

# Don't be a sleepy driver – managing sleep when working shifts

**NRSPP**  
NATIONAL ROAD SAFETY

**PARTNERSHIP**  
PROGRAM

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# Moderator

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# Housekeeping



Webinar is = 45 mins

Question time = 15 mins



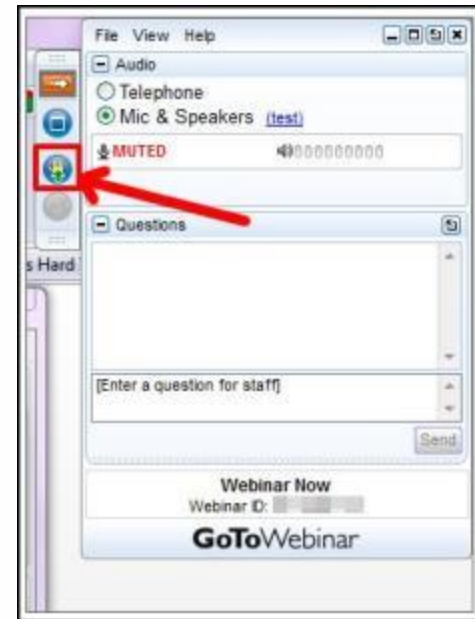
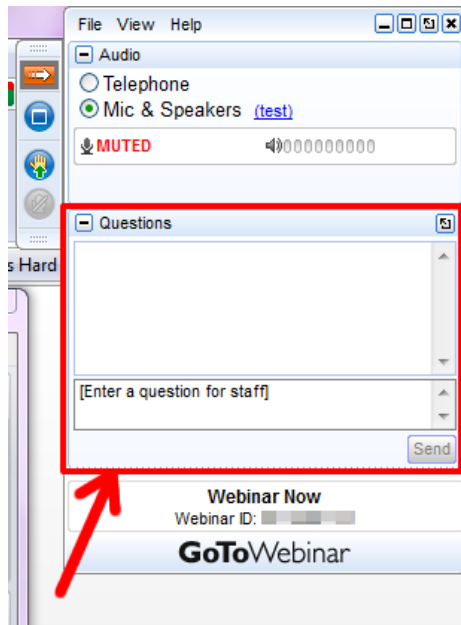
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# GoTo Webinar functions



Please type your questions here

# Today's presenter

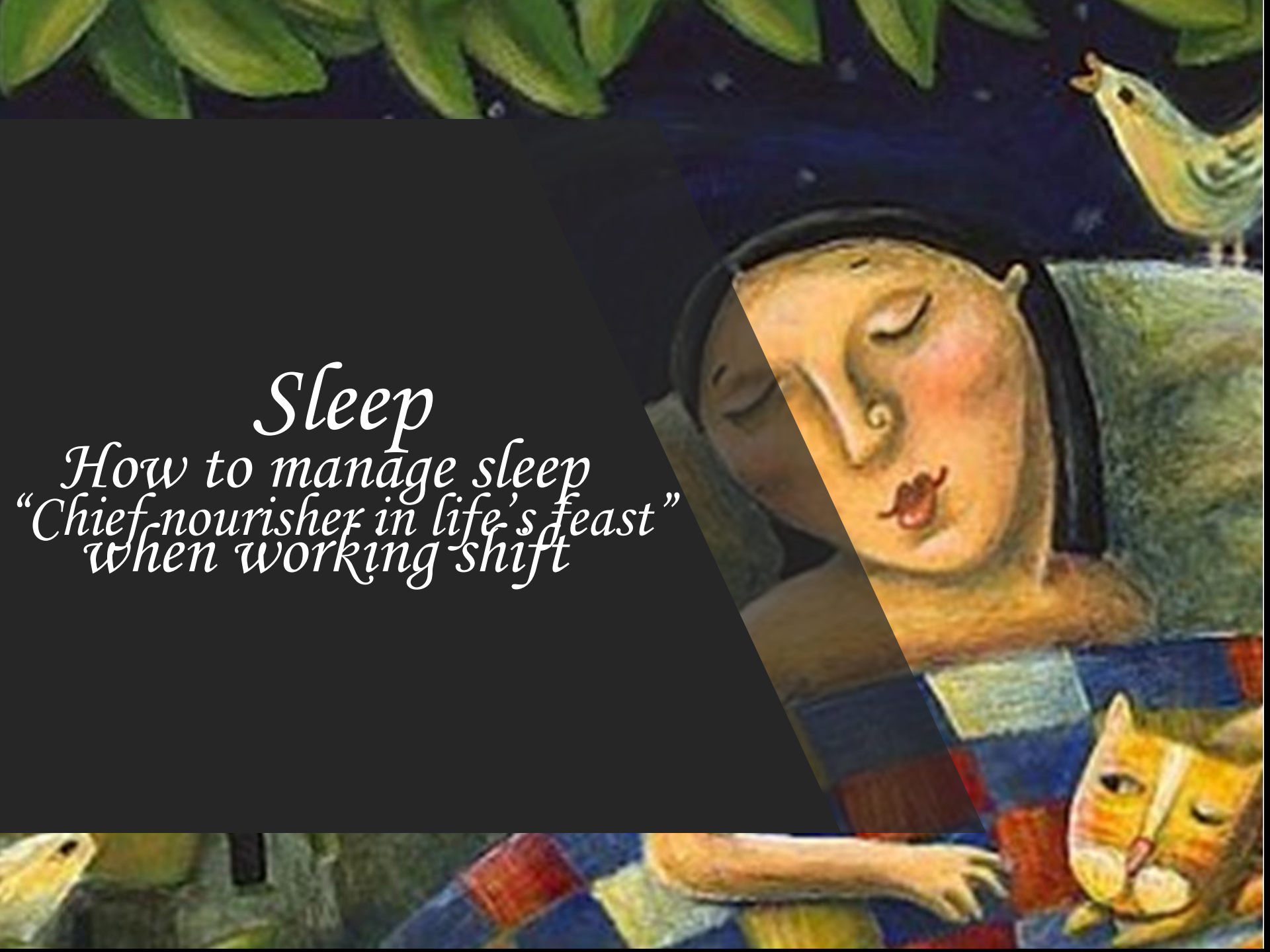
## Dr Carmel

Managing Director of Sleep  
for Health

Honorary Research Fellow at  
the Children's Hospital  
Westmead







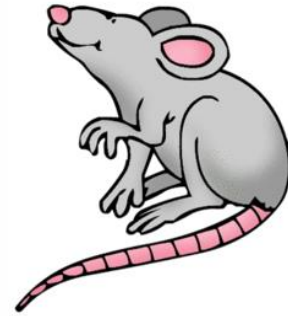
# *Sleep*

*How to manage sleep  
“Chief nourisher in life’s feast”  
when working shift*

Sleep is for  
the weak!



# AMAZING FACT



Day 13 -16



Day 17 - 21



Day 23 - 25



Think of the  
last time you  
didn't get  
enough  
sleep.....

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**THE AWAKE BRAIN**

**THE SLEEPING BRAIN**

Deactivated

Activated



# Behavioural characteristics of sleep deprivation

- Poor attention span
- Increased distractibility
- Reduced impulse control
- Risk seeking
- Intolerant / Impatient
- Unfocused

# Chronic vs acute sleep deprivation



- No sleep for 2 nights (0 hours of sleep)

**ACUTE**



Up to 6 hours of sleep per night for 14 nights

**CHRONIC**

⇒ *Neurocognitive performance and feelings of sleepiness measured at beginning and end*

# Chronic vs acute sleep deprivation



## EXTREMELY SLEEPY

Significant deficits neurocognitive ability.

- ↓ psychomotor vigilance
- ↓ working memory
- ↓ cognitive process performance.



## ONLY SLIGHTY SLEEPY

Significant deficits neurocognitive ability.

- ↓ psychomotor vigilance
- ↓ working memory
- ↓ cognitive process performance



**BUT THEY THOUGHT THEIR PERFORMANCE WAS  
NO DIFFERENT THAN AT START OF STUDY!**

# Chronic vs acute sleep deprivation

## SUMMARY

1. Sleep loss is cumulative.
2. Acute and chronic sleep deprivation causes the same deficits in performance.
3. There is adaptation to chronic sleep deprivation.
4. Once sleep restriction is chronic, people cannot accurately assess their true sleepiness or performance levels

# The sleep deprived driver

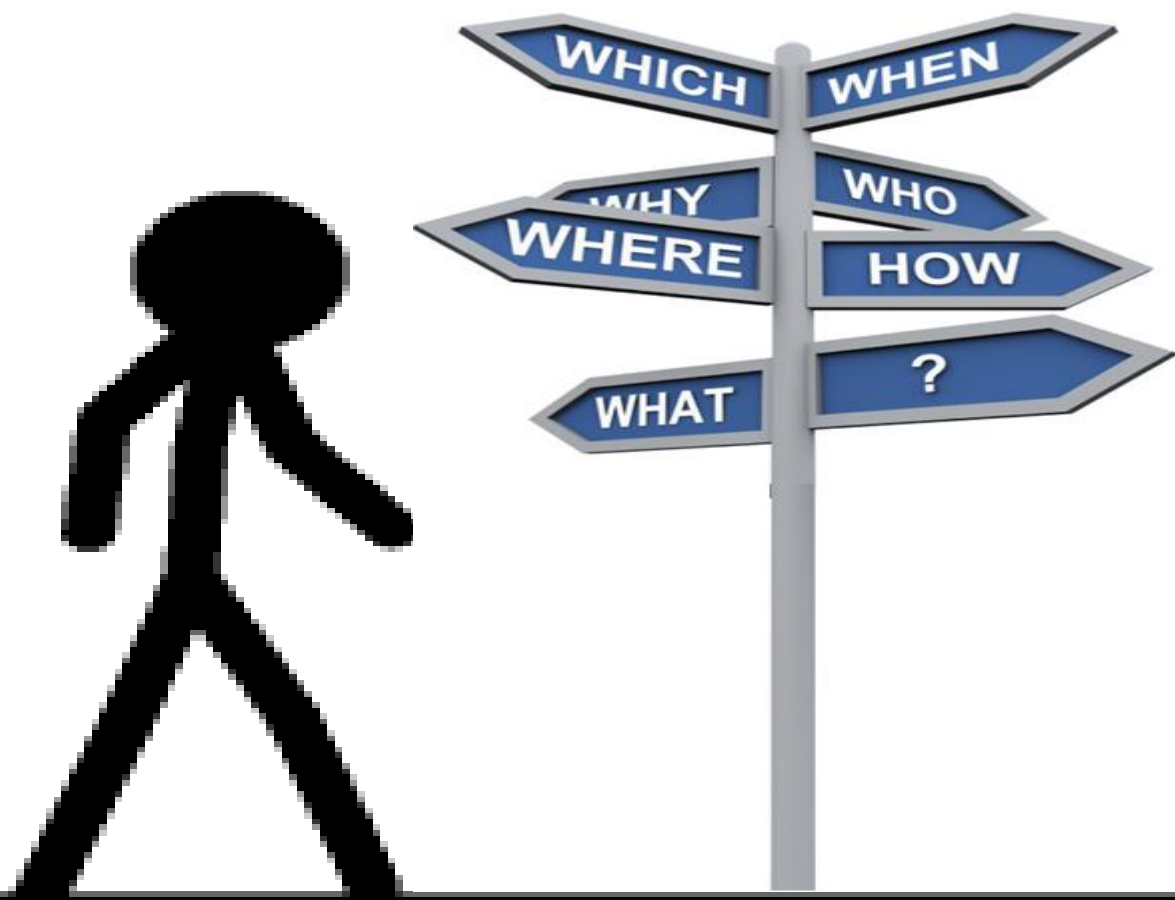
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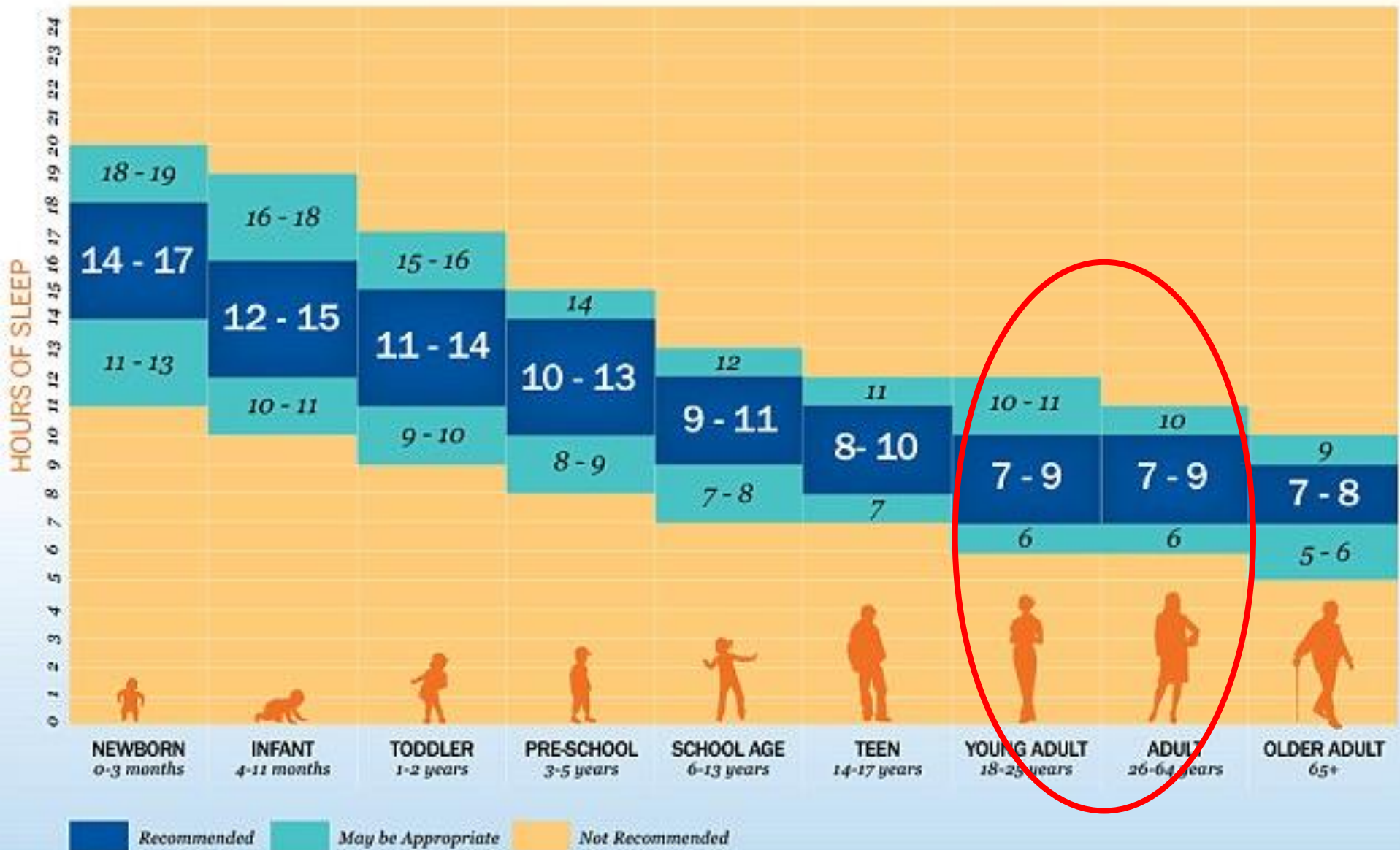
Not drunk.  
Not speeding.  
Just sleep  
deprived.

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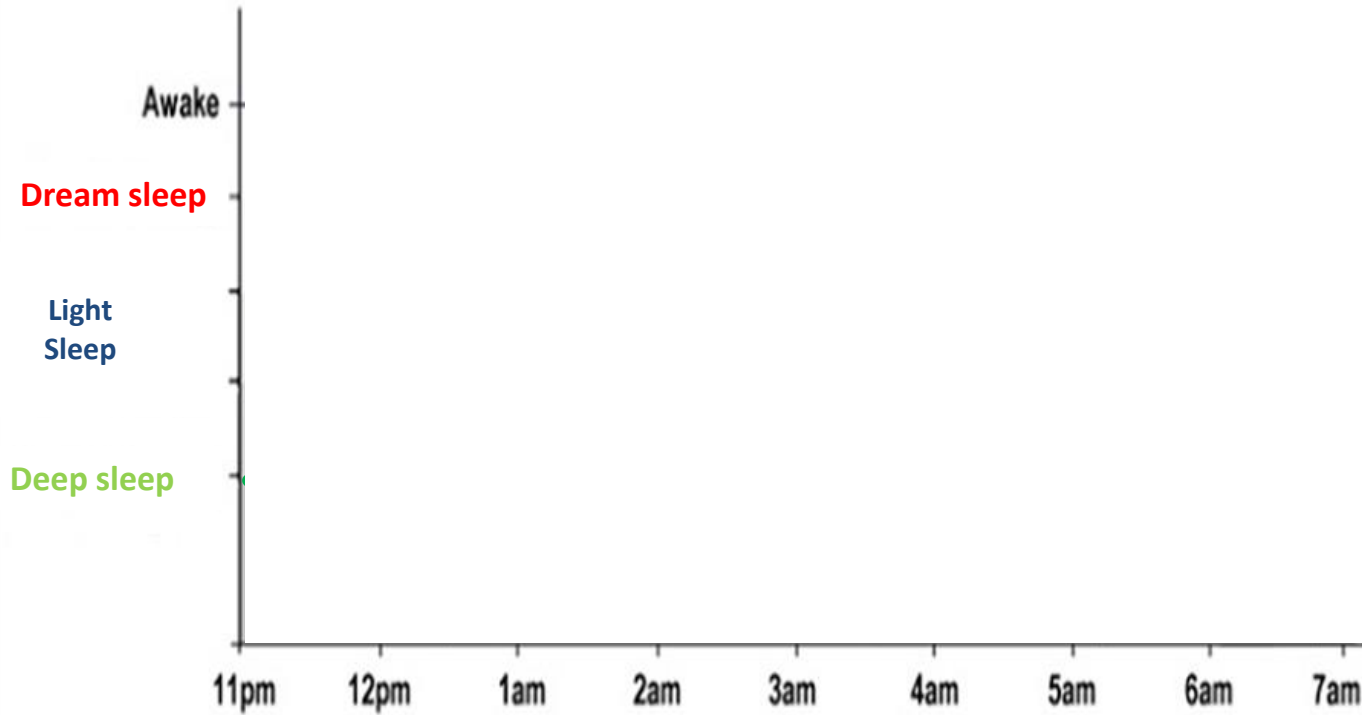




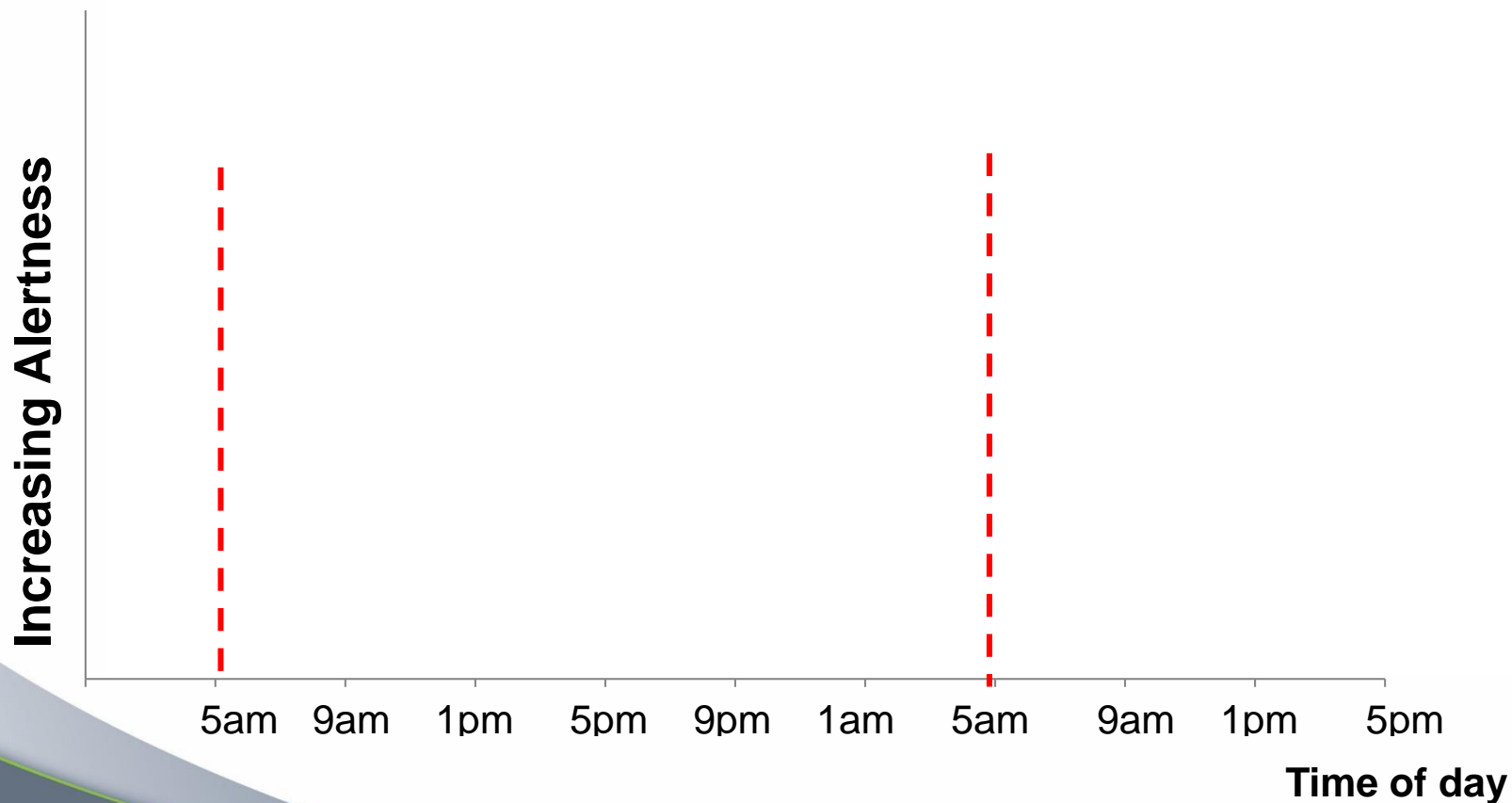
# SLEEP DURATION RECOMMENDATIONS



# How we sleep



# Our daily rhythm of alertness





## Melatonin

22



Do you work on your computer late at night or in bed?





How often do you check your emails in the middle of the night?

# Preparing the body for sleep

1. Get up at the same time every day.
2. Exercise for at least 30 minutes every day (a walk at lunchtime is good)
3. Eat who
4. Don't ha
5. No alcol
6. Do not s
7. Small m bedtime
8. Do not exercise within 3 hours of bedtime (this will alert the body)



# Preparing the mind for sleep

Step 1: Deal with issues during your wakeful hours

Step 2: Set an alarm one hour before bedtime.



# Step3: Bedroom environment encourages sleep

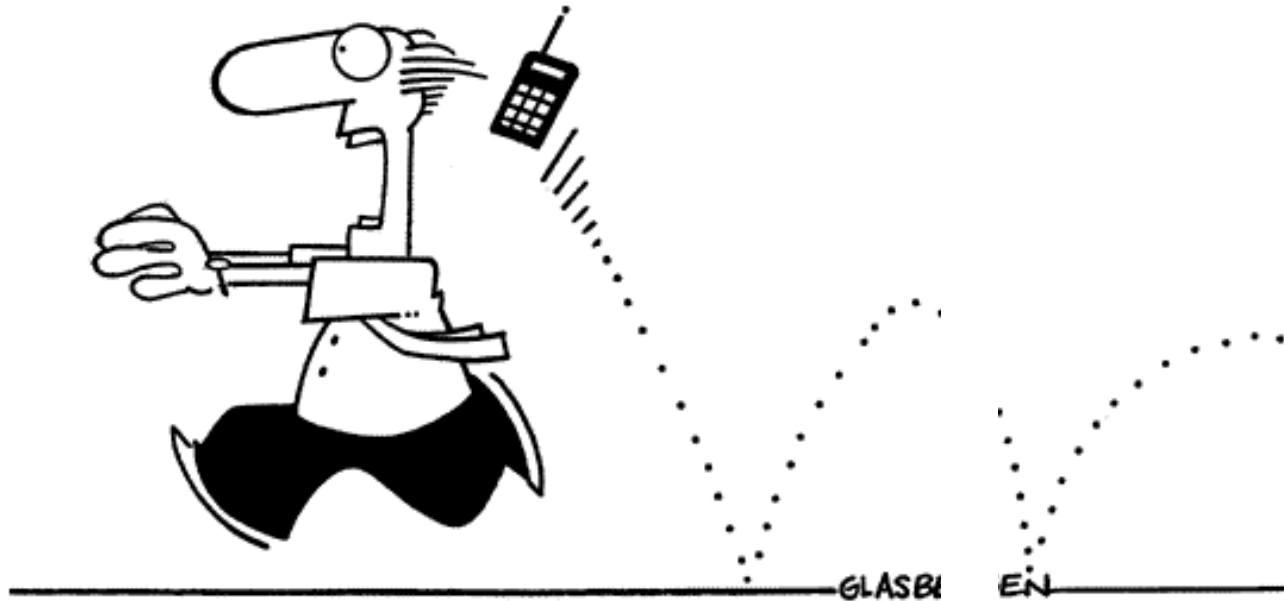
Quiet

Dark

Cool

Comfortable

*AND...*



**“I just want a few minutes of peace  
and quiet— LEAVE ME ALONE!!!!!!”**

***NO TECHNOLOGY!***

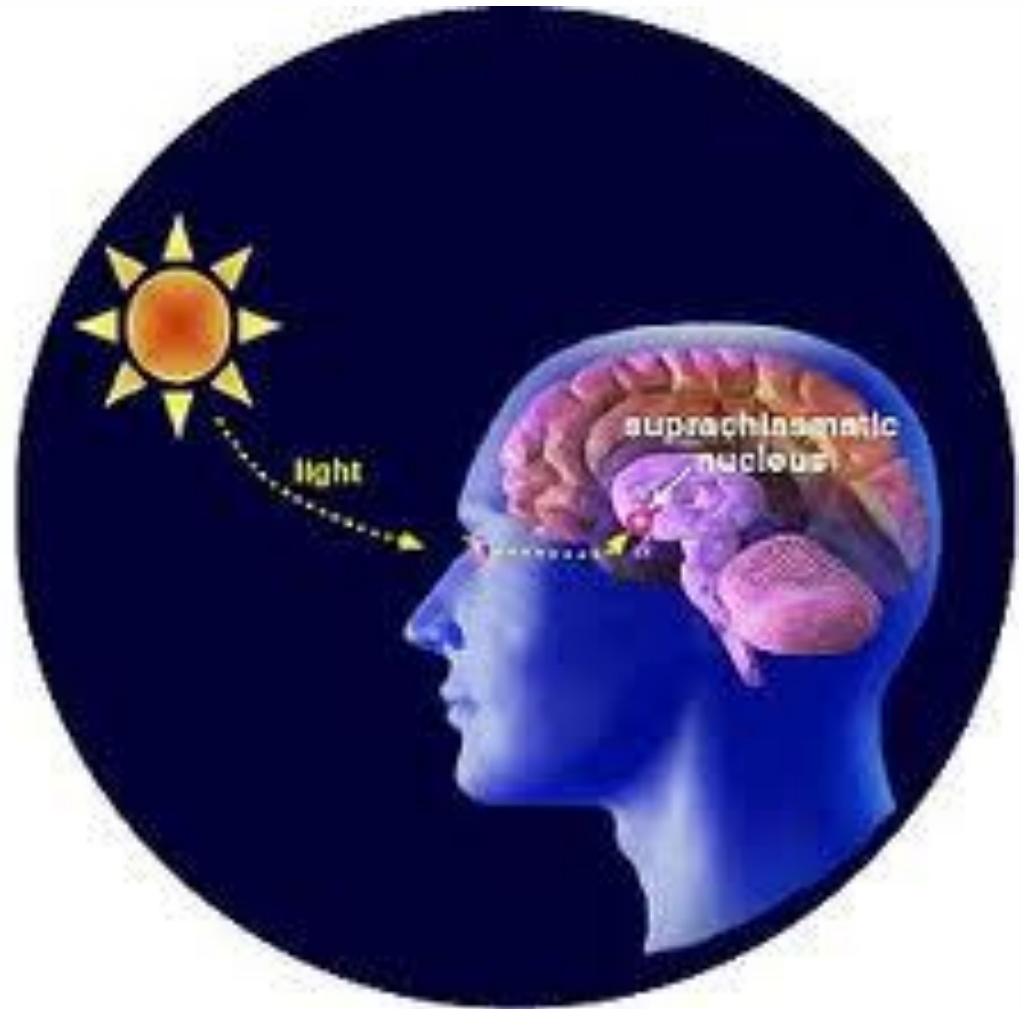


# MANAGING SLEEP & SHIFT WORK



# The body clock

## *Melatonin*



# What does our body clock actually do?



# Jet Lag

- Daytime
- Difficult
- An unv
- Difficult *int*
- Stoma
- Mood



# Shift work

*Creates a misalignment between your internal body clock and the outside world*

- Often chronically sleep-deprived.
- On average, two to four hours less sleep.
- More likely to be awakened by noises or people.
- Less likely to feel well rested when they wake up.
- Stomach problems
- Mood changes



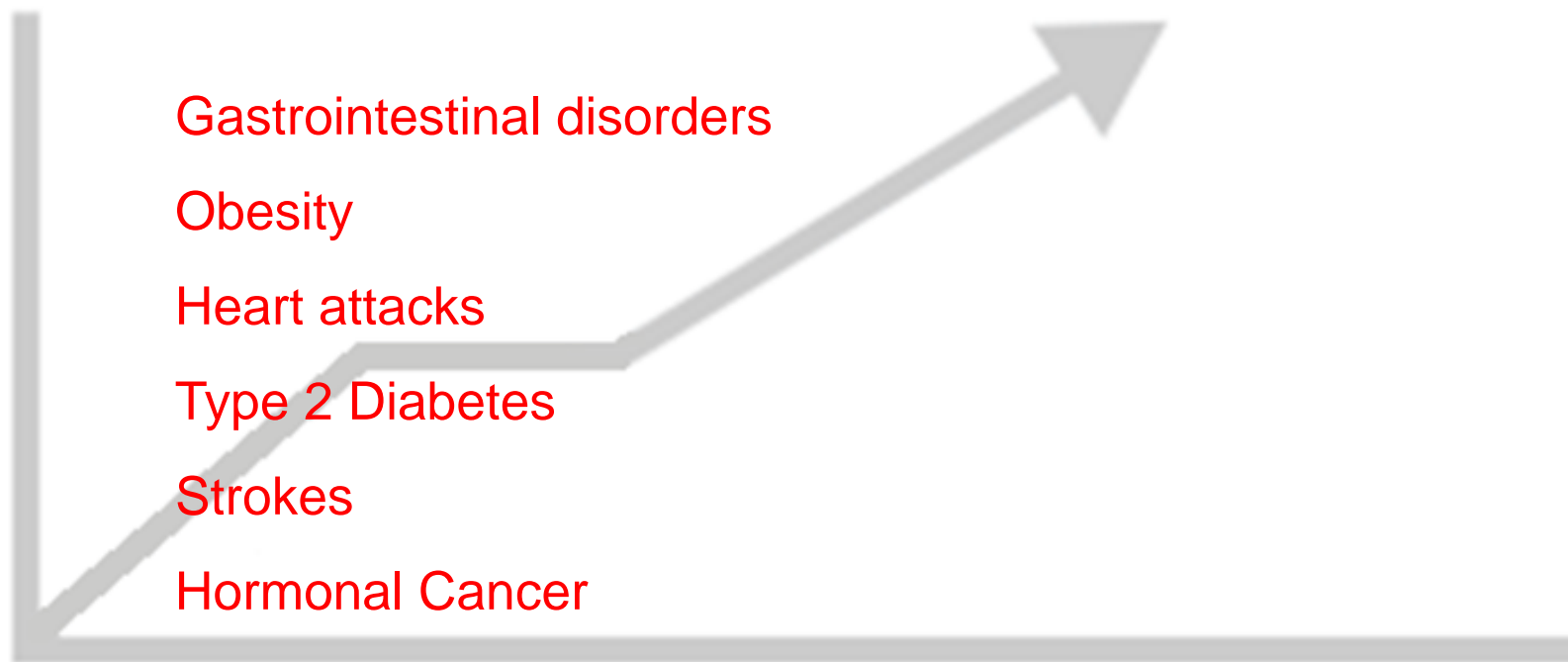


# Public Costs

*Major accidents occur during night shift*

# Personal costs

*Shift work is linked to an increased risk of*



# Managing the internal clock while working shift

1. Work schedules
2. Sleep and nap schedules
3. Diet
4. Sleep aids, stimulants and melatonin
5. Preparing for sleep

# 1. Work schedules

1. Forward rotating shift works best:

Day shift → Evening shift → Night shift → Morning shift

2. Rotating shifts every two or three days is better than changing every five to seven days.





## 2.Sleep & nap schedules

1. If possible have a 90 minute sleep before starting evening / night shift.
2. Allow enough time to shake the sleepy feeling following the sleep.
3. If possible nap during the night shift "lunch hour"- about 15 to 20 minutes only.
4. Take a 15 – 20 minute nap before driving home.





### 3. Diet

- Try to eat three regular meals spaced evenly over the course of the day.
- For night shift workers the largest meal should be at the start of the night shift.
- Eat a medium sized meal during the shift.
- Eat only a small meal at the end of shift.
- Avoid eating a lot of snacks and fast foods.
- Eat a balanced, low-fat diet with plenty of fruits, vegetables, and cereals.

## 4. Sleep aids *“beware”*

### Prescribed sleeping pills

- Not a long term solution
- Lose efficacy over time.
- Sometimes useful in the short term.
- “Hang-over” side effects.
- Do not resolve the sleep problems.

### Over the counter sleep aids

- Eg: anti-histamines
- Side effect of drowsiness can be severe.

# Stimulants

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- Caffeine is the most commonly used stimulant.
- May reduce sleepiness and increase alertness on a night shift.
- Should be avoided within six hours of desired bedtime.



# Melatonin

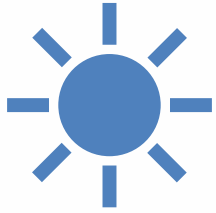
- May be effective in promoting sleep onset and sleep maintenance for shift workers.
- In the short term is fairly safe in healthy adults and has no known serious side effects.
- The long-term effects of taking it are unknown.



## 5. Preparing for sleep

- If feeling sleepy at the end of shift have a 15 minute nap before driving home.
- Minimise exposure to light on your way home.
- Eat only a light meal when you get home.
- Sleep as soon as possible after getting home.
- Avoid alcohol, nicotine and coffee.
- Implement a going to bed routine - no technology, hot shower, relaxation exercise - and follow this routine all the time.
- Ensure your sleep environment is conducive to good sleep. This means:
  - It is dark. Use block-out blinds and remove all sources of light.
  - It is quiet. Ear plugs may be required.
  - It is cool - a fan or air-conditioning may be required.
  - It is comfortable - check your bedding.
- Exercise regularly, eat healthily and limit fast food.





# Light and the body clock

- Exposure to bright light can help adjust the body's sleep cycle.
- Artificial bright light works like sunlight.

## How to use light to your advantage

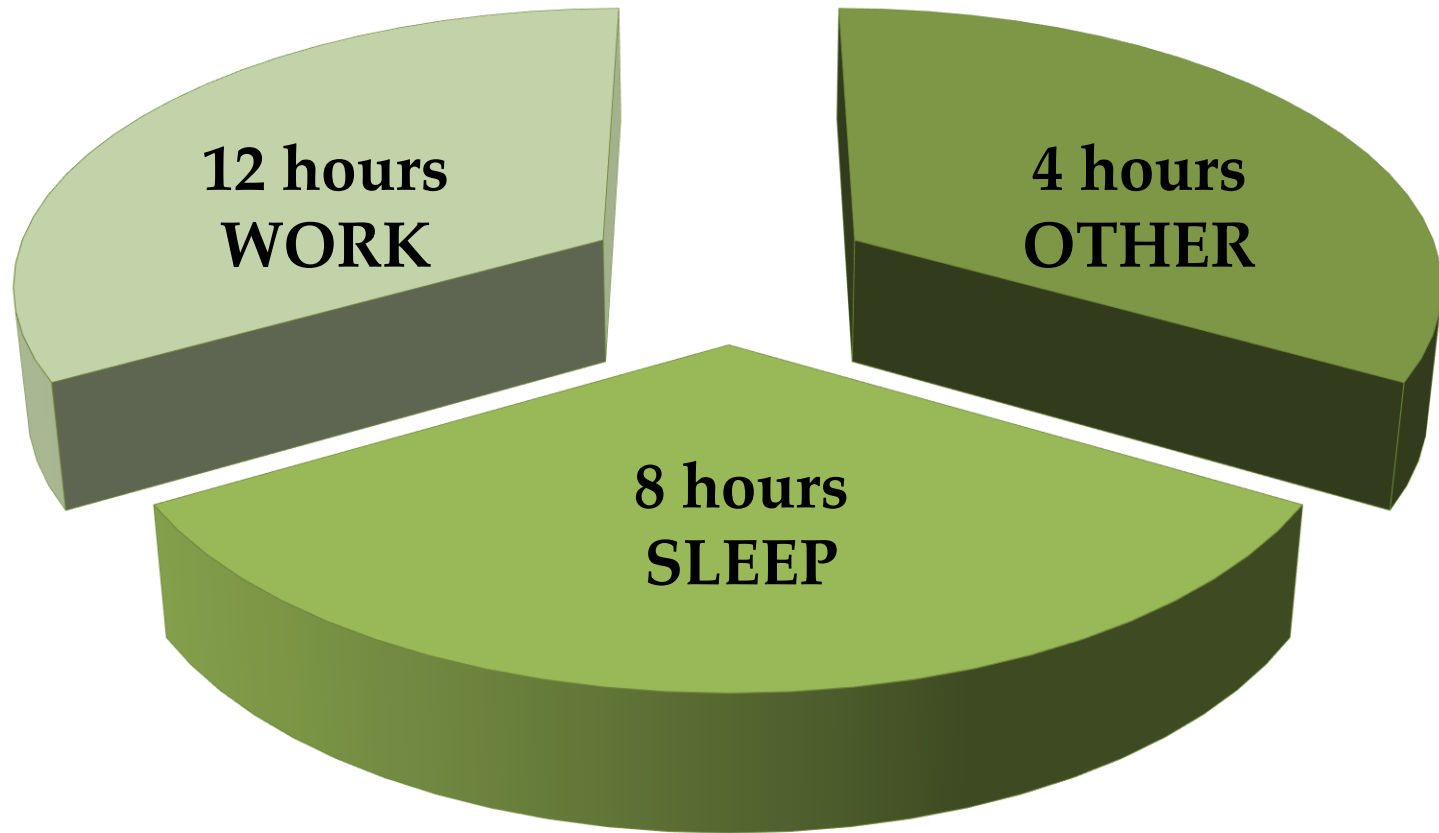
- Pre shift: bright light at start of shift can increase alertness.  
*(Exercise also increases alertness at this time.)*
- During shift: bright light during the night hours can increase alertness
- Post shift: Avoid daylight when you come off work and want to go to sleep. Dark wrap around sunglasses can help.



We all have the same  
**24 Hours**  
It's How You Manage  
Your Time That Matters!



## The division of our day when working 12 hour shifts



How do you  
prioritise your  
time?



*It is possible to sleep well when working shift*

We just need to:

- Be diligent in our approach and
- Implement appropriate strategies



What change are  
you going to make?

Thank you!

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# Questions



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