

# ABCs of ZZZs for Coaches

You Snooze...You Win!

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# All these athletes use sleep to win





“Sleep is where all the good stuff happens.  
It’s where I truly get to recover.”





**Chronically  
under-recovered**

**Failure to thrive**

**Poor sleep  
quality**





Mon, Nov 6 ⓘ

Quantity 4hr 45min

From 22:40

To 04:09 +1d



Tue, Nov 7 ⓘ

Quantity 7hr 55min

From 22:50

To 07:39 +1d



Wed, Nov 8 ⓘ

Quantity 4hr 15min

From 23:45

To 04:29 +1d



Thu, Nov 9 ⓘ

Quantity 5hr 10min

From 22:30

To 04:24 +1d







5

6

7

TISSOT

TISSOT

TISSOT

TISSOT

TISSOT

TISSOT

INDIA  
DANNY YEO



# Sleep as a Foundation of Resilience & Performance

Mental  
Health &  
Physical  
Wellness

SLEEP

RESILIENCE

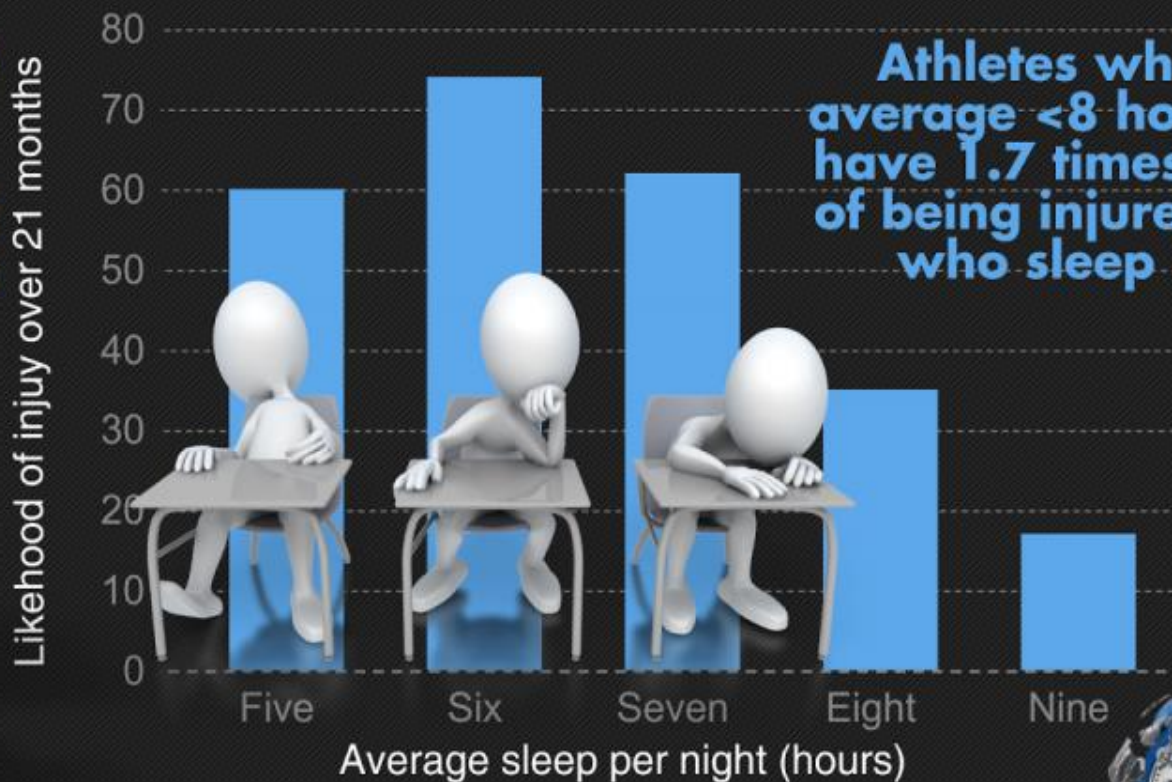
“Coping Threshold”

PERFORMANCE

Robust  
against  
Injury &  
Illness

# Likelihood of Injury Based on Hours of Sleep per Night

Designed by  
@YLMSSportScience



Athletes who sleep on average  $< 8$  hours per night have 1.7 times greater risk of being injured than those who sleep  $\geq 8$  hours



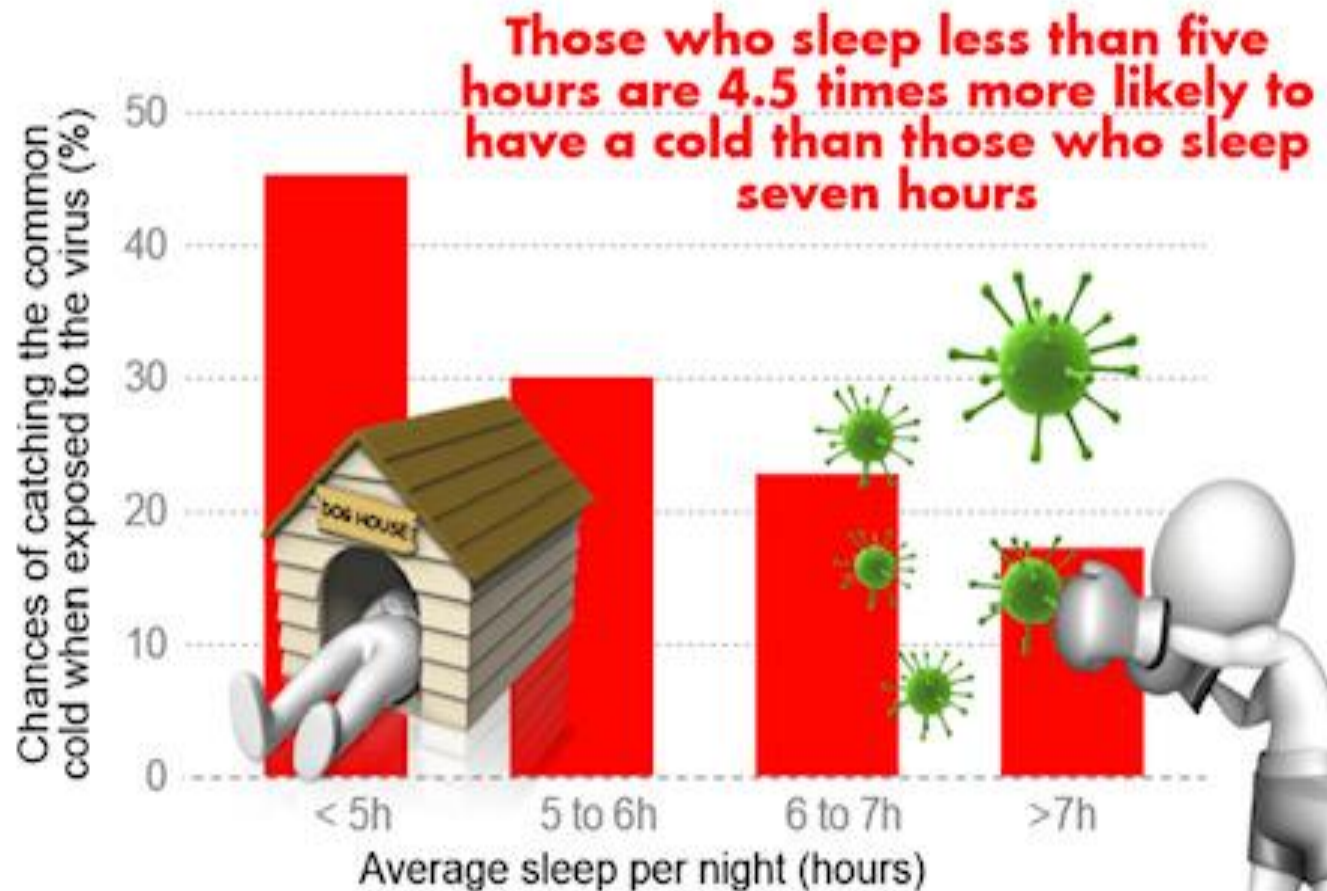
## Reference

Chronic Lack of Sleep is Associated With Increased Sports Injuries in Adolescent Athletes  
by Milewski et al. in J Pediatr Orthop 2014



# Likelihood of Infections Based on Hours of Sleep per Night

Designed by  
©YLM Sport Science



## Reference

Behaviorally Assessed Sleep and Susceptibility to the Common Cold  
by Prather et al. in Sleep, September 2015





Travel,  
Competition  
Performance  
Anxiety,  
Intense  
Training, Pain,  
Early & Late  
Training  
Times,  
ACADEMICS  
*all degrade  
athlete sleep  
quality*

# How Elite Sport Can Degrade Sleep Quality & Performance

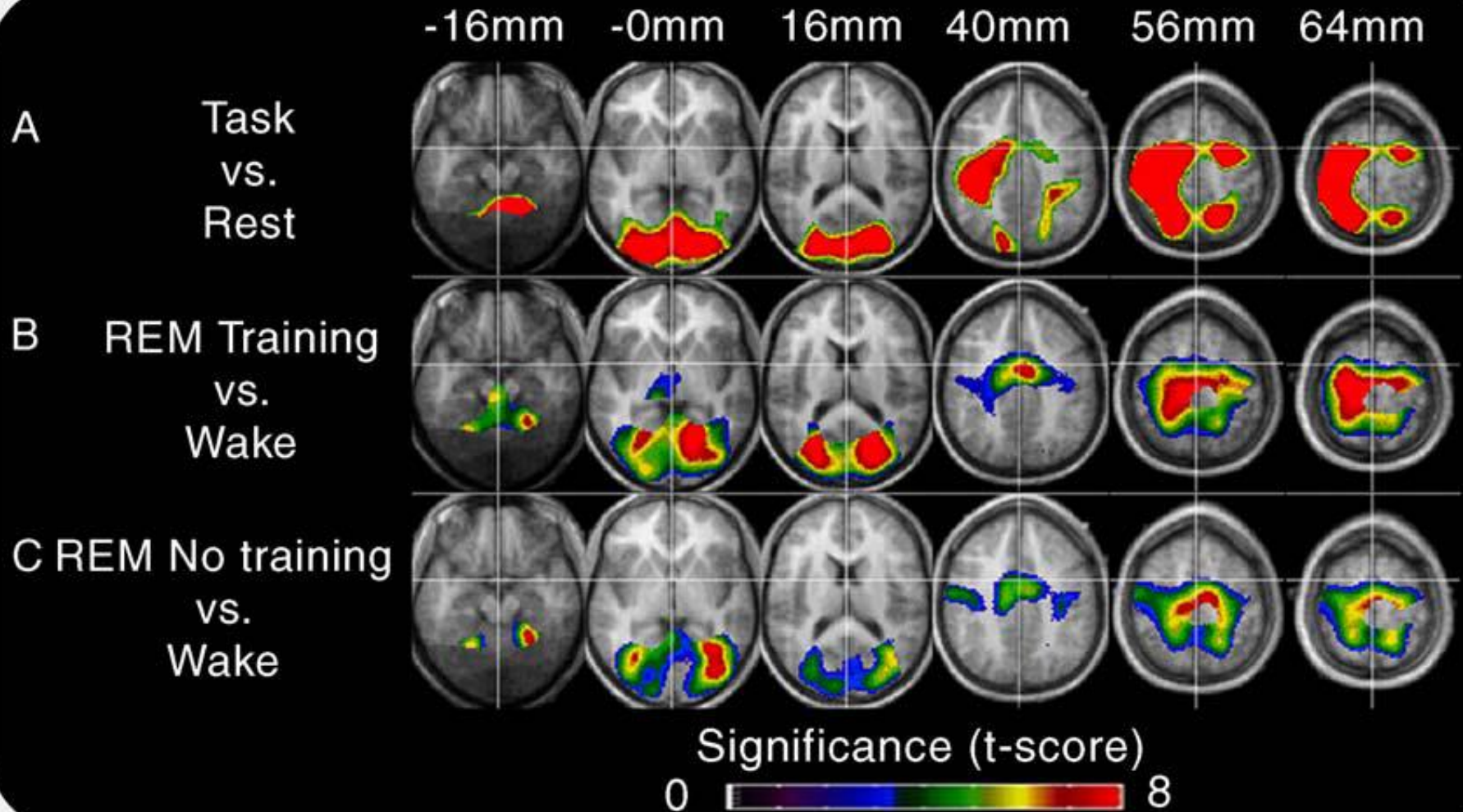
Reference: by Gupta • Morgan • Gilchrist, Sports Med Dec 2016

Designed by @YLMSportScience





# Sleep Improves Learning!





# Can we Bank or Save Sleep Before Competition?



# IS IT POSSIBLE TO STORE SLEEP?

Reference: by Arnal et al. Med Sci Spors Exerc March 2016

# Yes, we can!

## SITUATION 1

6 nights of habitual sleep

**8H15 OF SLEEP PER NIGHT**



## SITUATION 2

6 nights of extended sleep

**9H50 OF SLEEP PER NIGHT**



**FOLLOWED BY A PERFORMANCE TEST AFTER ONE NIGHT OF TOTAL SLEEP DEPRIVATION**

**The rating of perceived exertion during exercise was lower in extended sleep situation compared to the control condition**



The control situation resulted in a large decrease in time-to-exhaustion after the night of total sleep deprivation

**-7.2% VS -3.7%**

... while the performance impairment was only moderate after the period of sleep extension



Study: Sleep extension with swimmers

After extending time in bed to 9hr/night for several weeks collegiate swimmers showed improvements of

**+8%**

15m sprint  
speed

**+20%**

reaction time  
off the block

**+10%**

turn time  
efficiency

**+19%**

kickstrokes

Extended Sleep and the Effects on Mood and Athletic Performance in Collegiate Swimmers;  
Mah CD, Mah KE, Dement WC, 2011, Psychiatry and Behavioural Sciences, Stanford University, CA



# Sleep & Recovery

Extended sleep and naps improve recovery of muscle function, sprint times and reduced stress following HI running

## Resting to Recover: Influence of sleep extension on recovery following high-intensity exercise

Reference : by Pitchford, Bishop & Bartlett, ECSS 2017

Designed by @YLMsportScience

Following a bout of high-intensity intermittent running exercise the participants slept in laboratory conditions for 1 night of restricted sleep (6h in bed) followed by 3 intervention nights

1 CONTROL

8h time in bed



2 EXTENDED

10h time in bed



3 NAP

8h time in bed + 2h nap each afternoon



Participants were tested before and after the high-intensity intermittent running exercise

## RESULTS



### Sleep

Total sleep time was very likely largely increased for both Nap and Extended compared to Control

However, this was accompanied by likely small to very likely moderate increases in wake after sleep onset



### Muscle function

Whilst all groups displayed a likely small reduction in peak isometric knee extensor torque production post-training, Nap had a likely small positive effect on this parameter at +36 h compared to Control



### Sprint performance

5-, 10- and 20-m sprint times recovered fully in Extended and Nap and likely to very likely faster compared to Control (moderate to large difference)



### Stress

Both Nap and Extended caused a likely small decrease in stress compared to Control





# Effect of Sleep Extension on Bowling Performance



# Objective

To evaluate how extending YOUR total sleep time affects bowling performance



**FIRST**

Landmark Study in  
the field of bowling



**IDENTIFY**

Identify Area of  
Focus for Education  
and Intervention



**A COMPETITIVE  
EDGE**

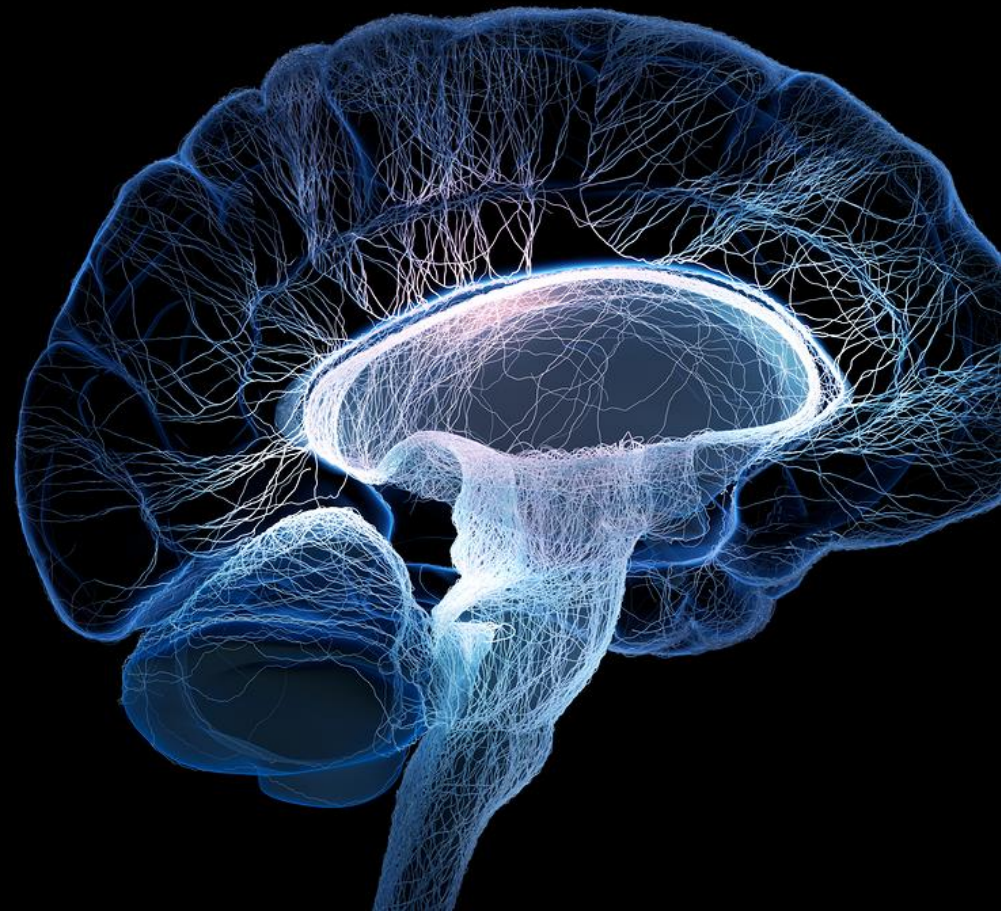
Potential  
Competitive Edge



# MIRACLES & MAGIC

SLEEP : GET MORE

“AIM FOR 10, HIT 9, BEAT 8  
HOURS  
PER NIGHT”



# Sleep Master



Patented Sleep Master® is the world's finest adjustable sleep mask with built-in sound muffling. Sleep Master was designed for people with sleeping difficulties, for those who just enjoy napping during the day or while traveling, or for when your partner insists on watching TV or reading late into the night.

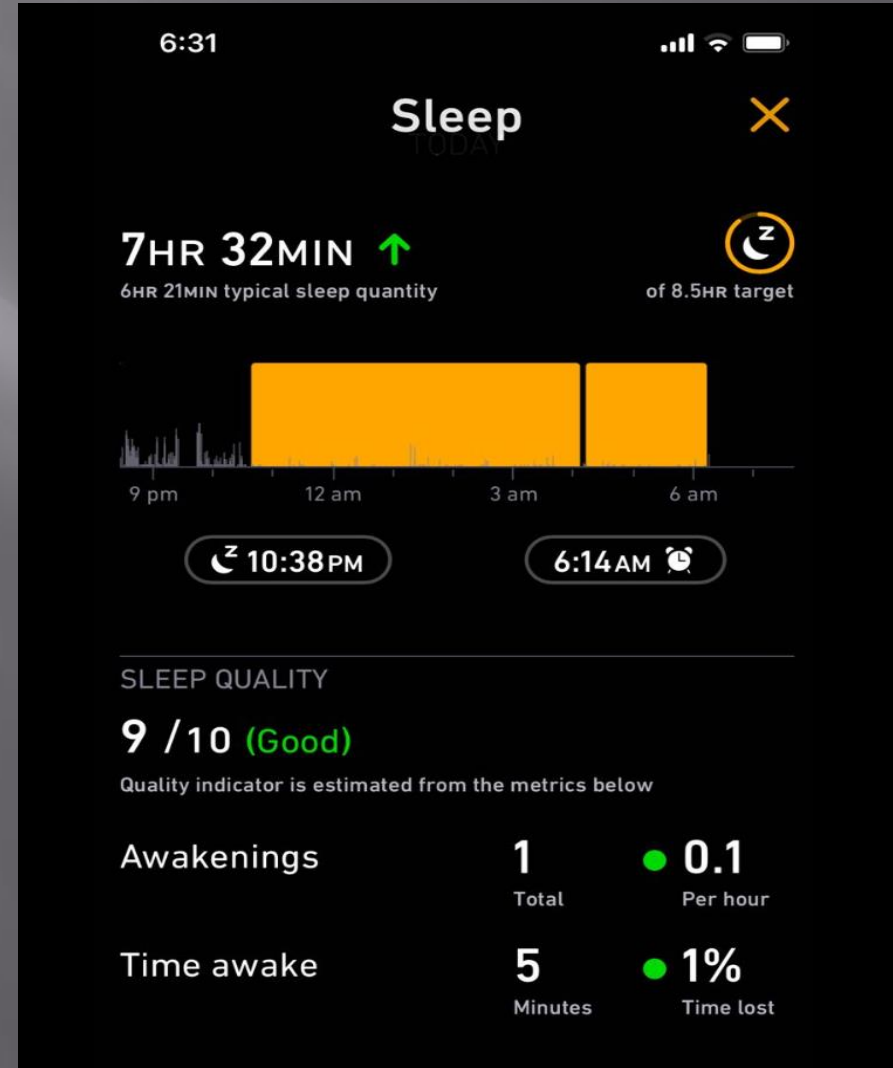
Sleep Master is a simple, affordable, one-size-fits-all product. Its comfortable, light-weight, breathable fit and amazing effect quickly induces deep refreshing sleep.

Traditional sleep masks cover your eyes. People who need help sleeping must have more than that. The idea behind Sleep Master combines total light elimination and sound reduction for the perfect all-natural sleep remedy.





# Good Night, Sleep Tight



# Relak Lah Hack...



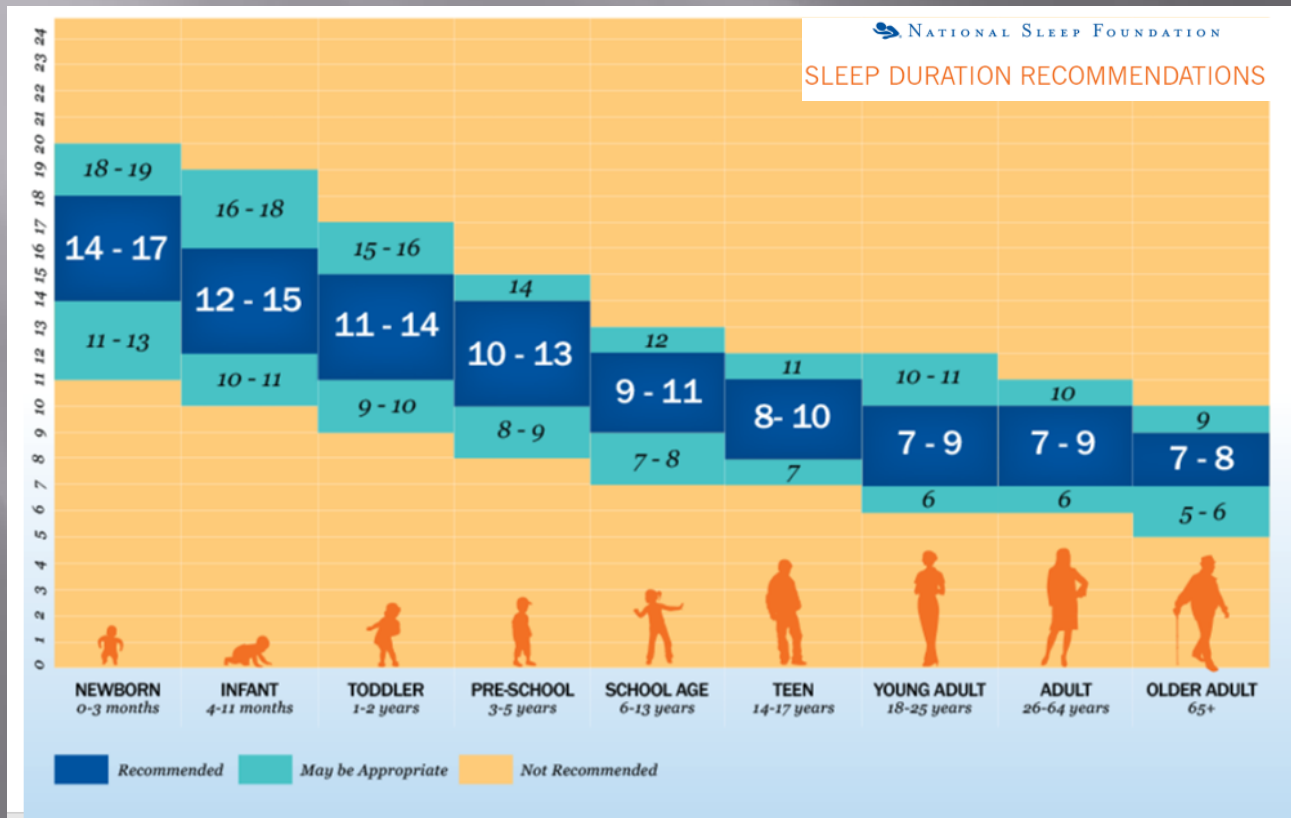


**DRUG Z...ZZ. Sleep is a natural, safe performance drug! Bank It!**

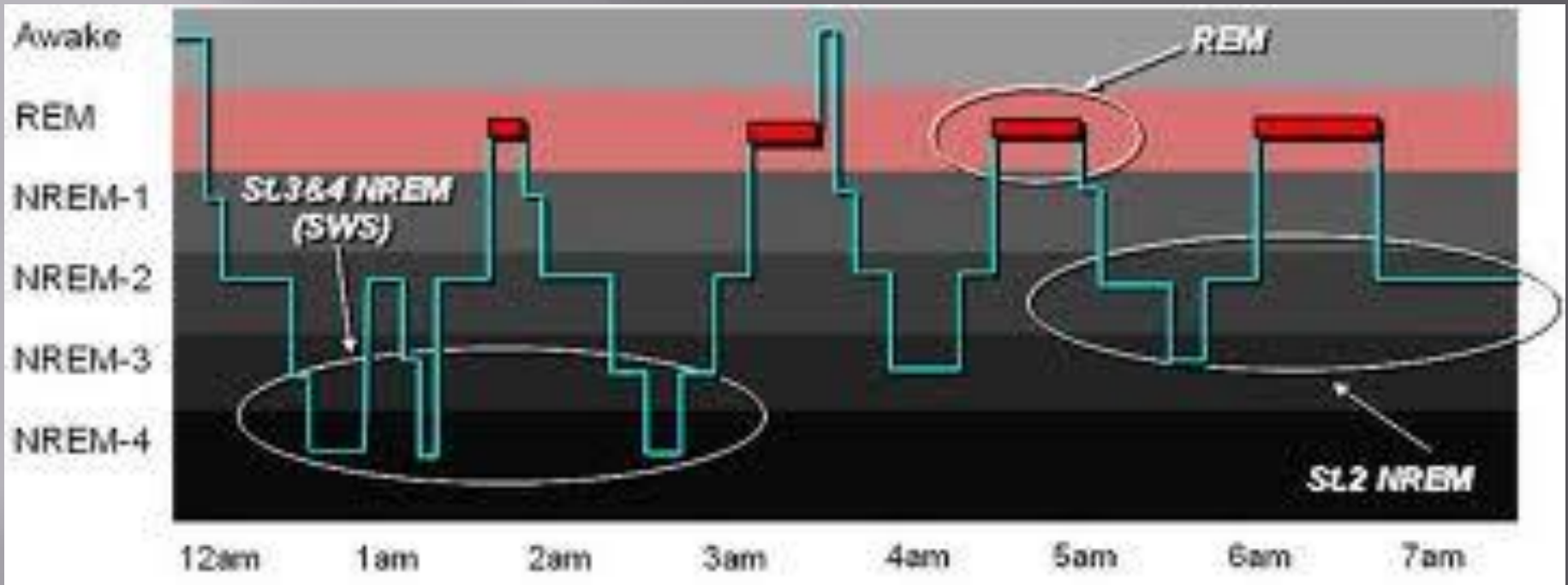


# The Research is clear

Adults need 7.5 -8.5 hours per night to function properly and be healthy. Children need 9-11 hrs







## What IS Sleep?

**Sleep is a state of unconsciousness in which both the body and the brain rest, repair, regenerate, and recharge.**

**Sleep cycles: Body repairs over 1<sup>st</sup> 4 hrs (deep sleep), then brain recharges (light sleep and REM dream sleep)....*if you have a short night the body repairs but the brain suffers!!***

# How do you extend your sleep?

Your end of week goal:

Look at your usual total sleep  
*Increase total sleep time*  
By 1 hour over 1 week!



# How?

1. Simply go to bed 10 minutes earlier each night
  2. Extend the hours before midnight, rather than sleep later
- n.b. Your body clock will not notice 10 minutes each night  
Feel the difference!!







# Routine...Rise with the Sun

Once sleep hours are optimised the body loves routine & daily recalibration

- *Go to sleep within 30mins of the same time each night*
- Awake roughly the same time each morning...
- **Sleeping in? No more than 1hr on the weekend**

“SOCIAL JETLAG”



# The De Power Hour

Can you go from 100km/hr to 0  
in 5 minutes?? NO!!

## HAVE PRE SLEEP HABITS

Allow time b4 bed to unwind,  
relax, and follow this routine





Writing down your thoughts, worries and 'to do's is incredibly relaxing for the mind...it stops you churning things over in bed...you go to sleep faster!



Clear the mind



1. Cool the body  
before bed

2. By warming the skin  
before bed



Room temp 18 - 22 degrees



Warm feet make you  
drowsy...try wearing socks  
before bed



# Lights Out

The brain is VERY primal.  
Light = No Sleep.

Turn the lights down 1 hour  
before you want to go to sleep.



Download F.Lux  
or use a blue light  
filter / night  
mode function on  
Hand Phone

Minimise screen  
time...reduce  
brightness...TV is ok with  
room lights off



Make the home like camping-  
Dim light & Good night





# Manage Sleep Wreckers 4 Sleep Quality

Do you need that PM primer?



Taper fluid after dinner

Block light



Block sound



STRESS- How do you manage this!!

Training Schedule

Cool bedroom  
18 degrees  
is optimal.  
Try it out!!

# DRUG ZZZ

It Makes Athletes Better

How Can We As Coaches Get More For  
Our Athletes?





Now you know your ABCs!! Sleep is a behaviour.  
Practice it. Coach it. Improve it.

sleep better. be better



# SLEEP & NUTRITION

Sports Med (2014) 44 (Suppl 1):S13-S23  
DOI 10.1007/s40279-014-0147-0

REVIEW ARTICLE

## Sleep in Elite Athletes and Nutritional Interventions to Enhance Sleep

Shona L. Halson

**Micronutrients –**  
Mg, Zn, B6, Folate

**PROTEIN –**  
Supports  
'staying asleep' via  
neurotransmitters &  
melatonin precursors



**CHO –**  
Supports  
'getting to sleep' via an  
insulin-BCAA-  
TRP  
relationship



**TRP**-very  
effective in  
promoting sleep  
as a melatonin  
precursor

# SLEEP & NUTRITION



Quality protein  
supplies  
Tryptophan, a  
building block for  
melatonin.



Including protein and carbs at dinner  
increases sleep hormones

Functional foods such as anti-oxidant rich dark  
red, blue and purple fruits, vegetables and  
juices and omega 3 rich fish hold the potential  
to improve sleep.



# What about napping?

- NASA studied Napping.
- Highly effective strategy if tired

## Basic NASA Nap Rules

- Don't nap if you struggle with insomnia/cant get to sleep at night
- We are programmed to nap @8hr post wake up time i.e. between 1-330pm
- Don't nap much past about 330pm
- A small nap of 20-30 mins is best
- Keep to 30min OR 90 mins to feel good afterwards...set your alarm!
- Try it on the weekend to 'catch up'



NASA found  
A 26 min nap  
can increase  
concentration  
by 100% and  
performance by  
34%