



Dr Alex Bartle

Director

Sleep Well Clinic

Doc I'm always tired! Sleep Disorders - Concurrent Workshop

Saturday, 30 July 2011

Start 4:30pm

Duration: 60mins

Cargill Room

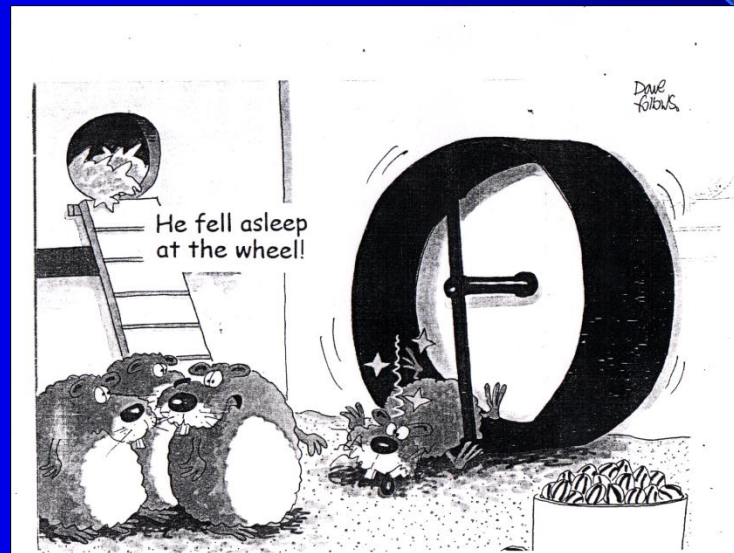


 **South GP CME 2011**

General Practice Conference & Medical Exhibition

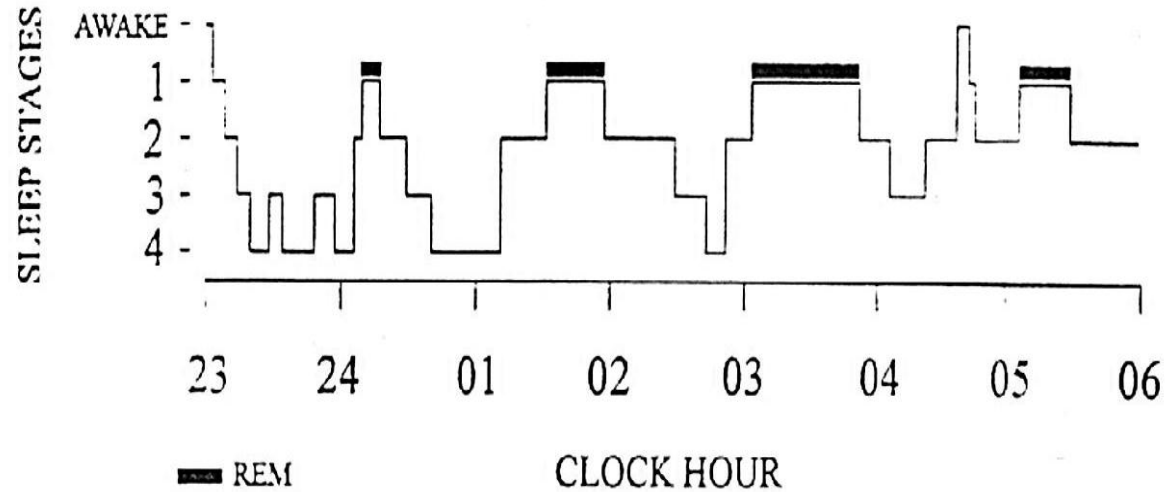
28-31 July 2011 | The Dunedin Town Hall | Dunedin

MANAGEMENT OF SLEEP DISORDERS



Doc I'm always tired – Sleep Disorders
GP CME Dunedin 2011

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

Symptoms of Sleep Loss

Impaired decision making

Low motivation

Less attention to detail

Faulty judgment / Increased risk taking

Increased irritability and lower stress tolerance

Decreased libido

Symptoms of Sleep Loss

Slowed reaction time

Increased sensitivity to pain

Two most common sleep disorders are...

1) Insomnia

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

2) Snoring and Obstructive Sleep Apnoea (OSA)

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

Medical problems associated with Insomnia

Heart Disease	x 2.27
Cancer	x 2.17
Hypertension	x 3.18
Breathing problems	x 3.78
Urinary problems	x 3.28
Diabetes	x 1.8
Chronic pain	x 3.19
Gastrointestinal	x 3.33

Insomnia (treatments)

CHEMICAL

Herbal

Allopathic

BEHAVIOURAL

Cognitive/behavioral therapy for Insomnia (CBTI)

Sleep hygiene

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**
- **Allow at least 1 hr relaxation time to unwind before bedtime**
- **Bedroom environment should be quiet, dark and comfortable and ~ 18 °C**
- **Maintain a regular sleep/wake schedule**
- **Avoid clock watching**

Stimulus Control

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

- **In Bed**

- If awake after 20 minutes or your mind is alert, get up for 20-30 minutes.
- use time out of bed to “wind down” and prepare again for sleep (*warm, dim light, write down what is on your mind, light reading material, comfortable chair*), return to bed and repeat as necessary
- Avoid working or playing in bedroom
- The bedroom is for sleep and sex only

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**
- **No visible clocks at night**
- **Get out of bed if unable to fall asleep in 15 – 20 minutes**
Return to bed when sleepy. 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

INSOMNIA

BED RESTRICTION THERAPY

Average the time asleep over 2 weeks

Add 0 - ½ Hour (Never allow less than 5hrs sleep opportunity)

Restrict time in bed to that amount of time

Increase time in bed slowly when sleeping is consolidated

- > 90% increase by 15 minutes

- 80% -90% remain the same

- < 80% reduce by 15 minutes

A Therapeutic Model

Stress management- Write down emotional thoughts and diary

- Muscle tension and relaxation
- Abdominal breathing
- Visualisation

Stimulants

- Caffeine (5-8 hour half life)
- Cigarettes
- Alcohol (initially sedative, later stimulant)

A Therapeutic Model

- **Temperature**
 - Avoid extremes of temperature
 - Cooling will keep sleep
- **Light**
 - Light stimulates serotonin and inhibits melatonin and sleep.
 - Be outside in the day as much as possible
- **Dark**
 - Stimulates Melatonin that helps sleep
therefore keep bedroom dark at night

A Therapeutic Model

- **Routine** - Both daytime and pre-bedtime are important
- **Exercise** - Keep fit
- No vigorous exercise within 3 hours of bed
- **Food** - Avoid a large meal within 3 hours of bedtime
- A small carbohydrate intake before bed may be helpful i.e. milky drink, banana

A Therapeutic model

Noise

- Sudden noise awakens. A constant low intensity noise may be helpful

The bed

- Firmer and larger rather than sagging and small
- Avoid synthetic sheets
- Use feather or down unless allergic to house dust mite

The Agony or the Ecstasy



Familiar?

Snoring Related Complaints

Drives wife from bedroom

Girlfriend won't marry me

Shakes entire house

Ask me to leave movies and church

Has had to leave boat 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.**

The Epworth Sleepiness Scale

How likely are you to doze off or fall asleep in the following situations, in contrast to just feeling tired?

This refers to your usual way of life in recent times.

Even if you have not done some of these things recently, try to work out how they would have affected you.

Use the following scale to choose the most appropriate number for each situation:

0 = would never doze

1 = slight chance of dozing

2 = moderate chance of dozing

3 = high chance of dozing

It is important that you put a number (0 to 3) in *each* of the eight boxes.

Situation

(0 – 3)

Sitting and reading

Watching TV

Sitting, inactive in a public place (eg a theatre or a meeting).....

As a passenger in a car for an hour without a break.....

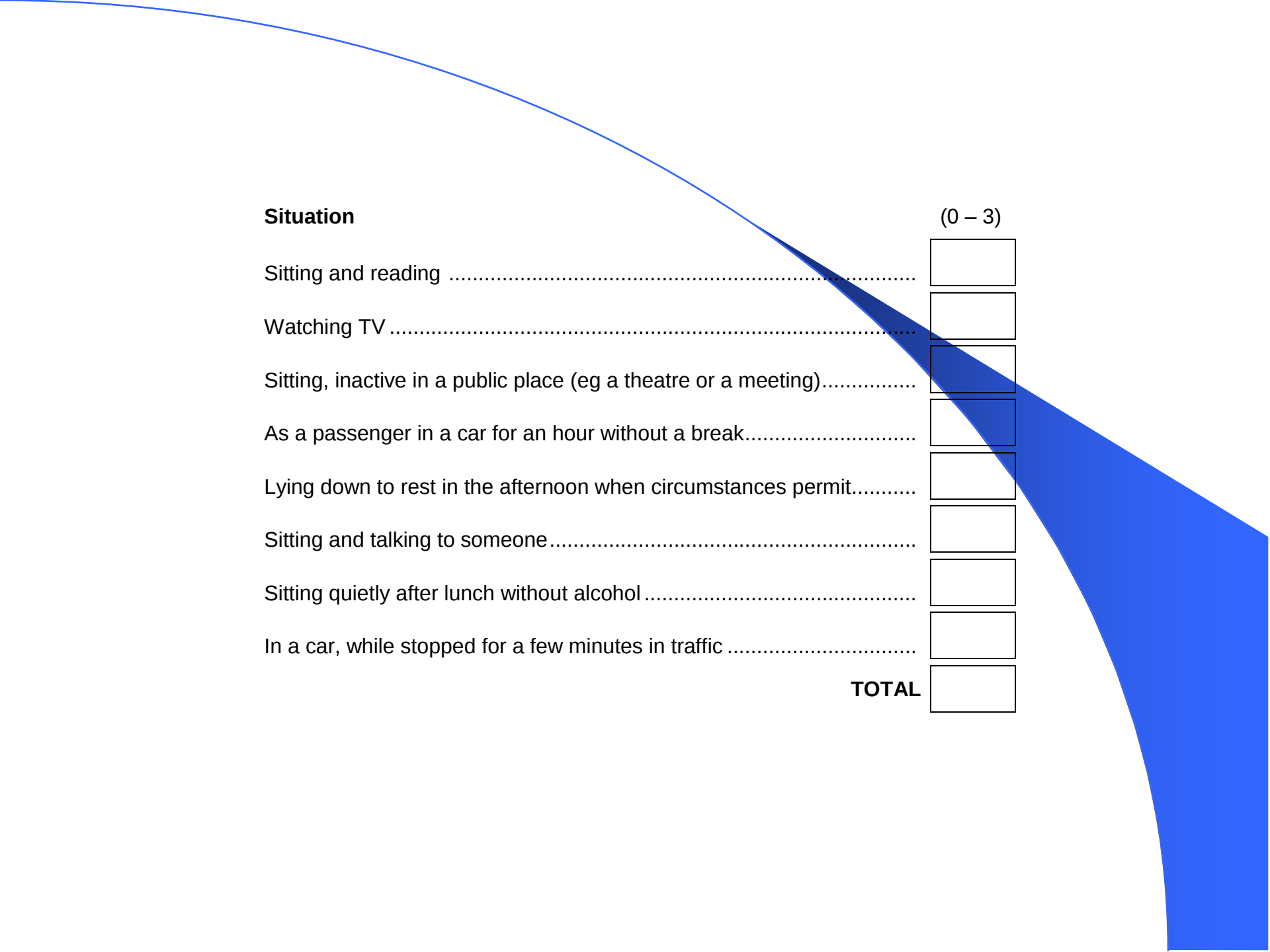
Lying down to rest in the afternoon when circumstances permit.....

Sitting and talking to someone

Sitting quietly after lunch without alcohol

In a car, while stopped for a few minutes in traffic

TOTAL



History Taking (If Possible With Partner)

Sleepy vs non-sleepy

Smoking / alcohol

Recent weight gain

Consistency of snoring

- Every night

- Every position

- Periods of apnoea

Examination

BMI

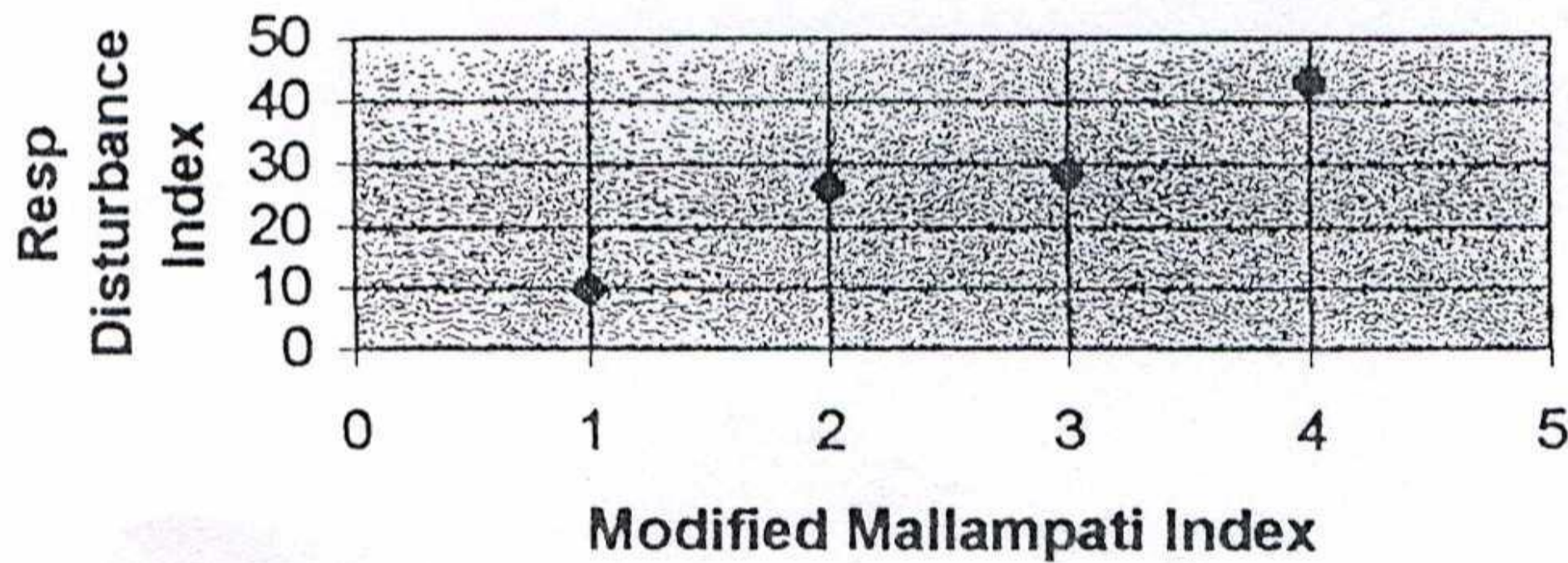
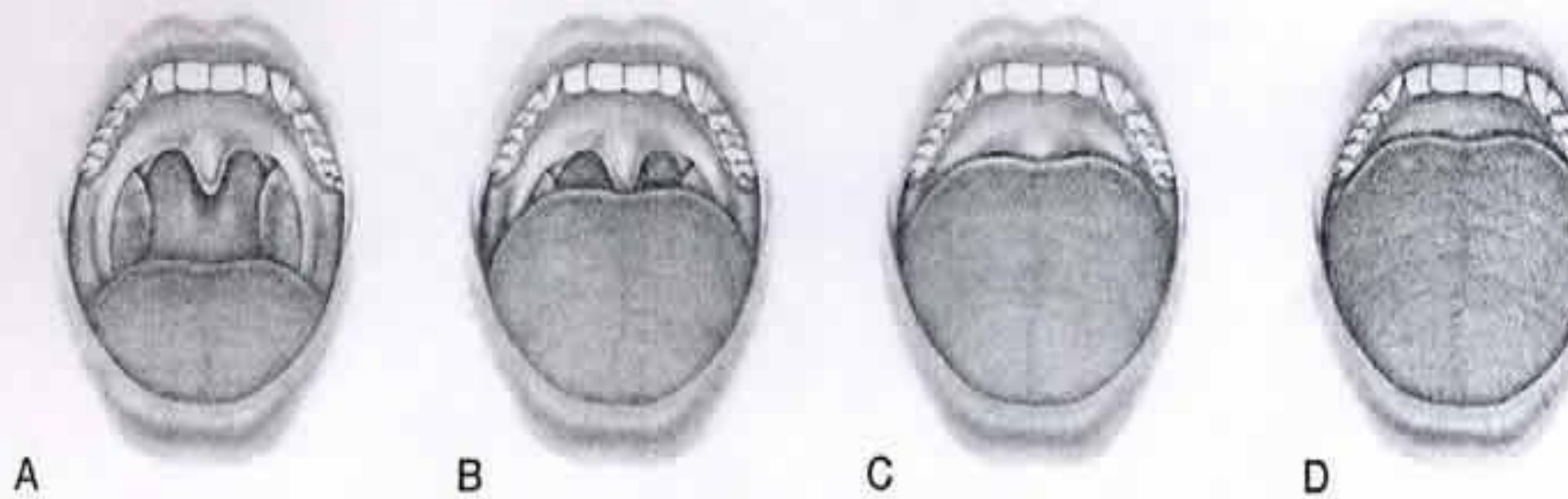
Neck circumference

Nasal airway: septum/ valves

Tonsil size / soft palate

Soft palate oedema

Base of tongue



Other investigations:

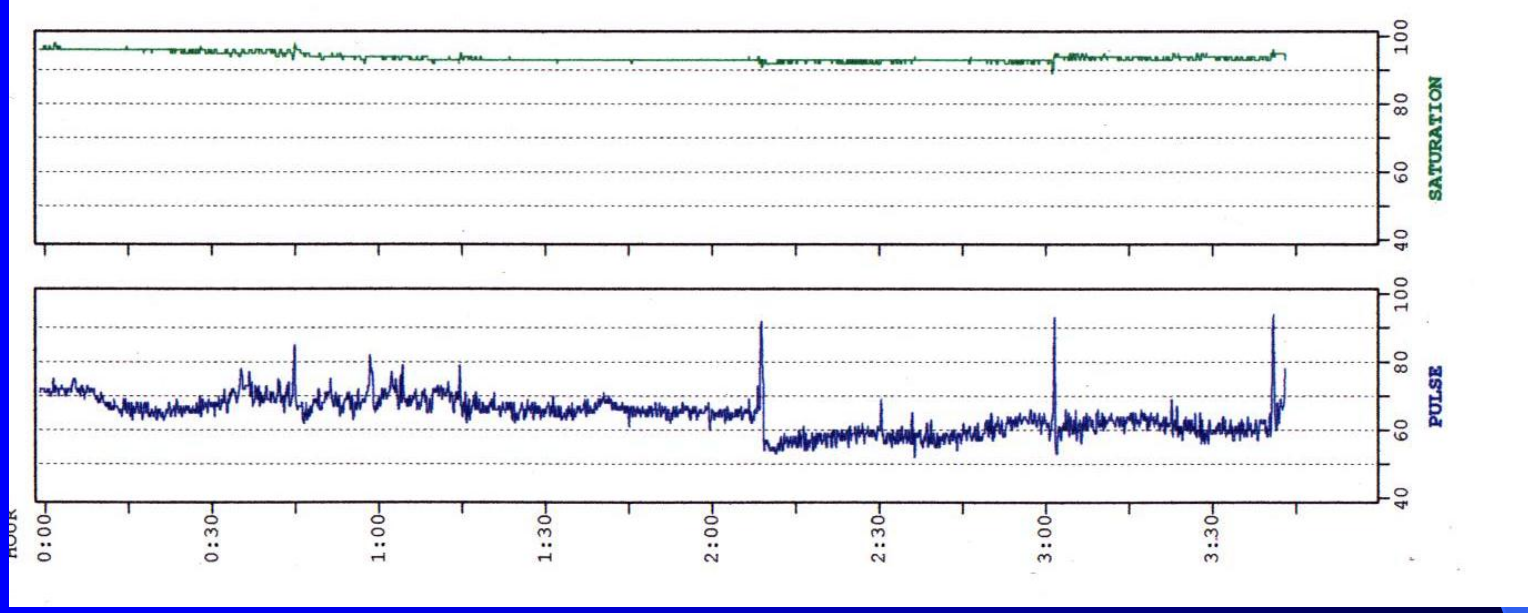
Overnight oximetry (level 4)

Acoustic recording devices

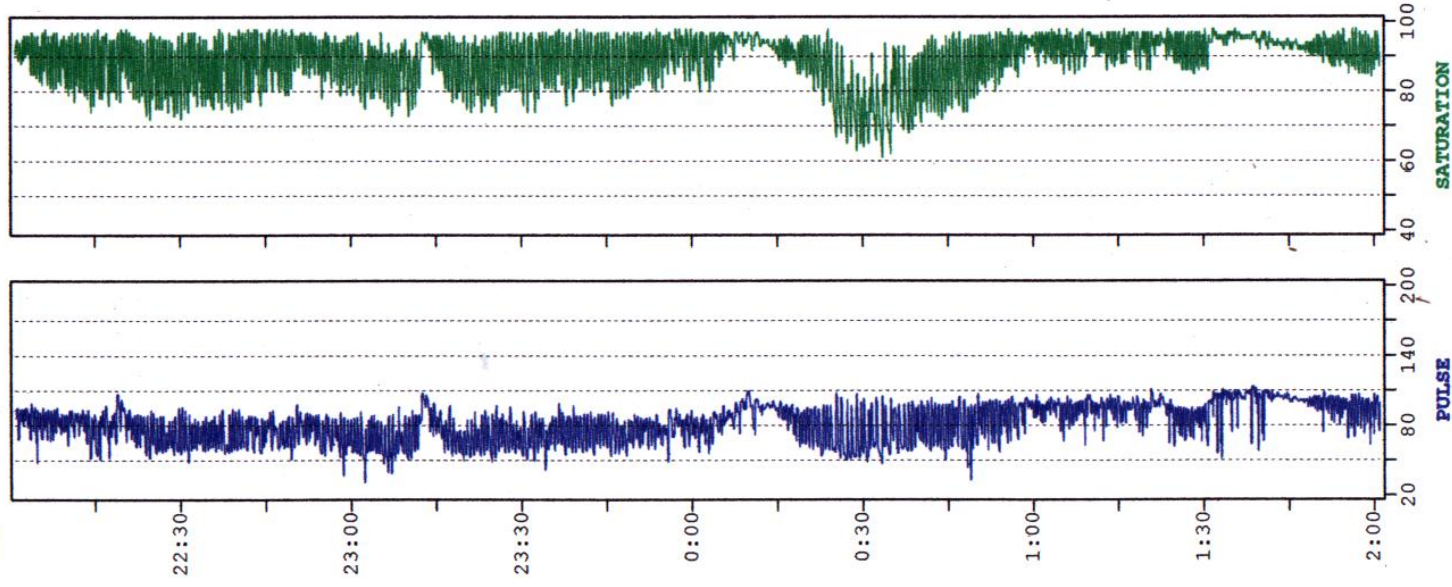
Respiratory monitoring (level 3)

Portable polysomnography (level 2)

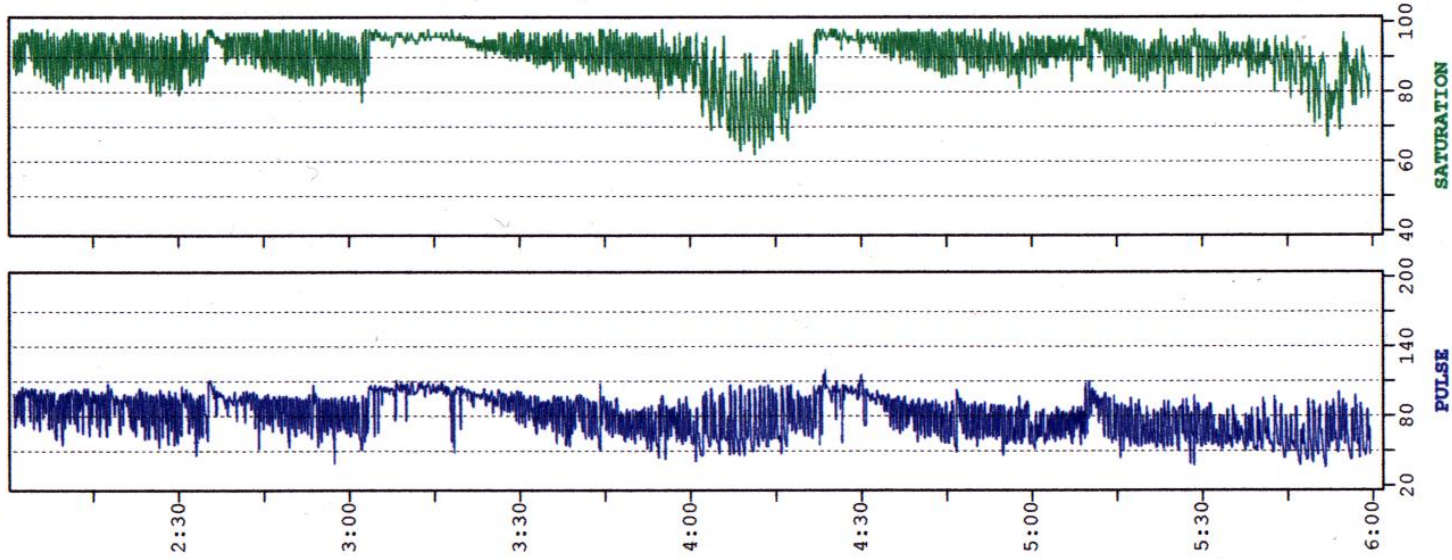
Sleep Unit Polysomnography (level 1 or 2)



HOUR



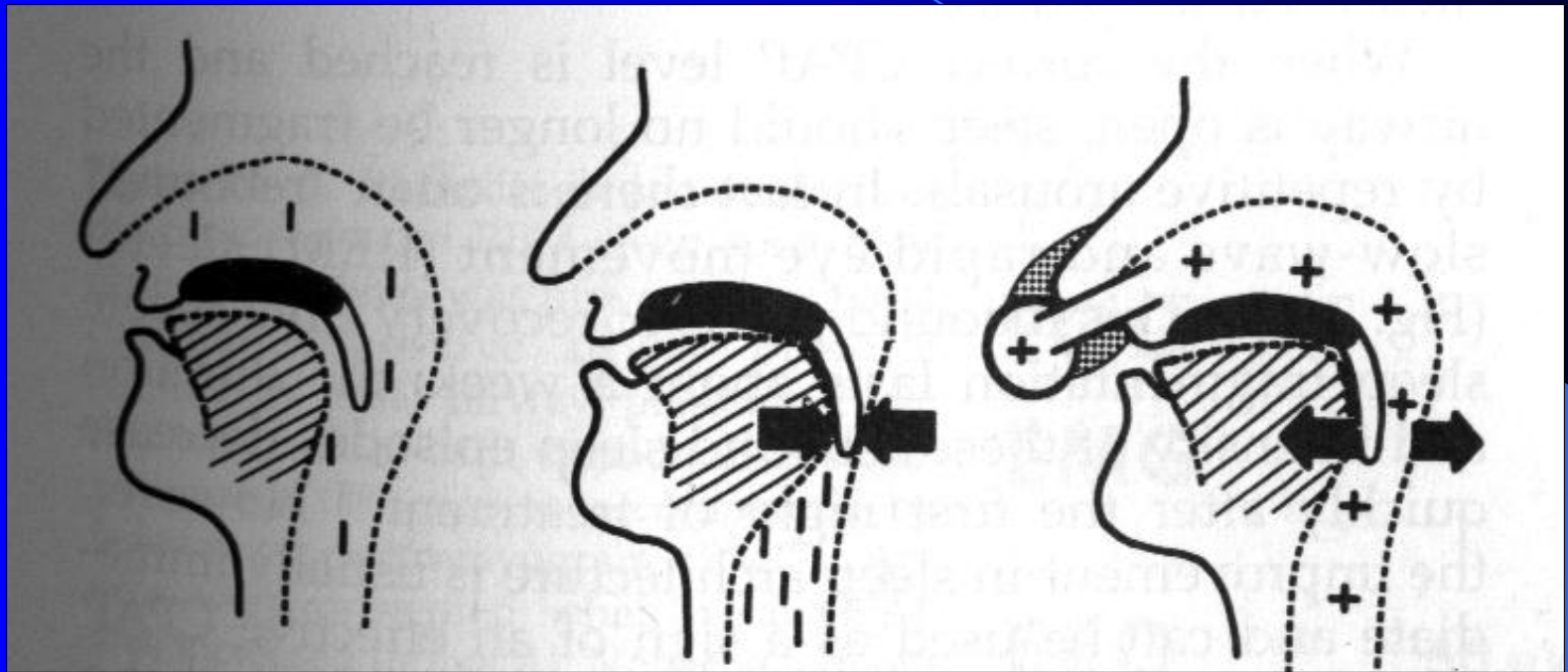
HOUR



Managements

**Nasal Continuous Positive Air Pressure
(nCPAP)**

**Mandibular advancement prostheses/splints
(MAP/S)**



Devices:

Mandibular advancement splints

- Fixed (Snorex device)
- Mobile SomnoDent, MDSA

Tongue stabilizing devices

Managements

Lifestyle

Sleep position, i.e. Side
 Upright

Control of Obesity

Avoidance of alcohol and drugs

Surgery

Adenotonsilectomy

Uvulopalatopharyngoplasty (UPPP)

Nasal surgery

Palatal surgery

Devices:

External nasal splints

Internal nasal splints

Palatal Surgery

UPPP

Somnoplasty

Palate tightening

Uvulectomy

LAUP

Other surgeries

Tracheostomy

Weight loss surgery

Conservative:

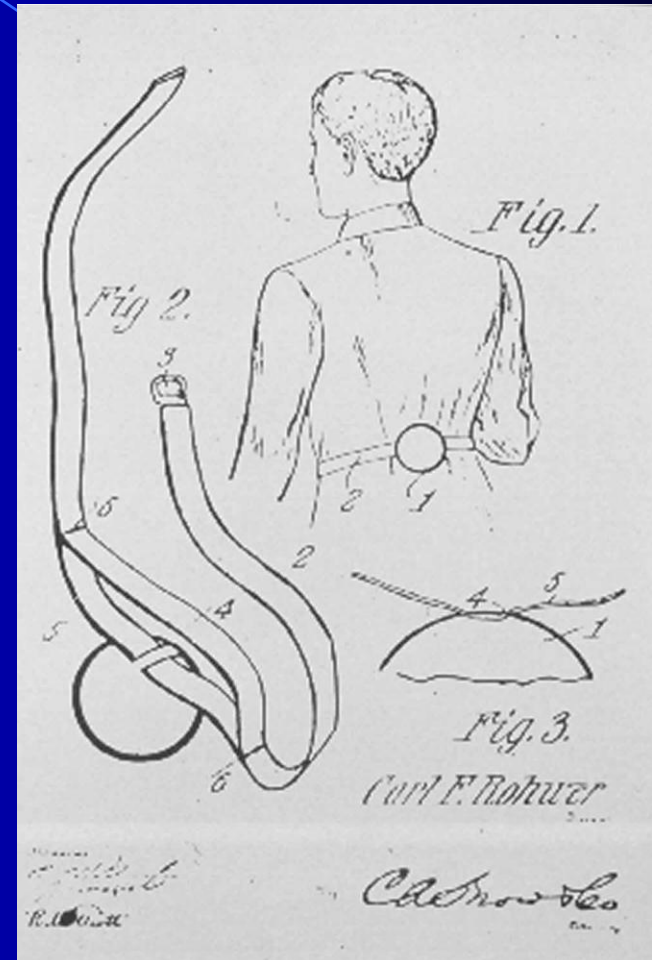
Weight loss

Alcohol avoidance

Stopping smoking

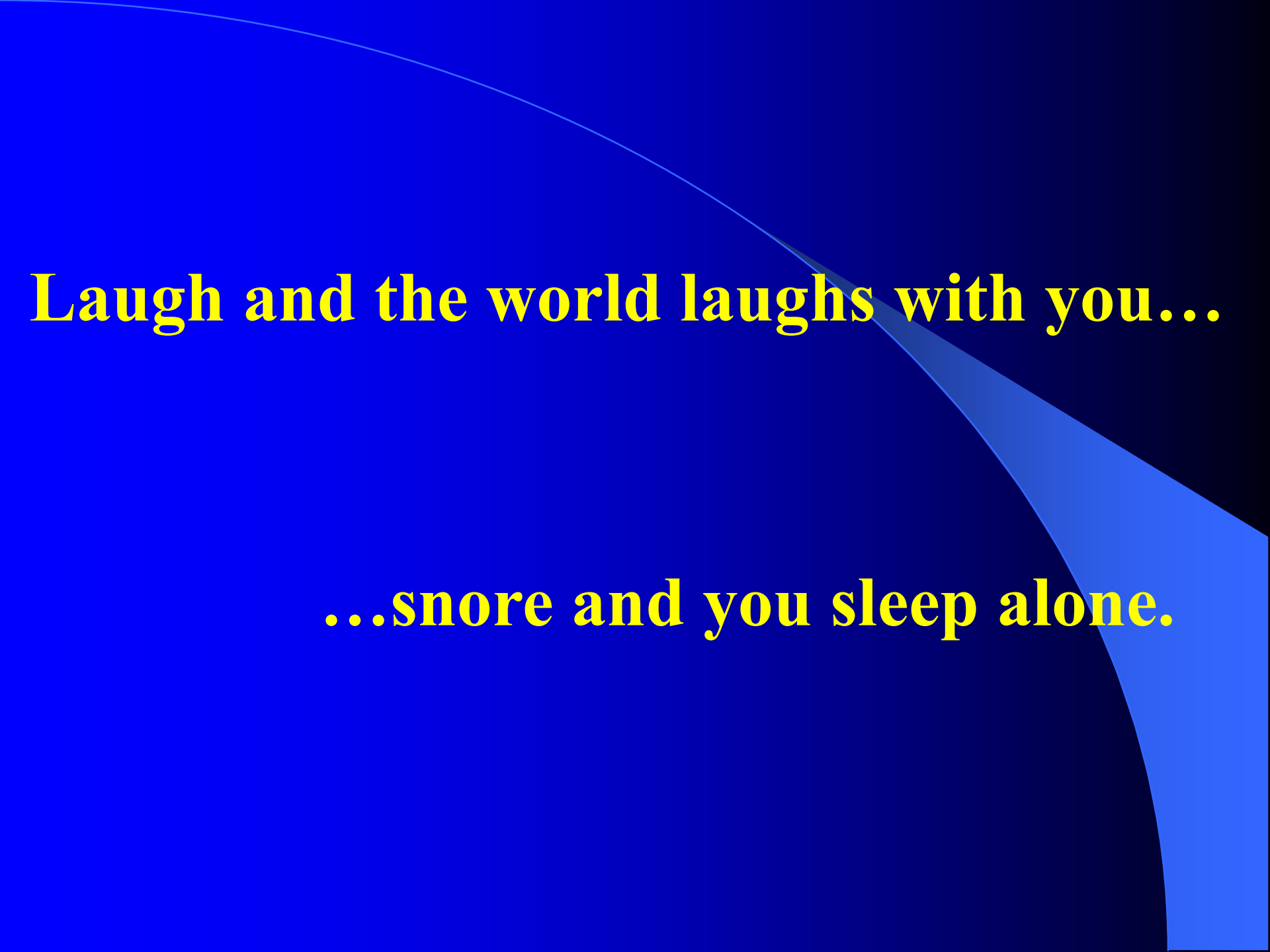
Sleeping tablets

Keep off back



KEY QUESTIONS:

1. **Do you snore?**
2. **Are you sleepy?**



Laugh and the world laughs with you...

...snore and you sleep alone.

Parasomnias: (Common)

In Non-REM

Sleep Walking

Night terrors

Sleep Related Eating Disorder

Sexsomnia

REM related sleep disorders

Nightmare

REM-Sleep Behaviour Disorder

Others

Bruxism

Sleep talking (somniloquy)

Enuresis

Rhythmic Movement disorders

Parasomnias:

In Non-REM

Treatments:

- . Reassurance and education
- . Safety measures
- . Sleep Hygiene
- . Address bedtime refusal / night-waking behaviour
- . Avoid waking
- . Guide back to bed
- . Avoid interfering
- . Avoid next-day discussion

Parasomnias:

In REM

- REM Sleep Behaviour Disorder. (REM without muscle atonia)

REM behavior disorder.mp4

Parasomnias:

In REM

- Nightmares:

- Treatments

- . Parental reassurance/positive reinforcement of independent coping skills
- . Avoid exposure to frightening or over-stimulating images
- . Reduce stressors
- . Ensure adequate sleep
- . Security objects
- . Dim, low-level nightlight
- . Relaxation strategies for the older child.
 - Progressive muscle relaxation
 - Visualisation
 - Relaxation tapes/music

Parasomnias:

In Either REM or Non-REM

- **Bruxism:**

8% of adults, 14% - 20% of children <11yrs

Stress related, Sleep-related disorders, Chemical related

RLS/PLMS, RBD, OSA, Night Terrors

Alcohol, Caffeine, MDMA (ecstasy)

SSRI's, Methylphenidate, Antiarrhythmics,

- **Sleep talking:**

In light non-REM or REM, but no memory in the morning

More frequent in times of stress, fever, sleep disturbance

Parasomnias:

In Either REM or Non-REM

- Enuresis:
“A disorder of arousal”. Unknown aetiology . May accompany nocturnal seizures, OSA, or other sleep disorders
- Rhythmic Movement Disorders (*Jactatio capitis nocturna*)
head banging / body rocking. Usually a soothing behaviour

Sleep Related Movement Disorders:

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.

Sleep Related Movement Disorders:

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

Sleep Related Movement Disorders:

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

Sleep Related Movement Disorders:

Periodic Limb Movements in Sleep (Von Ekbom 1945)

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

Sleep Related Movement Disorders:

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

Sleep Related Movement Disorders:

Treatments. RLS / PLMS

Non-pharmacologic

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

Sleep Related Movement Disorders:

Treatments. RLS / PLMS

Pharmacologic

- 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 or substance abuse

 - Use low dose in conjunction with dopaminergic Rx

Sleep Related Movement Disorders:

Treatments. RLS / PLMS

Pharmacologic

- Anticonvulsants.

Gabapentin

Not as powerful as Dopaminergic Rx
useful for those with painful RLS, especially when
symptoms begin after the age of ~45yrs
Daytime fatigue, and dizziness

- Benzodiazepines. Non-Benzodiazepines

Used to induce sleep, and improve sleep continuity.
No direct beneficial effect on PLS/PLMS

- Iron (+- Folate) supplementation.

Useful if Ferritin is <50%

Sleep Related Movement Disorders:

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

Other Nighttime disorders:

- **Narcolepsy**

- . Four cardinal symptoms:

- Excessive Daytime Sleepiness

- Sleep Paralysis

- Hypnagogic / Hypnopompic Hallucinations

- Cataplexy (only Cataplexy is unique to Narcolepsy)

- Not all are necessary for the diagnosis of Narcolepsy

- . Other common symptoms:

- Fragmented nocturnal sleep

- Sleep attacks

- Naps are temporarily refreshing

- . Onset:

- Most commonly in late teenage, and less often in late 30's

- May occur in children, especially with strong genetic links

- ˘ May investigate with overnight Polysomnography (PSG), and Multiple Sleep Latency Test (MSLT)

Other Nighttime disorders:

- **Narcolepsy**

- . Prevalence:

- 1/600 in Japan

- 1/4000 in North America and Europe

- 1/500,000 in Israel

- . Gender:

- Equal Male/Female

- . Family History:

- 8% - 12% have a 1st degree relative with narcolepsy

- . Thought to be related to a deficiency of Orexin/Hypocretin

- . Most carry the Human Leukocyte Antigen

- (HLA) DQB1*0602

- However, so do up to 40% of the population, and some narcolepsy patients do not have this marker

Other Nighttime disorders:

- Narcolepsy

RealPlayer SP.Ink

Thank You

Dr Alex Bartle

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