

Sleep Restriction and its Effects on Obesity and Type II Diabetes

Dr Nick Mabbott
Fatigue Risk
Management
Specialist

NRSP
NATIONAL ROAD SAFETY

PARTNERSHIP
PROGRAM



Beyond Midnight
Consulting

arob
AUSTRALIAN ROAD RESEARCH BOARD

Proudly managed by:

Moderator

Jerome Carslake

NRSPP Manager
ARRB Group

P: +61 3 9881 1670

E: jerome.carslake@arrb.com.au



Housekeeping



Webinar is = 30 mins

Question time = 15 mins



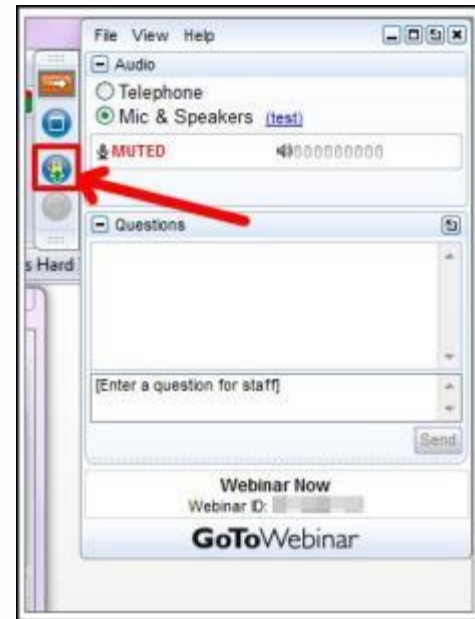
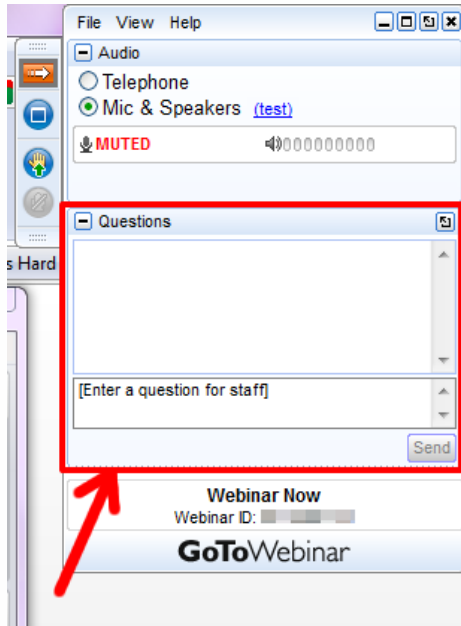
+



=



GoTo Webinar functions



Please type your questions here

Today's presenter



Dr Nick Mabbott Principal, Beyond Midnight Consulting

nickm@beyondmidnight.com.au

www.beyondmidnight.org

Ph: 08 9593 7575

M: 0427 275 885



NRSP
NATIONAL ROAD SAFETY

PARTNERSHIP
PROGRAM



Beyond Midnight
Consulting



Copyright Beyond Midnight Consulting 2018. All rights reserved.

Understanding the Need for Sleep

A homeostatic response to life



Copyright Beyond Midnight Consulting 2018. All rights reserved.

Sleep Restriction

Rosters & schedules not allowing enough time
between shifts to get enough sleep

Shiftwork – turning the
daily rhythm upside
down

Sleep
disorders

Sleep
disturbances

“Sleep
nonchalance”

Sleep Disorders

- There are more than 70 classified sleep disorders
- They can be put into categories such as:
 - Insomnia;
 - obstructed airways;
 - circadian rhythm disorders and
 - a whole range of medical-sleep related disorders..



Copyright Beyond Midnight Consulting 2018. All rights reserved.

Sleep Disturbance

- Partners
- Babies & Children
- External noises



Copyright Beyond Midnight Consulting 2018. All rights reserved.

Sleep Nonchalance

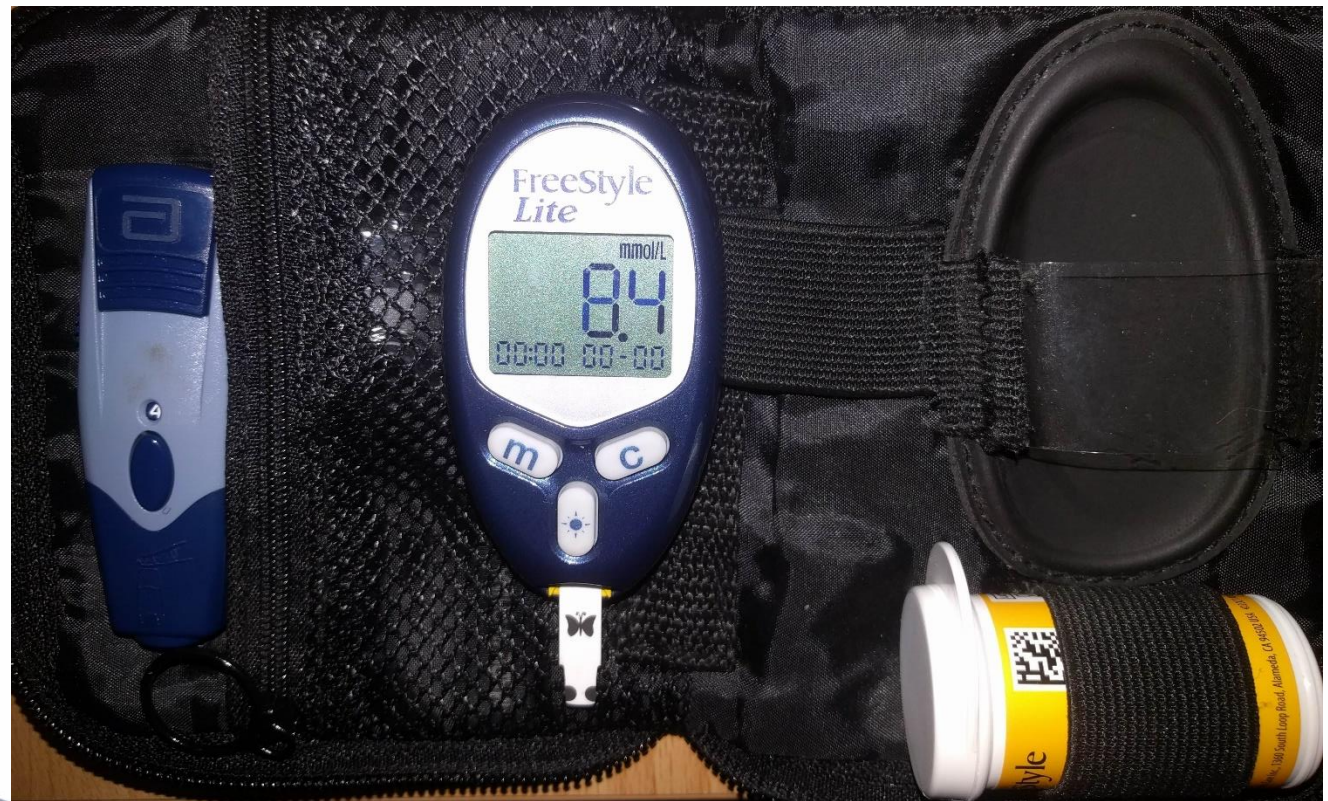
- “I’ll sleep when I’m dead”
- Other priorities, such as social media
- Late night TV
- Socialising
- Misperception of risk (“I only work 9-5”)



40,320

Sleep Restriction Effects on Physical Health

- Obesity
- Type II Diabetes
- Immunocompetence..



Obesity

Studies have found -

- That in the last generation we sleep approximately 1.5 hour less than we used to
- At least 1/3rd of Americans and nearly half of Australians currently sleep less than they should
- This has correlated with the steady increase in obesity worldwide..

Questions



Sleep Restriction Links to Obesity

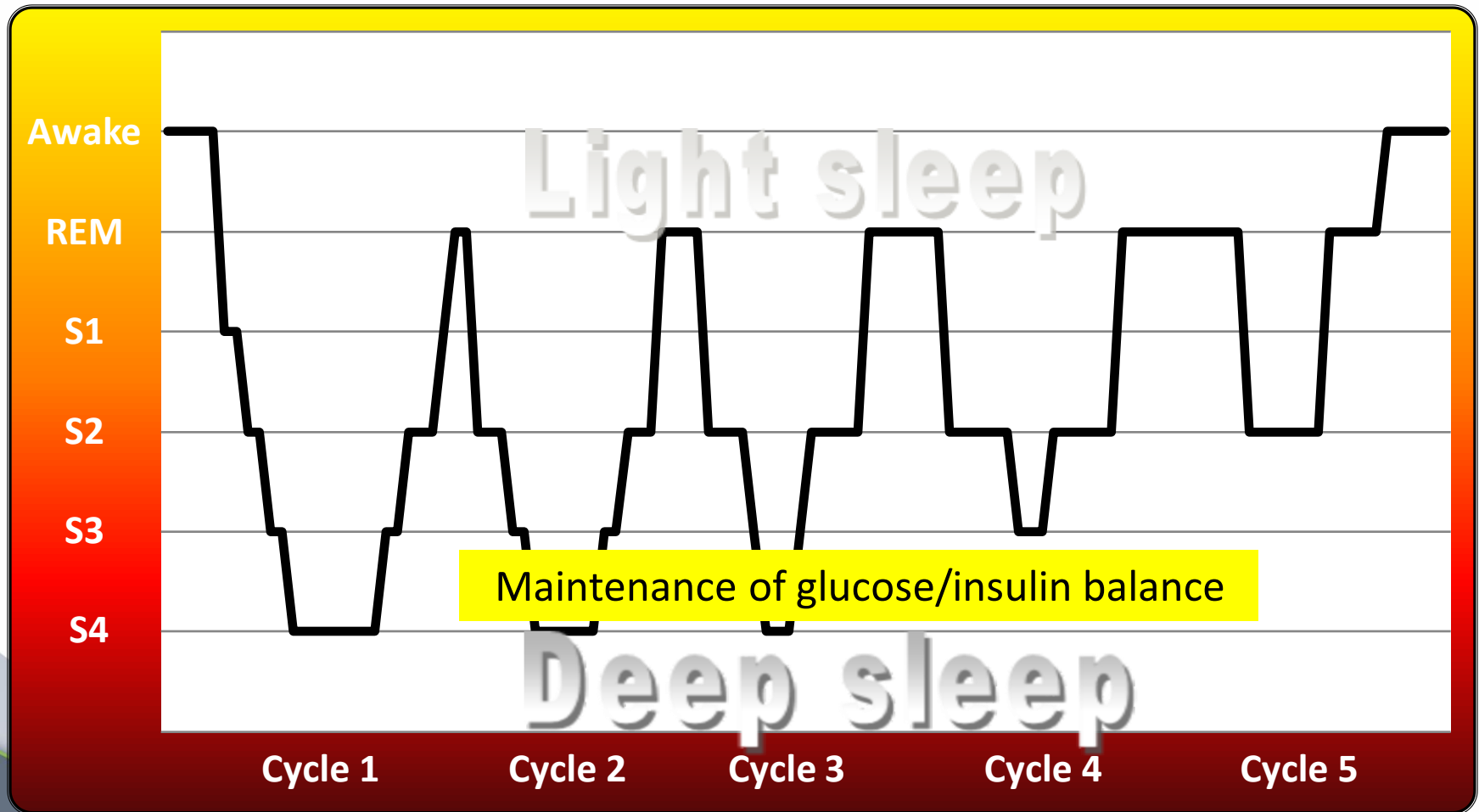
There are three basic issues to consider:

- 1) Ghrelin – A tired person is a hungry person
- 2) Leptin – A tired person generally overeats
- 3) Motivation – A tired person can't be bothered eating well and they don't have the energy to exercise..

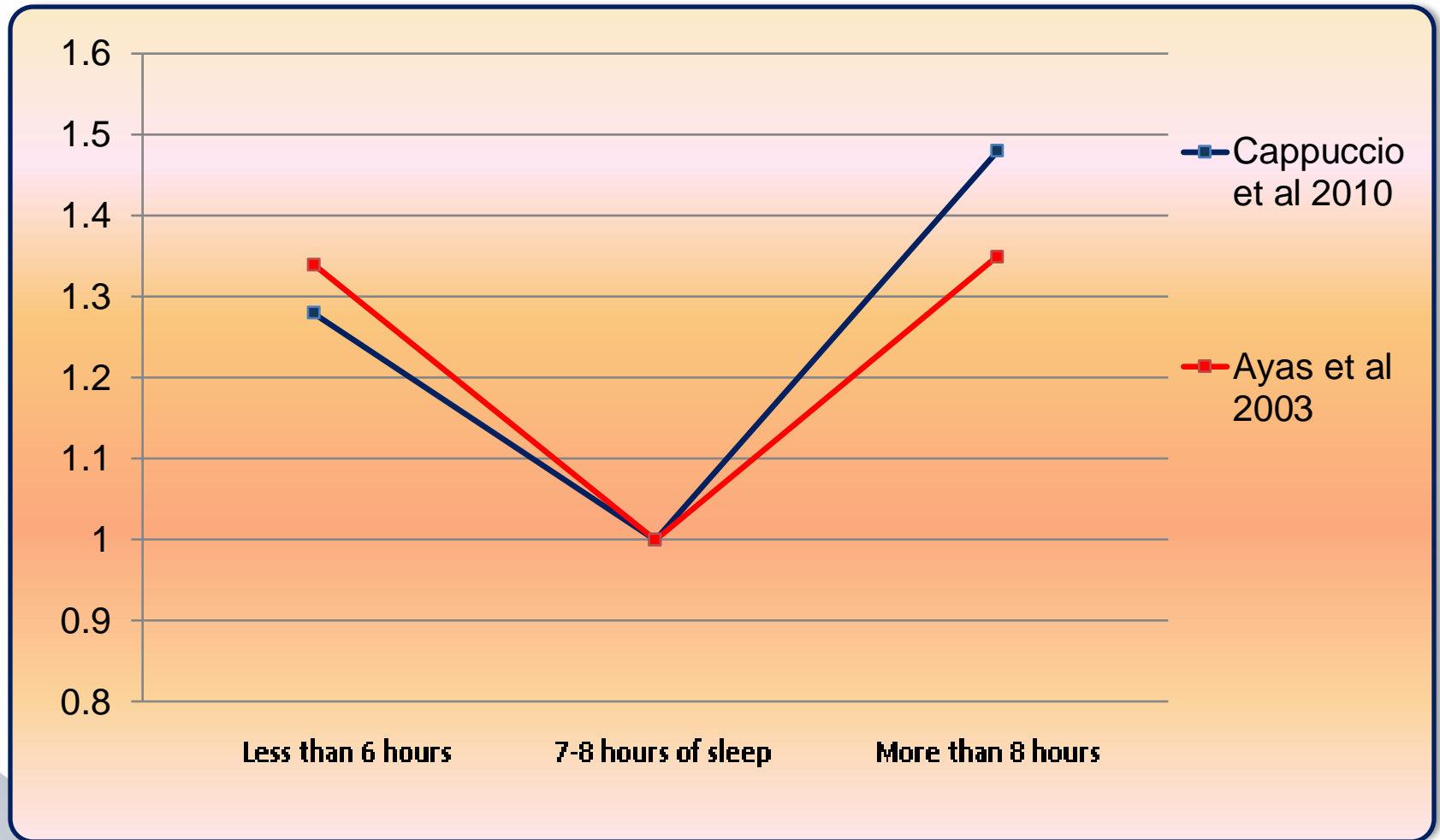


Copyright Beyond Midnight Consulting 2018. All rights reserved.

Sleep stages & cycles across the night



Type II Diabetes



Cappuccio *et al.* (2010) – 10 research projects with 107,000 subjects. Ayas *et al.* (2003) – 70,000 enrolled nurses. Source: Beyond Midnight Consulting “Fatigue Risk Management for Individuals and Employees: Health, Wellness, Safety & Productivity” 2018.

Copyright Beyond Midnight Consulting 2018. All rights reserved.

Sleep & Type II Diabetes

- Dr Eve van Cauter (Uni of Chicago)
 - In 2004 tested 22-year old subjects
 - 6 nights of 4 hours sleep
 - Found decreased glucose tolerance
 - Decreased Leptin & increased Ghrelin
 - Adverse cardiovascular effects
- In 2007, Dr van Cauter tested similar subjects
 - Over 3 nights with 8 hours of sleep
 - No deep sleep

Copyright Beyond Midnight Consulting 2018. All rights reserved.

The Immune System & Immunosuppression

- A number of studies have shown that when a person is immunised, the conversion of antibodies are affected by poor sleep
- This has been shown in research in adults with:
 - Hepatitis B treatment and
 - Influenza Virus treatments.
- Around half of the immunity was obtained..

What can we do in the Workplace?

- Use Code of Practice to better organise shifts, rosters, breaks and other important aspects of fatigue management
- Conduct a Fatigue Risk Assessment workshop
- Make a serious effort to be inclusive and obtain feedback from all parts of the organisation
- Get help from a fatigue content expert..



| Before Going to Bed | | | The Next Morning | | | | | |
|--|-------------------------|---|---|--|----------------------------|---|--|---|
| Please write what day of the week it is below in the column to the right of the day. | Dayshift or nightshift? | What did you do for the last hour before going to bed? | What time did you go to bed (in 0000hrs)? | How long did it take to get to sleep (approx)? | What time did you wake up? | How many times did you wake through your sleep? | How long were you awake for each time? | How did you feel when you woke up? |
| Day 1 | | <h2>How do we fix our sleep?</h2> <ul style="list-style-type: none"> Get help for any sleep disorders <ul style="list-style-type: none"> Speak with your Employee Assistance Provider See a GP for a referral to a psychologist See a GP for a referral to a sleep clinic for obstructive sleep apnoea Go to https://beyondmidnight.org/posters/ Try to get more sleep or catch up when you don't <ul style="list-style-type: none"> You must want it to get it!.. | | | | | | Sluggish A bit tired Fresh Great |
| Day 2 | | | | | | | | Sluggish A bit tired Fresh Great |
| Day 3 | | | | | | | | Sluggish A bit tired Fresh Great |
| Day 4 | | | | | | | | Sluggish A bit tired Fresh Great |
| Day 5 | | | | | | | | Sluggish A bit tired Fresh Great |
| Day 6 | | | | | | | | Sluggish A bit tired Fresh Great |
| Day 7 | | | | | | | | Sluggish A bit tired Fresh Great |

Summary

- We need to remember the homeostatic balance required for sleep and wakefulness
- Most adults need between 7 and 9 hours of sleep per 24-hour period
- If you don't get the sleep you need one night, try to catch up the following night
- Continued sleep restriction will affect your physical and mental health
- Getting the right amount of sleep will improve your health and wellness, and allow you to be the “best version of yourself”..

Copyright Beyond Midnight Consulting 2018. All rights reserved.

Questions



Thank You

Face-to-Face & Online Fatigue Risk Management Training

www.beyondmidnight.org

Newsletters and free posters online



Beyond Midnight
Consulting