SLEEP Unit | Christchurch Hospital

Sleep Health

SLEEP AWARENESS WEEK

ceo update

Canterbury District Health Board
Te Poari Hauora o Waitaha

Monday 22 September 2014

Wellbeing – where are we at?

The high level findings of CDHB's Staff Wellbeing survey were discussed at this week's General Manager's meeting and I wanted to share some of the findings with you.

Firstly thanks to over 2,300 staff who completed the online survey – that's almost a quarter of our staff employed directly by CDHB. We suspect that your experience may be similar to that of your 9,000 community-based colleagues who work in our health system.

It is evident that although we are a well-educated bunch of people who know the importance of living a healthy lifestyle, we're not always good at doing the right thing for our own health. For example, the number of staff achieving the minimum recommended level of physical activity has dropped from 22% in 2012 to 14% this year.

Overall, there hasn't been a huge shift in our collective wellbeing since the last Staff Wellbeing Survey carried out in 2012. This isn't surprising given the multiple stressors many of you are experiencing – such as your work environment, dealing with housing and financial issues as a direct result of the quakes.

The World Health Organization have a wellbeing index, and in our 2012 survey almost 39% of male staff and 36% of our female staff rated as having poor emotional wellbeing. This has improved slightly for our male staff this year with 35% falling into the 'poor emotional wellbeing' category and 37% of our female staff in the same situation and highlights the importance of the wellbeing strategies that have been in place over the past few years. It also highlights the importance of continuing to provide the right ongoing interventions as we continue to deal with the real and ongoing challenges that we face with continued shifting of services as we deal with earthquake repairs and new builds.

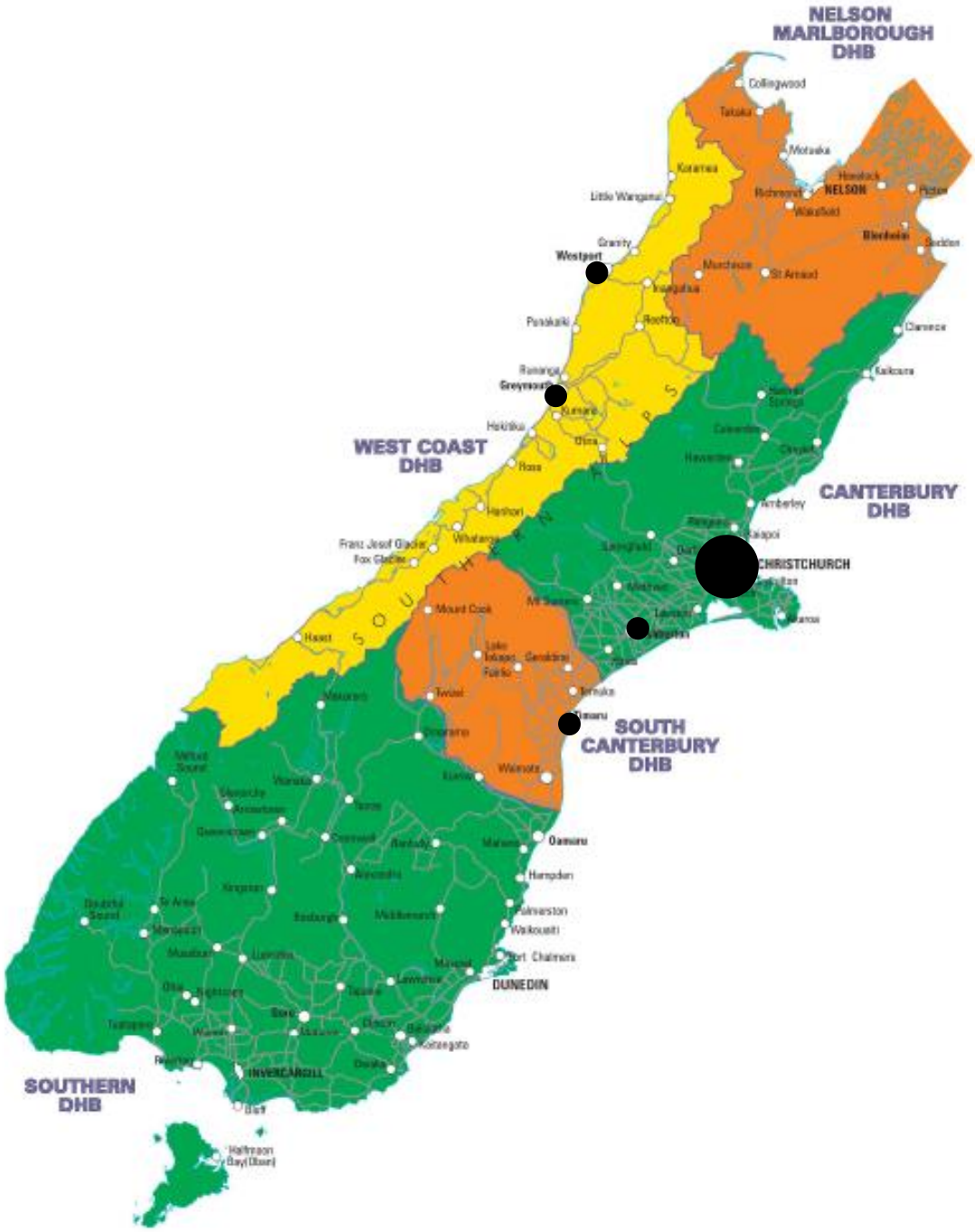
Lack of sleep and feeling fatigued was a very common theme, and we are looking at providing staff education, information and seminars on this topic. 53% of respondents said they would attend a seminar on sleep – so watch out for information on this over the coming weeks.

https://www.facebook.com/SleepHealthFoundation

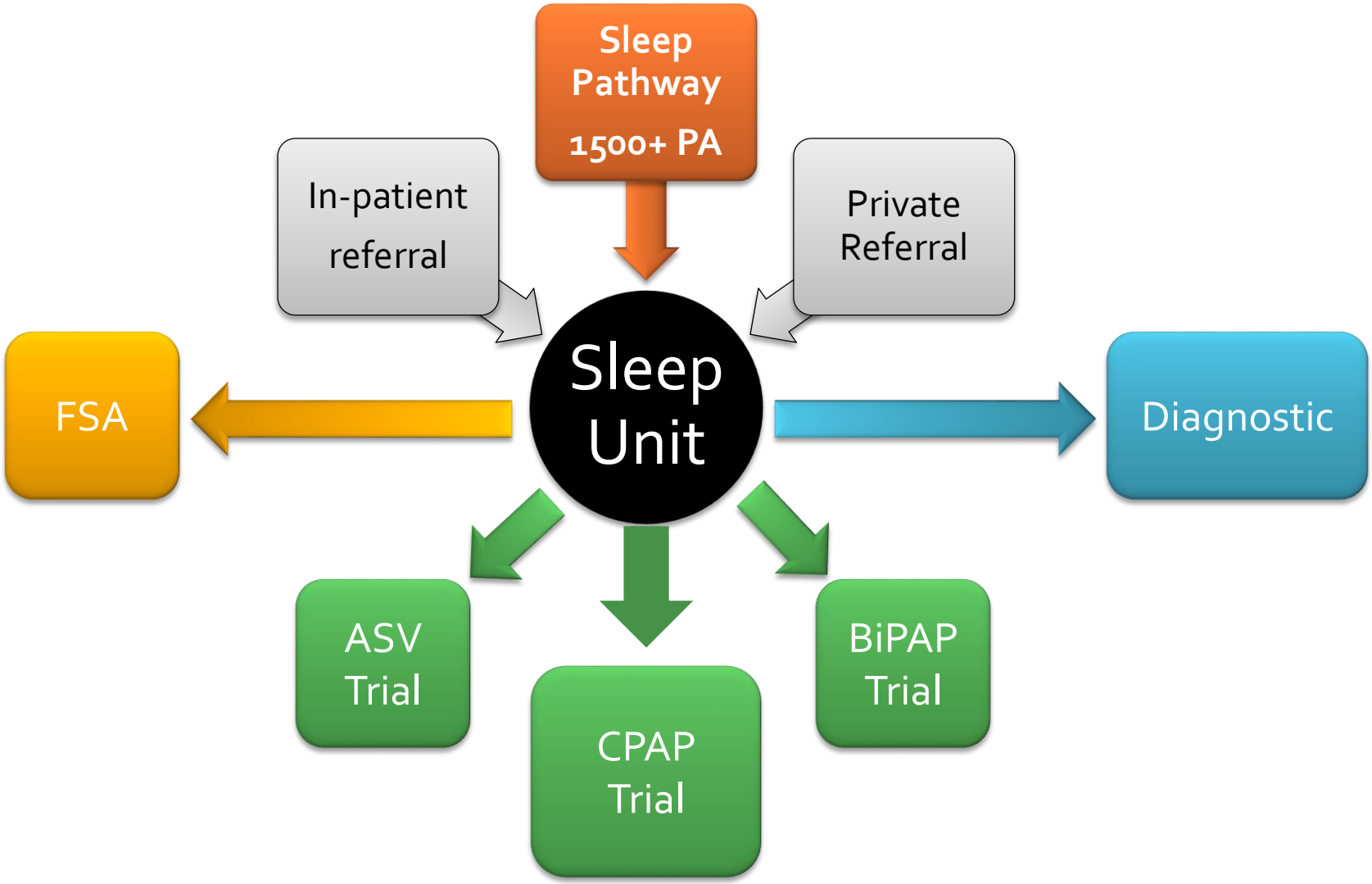
The CDHB Sleep Service

CHRISTCHURCH HOSPITAL
- 1 Clinical Manager
- 2 Clinical Nurse Specialists
- 3 Senior Medical Officers
- 6 Clinical Physiologists
- 2 Admin

COMMUNITY SERVICES
- 20 APP (practice nurse + GP)
- SMO + CNS as BWH
- 1 RN AB; 1 Physiologist
- 3 Clinical Nurse Specialists (WC)
- 2 Clinical Nurse Specialists (SC)



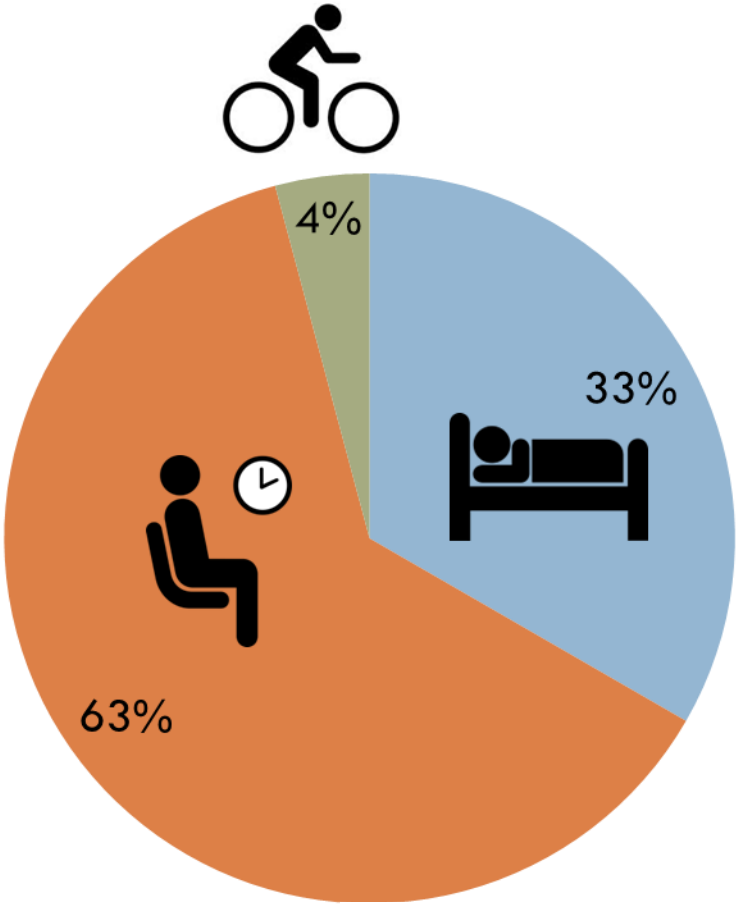
SU-REFERRAL PATHWAY



Typical Day

24 HOURS

- 8 hour job
- commuting time
- family tasks
- social time with friends
- keeping up-to-date with news and other information
- exercise
- …and sleeping 7 to 8 hours



Poor sleep can be thought of as a "disease" of society. Rates of poor sleep have increased with urbanization, noise, shift work, increasing connection time and, especially in young adults and adolescents, with the increasing use at night of mobile phones and the internet.[5,6,18-21] Nevertheless, although poor sleep may indeed be a "disease" of society, almost 10% of the general population complains of chronic insomnia independent of their jobs or environmental conditions.[18,22-24]

Working with Poor Sleep

Commentary on Lallukka et al. Sleep and sickness

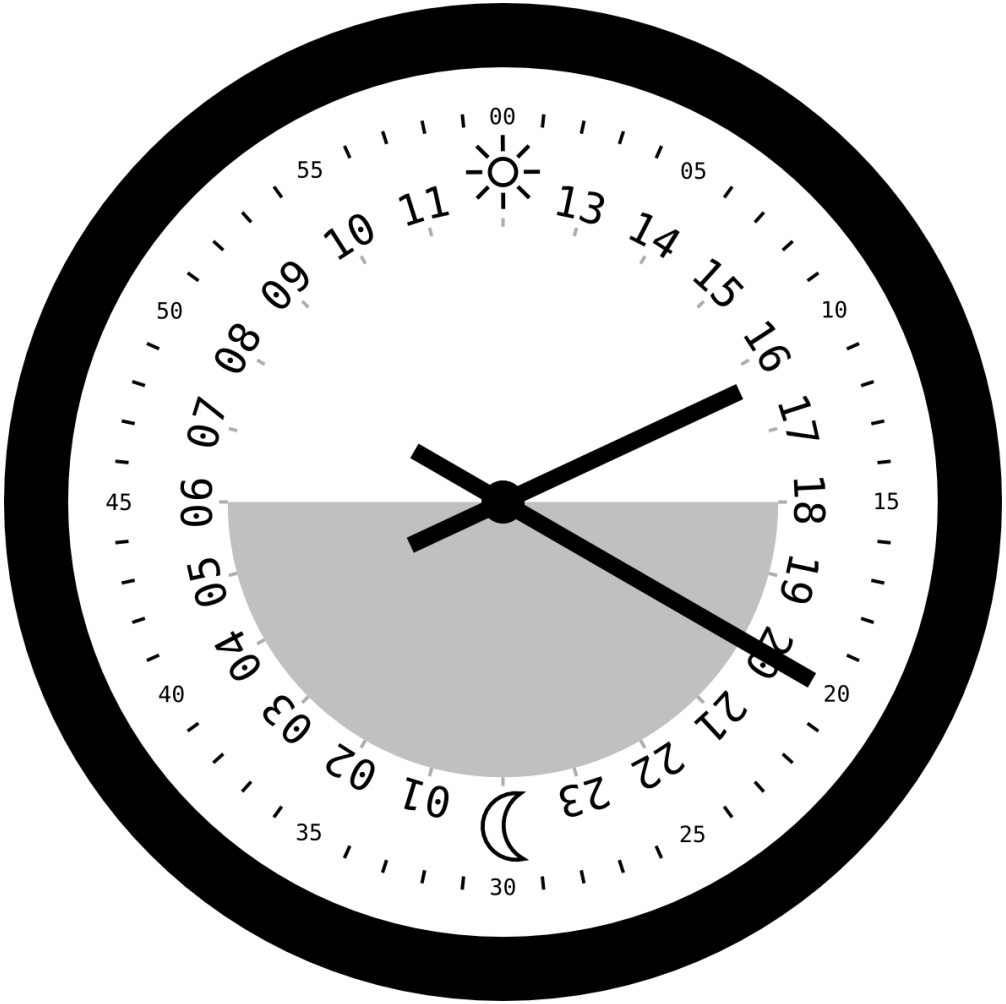
Damien Leger, MD, PhD

Why do we sleep?

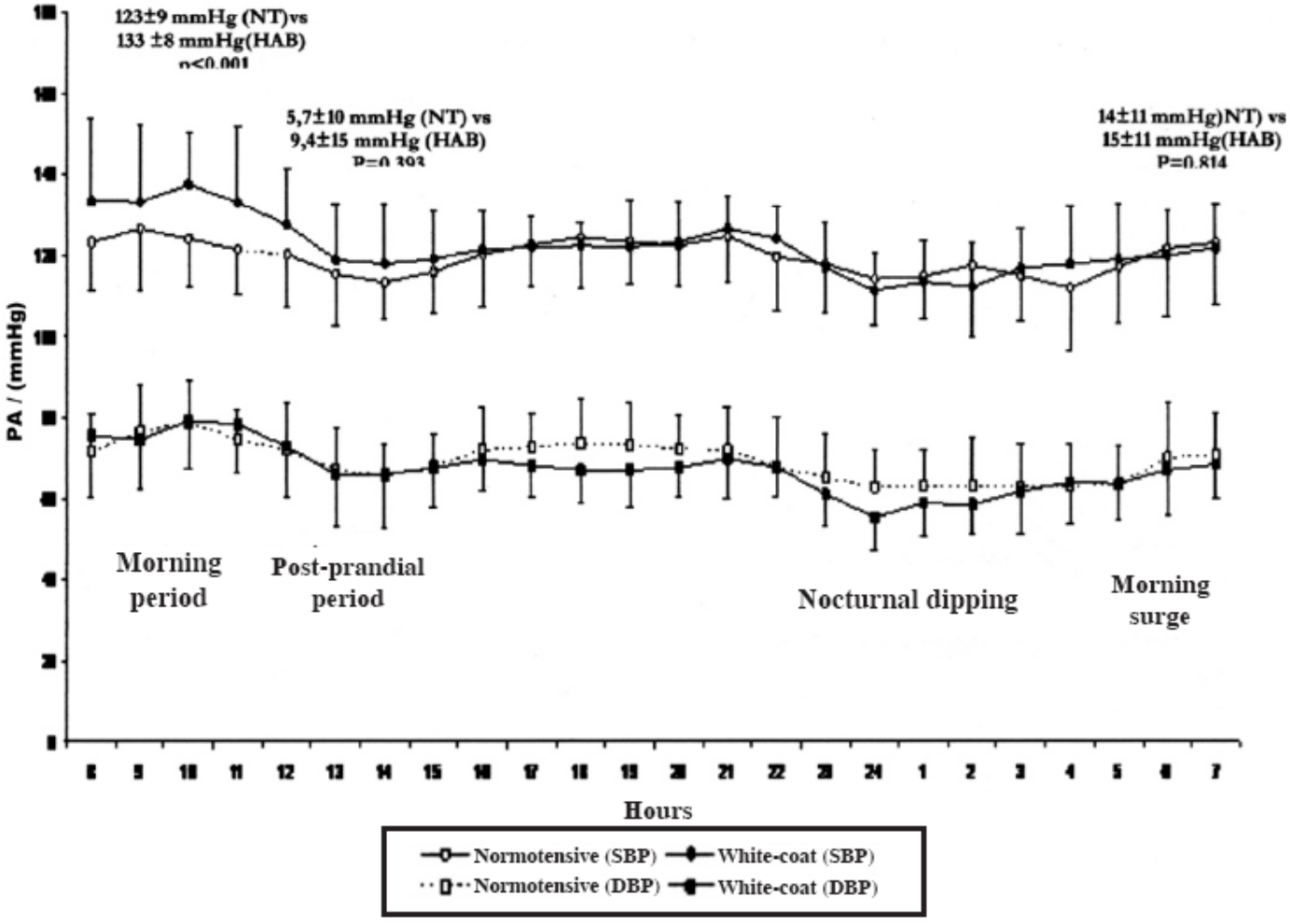
- Greatest mystery in Sleep Medicine (AASM, 2007)

- To restore
- To balance
- To heal
- Memory consolidation
- Learning retention
- Concentration
- Performance

Circadian Rhythm

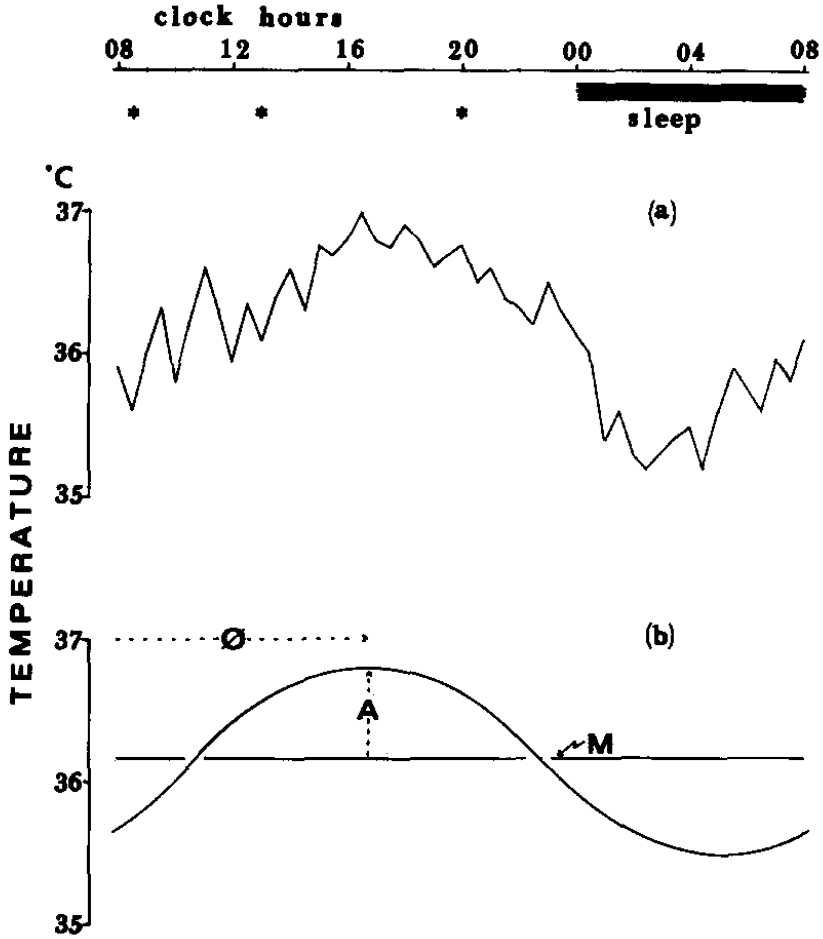


Circadian blood pressure



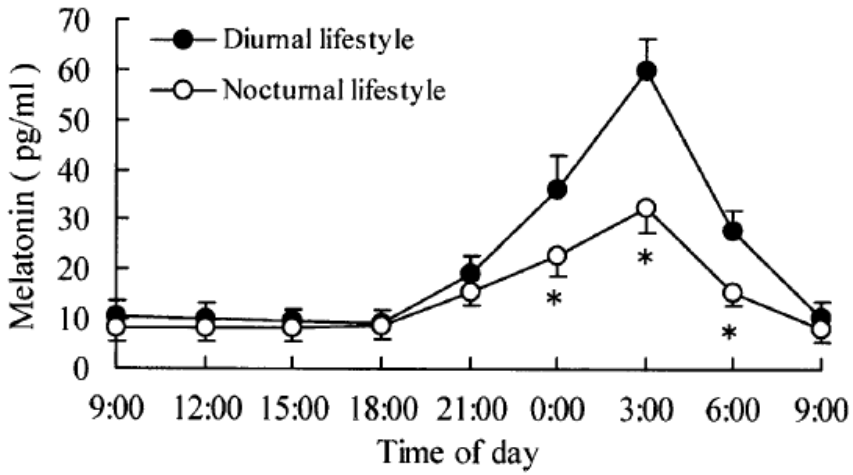
Arq Bras Cardiol 2010; 94(4):405-411

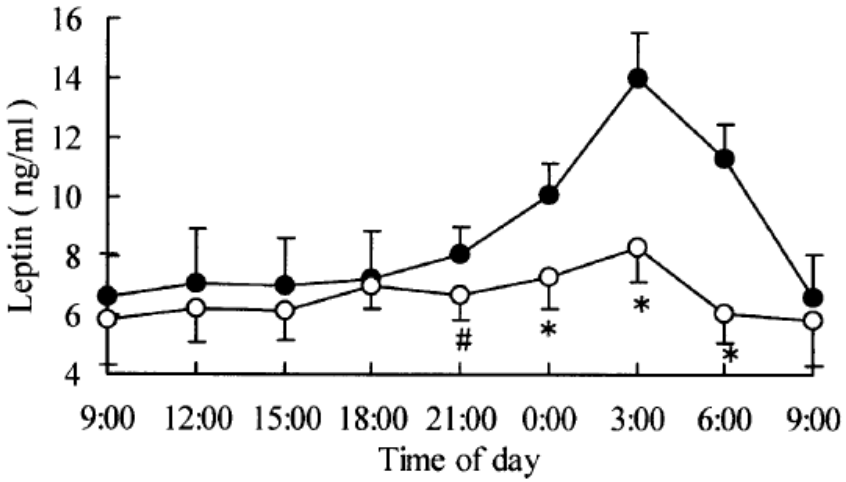
Circadian body temperature

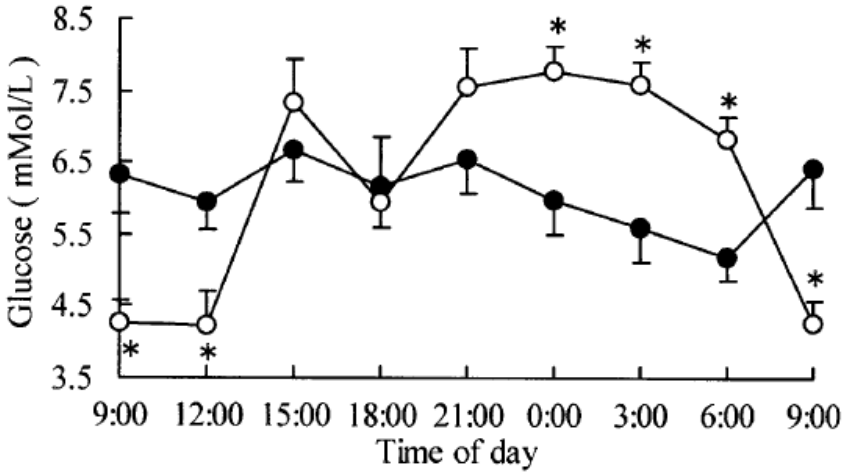


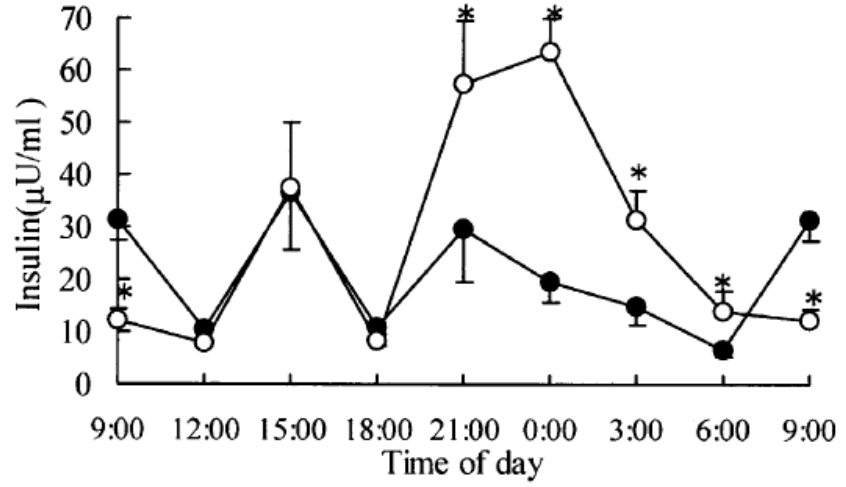
Pharmac. Ther. Vol. 22, pp. 425--464, 1983

Circadian endocrine



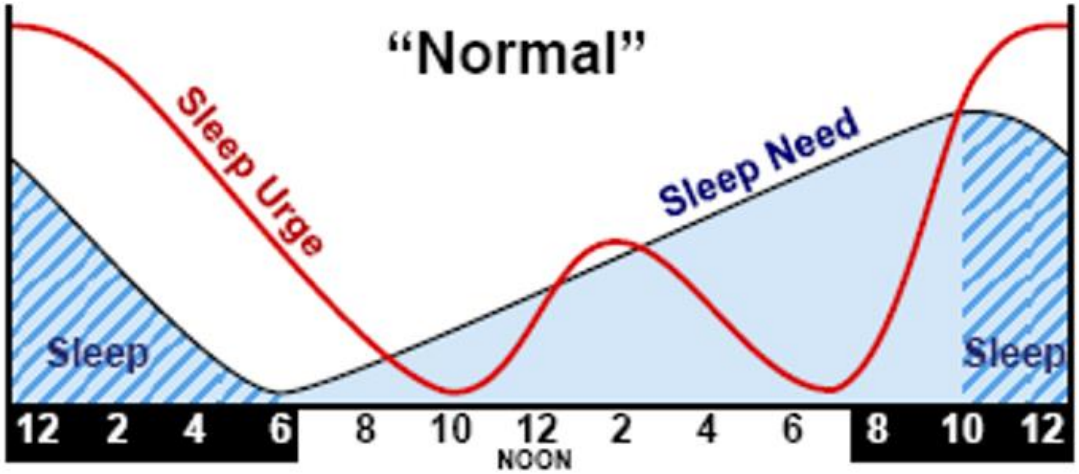




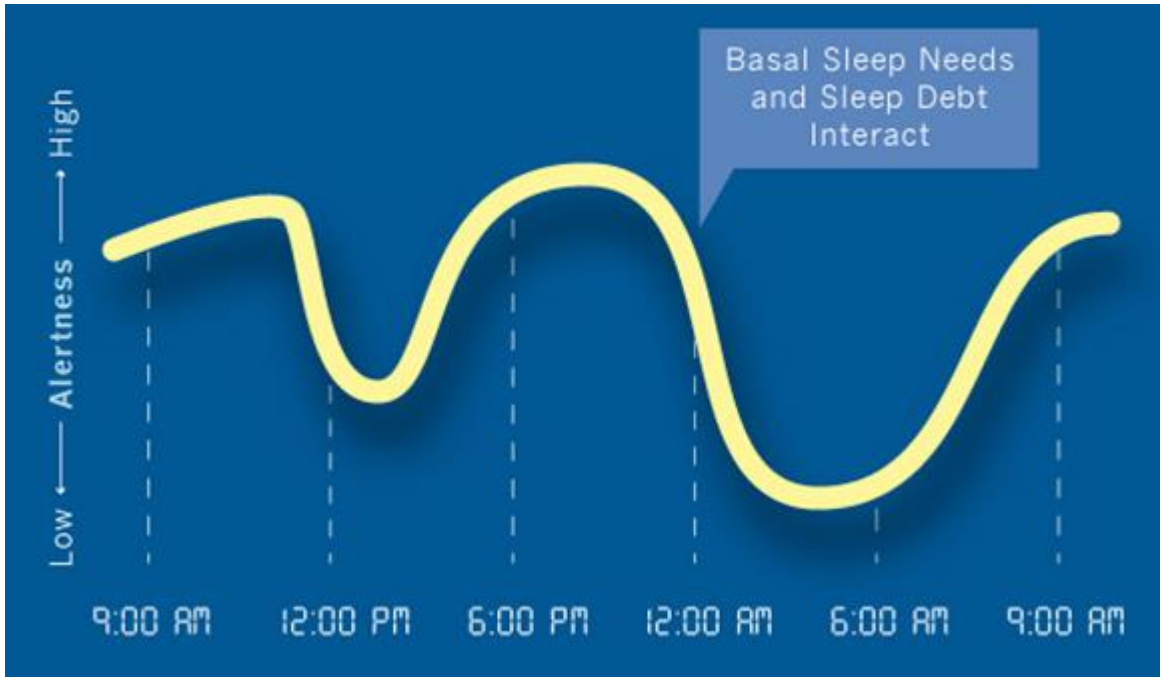


L.-Q. Qin et al. / Life Sciences 73 (2003) 2467–2475

Circadian Rhythm

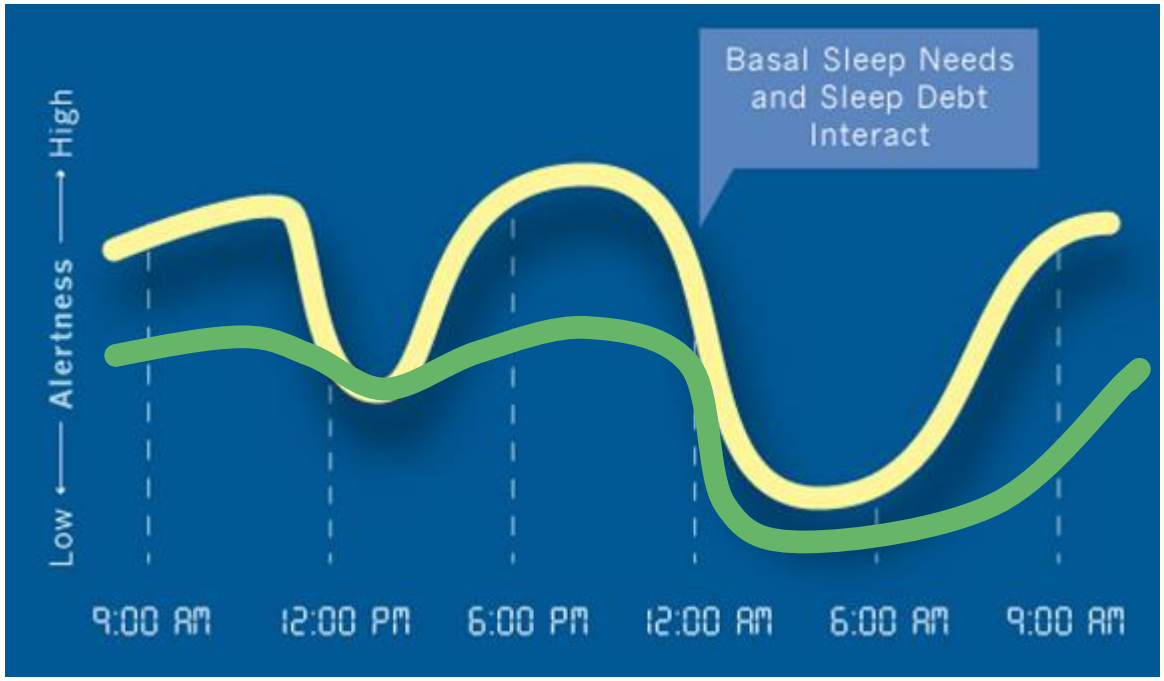


Alertness throughout the day



http://www.sleepfoundation.org

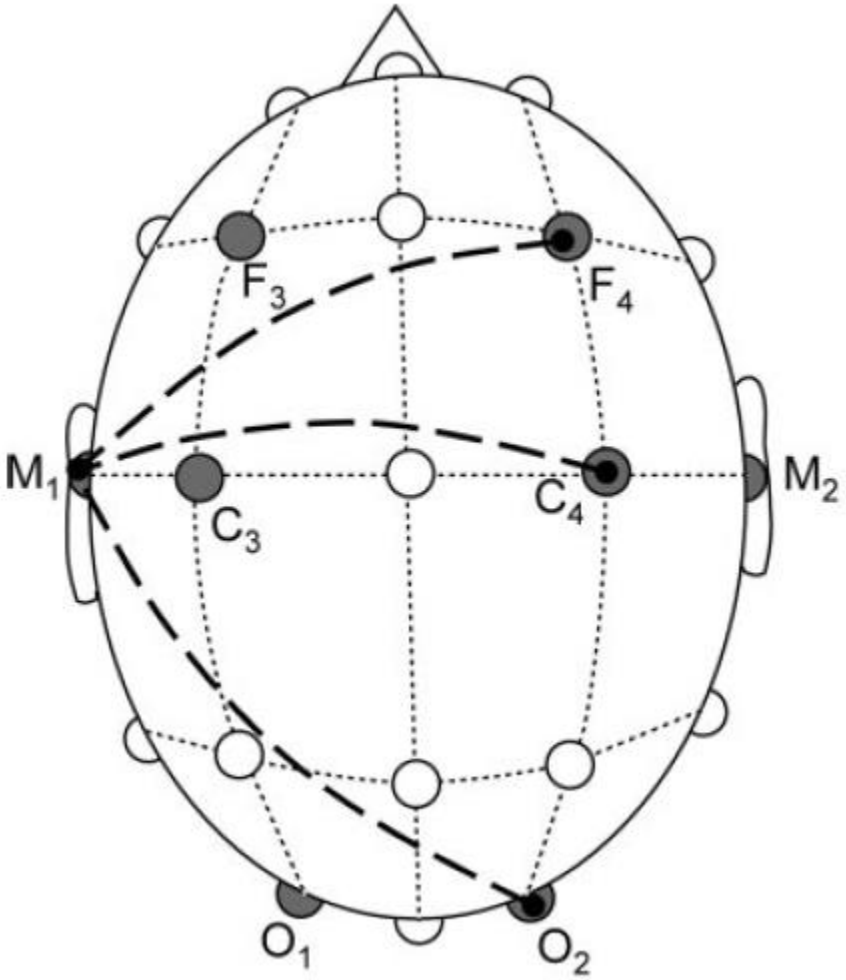
Alertness throughout the day

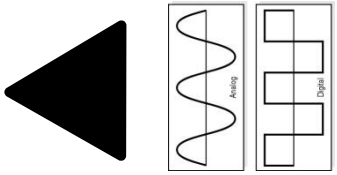


http://www.sleepfoundation.org

Sleep and brain activity

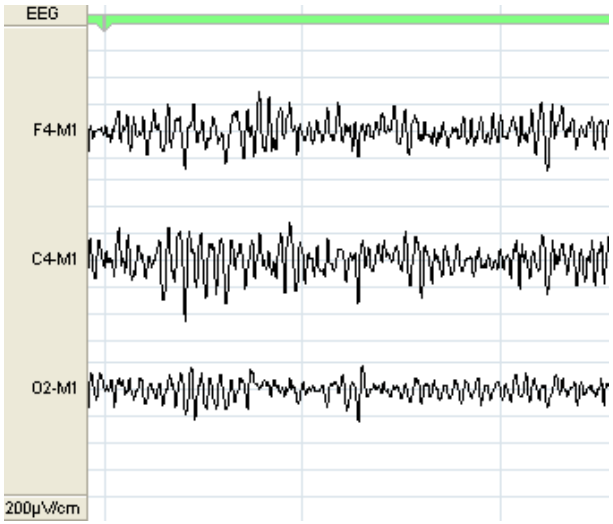
- The brain is inactive during sleep





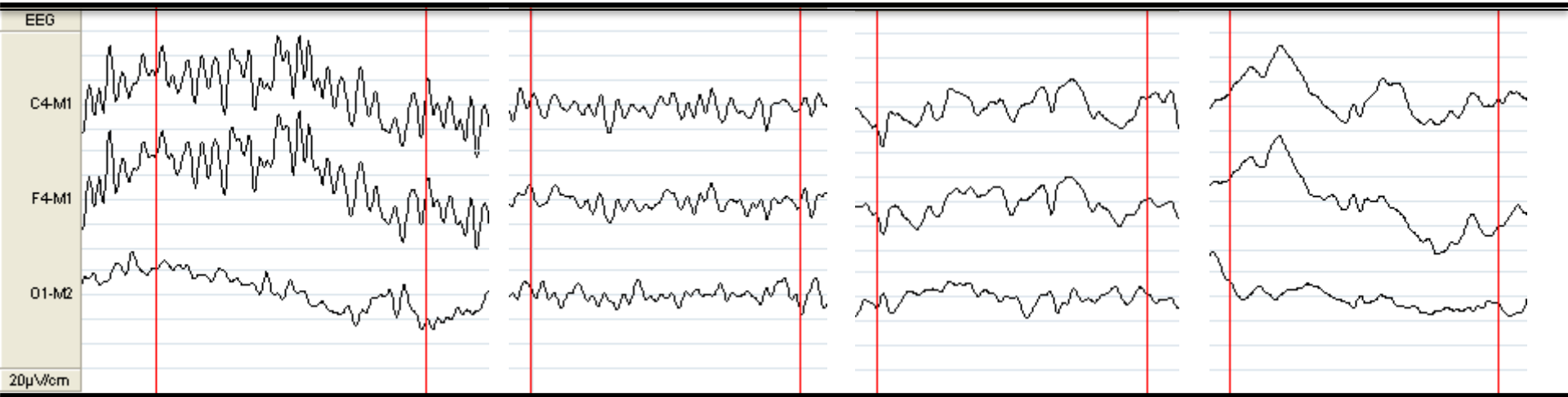
amplifier

A/D converter



Sleep and brain activity

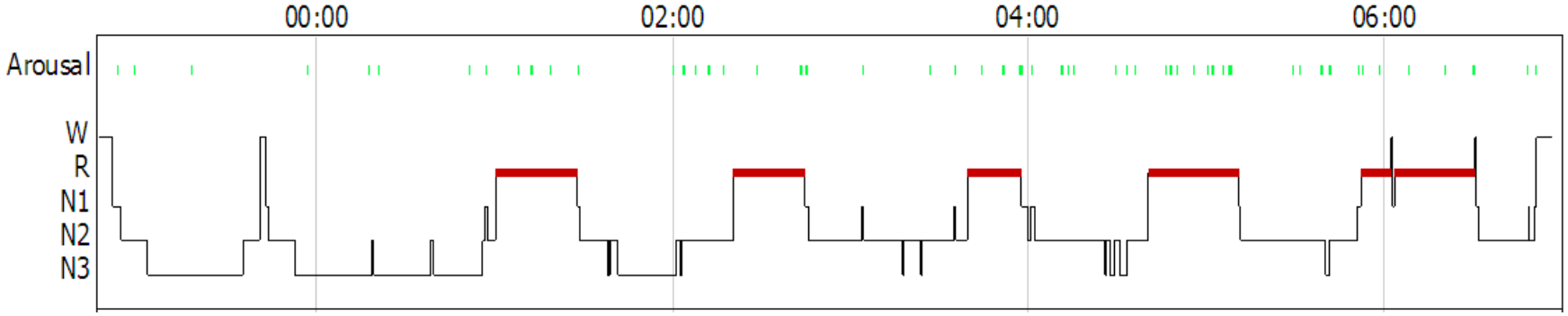
EEG Waves	Frequencies (Hz)
Delta	0-4
Theta	5-7
Alpha	8-13
Beta	> 13



Sleep Staging

AASM Staging

W > 50% of EPOCH has alpha rhythm, no eye movement
N1 Attenuation of alpha > 50% mixed frequency
N2 >K complex and/or sleep spindles in the 1st half of EPOCH
N3 Slow wave sleep > 20% of EPOCH
R Sawtooth EEG, conjugate eye movement, decrease chin EMG tone



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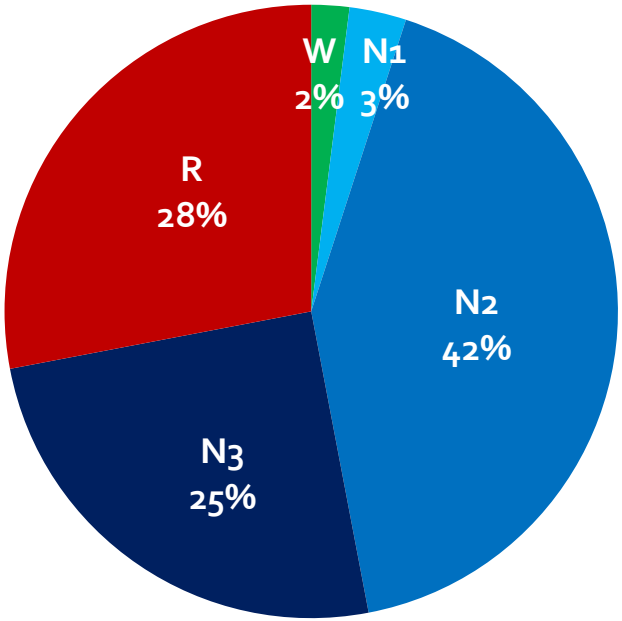
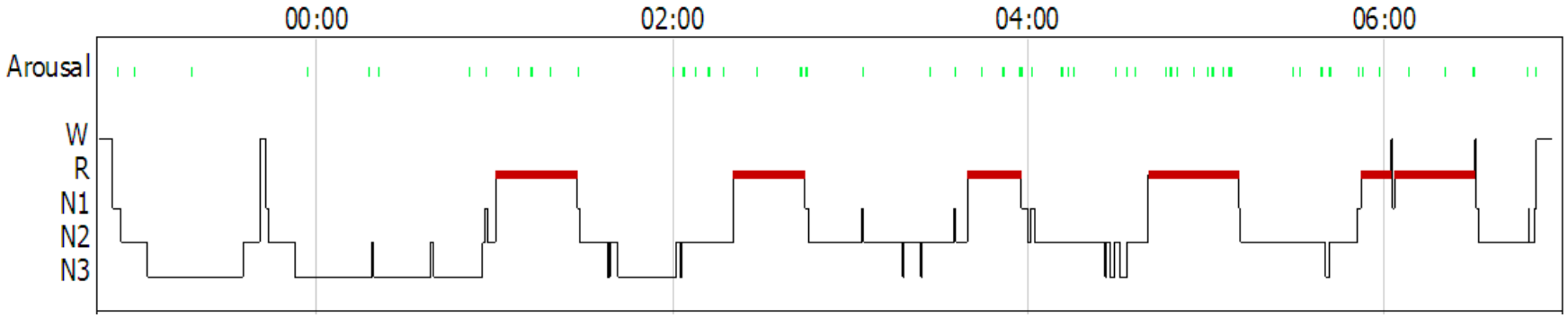
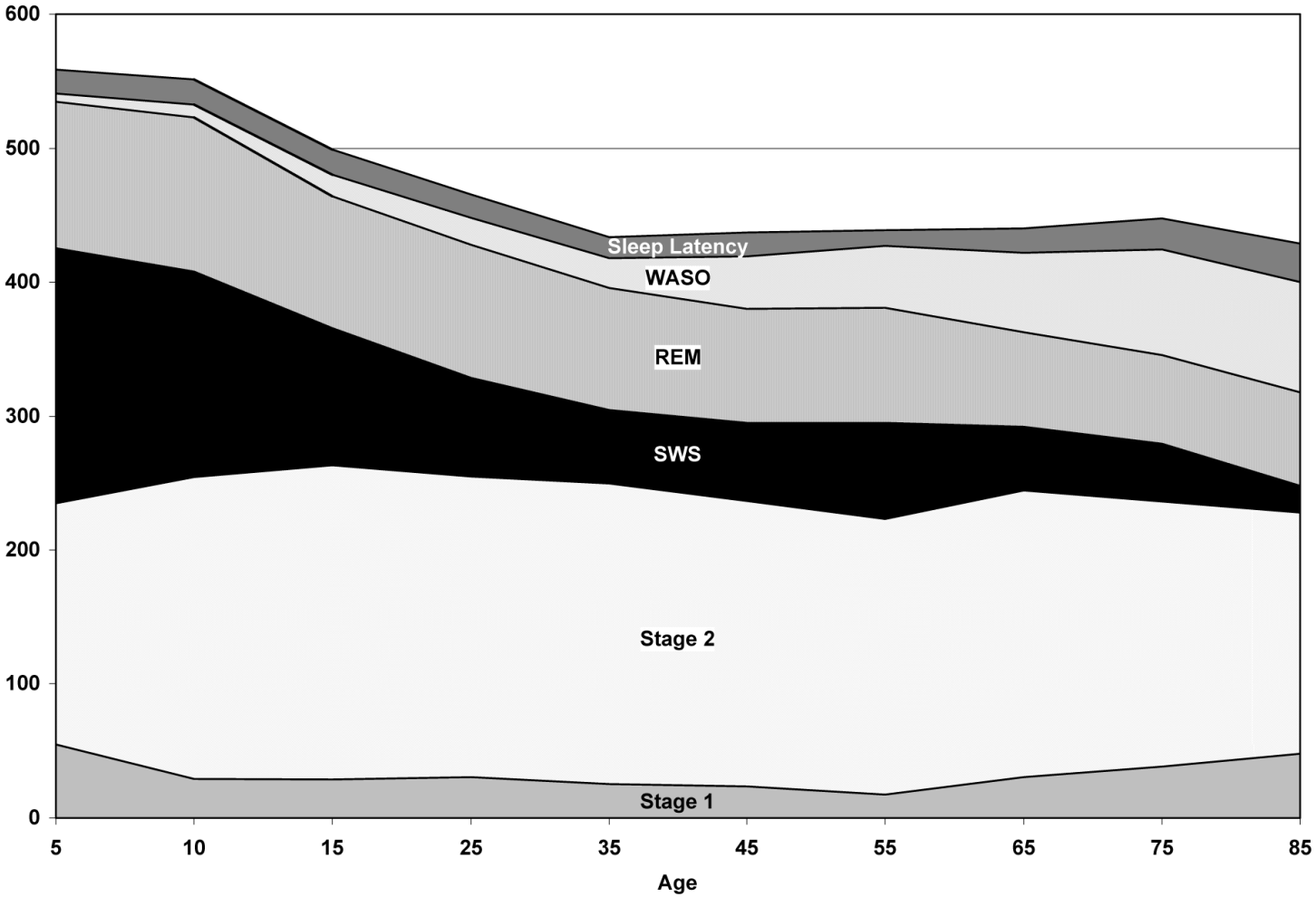


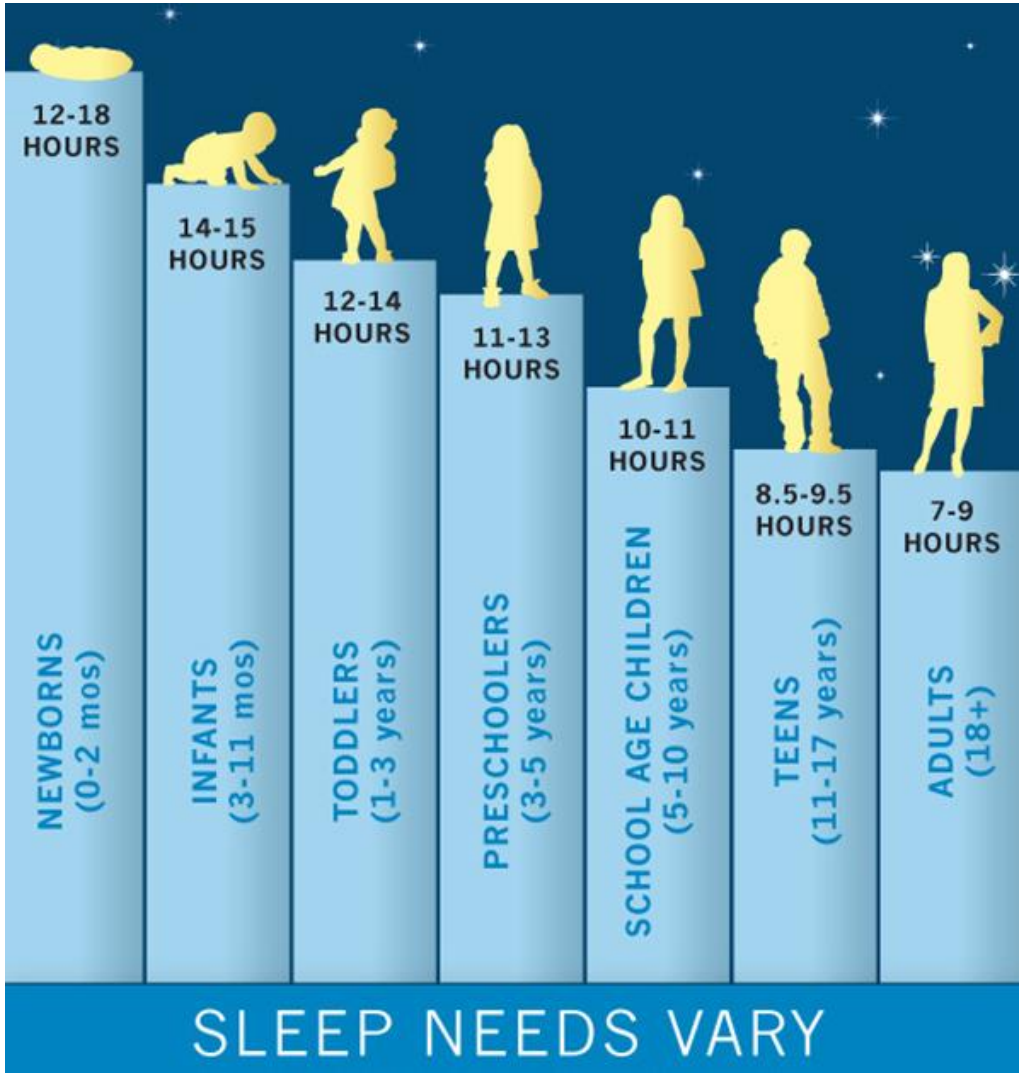


Sleep Staging and Aging



SLEEP 2004;27(7):1255-73.

How much sleep do we need?



ADULTS-OLD AGE

- △sleep pattern with age
- ↑ sleep latency
- ↑ wake times/staying asleep
- Change in sleep architecture
  - ↑ fragmentation
  - ↓ REM
- Circadian shift (ASPS)
  - Sleepier in evening
  - Awake earlier
- Increase prevalence of sleep disorders with age
- Increased medications

http://www.sleepfoundation.org

Individual sleep needs vary

http://www.sleepfoundation.org

A. Sleep duration

	Weekdays				Free time			
	Men		Women		Men		Women	
Hours	No.	%	No.	%	No.	%	No.	%
< 4	28	0.9	31	0.7	20	0.7	11	0.3
4 - 5	89	2.8	78	1.8	36	1.1	39	0.9
5 - 6	409	11.6	372	8.5	89	2.8	93	2.1
6 - 7	1331	42.6	1400	31.9	393	12.5	384	8.7
7 - 8	1058	33.9	1926	43.8	1051	33.3	1277	29.0
8 - 9	174	5.6	516	11.7	1177	37.3	1736	39.5
9 - 10	23	0.9	55	1.3	338	10.7	721	16.4
> 10	5	0.2	16	0.4	50	1.6	135	3.1

Sleep Duration, Subjective Sleep Need, and Sleep Habits of 40- to 45-Year-Olds in the Hordaland Health Study

Reidun Ursin, MD, PhD[1,4]; Bjørn Bjorvatn, MD, PhD[2,4]; Fred Holsten, MD, PhD[3,4]

SLEEP, Vol. 28, No. 10, 2005

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SLEEP, Vol. 28, No. 10, 2005

Sleep and sickness absence

Sleep and Sickness Absence: A Nationally Representative Register-Based Follow-Up Study

Tea Lallukka, PhD[1,2]; Risto Kaikkonen, MSc[3]; Tommi Härkänen, PhD[3]; Erkki Kronholm, PhD[3]; Timo Partonen, PhD[3]; Ossi Rahkonen, PhD[2]; Seppo Koskinen, MD, PhD[3]

[1]Finnish Institute of Occupational Health, Helsinki, Finland; [2]Hjelt Institute, Department of Public Health, University of Helsinki, Helsinki, Finland; [3]National Institute for Health and Welfare, Helsinki and Turku, Finland

"direct costs due to sickness absence could decrease by up to 28% if sleep disturbances could be fully addressed"

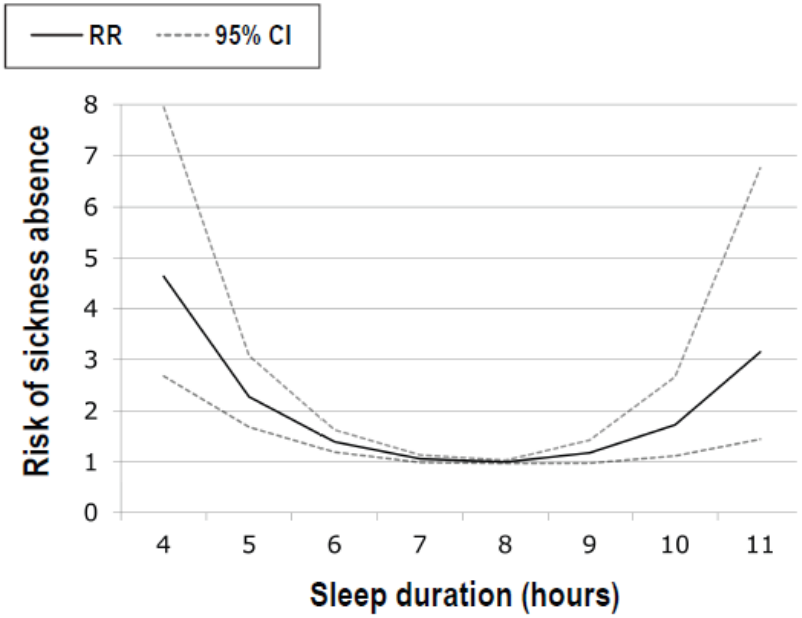


Figure 1—The association between sleep duration and sickness absence among men. 7.76 h the lowest risk. RR, rate ratios; 95% CI, 95% confidence interval.

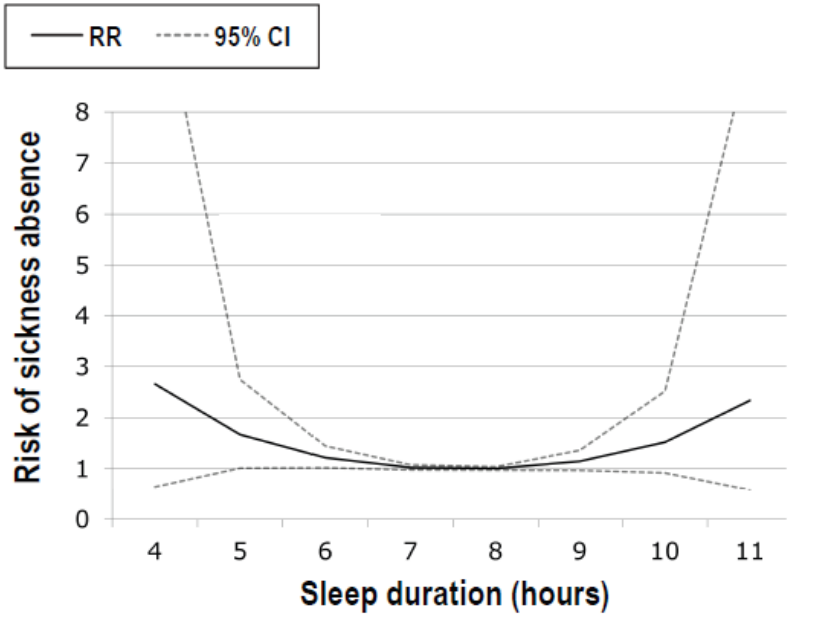


Figure 2—The association between sleep duration and sickness absence among women. 7.63 h the lowest risk. RR, rate ratios; 95% CI, 95% confidence interval.

10 Tips for Good Sleep Hygiene

1. Avoid **caffeine** at least 4 hours before bed
2. Avoid **nicotine** 1 hour before bed
3. Avoid **alcohol** around bedtime
4. Avoid eating a **large meal**
5. Regular exercise is good, but avoid before bed
6. Have a good clean sleep environment
7. Comfortable temperature
8. BR should be quiet and dark
9. BR should be for sleeping (not TV, SM or eating)
10. Keep regular lights off/lights on time

Common Myths About Sleep

- You can train yourself to get less sleep
- You can "bank" sleep in advance
- You can decrease daytime sleepiness by spending more time in bed

Common Myths About Sleep

- Daytime naps don't work
  - Pro: relaxing, ↓ fatigue, ↑ alertness & mood, ↑ performance (RT, less confusion/accidents/mistakes)
  - Con: Sleep inertia, night-time sleep problems
- The body adjusts quickly to changes in sleep schedule
  - Travelling E is worse (harder to phase advance)
  - Plan on going to bed earlier 7 days pre travel, exposing to light in am

Common Mistakes with Sleep

www.dailymail.co.uk/health/article

Common Mistakes with Sleep

Don't sleep with your pet, you may catch something (possibly bubonic plague)

By DAVID GARDNER
UPDATED: 10:37 GMT, 25 January 2011

Share Tweet +1 Share 76 View comments

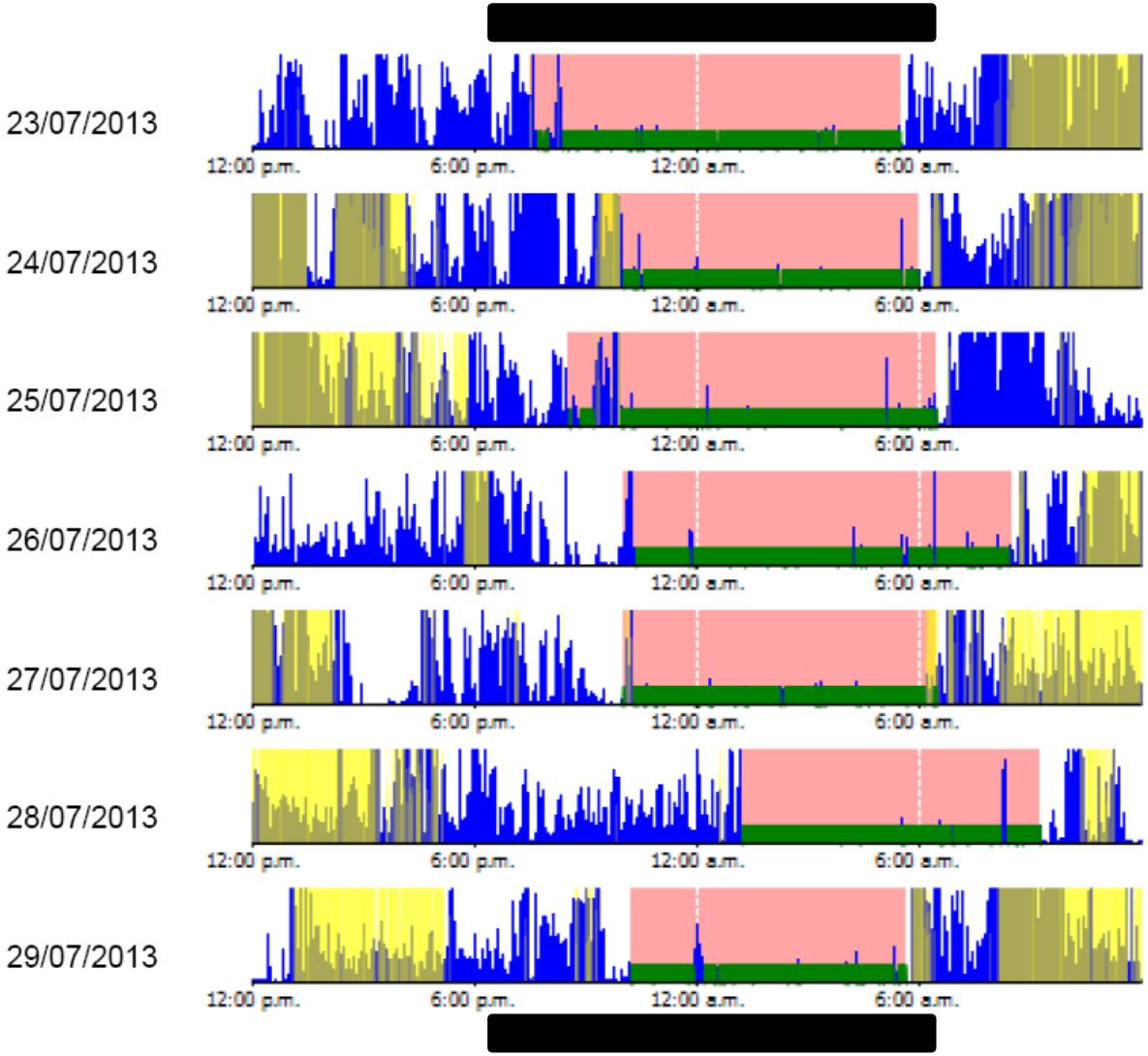
Letting sleeping dogs lie in your bed can make you sick, research suggests.

Pet owners may increase the chances of contracting everything from worms to the bubonic plague.

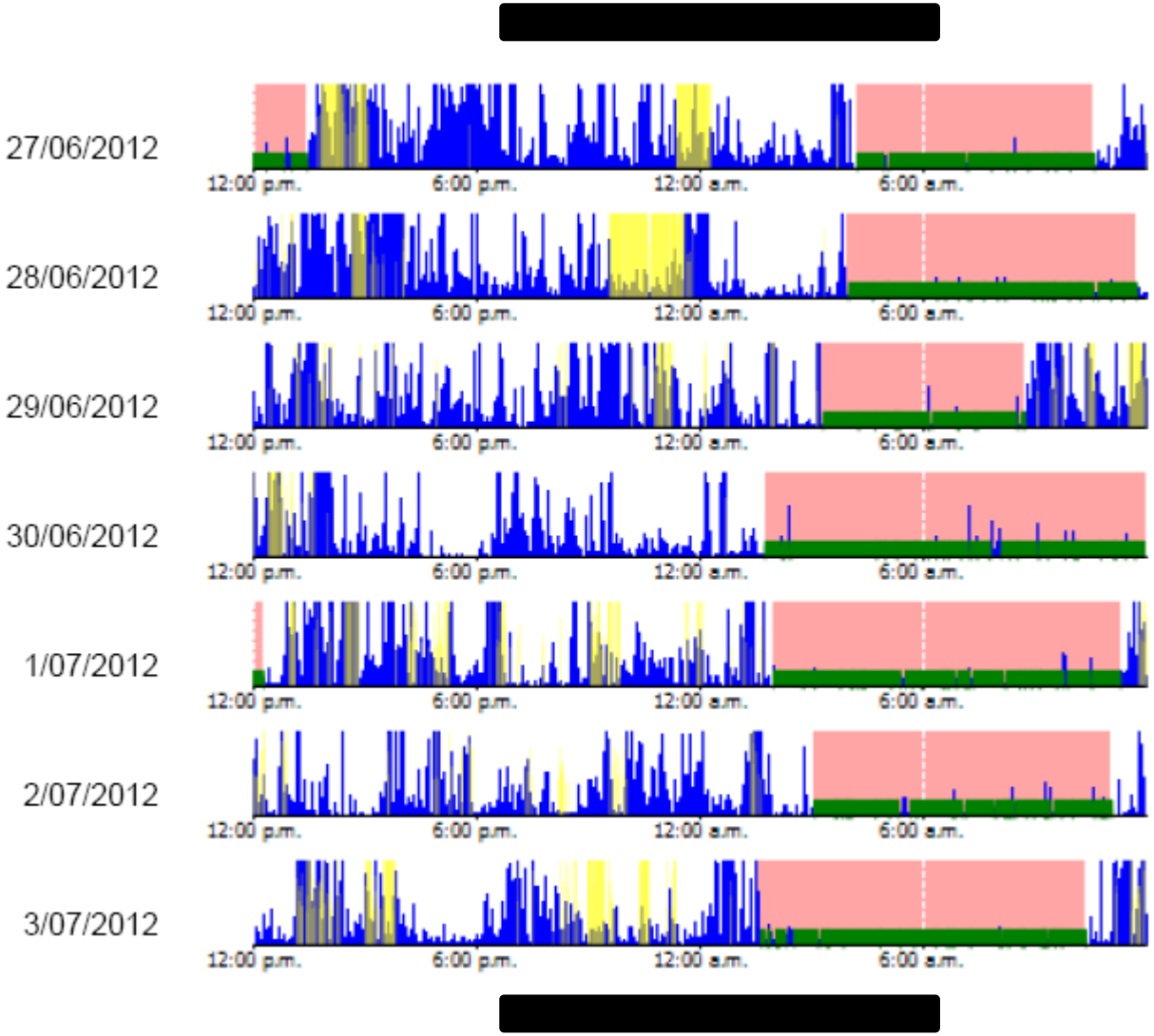
Of the 250 known diseases transmitted from animals to humans, more than 100 of them come from domestic animals, researchers say.

www.dailymail.co.uk/health/article

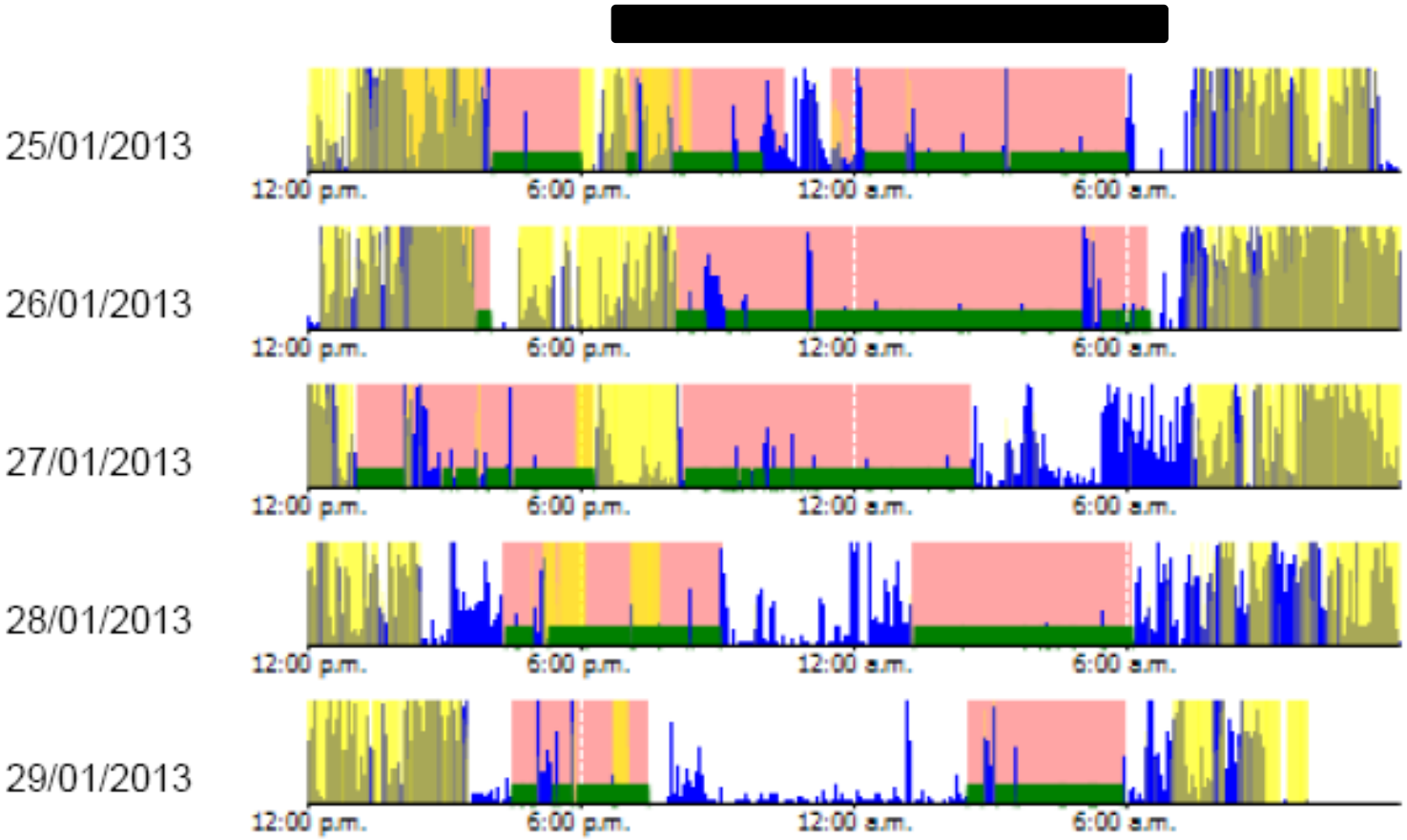
Common Mistakes with Sleep



Common Mistakes with Sleep



Common Mistakes with Sleep



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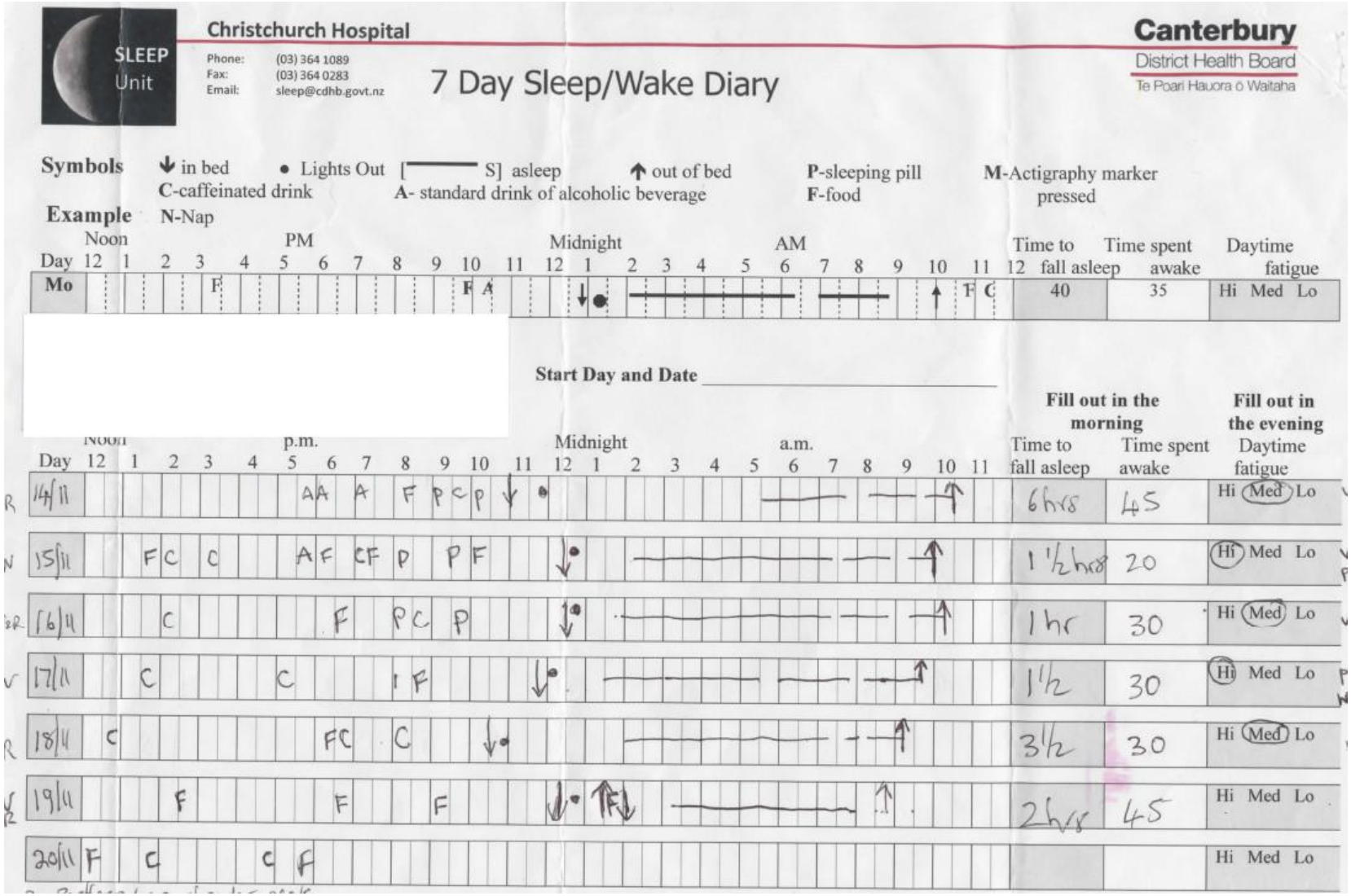

SLEEP Unit

Christchurch Hospital

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Email: sleep@cdhb.govt.nz

7 Day Sleep/Wake Diary

Canterbury District Health Board
Te Poari Hauora ō Waitaha

Symbols ↓ in bed • Lights Out [——— S] asleep ↑ out of bed **P**-sleeping pill **M**-Actigraphy marker pressed
C-caffeinated drink **A**- standard drink of alcoholic beverage **F**-food

Example **N**-Nap

Noon PM Midnight AM

Day	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	Time to fall asleep	Time spent awake	Daytime fatigue
Mo				F							F	A		↓	•								↑	F	C	40	35	Hi Med Lo

Start Day and Date _____

Noon p.m. Midnight a.m.

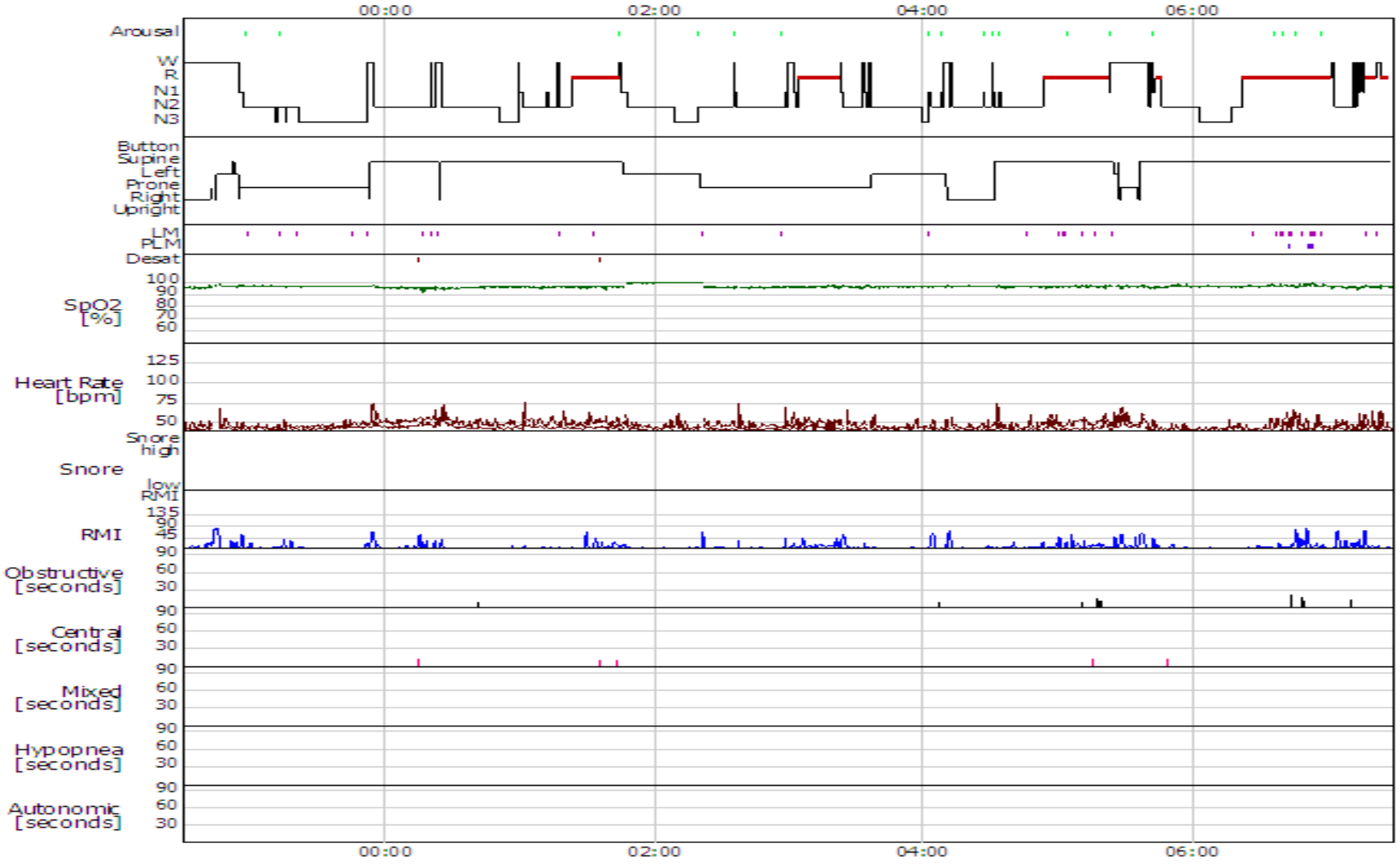
Day	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	**Fill out in the morning** Time to fall asleep	Time spent awake	**Fill out in the evening** Daytime fatigue
R 14/11							A	A		A		F	P	C	P	↓	•							↑	6hrs	45	Hi (Med) Lo
N 15/11			F	C		C			A	F		CF	P		P	F		↓	•					↑	1½hrs	20	(Hi) Med Lo
ER 16/11				C				F			P	C		P			↓	•						↑	1hr	30	Hi (Med) Lo
17/11			C				C				F						↓	•						↑	1½	30	(Hi) Med Lo
R 18/11	C							FC			C			↓	•									↑	3½	30	Hi (Med) Lo
19/11			F					F				F			↓	•								↑	2hrs	45	Hi Med Lo
20/11	F		C				C		F																		Hi Med Lo

Common Mistakes with Sleep

- Being irregular
- Sleep environment
- Not preparing for sleep
- Long naps
- Sedative drugs
- Using alcohol
- TV or computers in the bedroom
- Over thinking
- Ignoring sleep disorders!

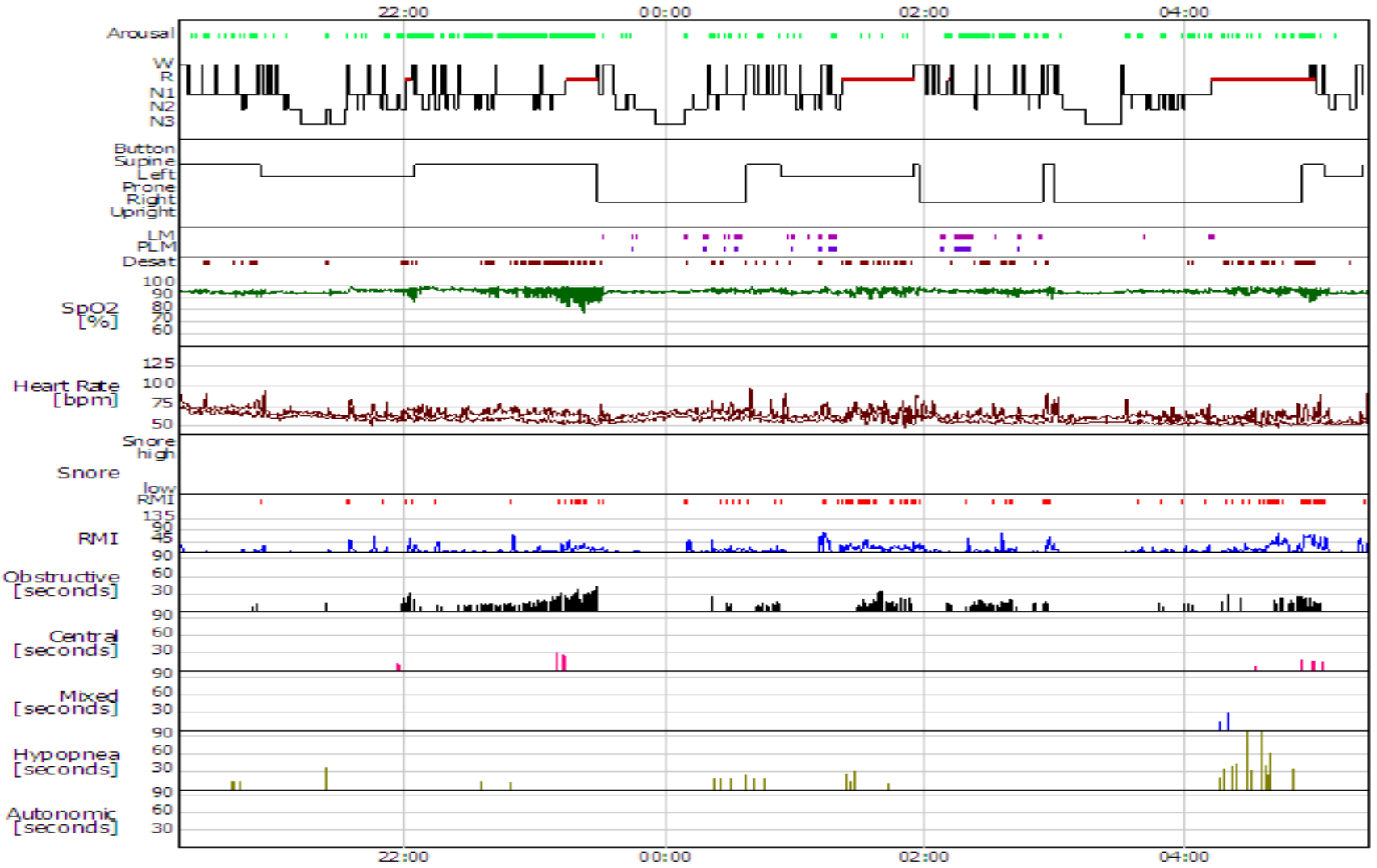
Normal Sleep Study

Gender:	Female
Height (m):	1.72
Mass (kg):	85.0
BMI (kg.m^{-2}):	28.7
Neck (cm):	36
ESS:	12
AHI (#.H^{-1}):	1.9
ODI (#.H^{-1}):	0.3

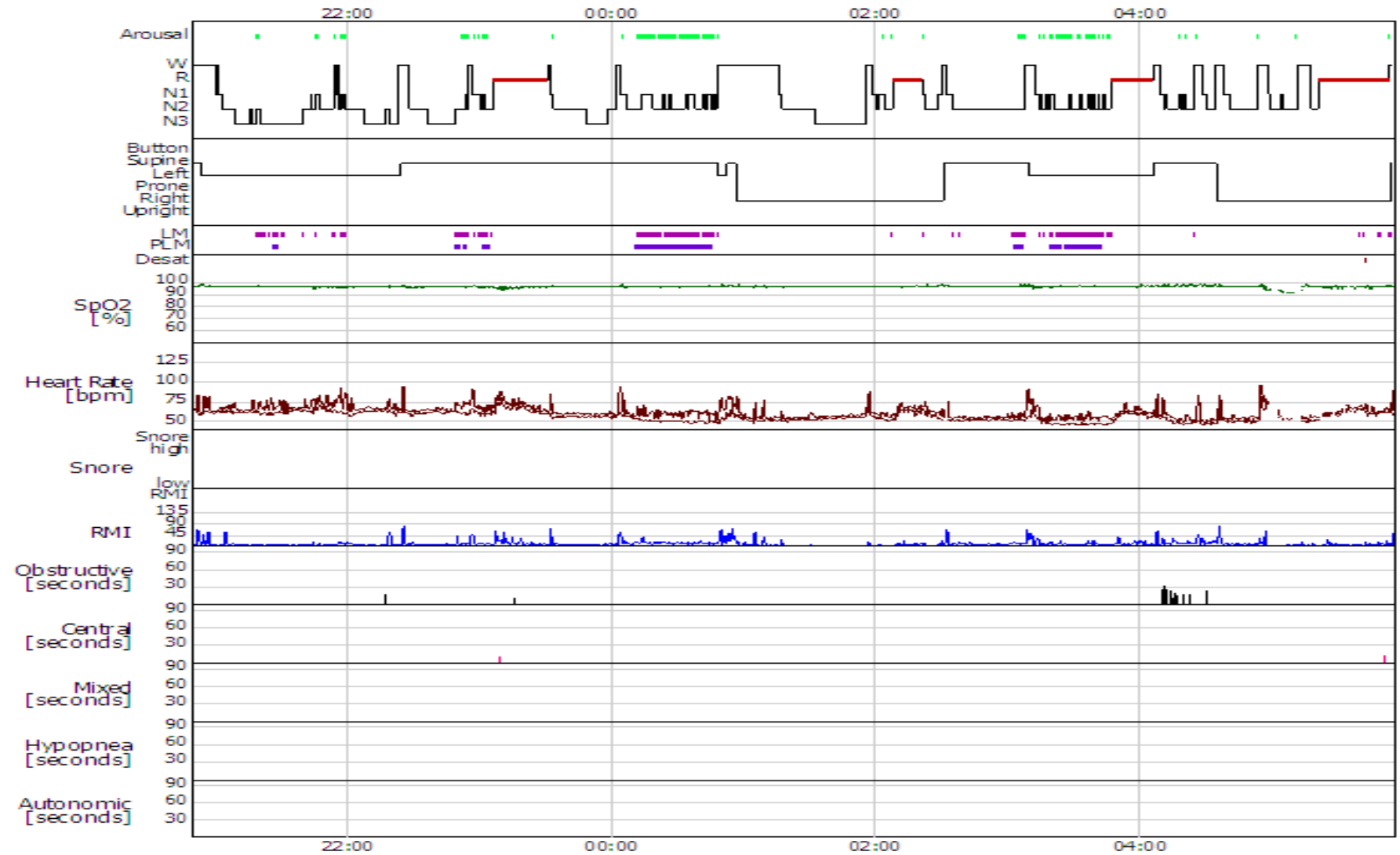


Severe OSA

Gender:	Male
Height (m):	1.83
Mass (kg):	106.0
BMI (kg.m^{-2}):	31.7
Neck (cm):	43.5
ESS:	10
AHI (#.H^{-1}):	36.4
ODI (#.H^{-1}):	24.6



PLMs


22:00
00:00
02:00
04:00
Arousal
W
R
N1
N2
N3
Button
Supine
Left
Prone
Right
Upright
LM
PLM
Desat
SpO2 [%]
100
90
80
70
60
Heart Rate [bpm]
125
100
75
50
Snore
high
low
Snore
RMI
135
90
45
RMI
Obstructive [seconds]
Central [seconds]
Mixed [seconds]
Hypopnea [seconds]
Autonomic [seconds]
60
30
90
22:00
00:00
02:00
04:00

Shift working

- How can shift work affect my sleep?
- If I do shift work, am I more likely to be tired while I am awake?

- **What can I do about it?**
- Make time for enough sleep. Shift workers have to sleep when others are awake.
- Rearrange social and sporting events.
- Try to go to bed at the same time every day and get up at the same time also.
- Try to sleep in peace!
  - Others in the house need to respect the need of the shift worker to sleep.
  - Remove phone from the bedroom and having heavy carpet or curtains in the bedroom to help absorb any noise.

http://www.sleepfoundation.org

Shift working

- A fan or "white noise" machine will help to muffle noise.
- Keep the bedroom cool and dark.
- Avoid caffeine, sleeping pills, alcohol or cigarettes before going to bed.
- If you can, sleep just before going to work. This is better than earlier in the day. If this is not possible, taking a nap before going to work may help.
- Some workers are allowed to take a break during their shift. This time can be used for a short nap.

http://www.sleepfoundation.org

Drowsy Driving

- Driving when tired can be like driving drunk – similar reaction times
- People under 25 at most risk
- Shift workers need to be careful
- Short naps (15 min) may lower your risks
- Learn to recognize the symptoms

Sleep Facts

- Sleep needs vary
- Sleep is an active state
- Deep sleep happens first
- Sleep occurs in cycles
- Body functioning occurs with circadian rhythms
- Falling asleep can be hard
- Lack of sleep can bring you down

10 Common Sleep Problems

- Snoring
- Obstructive sleep apnoea
- Sleep hypoventilation
- Restless leg syndrome
- Insomnia
- Bruxism
- Narcolepsy
- Sleep Walking, talking
- Nightmares and night terrors
- Rapid eye movement behaviour disorder

Detective Work

So, how can you tell if someone has a sleep problem?

- Wakes unrefreshed
- Daytime hypersomnolence
- Resuscitative snorts
- Uncontrolled hypertension
- Poor wound healing

Help is at hand!

- 20 Approved providers of sleep assessments in the community for the Christchurch Sleep Unit
- 3 private providers of sleep medicine in Christchurch
- Specialist referral

Online resources

- http://www.sleepfoundation.org/
- http://www.canterburyinitiative.org.nz/HealthPathways.aspx
- http://www.sleep.org.au/information/health-professionals-information