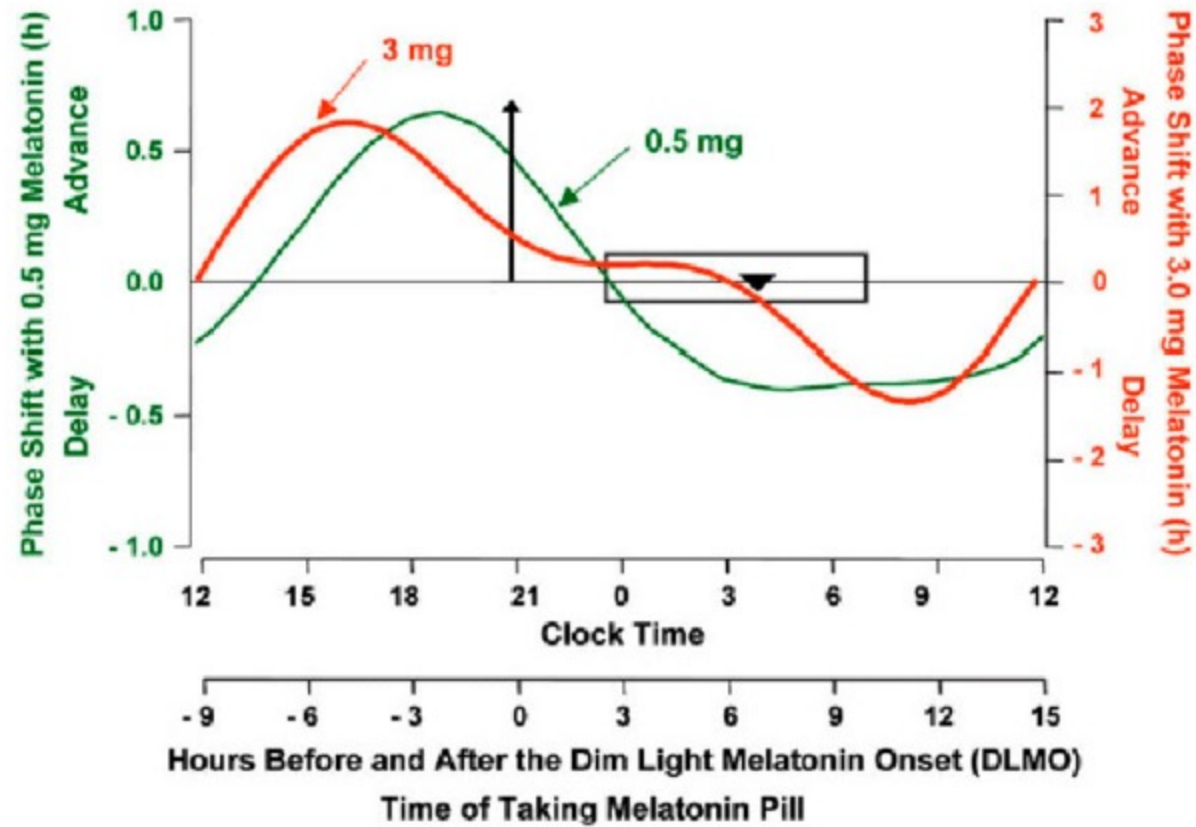


Treatment Options

Consideration of other
sleep disorders
Knowledge of effects on
sleep of psychotropic
medications
Adjustment of the
circadian rhythm –
importance of timing of
melatonin



Human Phase Response Curves to Different Doses of Melatonin



Conclusions

A large, white, rectangular pillow is positioned horizontally in the center of the frame. It has a soft, wrinkled texture and is set against a solid, vibrant blue background. The pillow's edges are slightly irregular, giving it a natural, lived-in appearance.

Sleep fundamental to good
mental health

Sleep issues not simply
secondary to mental health
issues

Sleep medicine should be
part of standard psychiatric
care

www.Gresham.ac.uk
@GreshamCollege



**FOR THE LOVE OF LEARNING
SINCE 1597**



GRESHAM

COLLEGE