

Gasping for Breath:
Management of Sleep Disordered Breathing after Complex Injuries

Ashtons Brain Injury Conference
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Without adequate sleep we can become:

- Tired
- Anxious
- Irritable
- Depressed
- Less able to learn and recall skills and information
- More likely to have persistent insomnia



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How much sleep do we need?

- Eight hours?
- Enough?
- Enough for Whom?
- How much do you need?

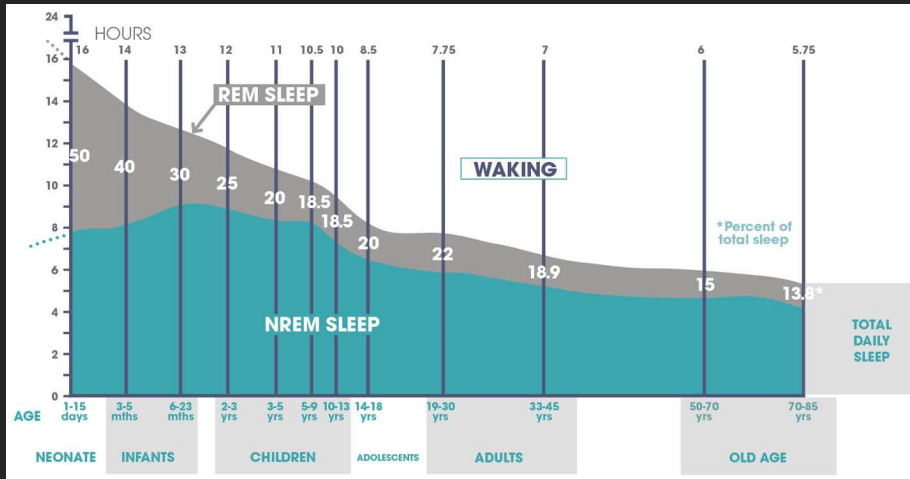


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Changes in sleep requirements with age



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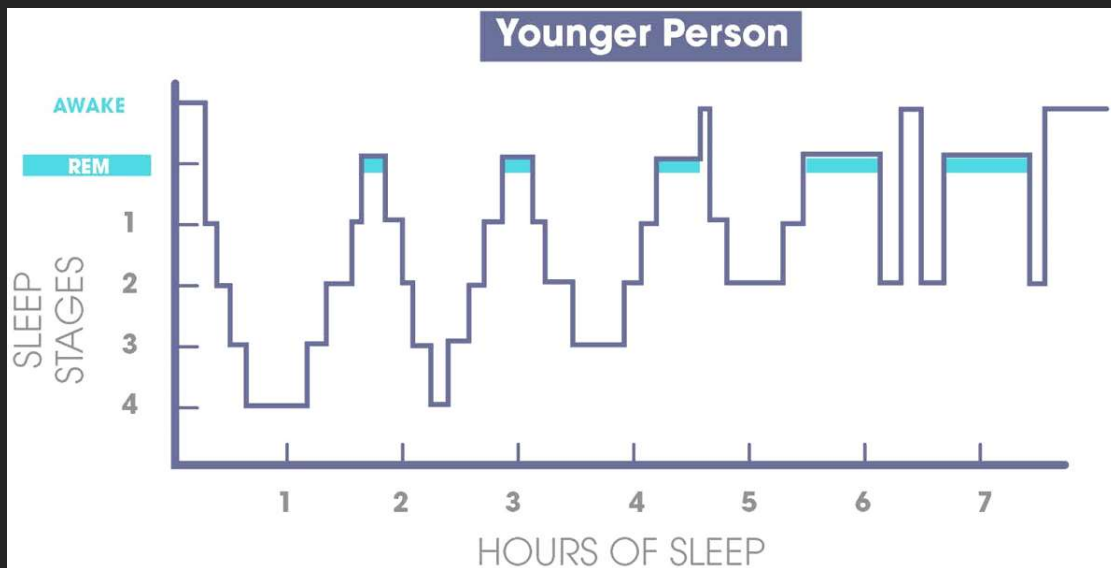
Reproduced from Roffwarg et al 1966



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Sleep Structure

Younger Person

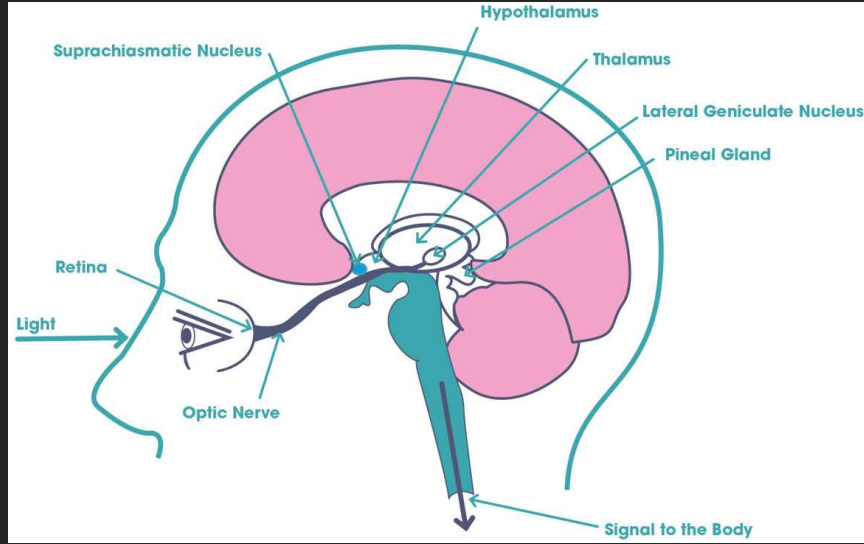


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Retino-Hypothalamic Tract

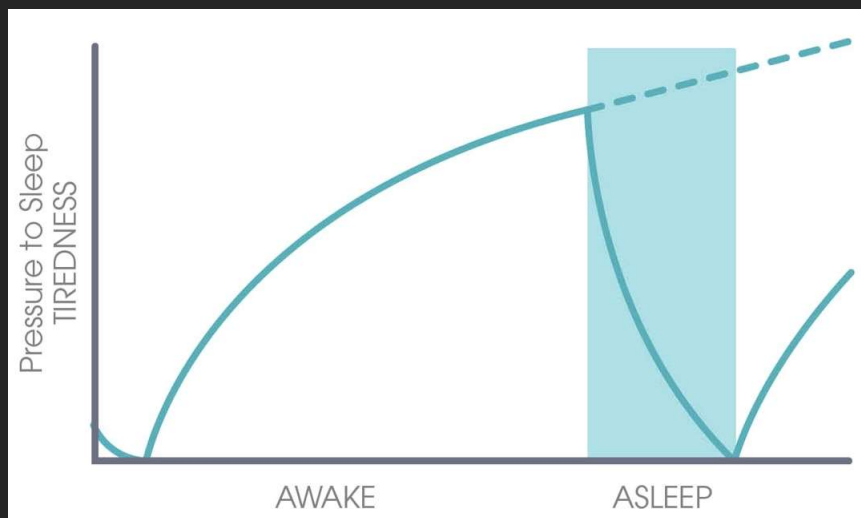


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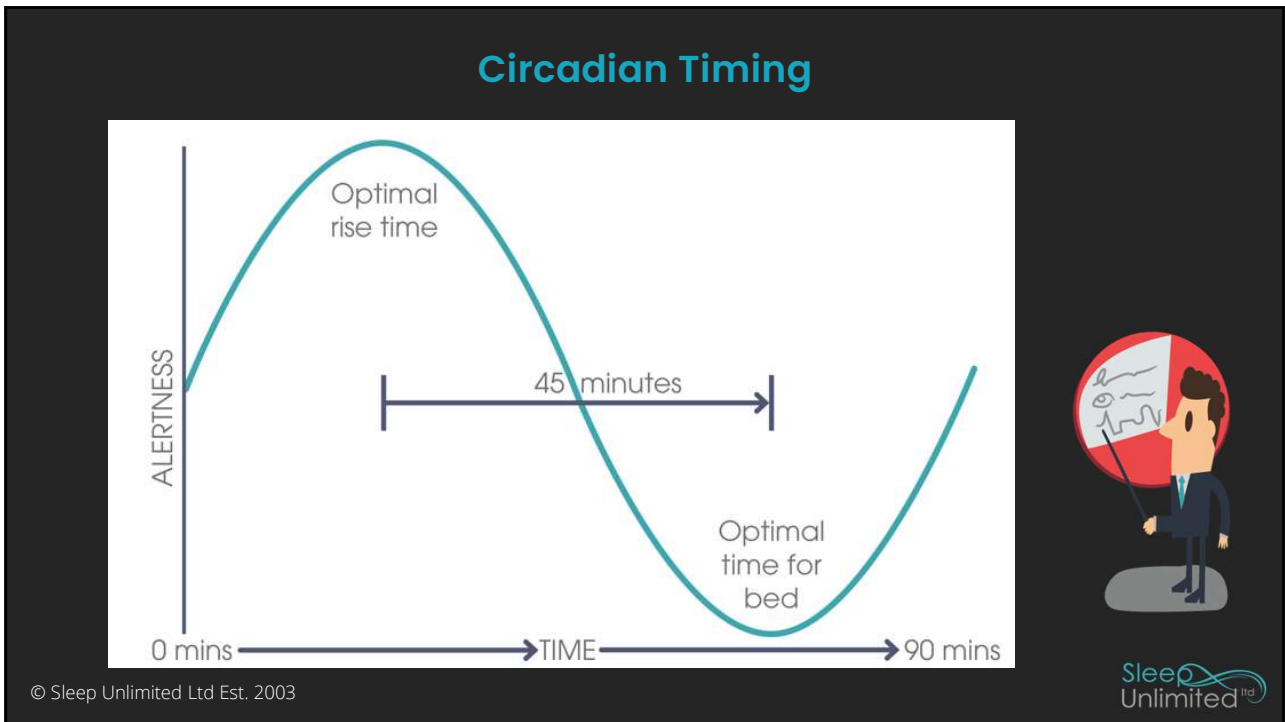
Sleep Pressure



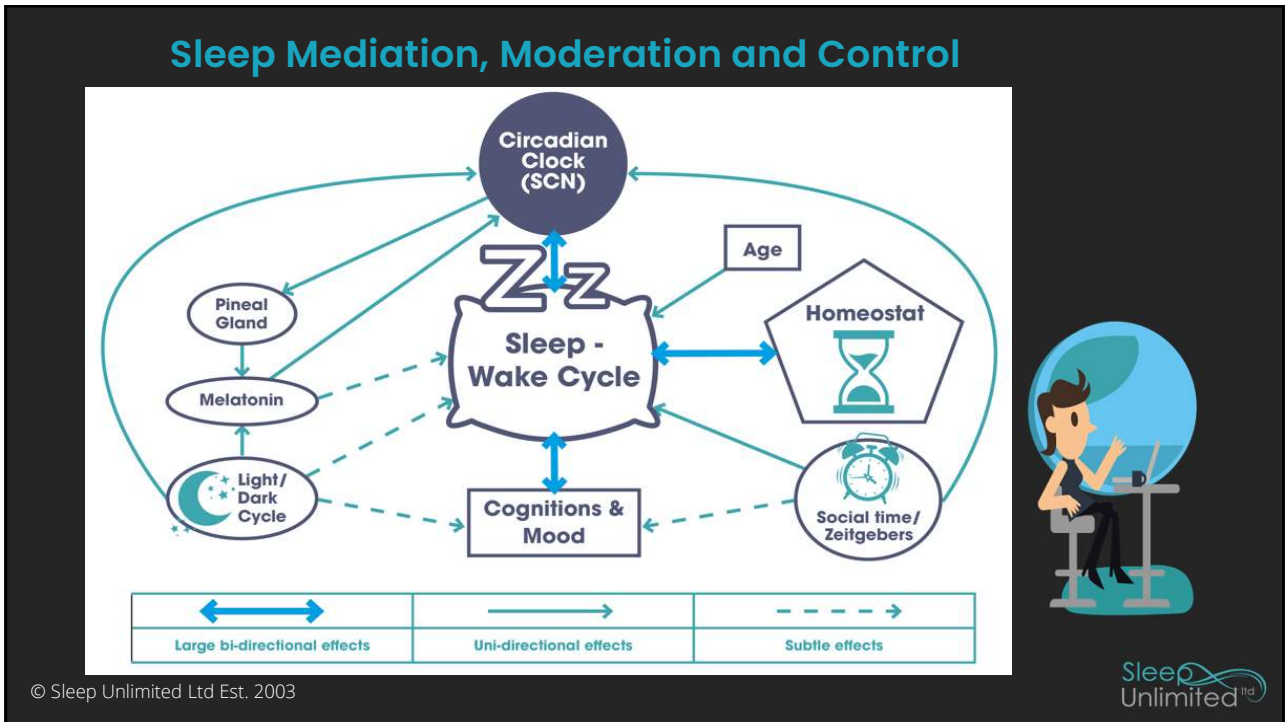
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Types of insomnia






01	Acute or chronic insomnia	
02	Initiation, maintenance or early waking	
03	Psycho-physiological insomnia	
04	Co-morbid insomnia	
05	Adjustment Insomnia - Social - Environmental - Emotional	

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Types of insomnia

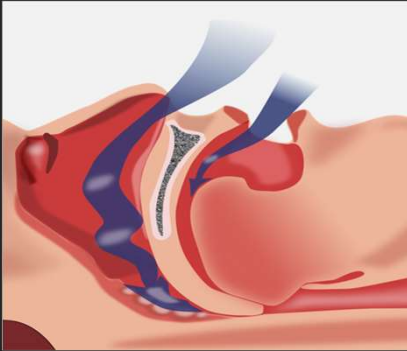
06	Circadian or schedule insomnia	
07	Hypersomnia	
08	Orthosomnia	
09	Parasomnias – nightmares, sleep waking, night terrors etc...	
10	Physiological – Apnoea, Narcolepsy Restless Leg Syndrome, Periodic Limb Movements	

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Sleep Apnoea



- Obstructive vs Central (more common)
- Periods of anoxia lasting 10 – 15 seconds common in sleep (around 10 – 15% of adults) and not a cause of insomnia
- In a few people, periods of anoxia lasting for up to and sometimes over a minute (many times during the night)
- Called Apnoeas – microarousals – insomnia – excessive daytime sleepiness (EDS) – pulmonary heart disease
- Underreported due to ignorance

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Sleep Apnoea

- Estimates suggest that around 1.5 million people in the UK may have obstructive sleep apnoea (OSA)
 - Currently, only 330,000 have a confirmed diagnosis
 - If OSA were treated in these remaining undiagnosed people an estimated 40,000 less road traffic collisions would occur per-year in the UK
- Saving an estimated £55 million in direct costs relating to accidents and treating co-morbidities in people with OSA
- Professional drivers an at-risk group for sleep disordered breathing

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Diagnostic Tools



Oximetry



Actigraphy

Paper Based Assessments

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Diagnosis and Treatment

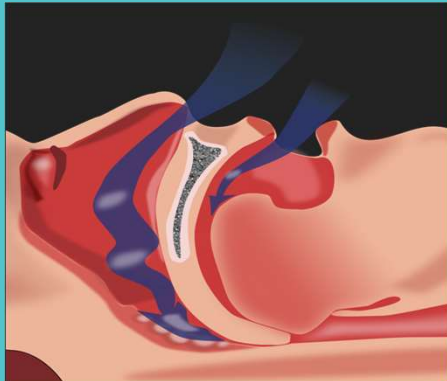


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- There are a range of treatment options for managing OSA including:
 - weight loss, mandibular advancement devices, uvulopharyngoplasty, tonsillectomy, and continuous positive airway pressure (CPAP) therapy
 - Adherence to the use of CPAP therapy has been shown to normalise risk in professional drivers with OSA
- Access to effective diagnostic and treatment protocols is thought to be problematic for up to 85% of people with OSA
- There is an inequitable distribution of health service provision across the UK at the present time

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Score >5 = High Risk
 Score 3 – 5 = Medium Risk
 Score <3 = Low Risk
 For sleep disordered breathing

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STOP – BANG Questionnaire

Score one point for each 'yes'

- Snore (do you?)
- Tired (are you?)
- Observed to stop Breathing (have you?)
- Pressure (high blood pressure)
- BMI (overweight or obese)
- Age (over 50)
- Neck size (over 16" or 42cm)
- Gender (male)

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