



Dr Alex Bartle

Sleep Well Clinic

Overview of Sleep Disorders and Insomnia - Concurrent Workshop Repeated

Saturday, 17 August 2013

Start 2:00pm

Duration: 55mins

Picasso

Start 3:05pm

Duration: 55mins

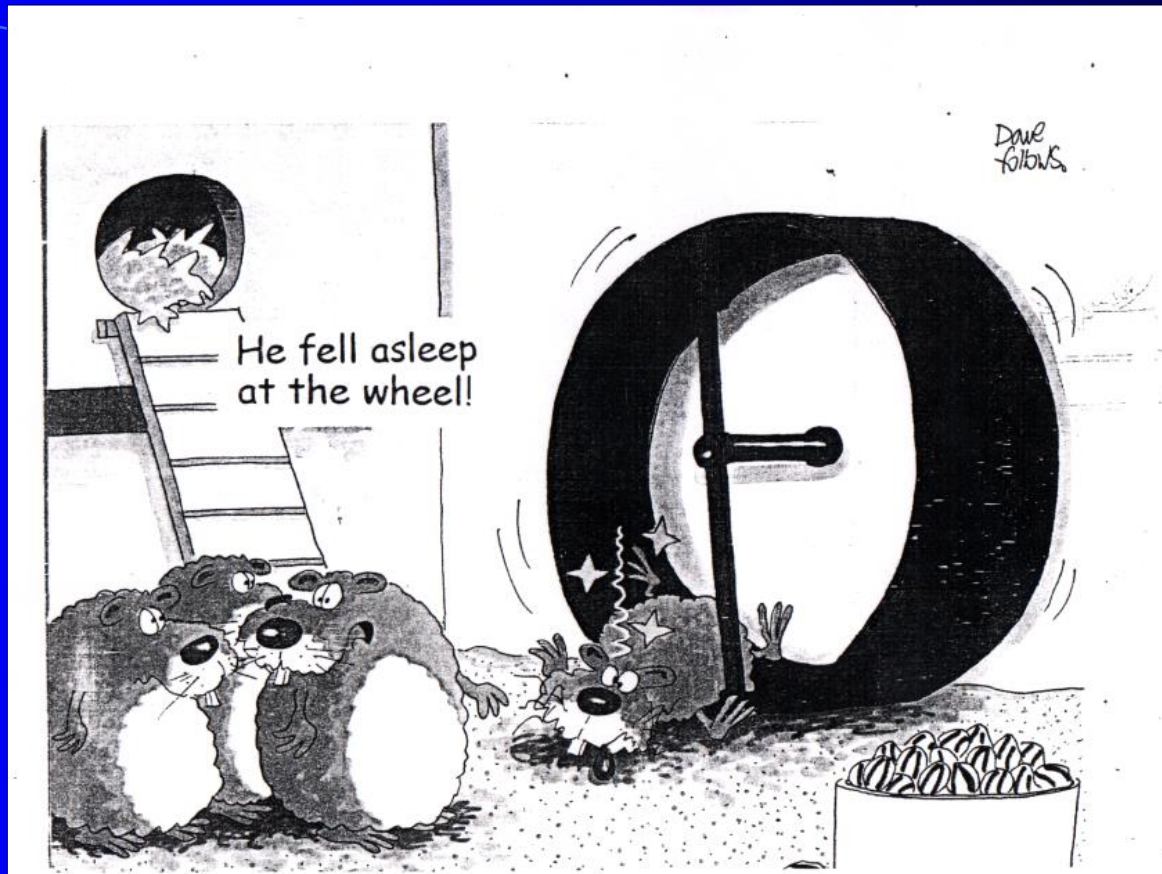
Picasso



South GP CME 2013

General Practice Conference & Medical Exhibition

15-18 August | Edgar Centre | Dunedin



Overview of Sleep Disorders & Insomnia

Overview of Sleep Disorders

Normal Sleep

Effect of Poor Quality or reduced Quantity of Sleep

Common Sleep Disorders

Management of Insomnia

Medication vs CBTi

Conclusion

Sleep Statistics in New Zealand

Fatigue and Excessive Daytime Sleepiness (EDS)

General Population:

- 37% rarely or never get enough sleep
- 46% rarely or never wake refreshed

Those who felt that they rarely or never got enough sleep were 33% more likely to report a road accident

Fatigue and Excessive Daytime Sleepiness (EDS)

Youth:

- 50% 13yr olds getting less sleep on weekdays than they thought necessary
- 75% 16yr olds getting less sleep on weekdays than they thought necessary.
- 30% of both groups got less sleep than they needed at week ends.

Fatigue and Excessive Daytime Sleepiness (EDS)

Elderly: (65 and over)

- 93% considered that they had a sleep problem
- 11% considered that inadequate sleep was affecting them often or always
- 65% reported napping at least once per week
- 6% reported napping every day

Sleep Statistics

Fatigue and Excessive Daytime Sleepiness (EDS)

- Fatigue affects the lives of up to 50% of NZers
- 10% - 15% suffer from Chronic Insomnia
- >20% fall asleep while driving at some time

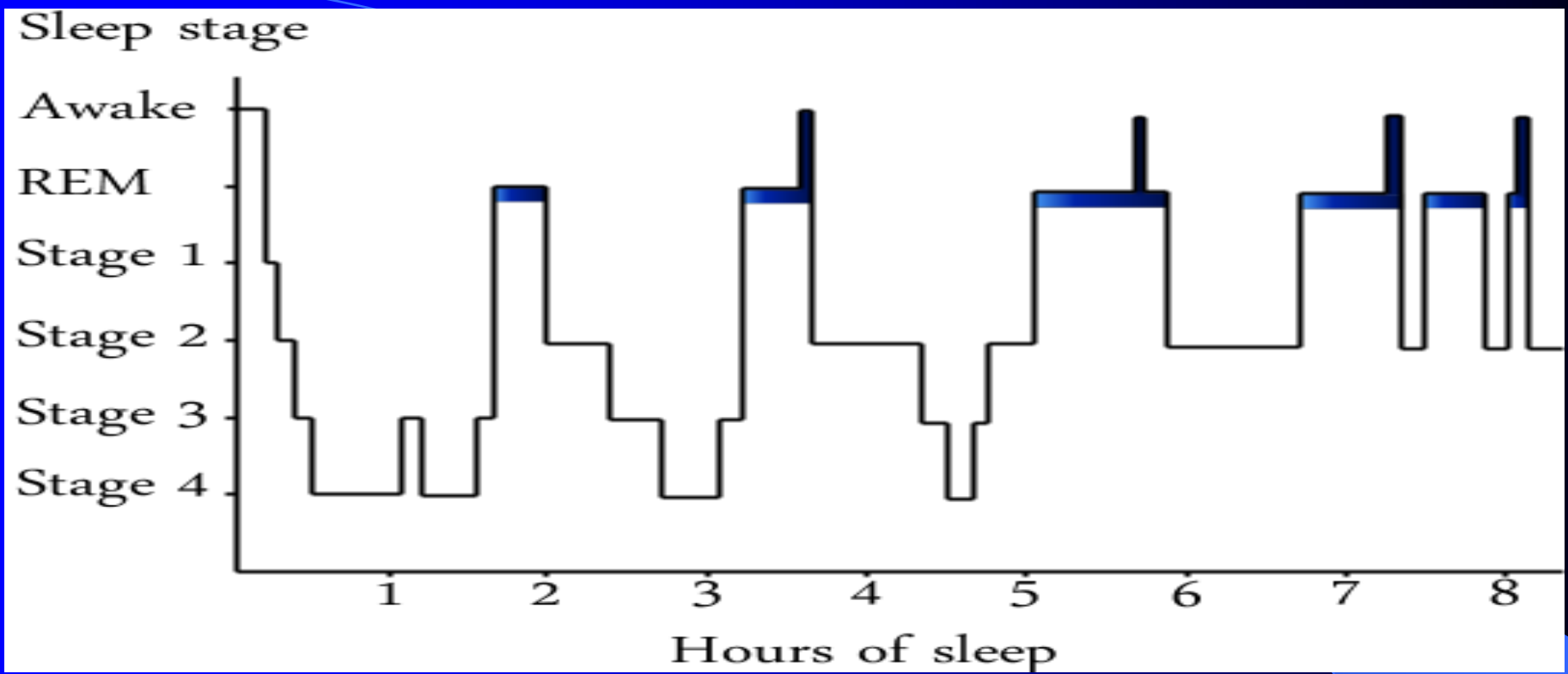
Sleep Statistics

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

Medical problems associated with Insomnia

- Heart Disease x 2.27
- Cancer x 2.17
- Hypertension x 3.18
- Diabetes x 1.8
- Gastrointestinal x 3.33



- REM - Rapid Eye Movement NREM - Non-Rapid Eye Movement

- Stages 1 and 2 light sleep Stages 3 and 4 deep sleep

-

- 90 -100 Minute sleep cycles. 4 – 5 cycles per night to feel refreshed

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

Sleep

How much sleep do we need?

Teenagers ----- 9 – 9¼hrs

Adults ----- 7½ – 8hrs

Elderly ----- 7 – 7½hrs

Sleep

But, how much sleep do we get?

Early 1900's	---	9hrs
1960's	---	8hrs
Early 2000's (NSF)	---	7hrs
Most recent (NSF)	---	6 $\frac{1}{2}$ hrs

FATIGUE

Causes and Effects

Fatigue is a lack of alertness and reduced mental and physical performance often with drowsiness.

Fatigue is more than sleepiness

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

Effects 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

Effects of fatigue/sleep deprivation

- Excessive Daytime Sleepiness.(EDS)
- Impaired cognitive function.
- Poor concentration
- Learning and Memory difficulties
- Depression
- Personality changes

Fatigue

Effect of fatigue/sleep deprivation

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

All result in reduction in Performance

Consequences of Fatigue

Accidents

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

All result in *Reduced Performance*

Medical consequences of Fatigue

- High blood pressure
- Heart Attack
- Stroke
- Diabetes
- Obesity
- Cancer
- Women's reproductive health

The most common sleep disorders are associated with:-

1) Shiftwork

Up to 20% of the workforce are shiftworkers

2) Insomnia

10 – 15% of adults suffer from chronic and severe insomnia that affects daytime performance.

3) Snoring and Obstructive Sleep Apnoea (OSA)

Snoring – up to 60% adults snore regularly

OSAS – 9% of males, 4% females over 40

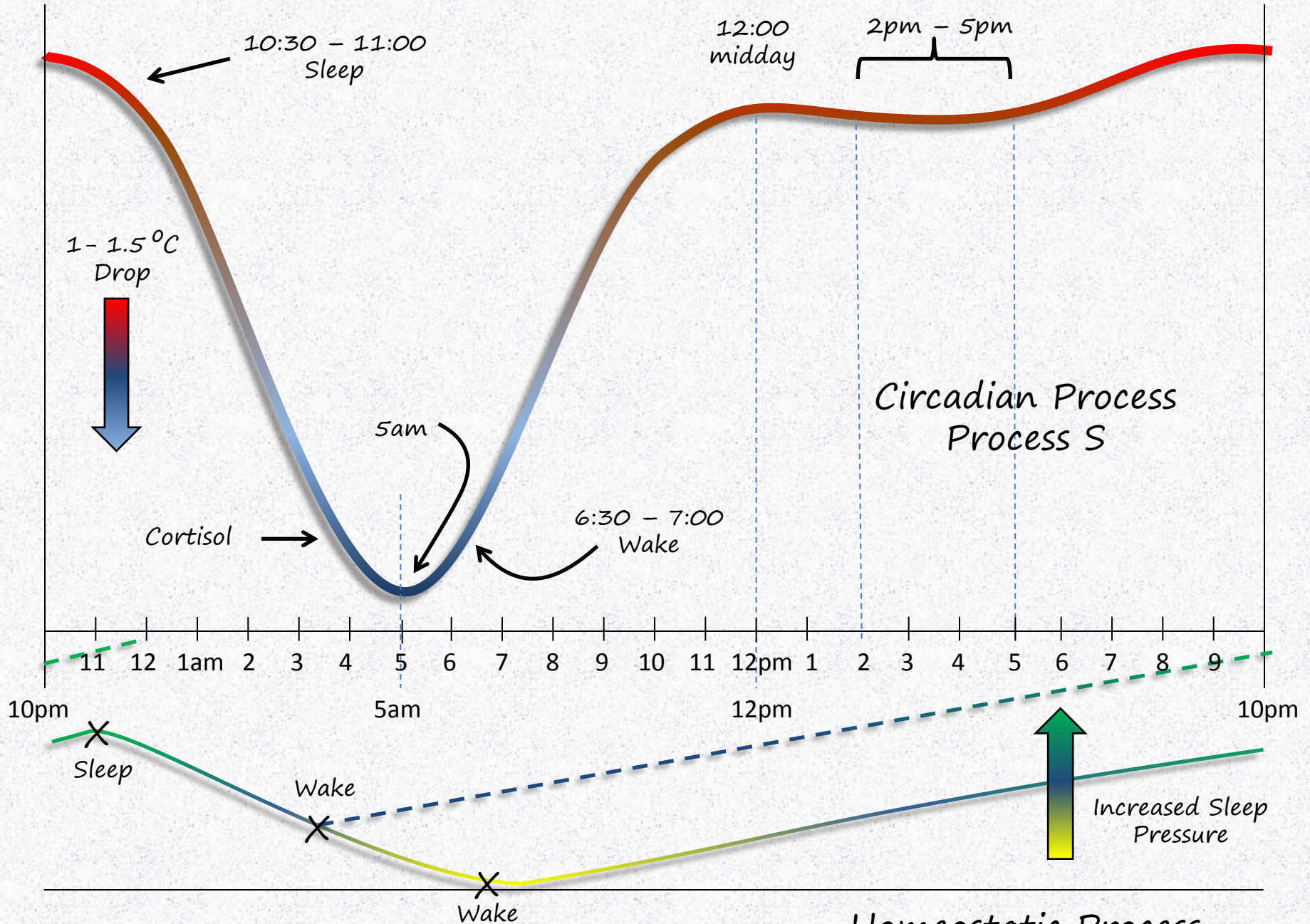
Circadian Rhythms

Circa Dies = About a day

Controlled by

- **Internal body clock** - The Suprachiasmatic Nucleus (SCN)
 - Core body temperature circadian cycle
 - The role of our own Melatonin
- **External environment cues** – Zeitgebers (Time keepers)
 - - The effect of light
 - Exercise
 - Meals

10pm Bed



Insomnia (Primary or Psychophysiologic)

Complaint : Difficulty initiating or maintaining sleep. (Sleep is unrefreshing)

Frequency: Three or more nights per week

Severity: SOL (Sleep Onset Latency) and/or WASO (Wake after Sleep Onset) > 30mins

Duration: Greater than 1 month (DSM IV)

Effects: Negative impact on daytime functioning both socially and at work

Insomnia

Risk Factors:

Female 2:1 (?More likely to report insomnia)

Increasing age (? Increased likelihood of medical complaints)

Stress/Anxiety (Hyper-arousal Disorder)

Psychiatric Illness

Medical disorder

Social factors (Unemployed, single, physical inactivity)

Environmental factors (noisy environment, latitude-SAD)

Insomnia

Treatments:

CHEMICAL

Herbal

Allopathic

BEHAVIOURAL (CBTi)

Seep hygiene

Relaxation therapies

Stimulus control

Bed Restriction Therapy

Insomnia

HERBAL MEDICINES

- VALERIAN
- KAVA
- ST JOHN WORT
- MELATONIN
- CHAMOMILLE
- OTHERS

Insomnia

Allopathic

HYPNOTICS – Which one?

Benzodiazepines

- Triazolam (T_{1/2} 2-6hrs)
- Temazepam (T_{1/2} 8-20hrs)
- Clonazepam (T_{1/2} 20-60hrs)

Non Benzodiazepines

- Zopiclone (T_{1/2} 4-6hrs)
- Zolpidem (T_{1/2} 1.5-2.4hrs)
- Zaleplon (T_{1/2} 1hr)

Insomnia

Allopathic

Benzodiazepines

Benefits

- effective
- wide margin of safety
- slow tolerance

Adverse effects

- residual sedation
- anterograde amnesia
- rebound insomnia
- Dependence

Contraindications and Precautions

Insomnia

Allopathic

Hi Antihistamine

Diphenhydramine ($T_{\max}$ 2-2.5hrs: $T_{1/2}$ 5-11hrs)

Use;

- Insomnia with allergic symptoms

Adverse effects;

- Daytime drowsiness
- Impaired learning
- Constipation/Dry mouth
- Urinary retention
- Weight gain
- Occasionally - Insomnia

Insomnia

Allopathic

Sedating Antidepressants

Doxepin, Amitriptyline, (T_{max} 1.5-6hrs; $T_{1/2}$ 10–50hrs)

Mirtazapine (T_{max} $\frac{1}{4}$ -2hrs; $T_{1/2}$ 20-40hrs)

Use;

- Insomnia with Clinical Depression
- Sleep maintenance insomnia

Adverse effects;

- cardiotoxic
- anticholinergic
- increase PLMs
- impaired daytime performance
- rapid tolerance

Insomnia

Allopathic

Antipsychotics

Quetiapine (T_{max} 1-2hrs ; $T_{1/2}$ 7hrs);

Olanzapine (T_{max} 4-6hrs; $T_{1/2}$ 20-54hrs)

Use;

-Insomnia with psychotic illness/mania/Bipolar Depression

Adverse effects;

- Daytime drowsiness
- Orthostatic hypotension / dizziness and falls
- Tachycardia
- Weight gain
- Urinary retention

Insomnia

Allopathic

Anticonvulsants

Gabapentin (T_{max} 3-3.5hrs; $T_{1/2}$ 5-9hrs)

Use;

- Insomnia with pain
- Dependence
- Partial Seizures

Adverse effects;

- Daytime sedation
- Dizziness
- Ataxia

Insomnia

Allopathic

Use short acting hypnotics for short term treatment in low dose

Use sedating antidepressants in full doses for insomnia associated with depression

Brief Questions:

Insomnia

Evaluation: The three P's

- Predisposing Factors

Genetics, Personality type, Social Pressures

- Precipitating Factors

Stressful life event(s). "Trigger" for insomnia.

- Perpetuating Factors.

Compensatory strategies. eg Spending longer in bed.

Staying in bed. Monitoring sleep. Alcohol use

Insomnia

Behavioral Treatments

CBTi

Sleep Hygiene

Relaxation therapies / Mindfulness meditation

Stimulus Control

Sleep (Bed) Restriction Therapy

Sleep Hygiene

- **To Provide information about lifestyle, and environment that might interfere with sleep, or promote better sleep.**
- **These strategies are important as a baseline, and should be combined with the other treatments.**
- **As a sole therapy, it is not effective for the more severe insomnia, but should be addressed in therapy.**

Sleep Hygiene

- Avoid stimulants
 - Caffeine (5-8 hour half life)
 - Cigarettes
 - Alcohol (initially sedative, later stimulant)
 - Psychoactive Drugs
- Exercise regularly
- Allow at least 1 hr relaxation time to unwind before bedtime
- Bedroom environment should be quiet, dark and comfortable and $\sim 16 - 18^{\circ}\text{C}$
- Avoid clock watching

Relaxation Therapies

- Abdominal breathing
- Progressive muscle relaxation
- Visualisation
- Mindfulness meditation

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

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

Return to bed after 15 - 20 mins, or until sleepy.

Repeat as often as necessary

Bed Restriction Therapy

for those with insomnia

Sleep 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

Restrict time in bed to that time. (never less than 5hr sleep opportunity)

Increase time in bed slowly when sleeping
is consolidated to >85%,
Stay the same if 80%-85%
Reduce time in bed if <80%.

Brief Solutions:

Insomnia

- Journaling
- Improve 'sleep efficiency'
 - Later to bed
 - Stimulus Control
 - Bed restriction
- Avoid 'clock-watching'
- Sleep Diary

Thank You

Dr Alex Bartle

The SLEEP WELL Clinic
Auckland, Wellington & Christchurch

