Asthma


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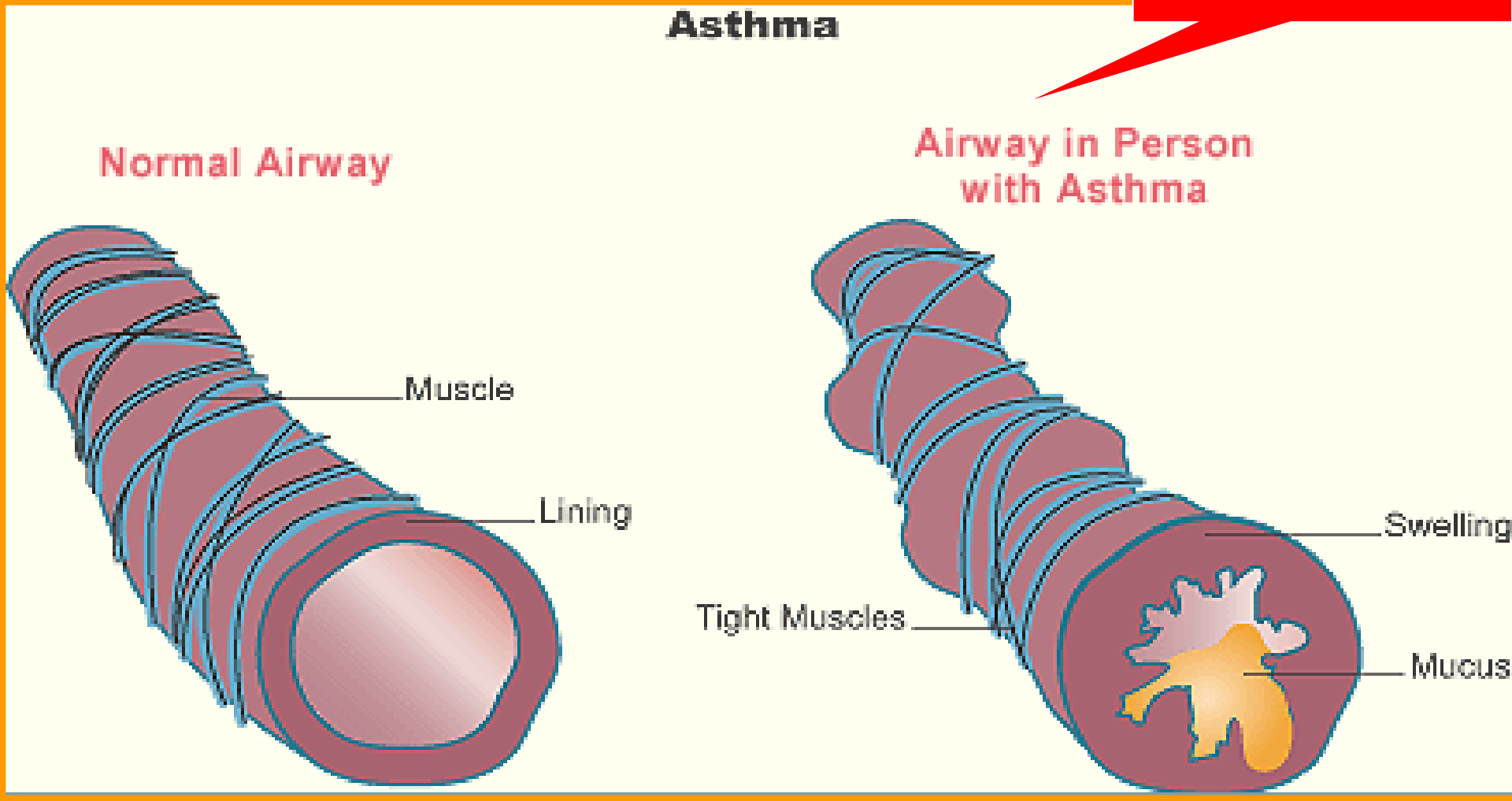
What is Asthma?

- Chronic disease of the airways that may cause
  - Wheezing
  - Breathlessness
  - Chest tightness
  - Night time or early morning coughing
- Episodes are usually associated with widespread, but variable, airflow obstruction within the lung that is often reversible either spontaneously or with treatment.

Pathology of Asthma

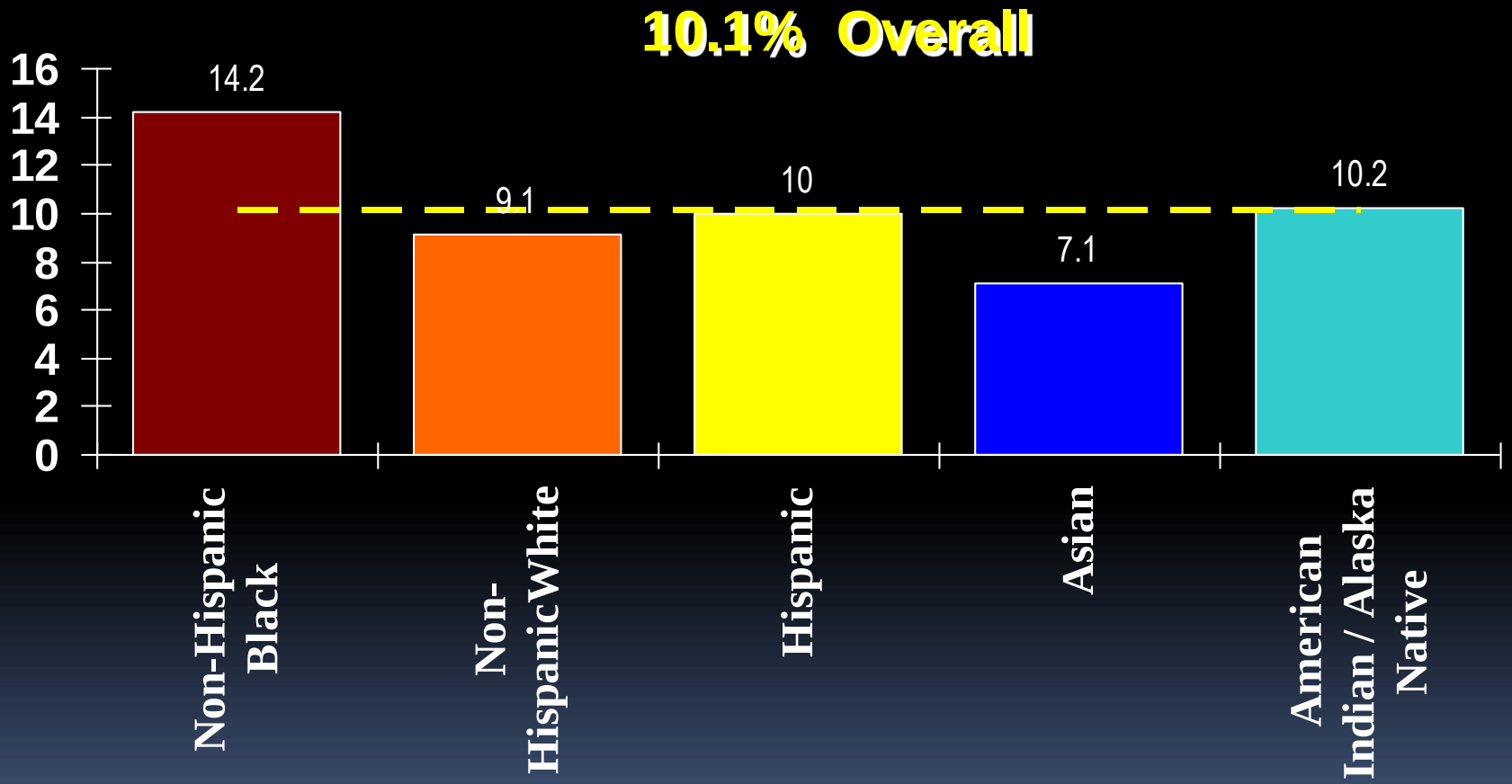
Normal **Asthma**

Asthma involves inflammation of the airways



Source: "What You and Your Family Can Do About Asthma" by the Global Initiative For Asthma
Created and funded by NIH/NHLBI, 1995

Asthma Prevalence for Youth by Race/Ethnicity, Ages 5-17, 2005-2007



Centers for Disease Control and Prevention. National Center for Health Statistics. Health Data Interactive. www.cdc.gov/nchs/hdi.htm. [July 15, 2009].

Population Disparities in Asthma

- Current asthma prevalence is higher among
  - **children than adults**
  - **boys than girls**
  - **women than men**
- Asthma morbidity and mortality is higher among
  - **African Americans than Caucasians**

Source: ***MMWR*** **2007;56(No. SS-8):1-54**

Risk Factors for Developing Asthma

- Genetic characteristics
- Occupational exposures
- Environmental exposures

Risk Factors for Developing Asthma: Genetic Characteristics

Atopy

- The body's predisposition to develop an antibody called immunoglobulin E (IgE) in response to exposure to environmental allergens
- Can be measured in the blood
- Includes allergic rhinitis, asthma, hay fever, and eczema

Clearing the Air: Indoor Air Exposures & Asthma Development

Biological Agents

- Sufficient evidence of causal relationship
  - **House dust mite**
- Sufficient evidence of association
  - **None found**
- Limited or suggestive evidence of association
  - **Cockroach (among pre-school aged children)**
  - **Respiratory syncytial virus (RSV)**

Chemical Agents

- Sufficient evidence of causal relationship
  - **None found**
- Sufficient evidence of association
  - **Environmental Tobacco Smoke (among pre-school aged children)**
- Limited or suggestive evidence of association
  - **None found**

Clearing the Air: Indoor Air Exposures & Asthma Exacerbation

Biological Agents

- Sufficient evidence of causal relationship
  - **Cat**
  - **Cockroach**
  - **House dust mite**
- Sufficient evidence of an association
  - **Dog**
  - **Fungus/Molds**
  - **Rhinovirus**
- Limited or suggestive evidence of association
  - **Domestic birds**
  - **Chlamydia and Mycoplasma pneumonia**
  - **Respiratory syncytial virus (RSV)**

Chemical Agents

- Sufficient evidence of causal relationship
  - **Environmental tobacco smoke (among pre-school aged children)**
- Sufficient evidence of association
  - **NO_2, NO_X (high levels)**
- Limited or suggestive evidence of association
  - **Environmental Tobacco Smoke (among school-aged, older children, and adults)**
  - **Formaldehyde**
  - **Fragrances**

Reducing Exposure to House Dust Mites

- Use bedding encasements
- Wash bed linens weekly
- Avoid down fillings
- Limit stuffed animals to those that can be washed
- Reduce humidity level (between 30% and 50% relative humidity per EPR-3)

Source: "What You and Your Family Can Do About Asthma" by the Global Initiative For Asthma Created and funded by NIH/NHLBI, 1995

Reducing Exposure to Environmental Tobacco Smoke

Evidence suggests an association between environmental tobacco smoke exposure and exacerbations of asthma among school-aged, older children, and adults.

Evidence shows an association between environmental tobacco smoke exposure and asthma development among pre-school aged children.

Reducing Exposure to Cockroaches

Remove as many water and food sources as possible to avoid cockroaches.

Reducing Exposure to Pets

- **People who are allergic to pets should *not* have them in the house.**
- **At a minimum, do not allow pets in the bedroom.**

Diagnosis of Asthma: Methods for establishing diagnosis:

- • medical history
- • Physical exam
- • Spirometr

Symptoms (episodic, variable)

- 1. Dyspnea
- 2. Cough
- 3. Chest Tightness
- 4. Wheezing