

# Snoring Is Not Cute: OSA in children

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“Mama loved her baby Ben  
her precious little child,  
but he always disobeyed her  
he was reckless, loud and wild.”

The Wild Baby  
B Lindgren

# Case 1: Girl

- Six year old girl
- Trouble concentrating at school
- Teacher wants her on Ritalin
- Constant blocked nose
- On exam huge tonsils, skinny
- Further questioning
  - Snores every night
  - Chest sucks in when she's breathing in sleep
  - Difficult to wake in the morning

# Girl: Progress

- Underwent adenotonsillectomy
- Six weeks later no longer snoring
- Happier child, “eating like a horse”
- Teacher says improved

# Obstructive sleep apnoea in childhood

## ■ Common

- Snoring most nights 10-12 % of children
- OSA 1-3% of children

## ■ Peak incidence 1-6 years

- Not related to obesity

## ■ Second peak in adolescence

## ■ Related to size of adenoids and tonsils relative to pharyngeal airway

## Case 2: Boy

- Obese 12 year old
  - Glucose intolerant
  - Acanthosis nigricans
  - Loud snoring, stops breathing
  - Sleepy in the day
  - Tonsils moderate
- 
- Severe OSA on sleep study

# Boy: Progress

- Underwent adenotonsillectomy
  - Large adenoids
- Still snoring
- Repeat sleep study moderate OSA
- Started on CPAP
  - Wears 5 nights per week
  - Less grumpy on days he wears it

# Definition OSA in children

- Different to adults
- Combined obstructive apnoea & hypopnoea index (OAHI)
- OAHI > 1 event per hour
  - Mild 1-5
  - Moderate 5 - 20
  - Severe > 20

# Risk factors for OSA

- Large adenoids/tonsils
- Obesity
- Syndromes
- Previous surgery eg palate repair
- Family history

# Consequences of untreated OSA

- Behaviour effects
  - Similar to ADHD – inattention/aggression
- Poor concentration/learning
- School failure
- Decreased IQ 4 - 10 points
- Early onset hypertension/hyperlipidaemia
  
- Severe
  - Failure to thrive
  - Systemic or pulmonary hypertension
  - Cardiac failure (Cor pulmonale)

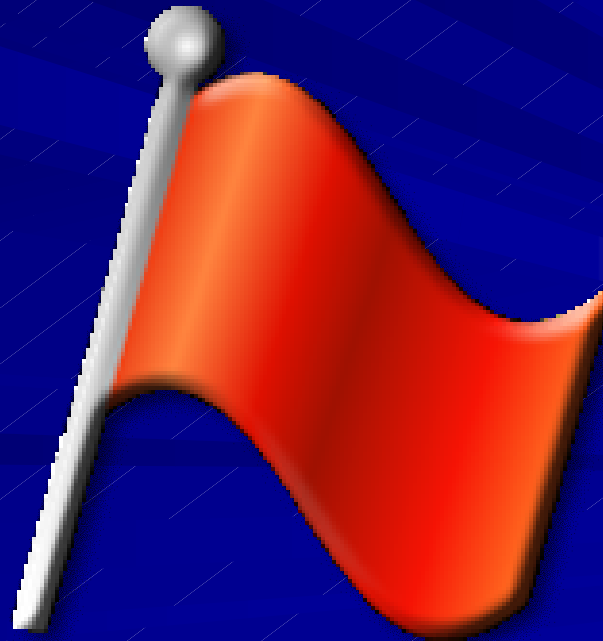


# Common ways children with OSA present

- Parents terrified their child will stop breathing
- Really loud snoring
- Constant blocked nose (halitosis)
- “He’s totally hypo!”
- “Oh my goodness, you’ve got big tonsils”

# Red Flags

- Cyanotic episodes
- Stridor
- Difficulty breathing and noisy breathing awake



# OSA: Features on history (SMART)

S - Snoring  $\geq 4$  nights per week (“frequent”)

M - Constant Mouth breathing asleep & awake†

A - Occasional pauses in breathing (Apnoea)

R - Frequent increased Respiratory effort

T - Large Tonsils (grade 3 or 4)†

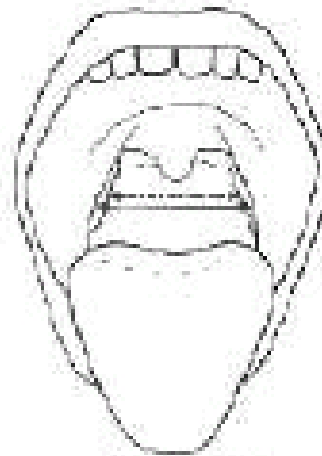
These items are specific but not sensitive.

† = Useful examination findings

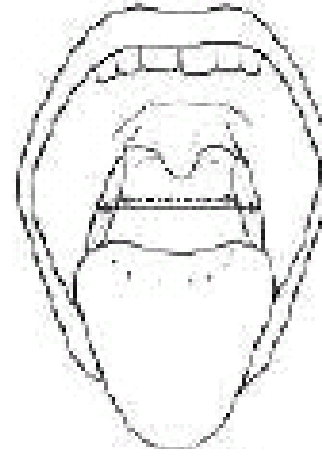
Snoring + 1 item = sensitive

Snoring + 2 items = specific

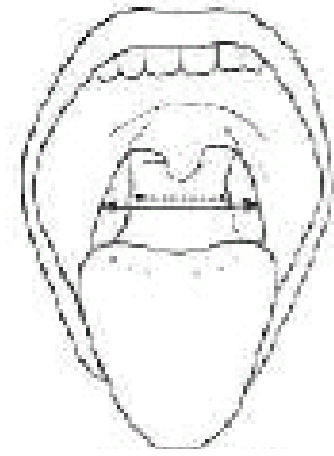
# Clinical assessment: tonsil size



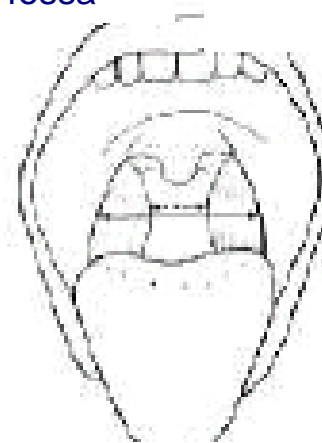
0 – in fossa



+1 <25% available space



+2 25% - 50%



+3 50% - 75%



+4 > 75%

# Other useful examination signs

- Mouth breathing in the office
- Hyponasal speech
- Long adenoidal face
- Small jaw

# First line treatment for OSA

- Adenotonsillectomy

## GP Management

- Refer to ENT children with snoring and *possible OSA*
- Refer children with operative risk factors to paediatrician for risk assessment
  - Syndromes
  - Morbid obesity

# Effectiveness of adenotonsillectomy

- “Partial” or total cure (OAHI < 5)
  - 80 - 85%
  - 50% in severe and obese
  - Severe will still be improved
- Total Cure (OAHI < 1)
  - 50%
  - 25% in severe

# Risks of adenotonsillectomy

- Respiratory compromise 10%
  - Post-op oxygen desaturation
  - Apnoea
  - Atelectasis/pneumonia
  - Pulmonary oedema
- Haemorrhage 2 - 5.5%
- Mortality < 1/ 35000

# Second line treatment

- GP Management: Referral ENT or Paeds
  
- Nasal spray corticosteroids
  - Approx halve OAHl
  - Good for mild OSA
  
- Revision adenoidectomy +/- nasal turbinate reduction
  
- CPAP
  - Reserved for moderate OSA post-adenotonsillectomy

# Resources

- Starship Hospital website guidelines
  - <http://www.starship.org.nz/>
  
- Paediatric Society of New Zealand guideline
  - <http://www.paediatrics.org.nz>

■ “To know even one life has breathed easier because you lived. This is to have succeeded.”

—Ralph Waldo Emerson