Sleep well to be well

Exploring the links between sleep and health
Sleep duration, adults and adolescents

- Adults:
  - ≤ 6: 10%
  - >6, ≤7: 20%
  - >7, ≤8: 30%
  - >8, ≤9: 20%
  - >9: 10%

- Adolescents (14-18yo):
  - <8: 44%
  - ≥8, <9: 20%
  - ≥9: 10%

Morselli, L. Best Prac Res Clin Endocrinol Metab 2010
Sleep and physical health

Sleep and our mental health?
1. Brief awakenings
2. Deep sleep
3. REM sleep
4. Non-REM stage 1
5. Non-REM stage 2
6. Non-REM stage 3
AWAKE

REM
The experiment

- 25 good sleepers - average sleep time 7 hours 5 minutes
- 25 poor sleepers - average sleep time 6 hours 4 minutes
- Performed an increasingly complex cognitive task
- fMRI’s were performed while participant engaged in task

Drummond, SP et al Sleep 2013
Good sleeper
(7 hours 5 mins)

Poor sleeper
(6 hours 4 mins)

Activated

Deactivated

Drummond, SP et al Sleep 2013
Five-fold increase in the risk of developing depression

Van der Helm, E et al Psychol Bull 2009
Sleep and brain health

Clearance rate (min⁻¹)

Awake

Asleep

p<0.05

Xie, L et al Science 2013
The study

- Women's Health Initiative Memory Study
- 7444 women enrolled (65-80y)
- Followed for 13 years: 1995 – 2008
- Baseline habitual sleep recorded

Chen, JC Alzheimer's & Dementia 2015
The less sleep we have the more mistakes we make
30 day mortality rates/1000 surgical admissions
(English hospitals 2008-2011)

The foreseeable consequences

Deaths / 1000 surgical admissions

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td>759000</td>
</tr>
<tr>
<td>Tues</td>
<td>852000</td>
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</tbody>
</table>

Aylin, P BMJ 2013
The timing of our sleep is a result of two biological processes working together:

1. Our sleep drive (*and our sleepy neurotransmitter*)
2. The Circadian process
Our cycle of alertness

⇒ Early birds (larks) wake around 6am and feel most awake around 8am and again at 8pm

⇒ Night owls like to wake after 8am, are most awake around 10am and again at 10pm

Afternoon dip in alertness

Least alert during night hours

Most alert at 9am and 9pm
The importance of light 
(and melatonin)
Causes of poor sleep

- Insufficient time in bed
- Sleep disorder
- Poor sleep practices
For the body

1. Get up at the same time every day.
2. Exercise for at least 20 minutes per day (a walk at lunchtime is good)
3. Don't have caffeine after midday
4. No alcohol
5. Do not sleep during the day (a nap of 20 minutes is ok)
6. Small meal at night and especially no big meal within 3 hours of bedtime.
7. Do not exercise within 3 hours of bedtime (this will alert the body)
Step 1: Deal with the issues of the day
Step 2: Set an alarm one hour before bedtime.
Step 3. Ensure that the bedroom environment is conducive to sleep for the brain.

For the brain

No

No iPods, cell phones, tablets, iPhones, phones, televisions, or other devices or notepads with players.

No radios, iPods, cell phones, tablets, iPhones, phones, televisions, or other devices or notepads with players.

No video recorders, audio recorders, or similar devices.
Working with your sleep diary

**At midday each day complete the following 3 statements**: Circle the position on the line that most applies to you today.

Since waking this morning:

- **I have been:**
  - 1: Exhausted
  - 2: Very tired
  - 3: Tired
  - 4: Energetic
  - 5: Very energetic

- **I have found thinking:**
  - 1: Very difficult
  - 2: Difficult
  - 3: OK
  - 4: Easy
  - 5: Very easy

- **I have felt:**
  - 1: Very unhappy
  - 2: Unhappy
  - 3: OK
  - 4: Happy
  - 5: Very happy
Be smart .... and catch some sleep

www.sleepforhealth.com.au