



Dr Alex Bartle

Director

Sleep Well Clinic

Shift Work - Managers Programme

Saturday, 30 July 2011

Start 3:00pm

Duration: 30mins

Scenic Room

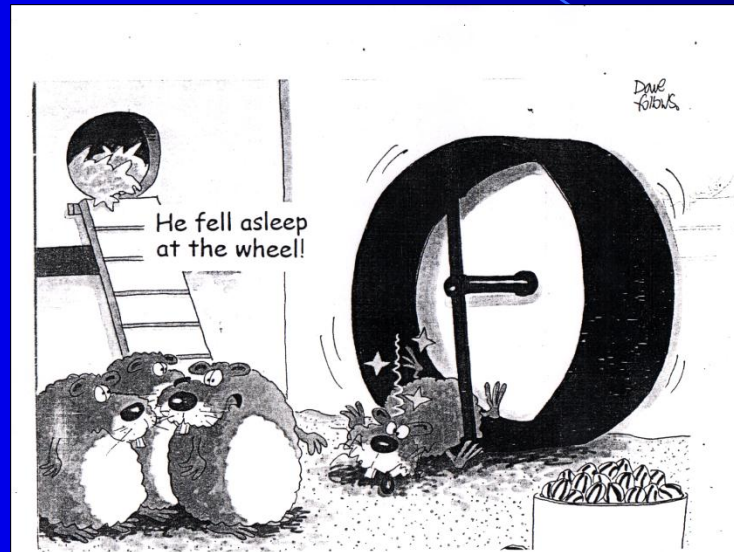


 NZMA
New Zealand Medical Association
South GP CME 2011

General Practice Conference & Medical Exhibition

28-31 July 2011 | The Dunedin Town Hall | Dunedin

Welcome



Shiftwork & Fatigue Management Practice Managers 2011

Fatigue in the Workforce

The structure of sleep

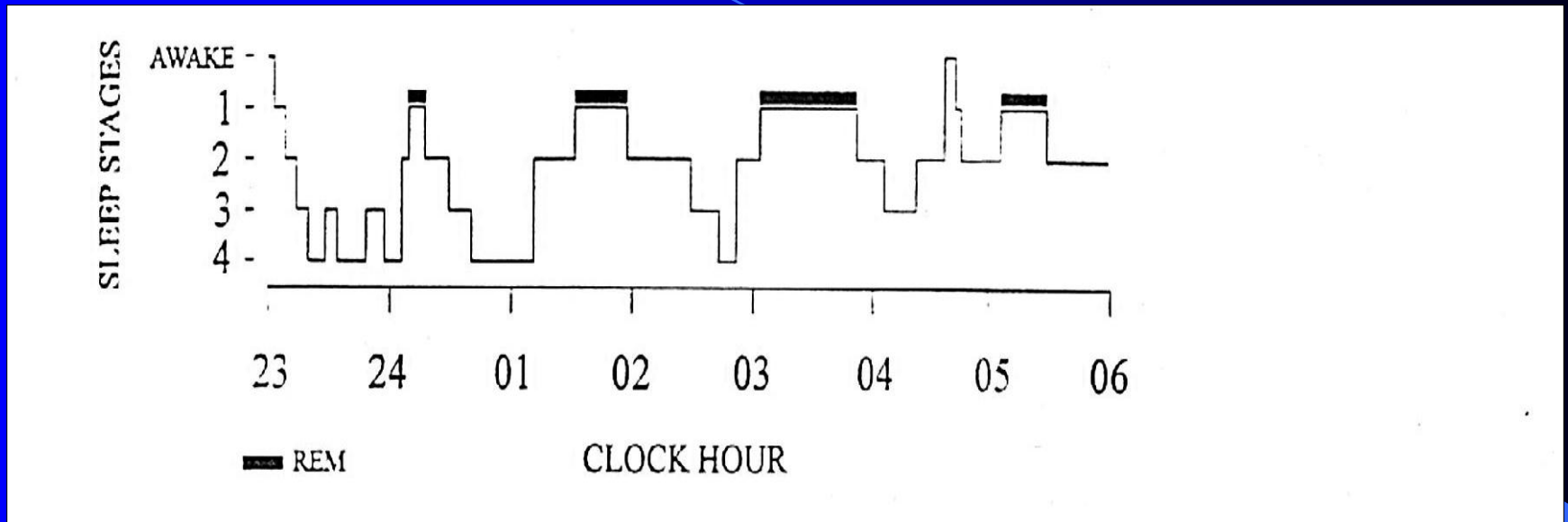
Fatigue and sleep

Consequences of fatigue

Management of Shiftwork

Conclusion

Sleep Architecture



REM Rapid Eye Movement

NREM Non-Rapid Eye Movement

Stages 1 and 2 light sleep

Stages 3 and 4 deep sleep

25% REM, 50% Stage 2 and 25% stages 3 and 4

Sleep Requirements

Age

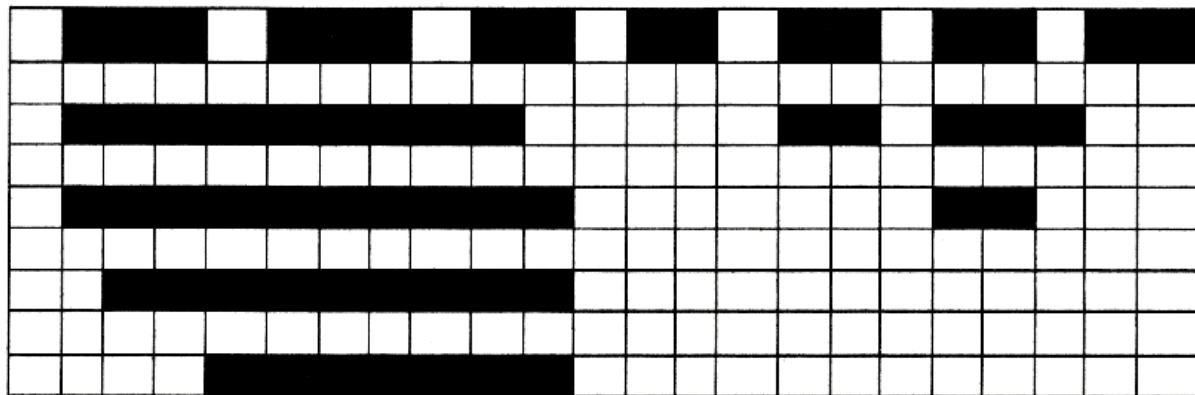
Newborn

One Year

Four Yrs

Ten Yrs

Adult



6pm

12am

6am

12pm

6pm

TIME OF DAY

FATIGUE

Causes and Effects

Fatigue is a complex state, characterised by lack of alertness and reduced mental and physical performance often accompanied by drowsiness.

Fatigue is more than sleepiness and its effects go beyond falling asleep

FATIGUE

Causes and Effects

No physiological markers or blood tests
Unlike alcohol

However, there are a number of factors that
can result in fatigue

Fatigue

Effect of fatigue/sleep deprivation

- Increased irritability and lower stress tolerance
- Low motivation (“Can’t be bothered”)
- Faulty judgment
- Lapses in attention and vigilance
- Impaired decision making and logical reasoning

Fatigue

Effect of fatigue/sleep deprivation

- Poor concentration
- Learning and Memory difficulties
- Personality changes
- Adverse effect on Women's reproductive system
- Reduced Libido

Fatigue

Effect of fatigue/sleep deprivation

- Slowed reaction time
- Susceptibility to illness
- Increased sensitivity to pain

Consequences of Sleep Deprivation

Accidents

- At work (especially 3am – 5am)
- To and from work

Sleep Statistics

Fatigue and Excessive Daytime Sleepiness (EDS)

- Fatigue affects the lives of 20% - 50% of NZers
- 10% - 15% suffer from Chronic Insomnia
- 100,000+ car accidents in the US are the result of EDS
- 20% fall asleep while driving at some time

Sleep Statistics

Fatigue was a major contributing factor for the following:

- The Three Mile Island disaster, 1979 (4.00am)
- Chernobyl, 1986 (1.30am)
- The grounding of the Exxon Valdez, 1989 (12.04am)
- Disastrous launch of the Challenger, 1986

SHIFTWORK

How to Remain Alert at Night

- Avoid sleep debt
- Understand and respect the body clock
- Light
- Nutrition and stimulants

SHIFTWORK

How to Remain Alert at Night (cont)

- Introduce interest
- Maintain muscular activity
- Temperature
- Noise

SHIFTWORK

How to Improve Sleep after Nightshift

- Sleep as soon as possible after shift
- Avoid morning light
- Try to have one block of sleep only
- Use black-out curtaining / eye shades / ear plugs
- Disconnect phone / answer machine – use call minder

SHIFTWORK

How to Improve Sleep after Nightshift (cont)

- Avoid stimulants at work and sedatives at home
- Try to anticipate shift changes
- Inform neighbours and friends
- Discuss with family

SLEEP DEPRIVATION IN THE WORKFORCE

Individual

- Personal lifestyle choice
- Personal responsibility
- Economics/job availability
- Genetics “owl”
“lark”
“SWSD”. (Shift Work Sleep Disorder)
- Medical fitness
- Age

SLEEP DEPRIVATION IN

!

Alertness Strategies

- Naps
- Caffeine
- Good sleep habits
- Managing the sleep environment
- Exercise
- Diet
- Medication
- Sleep scheduling

SLEEP DEPRIVATION IN

Individual

Investigate specific sleep disorders

OSAS 4%

Insomnia 10-15%

RLS/PLM's 10-15%

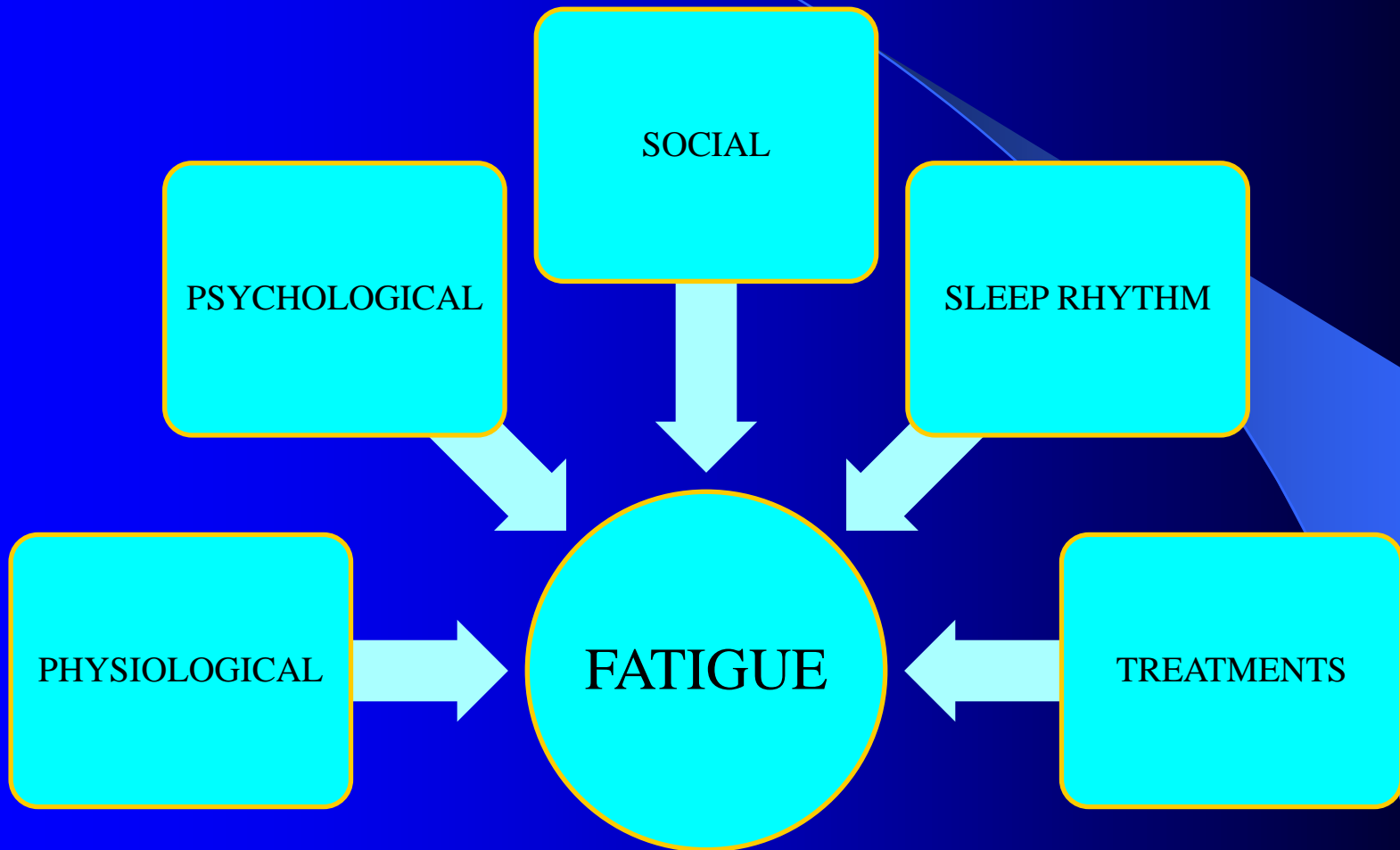
SWSD

SLEEP DEPRIVATION IN THE WORKFORCE

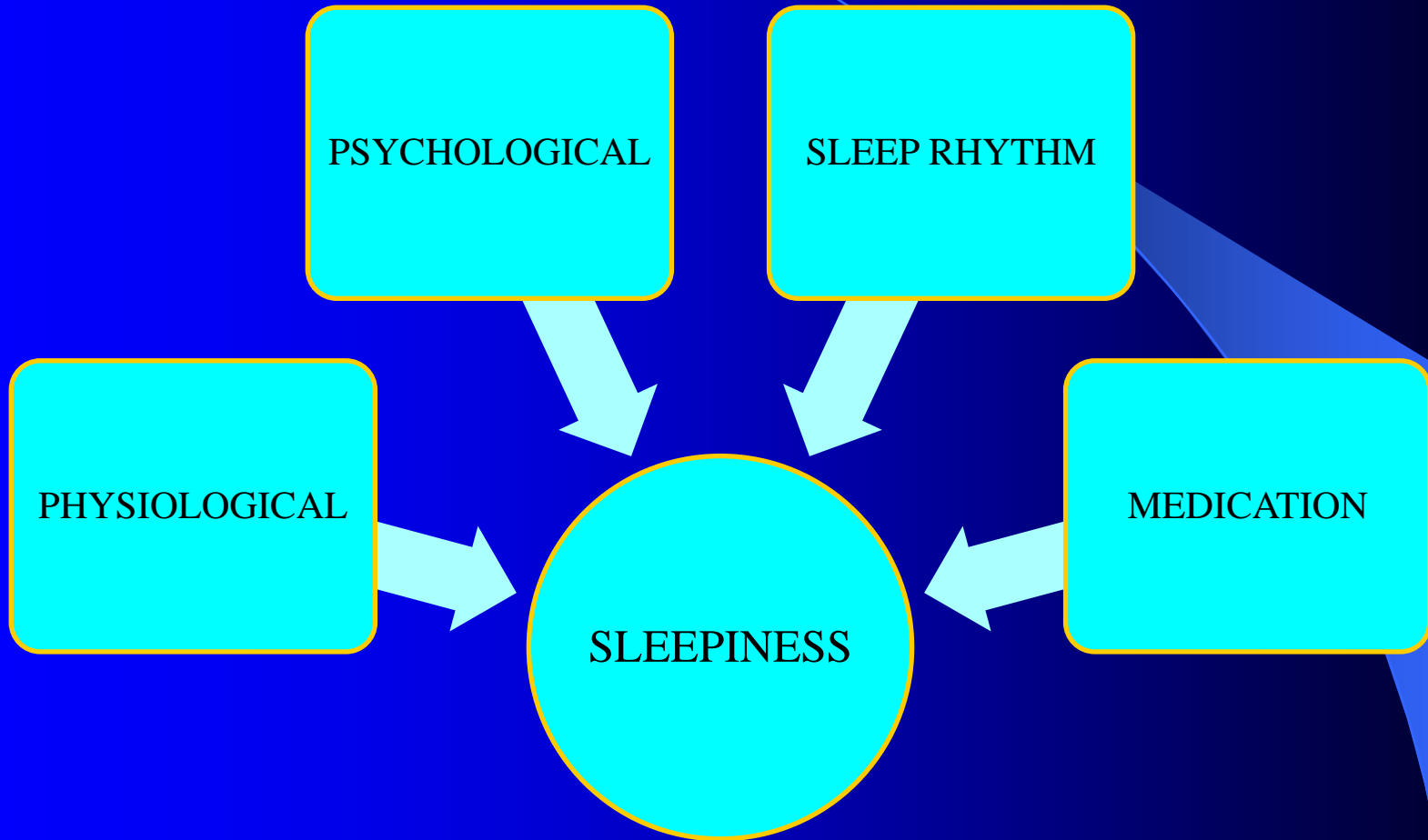
Conclusion

- The 24hr society is here to stay
- Work outside normal biological circadian rhythms & attendant sleep loss leads to increasing health & safety risks.
- Shiftwork affects societies, organisations & individuals - environmentally, economically and in health & well-being
- Although solutions are complex, there are solutions through education.

FATIGUE vs SLEEPINESS



FATIGUE vs SLEEPINESS



Two Most Common Sleep Disorders Are...

1) Insomnia

10 – 15% of adults suffer from chronic and severe insomnia

2) Snoring and Obstructive Sleep Apnoea (OSA)

*Snoring – up to 60% adults snore regularly
OSAS– 4% of males, 2% females over 40*

Sleep Hygiene

for those with insomnia

Behavioural

Sleep Hygiene involves improving factors required for the maintenance of a normal, regular sleep/wake cycle.

eg. Avoid stimulants/alcohol, Exercise regularly,
Bedroom environment comfortable, dark, quiet.
Regular sleep schedule. Allow 1hr unwind time.

Important, but by itself, rarely effective

Stimulus Control

for those with insomnia

Stimulus Control is based on classical conditioned response to certain stimuli.

This involves strengthening the relationship between bed and sleep, and breaking the negative relationship between bed and anxiety and wakefulness

Important and Effective

Stimulus Control Therapy

Go to bed when sleepy

Do not watch TV, read, eat or worry while in bed

Do not nap during the day

Set regular wake up/get up time – including weekends

Get out of bed if unable to fall asleep in 15 – 20 minutes, or
anxious. Remain up for 20-30 minutes only.

Repeat as often as necessary

Bed Restriction Therapy

for those with insomnia

Bed restriction therapy is designed to improve sleep consolidation and sleep efficiency.

This is achieved by initially increasing the homeostatic drive to sleep.

Sleep efficiency is improved.

Time in bed can then be increased

The most difficult, but the most effective

Bed Restriction Therapy

Average the time asleep over 2 weeks

Add $\frac{1}{4}$ - $\frac{1}{2}$ Hour

Restrict time in bed to that time (never less than 5hrs)

Increase time in bed slowly when sleeping is consolidated to 85% - 90%. Restrict further if $< 80\%$

Medical problems associated with Insomnia

Gastrointestinal	x 3.33
Chronic pain	x 3.19
Hypertension	x 3.18
Heart Disease	x 2.27
Cancer	x 2.17
Diabetes	x 1.8

Thank You

Dr Alex Bartle

The SLEEP WELL Clinic

Christchurch, Auckland, Wellington
Nelson, Tauranga, Whangarei

