






Allergic Rhinitis, Asthma & Dust Mite Allergy: Suspecting, Subduing & Solving



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Take Home Messages

- 1. Dust mite allergy is an important cause of chronic allergic rhinitis and asthma - with persistent unrecognised associated morbidity
- 2. Allergen Avoidance, Nasal Steroids and Immunotherapy are all under-utilised.
- 3. GP's are key! Patients rely on you to consider the diagnosis and assist by educating, managing and referring appropriately. Suspect, Subdue, Solve.



Myths & Misconceptions: No Treatment is necessary(!)

- Persistent Allergic Rhinitis and (mild) asthma is seen as a minor complaint
 - Not recognising to subacute effects on sleep, cognition, and effects on other allergic disease
- Not aware of substantial disease modifying treatments available


What is Allergic Rhinitis?

- "Inflammation of the lining of the nose"
- Allergic process: Stimulus → Reaction
- Ambient Allergens
- Commonly called "hay fever"

Causes of Allergic Rhinitis

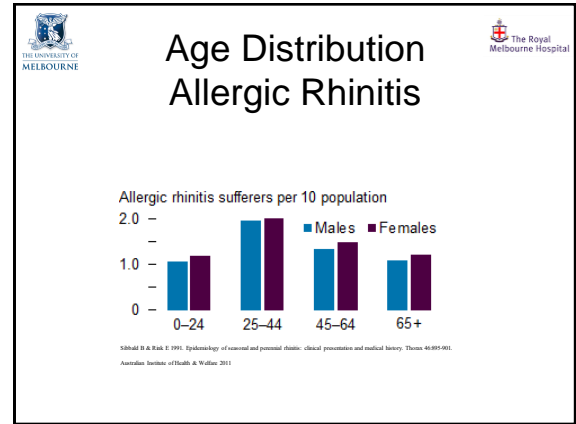
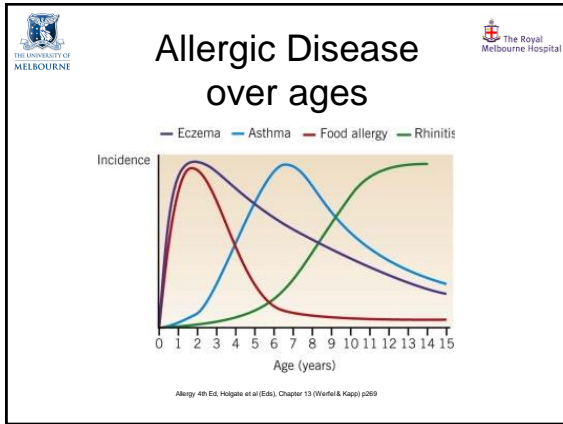
- Exposure to allergen in those with sensitised immune system.
- Main Allergen causes:
 - House Dust Mite - *usually persistent*
 - Grass Pollen - *usually seasonal*
 - Animal Epithelia (cats, dogs & horses) - *usually episodic*

Who get's Allergic Rhinitis?

- Worldwide epidemic - 500mil & rising
- 25% of Europeans
- 30% of Americans
- 1 in 7 Australians in 2007-08

Allergic Rhinitis ('Hay Fever') in Australia, Canberra, ACT, Australian Institute of Health and Welfare, 2011. <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=1073420514>



Focus on Dust Mites

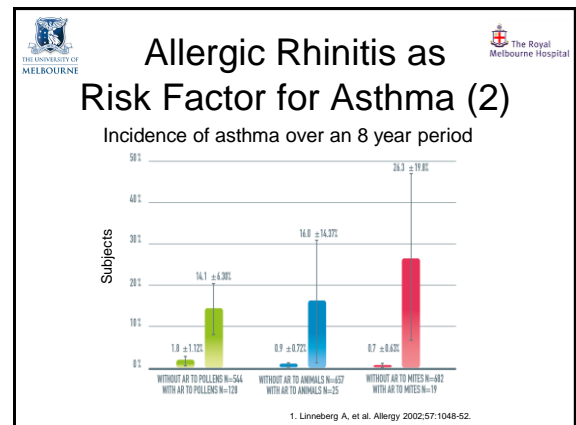
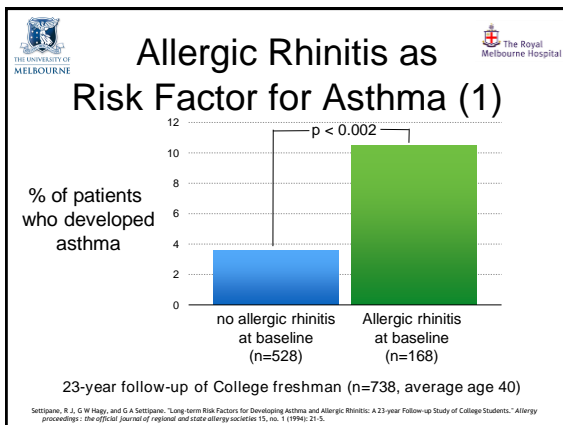
- Usually Persistent (but can fluctuate) during the year.
- Chronicity —> Unrecognised/accepted by patients
- Association with persistent allergic asthma

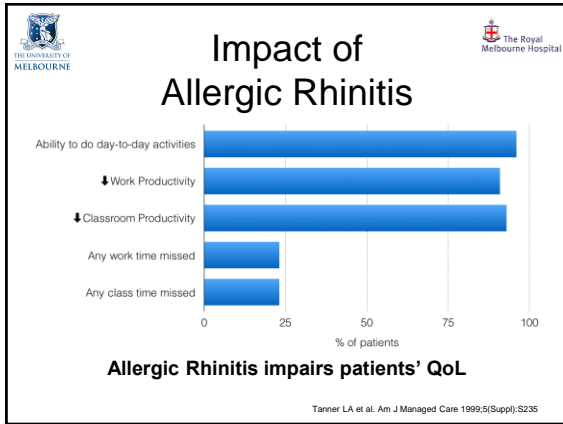
Asthma & Allergic Rhinitis are linked

- Up to 80% asthmatic patients have co-existent allergic rhinitis
- Up to 40% of allergic rhinitis patients have asthma
- United airways hypothesis
 - Same disease, different place?
 - Contiguous organ
 - Same cells / mediators
 - Same medications

Rhinitis
Asthma

Pawankar 2002





What does Allergic Rhinitis look like?

Classical Symptoms

- Rhinorrhea/runny nose
- Sneezing
- Nasal congestion
- typically alternating with nasal cycle
- (if not, ?anatomical issue, polyp, etc)

Unrecognised Symptoms

- Snoring/disturbed sleep
- Mental clouding (inflammatory mediators)
- Tiredness (due to above) —>

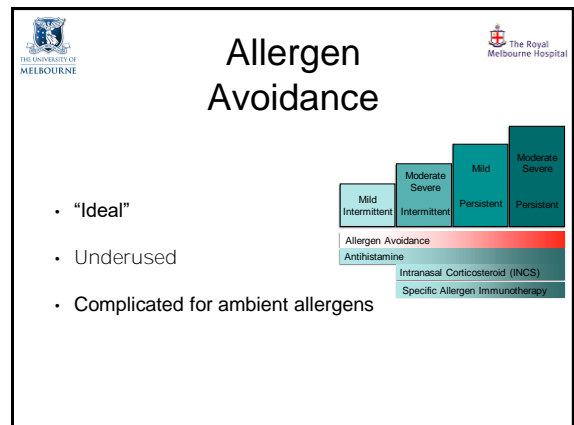
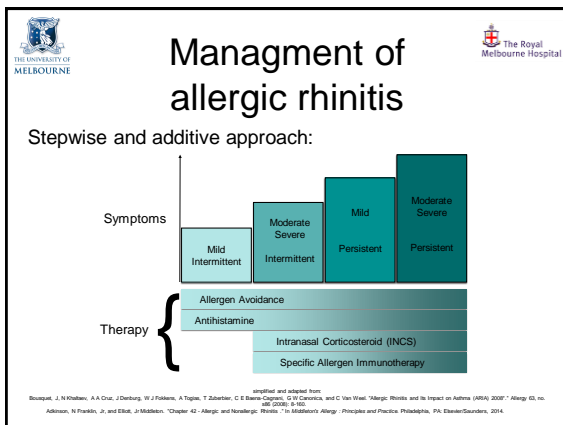
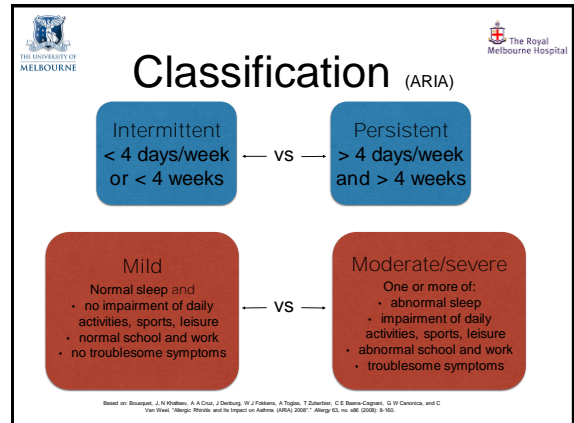
Allergy ORIGINAL ARTICLE

Allergic rhinitis is a risk factor for traffic safety
E. F. P. M. Vuurman¹, L. L. Vuurman², I. Lutgens³ & B. Kramer⁴

Abstract
Background: Allergic rhinitis, during winters, is associated with a high prevalence of snoring, disturbed sleep, and tiredness during workdays. We investigated whether allergic rhinitis is a risk factor for traffic safety.

Keywords: Allergic rhinitis, snoring, sleep, tiredness, productivity

Original Research
The impact of allergic rhinitis on work productivity
Sheryl L Szeinbach^{1*}, Enrique C Seoane-Vazquez^{2*}, Andrew Beyer^{3*}



Removing Carpets and Soft Furnishings

- Reducing/removing carpets and other soft furnishings IS EFFECTIVE
 - But can be expensive and/or impractical
 - Not often feasible for many people
 - May not be enough/temporising measure for some

Artian, L.G. and T.A. Platts-Mills. "The Biology of Dust Mites and the Remediation of Mite Allergens in Allergic Disease." The Journal of allergy and clinical immunology 107, no. 3 Suppl (2001): S406-13.
Nurmatov, U, C.P. van Schoek, B. Hurwitz, and A. Shebb. "House Dust Mite Avoidance Measures for Perennial Allergic Rhinitis: An Updated Cochrane Systematic Review." Allergy 67, no. 2 (2012): doi:10.1111/j.1365-9995.2011.02762.x.

HEPA air purifiers

- HEPA air purifiers → will remove dust mite from the air, but NOT effective in significantly changing symptoms
 - much of dust is "settled", not airborne - so not extracted.
 - not useful in isolation, and costly

Artian, L.G. and T.A. Platts-Mills. "The Biology of Dust Mites and the Remediation of Mite Allergens in Allergic Disease." The Journal of allergy and clinical immunology 107, no. 3 Suppl (2001): S406-13.
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Misconception: Environmental Changes Don't Work (or do they?)

- Special Dust Mite Covers - possibly effective (in children)
 - do reduce measurable dust (as do normal covers)
 - no significant change in symptoms*
 - comfort complaints, and costly

* one study showed a 1 year, 50% (active) reduction in steroid use in asthmatic children

Artian, L.G. and T.A. Platts-Mills. "The Biology of Dust Mites and the Remediation of Mite Allergens in Allergic Disease." The Journal of allergy and clinical immunology 107, no. 3 Suppl (2001): S406-13.
Nurmatov, U, C.P. van Schoek, B. Hurwitz, and A. Shebb. "House Dust Mite Avoidance Measures for Perennial Allergic Rhinitis: An Updated Cochrane Systematic Review." Allergy 67, no. 2 (2012): doi:10.1111/j.1365-9995.2011.02762.x.
Halonen, Susanna, Arno Hefti, Ulla Hakkio, Lars G. Hansson, Frank Nielsen, Soren Pedersen, Ole Osterhalla, Chris Weggeby, and Lars K. Poulsen. "Effect of Mattress and Pillow Encasings on Children with Asthma and House Dust Mite Allergy." The Journal of allergy and clinical immunology 111, no. 1 (2003): 169-76.

Mountain Air

- IS EFFECTIVE
- Much lower Dust mite levels
 - Temperature (low) & Humidity (Low)
 - Much improved Asthma and Rhinitis Symptoms
 - (Hence Alpine sanatoriums)

Spiekstra, F.Th.M., Pw Zuidema, and M.J. Leupen. "High Altitude and House-dust Mites." Br Med J 1, no. 5740 (1971): 82-84.
Rijsbergen-Nouwers, L.H., and E.H. Bel. "High-altitude Treatment: A Therapeutic Option for Patients with Severe, Refractory Asthma?" Clinic of and experimental allergy: Journal of the British Society for Allergy and Clinical Immunology 41, no. 4 (2011): doi:10.1111/j.1365-2222.2011.02763.x.



Efficacy vs Cost

From: Cotloff, Matthew J. "Dust Mites." Collingwood, VIC, Australia: CSIRO Publishing, 2009.

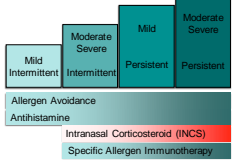
Antihistamines

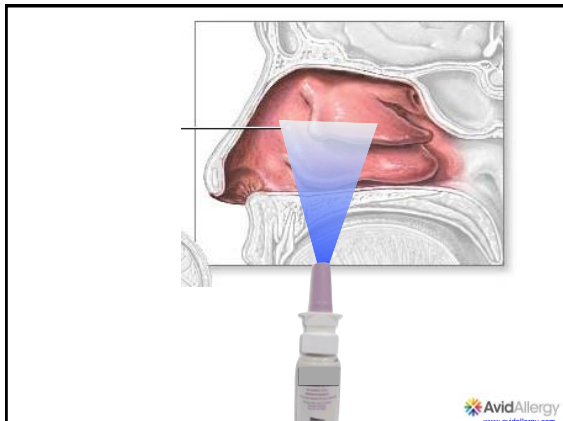
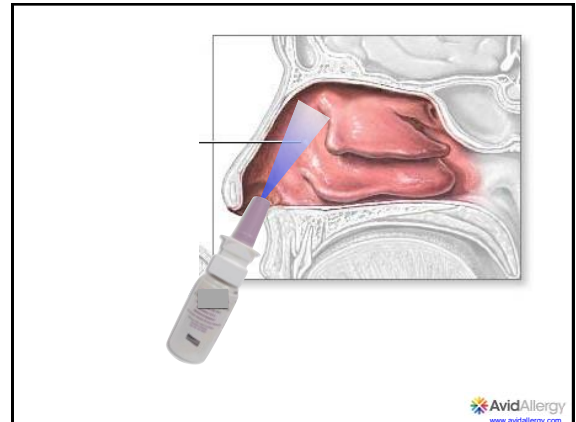
- Very effective for mild symptoms
- Particularly good for intermittent
- Prophylactic on demand
- Non-drowsy* "modern" 2nd gen antihistamines preferred

INCS
Intranasal corticosteroids



 

- Mainstay of Treatment
- “Nose preventer”
- Under-utilised
- Effective for Allergic Rhinitis and Asthma
- Needs pep-talk and education from GP!
 - (takes > week)
 - Technique

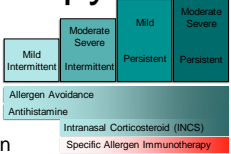






Immunotherapy

- Specific Allergen
- Immunotherapy/desensitisation
- Restores Tolerance —> induces durable improvement in symptoms and reduction in medication use
- Under-utilised





Long History of Immunotherapy Use

- Over 100 years
- Both AR and AA
- Improving evidence base - especially as new immunotherapy types come on to market
- Closest thing to a cure

Why is immunotherapy under-utilised?

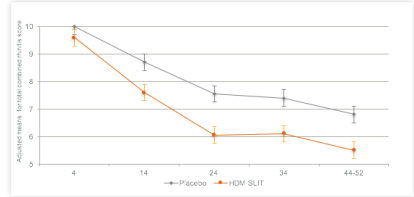
- Mainly lack of awareness
- Previously very specialised diagnostics
- Minimal allergy teaching and exposure in medical school
- Not-reimbursed by PBS

New options in Dust Mite Immunotherapy

- Injectable preparations
 - Short and "0 Day" up-dosing schedules
 - Monthly injections with GP
- Tablet preparations
 - Sublingually dissolving tablets
 - Daily dose under tongue at home

Time to benefit

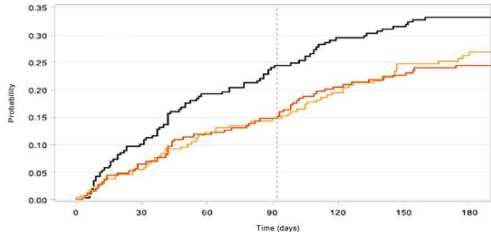
- in double blind placebo controlled trials
- statistically significant benefit after 3 months



Adapted from: Demoly P, Pascal W, Walraud E, Cortes R, Vibeke B, Lene T, Jörg K, et al. "Effective Treatment of House Dust Mite-induced Allergic Rhinitis with 2 Doses of the SQ-HDM SLIT-tablet: Results From a Randomised Double-blind, Placebo-controlled Phase III Trial." *The Journal of allergy and clinical immunology* (2015) doi:10.1016/j.jaci.2015.06.036.

Also demonstrable Asthma control

Risk of a first moderate or severe asthma exacerbation



Adapted from: Vichow, J Christian, Vibeke Backer, Piotr Kuna, Luis Prieto, Hendrik Nolte, Hanne Hedegaard Villesen, Christian Ljerring, Bente Riis, and Frederic de Blay. "Efficacy of a House Dust Mite Sublingual Allergen Immunotherapy Tablet in Adults with Allergic Asthma: A Randomized Clinical Trial." *JAMA* 315, no. 16 (2016): doi:10.1001/jama.2016.3964.

Suspect House dust mite allergy

- Persistent Allergic Rhinitis symptoms
- Persistent Asthma
- Persistent nasal congestion/loss of smell

Subdue House dust mite allergy

- Educate and Encourage Allergen Avoidance
- Recommend - enthuse regular "Nose Preventers" (and technique!)
- Help understand time course & effects of therapy
- May be all that is needed to effectively "fix" mild - moderate cases and significantly improve asthma

Solve House dust mite allergy

- Consider immunotherapy in all patients with persistent symptoms
- Consider referral for specialist review - especially for severe and in setting of incompletely controlled asthma [NB: asthma must be controlled before commencement]
- Co-manage ongoing immunotherapy treatment with specialist and monitor improvements over time.



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