SNORING CAN BE CURED

Not funny, Not hopeless

Laser Snoring Centre
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How Does Snoring Happen?

* The throat has no rigid supports
* Throat muscles hold the airway open
* All muscles relax in deep sleep
* Airway collapses when you breathe in
* Snoring is due to partial airway obstruction
* The throat flutters, making noise
Why Do Only Some People Snore?

* Normal throat
* Snorer’s throat is “too saggy”
  Low soft palate
  Thick uvula
  Floppy or low posterior pillars
  Large tongue base
Why Do Only Some People Snore?

Throat is “too saggy”
Muscles too lax when asleep
* Alcohol
* Sleeping tablets
* “Unlucky”
Why Do Only *Some* People Snore?

Throat is “too saggy”
Muscles too lax when asleep

- **Overweight**
  - increased effort of breathing
  - not all snorers are overweight
Why Do Some People Snore?

- Throat is too saggy
- Muscles too lax when asleep
- Overweight
  - Increasing age - everything sags
  - Blocked nose
  - Worse if lie flat on back
Some Snoring Facts

* 30% men snore most nights
* 20% women snore
* Over 300 patented devices in US
* Guinness Book Records - 87 decibels
* PalatoPharyngoplasty - 1981
* Laser Palatoplasty - 1993
* Radio-frequency Palate stiffening - 1997
Problems for Snorers

* Partner can’t sleep
  - one of them leaves room
  - might still hear snorer!!

* Refuse marriage

* Holidays - no spare room
More Problems

* Apartment - neighbours complain
* Embarrassing :-
  Aeroplanes, Theatre, Church, Lectures
* Sharing a room on business trips
* Camping
Worse for women

* “Not ladylike” - embarrassing
* Girls at slumber partners
* Single women
  - embarrassing if fall asleep “afterwards”
Obstructive Sleep Apnoea

* Snoring is due to
  Partial airway obstruction

* OSA is due to intermittent
  Complete airway obstruction
Obstructive Sleep Apnoea

* Intermittent suffocation
* Variable duration: 10 - 60 seconds
* Mild, Moderate, Severe
* Arterial Oxygen level drops
  “Oxygen desaturation”, “hypoxia”
**OSA - Hypoxia**

- Low oxygen level in blood
  - Puts a strain on the heart
  - ↑ pulse rate
  - ↑ blood pressure
  - ↑ strain on lungs
  - Risk of heart attack, stroke, fit
OSA - Arousal from deep sleep

* Restlessness
* Bed-wetting
* Sleep deprivation
* Daytime tiredness
* Morning headaches
* Memory problems
* Impotence

Thag Anderson becomes the first fatality as a result of falling asleep at the wheel.
Severe Obstructive Sleep Apnoea

* 10% 5-year death rate if untreated
* 5 years - 1 in 10 chance of death
  – As dangerous as Angina
* 2% of population
  – As common as Diabetes

* Diagnosed by an Overnight Sleep Study
Overnight Sleep Study
Poly-Somno-Gram (PSG)

* Not every snorer needs testing
* Test if - Partner notices obstructions
  - Significant daytime tiredness
* Measure Sleep - Brain waves
  Electro-Encephalo-Gram (EEG)
  Eye movements (EOG)
  Posture (infra-red camera)
Sleep Study

Poly-Somno-Gram (PSG)

* Measure Sleep
* Measure Breathing
  Oxygen saturation
  Respiratory Effort
  Airflow
  Electro-Cardio-Gram (ECG)
Sleep Study
Poly-Somno-Gram (PSG)

* Measure Sleep - EEG, EOG, Posture
* Measure Breathing
* Measure Muscle Tone
  Beneath Chin
  Leg
Treatment options for snoring

* Avoid sedatives, alcohol
  Beware Pre-meds if OSA
* Treat nasal blockage
  Tubes, Breathe-right strips, Nazovent Sprays - beware long-term
* Lose weight – worth trying
  - few patients lose it, or keep it off
Treatment options for snoring

* Avoid sedatives, alcohol
* Treat nasal blockage
* Lose weight
* Hormones - hypothyroidism, acromegaly
* Posture - Sleep on your side
  Sew or clip ball in PJ’s
  Snoring pillow
  Elbow in the ribs
* Dental devices - pull lower jaw forwards
Treatment options for snoring

* Avoid sedatives, alcohol
* Treat nasal blockage
* Lose weight
* Hormones
* Posture - Sleep on side
* Dental devices
* NCPAP Mask
* Surgery
NCPAP Machine

* Nasal
* Continuous
* Positive
* Airway
* Pressure
NCPAP

* Fitted face mask
* Pump, soft noise
* Air tubing
* Blows air into nose
* Creates internal “air splint”
* Holds soft tissues of throat open
* Works very well - even severe OSA
* Neither comfortable, nor romantic
"Cures" snoring and OSA
If you wear it every night, forever !!!

Compliance is poor
Only 2/3 of patients wear it regularly

If you don’t wear it, it doesn’t work !!!
Mandibular Advancement Splint

* Pulls the lower jaw forwards
* Pulls the tongue forwards too
* Needs to be worn every night
* Effective but uncomfortable
* Takes time to get used to it
Mandibular Advancement Splint
* Hole cut into the windpipe, with plastic tube
* Without doubt, the best treatment
* Effective, for even the most severe OSA
* Not very pleasant, but does cure a dangerous condition, permanently
Adeno-tonsillectomy

* Very effective for children, whose snoring and OSA is due to large Tonsils and Adenoids

* Even if they have severe OSA
Surgery - on the Soft Palate

* Trim the soft palate - to stop flutter
* Makes more space
* Trims and tightens the free edge
Surgery - on the Soft Palate

* Trim the soft palate - to stop flutter
* Makes more space
* Trims and tightens the free edge
* Removes the redundant tissue below the muscular attachments
* The Soft palate is a Trap-door with a curtain
* The curtain (*velum*) is removed
Uvulo-Palato-Pharyngo-Plasty
UPPP, UP3, Full PPP

* Devised by Fujita in 1981
* Effective
* Snoring - 75% don’t snore,
  15% snore less

10% are unimproved
Uvulo-Palato-Pharyngo-Plasty
UPPP, UP3, Full PPP

* Effective BUT

* 1 in 10 “successes” fail later
* Severe OSA - 10% patients are “cured”
* Painful - 3 days in hospital,
  2 - 3 weeks off work

* I rarely need to do a UPPPP nowadays
**Laser Palatoplasty**

* Devised in 1993
* Less painful
  - Lesser operation
  - Tonsils not removed
  - Laser seems to numb the nerves
* Several different operations
* American Health insurance won’t pay -
  - “cosmetic” snoring
* Medicare & Private Health Insurance will pay for the 1-stage treatment I do
Laser Assisted Uvulo-Palato-Plasty
LAUP

* Different techniques
* Some are multi-staged (4-8 sessions)
* Some create a large (painful) ulcer, which increases stiffening, but takes over a month to heal

* My technique is one-staged
My 1-stage technique of Laser Palatoplasty

* 1987 - 1994 - I did over 350 Full UPPP's
   (I rarely do UPPP’s nowadays)
* I started doing LaserPP’s in Sept 1994
* I’ve done about 800 since then

* I do LaserPP, even if tonsils present - unless they are very large or floppy
My One-stage technique of Laser Palatoplasty

Soft Palate before treatment

Trim off the uvula and the vibrating edge of the soft palate, with a Laser

Post-operative
My One-stage technique of Laser Palatoplasty

* This is what gets removed
* The pencil is just a guide for you as to the size of the removed piece
“Kleid” technique of One-Stage Laser Palatoplasty

* The operation is basically the central third of a Full UPPP

* Trim the uvula and the posterior pillars
  Like a “web” on the side of the uvula

* The wound is sutured open to widen the gap
**Laser Palatoplasty - Operation**

* Awake, but sedated by anaesthetist
* Local anaesthetic spray - reduces gagging
* Local anaesthetic injection
* The laser cuts and coagulates at the same time - so there is no bleeding
* 2 dissolving sutures, one each side
Laser Palatoplasty - Post-op

* Wide awake, 30 minutes later
* If no Sleep Apnoea - home in 4 hours
* If OSA - overnight in close observation ward
* If severe OSA - wear NCPAP mask post-op
Laser Palatoplasty
- Post-op little pain

* Laser seems to numb the nerve endings
* Not very sore for the first few days
* Painful for a few days
  * like a big ulcer
* Gargles, lozenges
  Panadeine, Panadeine forte
* Rarely need Morphine or Antibiotics
Laser Palatoplasty - Post-op

* Day-stay, or Overnight

* Part-Time work within a couple of days

* Schedule 5 days off,
  before back to Full Time work
Laser Palatoplasty

* Half of my patients also need Nasal Surgery at the same time
  - If nose blocked, sinus problems or Rhinoplasty
* Usually need General anaesthetic (asleep)
  - Stay overnight - Home next morning
* No Nasal Pack needed for my nasal surgery
  - I use dissolving sutures
* 10 days off Full-time work
Laser Palatoplasty - Results

* 80% success
  (that means a satisfied bed-partner)

* Results not as good if significant OSA,
  due to generalised floppiness
Can I predict success?

* This obese man with a small mandible and full tongue, and mild OSA should not have been cured with a LaserPP
* but he was !!
“Radio-Frequency” Palato-Plasty

* Radio-Frequency Palate stiffening
* Also called “Somnoplasty”
* New treatment
* September 1997, Stanford University reported on their first 20 patients
  * 60% Successful
* Local anaesthetic, in Dental chair
* No pain, No time off work
Radio-Frequency Treatment

* 2 treatments, 4-6 weeks apart
* Expensive machine ➔ Expensive treatment
* No pain, No time off work

* If doesn’t work, can still have a LaserPP

* Fees are not covered by Medicare or Private Health Insurance
**Injection Snoreplasty**

* Another way to stiffen the soft palate
* First results reported September 2000
* 2-sessions of treatment – like Radio-Frequency
* 25% cases had ulceration, up to the size of a 10c piece, which could take over a month to heal (and risk of Palate perforation)
* Panadeine (+/- forte) needed for a few days

* Similar to RF, but less control, a little more pain
Tongue Base Advancement

* Pull tongue base forwards
Genioglossus advancement
Plus Hyoid advancement
Tongue Base Reduction

* Surgical -with or without a laser
  “carve a chunk out of the back of tongue”

* Radio-Frequency to tongue base
  has been tried, but risks
Orthognathic surgery
Bimaxillary Osteotomies

* Cut upper and lower jaws
* Advance them
* A very big operation
* Best results - even for severe OSA.
Laugh, and the world laughs with you

Snore, and you sleep alone

Anthony Burgess