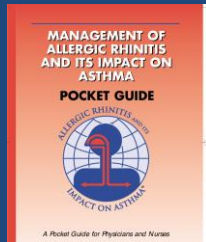




## AR and Asthma

- Very strong association
- Treating the upper airway will provide better control of their lower airway
- Must screen all AR patients for asthma and treat the upper airways of asthma patients
- Action plans and management plans



## Sleep disordered breathing

- Spectrum primary snoring – OSA
- Daytime sleepiness and fatigue are common
- Often also present with behavior issues
  - Hyperactivity
  - Poor impulse control
  - Poor concentration
- Effects mandibular and palatal growth – dental malocclusions
- Effect physical activity and sport
- Effects school performance (exams)

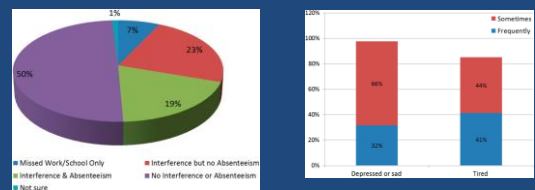
## Rhinitis and exam performance

- Case-control analysis of 1834 students (age 15-17 years; 50% girls) sitting for national examinations. Cases were those who dropped 1 or more grades in any of 3 core subjects (mathematics, English, and science) between practice (winter) and final (spring/summer) examinations; controls were those whose grades were either unchanged or improved
  - Rhinitis **-40%** risk for dropping a grade
  - Rhinitis Rx with sedating antihistamines – **-10%** more likely to drop a grade

Seasonal allergic rhinitis is associated with a detrimental effect on examination performance in United Kingdom teenagers: Case-control study. *J Allergy Clin Immunol* 2007;120:381-7.

## Burden of disease

BoD (2007) – allergy 21.5 billion (arthritis 11.7 billion)



Katelaris et al. Allergic rhinoconjunctivitis in the Australian population: Burden of disease and attitudes to intranasal corticosteroid treatment. *Am J Rhinol Allergy* 2013 Nov - Dec

## Burden of disease



Figure 3. The majority of respondents reported sleep interference during the previous week before the survey. Respondents were asked to report how troubled they were by different aspects of sleep interference. Data are presented as percentage of all responses (n = 303).

Katelaris et al. Allergic rhinoconjunctivitis in the Australian population: Burden of disease and attitudes to intranasal corticosteroid treatment. *Am J Rhinol Allergy* 2013 Nov - Dec

## Behavioral, physical and emotional well being

- Anxiety
  - Specificity in the association of anxiety, depression, and atopic disorders in a community sample of adolescents. Slattery M et al. *Journal of Psychiatric Research* June 2011
- Depression
  - Allergic rhinitis in adolescence increases the risk of depression in later life: A nationwide population-based prospective cohort study. Mu – Hong Chen et al. *Journal of Affective Disorders* Feb 2013
- ADHD
  - Attention-Deficit/Hyperactivity Disorder-related Symptoms Improved with Allergic Rhinitis Treatment in Children. Ming – Tao Wang et al. *Am Journal of Rhinology & Allergy* May 2016
- Self confidence and self esteem
  - Differences in leisure activities between children with allergic rhinitis and healthy peers. Engal – Yeger B. et al. *Intr Journ of Ped Otolaryn* Dec 2010

## Consequences of untreated AR

- Associated with later life onset of .....
  - Chronic sinus disease
  - Non – allergic rhinitis
  - Chronic obstruction requiring surgery
  - Eustachian tube dysfunction
- Impaired performance
  - Work
  - Education
  - Driving

## Allergic rhinitis – allergen triggers

- Pollen (tree, grass, weed)
  - Seasonal outdoors
  - ASCIA pollen calendar
- Dust mite
  - perennial
  - AM symptoms, indoor, triggered by sweeping, vacuuming, dust collecting environments, bed
- Pet dander
  - Cat, dog, horse, rabbit, feathers
- Mould

## Classification of Rhinitis

<b>Intermittent</b> • < 4 days per week • or < 4 weeks	<b>Persistent</b> • 4 days per week • and > 4 weeks
<b>Mild</b> normal sleep and • no impairment of daily activities, sport, leisure • normal work and school • no troublesome symptoms	<b>Moderate-severe</b> one or more items • abnormal sleep • impairment of daily activities, sport, leisure • abnormal work and school • troublesome symptoms

ARIA (Allergic Rhinitis and its Impact on Asthma) 2002

## Evidence

- ICAR (International Consensus on Allergic Rhinitis) – 2018
- ARIA guidelines (Allergic Rhinitis and its Impact on Asthma) – 2016
- WAO (World Allergy Association) Position paper on SLIT - 2014
- GINA (Global Initiative for Asthma) guidelines – 2018
- US joint task force - 2017

## ASCIA Clinical Guidelines 2017

	Persistent and mild	Intermittent and moderate-severe	Persistent and moderate-severe
Intermittent and mild	Intranasal corticosteroid sprays*		
	+/- Other therapies (intranasal chonromes, intranasal anticholinergic sprays, leukotriene antagonists)		
	Oral non-sedating or intranasal antihistamines*		
	+/- Nasal saline irrigation		
	Allergen avoidance		
*Typical first line treatments recommended	Immunotherapy		

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## In Summary

- **INCS** best first line choice across the board !
  - Both nasal and ocular symptoms
- Topical antihistamine adjunct (eye, nose)
- Oral non sedating antihistamine
  - not recommended for nasal symptoms but OK as an adjunct for eye or skin

### Testing for IgE sensitization (previously known as RAST)

- THINK ! – will it change my management
- SPT gold standard but serum IgE very good
- ONLY valuable in IgE mediated reactions
  - IgE – asthma, AR, anaphylaxis
- AR, asthma – inhaled allergens (not food)
- SPT or IgE testing NOT indicated for non – allergic triggers (cig smoke, fumes, flowers, perfumes respiratory irritants, changes in temp, wind)
- NOT indicated for intolerances (IBS), non- specific rash, \*eczema headaches, fatigue, food additives

\* Eczema is a disorder of skin barrier dysfunction - it is a risk factor for development of allergic disease best to ask for advice before ordering any allergy tests

## Beware

Sensitization does NOT equal allergy

### WHY order the tests ?

- Can allergen be avoided (pets)
- Minimized or reduced (HDM)
  - Not expensive sheets and covers
  - Wash in hot water, use dryer, use freezer
- Consideration for immunotherapy - for those failing maximal medical management

### What is immunotherapy ? (i.e. can I just lick the cat?)

- Administration of specific allergenic protein over the course of 3-5 years to induce tolerance
- Specific protein amplified
- Aims to "turn off" allergic drive and change the way the immune system responds to allergen
- Tolerance induced by T reg cells found in high concentration in skin and under the tongue
- Benefit may begin in first few months but long duration needed to maintain tolerance
- Disease modifying aim to reduce or alleviate symptoms