

# Asthma in Minnesota

## RESULTS FROM THE 2015 ASTHMA CALL-BACK SURVEY

The Asthma Call-back Survey is comprehensive survey of asthma in children and adults. It is conducted as a follow-up to the Behavioral Risk Factor Surveillance System (BRFSS) survey, a telephone survey of health conditions and health-related behaviors conducted on an annual basis by the Minnesota Department of Health in conjunction with the Centers for Disease Control and Prevention. Adults who report in the BRFSS survey that they or their child has been diagnosed with asthma are invited to participate in the Asthma Call-back Survey to provide more in-depth information about their or their child's asthma history. In 2015, call-back interviews were completed for 834 adults (age 18 and older) and 142 children (age 0-17) in Minnesota. Questions from the Asthma Call-back Survey that are associated with the data presented in this report can be found in the appendix.

This report includes results for children and adults with “active asthma” as defined by having seen a health care provider for asthma, having asthma symptoms or having taken medicine for asthma in the past 12 months. In some people, asthma may be intermittent in which case they may not experience symptoms or have taken asthma medication for years, but still have asthma.

## Asthma Control

Asthma symptoms can include, but are not limited to, wheezing, coughing, shortness of breath and chest tightness. The goals of managing asthma are to reduce daytime and nighttime symptoms, decrease use of a rescue inhaler for symptoms, not miss school or work due to asthma and have no limitations in activities due to asthma; that is, live a life without symptoms.

**Table 1. Asthma symptoms among children and adults with active asthma, Minnesota, 2015**

	Children	Adults
Had symptoms in past 30 days	39.5%	61.0%
Sleep disrupted by asthma in past 30 days	*	22.4%
Asthma attack or episode in past 12 months	50.3%	42.7%
Limited usual activities a little to a lot in past 30 days	30.7%	39.9%
Unable to work or carry out usual activities due to asthma in past 12 months	-	24.6%
Missed 1 or more days of school in past 12 months due to asthma (among school aged children with asthma)	34.7%	-
Had 1 or more urgent office visits for worsening symptoms in past 12 months	26.7%	16.2%
Had 1 or more emergency department or urgent care visits for asthma in past 12 months	14.5%	12.2%

Source: Minnesota Asthma Callback Survey, 2015

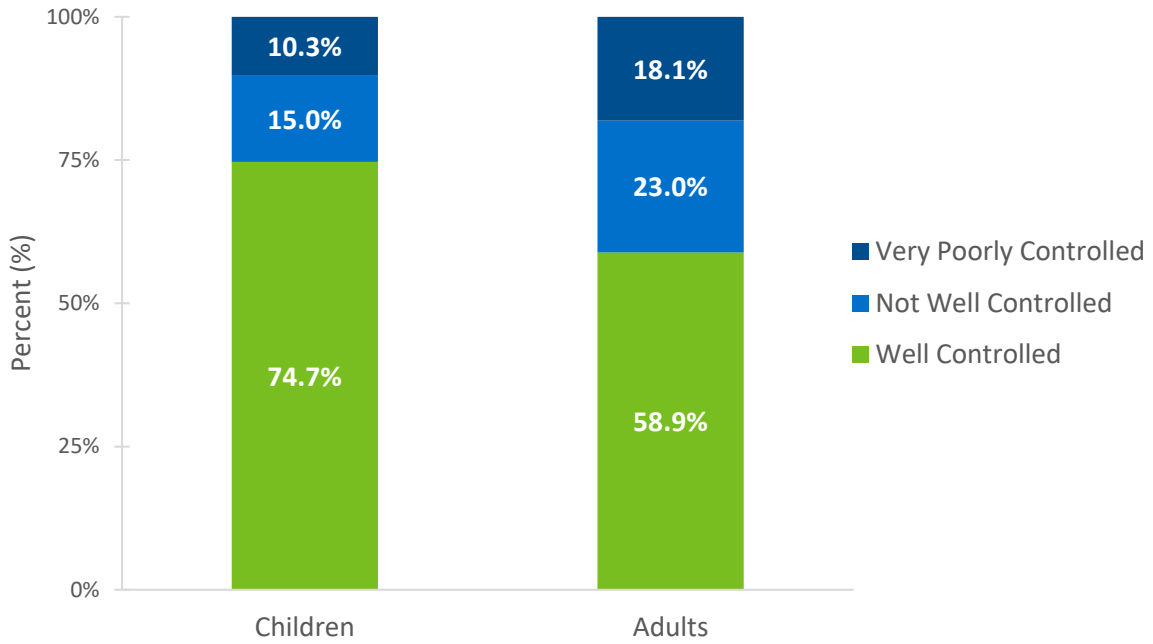
\*Data not shown if the unweighted sample size for the denominator was <50 or if the relative standard error is ≥30%

RESULTS FROM THE 2015 ASTHMA CALL-BACK SURVEY

Overall, 69.6% of children and 46.9% of adults with asthma report that they were symptom-free over the past 2 weeks, an indication of well controlled asthma.

Figure 1. shows levels of asthma control based on reported daytime symptoms, nighttime awakenings and frequency of short-acting beta-agonist use for symptom control. A greater percentage of children than adults have well controlled asthma.

**Figure 1. Asthma control among children and adults with active asthma, Minnesota, 2015**



Source: Minnesota Asthma Callback Survey, 2015

## Work-Related Asthma

Work-related asthma can include asthma that has been caused by some aspect of work (also known as occupational asthma) and existing asthma that is worsened or aggravated by work (also known as work-exacerbated asthma). Forty-three percent of adults with asthma report that their asthma was caused or aggravated by a current or previous job. However, only 14% report ever discussing with a healthcare provider whether their asthma may be work-related.

**Table 2. Work-related asthma among adults with active asthma, Minnesota, 2015**

	Adults
Asthma caused or made worse by previous job	31.2%
Asthma caused or made worse by current job	15.3%
Asthma caused or made worse by any job	42.7%
Discussed with a health professional whether asthma may be work-related	13.5%

Source: Minnesota Asthma Callback Survey, 2015

## Environmental Factors Affecting Asthma

Many environmental factors in the home can act as triggers of worsening asthma symptoms. Table 3 presents data on environmental triggers reported in the homes of children and adults with asthma. The most commonly reported asthma triggers were pets and carpeting or rugs in the bedroom.

**Table 3. Environmental triggers in the homes of children and adults with active asthma, Minnesota, 2015**

	Children	Adults
Gas used for cooking	34.8%	42.5%
Seen or smelled mold or musty odor in home	*	9.2%
Has pets inside the home	57.7%	61.6%
Pets are allowed in the bedroom	29.3%	47.9%
Mice or rats seen inside the home	*	7.4%
Wood burning fireplace or wood burning stove used in the home	*	11.4%
Unvented gas logs, unvented fireplace or unvented gas stove used in the home	*	5.8%
Smoking inside home in the past week	*	13.3%
Has carpeting or rugs in the bedroom	63.9%	67.4%
Ever advised by a health professional to change home, school or work environment to improve asthma	20.3%	26.9%

Source: Minnesota Asthma Callback Survey, 2015

\*Data not shown if the unweighted sample size for the denominator was <50 or if the relative standard error is  $\geq 30\%$

As shown in Table 4, the most commonly reported actions taken to reduce triggers in the home were the regular use of kitchen and bathroom exhaust fans. In both cases, use was more likely in the homes of children than adults with asthma.

**Table 4. Environmental modifications in the homes of children and adults with active asthma, Minnesota, 2015**

	Children	Adults
Air cleaner or purifier regularly used in the home	43.7%	33.3%
Dehumidifier regularly used in the home	50.8%	42.4%
Exhaust fan in kitchen regularly used when cooking	78.1%	59.3%
Mattress cover used	38.0%	33.8%
Pillow cover used	29.1%	29.2%
Exhaust fan in bathroom used regularly	80.1%	66.1%
Sheets and pillowcases washed in hot water	36.3%	35.3%

Source: Minnesota Asthma Callback Survey, 2015

## Coexisting Medical Conditions

Chronic obstructive pulmonary disease (COPD) and depression are conditions that are commonly associated with asthma. COPD is a broad term that encompasses both emphysema and chronic bronchitis. Overall, 23% of adults with asthma report that they have also been diagnosed with COPD. Thirty-six percent of adults with asthma report having a diagnosis of depression.

**Table 5. Coexisting conditions reported by adults with active asthma, Minnesota, 2015**

	Adults
Chronic Obstructive Pulmonary Disease (COPD)	22.7%
Depression	36.2%

Source: Minnesota Asthma Callback Survey, 2015

## Asthma Management

The national guidelines for asthma management recommend that people with asthma have routine asthma checkups with a health care provider at least once yearly. As shown in Table 6, children are more likely than adults to have had a routine checkup for asthma in the past 12 months.

The CDC recommends annual flu shots for people with asthma of any age. Children are also more likely than adults with asthma to have had a flu shot in the past year.

**Table 6. Preventive care for children and adults with active asthma, Minnesota, 2015**

	Children	Adults
Routine asthma checkup in past 12 months	73.0%	51.3%
Flu shot in past 12 months	71.5%	53.7%

Source: Minnesota Asthma Callback Survey, 2015; Behavioral Risk Factor Surveillance System, 2015 (adult flu shots)

## Self-management education

A key component of asthma care is self-management education. According to the national guidelines, this involves teaching people with asthma how to monitor their level of asthma control, take medication correctly (e.g., inhaler technique) and avoid environmental triggers. They should also receive an asthma action plan which is a written document developed by their health care provider that includes instructions on which medicine to take when, a list of factors that make their asthma worse (i.e., asthma triggers) and actions to take when symptoms get worse. People with asthma may also be taught how to use peak flow meters which are devices they can use to measure how well they are breathing.

Results from the Asthma Call-back Survey show that children are far more likely than adults to have ever received an asthma action plan from their health care provider.

**Table 7. Asthma self-management education among children and adults with active asthma, Minnesota, 2015**

	Children	Adults
Taught to recognize early signs or symptoms of an asthma attack	84.5%	68.8%
Taught what to do during an asthma episode or attack	*	77.4%
Taught how to use a peak flow meter to adjust daily medications	42.0%	49.7%
Ever given an asthma action plan	73.2%	41.0%
Taken a class on how to manage asthma	16.4%	10.3%

Source: Minnesota Asthma Callback Survey, 2015

\*Data not shown if the unweighted sample size for the denominator was <50 or if the relative standard error is ≥30%

## School-based asthma management

Because children spend a significant portion of their days at school, it is important for them to be able to manage their asthma while in school. Minnesota law allows students with asthma to carry asthma inhaler medication following determination by their school nurse and health care provider that they have the knowledge and skills to safely carry and use their inhaler medication at school.

**Table 8. Asthma management among school-aged children with active asthma, Minnesota, 2015**

	School-aged children
Has a written asthma action plan on file at school	51.3%
Allowed to carry asthma medication at school	53.7%

Source: Minnesota Asthma Callback Survey, 2015

## Access to Care

A potential barrier to managing asthma is the cost of medical care and medications. While only 5% of adults with asthma report that they do not have health insurance coverage, 15% report that they were not able to afford asthma medications at some time in the past 12 months. This implies that even those who have health insurance experience cost barriers to accessing asthma medication.

**Table 7. Insurance status and cost barriers among children and adults with active asthma, Minnesota, 2015**

	Children	Adults
Currently has health insurance	*	95.4%
Cost a barrier to seeing primary care doctor for asthma in past 12 months	*	4.7%
Cost a barrier to buying medications for asthma in past 12 months	*	14.9%
Cost a barrier to seeing a specialist for asthma care in past 12 months	3.0%	3.6%

Source: Minnesota Asthma Callback Survey, 2015

\*Data not shown if the unweighted sample size for the denominator was <50 or if the relative standard error is  $\geq 30\%$

## Use of Complementary Health Approaches to Manage Asthma

The Asthma Call-back Survey data show that 44 percent of children and adults with asthma are using complementary health approaches to manage their asthma. The majority of approaches fall into the category of self-care rather than practitioner care. Note that the survey did not ask whether these approaches were used instead of asthma medication or discussed with their health care provider.

The National Center for Complementary and Integrative Health's webpage on [Asthma](https://nccih.nih.gov/health/asthma) (<https://nccih.nih.gov/health/asthma>) provides information on the effectiveness and safety of complementary health approaches for asthma.

**Table 8. Use of complementary health approaches for asthma among children and adults with active asthma, Minnesota, 2015**

	Children	Adults
Any complementary health approaches	43.8%	43.8%
Self-care (e.g., herbs, vitamins, aromatherapy, homeopathy, yoga or breathing techniques)	41.9%	40.9%
Practitioner care (e.g., acupuncture, acupressure, naturopathy or reflexology)	*	3.1%

Source: Minnesota Asthma Callback Survey, 2015

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## Appendix: Asthma Call-back Survey questions used in this report

### Table 1. Asthma symptoms

“One or more” to: “During the past 30 days, on how many days did you/your child have any symptoms of asthma?”

“One or more” to: “During the past 30 days, on how many days did symptoms of asthma make it difficult for you/your child to stay asleep?”

“Yes” to: “During the past 12 months, have you/your child had an episode of asthma or an asthma attack?”

“A little, a moderate amount or a lot” to: “During the past 30 days would you say you/your child limited your usual activities due to asthma not at all, a little, a moderate amount, or a lot?”

“One or more days” to: “During the past 12 months, how many days were you/your child unable to work or carry out your usual activities because of your asthma?”

“One or more” to: “During the past 12 months, about how many days of school did your child miss school because of his/her asthma?”

“One or more” to: “During the past 12 months, how many times did you/your child see a doctor or other health professional for urgent treatment of worsening asthma symptoms or for an asthma episode or attack?”

“One or more” to: “During the past 12 months, how many times did you/your child visit an emergency room or urgent care center because of your asthma?”

### Table 2. Work-related asthma

“Yes” to:

“Was your asthma caused/made worse by chemicals, smoke, fumes, or dust in any previous job you ever had?”

“Was your asthma caused/made worse by chemicals, smoke, fumes, or dust in your current job?”

“Was your asthma caused/made worse by chemicals, smoke, fumes, or dust by any job you ever had?”

“Did you ever discuss with a health professional whether asthma may be work-related?”

### Table 3. Environmental triggers

“Yes” to:

“Is gas used for cooking?”

“In the past 30 days, has anyone seen or smelled mold or a musty odor inside your home?”

“Does your household have pets such as dogs, cats, hamsters, birds or other feathered or furry pets that spend time indoors?”

“Yes” or “some are, some aren’t” to: “Are pets allowed in your/your child’s bedroom?”

“In the past 30 days, has anyone seen mice or rats inside your home?”

“Is a wood burning fireplace or wood burning stove used in your home?”

“Are unvented gas logs, unvented gas fireplace or unvented gas stove used in your home?”

“In the past week, has anyone smoked inside your home?”

“Do you have carpeting or rugs in your bedroom?”

“Has a health professional ever advised you to change things in your home, school, or work to improve your asthma?”



#### **Table 4. Environmental modifications**

“Yes” to:

“Is an air cleaner or purifier regularly used inside your home?”

“Is a dehumidifier regularly used to reduce moisture inside your home?”

“Is an exhaust fan that vents to the outside used regularly when cooking in your kitchen?”

“Do you use a mattress cover that is made especially for controlling dust mites?”

“Do you use a pillow cover that is made especially for controlling dust mites?”

“In your bathroom, do you regularly use an exhaust fan that vents to the outside?”

“Hot” to: “Are your sheets and pillowcases washed in cold, warm, or hot water?”

#### **Table 5. Coexisting conditions**

“Yes” to any of the following questions: “Have you ever been told by a doctor or other health professional that you have...

...chronic obstructive pulmonary disease also known as COPD?”

...emphysema?”

...chronic bronchitis?”

“Yes” to “Have you ever been told by a doctor or other health professional that you were depressed?”

#### **Table 6. Preventive care**

“One or more” to: “During the past 12 months, how many times did you/your child see a doctor or other health professional for a routine checkup for your [his/her] asthma?”

“Yes” to “During the past 12 months, have you had either a flu shot or a flu vaccine that was sprayed in your nose?”

#### **Table 7. Asthma self-management education**

“Yes” to: “Has a doctor or other health professional ever taught you [or child’s name] ... How to recognize early signs or symptoms of an asthma episode?”

“Yes” to: “Has a doctor or other health professional ever taught you [or child’s name] ... What to do during an asthma episode or attack?”

“Yes” to: “Has a doctor or other health professional ever taught you [or child’s name] ... How to use a peak flow meter to adjust your daily medications?”

“Yes” to: “Has a doctor or other health professional EVER given you/your child an asthma action plan?”

“Yes” to: “Have you [or child’s name] ever taken a course or class on how to manage your asthma?”

#### **Table 8. Asthma management among school-aged children**

“Yes” to: “Does your child have a written asthma action plan or asthma management plan on file at school?”

“Yes” to: “Does the school your child goes to allow children with asthma to carry their medication with them while at school?”

#### **Table 9. Insurance status and cost barriers**

“Yes” to: “Do you [Does your child] have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare or Medicaid?”

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“Yes” to: “Was there a time in the past 12 months when you [your child] needed to see your primary care doctor for your asthma but could not because of the cost?”

“Yes” to: “Was there a time in the past 12 months when you needed to buy medication for your [your child’s] asthma, but could not because of the cost?”

“Yes” to: “Was there a time in the past 12 months when you needed to see a specialist for your [your child’s] asthma, but could not because of the cost?”

### **Table 10. Use of complementary health approaches**

“Yes” to “In the past 12 months, have you/your child used (herbs, vitamins, aromatherapy, homeopathy, yoga, breathing techniques, acupuncture, acupressure, reflexology, or naturopathy) to control your asthma?”

“Yes” to “In the past 12 months, have you/your child used (herbs, vitamins, aromatherapy, homeopathy, yoga, or breathing techniques) to control your asthma?”

“Yes” to “In the past 12 months, have you/your child used (acupuncture, acupressure, naturopathy, or reflexology) to control your asthma?”

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