

Framing Fatigue

East Midlands Periop and Critical Care Meeting
19th October 2018

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Aberdeen Royal Infirmary



Association
of Anaesthetists

Why talk about fatigue?



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Objectives

- Provide scientific theory on cause and effects of fatigue
- Detail the adverse health effects associated with fatigue
- Outline why anaesthetists and intensivists are at risk
- Suggest strategies for mitigation and management
- Attempt to change thinking in remaining sceptics



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Disclosures



Fatigue and Anaesthetists

Published by
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October 2014



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Fatigue

Subjective feeling of needing to sleep
reduced alertness
impaired neurobehavioural
performance increased sleepiness
greater risk of injury and accident

Most common cause is lack of
restorative sleep (quantity and or

Fatigue features

- Physical

- Yawning
- Eye rubbing
- Head drooping
- Microsleeps



- Mental

- Decreased concentration
- Lapse in attention
- Failure to communicate
- Failure to anticipate

- Emotional

- Quiet
- Withdrawn
- Lacking in energy / motivation
- Irritable / grumpy

24 hour society

Sleep patterns

Family and social life

Physical and mental health

Extended hours of work and shifts

consecutive shifts and shift patterns

Breaks and rest



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Level of fatigue

- Time spent awake
- Time spent asleep
- The time of day
- Age
- Sleep inertia
- Microsleeps



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Time awake / time on task

14 hrs continuously awake - alertness significantly reduced

21 hrs continuously awake - comparable to effects of blood alcohol > 0.1%

Accident risk increases nearly exponentially with hours at work / time on task

Between 8 and 12 h
accident risk double



R News • Local News • Courts

Nurse banned from driving after crashing on way home from nightshift

GILLIAN Pick has been banned from the road after crashing her car into another vehicle following a nightshift where she had no breaks, her lawyer told Ayr Sheriff Court.



By Sarah Hilley
15:28, 2 JAN 2017

NEWS

Time asleep

11 hours off vs 11 hours sleep

Need 7.5 and 8 hours/night

Sleeping less leads to **sleep-debt**

2 weeks of 6 hr sleep = 1 night of no-sleep

Cognition ↓ ☐ ↓ ☐ ↓ ☐

Circadian Rhythms & Biological clock

24hr cycle of mental / physical characteristics

Biological clock - 25 hr cycle

Light stimulates the retina

Melatonin secretion ↓ by light stimulus

External triggers - zeitgebers

Time of day

Ability to sleep depends on time of day:

- ✓ 10pm - 2 am
- ✗ 8am - mid day
- ✗ 5pm – 9pm

Alertness and performance are at their highest morning and evening

Circadian nadir:

- ✓ 2am – 4am
- ✓ 1pm – 3pm



Greatest risk

Significant sleep loss in combination
with circadian rhythm disturbance

Long day shift followed by a night on
call and being in and working

Road traffic collisions

Working an extended shift – twice the odds

Near-miss > 5 times risk after extended work shift

Five or more extended shifts/month - almost 4x more likely to fall asleep while driving or stopped in traffic

Barger LK et al . Extended Work Shifts and the Risk of Motor Vehicle

Crashes among Interns. N Engl J Med 2005; 352:125-13.

Sleep Inertia

Passing state of reduced alertness and performance that appears for a period immediately after being woken up

Can last up to 30 mins or more

Woken in deep sleep (beware of longer naps)

Low point in circadian rhythm

Following a period of sleep deprivation


Microsleeps

Mark of sleep deprivation

Usually not aware of “sleeping”

If you regularly fall asleep within 5 minutes of going to bed, you probably have severe sleep deprivation (sleep onset latency)

Often level of impairment is not

 appreciated by the individual (self monitoring is an issue)

Sleep and age

Children demand most sleep

Physiology of sleep changes with age

Less deep sleep (restorative sleep)

Increased sleep fragmentation

Frequent and early awakenings with an exaggerated dip in arousal mid afternoon

Need does not decrease – carry sleep debt

Normal sleep

- NREM sleep 70 - 80% of sleep
 - N1
 - N2
 - N3 (Stage 3 & 4)
- REM 20 -25%
 - Entered though NREM
 - Cycle every 90 -120 minutes 5-6 cycles per night
 - REM sleep lengthens through the night



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• Adults spend 2% night wakeful

Adverse effects

Patient safety
issues

Self

- Accidents / incidents
- Diabetes
- Hypertension & ? MI
- TIA / CVA
- Some types of cancer
- Peptic ulceration

Measuring Fatigue

Subjective

- VAS, KSS, Samn Perelli
- Sleep diaries

Objective

- Circadian rhythms
- Polysomnography
- Performance – simple mental tasks
/ complex behaviours



Samn Perelli

1. Fully alert, wide awake
2. Very lively, responsive, but not at peak
3. Okay, somewhat fresh
4. A little tired, less than fresh
5. Moderately tired, let down
6. Extremely tired, very difficult to concentrate
7. Completely exhausted, unable to function effectively



Mitigation

Educate

Recognise, Assess, Manage/
Management

Individual knowledge, skills, attitudes

Preparation for night shifts

Napping, bright light, eating and
pattern, caffeine

Organisation / Service level

Culture



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Facility

Coping strategies

Naps

Caffeine

Good sleep habits

Light therapy

Scheduling policy

Healthy sleep



Control strategies

Fatigue management systems

Fatigue and Risk Index – rail industry designed by HSE, RCP

Fatigue Risk Management System - Queensland Govt using FAID tool

Fatigue Management plan - international oil and gas

Assess for risk and register risk

Set thresholds – AMA code of practice

Manage – good rota design is the key



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Fatigue No

The effects

Fatigue adversely affects
Physical health (73%)
Psychological wellbeing
(71%)
Personal relationships (68%)



Fatigue and sleep deprivation lead to deterioration of physical health and psychomotor skills impacting

- Physical health 73.6%
- Psychological wellbeing 71.2%
- Personal relationships 67.9%

About the
fatigue campaign



Most do not get uninterrupted breaks on
nightshift

Most do not sleep well between nights

Most do not “sleep off” before driving home



Too tired to think logically

- Only 16.8% use rest facilities “I just want to get home”

There is no official minimum standard for the provision
of rest facilities in hospital



travelling home after night shift

programme informing doctors
and their managers about
fatigue and how they can
reduce its risks.

3. Defining the standards for

2016 Junior Doctor Contract states...

- Employers must (where possible) provide appropriate rest facilities for doctors who feel unable to travel home
- If this is not possible, employers must make sure alternative travel arrangements are in place

The consequences of fatigue on the safety of doctors, patients and the general public

- ✓ **DETECTION:** self-assessment and fatigue risk management
- ✓ **EDUCATION:** for individuals, teams and employers
- ✓ **PREVENTION:** good rota planning, appropriate staffing levels and defining the standards for adequate rest

www.aagbi.org/fatigue

57% have had an accident
or near miss post nights
Most commute for
>30mins each way

Standards for facility

	During a shift		After a shift	
What is available	Green	Quiet, dark, private room with bed	Green	Quiet, dark, private room with bed and bathroom facilities available for full duration of time between shifts
	Amber	Private area with reclining chair, pull-out mattress or sofa	Amber	Available for limited duration, poor quality facilities
	Red	No or communal facilities	Red	No facilities
Ease of access [N/A if no facilities]	Green	Adequate number of immediately available rooms	Green	Adequate number of immediately available rooms within appropriate walking distance
	Amber	Adequate number of rooms available within 15 mins of request	Amber	Notice required, limited number of rooms or remote location
	Red	Restricted access* or limited availability	Red	Pre-shift notice required

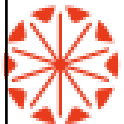


Rest culture

Green	Positive institutional attitude towards rest; fatigue awareness and introduction to rest facilities included at induction.
Amber	Fatigue awareness and introduction to rest facilities included at induction
Red	Threatening culture towards rest or poor awareness of facilities

Individual responsibility

	At work	At home
Knowledge	<p>Understand national guidelines on fatigue¹</p> <p>Be aware of the location of rest facilities and how to access them</p>	<p>Understand good sleep hygiene^{1, 2}</p> <p>Understand how to manage shift working³</p>
Behaviours	<p>Where possible, use breaks on night shifts to nap</p> <p>Consider colleagues' fatigue during the handover process</p> <p>Encourage and enable colleagues to do the same</p>	<p>Practice good sleep hygiene</p> <p>Use time off before a night shift or on call duty responsibly to prepare for work</p> <p>Use time off after a night shift or on call duty responsibly to rest and recover</p>
Attitudes	<p>Demonstrate a positive personal attitude towards rest</p> <p>Act as a role model by supporting colleagues to rest at work</p> <p>Attend and engage with education sessions on fatigue</p>	<p>Demonstrate a positive personal attitude towards rest</p> <p>Be mindful of fatigue if taking on additional locum work</p>



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[Fight Fatigue campaign](#)

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Let's #FightFatigue

Time to change the culture of fatigue in the healthcare profession

The Association of Anaesthetists of Great Britain and Ireland (AAGBI), Royal College of Anaesthetists (RCOA) and the Faculty of Intensive Care Medicine (FICM) have come together to start a national conversation about the impact of fatigue and shift working on the NHS workforce. The campaign will support healthcare professionals with practical, everyday solutions which help to raise awareness, change attitudes and improve working environments. By supporting this campaign, you are backing a call for enhanced education, protected rest breaks and better access to facilities for all NHS staff. There are multiple ways you can get involved:

- Encourage your organisation to become an official **campaign backer**
- Download and utilise the educational **resource packs**
- Share your stories of how you will **#FightFatigue** on social media and via our [Twibbon campaign](#)
- **Share your experiences** and best practice with us

Let's put the risks to bed – back our campaign to **#FightFatigue**.



JOINT STATEMENT



FATIGUE FAQs



PRACTICAL
RESOURCES



CAMPAIGN
BACKERS



HOW TO GET
INVOLVED



#FIGHTFATIGUE
SOCIAL MEDIA

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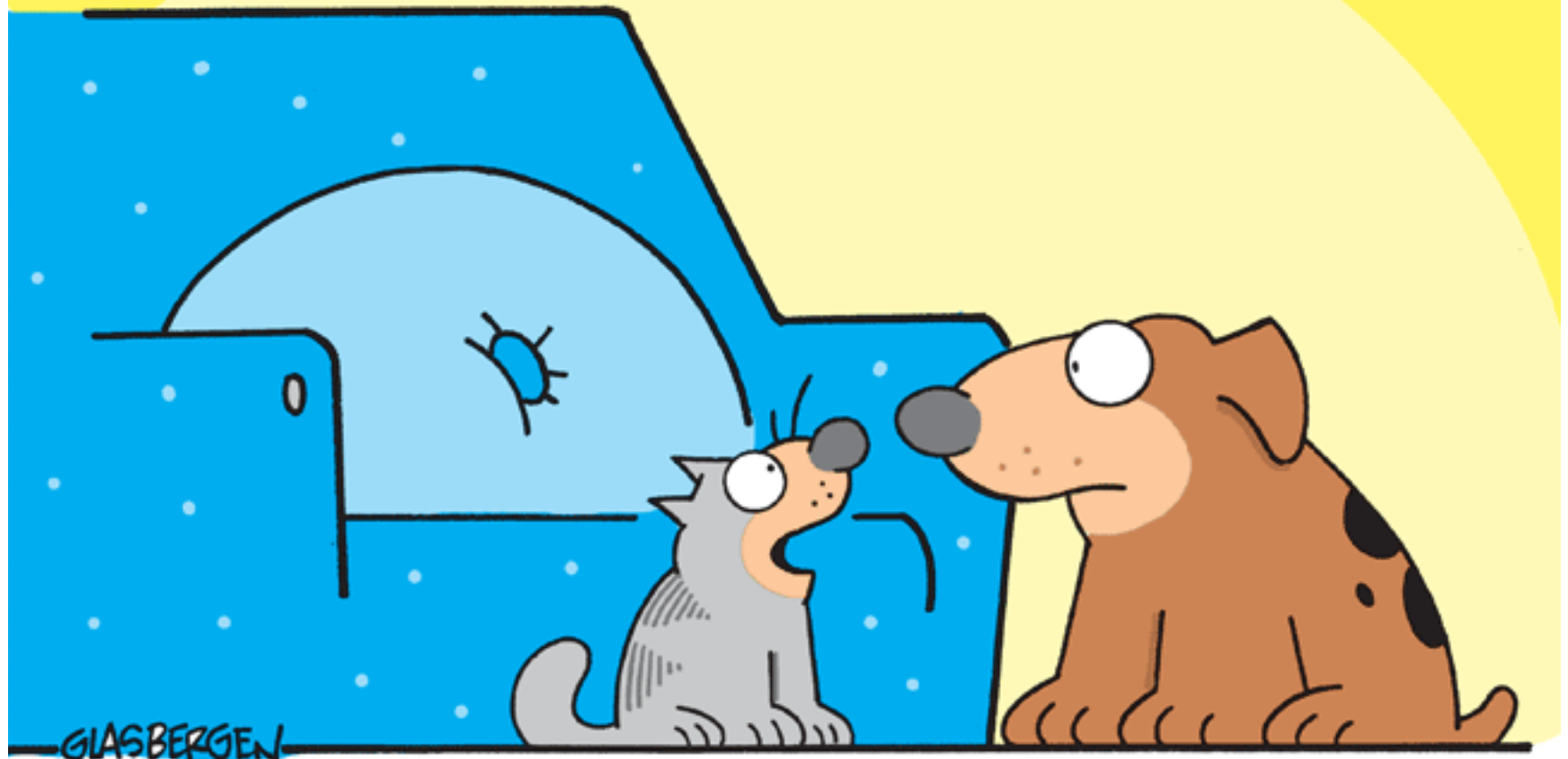
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References
Royal College
M. Farquhar



www





**“I can get by on just 2 hours of sleep
every day, as long as I nap for 14 hours.”**



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Summary

Missing restorative sleep leads to reduced cognition and increased health risks in night and shift workers

Levels of fatigue should be assessed

Efforts to limit activity out of hours

Need strategies for fatigue management