



WAPHA
WA Primary Health Alliance

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PERTH NORTH, PERTH SOUTH,
COUNTRY WA

An Australian Government Initiative

Primary Health Network Persistent Pain Program presents



'Turning Pain into Gain'

Welcome to Topic FIVE

Today's Topic:

- * **The Sleep-Pain Nexus**
- * **Tips for Better Sleep**



Did you know.....

We spend a third of lives sleeping!?

- * Average life span of 79 years
- * 26 years spent asleep
- * 7 years spent trying to sleep

So why do we sleep??



Why do we sleep?

- * For healing, growth, repair and rejuvenation
- * For concentration
- * To conserve energy
- * To create new memories
- * Maintain and form new nerve pathways in the brain
- * Assists us in our learning
- * Immune function
- * Removes toxins in our brain

How do we sleep?

Circadian Rhythm

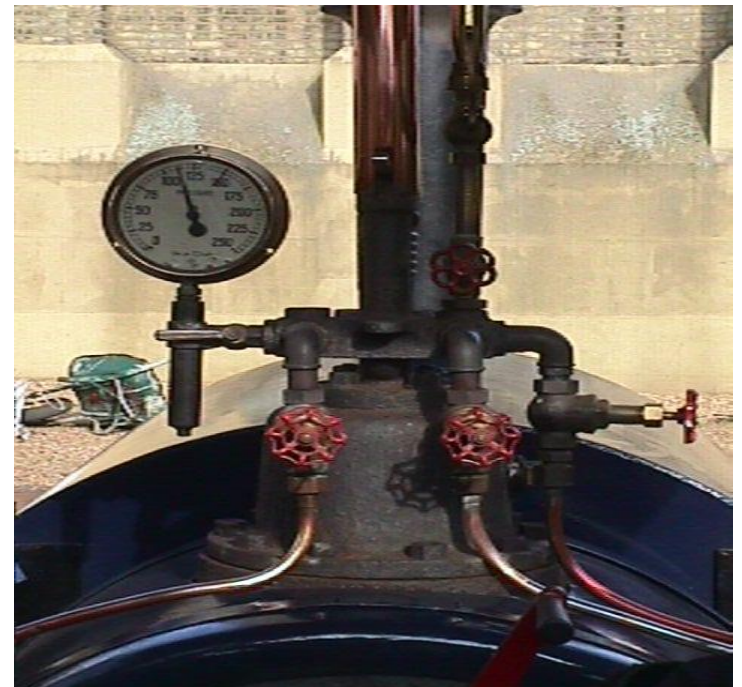
-the master clock-



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Sleep-wake homeostasis

-the pressure gauge-



Circadian Rhythm: Light and Heat

Circadian Rhythm (Body-Temperature Cycle)



In stage 1 we experience a light transitional sleep. This is where drowsiness and sleep begin.

Stage 1

In stage 2 more stable sleep occurs. Chemicals produced in the brain block the senses making it difficult to be woken.

Stage 2

**90-120
Minutes**

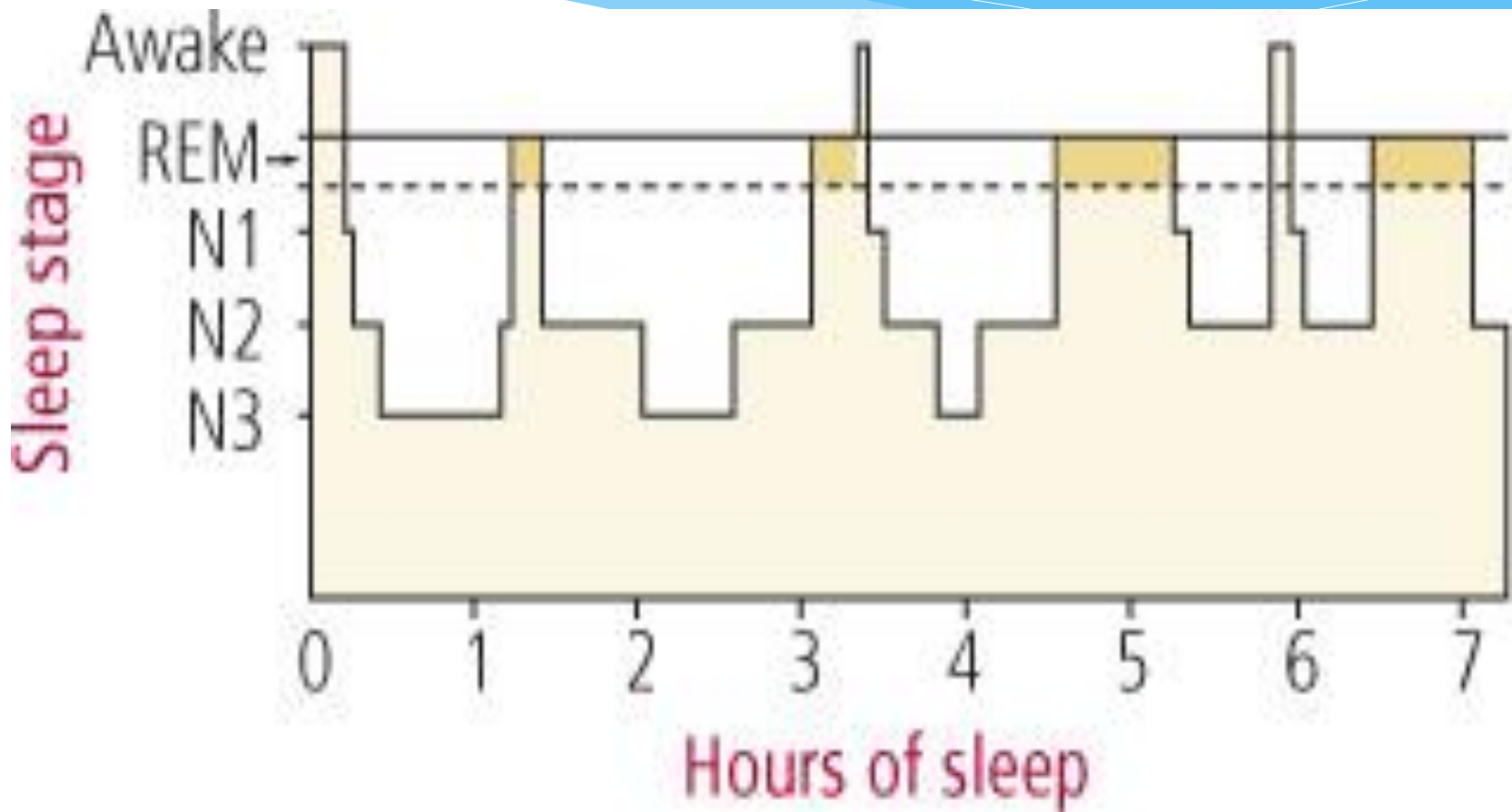
REM

REM sleep revitalizes the memory. In this stage brain activity is very high and intense dreaming is likely to occur.

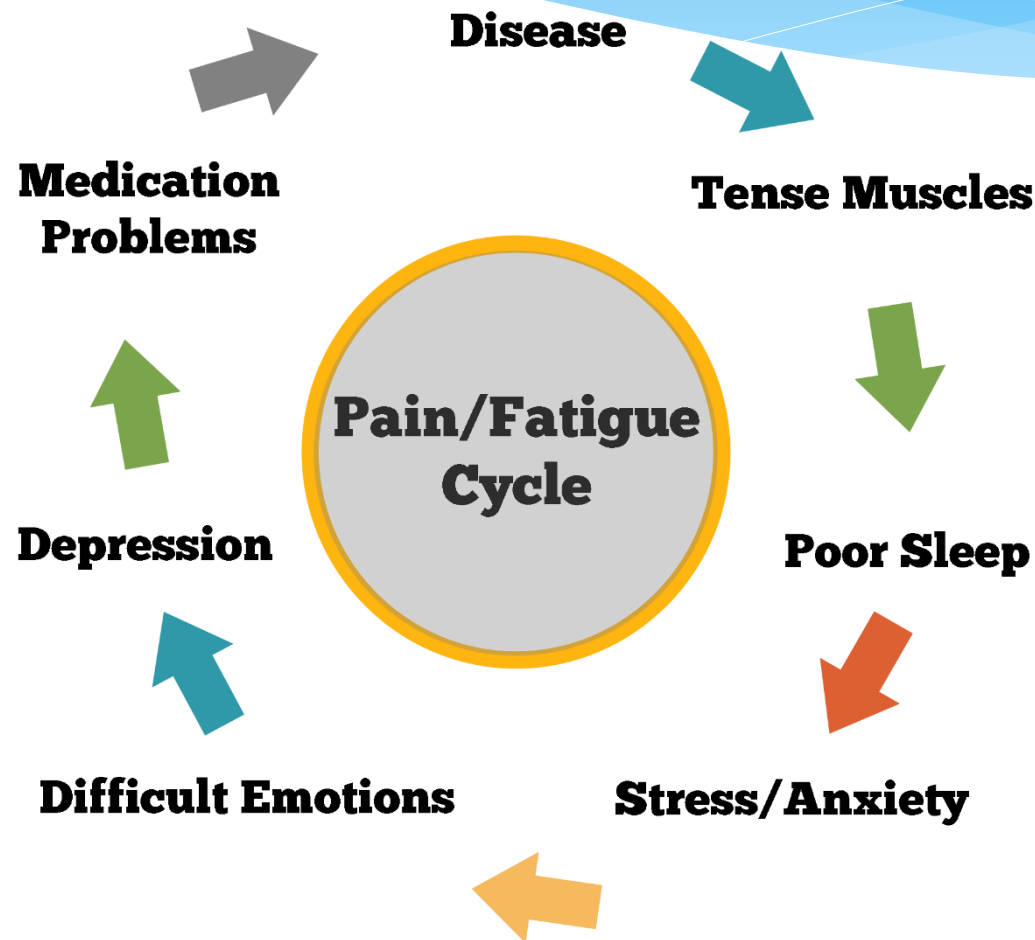
Stage 3

Stage 3 is deep sleep. Growth hormone is released during this stage. Most stage 3 sleep occurs in the first third of the night.

The stages of sleep



Sleep, Pain and Fatigue Nexus



Sleep, Pain and Fatigue Nexus

- * 50-88% of chronic pain sufferers also have sleep disorders
- * 40% of sleep disorder sufferers also have chronic pain
- * Sleep effect > Pain effect

Affect of Sleep

- Difficulty falling asleep
- Microarousals
- Fragmented sleep
- Daytime tiredness
- Reduced quality and quantity of sleep



AFFECT ON PAIN

- Increase sensitivity in the nervous system
- Lower pain threshold
- Increase in functional disability
- Impaired healing rate

Common sleep disorders and pain

MOST COMMON...

- * Insomnia
- * Hypersomnia
- * Sleep Apnea
- * Restless Legs Syndrome



Defining sleep disorders

	Symptoms	Treatment
Insomnia	<p>Difficulty falling asleep and staying asleep Waking early and not being able to return to sleep</p> <p>Cause :</p> <ul style="list-style-type: none">• Pain• Daytime sleeping• Worry and anxiety, low mood	<ul style="list-style-type: none">• Cognitive behavioural therapy
Restless Legs Syndrome	<p>Urge to move legs at night Associated with central sensitisation (over-active nervous system)</p>	<ul style="list-style-type: none">• Parkinson's disease medicine

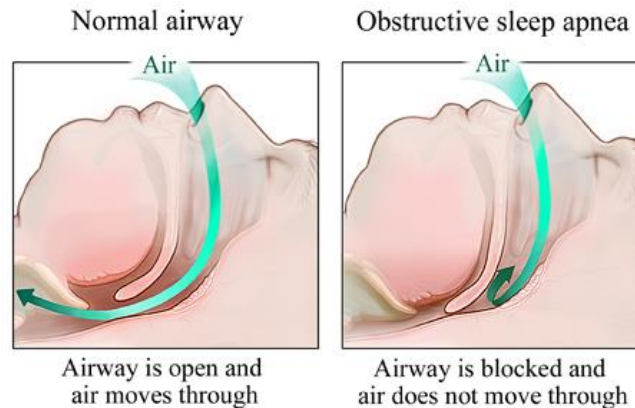
Defining sleep disorders

	Symptoms	Treatment
Hypersomnia	<p>Sleeping too much</p> <p>Caused by:</p> <ul style="list-style-type: none">• Depression• Staying in bed to avoid dealing with pain• Excessive sedation from over-medication on pain relievers	<ul style="list-style-type: none">• Treating depression• Reduce pain relievers that are sedating



Defining sleep disorders

	Symptoms	Treatment
Sleep Apnoea Most common is Obstructive Sleep Apnoea	Stop breathing during sleep Cause : <ul style="list-style-type: none">• Overweight• Type 2 diabetes• Heart disease• Snoring – facial abnormalities• Long term opioid use• Alcohol	<ul style="list-style-type: none">• Losing weight• Quit smoking• Avoid alcohol• Use mouth pieces• Continuous positive airway pressure devices• Sleep on your side



Sleep and Pain Medication

The effect of opioids on sleep:

- * Studies have shown increase risk in developing irregular breathing rate in those taking high doses of opioids
- * Reduction in slow-wave sleep = opioid induced fatigue



Sleep and Sleep Medication

The effect of sleeping tablets on sleep:

- * Reduce breathing rate especially when taking opioids as well
- * Reduce stage 3-4 sleep
- * Increase risk of falls because they make muscles too relaxed
- * Lingering drowsiness in the day (“hang over”)
- * Rebound insomnia (making insomnia worse)
- * Forgetfulness (forgot you just took the sleeping tablet and extra is taken)



Stretch Break



Tips for better sleep coming up next.....

Tips for Better Sleep

Principle and practice

- * Principles are general, Practice is unique and individualised

The Golden Rule

- * Start with what works for you

Getting good rest takes consistency

- * There is no wonder fix

Small changes result in a big differences

- * Look for **progress** *not* perfection

Be Active and Engaged

- * Get out of the house more
- * Exercise in the morning or late afternoon (but not a few hours before bed)
- * Unclear if exercise helps sleep onset *but* aerobic exercise can deepen sleep.
- * Deeper sleep more restorative
- * Also protective against awakenings related to noise, pain, hot flashes, etc.



Keeping a sleep diary

- * Keeping a sleep diary can be helpful to assess your sleep
- * Identify patterns
- * Improve sleep hygiene



SLEEP RIGHT
SLEEP TIGHT
Natural sleep before medicines

Sleep diary



sleep diary

Use this sleep diary to make an accurate assessment of how much you sleep and other factors associated with your sleep. This will help you to identify patterns and areas for improving sleep hygiene. Also, many people who struggle with sleep difficulties make negative assumptions about their sleep (e.g. "I never sleep more than 5 hours a night") and this worksheet can help you to check if this is really the case.

Day/Date	Pre-sleep information						Bed/sleep pattern						
	Naps (what time & how long?)	Caffeine, alcohol, nicotine? (day total & 4 hrs before bed)	Medication (day total & before bed)	Pre-bed activity (what did you do?)	Day fatigue level (0-5, 5 most tired)	Tension in bed (0-5, 5 most tense)	In-bed activities	Lights out (time)	Time to fall asleep (minutes)	Waking time	Hours slept	Woke up? (number of times, how long)	Rest score (0-5, 5 most rested)
Example:	2pm, 40 minutes	2 coffees, 1 beer, nothing after 4pm	Nil.	watched TV after dinner, 3 hours	3 - felt a bit tired today	4 - felt very tense when I went to bed	Read for 1 hour	10:30pm	40 min	5:10am	6 hrs 40 min	Once at 2am, back to sleep after 20 minutes	3 - felt somewhat rested when I woke up

Eat a Light Snack Before Bedtime

- * **A snack can be helpful about 1 hour before bedtime.**
 - * Carbohydrates (i.e., crackers, bread, cereal, fruit) are best for a good night's sleep.
- * **Avoid chocolate or heavily sweetened foods.**
 - * Such snacking may help to avoid a blood sugar drop during the night that can disrupt sleep.
- * **Have a *light* snack.** Heavy meals close to bedtime can result in discomfort.
- * **Beware of any gastric disorders** that may cause reflux or discomfort



Be Mindful of Liquids before Bedtime

- * Liquids close to bedtime fill the bladder, resulting in discomfort while you sleep, and causing more bathroom visits during the night
- * If you have to drink then do so minimally and keep water by bedside



Caffeine and Alcohol

- * **Avoid caffeinated products** within 6 hours of bedtime
 - * Caffeine blocks adenosine, needed to build sleep pressure
- * **A nightcap?** Don't use alcohol to sleep.
 - * It does promote sleep *but* results in more fragmented sleep, more awakenings during the night and early morning.
- * **A drink or two** with dinner is okay
 - * minimal effect on sleep stages



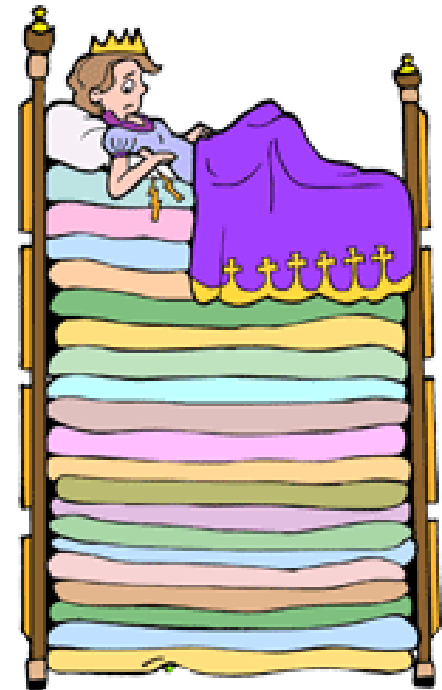
Noise Management

- * More prone to waking due to irregular noises, even quiet ones, can be disruptive to sleep.
- * White noise, such as the sound of a fan or humidifier, can drown out other more disruptive noises, leading to less broken sleep.
- * Likewise, avoid sleeping with pets



The Sleep Environment

- * **Bedding:** Take the old advice “Invest in anything that separates you from the ground: Tyres, shoes and a *mattress*”
- * **Temperature:** Remember “*Sleep loves the cold*”. It’s easier to keep the room cold and cover up with blankets than it is to keep the room warm and try to cool down when feeling too hot.
- * **Light:** Help out your circadian rhythm.
Dim at night, Bright in the morning



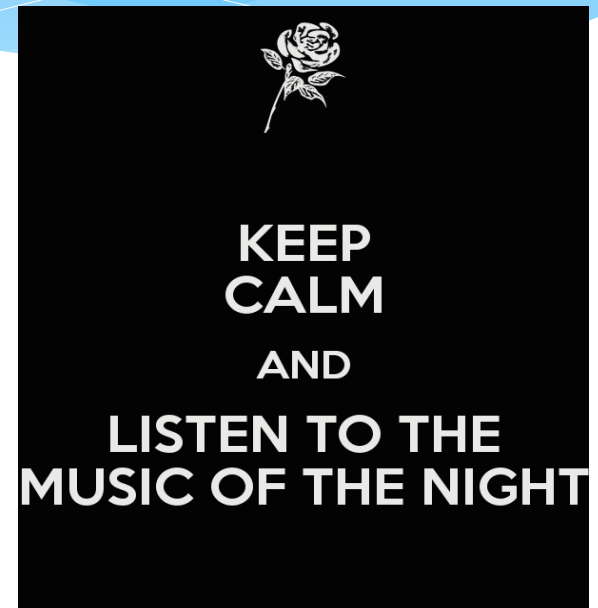
Keep a Regular Sleep Schedule

- * Your body loves routine. Keeping a consistent wake time will promote better circadian cycling
- * Go to bed and get up at the same time
- * Set an alarm
- * Weekend sleep ins are okay
- * Just don't over do it



Stress Less

- * If you can't fall asleep, avoid lying in bed as you may feel more anxious or frustrated. Leave your bedroom to read or relax in a darkened room.
- * If you wake in the middle of the night, and can't get back to sleep after 20-30 minutes, get up for a little bit, read or relax in a darkened room. Then go back to bed when you are tired.
- * Avoid clock watching



To nap or not to nap?

Positives: Napping less than an hour:
protective factors for cardio, cognition,
emotions and memory

Problems: reduces sleep pressure – makes it
hard to get to sleep. Higher mortality risk??

Tip: Nap earlier in the day

- * No more than 30-45 mins (1 cycle of sleep)
- * Delay bedtime equivalent to period spent
in bed



Today's Key Messages



Sleep is a busy process and can be re-trained with good sleep hygiene to reduce the contributing factors



Start with what works for you and stay consistent with your plan



Discuss any sleep concerns with your doctor or pharmacist as further investigations may be required