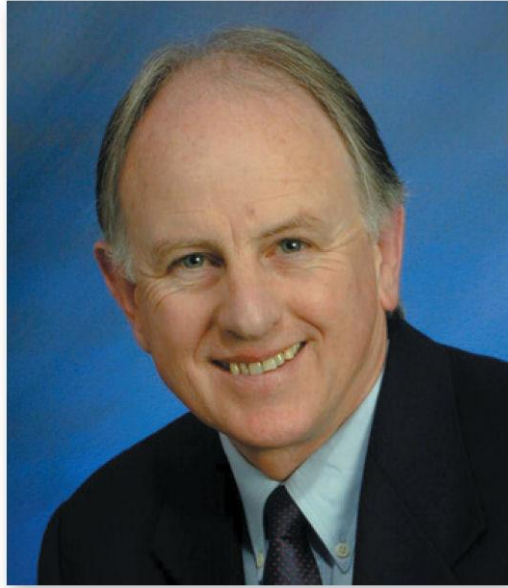




Dr Alex Bartle

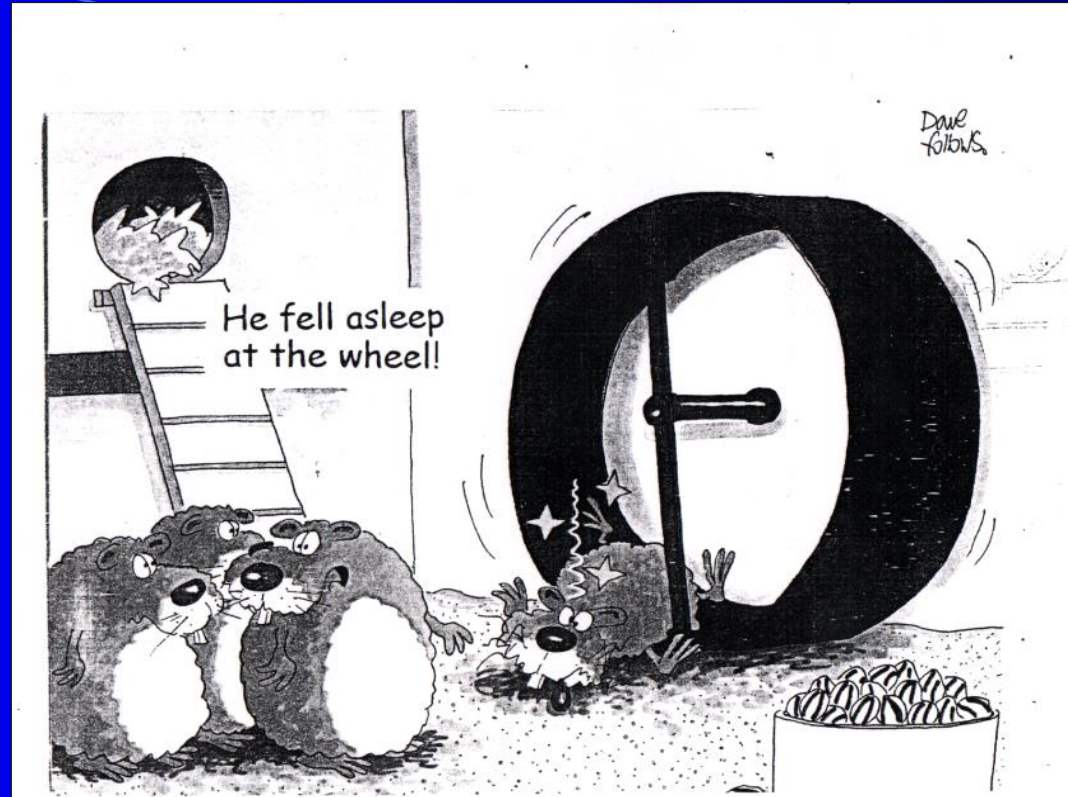
Medical Director
Sleep Well Clinic
Christchurch

Sunday, June 11, 2017

(Room 3)

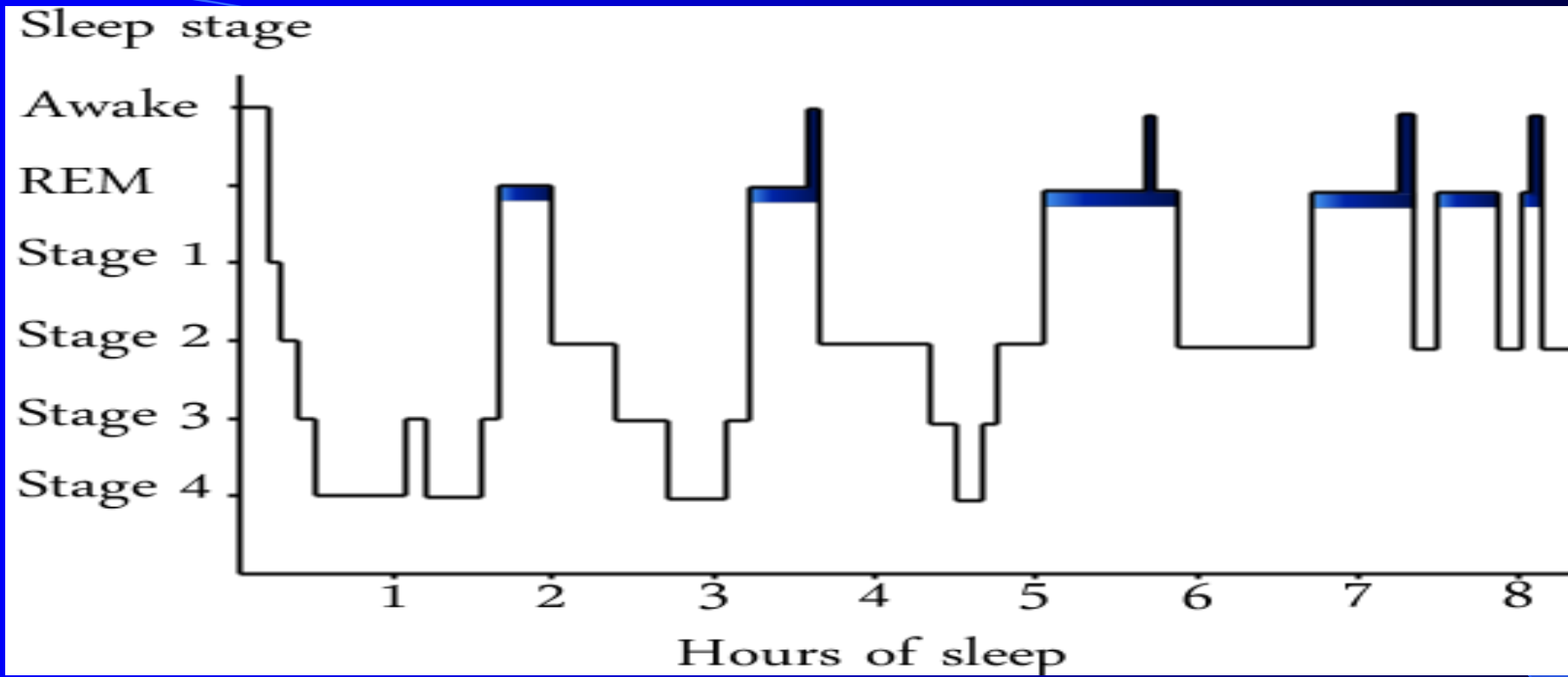
8:30 - 9:25 WS #191: Sleep Disorders in The Elderly

9:35 - 10:30 WS #203: Sleep Disorders in The Elderly (Repeated)



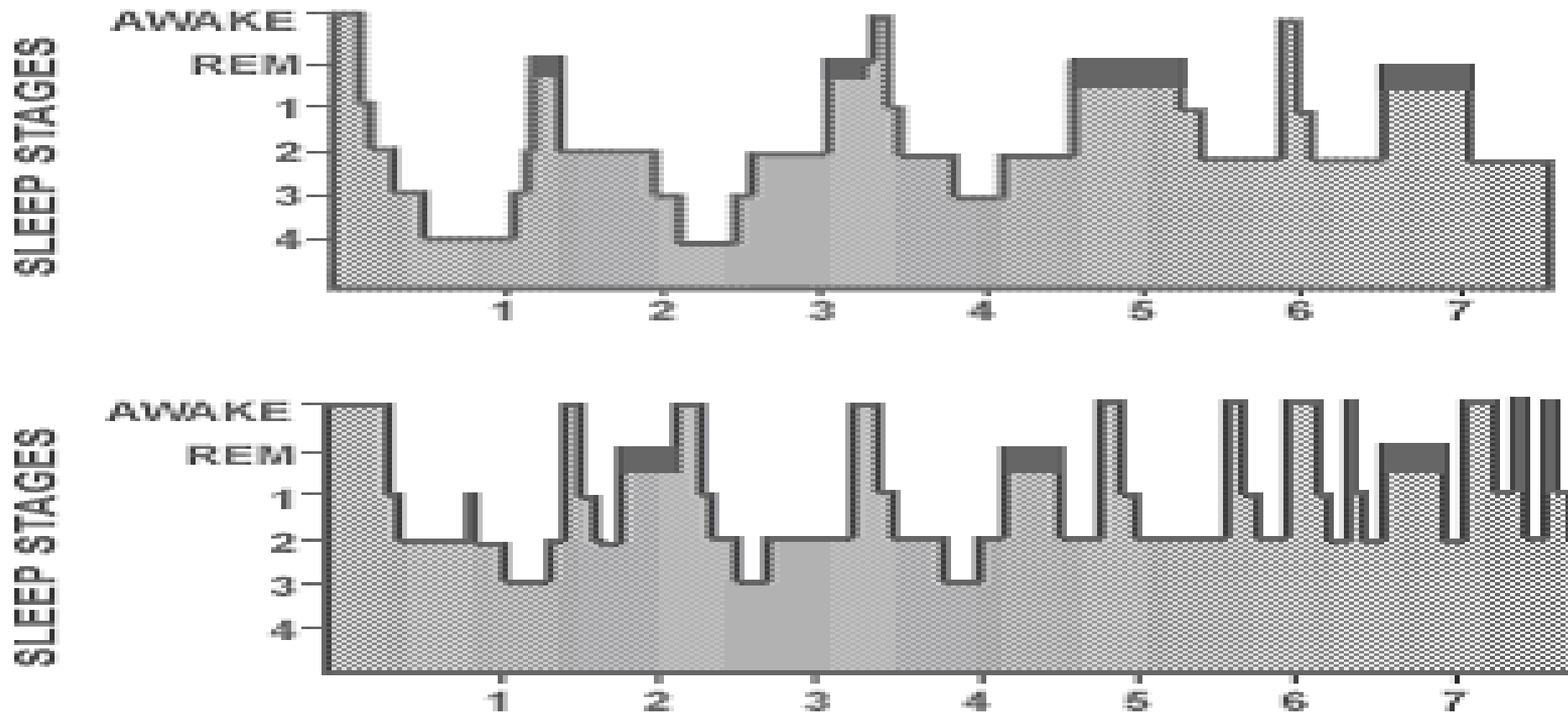
Sleep In the Elderly

2017



- 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 Related Changes and Ageing



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

Statistics from the NSF (USA)

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

Statistics from NZMJ (2016) – from LiLACS Study
(Life and Living in Advanced Age Cohort Study)

Advanced Age: (79 – 90) (649 Respondents)

- 26.3% of 251 Maori
31.7% of 398 non-Maori
considered they had at least one
symptom of Insomnia
- 10%-30% of the 'problem sleepers' reported
problematic snoring or other sleeping problem

Statistics from NZMJ (2016) – from LiLACS Study

Advanced Age: (79 – 90)

- Less reported sleep problems than a previous study of 60 – 80yr olds
 - Long lives are healthier and sleep better
 - Less expectation of sound sleeping
 - Less life and societal stressors
- Poor sleepers in the Advanced age group tend to have been poor sleepers in their younger years

Statistics from NZMJ (2016) – from LiLACS Study

Advanced Age: (79 – 90)

- Poor sleepers scored worse on mental health questionnaires, with increased report of depression.
- Poor sleepers related to poorer physical health outcomes, including ↑ pain & ↑ falls

Sleep and Ageing

Poor sleep in older people is often associated with a higher prevalence of medical conditions.

- Taking medications that interfere with sleep,
- Being less active
- Spending less time outside

Older people experience a higher prevalence of sleep disorders such as Sleep Apnoea (Obstructive and Central), Periodic Limb Movements in Sleep and RBD)

Sleep and Ageing

Factors contributing to poor sleep in the elderly

- Restless Leg Syndrome
- Obstructive Sleep Apnoea
- Infections (especially bladder)
- Polypharmacy
- Depression
- Faecal impaction
- Environmental factors
- Pain

The Most Common Sleep Disorders as we age:-

1) Circadian Rhythm disorders

2) Insomnia

10 – 15% of adults suffer from chronic , severe insomnia, affecting daytime functioning

3) Restless Leg Syndrome (RLS)/Periodic Limb Movements in Sleep(PLMS) *< 10% of adults , most are not severe*

REM sleep Behaviour Disorder (RBD)

4) 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)
- External environment cues – Zeitgebers (Time keepers)

Sleep and Ageing

Circadian Rhythm Disturbance

- Especially common in Alzheimer's Disease (AD) and Frontotemporal Dementia (FTD)
- Often presents as Insomnia and/or Excessive Daytime Sleepiness

Possibly the consequence of degenerative changes
in the SCN which ↓ Melatonin

Melatonin supplements may help (in the elderly)
and may slow progression of Dementia in AD

However, light is more powerful

Insomnia



Medical problems associated with Insomnia

Heart Disease	x 2.27
Cancer	x 2.17
Hypertension	x 3.18
Urinary problems	x 3.28
Diabetes	x 1.8
Gastrointestinal	x 3.33

Insomnia treatments

CHEMICAL

Herbal

Allopathic

BEHAVIOURAL

Cognitive/behavioral therapy for Insomnia (CBTI)

- **Sleep hygiene**
- **Relaxation therapies**
- **Stimulus control**
- **Sleep (bed) restriction**

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 - especially outside
- 'Journalling'
- Allow at least 1 hr relaxation time to unwind before bedtime
- Bedroom environment should be quiet, dark and comfortable and ~ 16 - 18 °C.
- White noise can help
- Maintain a regular sleep/wake schedule
- Avoid clock watching

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*

Effective but not easy!

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 minutes.

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 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) for 2 weeks.
- Increase time in bed slowly when sleeping is consolidated to >85% efficiency by 15 mins every 2 nights

Movement Disorders

Restless Leg Syndrome (RLS)

Periodic Limb Movements in
Sleep(PLMS)

REM sleep Behaviour Disorder (RBD)

Restless Leg Syndrome (Growing pains in children)

Essential features

- Unpleasant sensation in the legs requiring the urge to move
- Urge to move is worse at times of inactivity
- Unpleasant sensation is partially or completely relieved by movement
- Unpleasant sensation is worse in the evening or at night.

Restless Leg Syndrome (Growing pains in children)

Other, non-essential but common features

- Family history
- Association with Periodic Limb Movement in Sleep (80%)
- Response to dopaminergic therapy
- May cause sleep disturbance, especially sleep onset
- May begin at any age, but usually progressively worse with age
- Usually gone in the morning

Restless Leg Syndrome (Growing pains in children)

Secondary Restless Leg Syndrome

- Anaemia. Ferritin < 50

RLS is associated with low **CNS** iron (not specifically **serum** iron)

- Uremia. 15% - 40% undergoing dialysis suffer from RLS
- Pregnancy. Especially in the third trimester

Periodic Limb Movements in Sleep

(Von Ekbom 1945)

- Daytime sleepiness
- Restlessness during sleep
- Nighttime arousals
- Observed stereotypical limb movements at night.
Typically extension of the big toe,
dorsiflexion of the ankle,
occasional flexions of the knee, and hip

Periodic Limb Movements in Sleep

(Von Ekbom) 1945

- PLM Index (PLM/hr), on PSG or Actigraphy
 - > 20 requires treatment
 - 5 – 20 treat depends on symptoms
(EDS, effect on patient / bed partner)
 - < 5 treatment probably not indicated
- 20% Suffer with RLS
- May have periodic leg movements at rest

Treatments. RLS / PLMS

Non-pharmacological

- Good sleep practices to avoid psychophysiological insomnia
- Avoidance of caffeine and alcohol in the evening
- Massage. Hot/Cold compresses.
- Mental distraction
- Moderate exercise
- Remain physically active until bedtime

Treatments. RLS / PLMS

Pharmacological

- Dopaminergic Medication.

L-dopa. (Sinemet. Madopar)

Tolerance, augmentation, rebound, side effects

$\frac{1}{2}$ life of 3-4hrs

Dopaminergic Agonists. (Ropinerole. Bromocriptine)

Less tolerance, augmentation and rebound

$\frac{1}{2}$ life of ~6hrs

- Opioids.

Codeine; Oxycodone.

Start low and go slow.

Check Hx of substance abuse

Use low dose in conjunction with dopaminergic Rx

Treatments. RLS / PLMS

Pharmacological

- Anticonvulsants.

 - Gabapentin

 - Not as powerful as Dopaminergic Rx
 - painful RLS, especially in those over ~45yrs

 - Daytime fatigue, and dizziness

- Benzodiazepines. Non-Benzodiazepines

 - Used to induce sleep, and improve sleep continuity.

 - No physiological effect on PLS/PLMS

- Iron (+- Folate) supplementation.

 - Useful if Ferritin is <50

Treatments. RLS / PLMS

Drugs that **aggravate** RLS/PLMS

- Antihistamines.

 - Block Dopamine receptors

 - Older antihistamines are worse.

 - Check OTC use

- Antiemetics

 - Block Dopamine receptors

 - Metoclopramide, Prochlorperazine

- Antidepressants

 - ? Because it increases Serotonin

 - TCA's, SSRI's, ?MAOI's

- Antipsychotics

Restless Leg Syndrome in the elderly

Particularly common in those with :-

Alzheimer's Dementia

Parkinson's Disease

Lewy Body Dementia

Frontotemporal Dementia / Vascular dementia

Treat with a Dopamine agonist but monitor possible
Insomnia or exacerbation of Psychosis

REM Sleep Behaviour Disorder. (REM without muscle atonia)

- .Tends to be in the latter 1/3rd of the night
- . 40% - 50% (and probably more) will later develop some Neurodegenerative disorder, especially Parkinson's Disease or Multiple System Atrophy.
- . Triggered or exacerbated by TCA's, SSRI's & MAOI's

Treatment:

- . Review medication
- . Ensure safety in the immediate environment
- . 90% - 95% will respond to Clonazepam 0.5mg – 2.0mg
(May exacerbate dementia or OSA)

REM Sleep Behaviour Disorder (RBD)

REM Sleep Behaviour Disorder. (REM without muscle atonia)



Sleep and Dementia

Possible concerns In nursing homes

- Low indoor light in the day
- Noise and light disruption at night
- Longer time in bed with earlier bedtimes
- Increased napping in the day
- Boredom

Sleep and Dementia

Possible concerns In nursing homes

- Pain may increase the time in bed
- Change of staff at the time of peak agitation
(~ 4.00/5.00pm)
- Need to personalise environment
(Previous life/occupation)

The Agony or the Ecstasy



Familiar?

Snoring Related Complaints

- Drives partner from bedroom
- Partner won't marry me
- Shakes entire house
- Asked to leave movies / Church etc.
- Leaves boat/hut so friends could sleep
- Fall asleep at traffic lights waiting for red light to change

SNORING

IT'S NO JOKE!



He died in his sleep

**Sleep Apnoea ~
a sleep disorder.**

Consequences of Sleep Apnoea

Poor quality Sleep resulting in :-

Excessive Daytime Sleepiness.(EDS)

Impaired cognitive function.

Poor concentration

Learning and Memory difficulties

Depression

Personality changes

Hyperactivity in children

Consequences of Sleep Apnoea

Medical consequences :-

Hypertension

Cardiac Arrhythmia

Heart Attack

Stroke

Insulin Resistance

Nocturnal GORD

Nocturia

Depression

Risk Factors for Sleep Apnoea

Male: Female 2 : 1

Increasing age

Body Mass Index > 30

Neck Circumference > 42cm (17ins)

Alcohol (> 2 units)

Smoking

Post Menopausal Women

Sleeping Pills

But: 20% of those with sleep apnoea are not overweight

Sleep Apnoea and Ageing

Commonly found in Parkinson's Disease,
but also common in AD, DLB, FTD

Consider also the very common

Obstructive Sleep Apnoea ↔ Dementia

Central Sleep Apnoea is associated with Heart
Failure

CPAP is well tolerated if supported, and can slow the
progression of Dementia

Consequences of Sleep Apnoea

1. **Daytime fatigue, especially sleepiness**
2. **Bed partner sleep disturbance**
3. **Cardiometabolic complications**

Conservative

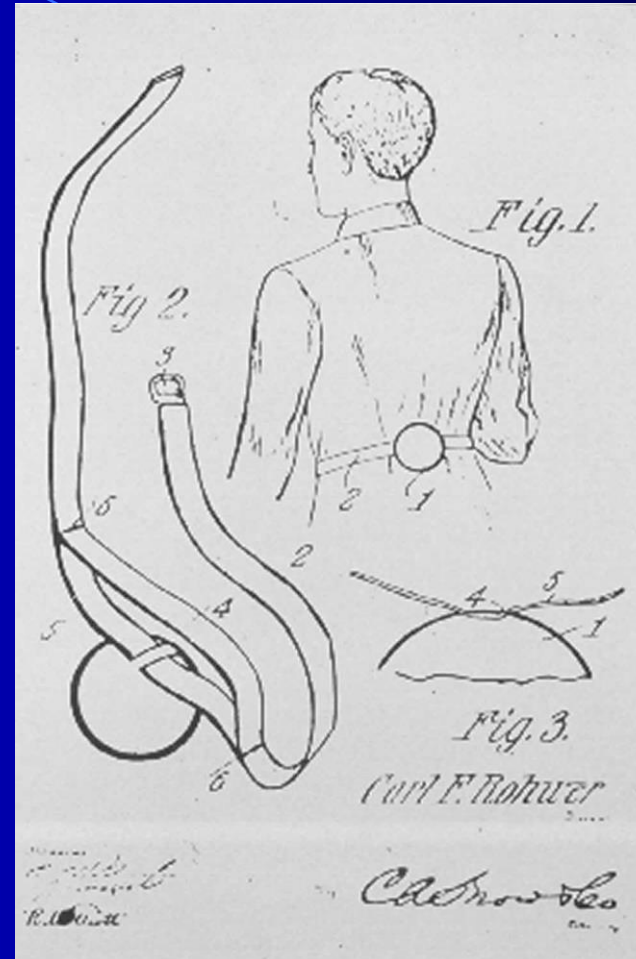
Weight loss

Alcohol reduction

Stop smoking

Avoid sleeping tablets

Keep off back



Devices

Mandibular Advancement Splints

SomnoMed/MDSA



Managements

Continuous Positive Air Pressure

CPAP



Laugh and the world laughs with you...

...snore and you sleep alone.

Thank You

Dr Alex Bartle
SLEEP WELL CLINIC
Throughout New Zealand

www.sleepwellclinic.co.nz

