

# Breathe IN Breathe OUT



# Asthma In Indiana

Spring/Summer 2009

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## *Special Topic*

### **Climate Change and Asthma**

*By Joan M. Duwve, MD, MPH*

The average surface temperature of the Earth has increased by about 1½ degrees Fahrenheit in the last 100 years, with the eight warmest years on record (since 1850) occurring in the past 10 years. In fact, 2005 was the warmest year on record. Human activities have contributed significantly to the increase in global warming.

For over the past 200 years, deforestation and the burning of fossil fuels like coal and oil have caused a significant increase in the concentrations of heat-trapping “greenhouse gases” in our atmosphere. As the concentrations of greenhouse gases increase, the average temperature at the Earth’s surface could increase from 3.2 to 7.2 degrees Fahrenheit above 1990 levels by the end of this century. This will result in significant changes in our climate, including changes in patterns of rainfall, lengths of growing seasons and an increase in severe weather events.

We have known for a long time that carbon-producing sources such as factories and power

plants, cars, trains and planes are also sources of particulate matter that negatively impact air quality and irritate sensitive lung tissue. However some scientists believe it may be the indirect effects triggered by climate change that have led to the significant increase in asthma rates and severity over the past thirty years.

How do global warming and climate change impact asthma? Experts describe at least four ways this might happen: global warming may increase the frequency of smog, climate change may increase the amount of particulate matter in the air, global warming may increase levels of pollen and lengthen pollen seasons, and climate change may increase levels of humidity, thereby allowing molds and cockroaches to flourish.

**Global warming increases the frequency of smog.** Sunlight and high temperatures, when combined with other pollutants, can cause ground-level ozone, more commonly known as smog, to increase. As surface temperatures rise, so will levels of smog. Smog can damage lung tissue, and is especially harmful for those with asthma and other chronic lung diseases.

### **Climate change increases particulate matter in the air.**

Particle pollution, or increases in particulate matter in the air, is the main cause of haze in the nation's cities and national parks. As the climate changes, extremes in temperature and rainfall will become more problematic. Warmer temperatures with relatively low levels of rainfall set the stage for drought and wildfires, both of which are responsible for increased amounts of particulate matter in the air. These particles can reach the deepest regions of the lungs during a normal breath, triggering asthma attacks and other respiratory problems.

### **Global warming increases levels of pollen and lengthens pollen seasons.**

As the climate gets warmer, pollen seasons start earlier and last longer, and the amount of pollen produced by flowering plants and trees increases. Warmer temperatures at higher altitudes also allow pollen-producing plants to thrive in previously hostile environments, exposing their populations to new varieties of pollen. Studies have shown that exposure to more intense pollen seasons in early infancy increases the likelihood that a child will develop allergies and/or asthma later in life. Therefore, as the climate warms and increased amounts of pollen circulate for longer periods of time, we can expect to see further increases in the numbers of children who suffer from asthma and allergies and more severe symptoms in those who have already developed these conditions.

### **Climate change increases levels of humidity, thereby allowing molds and cockroaches to flourish.**

As the climate warms, water evaporates more quickly causing an increase in the moisture content of air, or humidity. Scientists have measured a 2.2% increase in the amount of moisture in the air over most of the globe during the past three decades. Some scientists predict a 12 to 24 percent increase in humidity by the year 2100. For asthma sufferers, heat and humidity alone make the simple task of breathing an effort. But the combination of heat and humidity also make conditions ripe for mold growth, and provide the ideal environment

for cockroaches and dust mites, all common asthma triggers.

### **Take a deep breath; you can help!**

The United States is the largest energy consumer in the world, with the majority of our nation's energy coming from fossil fuels. We will all need to decrease our reliance on fossil fuels if we want to decrease our carbon emissions and fight global warming.

1. Don't idle your car engine (each day, Americans waste approximately 3.8 million gallons of gasoline by idling their cars)
2. Move your thermostat up 2 degrees in the summer and down 2 degrees in the winter (2,000 pounds of carbon dioxide/year)
3. Replace a regular incandescent light bulb with a compact fluorescent light bulb (300 pounds of carbon dioxide/year)
4. Clean or replace filters on your furnace or air conditioner (350 pounds of carbon dioxide/year)
5. Take a shower instead of a bath, and use a low flow showerhead (350 pounds of carbon dioxide/year)
6. Wash your clothes in cold or warm water instead of hot water (500 pounds of carbon dioxide/year)
7. Recycle! (2,400 pounds of carbon dioxide/year if you recycle ½ the waste generated by your household)
8. Plant a tree (a single tree will absorb one ton of carbon dioxide over its lifetime)
9. Reduce the number of miles you drive by 10 miles/week (500 pounds of carbon dioxide/year)
10. Keep your car tuned up (1% of car owners properly maintaining their cars saves one billion pounds of carbon dioxide)

For more tips, go to <http://globalwarming-facts.info/50-tips.html>.

# Data and Surveillance

## Asthma Call-back Survey

The Asthma Call-back Survey is a follow up survey to the Behavioral Risk Factor Surveillance System (BRFSS) Core questions. Call-back participants have lifetime asthma (said YES to the question “Have you ever been told by a Dr. or other health professional that you have asthma?”) and were willing to be called back a few weeks later for more questions related to their asthma.

The Asthma Call-back Survey first became available in 2005 as a pilot in three states. Indiana began participating in 2006. The survey is administered for both adults and children and includes 12 sections. Sections provide more detailed information on the participant’s asthma and management such as medications, modifications to environment, and health care use. For more information about the survey and methodology, please refer to: <http://www.cdc.gov/asthma/questions.htm#callback>.

Only a brief analysis of a few sections of the 2007 Adult Call-back Survey are reported here. More information will be analyzed and published at a later date.

Of the 791 adults with lifetime asthma that participated in the 2007 BRFSS Core, 392 (50%) participated in the Call-back telephone interview. Of those that participated in the Call-back, 75.5% reported that they still have asthma (current asthma).

Most of the adults with current asthma were diagnosed by a health care professional at age 12 and older (66%), while only 34% were diagnosed at age 11 or younger.

### Age of Diagnosis

| Age groups | Frequency | Weighted Percentage |
|------------|-----------|---------------------|
| 0 to 4     | 37        | 14.01               |
| 5 to 11    | 47        | 20.36               |
| 12 to 17   | 26        | 11.85               |
| 18 to 34   | 86        | 22.87               |
| 35 to 54   | 121       | 22.25               |
| 55 +       | 55        | 8.66                |
| Total      | 372       | 100                 |

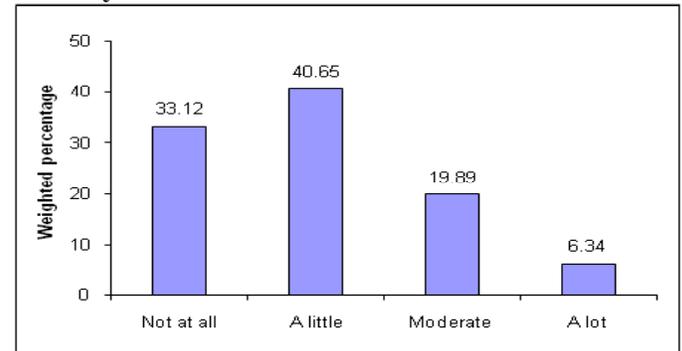
Approximately 45% of participants with current asthma have not talked to a doctor or other health care professional about their asthma in more than one year.

Of those with current asthma, 47.8% had an episode of asthma or asthma attack in the past 12 months and 40% reported sleep difficulty in the past 30 days related to symptoms of asthma.

In the last 12 months, among those with current asthma, 32% had one or more days where they were unable to work or carry out their usual activities because of their asthma.

Most adults with current asthma (67%) had some level of limitation in carrying out their usual activities due to asthma.

### Activity Limitation - Adults with Current Asthma



Of those with the current asthma, approximately 44% reported taking asthma medication within the last 24 hours and near 72% reported taking asthma medication in the last three months.

Among all adults interviewed (had current or lifetime asthma), 88% reported having ever used a prescription inhaler and 6% reported never using asthma medication.

In the past 3 months of those with current asthma, 68% used inhaler, 22% took asthma medication in pill form and 26% did not take any form of asthma medication.

# *Around the State*

## **InJAC Web site**

The InJAC Web site is now available! Check out [www.InJAC.org](http://www.InJAC.org) to view the Indiana Asthma Resource Guide, asthma awareness campaign materials, InJAC trainings, Breatheasyville, InJAC policies/resolutions and asthma data and reports. The Web site will also provide information about the coalition and a registration form for new members to join in our efforts to reduce the burden of asthma. Latest news and events regarding asthma will also be posted on the Web site. If you have an item that you would like to go on the Web site, please send to [ksuch@lungin.org](mailto:ksuch@lungin.org).

## **Visiting Lectureship**

The ISDH Asthma Program and Indiana Tobacco Prevention and Cessation, in partnership with the Indiana Academy of Pediatrics, received one of four grant awards from the American Academy of Pediatrics Julius B. Richmond Center of Excellence. The award supports a visiting lecturer for two days to address secondhand smoke and children's health in Indiana. We are excited to have Dr. Jonathan P. Winickoff, a principal investigator for the Richmond Center and practicing pediatrician, as our visiting lecturer this May. Dr. Winickoff and his team have developed the CEASE program (Clinical Effort Against Secondhand Smoke Exposure) to help child health care clinicians tailor their office setting to address tobacco use in a routine and effective manner. The visiting lectureship program is supported by the Flight Attendant Medical Research Institute.

## **Integrated Pest Management [IPM]**

A statewide School IPM Practicum for facility managers, public health professionals, health care providers, and other change agents will be held July 16th and 17th. The Practicum will feature recognized school IPM experts from around the nation, the experiences of school corporations in Bloomington and Indianapolis in implementing successful IPM programs, a tour of a Pike Township School, and facilitated discussions to further implementation of IPM in Indiana. The Practicum will be one and a half days and registration is free. For more information, visit [www.ikecoalition.org](http://www.ikecoalition.org).

# *InJAC Update*

Dear InJAC Members,

I am proud and honored to serve as president of InJAC for 2009 and thank you for this privilege. I would also like to applaud Fred Leickly for his energy and vision as president in leading us during critical, formative years for InJAC. He has some big shoes to fill and I will do my best! I would also like to recognize the past executive board including Janet McCabe, Kim Irwin, and Kathy Such for their hard work and contributions to InJAC. We will miss Marcie Memmer and wish her success in her new endeavors in the ISDH Nutrition and Physical Activity Division.

I want to thank Janet McCabe and Kathy Such for their continuation on the board as treasurer and secretary, respectively. We welcome Dan Stephens as vice president and Trisha Dane in her new role as Asthma Program Director for ISDH. As always, Judy Ganser provides tremendous support, resources and expertise from ISDH.

We have much to accomplish in 2009. Each of our workgroups has spent time over the past few months reviewing goals, objectives and strategies from the State Asthma Plan to determine where we are in meeting our goals. This is a difficult task but essential for us to take stock and refocus our energy and direction for the next five years. We will continue to update you on this process.

As we welcome spring, we need to renew and revitalize our membership. It is an incredibly challenging time for all of us. As volunteers, we strive to balance our time and demands of our work/life with the needs of our coalition. Our five workgroups are the engines of InJAC and integral to achieving our mission. We need to strengthen our coalition, recruit new members and build new partnerships to achieve our goals.

I look forward to working with you all this year to turn our challenges into opportunities for new successes.

With my best wishes,  
Marti Michel

# Upcoming Events

**May 5, 2009 is World Asthma Day and  
May is Asthma Awareness Month!**

**April 1, 2009 - Lung Walk Kick-off luncheon**  
The Skyline Club, One America Building, Indpls  
Contact [lzuercher@lungin.org](mailto:lzuercher@lungin.org) to register.

**April 21-22, 2009 - Asthma Educator Institute**  
Location TBD, Evansville, Indiana  
Contact: Brett Aschliman, 260-415-9294  
*Scholarship information also available for Institute  
and Asthma Certification Exam!!*

**April 25 - World Asthma Day Poster Contest**  
Glendale Kerasotes Theater  
Contact Robin Costley at 317-221-2473 or visit  
[www.asthmaindy.org](http://www.asthmaindy.org) for more information

**May 2, 2009 - World Asthma Day Celebration**  
Allen County Asthma Coalition, Fort Wayne, IN  
Contact: Brett Aschliman, 260-415-9294

**May 5-6, 2009 - Asthma Educator Institute**  
Hyatt Place, Keystone, Indianapolis, Indiana  
Contact: Brett Aschliman, 260-415-9294  
*Scholarship information also available for Institute  
and Asthma Certification Exam!!*

**May 13-14, 2009 - Asthma Educator Institute**  
Hyatt Place, Fort Wayne, Indiana  
Contact: Brett Aschliman, 260-415-9294  
*Scholarship information also available for Institute  
and Asthma Certification Exam!!*

**May 30, 2009 - Lung Walk- Asthma-Lung  
Cancer-COPD**  
The Monon Center, Carmel, IN 9:00 am  
Register at [www.lungin.org](http://www.lungin.org) or email [lzuercher@lungin.org](mailto:lzuercher@lungin.org)

**June 4-5, 2009 - EPA National Asthma Forum**  
Washington, D.C.  
Register online at <http://www.epaasthmaforum.com>

**InJAC Quarterly Meetings**  
ISDH, 8<sup>th</sup> Floor Conference Room,  
**June 18, 2009: 9:00 a.m. – 11:30 a.m.**  
**September 16, 2009: 1:30 p.m. – 4:00 p.m.**  
Contact: Kathy Such, 317-819-1181 x221 or  
[ksuch@lungin.org](mailto:ksuch@lungin.org)

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**Breathe In, Breathe Out: Asthma in Indiana** is a semi-annual newsletter published by the Indiana State Department of Health Asthma Program in conjunction with the Indiana Joint Asthma Coalition (InJAC). The purpose of this newsletter is to provide timely information on asthma to those interested in addressing the asthma burden in Indiana.

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