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Asthma Triggers and Management Webinar

October 15, 2013

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Asthma Triggers and Management

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Disclosure Statement

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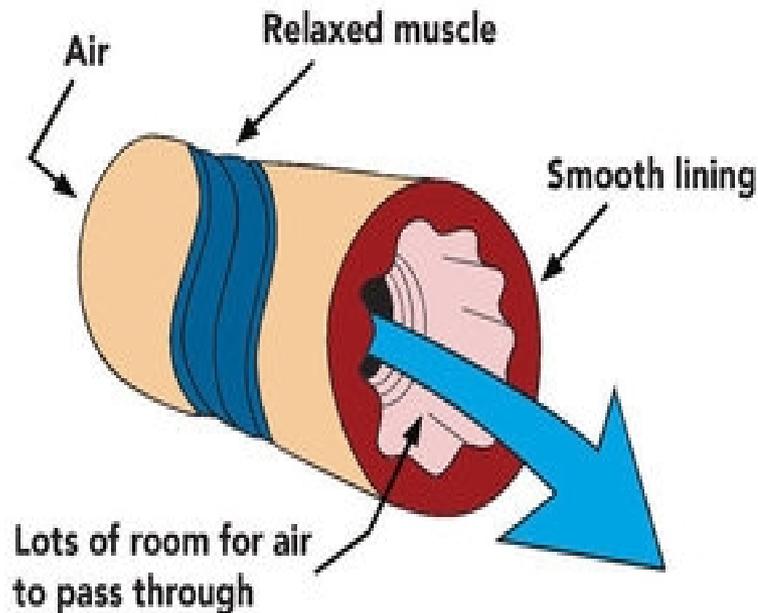
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- The Planners & Speakers for this program have declared no financial affiliations related to this topic.
- Successful completion of this program includes attendance at 100% program and completion of an evaluation with Survey Monkey:

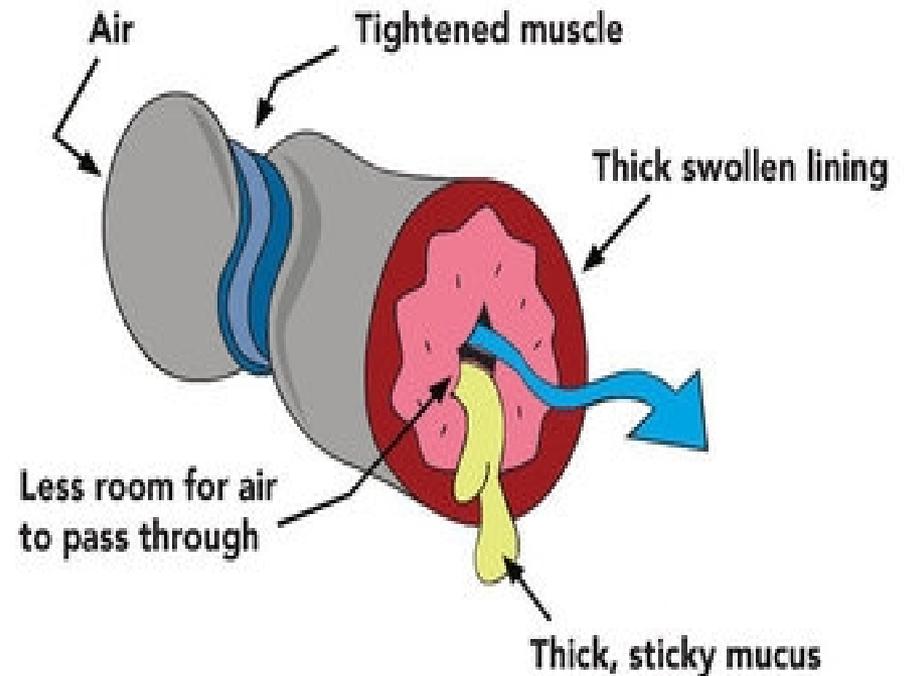
<https://www.surveymonkey.com/s/7VZCP3C>

What Happens During an Asthma Episode

Airway before an attack



Airway during an attack



Asthma Management

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graph TD; A[Asthma Management] --- B[Assessment, Medical Management and Maintenance according to the NIH Guidelines]; A --- C[Trigger Identification, Avoidance, and Management]; A --- D[Recognizing and Managing Exacerbations and Seasonal Fluctuations of Symptoms]
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Assessment, Medical Management and Maintenance according to the NIH Guidelines

Trigger Identification, Avoidance, and Management

Recognizing and Managing Exacerbations and Seasonal Fluctuations of Symptoms

Poll Question 1

1. Which trigger causes the most asthma attacks in children?

1. smoke
2. exercise
3. pollens
4. poor air quality

Trigger

- Any condition or stimulus that causes inflammation in the sensitive airway which causes asthma symptoms.
 - Situational
 - Allergens
 - Irritants

Situational Triggers

Triggers that are present in most asthmatics. Many of these are difficult to avoid altogether but can be recognized and symptoms managed

- Weather and Temperature Changes
- Stress, Exposure to Violence and Emotions
- URIs, Illness, Viruses
- Exercise

Weather and Temperature Changes

- Summer to Fall – most challenging time of year
- Maintain consistent temperature indoors
- Prepare for cold weather by dressing properly and using a scarf around mouth and nose if needed
- Be aware of sudden changes of temperature with swimming, air-conditioning use or during the night

Stress, Exposure to Violence and Emotions

- Help children to feel safe in home/community
- Keep predictable schedule
- Help children to prepare for changes and new experiences
- Encourage children to express feeling and spend time together as a family

National Domestic Violence Hotline: 1-800-799-SAFE

Georgia School Safety Hotline: 1-877-SAYSTOP

URIs, Virus and Illness

- Teach and model good hand washing
- Have child carry sanitizer on back pack or with rescue inhaler
- Avoid ill contacts
- Flu shot yearly
- Recognition of early symptoms and early implementation of yellow zone interventions

Survey Question 2

2. How many puffs is the correct dose for yellow zone symptoms?

1. one
2. Two
3. Three
4. Four

Yellow Zone Intervention

- Symptoms may include :
 - Mild cough/wheeze and chest tightness, mild shortness of breath
 - Runny nose, sore throat, watery eyes, fever, any viral infection
 - May initially occur only at night

My Asthma Action Plan

Children's at _____ Date: _____
 Address: _____ Date of Birth: _____ Doctor's name: _____
 Appointment date and time or follow-up time frame: _____ Doctor's phone number (weekday): _____ Phone number (after hours): _____

◆ Bring Asthma Action Plan and all medicines to all Doctor's appointments.

Begin Asthma Action Plan:

Asthma triggers: Exercise Cold/illness Allergies (pollen, dust, mold, food, animals) Emotions (anger, anxiety)
 Smoke (cigarettes, cigars, fires) Weather changes Air pollution Odors (perfume, cleaning products)

Every Day Medicines

Green Zone

• Good breathing • No coughing or wheezing • Able to sleep through the night • Can go to school, work or play

| Controller Medicine | How much to take / How to take it | How often to take it |
|---------------------|-----------------------------------|----------------------|
| | | |
| | | |
| | | |
| | | |

Before exercising, take: _____
 Call your doctor if rescue medicine is needed more often than _____ times per week (other than before exercise).

Step 1

Asthma Action Plan

Yellow Zone

• Runny nose • Sore throat • Breathing rate - normal or getting faster • Mild chest tightness • Alert and active • Skin color pink • Watery eyes • Mild cough or wheeze • Mild breathing problems • Shortness of breath

| Rescue Medicine | How much to take / How to take it | How often to take it |
|-----------------|-----------------------------------|----------------------|
| | | |
| | | |
| | | |

Step 2

↓ Symptoms better ↓ SYMPTOMS WORSE

• Continue rescue medicine for 24 hours
 • Continue with Green Zone medicines

Call your doctor now
 Begin oral steroids if prescribed

Red Zone - Poor Response

• Breathing rate - fast • Skin color pale • Trouble talking • Skin between ribs pulling in
 • Not as alert or active • Severe chest tightness • Waking up at night • Bad wheezing
 • Severe breathing problems • Continual cough • Hunched shoulders

| Rescue Medicine | How much to take / How to take it | How often to take it |
|-----------------|-----------------------------------|---------------------------------|
| | | Every 20 minutes for 40 minutes |
| | | |
| | | |

If skin, fingernail or lip color blue at any time:

Call 911 for help or go to the nearest Emergency Department

Always consult your child's doctor or other healthcare provider if you have any questions or concerns about the care or health of your child.
 22510-073R (12/09) Original - Patient Copy 1st Copy - Chart 2nd Copy - Duplicate Patient Copy



Yellow Zone Intervention

- SABA (Albuterol) every 3-4 hours for 24-48 hours or until symptoms are gone for 24 hours
- Will need to continue SABA every 3-4 hours even if oral steroids have been prescribed until symptoms are gone for 24 hours.
- 4-6 puffs of MDI with spacer is correct dose for quick-relief or yellow zone dose
- 4 puffs of MDI SABA with spacer equal 1 nebulization.

Exercise

- 90% of all asthmatics have an exercise induced trigger
- 10% of general population have exercise induced bronchospasm

Watch for:

- Cough after exercise
- Shortness of Breath
- “Out of shape”
- Tend to avoid play or Cannot keep up with peers

if dizzy with these symptoms, should be evaluated for cardiac issue

Exercise

- Ensure proper pre-treatment with quick relief medication (SABA) 15 minutes before activity
- Pre-treatment can be 2-4 puffs with spacer depending on what is efficient for that patient
- Talk to teachers, PE teachers and coaches about asthma and make sure they have an up to date Asthma Action Plan
- Ensure there is a SABA and Spacer available at all times
- Make sure to warm up and cool down properly

Allergens

Common Allergens:

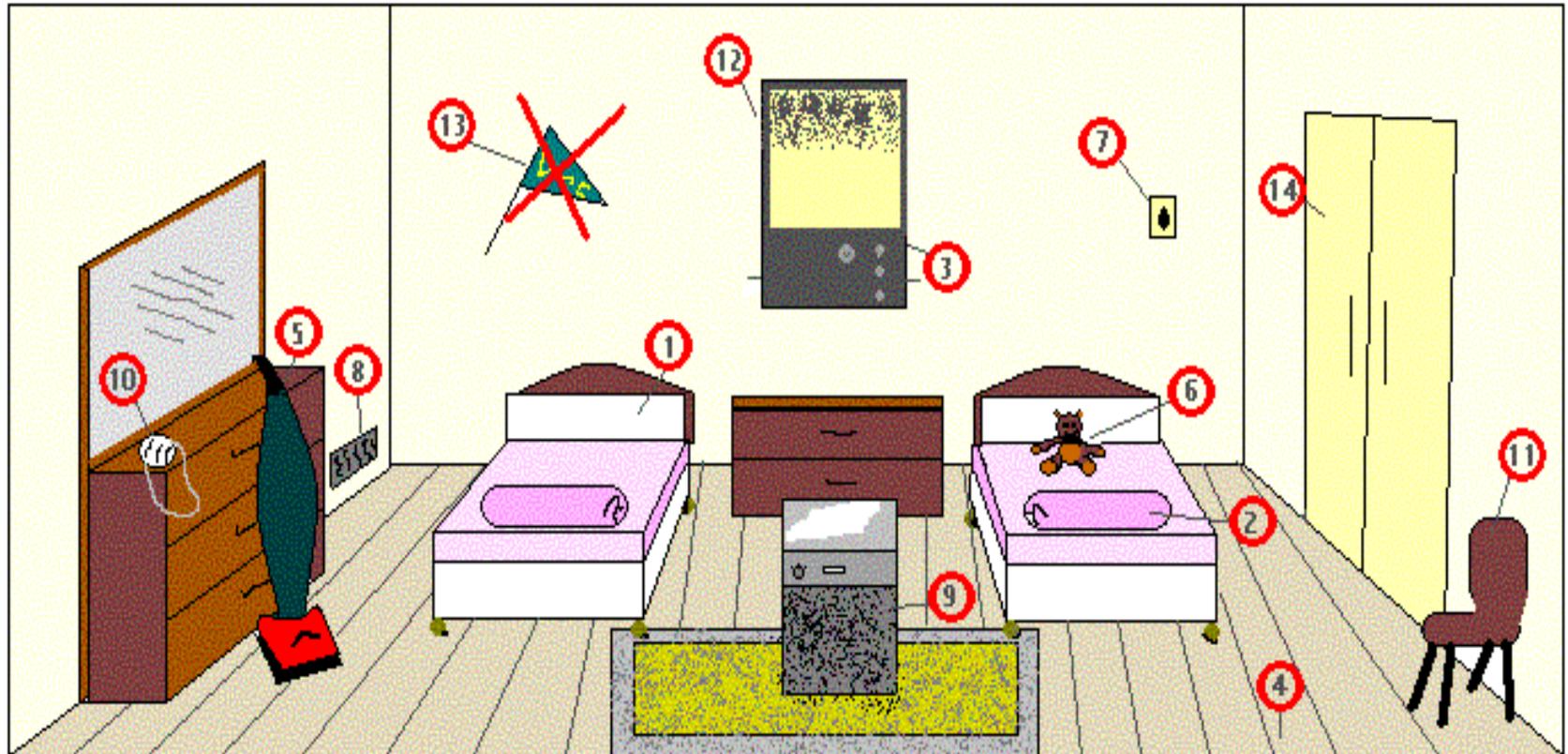
- Dust Mites
- Pollens
- Molds
- Pets/Animals
- Cockroaches

Dust Mites

- Microscopic, insect like creature which are found on pillow, mattresses, carpets and upholstered furniture
- Thrives in humid and warm conditions
- Wash blankets and sheets in hot water each week
- Allergy covers on mattress and pillow
- Stuffed toys off bed
- Vacuum with Hepa Filter vacuum or use wood or vinyl flooring
- Avoid use of humidifiers. Use de-humidifier if necessary to keep humidity in home less than 50%
- Use good quality filter on your Furnace rating MERV 8 or higher



Dust Mite Control in the Bedroom



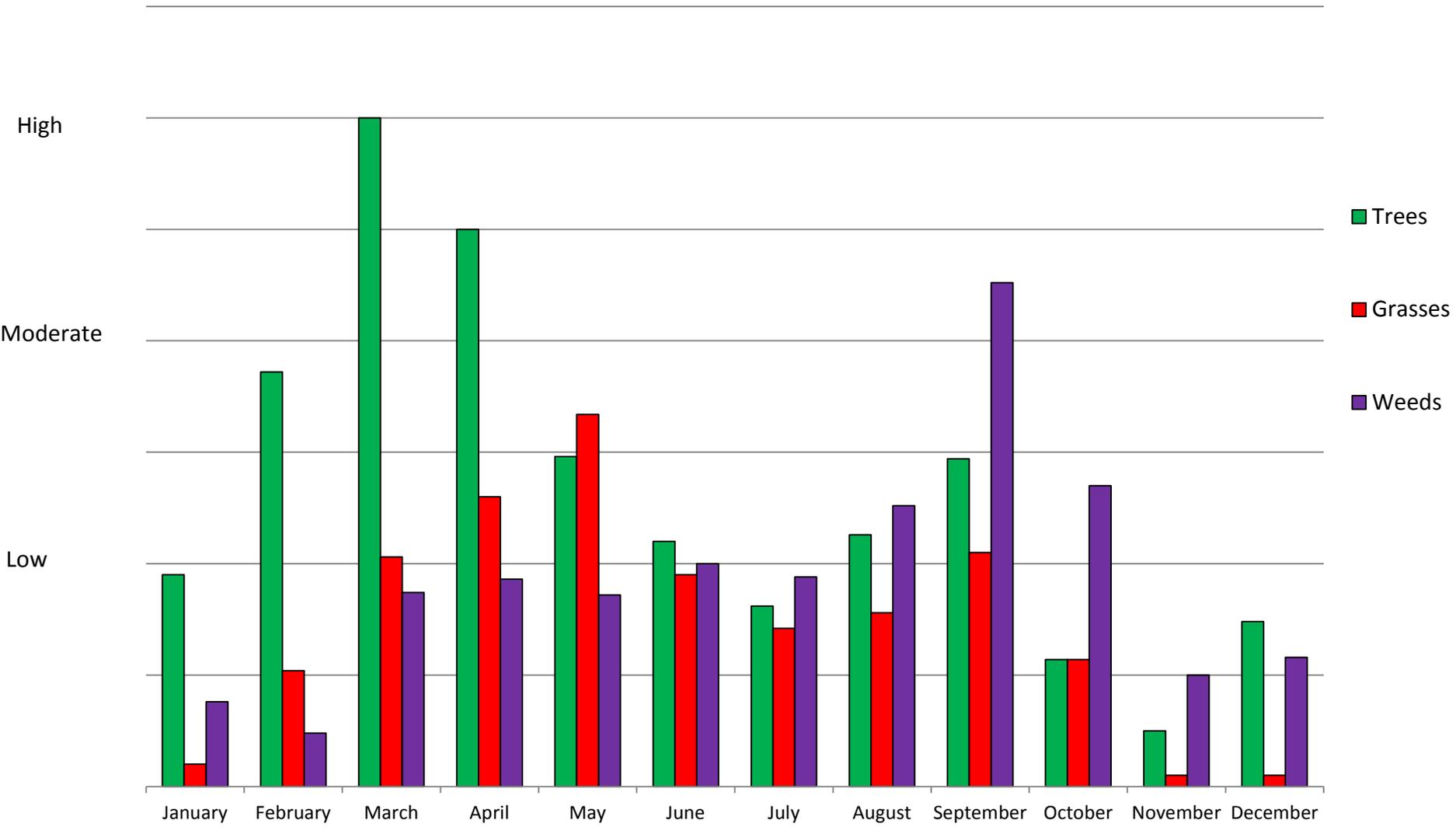
Cockroaches

One of the most common allergens

- Common in warm climates and urban areas
- Keep food and garbage in airtight containers
- Clean all food crumbs and spills right away
- Use roach traps or gels to assist with extermination

Pollens

- Ragweed Pollen
 - Fall Pollens
 - Runs from August to November but hits peak in September
- Grass Pollen
 - Regional and Seasonal
 - Can fluctuate yearly depending on rain and temperatures
- Tree Pollens
 - Earlier pollen producers – start in January in Southern States
 - Release a large amount of pollen which can be distributed miles away

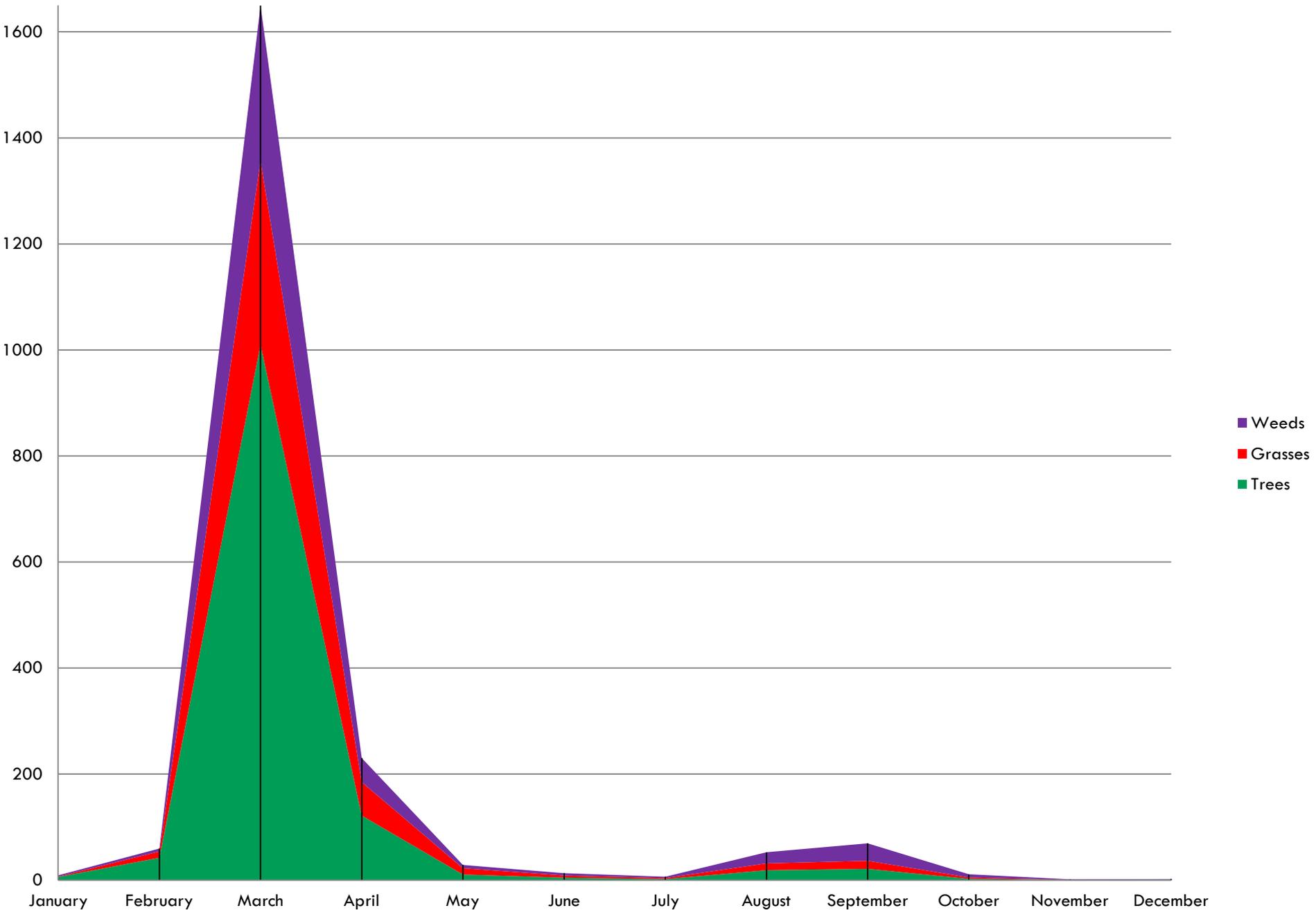


Low = 0-14
 Moderate = 15-89
 High = 90-1499
 Extremely High = 1500+

Average Pollen Count for Atlanta, GA in 2012



Average Pollen Count by Month 2012 for Atlanta, GA



Pollens

- Avoid outdoors between 5:00 AM and 10:00 AM
- Keep window in home and car closed. Avoid using attic and window fans
- Take off shoes upon entering the home and be aware in high pollen days it can be transported in on people's clothes and pets
- Keep grass cut short and have someone else mow grass if possible

Pets and Animals

- Pet allergies usually aggravated by
 - Proteins secreted by oil glands and shed as dander
 - Proteins in Saliva
 - Aerosolized urine from rodents and guinea pigs

 - Remove pets from home if possible
 - Keep them out of bedrooms and confined to areas without carpets and/or upholstered furniture
 - Bathe pet weekly
 - Wash hands after playing with animal
 - Dust often with damp cloth, vacuum carpets and rugs often

Molds

- Molds can grow indoors and outdoors
- Outdoor molds
 - Seasonal and appear in early spring and last until winter
 - Grow in moist shady areas (soil, compost, rotting wood)
- Indoor molds
 - In dark, warm, musty and humid areas (basements, bathrooms)
 - Where fresh food is stored, air conditioners,
 - To check approximate indoor humidity:
 - http://www.weather.com/activities/health/allergies/mold/control_humidity.html

Molds

- Use dehumidifier or Air conditioner to maintain humidity below 50%
- Vent bathrooms and laundry rooms
- Fix leaky plumbing
- Remove decaying debris from lawn
- Wash mold off surfaces. Use bleach for non-porous surfaces like tile , glass or countertops. Use Baking Soda and Vinegar mixture for more porous surfaces like wood or fabric.

Allergy Testing

Determine whether a patient has specific allergic antibodies (Immunoglobulin E or IgE) to a specific substance.

- Skin Testing
 - Diluted amount of allergen scratched onto top surface or into skin
 - IgE reaction of raised, red and itchy welt within 15 minutes
 - Intradermal testing more sensitive than scratch testing
- RAST (Radioallergosorbent Test)
 - Measures IGE in blood
 - Less sensitive than skin testing
 - Better for patients with skin conditions (Atopic Dermatitis) or whose allergies are so severe they cannot be off allergy medication

Treatment of Allergies

- Nasal Rinse and Nasal Steroids
- Antihistamines
- Leukotriene modifier
- Immunotherapy
 - Injection of allergen to skin
 - Begins with dilute dose and builds as tolerated to maintenance dose
 - Many have lasting remission or decrease of allergy symptoms for 5-10 years
 - Some will have relapse when immunotherapy is discontinued

Nasal Washes

- Saline Wash helps remove mucus, pollen, dust and bacteria from the nose and sinuses
- Temporarily reduces symptoms of nasal congestion and postnasal drip
- May enhance the action of nasal steroid by allowing medication to reach the target tissues.



Irritants

- Smoke
- Odors
- Poor Air Quality

Smoke

- Camp fires, burning leaves, BBQs
- Passive and side-stream smoke from tobacco
 - More harmful than the smoke inhaled by smoker
 - Also causes ear and sinus infections, PNA, increases GERD symptoms
 - Odor on clothes can cause irritation
 - Evidence has shown that exposure to smoke causes more asthma symptoms and more asthma attacks

Smoking and Asthma

- No smoking in house or car by anyone
 - If you have to smoke, wear jacket and gloves while smoking and remove before entering house
 - Support those who are quitting
 - Offer resources to assist those who are interested in quitting including their PCP
-
- Georgia Quitline: www.livehealthygeorgia.org/quitline.shtml or 1-877-270-STOP (7867)
 - US Department of Health and Human Services: www.smokefree.gov
 - American Lung Association Freedom from Smoking program: <http://www.ffsonline.org/>

Odors

- Cleaning supplies
 - Bleach, ammonia, pine cleaners
 - Antibacterial sprays (Lysol)
 - Carpet fresheners/cleaners
- Perfumes and Colognes
- Air fresheners
- Laundry detergents and/or softeners
- Pest control sprays
- Hair Sprays

Odor-Free Cleaning

- Endust Free
- Seventh Generation Chlorine Free Bleach
- Seventh Generation has a Free and Clear cleaning products line that are unscented (all purpose cleaner, glass & surface cleaner, plus laundry liquid and powder, and dishwashing liquid for handwashing and dishwashing)
- Simple, Pure, Clean unscented cleaning products available online only at www.simplepureclean.com/buy_natural_cleaning_products.html

Ozone and Air Pollution

- Two kinds of outdoor air pollution in Georgia
 - Ground-level ozone and Fine particles; when these pollutants occur simultaneously, smog develops
 - Highest level of smog during spring and summer in larger cities
 - Rural cities have more high-particle pollution; usually from open burning, diesel engines and wildfires
 - The Air Quality Index (AQI) is a daily report of air quality on scale of 0 (cleanest) to 500 (the most polluted)

Air Quality

Recommended changes in outdoor activities based on the AQI

| AQI | Health concern | Recommendation |
|-------------------|--|---|
| GREEN 0-50 | The air is considered healthy for everyone. | Outdoor activities are recommended for all children and adults. |
| YELLOW 51-100 | The air is unhealthy mainly for very sensitive children and adults. | Outdoor activities are recommended for most children and adults except those known to react to air pollution at this level.* |
| ORANGE 101-150 | The air is unhealthy for sensitive individuals, including all children under the age of 18, the elderly and those with heart or lung conditions. | Children, the elderly and sensitive adults should limit outdoor activity to times of the day when pollutant concerns are lowest. |
| RED 151-200 | The air is unhealthy for everyone. | Children and adults should avoid outdoor activities completely. Some times during the day may be safe for outdoor activity (see information below). |
| PURPLE 201-400 | The air is unhealthy or even hazardous for everyone. | All children and adults should avoid outdoor activities completely throughout the day. |

**Parents and other caregivers should watch children and the elderly carefully for signs of distress to find out if they are particularly sensitive to air pollution. Always have asthma medication on hand if you care for people with asthma.*

Survey Question 3

3. What is the worst time of day to go outside when the air quality is bad?

1. 5a-10a
2. 10a-2p
3. 2p-7p
4. 7p-11p

Air Quality Index by Month for 2012

Number of Days

25

20

15

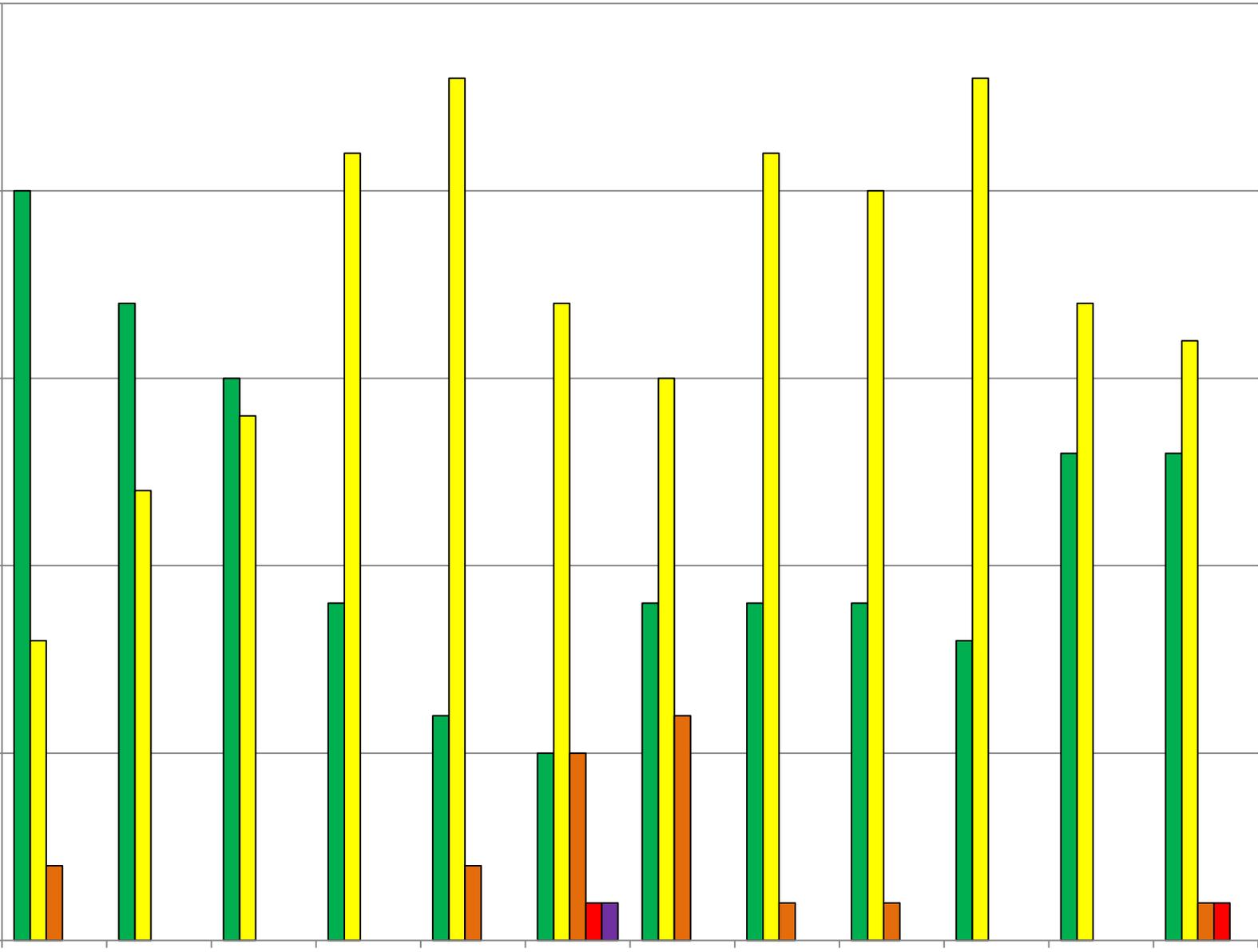
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January February March April May June July August September October November December

- Good
- Moderate
- Unhealthy for Sensitive Groups
- Unhealthy
- Very Unhealthy



Air Quality

- Spend less time outdoors when smog levels are high
- Be aware of child's response to smog, signs of difficulty breathing and pre-treat on poor air quality days
- Ozone pollution is usually at its worse between the hours of 2p and 7p.
- Avoid idling and encourage a no idle policy in your school and community, especially at school bus areas
- Do your part to help clean the air; Walk, bike, carpool or take the train and/or bus when possible

Summary

- Asthma symptoms are caused by triggers
- Recognizing an individual's triggers is as important as utilizing medications correctly
- Pre-treatment before a known trigger is one of the key components in an asthma action plan
- Allergy testing, treatment and immunotherapy can make significant changes in a patient's quality of life and their asthma management
- The greatest opportunity we have to help children with their asthma is to provide a safe and healthy environment for all children.

Resources

- **Children's Asthma Center at Hughes Spaulding**
<http://www.choa.org/childrens-hospital-services/pulmonology/asthma-program>
- **Georgia School Health Resource Manual 2013**
http://www.choa.org/Health-Professionals/Nurse-Resources/School-Nurses/~/_media/CHOA/Documents/Health-Professionals/2013-School-Health-Manual/Manual-Chapters/Ch-5-Chronic-Health-Conditions.pdf
- **Department of Education: School Nurse Exchange**
<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/School-Nurse.aspx>
- **Children's Health Fund Report**
<http://bronx.ny1.com/content/lifestyles/health/190114/asthma-among-top-three-learning--barriers---study-finds>
<http://www.childrenshealthfund.org/advocacy-and-research/crisis-classroom>

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