

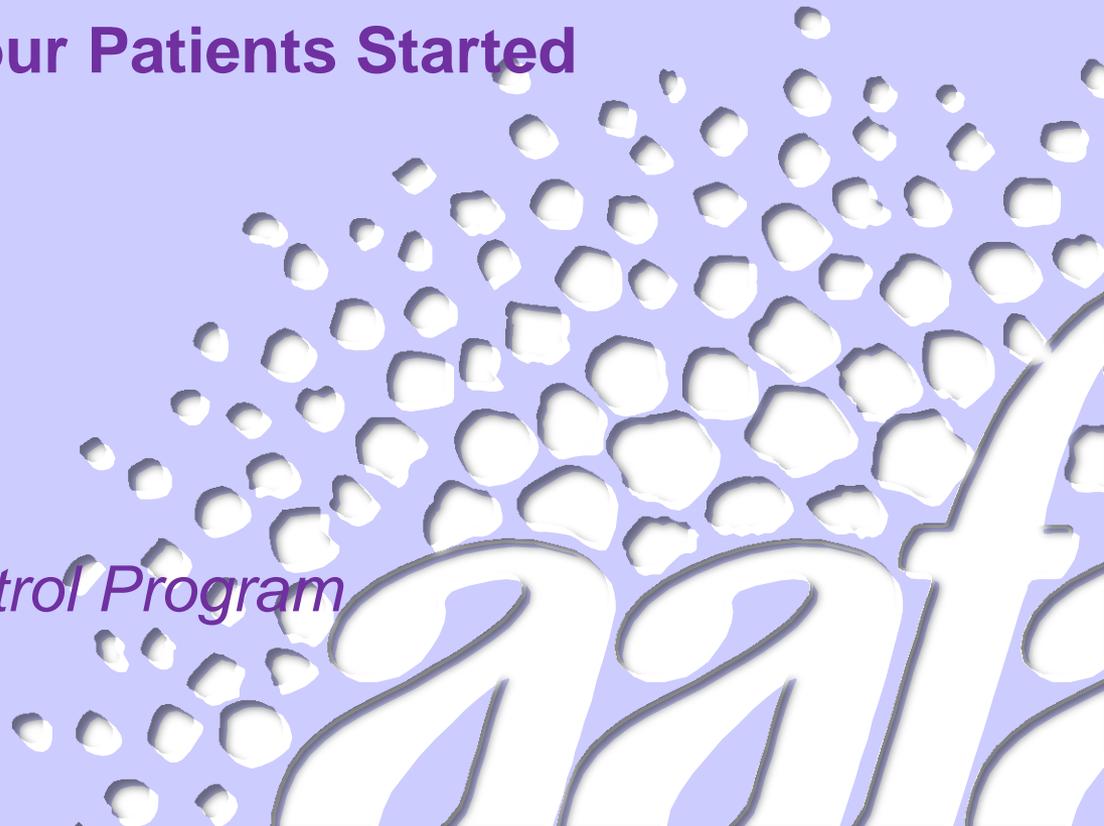


Asthma and Allergy
Foundation of America

Environmental Control for Asthma

Part 1 of 2: Getting Your Patients Started

Montana Asthma Control Program
January 27, 2011



WELCOME

- [Insert Info or Comments from the Montana Asthma Control Program]

Host

Jeanne Cannon, RHIA, CPhT, CWPM
Quality Improvement Coordinator
Montana Asthma Control Program

Speaker

Maureen George, PHD, RN, AE-C
Assistant Professor of Nursing
University of Pennsylvania School of Nursing

Moderator

Brian Oliver, MBA
Brand Manager
Asthma and Allergy Foundation of America
asthma & allergy friendly™ Certification Program

AGENDA

1. Overview of Asthma and Allergic Disease

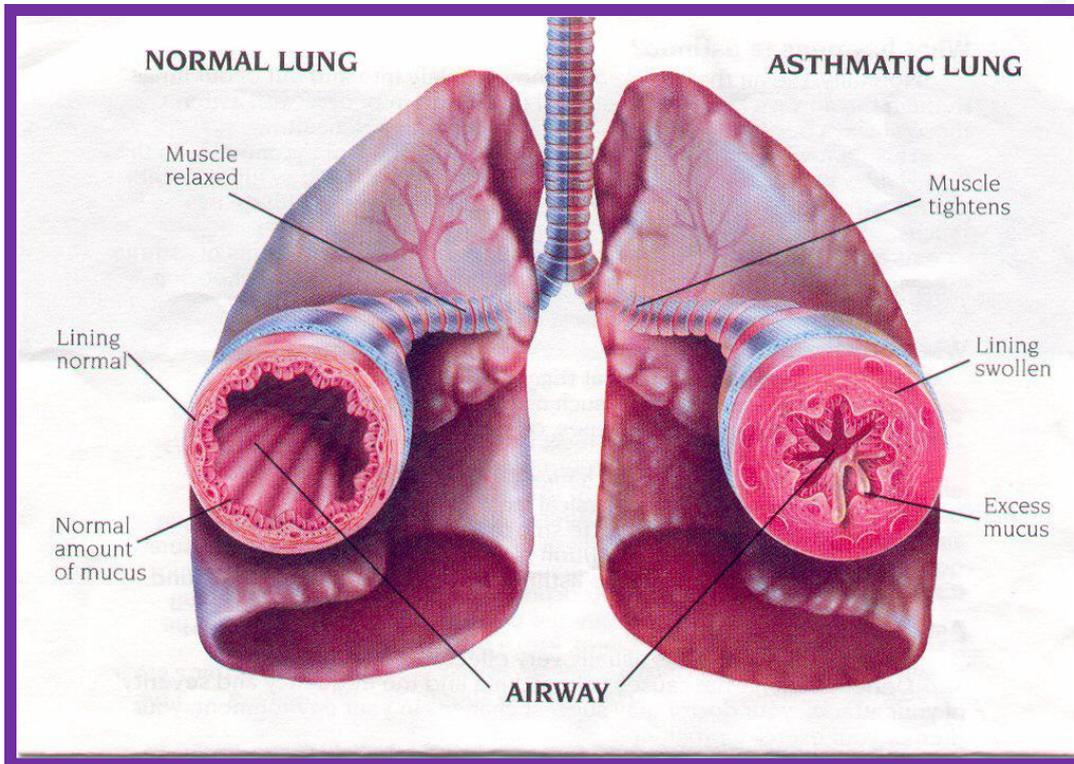
- a. Asthma Defined
- b. Statistics, Demographics and Prevalence
- c. Four Components of Asthma Care from the NHLBI Expert Panel Report 3- 2007 (EPR 3)

2. Allergen Avoidance and Environmental Control

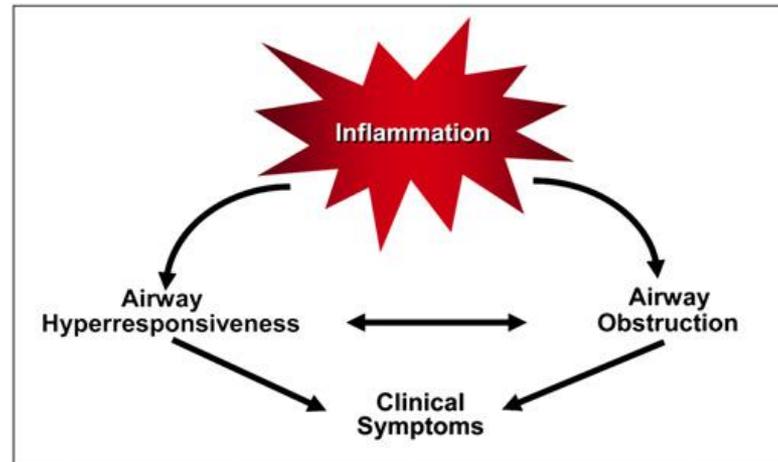
- a. Environmental Triggers
- b. Multifaceted Approach to Avoidance and Control
- c. Need for 3rd Party Certification of Control Products
- d. Review of Resources

3. Questions and Answers

WHAT IS ASTHMA?



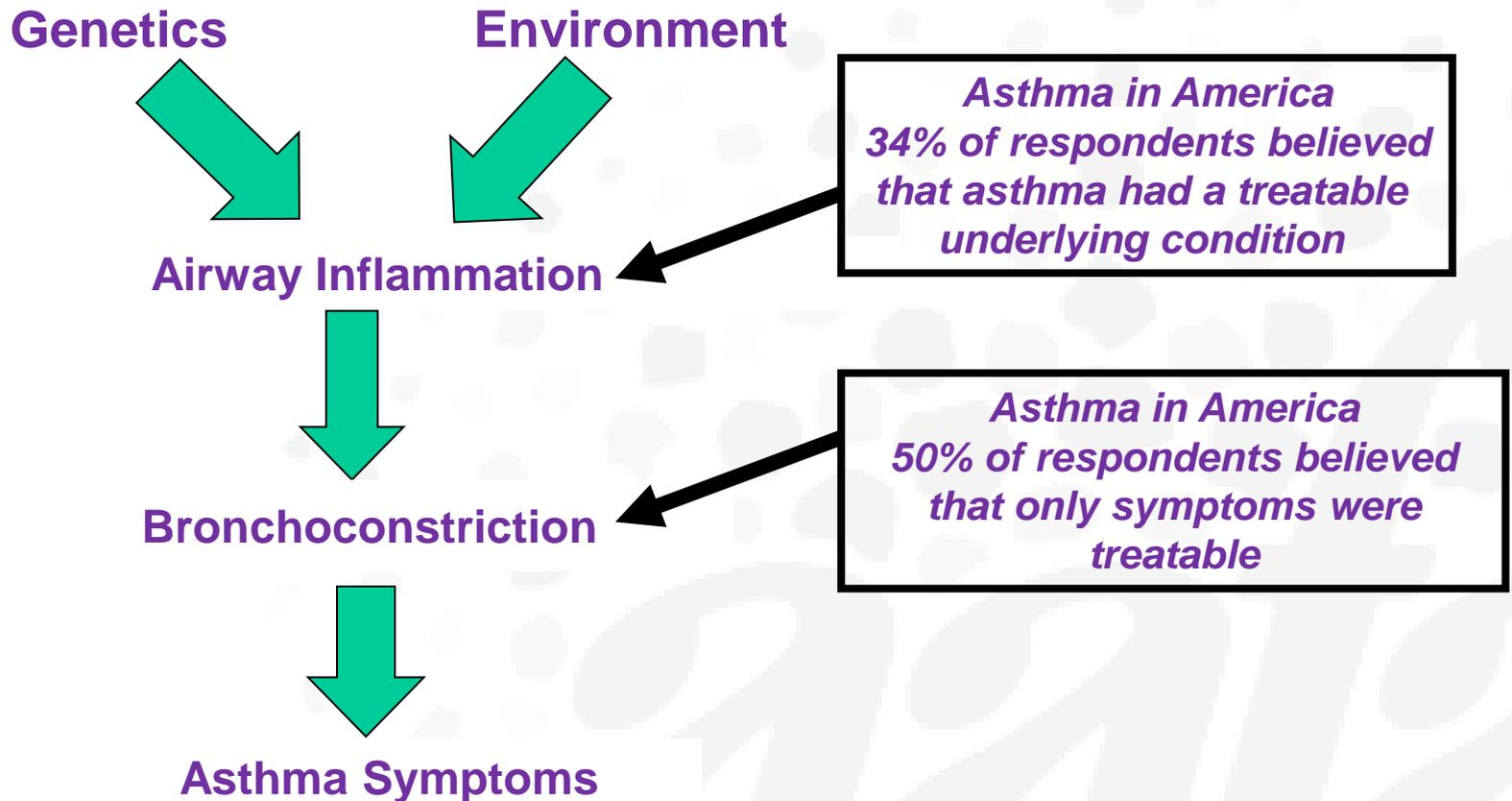
ASTHMA DEFINED



Asthma is a chronic inflammatory disease of the airways with:

- Airway obstruction that may or may not be reversible either spontaneously or with medication
- Airway inflammation caused by many cellular components
- Increased airway hyper responsiveness
- Airway remodeling

DEVELOPMENT OF ASTHMA



ASTHMA SYMPTOMS

- Cough
- Wheeze
- Shortness of breath
- Chest tightness
- Mucus production

These symptoms are worse at night

WHEN YOU SEE:

- Chronic cough
- Reactive airway disease
- Recurrent pneumonia
- Wheezy bronchitis
- Bronchiolitis
- Recurrent croup

THINK ASTHMA!!

ASTHMA STATISTICS

In the United States:

- 16.4 million or 7.3% adults have asthma
- 7 million or 9.4% children have asthma

Asthma accounts annually for:

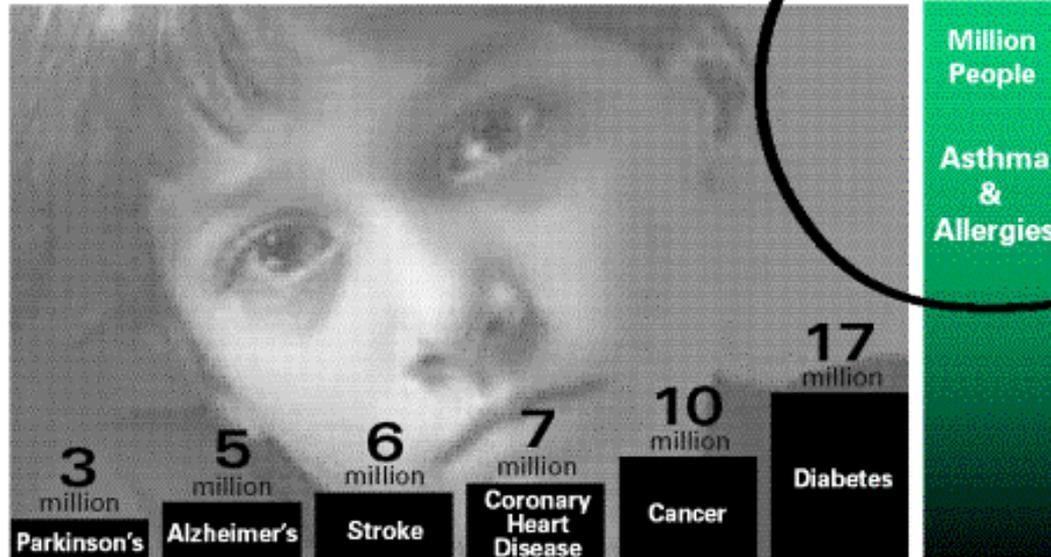
- 13.3 million outpatient visits to private physician offices, emergency departments & hospital clinics
- 440,000 hospitalizations
- 3,780 deaths

National Center for Health Statistics, Summary Health Statistics 2008

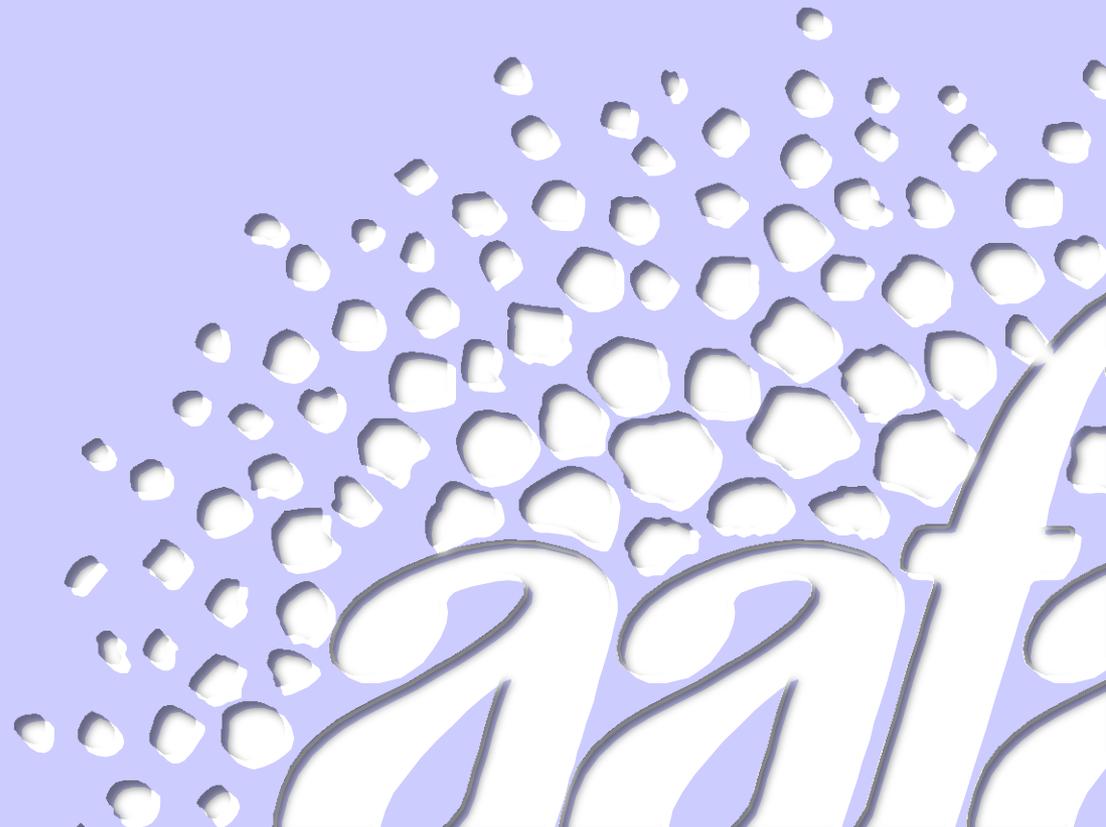
<http://www.cdc.gov/nchs/FASTATS/asthma.htm>

ASTHMA PREVALENCE

Asthma and Allergies
strike 1 out of 5 Americans



**EXPERT PANEL REPORT 3:
GUIDELINES FOR THE
DIAGNOSIS & MANAGEMENT OF
ASTHMA**



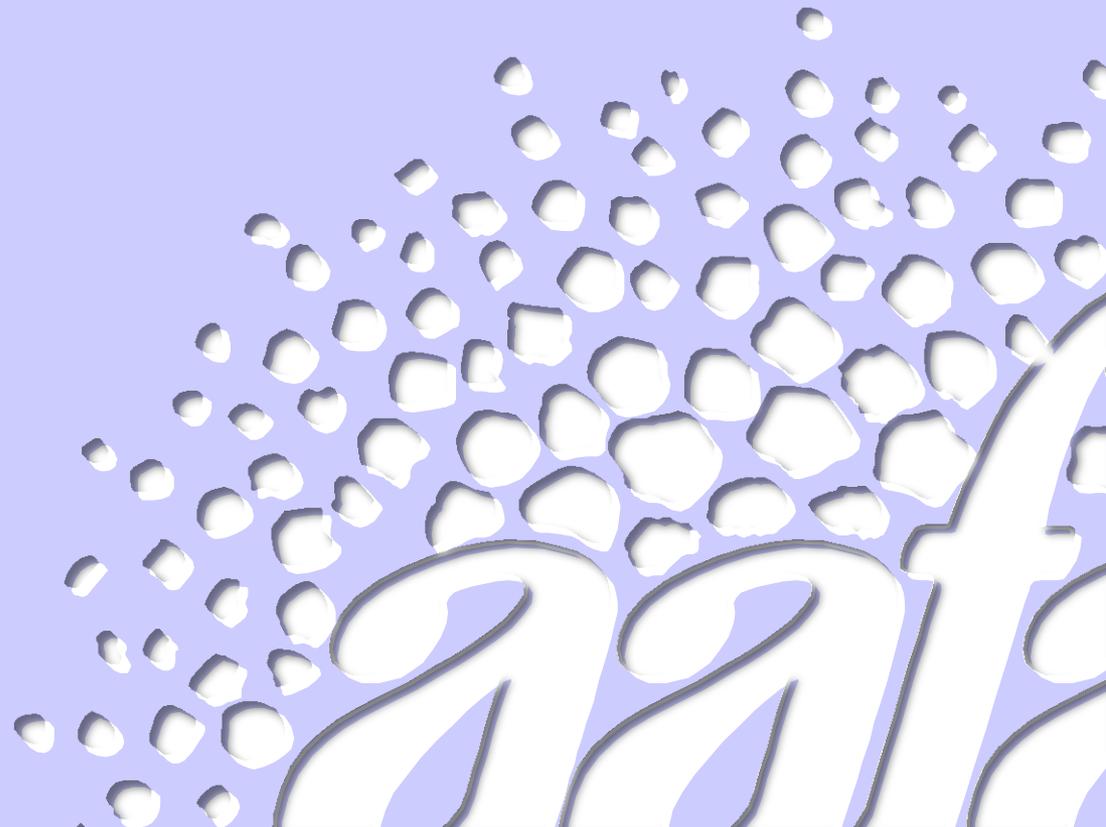
EPR3 GUIDELINES

Four Components of Asthma Care

- 1) Measures of Asthma Assessment & Monitoring
- 2) Education for a Partnership in Asthma Care
- 3) Medications
- 4) **Control of Environmental Factors** & Co Morbid Conditions that Affect Asthma

EPR3 Summary Report 2007

CONTROL OF ENVIRONMENTAL FACTORS

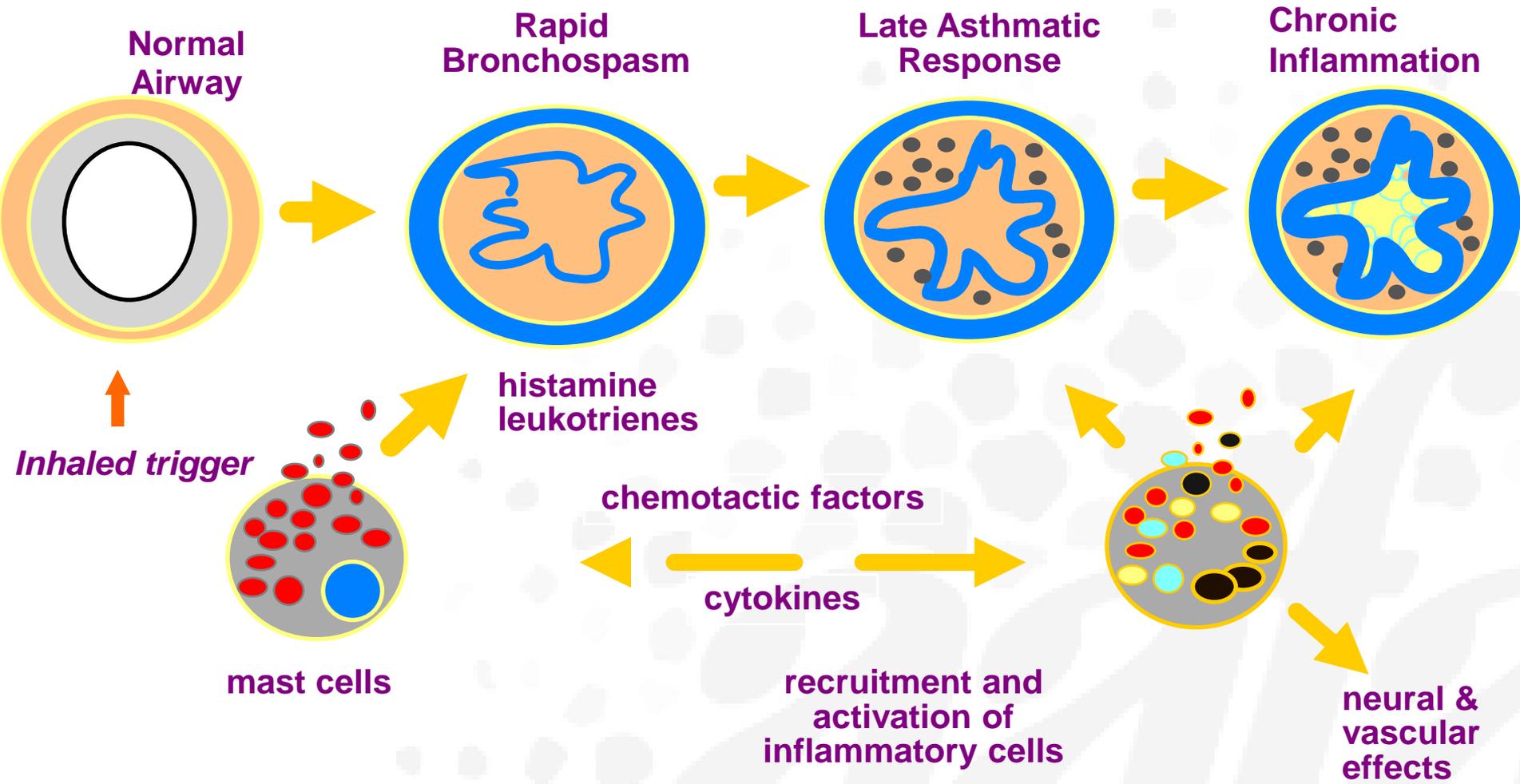


CONTROL OF ENVIRONMENTAL FACTORS

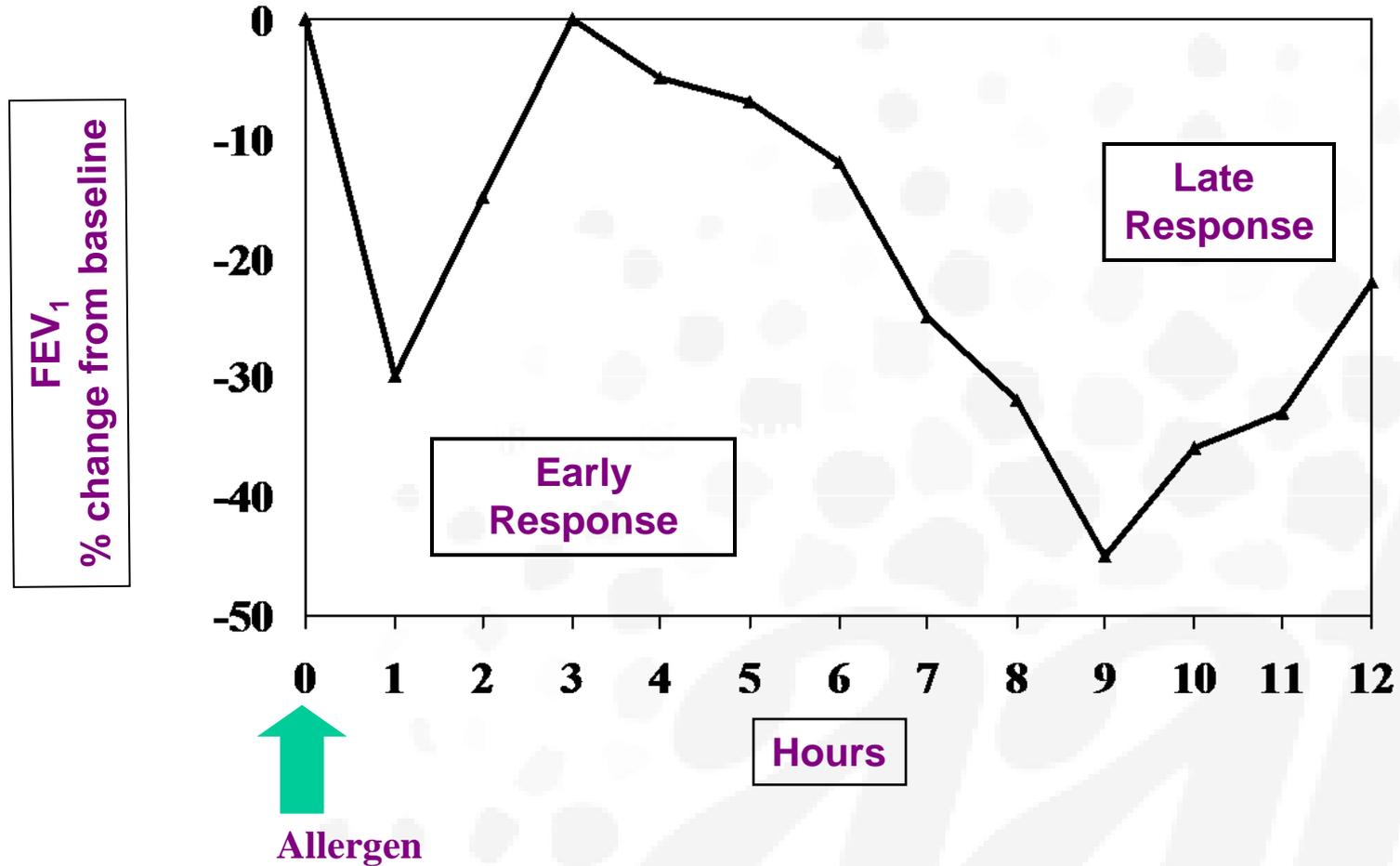
What is “Environmental Control” ?

- Exposure to **allergens** or **irritants**, known as “triggers”, has been shown to increase asthma symptoms and precipitate asthma exacerbations.
- Eliminating or reducing the sources of triggers, and avoiding exposure to triggers is called “**Environmental Control**,” and it is a cornerstone of modern asthma management.

ASTHMA PATHOPHYSIOLOGY



EARLY AND LATE ASTHMATIC RESPONSE



CONTROL OF ENVIRONMENTAL FACTORS

- Allergens, unlike irritants, elicit an allergic reaction from the body, however exposure to either can increase the risk of asthma symptoms

Allergens

- **Dust mites**
- **Pet dander**
- Pollen
- **Rodents**
- **Mold**
- Natural oils
- Organics, etc.

Irritants

- Smoke
- Strong fumes
- Pollution
- Ozone
- Chemicals
- Petroleum, etc.
- **VOCs**

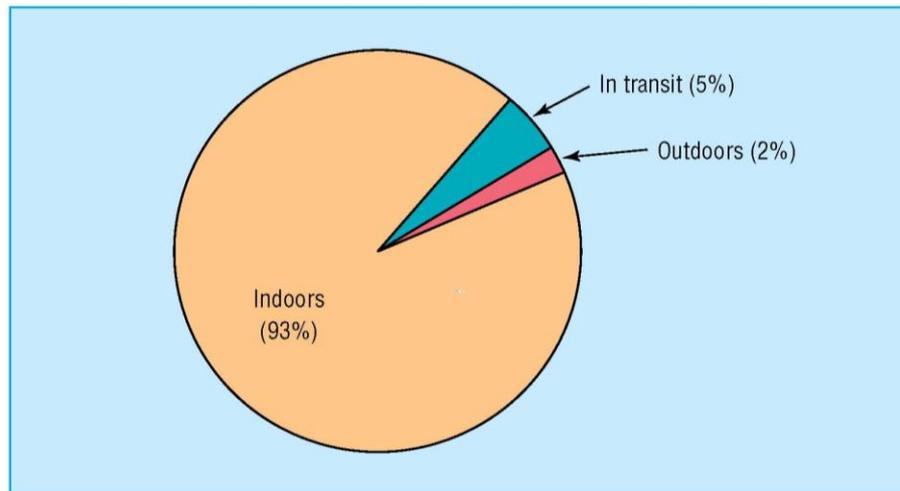


CONTROL OF INDOOR ENVIRONMENTAL FACTORS

- The most logical area to focus on is Indoors

Why?

Because we spend the majority of our time Indoors



Amount of time that most Americans spend indoors, outdoors, and in transit

BMJ VOLUME 316 4 APRIL 1998

VOLATILE ORGANIC COMPOUNDS (VOCs)

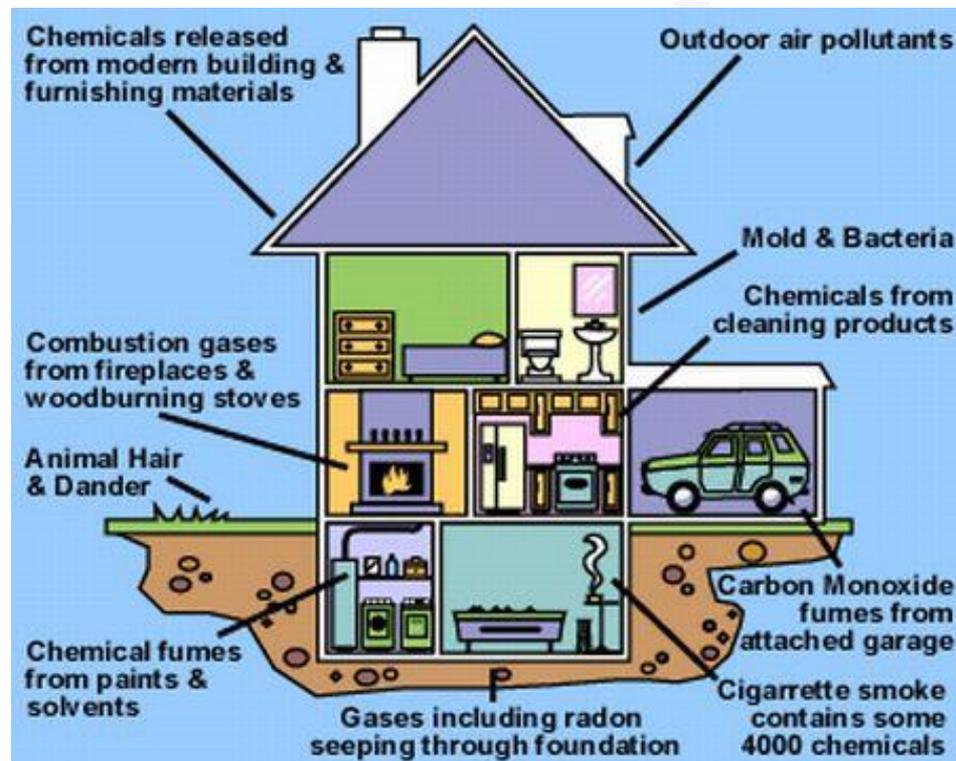
- Gases from certain solids or liquids commonly found around the house
- Examples:
 - Aldehydes (cleaning products and manufactured wood)
 - Benzenes (lubricants and detergents)
 - Chlorobenzenes (pesticides)
 - Polychlorinated biphenyl (paint and sealants)
 - Toluene (lacquers and disinfectants)
 - Trichloroethane (aerosols)
 - Xylene (fuels and varnishes)



EPA Tools for Schools website
<http://www.epa.gov/iaq/schools/>

SOURCES OF INDOOR ALLERGENS AND IRRITANTS

- Concentrations of VOCs Indoors can be 10 times higher than Outside



CONTROL OF INDOOR ENVIRONMENTAL FACTORS

Creating an Indoor Environmental Control and Allergen Reduction Plan

How do patients get started?



CONTROL OF INDOOR ENVIRONMENTAL FACTORS



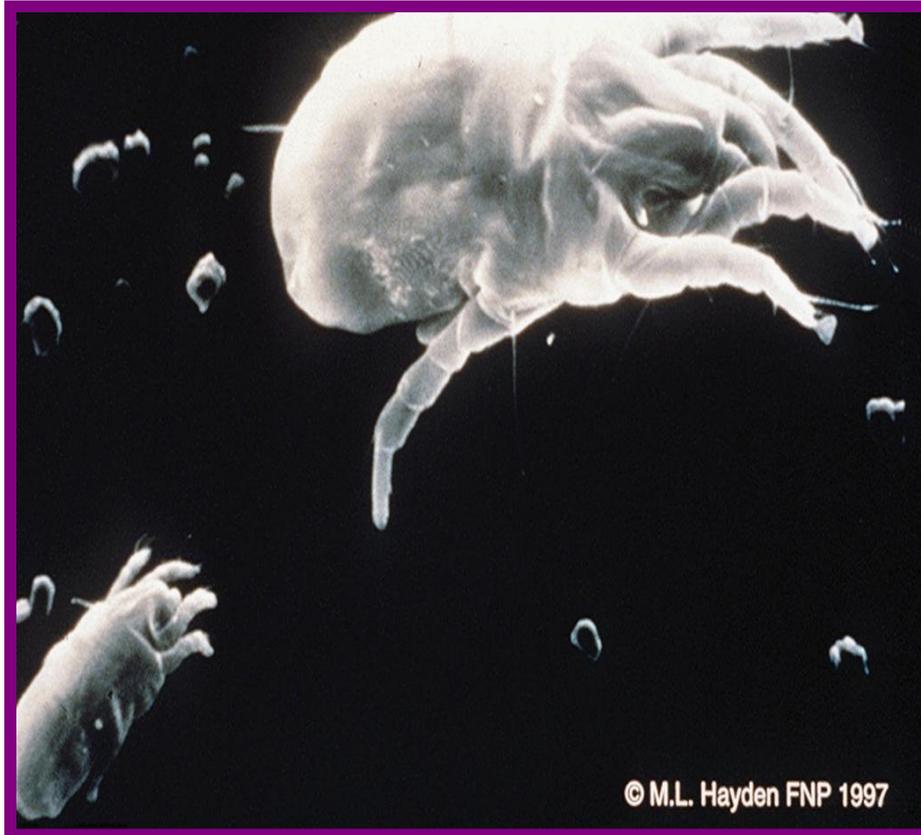
- Begin in the in the Bedroom

We spend 1/3rd of our lives there

The over all scope of the task can seem daunting to patients and caregivers.

By creating a plan that addresses the most important areas in a prioritized manner, the process seems much more manageable

HOUSE DUST MITE CONTROL MEASURES



- Encase the pillows & mattress in an allergen proof cover that are verified by a 3rd party to be a proven allergen barrier
- Wash bedding and stuffed animals weekly with hot (>130°) water or put in hot dryer
- Reduce clutter in bedroom
- Avoid upholstered furniture

HOUSE DUST MITE CONTROL MEASURES (cont.)

- Reduce indoor air humidity to 40-45%
- Lower indoor temperatures to $< 70^{\circ}$ when possible
- Remove carpets
- Keep surfaces in bedroom “wipeable”
- Vacuum with HEPA filtration and/or ‘microfiltration’ bags

COCKROACH CONTROL MEASURES



- Eliminate food source: meticulous cleaning & air tight food storage
- Eliminate moisture: Repair leaks, wrap pipes & improve ventilation
- Place large bait traps in kitchen and bathroom away from children & pets

ANIMAL ALLERGEN (DANDER) CONTROL MEASURES



- Remove furry or feathered animals from the home
- Keep animals out of the bedroom
- A true HEPA air filter may be helpful
- Allergen can remain long after animal is removed

MOLD CONTROL MEASURES



Indoor

- Dehumidify
- Clean moldy areas with soap and water solution
- Dry clothing before storing in closet, especially shoes
- Vent clothes dryer to outside
- Remove source of mold if possible
- Avoid carpet on cement

CONTROL OF INDOOR ENVIRONMENTAL FACTORS

Creating an Environmental Control and Allergen Reduction Plan



Important to note:

Effective allergen avoidance requires a multifaceted, comprehensive approach; individual steps alone are generally ineffective

TOOLS FOR CONTROL OF INDOOR ENVIRONMENTAL FACTORS

Bedding

This includes pillows, mattress covers, encasements, comforters

Suggested Criteria:

- It is a barrier to allergen.
- Allergen that accumulates can be removed by washing.
- It has been tested for sensitizing or allergenic chemicals such as:
 - Formaldehyde
 - Toluene
 - Volatile organic compounds
 - Pesticides
 - Azo Dyes/Allergenic dyestuffs*
- It is manufactured from a breathable fabric.
- The quality of construction and materials used allows it to withstand the recommended washing frequency.

TOOLS FOR CONTROL OF INDOOR ENVIRONMENTAL FACTORS

Vacuum Cleaners

Suggested Criteria:

- It removes a specified and significant amount of allergen from carpeting.
- Allergen that is removed is retained within the vacuum cleaner.
- The removal of the allergen is as a result of the action of the vacuum cleaner and the allergen is not simply re-distributed.
- The vacuum cleaner does not experience a reduction in allergen pick-up in the presence of a partly filled bag (or receptacle).
- The operator is not excessively exposed to allergen upon bag (or receptacle).

TOOLS FOR CONTROL OF INDOOR ENVIRONMENTAL FACTORS

Air Cleaners

Suggested Criteria:

- It removes a specified and significant amount of allergen from the air.
- Allergen that is removed from the air is retained within the air cleaner.
- The removal of the allergen is as a result of the action of the air cleaner and the allergen is not simply re-distributed.
- It does not produce ozone.

TOOLS FOR CONTROL OF INDOOR ENVIRONMENTAL FACTORS

Washing Machines

Suggested Criteria:

- It reduces the total allergen burden of contaminated items
- It induces mite mortality through the attainment of elevated temperatures
- It achieves target temperatures for a set period of time
- It does not produce ozone

CONTROL OF ENVIRONMENTAL FACTORS

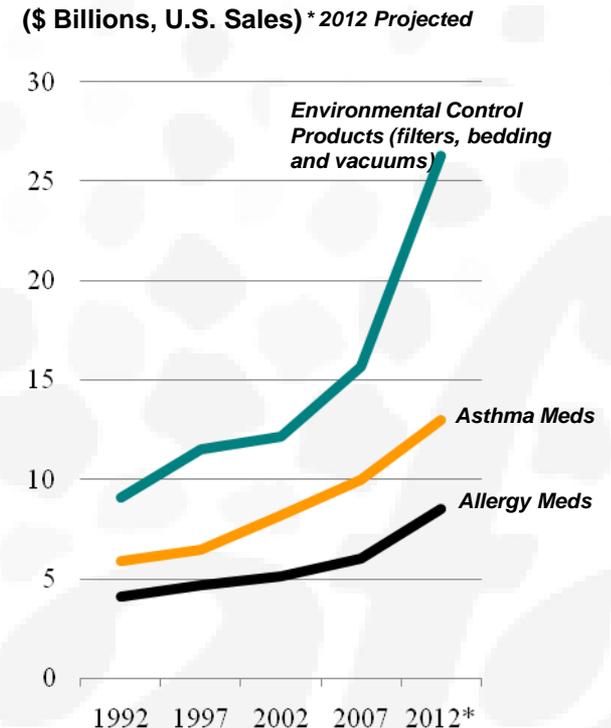
Creating an Environmental Control and Allergen Reduction Plan

In the Bedroom:

- Use certified allergen barrier bedding
- Wash sheets once a week in 130 degree+ water
- Never allow pets on the bed
- Never allow wet or moist clothing to pile up
- Use a certified air cleaner
- Keep pet sleeping areas out of the bedroom
- Replace mattresses every 10 years, pillows every 2 years
- Vacuum floors and mattresses weekly

ASTHMA & ALLERGY MARKETPLACE

- **\$10 Billion Annually on Asthma Meds**
- **\$6 Billion Annually on Allergy Meds**
- **Plus “Environmental Control” products:**
 - ✓ *Air filters*
 - ✓ *Bedding products*
 - ✓ *Vacuum cleaners*
 - ✓ *And others...*
- **More “allergy benefit” claims than ever**



SOURCE: U.S. Census Bureau Economic Census; The Cost of Asthma and Allergies in America - National Pharmaceutical Council (NPC) and AAFA Joint Report; BCC Research; Packaged Facts, Inc.; Mintel International Group

WHAT THE EXPERTS SAY

- **Third International Workshop on Asthma & Allergies, 1997**

- *“Appropriate standards for products for allergen avoidance should be developed by industry or consumer agencies.”*
- *Currently there is little or no regulation governing claims.”*
- *Products bearing “allergy free” or “hypoallergenic” claims are not subject to standardized testing.*

ABOUT AAFA



Asthma and Allergy
Foundation of America

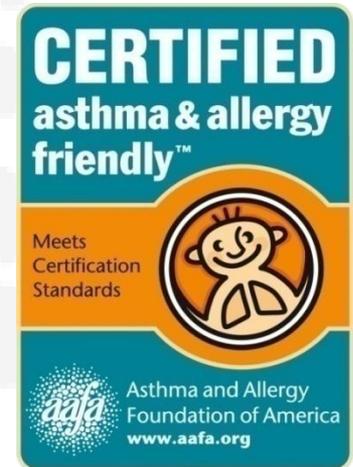
- **Largest, Oldest Asthma/Allergy Consumer Group**
- **Nonprofit Charity Founded 1953**
- **Mission: Education, Advocacy and Research**
- **9 Regional U.S. Chapters, 100 Support Groups**



THE **asthma & allergy friendly™** CERTIFICATION PROGRAM

Experts recommend having a good plan for allergen avoidance, and using the right kinds of tools to remove and reduce exposure to indoor triggers.

The Asthma and Allergy Foundation of America (AAFA) has created a new resource for people who are concerned about allergens in the home. AAFA has partnered with the international research and testing organization Allergy Standards Limited (ASL) to test and certify household products **asthma & allergy friendly™**.



WHY A CERTIFICATION PROGRAM?

- **Consumers Demanding Better Information**

Manufacturer claims not trustworthy

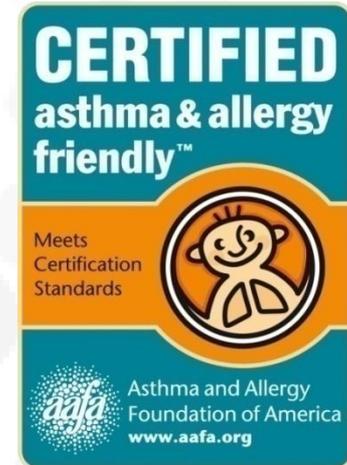
- **“A Lighthouse in the Fog”**

“Hypoallergenic” is un-validated

“Doctor recommended” is meaningless

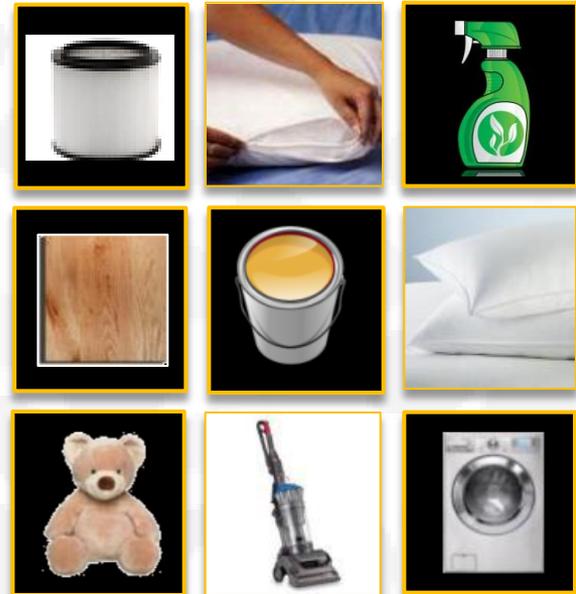
- **Our Mission**

Empower consumers to make educated choices



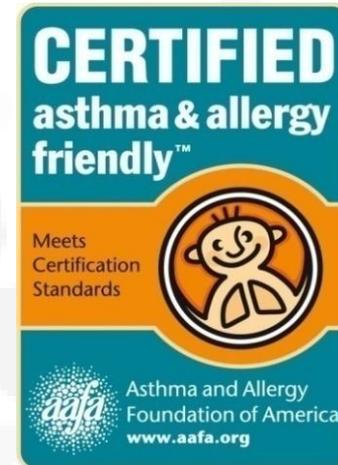
CERTIFICATION CATEGORIES

- **HEPA Air Filters**
- **Bedding Barriers, Encasings**
- **Cleaning Products**
- **Flooring**
- **Indoor Coatings, Paints**
- **Pillows, Comforters, Encasements**
- **Plush Toys**
- **Vacuum Cleaners**
- **Washing Machines**
- **Others in Development:**
 - *Dehumidifiers*
 - *Furniture*



HOW CERTIFICATION WORKS

- Full medical and industry literature review
- Design Standard and Certification Criteria
- Develop Test Protocol and SOPs
- Submit to AAFA
 - Peer review by leading independent medical scientist.
- Publish abstract
- Register IP
- Execute the test
- Award certification



TESTING PROCESS OVERVIEW (PILLOW EXAMPLE)

Chemical

**Surface and stuffing
material analysis**

Phase 1

Physical

**Safety and quality
testing**

Phase 2

Allergen

**Allergen loading and
successful
eradication**

Phase 3

CHEMICAL TESTING

Banned aromatic amines as defined in Appendix point 43 of Annex A of Draft EU Directive 76/769/EEC	
1	4-Aminobiphenyl
2	Benzidine
3	4-Chlor-o-toluidine
4	2-Naphthylamine
5	O-Aminoazotoluene
6	2-Amino-4-Nitrotoluene
7	p-Chlor-aniline
8	4-Methoxy-m-phenylenediamine
9	4,4' Diaminodiphenylmethane
10	3,3'Dichlorobenzidine
11	3,3'Dimethoxybenzidine
12	3,3'Dimethylbenzidine
13	3,3'Dimethyl 4,4'diaminodiphenylmethane
14	2-Methoxy-5-Methylaniline
15	4,4'Methylene-bis-(2-Chloraniline)
16	4,4'Oxydianiline
17	4,4'Thioldianiline
18	o-Toluidine
19	4-Methyl 1,3-Phenylenediamine
20	2,4,5-Trimethylaniline
21	O anisidine
22	2,4-Xylidine
23	2,6-Xylidine

CHEMICAL TESTING

COLORANTS, DYES AND PROCESSING CHEMICALS

Product	Levels
Disperse Dyes suspected of causing sensitization	Not to be used
CI Disperse Blue 1, 3, 7, 26	
CI Disperse Orange 1, 3, 55, 74	
CI Disperse Red 1, 11, 15, 17, 151	
CI Disperse Yellow 7, 23, 55.	

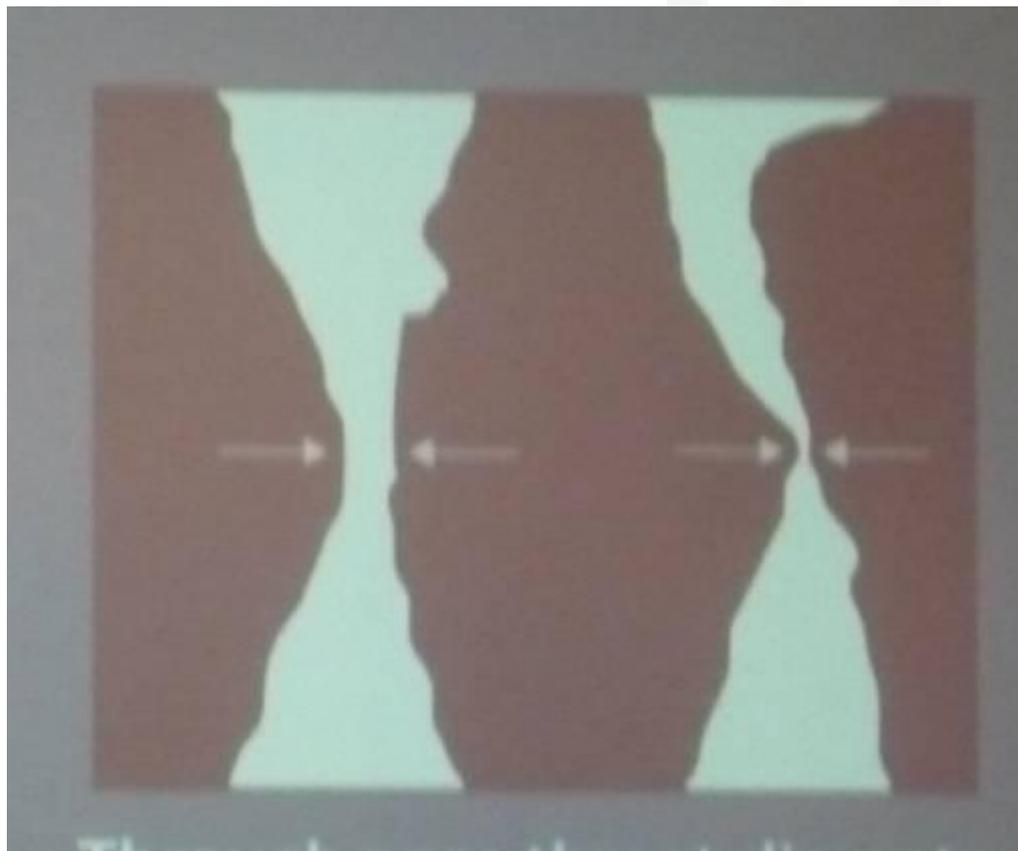
CHEMICAL TESTING

Reactive Dyes Known To Cause Sensitization In Industry	
Levafix brilliant yellow E36	Not to be used
Drimaren brilliant yellow K-3GL	
Cibachrome brilliant scarlet 32	
Drimaren brilliant blue K-BL	
Lanosol yellow 4G	
FD&C blue dye #2 (Chan-Yeung & Malo)	Not to be used
Formaldehyde	Not detectable as defined in ISO 14184-1
Biocidic Finishes	Not to be used
Topically applied Flame retardant finish	Not to be used
Emission of Volatiles (mg/m ³)	
Toluene	0.1
Styrene	0.005
Vinylcyclohexene	0.002
4-Phenylcyclohexene	0.03
Butadiene	0.002
Vinylchloride	0.002
Other Aromatic hydrocarbons	0.03
Other Organic volatiles	0.03
Chlorinated organic carrier (ppm)	1.0
Biocidic Finish	Not to be used
Flame retardant finish	Not to be used
Pesticides and Fungicides	Not to be used
Phthalates	Not to be used
PBB, TRIS, TEPA	Not Detectable
Determination of Odours	Not Detectable
SNV 195 651	3

PHYSICAL (WASHABILITY) TESTING- 25 CYCLES



PORE SIZE



ALLERGEN BARRIER ASSESSMENT

Modified Dust Trap



Simulated Use Test



ALLERGEN BARRIER ASSESSMENT



PRODUCT CERTIFICATION SYSTEM CHECKS

- Custom care instructions sewn into every product
- Quality assurance
- Full claims and marketing review of certified products
- Quality control
- Conformation Certificates
- Random Audit Testing

FINAL PRODUCTS FOR THE PATIENTS

S T A N D A R D



Microshield™

CERTIFIED **asthma & allergy friendly™**

CERTIFIED
asthma & allergy
friendly™

Meets
ASP-02:01
Standard for
Pillows



Asthma and Allergy
Foundation of America
www.aafa.org

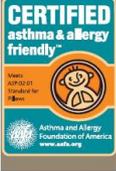
- effective allergen barrier
- breathable fabric withstands repeated washings
- 300 thread count, 100% cotton fabric
- polyester fiber fill
- three year warranty

S T A N D A R D

“SLEEP WITH CONFIDENCE™”

This pillow meets the **asthma & allergy friendly™** standard according to the Asthma and Allergy Foundation of America.

CERTIFICATION CODE: ASP-02:01



CERTIFIED

asthma & allergy
friendly™

To keep the allergen levels in this pillow low, wash before use and repeat the following instructions:
Frequency: Every 6 weeks
Machine wash and dry at the following settings:

- Water level: High
- Temperature: 40°C (lukewarm)
- Cycle: Regular

Note: Before placing in the dryer, ensure excess water is removed from pillow either by repeating the spin cycle, or by gently hand squeezing.
Tumble dry: High, until completely dry

CERTIFIED

asthma & allergy
friendly™

Meets
ASP-02:01
Standard for
Pillows



Asthma and Allergy
Foundation of America
www.aafa.org

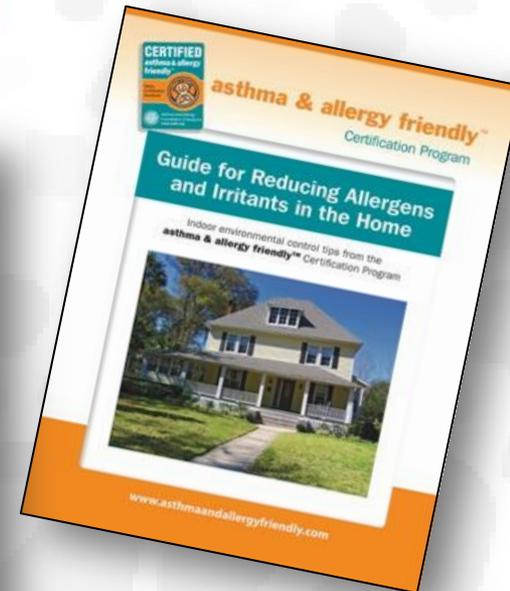
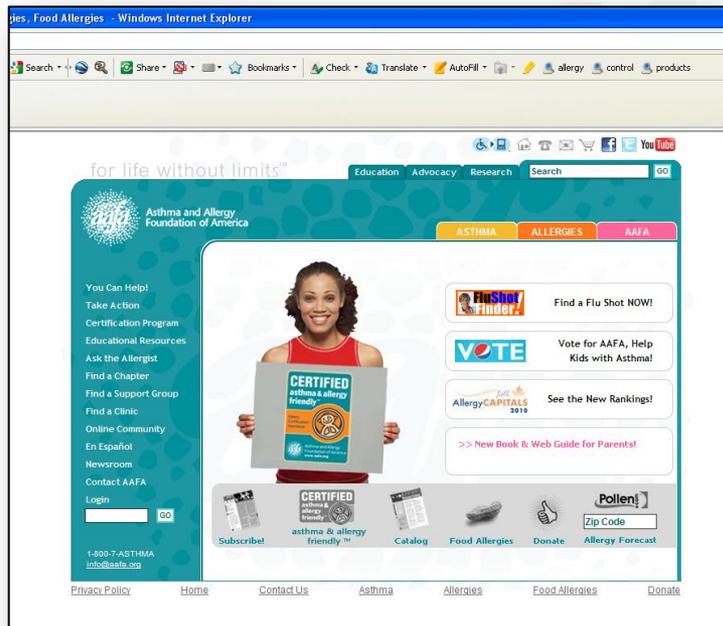
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WHAT WE HAVE LEARNED

- Cost does NOT equal quality
- Pore size 10 microns or less is sufficient and there are multiple ways to measure pore size
- Washing effects pore size
- Pore size too close to zero reduces breathability (and patient comfort)
- Even full encasements and covers need to be regularly washed to remove accumulated allergen
- “Organic” and “Eco-Friendly” does NOT mean asthma & allergy friendly
- A mattress that remains uncovered for 10 years- **DOUBLES ITS WEIGHT** in allergen
- If your pillow is older than 2 years- **GET RID OF IT**

RESOURCES

www.aafa.org



QUESTION AND ANSWERS



JOIN US NEXT TIME- AUGUST 25, 2011

Environmental Control for Asthma

Part 2 of 2: Advanced Techniques
Application to the Whole Home



THANK YOU!

**for
life
without
limits**