

# How Lifestyle Affects Asthma Among Washington Residents

May 2015



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# How Lifestyle Affects Asthma Among Washington Residents

May 2015



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PO Box 47855  
Olympia, WA 98504-7855  
360-236-3851

John Wiesman  
Secretary of Health

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## About This Report

Lifestyle choices and health behavior can greatly affect a person's exposure to asthma triggers. Although there is no cure for asthma, it is possible to live a full and healthy life with asthma.

To reduce the overall burden of asthma it is important for people to know common asthma triggers, how those triggers can lead to asthma attacks, and how to manage or completely avoid them.

This report includes information about:

- Who is affected by asthma in Washington State
- Common asthma triggers
- Inexpensive ways to reduce or eliminate environmental triggers
- Resources available in Washington State to help people with asthma live symptom-free

This report is for public health professionals, organizations involved in asthma research, outreach and education, and persons with asthma.

## Report Data

This report presents data about Washington adults only. Researchers gathered data from the:

- Washington Behavioral Risk Factor Surveillance System (BRFSS)
- BRFSS Adult Asthma Callback Survey

Any reference to differences between groups implies the differences are statistically detectable unless otherwise stated. See the Appendix to learn more about methods and data sources.

## Lifetime Versus Current Asthma

This report makes a distinction between lifetime asthma and current asthma.

- **Lifetime asthma** means a person diagnosed with asthma by a doctor or other health professional at any point in his or her life.
- **Current asthma** means a person diagnosed with asthma at any point and who still has asthma at the time they responded to the survey.

Lifetime asthma describes how many people asthma affects at some point in their life. Current asthma describes how many people asthma affects today. This report focuses on current asthma.

## Background

Asthma is a chronic respiratory condition. It is a common but complex disorder of the airways. Asthma causes the lungs to swell and narrow, leading to wheezing, shortness of breath, chest tightness, and coughing.<sup>1</sup> Asthma can range from a persistent wheeze or cough to a severe, progressive and sometimes fatal disease. In most cases, it is difficult to know what causes asthma to develop. Currently there is no cure for asthma.

In 2012, more than 700,000 Washington adults were estimated as having lifetime asthma and over 450,000 adults were estimated as having current asthma.

## Asthma Risk Factors

There are two categories of asthma risk factors: host factors and environmental factors.<sup>2</sup>

**Host factors** are characteristics such as age, gender, race, ethnicity, genetics, and obesity. These factors influence the development of asthma.

**Environmental risk factors** are triggers that influence the expression and severity of asthma. They are usually controllable risks and include such things as:<sup>3</sup>

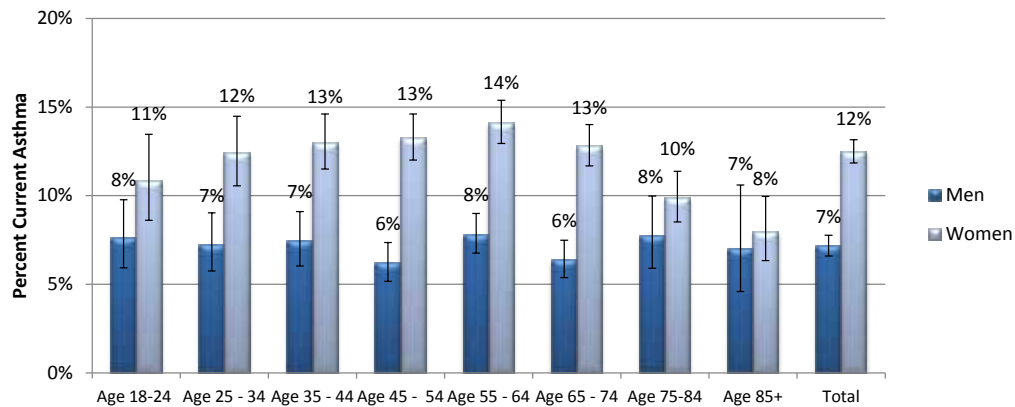
- Cigarette and other smoke.
- Mold.
- Pollen.
- Dust mites.
- Animal dander.
- Exercise.
- Cold air.
- Household and industrial cleaning products.
- Indoor and outdoor air pollutants.
- Some upper respiratory infections caused by viruses and atypical bacteria.

However, a person's lifestyle choices and habits can reduce their exposure to asthma triggers.

# Host Factors

## Age and Sex

Adult females are more likely to have asthma than adult males. This is true across all adult age groups in Washington State [Fig. 1]. National data show similar differences in asthma prevalence.<sup>4</sup> Studies show this striking difference related to sex and age follows key transition points in the reproductive cycle of women, such as menstruation, pregnancy, and menopause.<sup>5</sup> Other possible reasons women have a higher burden of asthma include sex hormones, differences in airway size and responsiveness, obesity, or socioeconomic differences.<sup>4</sup> In the U.S, women have a 10.5 percent greater chance of developing asthma than men.<sup>5</sup>



Washington Behavioral Risk Factor Surveillance System 2010-2012; Age-standardized

Figure 1. Adults with current asthma by age and sex

Adult-onset asthma is more likely to develop among people with allergies or people exposed to environmental irritants such as:

- Tobacco smoke
- Mold
- Dust mites
- Animal dander
- Perfume

Certain viruses or illnesses such as cold or flu may also increase the likelihood of adult-onset asthma. Women who have experienced hormonal changes such as pregnancy or menopause are more likely to develop adult-onset asthma than women who have not.<sup>6</sup>

## Race and Ethnicity

Disparities in asthma prevalence exist among racial and ethnic groups in Washington State [Fig. 2]. This means adults of different racial/ethnic groups experience a greater or lesser burden of asthma. These differences are complex. Genetic differences alone do not explain them. In Washington State, non-Hispanic American Indian and Alaska Native persons report higher asthma rates (17 percent) than other racial/ethnic groups. Persons of Asian (4 percent), Pacific Islander (8 percent) or Hispanic (7 percent) origin report lower asthma rates than other racial/ethnic groups. National data shows similar racial/ethnic disparities among people with asthma.<sup>4</sup>

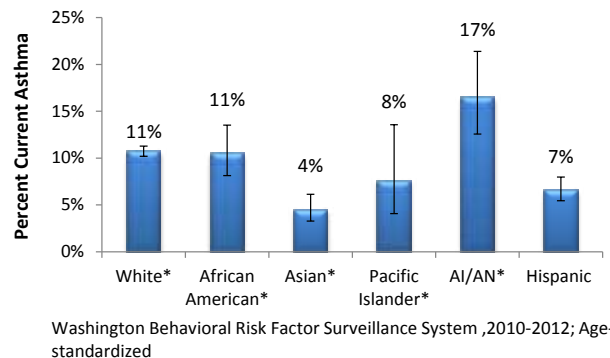


Figure 2. Adults with current asthma by race and Hispanic ethnicity

Researchers are unable to explain some of the considerable racial/ethnic differences in asthma-related problems as seen in Washington State. For example, researchers cannot explain why Asian and Hispanic people have the lowest rate of asthma prevalence. Among African Americans and American Indian/Alaska Natives, socioeconomic status and air quality account for much of the observed disparity when compared to whites.<sup>7</sup> Factors associated with poverty such as lack of access to specialized health care, exposure to stress, and violence may also contribute to asthma.<sup>8</sup>

## Genetics

Until recently, asthma symptoms were thought to be solely linked to environmental factors such as air quality, smoke, scented products, and mold. Research now reveals a strong correlation between asthma and genetics.<sup>9</sup> Research suggests genetic factors contribute 40 to 60 percent of overall asthma risks. Genes associated with asthma have been identified.<sup>10</sup> Studies show that a person does not inherit asthma directly, but inherits a greater tendency to develop asthma. This inherited tendency is later expressed when the person is exposed to environmental agents that trigger asthma.<sup>9</sup> However, genes that make people prone to asthma are not consistent among populations.



Asthma is a complex condition where both genetic and environmental factors are important. In other words, both nature and nurture matter.<sup>9</sup>

## Obesity

In Washington State and nationally, higher body mass index is significantly associated with higher prevalence of asthma for women [Fig. 3]. Nearly 1 in 5 obese women (21 percent) reported having asthma in contrast to 1 in 11 women who are not overweight or obese (9 percent).

Extra fat around the ribcage and lungs make it harder for people with asthma to breathe. As a result, people with asthma who are obese often find that their medications are more effective after they lose weight.<sup>11</sup> Many studies suggest that obesity increases the risk of asthma, even though the reasons underlying the steady dose-response relationship between obesity and asthma are not fully described. Most of these studies also suggest that the relationship between asthma and obesity is stronger in women. Estrogen or other sex-based biologic differences may play a role in the relationship between asthma and obesity.<sup>12</sup>

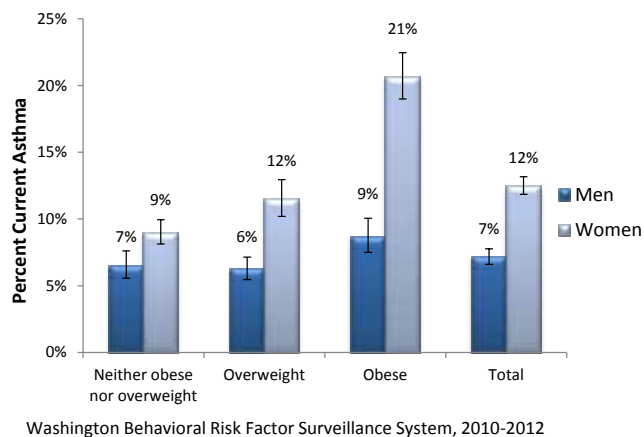


Figure 3. Adults with current asthma by BMI status and gender

## Environmental Factors

### Smoking

According to the National Heart, Lung and Blood Institute (NHLBI), tobacco smoke is the most harmful asthma irritant in the indoor environment. Tobacco smoke can trigger asthma symptoms. Researchers agree that people with asthma who smoke have more severe symptoms than people with asthma who do not smoke.<sup>13</sup> In 2012 in Washington, current smokers were more likely to have asthma (14 percent) than former smokers (12 percent) or people who never smoked (8 percent) [Fig. 4].

### Secondhand Smoke

Secondhand smoke is the smoke from a cigarette, cigar or pipe, and the smoke exhaled by the smoker. Exposure to secondhand smoke can have immediate harmful effects on the cardiovascular

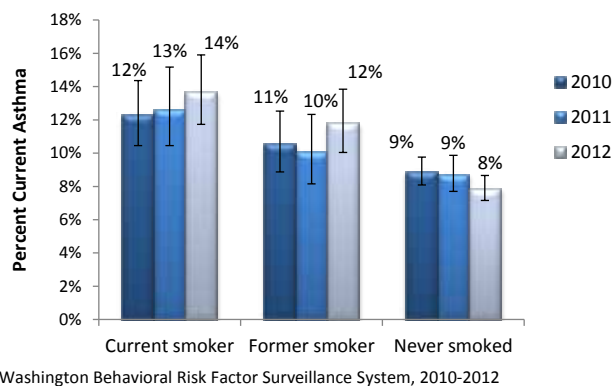


Figure 4. Adults with current asthma by smoking status



system and causes coronary heart disease and lung cancer. The scientific evidence indicates that there is no risk-free level of exposure to secondhand smoke.<sup>14</sup> Secondhand smoke can trigger asthma attacks and increase the severity of asthma attacks.

Figure 5 shows that both lifetime asthma and current asthma in Washington is higher among adults who are exposed to secondhand smoke in their homes (18 percent, 11 percent) when compared to adults with no secondhand smoke exposure (15 percent, 9 percent).

### Stress

Stress may worsen asthma symptoms in people who already have asthma.<sup>15</sup> Strong emotions like anger and anxiety can lead to changes in breathing. Changes in breathing can trigger asthma symptoms or make them worse. Studies show stressful events such as being upset, scared, or exposed to family or community violence may have an impact on asthma.<sup>8</sup> Studies also show that stress can make it more difficult to follow directions for taking asthma medications.<sup>8</sup>

### Exercise

Twenty-five percent of adults in Washington with asthma reported not exercising in the past 30 days, compared to 18 percent of adults without asthma in 2012 [Fig. 7].

Exercise is a vital part of being fit and healthy. Exercise is also an important part of good asthma management. People with

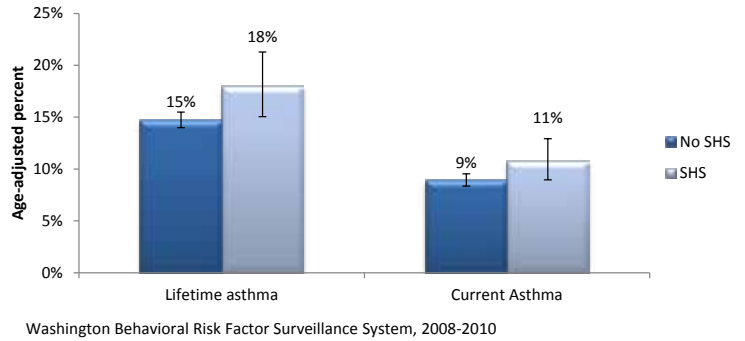


Figure 5. Lifetime and current asthma among adults compared by exposure to secondhand smoke (SHS) in the home

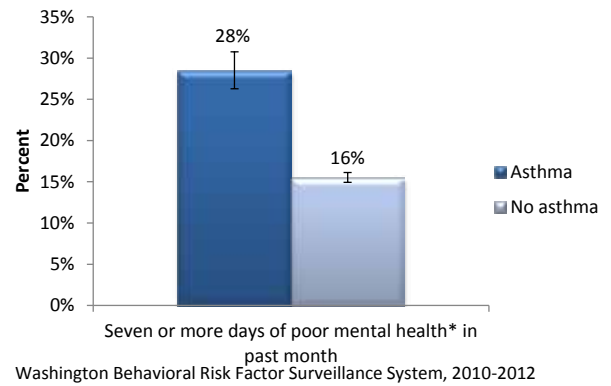


Figure 6. Poor mental health among adults with and without asthma  
\*Note: Refer to the Technical Notes for the definition of Stress/Mental Health used to produce this graph

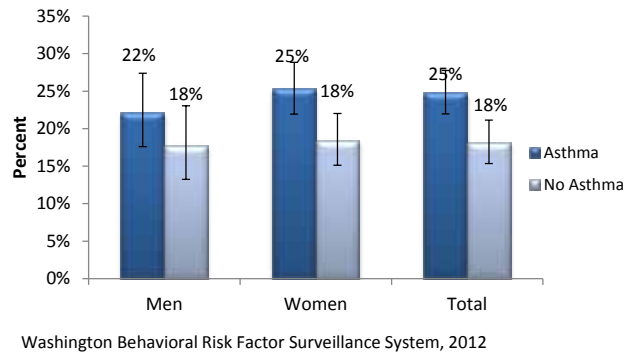


Figure 7. Adults who had no exercise in the past 30 days by asthma status and gender

well-controlled asthma can fully participate in physical activity. However, sometimes the physical effort of exercising or physical activity can trigger an asthma episode. Exercise-induced asthma (EIA) is asthma triggered by exercise or other physical activity. Adults typically manage exercise-induced asthma easily. Managing EIA should be a part of the asthma management plan. Certain activities like walking, leisure biking, and hiking may be better for people with EIA because they are less strenuous, and therefore less likely to trigger asthma episodes. New evidence suggests that appropriate exercise programs can benefit people with asthma by helping them reduce the severity of asthma attacks or entirely prevent them.<sup>16</sup>

## Diet

Many studies have explored the relationship between diet and allergic diseases such as asthma. Researchers have studied food content and airway inflammatory response, the protective effect of antioxidants, the harmful effects of trans-fatty acids, and the benefits of eating oily fish.<sup>17</sup>

There is a strong relationship between diet and asthma.<sup>17,18</sup> Key findings from recent studies include:

- People with severe asthma eat less fiber and more fat than their healthier counterparts.<sup>19</sup>
- People with asthma who eat less fiber also have poorer lung function and more inflammation in their airways.
- Fat intake can increase inflammation and reduce the response of a rescue inhaler.<sup>20</sup>
- More frequent consumption of fruit, vegetables and fish is associated with a lower lifetime prevalence of asthma.<sup>17</sup>



## Outdoor Air Exposures

The chart below lists outdoor air pollutants that can cause or trigger asthma.<sup>21</sup>

| Pollutant                       | Source   | Effect on Asthma  |
|---------------------------------|--|---|
| Ozone                           | <p>Principle component of smog.</p> <p>Summertime air pollutant formed when vehicle exhaust and industrial emissions react with sunlight.</p> <p>After several consecutive days of hot, sunny weather, ozone can build up.</p>   | <p>Exposure is associated with asthma development among children frequently playing outdoor sports.</p> <p>Exposure increases symptoms and emergency room visits among people with asthma.</p> <p>Breathing ozone can prematurely age the lungs and decrease lung function.</p> |
| Fine Particulate Matter (PM2.5) | <p>Easily inhaled tiny particles</p> <p>Includes particles from dirt, soot, dust, smoke or unburned fuel.</p> <p>Includes aerosols suspended in the air that come from mobile vehicles, wood stoves and fireplaces, backyard and agricultural burning, diesel exhaust, industry, wildfires and mining.</p> | <p>Exposure increases symptoms among people with asthma.</p> <p>Exposure can increase emergency room visits among people with asthma.</p> <p>Exposure decreases lung function.</p>  |
| Nitrogen oxides (NOX)           | <p>Results from car or truck emissions, power plants, and industry.</p> <p>Exposure is likely to be higher near busy roadways.</p>   | <p>Exposure increases symptoms among people with asthma.</p>  |
| Sulfur dioxide (SO2)            | <p>Typically comes from diesel engines, ships, and industrial sources that burn sulfur-containing fuels like coal and oil.</p> <p>Mt. St. Helens is also a periodically significant source of SO2 in Washington State.</p>   | <p>Exposure increases symptoms among people with asthma.</p> <p>Exposure can cause increased emergency department visits.</p>   |

## Indoor Air Triggers

On average, Americans spend 90 percent of their time indoors.<sup>22</sup> Indoor allergens and irritants can play a significant role in worsening asthma symptoms.<sup>22</sup> Table 1 (page 9) summarizes indoor air exposures that can influence asthma. Exposure to some of the triggers indicated can be easily reduced or avoided.

Most people spend much of their time at home in the bedroom. People with asthma should give their bedroom special consideration when thinking about indoor asthma triggers. The most effective strategy for reducing environmental risk factors for asthma is to reduce asthma triggers throughout the entire house.

Studies show that 92 percent of homes contain high concentrations of at least one allergen and 46 percent contain three or more allergens.<sup>23</sup> Burning wood for heat and cooking with gas generate particulate matter and gases that can exacerbate asthma. Some people with asthma use wood burning fire-

places or stoves (23 percent), cook with gas (21 percent), or have seen or smelled mold inside the home (13 percent) [Table 2]. Most people with asthma live in an indoor environment where they have carpets or rugs in the bedroom and have pets inside the house [Table 2].

**Table 1: Indoor air exposures proven to cause or worsen asthma<sup>4</sup>**

| Indoor Air Exposure  | Cause of Asthma | Trigger of Asthma |
|--|-----------------|-------------------|
| Dust Mite Allergen   | XXX             | XXX               |
| Cockroach Allergen   | XX*             | XXX               |
| Dog Allergen   |                 | XX                |
| Cat Allergen   |                 | XXX               |
| Fungi/Mold   |                 | XX                |
| Secondhand Tobacco Smoke                                       | XX*             | XXX               |
| Indoor Chemical Exposures (Fragrances, non-specific exposures) | X               | XX                |
| Dampness Indoors/Home  | X               | XX                |
| NO2 (e.g. gas appliances in poorly ventilated kitchens)        |                 | XX                |

\* among young children only

X = Limited evidence for association. XX = Sufficient evidence for association. XXX = Sufficient evidence for causation.

**Table 2. Indoor asthma triggers among adults with current asthma**

| Triggers  | Percent | 95% CI  |
|---|---------|---------|
| Carpeting or rugs in bedroom                                    | 79      | (75-83) |
| Pets inside home  | 71      | (66-75) |
| Mold (past 30 days)   | 13      | (10-17) |
| Pests (mice, rats or cockroaches) inside the home, past 30 days | 9       | (6-13)  |
| Wood burning fireplace/stove                                    | 23      | (19-28) |
| Pets in bedroom   | 55      | (49-60) |
| Smoking inside home (past week)                                 | 10      | (7-13)  |
| Gas fireplace or unvented gas stove                             | 3       | (2-6)   |
| Gas used for cooking  | 21      | (17-25) |

Data Source: Washington Behavioral Risk Factor Surveillance System, Adult Asthma Callback Surveys, 2011-2012

## Asthma trigger mitigation strategies

Small lifestyle changes can be an inexpensive way to reduce asthma triggers in day-to-day life. The following strategies help reduce or eliminate asthma triggers:<sup>24</sup>

- Take off shoes at the door
- Use vent fans/exhaust fans in the bathroom and kitchen
- Wash sheets and pillow cases in hot water
- Remove pets from the house or from certain areas in the house
- Prohibit smoking both indoors and near entryways
- Use fragrance-free products
- Eliminate dust mites and cockroaches in the house
- Control indoor dampness to prevent mold growth

Following these strategies can help reduce indoor allergens that make asthma worse.<sup>25</sup>

In Washington State, most people with asthma report using exhaust fans in the kitchen (69 percent) and exhaust fan in the bathroom (77 percent) [Table 3]. Reducing indoor humidity to 30-60 percent can decrease mold growth. You can reduce moisture levels inside the home by:<sup>26</sup>

- Venting bathrooms, dryers, and other moisture-generating sources to the outside
- Increasing ventilation
- Using de-humidifier or air-conditioner
- Using exhaust fans whenever cooking, dishwashing, or cleaning

**Table 3. Action taken to reduce environmental exposures among adults with current asthma**

| Actions taken                          | Percent | 95% CI  |
|--|---------|---------|
| Air cleaner or purifier regularly used | 29      | (25-33) |
| Dehumidifier regularly used            | 9       | (6-13)  |
| Exhaust fan in kitchen used regularly  | 69      | (64-74) |
| Mattress cover used                    | 31      | (27-36) |
| Pillow cover used                      | 30      | (25-35) |
| Exhaust fan used in the bathroom       | 77      | (72-81) |

Data Source: Washington Behavioral Risk Factor Surveillance System, Adult Asthma Callback Surveys, 2011-2012

## Recommendations: Lifestyle changes to help manage your asthma

Much is still unknown about what causes asthma. Significant lifestyle changes over the past 40 years may be one reason more people have asthma in the U.S. today.<sup>27</sup>

Not all people with asthma have the same triggers. Good asthma management includes finding out which factors trigger an attack for you or someone you know, and taking steps to avoid them. The following is a list of recommendations to avoid asthma triggers (controllable factors) listed in the first half of this report.<sup>26, 28</sup>

### Smoking

- Stop smoking to eliminate a prime asthma cause.
- If you need help to quit smoking, visit [www.Quitline.com](http://www.Quitline.com) or call 1-800-QUIT-NOW or visit Tobacco Quitline Services.
- If quitting is not an option, only smoke outdoors, away from windows and doors, and use a smoking jacket that you remove before you come back inside.
- Learn more about secondhand smoke at [www.smokefreewashington.com](http://www.smokefreewashington.com).

### Diet

Certain foods and food preservatives may worsen asthma. To reduce the risk of diet contributing to asthma:

- Cook your own food instead of eating out or eating prepackaged foods.
- Include fresh fruits, vegetables, whole grains, and lean meats in a healthy diet plan.

### Physical activity

To minimize effects of exercise that triggers asthma:

- Take one or two puffs from an albuterol inhaler five minutes before beginning exercise.
- Warm up gradually at the beginning of each exercise session.
- Start any new exercise slowly, gradually building strength and endurance.
- Avoid exercising outdoors in extremely cold weather.



## Weight management

- Lose excess weight to help manage asthma.
- Talk to your doctor if you do not know what weight to aim for or how to get there safely.

## Stress management

- Maintaining an active lifestyle is important for both physical and mental health.
- Schedule relaxation time for activities such as meditation or yoga.
- Avoid foods high in sugar and caffeine that can increase nervous feelings.
- Avoid drinking too much alcohol.
- Learn breathing control exercises and muscle relaxation techniques.

## Outdoor air pollution

- Use the State Department of Ecology's Washington [Air Quality Advisory Index](#) to check air quality.<sup>29</sup>
- Plan activities when and where pollution levels are lower.

## Outdoor allergens

Asthma symptoms may worsen outdoors at certain times of the year. An allergy to pollen or plant material is likely the trigger of these symptoms. People sensitive to outdoor allergens should:

- Try to stay indoors as much as possible during high pollen days.
- Use air conditioning when it is hot outside or when pollen counts are high.
- Keep windows closed on high pollen days.
- Avoid cutting grass, digging around plants, or participating in other outdoor activities that could worsen the symptoms.

## Indoor allergens

Follow these simple steps to reduce or eliminate your exposure to indoor allergens:<sup>24</sup>

### Dust mites

- Use mattress covers and pillow covers to make a barrier between dust mites and yourself.
- Remove stuffed animals and clutter from your bedroom.
- Wash your bedding on the hottest water setting.
- Reduce indoor humidity to 30-50 percent to decrease dust mite populations.

### Pests

- Get rid of cockroaches in your home by removing as many water and food sources as you can.
- Vacuum or sweep areas that might attract pests every 2-3 days (pests are attracted to places where people eat food and leave crumbs behind).

## **Pets**

- If your pet may be causing your asthma, try to find another home for it.
- If you cannot do that, restrict your pet to a certain part of your home.
- Bathe pets every week and vacuum often if you have a furry pet.

## **Mold**

- Fix water leaks that allow mold to grow behind walls and under floors.
- Reduce indoor humidity to 30-60 percent to decrease mold growth.
- Increase ventilation by using kitchen fans when cooking, and bathroom fans when showering.
- Open doors and windows to circulate fresh air.
- Contact the Department of Health for a free DVD about [How to Reduce Mold in Your Home](#)

## **Cleaning and other scented products**

- Use green cleaning kits.
- Avoid candles, incense, and perfumes.

People with asthma can enjoy more symptom-free days by controlling asthma triggers in the home and working toward positive lifestyle change.



## Conclusion

Lifestyle affects asthma among Washington residents. While a person cannot change his or her age, gender, or genetics, there are simple steps he or she can take to control asthma triggers. Because people spend about 90 percent of their time indoors, it is important to make sure that the indoor living environment is not making you sick.

For people with asthma and those sensitive to allergens, key recommendations from this report include:

- Quit smoking and avoid exposure to secondhand smoke.
- Make sure the house is free from indoor contaminants like dust mites, cockroaches, pet dander, and strong fragrances or chemicals.
- Exercise regularly and create a healthy diet plan that works for you.
- Make sure the house is well ventilated to prevent mold growth.

Adjusting personal health behaviors like diet, exercise, and avoiding outdoor allergens during certain times of the year can improve quality of life for people with asthma. Recommendations for specific health behaviors are included in the report. By creating environments that support healthy lifestyles including tobacco free living, healthy food and beverage options, and safe spaces for physical activity, communities can support people with asthma to live healthy, active lives.

# Appendix

## Methods

The Washington State Department of Health gathers data on Washington residents' health and risk behaviors through multiple sources. The Asthma Program compiled data on asthma-related indicators and this report summarizes the surveillance findings using the most recent data available. We generally report the prevalence of asthma, defined as the percentage of people who have the condition at a single point in time. An in-depth discussion of methods used to determine statistical significance is described in *The Burden of Asthma in Washington State: 2013 Update* (Technical Notes, Appendix C-1).<sup>6</sup>

Adult asthma prevalence is monitored primarily by using the Behavioral Risk Factor Surveillance System (BRFSS), a national state-based survey sponsored by the Centers for Disease Control and Prevention (CDC). To understand the scope of the disease, two survey questions are used to define lifetime asthma and current asthma.

- Lifetime asthma is when the adult or youth has ever been told by a doctor, nurse, or other health professional they have asthma.
- Current asthma is when the adult or youth has ever been told they have asthma AND they still have asthma at the time they took the survey.

For most of the analysis presented here, current asthma is used to describe the burden of the disease. We used the following conventions to describe population subgroups:

- All Adults – defined as non-institutionalized adults who reside in Washington State and do not live in group quarters (i.e., nursing homes, military barracks, hospitals, correctional facilities, etc.).
- Adults– adults are age 18 or older.

Small population sizes and limited resources for data gathering make it difficult to accurately identify asthma rates and related indicators among American Indian/Alaska Native (AI/AN). In general, there are gaps in information for some racial and ethnic minorities living in Washington. Gaps can relate to insufficient data to produce reliable estimates or, when estimates are possible, inadequate power to detect differences between groups. This can limit our ability to identify the current state of disparities for some groups. To provide sufficient sample size for analysis we combined 2010-2012 BRFSS and 2011-12 BRFSS Asthma Callback Survey data for the adult population.

## Data Sources

### Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is a statewide random-digit-dialing telephone survey coordinated by the Centers for Disease Control & Prevention (CDC) and conducted in all 50 states. Every month throughout the year surveyors conducted interviews. This report combined responses by calendar year. The researchers weighted survey responses to be representative of the adult population of Washington. The survey used reports of current asthma to determine adult asthma prevalence.

### BRFSS, Asthma Callback Surveys (ACBS)

The ACBS is an in-depth asthma survey conducted approximately two weeks after the Behavioral Risk Factor Surveillance Survey (BRFSS). BRFSS respondents who report ever being diagnosed with asthma are eligible for the asthma callback. The ACBS addresses critical questions surrounding the health and experiences of persons with asthma. Through the callback, the Washington Asthma Program collects detailed information on topics such as healthcare utilization, knowledge of asthma, asthma management, asthma medications, environmental factors, costs, co-morbid conditions, work related asthma, and complementary and alternative medicines. Learn more: [www.cdc.gov/asthma/ACBS.htm](http://www.cdc.gov/asthma/ACBS.htm)

## Technical Notes

### Stress – as used for this report

For lack of data availability of stress by itself as an indicator through BRFSS, we used mental health as the indicator that predicts stress for this report. The definition of mental health in BRFSS ‘includes stress, depression, and problems with emotions’. For this report, people who reported seven or more days of poor mental health during the past 30 days are considered as having poor mental health/stress.

### Body Mass Index (BMI)

BMI is a measurement of body fat in relation to lean body mass. BMI is found by dividing a person’s metric weight by the square of the person’s metric height. For this report BMI is defined as people who are not overweight (BMI <25), overweight (BMI 25-29.9), or obese (BMI ≥30). For youth the cut points for obesity and overweight are based on age and gender specific growth charts developed by the CDC. Individuals in the top 5 percent for BMI based on age- and gender-specific growth charts are considered obese. Those in the top 15 percent, but not the top 5 percent, are considered overweight.

## **Obesity/Overweight**

Obesity is an abnormally high amount of body fat in relation to lean body mass. The Centers for Disease Control and Prevention defines obesity in adults as a body mass index (BMI) of 30 or greater. Overweight is defined as a BMI of 25-29.9. Body mass index is based on an individual's height and weight, and is calculated by dividing weight in kilograms by height in meters squared. Of BRFSS respondents: a typical woman 5 feet 5 inches tall with a normal BMI weighed 130 pounds, a typical woman considered overweight based on BMI weighed 160 pounds, and a typical obese woman weighed 200 pounds. A typical man 5 feet 11 inches tall with a normal BMI weighed 160 pounds, a typical overweight man weighed 190 pounds, and an obese man weighed 235 pounds.

## Glossary

**Health disparity**—Differences in health status among distinct segments of the population including differences that occur by gender, race or ethnicity, education or income, disability, or living in various geographic localities.

**Health inequity**—Health disparities that are unfair, unjust, or avoidable.

**Age-adjustment**—A method to standardize populations with different age distributions and allows for comparisons over time; also known as age-standardization. This is particularly important for age-related diseases. Unless otherwise indicated, all age-adjusted rates in this document have been adjusted to the 2000 U.S. standard population.

**Confidence interval (CI)**—An indication of a measurement’s precision with a narrow confidence interval indicating high precision and a wide confidence interval indicating low precision. This is sometimes called the “margin of error.”

**Current asthma**—When a survey respondent reports that they have ever been told they have asthma AND they still have asthma at the time they took the survey.

**Lifetime asthma**—When survey respondents report a doctor, nurse, or other health professional has ever told them that they have asthma.

**Adult-onset asthma**—When asthma symptoms appear and are diagnosed in adults older than 20 years, it is typically known as adult-onset asthma.

**Prevalence**—The percentage of a defined population with a disease at a given time.

**Risk factor**—A personal habit or characteristic, clinical condition, or environmental exposure that is associated with an increased probability or severity of disease.

**Secondhand smoke exposure**—Inhalation of air containing tobacco smoke from someone else smoking. Also known as environmental tobacco smoke.

Adult – smoking occurring in the home in the past 30 days.

Adult Call back –smoking inside the home in the past 7 days.

**Statistically detectable**—An observed difference between two populations is determined to be statistically detectable (significant) if it is unlikely to have occurred randomly or by chance. If there is more than a 5 percent probability that the differences we see are due to chance, we say that there is no statistically detectable (or significant) difference.

**Surveillance**—The ongoing systematic collection, analysis, and interpretation of health data. Surveillance is essential to the planning, implementation, and evaluation of public health practice.

**Tobacco use**—Adults that ever smoked at least 100 cigarettes in their lifetime and currently smoke every day or someday; Youth that smoked a cigarette in the past 30 days

**Trigger**—A risk factor that causes exacerbations of asthma. Triggers are secondhand smoke, exercise, mold, pet dander, etc.

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