

The Impact of Allergy on the occupants inside a building

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Aim of the presentation AllergyUK

- Outline what allergy is?
- Understand indoor air quality and the importance of ventilation in building design
- Make links between allergic disease and allergic triggers
- Adverse effects on occupants health.

26 years of helping people who live with allergy



- In 1991, the British Allergy Foundation was formed by leading allergists to improve awareness, understanding and management of allergic disease
- Primarily a patient information Helpline - helping people affected by allergy, sensitivity and intolerance for over 25 years
- Established in 1995 our Seal of Approval is a globally recognised product endorsement, currently used in over 70 countries by over 95 companies, on a wide variety of products
- Allergy Friendly Product Award established in 2001
- In 2002 we changed our operational name to become **Allergy UK.**

We make a difference by:



- Campaigning and raising awareness of the impact that allergens can have on health
- Highlighting health problems related to poor IAQ, such as respiratory problems and allergy, which can cause significant morbidity and mortality
- Addressing these concerns with key people involved in the provision of materials and systems for new build properties as well as renovations and/or decorating of existing buildings.

Allergy UK's mission is to ***'raise the profile of allergy at all levels'***

Making a difference in 2015/16



- Our Helpline supported around 8,000 callers - an increase of 25% in comparison to the previous year
- Over 200 Healthcare Professionals attended our educational Masterclasses
- Over 700,000 web page visits per month
- Around 7,000 followers on Twitter
- Around 13,000 likes on Facebook
- There were over 266million opportunities to see, read or hear about Allergy UK in the national media last year.

The impact of allergy in the UK



- 21 million adults in the UK suffer from at least one allergy with 10 million suffering from more than one type of allergy
- 50% of children in the UK suffer from some form of allergic disease
- Diagnosed allergic rhinitis and eczema in children have both trebled over the last three decades
- 1 in 50 children suffer from a nut allergy
- 40% of children and 30% of adults have one or more allergic condition (i.e. asthma, eczema, hay fever)
- The UK is one of the top three countries in the world for the highest incidence of allergy

Statistics can be found at allergyuk.org/statistics

www.allergyuk.org Helpline 01322 619 898

What is allergy?



- It is driven by the immune system
- Is a multi system/organ disease
- Can affect the respiratory, gastro intestinal, cardiovascular, eyes and skin
- Can come on suddenly or be persistent
- Allergic reactions can be mild, moderate or severe
- Undiagnosed, untreated allergy has the potential to cause serious health problems and affects quality of life
- Allergic conditions need to be recognised early, diagnosed and managed appropriately.

Effects of indoor air pollutants

- Most people in N America and Europe spend about 90% of their time indoors
- Levels of air pollutants and allergens are often higher indoors
- Direct effects of air pollutants include irritant effect on airways
- Air pollutants thought to modify allergenic proteins
- Health problems related to this include asthma and allergy.

The indoor environment

- Collected data has led to an increasing evidence base suggesting linkages between indoor dampness, fungi, and human health
- A series of epidemiological studies examining the role of housing and the indoor environment have revealed the importance of dry environments to limit the risk of asthma and other immune system-related diseases
- The majority of adverse health effects kept at bay by maintaining a relative humidity indoors between 40–60 %

Increasing problem



- Changes in house design etc.
- Reduced ventilation from energy conservation drives
- Central heating
- Carpets
- Cool wash detergents
- Increased range of sources e.g. DIY - many products can be irritants
- Increased use of cleaning products, candles etc.

“There are strong associations between indoor fungi and initiation, promotion, and exacerbation of allergic respiratory disease.”

(Indoor Fungal Exposure and Allergic Respiratory Disease. N J Osborne et al 2015)

Mould allergy



Aspergillus fumigatus is a significant contributor to the millions of individuals globally who develop respiratory and nasal allergies.

Colonization of the airways of adults and children by the fungus can lead to severe asthma with fungal sensitisation, which is estimated to affect between 3.25 and 13 million adults worldwide, and contributes to the 100,000 asthma deaths annually.

Allergy to fungi



- Fungi are present in all homes
- Can be present in carpets, wall papers, mould on windows, walls, fridges, bathrooms etc.
- Different types tolerant of a wide range of conditions
- Many allergenic
- They can cause asthma, make asthma worse, make eczema worse.

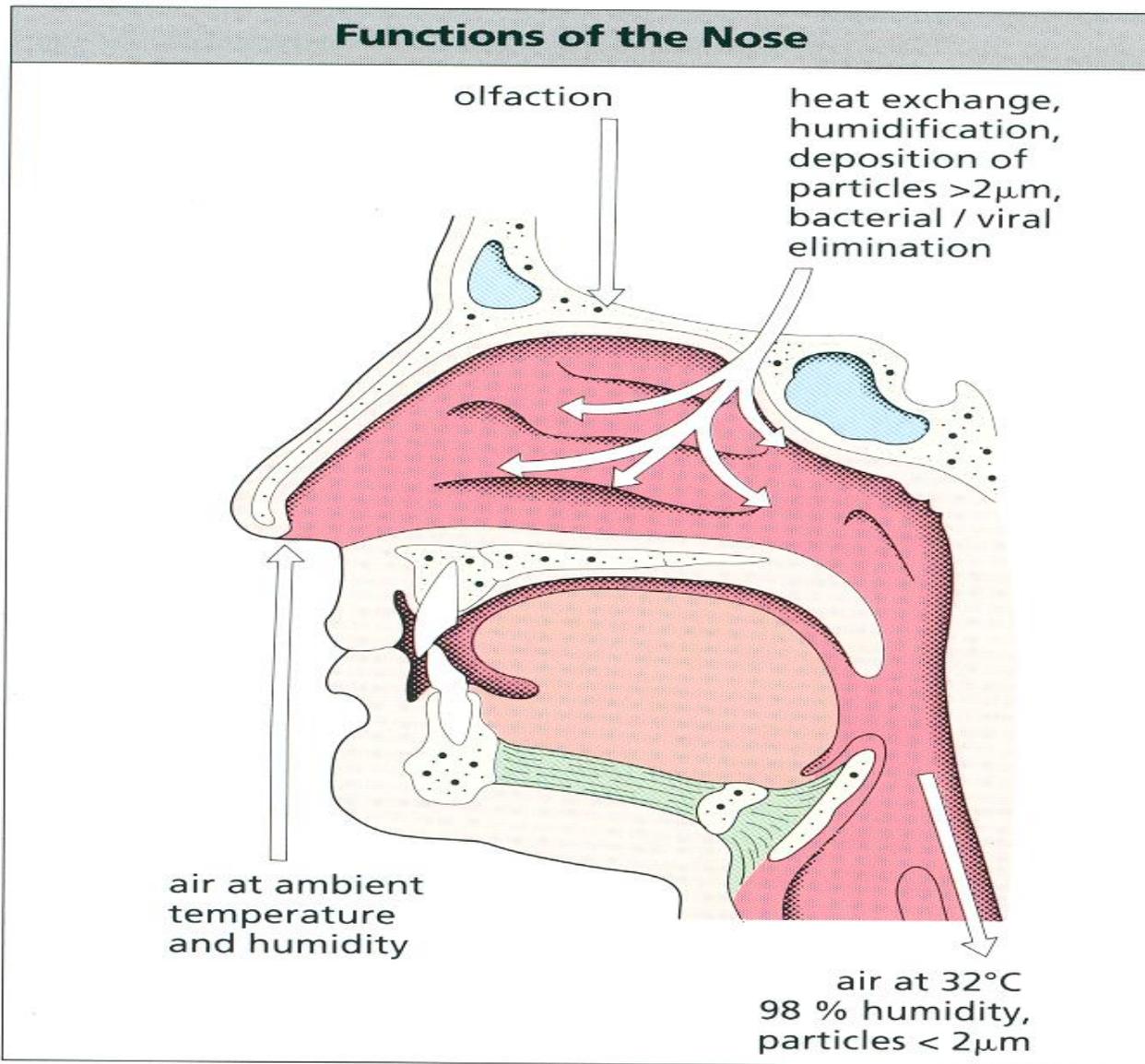


Fig. 17.11 Functions of the nose in warming, humidifying, and filtering inspired air.

Allergic rhinitis the medical term for hay fever symptoms

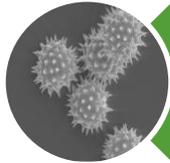


- Allergic rhinitis is an allergic disease involving inflammation of the inner lining of the nose
- This allergic inflammation causes symptoms of sneezing, itchy and runny nose and congestion
- Often symptoms affecting the eyes (allergic conjunctivitis) also occur with itchy, red, water eyes
- Hay fever can be seasonal or year round (perennial)
- Affects 1 in 5 adults and children.

Allergic Rhinitis and Asthma:



Link between the upper and lower airways



Allergic rhinitis can make asthma harder to control (80% of asthmatics also have allergic rhinitis)



One airway one disease (Nose is the gateway to the respiratory system)



The triggers of allergic rhinitis may also be asthma triggers

Asthma



- Asthma is an allergic disease which involves allergic inflammation of the airways. The chronic inflammation in the airways results in the airways being over reactive
- Asthma is common in adults and children (In the UK 1:11 and 1:12 have asthma)
- Individuals with asthma are more likely to have other allergic diseases such as hay fever, eczema and a food allergy
- Adult onset of asthma often related to occupation
- Having asthma and a food allergy increases the likelihood of having a severe reaction to the food the person is allergic to and also more likely to have a severe asthma attack.

Respiratory allergies

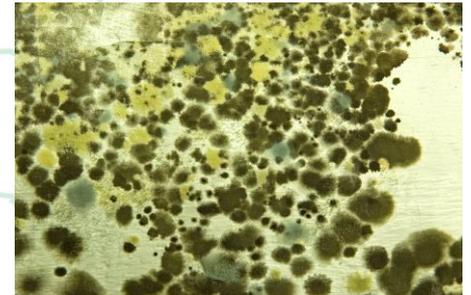
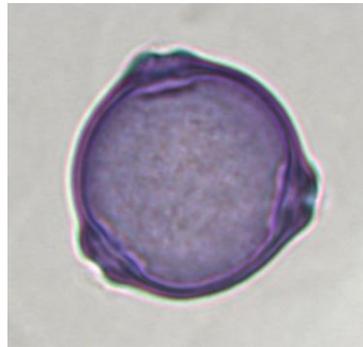


Respiratory allergies are caused by allergens in the environment such as:

- Pollens
- House dust mites
- Pets
- Moulds

Typical conditions include:

- Hay fever (Seasonal Rhinitis)
- Perennial rhinitis
- Asthma



Environmental exposures

- Asthma in children is driven by airborne allergens (pollen, mould, dust mite, pet dander)
- Occupational environment
- School/University
- Home environment
- Social
- Travel



Asthma Triggers

Indoor allergens



- House dust mite allergen is protein in the faecal particles (poo) - it is microscopic & becomes fine dust
- This penetrates all bedding, carpets & upholstery & also is found in dust
- A two year old pillow will have up to 10 million house dust mite inhabitants
- The HDM & its droppings account for 10% of the weight of this pillow!
- House dust mites are destroyed at temperatures above 60degrees centigrade only.

Every breath we take: the lifelong impact of air pollution



- A report from the RCP and the RCPCH examines the impact of exposure to air pollution across the course of a lifetime.
- We must strengthen our understanding of the key risk factors and effects of poor air quality in our homes, schools and workplaces.
- A coordinated effort is required to develop and apply any necessary policy changes.
- Quantify the relationship between indoor air pollution and health.

Recommended changes:

- Improved government regulation
 - Building regulations need to consider health and wellbeing as a priority over eco and energy efficiency policies, as current regulations have potential to increase indoor pollutants levels.
- Improved guidance
 - For manufacturers and providers of construction/finishing materials/products, ventilation systems, double glazing, etc. which are used in the home, need to be aware of and consider the effects these are having on health, not just how eco-friendly and energy efficient the home/building can be made.

Influencing decision makers

- Allergy UK is active in campaigning and contributing to legislation and regulation aimed at improving the safety and quality of life of those affected by allergy including:
 - National Allergy Strategy Group
 - AAI in Schools Campaign
 - All Party Parliamentary Group for Allergy
 - Schools guidance for medical conditions in Wales
 - Prescription Charges Coalition
 - Improving Indoor Air Quality
 - European Federation of Allergy and Airways Disease
 - Patient Organisations (EFA)

Thank you

Any questions?

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