



Behavioral
Risk
Factor
Surveillance
System

Contents

**Asthma Among Adult
New Yorkers**

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The data in this report come from the Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is a continuous telephone survey system supported in part by the Centers for Disease Control and Prevention and administered by the New York State Department of Health. The system is designed to provide information on behaviors and risk factors for chronic and infectious diseases and other health conditions among the adult population. The data for this report have been weighted to reflect the adult population of New York State¹.

This report describes the prevalence of asthma among adults in New York State, emergency room use for asthma treatment and whether those with asthma receive counseling on ways to help them manage their asthma better. The asthma data were collected from the 1996 and 1997 BRFSS surveys.

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Asthma Among Adult New Yorkers

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Overview

Asthma is a chronic disease of the respiratory system and is characterized by airway inflammation and hyper-responsiveness (the bronchi narrow too easily and too much). These conditions in the lung cause recurrent, reversible episodes of wheezing, shortness of breath and coughing upon exposure to so-called asthma trigger factors. A medical diagnosis of asthma is based upon a combination of reported symptoms and clinical criteria (measurable physiological changes).

Asthma affects 14-15 million people nationwide². Asthma is responsible for significant numbers of lost workdays, missed school days, and hospital stays, and is a significant burden on the patient, their families and on health care resources.

What causes an individual to develop asthma is unknown, but genetic and environmental factors probably both play a role. Some individuals who produce excess amounts of antibodies (IgE) in response to exposure to allergens are at greater risk for developing asthma. Exposure to allergens, respiratory viruses and chemicals can contribute to the development of asthma, and exacerbate symptoms in those with existing asthma. Numerous studies report that asthma prevalence is increasing worldwide³. The reason for this increase, which is especially dramatic among children, is not understood. Whether the trend results from a change in the occurrence of the disease or from changes in the recognition and diagnosis of asthma is unclear. Prevalence of asthma varies with sex and age. While asthma is considered a chronic disease, an individual's asthma status may vary throughout his or her lifetime. For children, asthma prevalence is reportedly higher among males. However in adults, asthma prevalence is higher among women.

Many factors are known to influence the frequency and severity of asthma attacks. Of those factors, some are asthma "triggers" present in the outdoor environment, home or workplace. A variety of environmental factors can trigger an asthma attack; some examples are: smoke, allergens from animals (e.g., cockroach, rat, cat, dog, birds), pollen, mold spores, strong odors or perfumes, cold air. By limiting or eliminating exposures to asthma triggers, people with asthma can reduce their risk of experiencing asthma attacks.

There is no cure for asthma, but medications are available to treat or prevent asthma symptoms. The underlying cause of asthma is inflammation of the airways. Current guidelines in asthma management for moderate and severe asthma recommend the use of medications that prevent an attack by consistently reducing airway inflammation (controller medication), and discourage reliance solely upon medications that relieve or reverse the symptoms once an attack has begun (rescue medication). Another tool in asthma management is a personal peak flow meter, which measures lung function. The patient uses a peak flow meter to monitor the status of his or her lung function. Monitoring and recording of lung function status assists the health professional to evaluate the need and or efficacy of the patient's medications.

Patients that receive and follow advice about how and when to monitor personal lung function, how and when to use their medications effectively, and how to reduce or avoid exposure to asthma "triggers", can better manage their asthma. Five key factors in successful management of asthma are: better recognition of the disease (early and accurate diagnosis); reducing exposures to triggers; monitoring respiratory function; encouraging the use of controller medications to prevent the onset, or reduce the severity of, an asthma attack; and effective patient education³.

Asthma Data

In the 1996 and 1997 BRFSS surveys, asthma status was established from the response given to the question, "Have you been told by a doctor that you currently have asthma?" A positive response to this question was followed up with three additional questions addressing emergency room use for asthma treatment in the preceding twelve months, counseling on the use of medications to prevent asthma attacks, and counseling on ways to clean or modify the home environment to reduce asthma symptoms. A fifth question, asking about the presence of pets (cat, dog or bird) in the home was asked of everyone, independent of asthma status, in the 1997 survey.

Results

According to the combined data from 1996 and 1997 BRFSS, approximately 870,000 adults in New York State have current, diagnosed asthma (6.4% of the population).

Asthma prevalence estimates derived from BRFSS survey data may underestimate actual asthma prevalence as they reflect current rather than lifetime prevalence, and only cases of diagnosed asthma. Estimates of current asthma prevalence were similar for New York City and for the rest of New York State (5.9% (95 % Confidence Interval (CI) of 4.7 - 7.1) and 6.7% (95% CI 5.8 - 7.6), respectively). Consistent with national findings, asthma prevalence among New York State women is almost twice that for adult males (8.1%, CI 7.0 - 9.1, and 4.6%, CI 3.6 - 5.5, respectively). Asthma prevalence varies with age (Figure 1). Prevalence of current, diagnosed asthma is higher among young adults (18-24 years of age) than among older adults. Asthma prevalence rates are higher for adults with lower household incomes (Table 1).

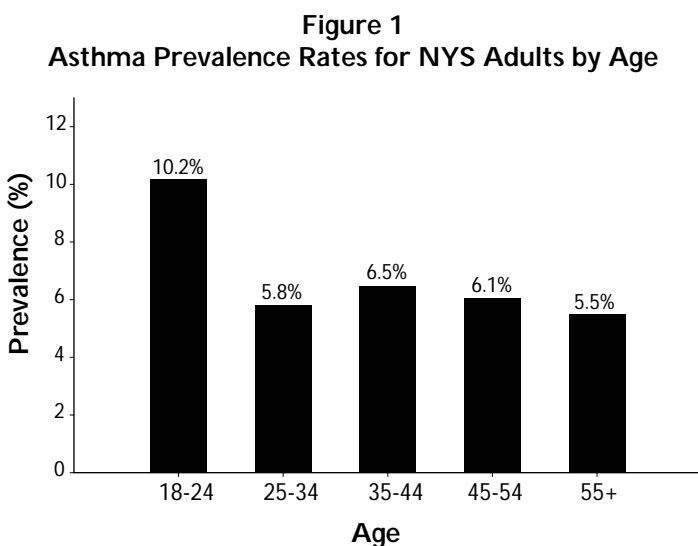


Table 1
Asthma Prevalence Rates for NYS Adults by Income

Annual Income	Prevalence	(95% Confidence Interval)
≤\$14,999	10%	(7.4 - 13.2)
\$15,000 - \$24,999	9%	(6.6 - 10.6)
\$25,000 - \$49,999	6%	(4.4 - 6.8)
≥\$50,000	5%	(3.5 - 5.9)

Asthma prevalence also varies with race and ethnicity. Using the combined BRFSS data for 1996 and 1997, asthma prevalence among non-Hispanic Whites, non-Hispanic African Americans and Hispanics is estimated at 6% (CI 5.2 - 6.8), 8% (CI 5.5 - 10.3), and 10% (CI 7.0 - 12.8) respectively.

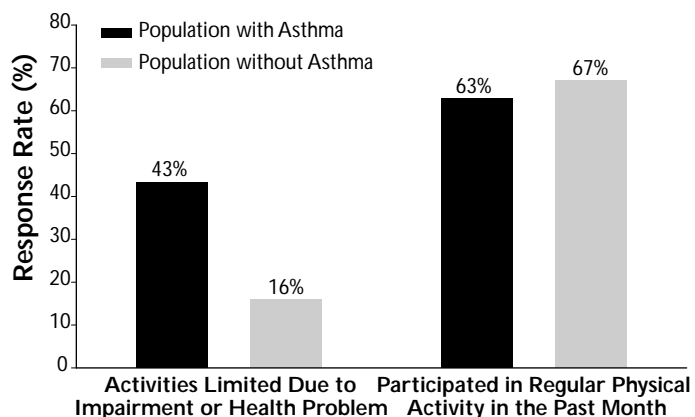
In addition to the burdens on patients and their families, asthma also exacts a toll on the health care resources of communities responding to the increasing rates of asthma and the need for asthma treatment and management.

According to the 1996 and 1997 BRFSS, over 189,000 New Yorkers (22% of the adult population diagnosed with asthma) sought treatment for their asthma on at least one occasion at an emergency room or urgent care clinic in the previous twelve months. One way to reduce the number of patients needing emergency treatment for asthma is counseling by medical providers about what action patients can take to prevent or reduce the number and severity of their asthma attacks. The 1996 and 1997 BRFSS survey found that about 82% of asthma patients had received counseling on how to use asthma medications to prevent an asthma attack. Two out of three patients with asthma had received counseling from their health care provider about ways to clean or modify their home environment to reduce asthma symptoms.

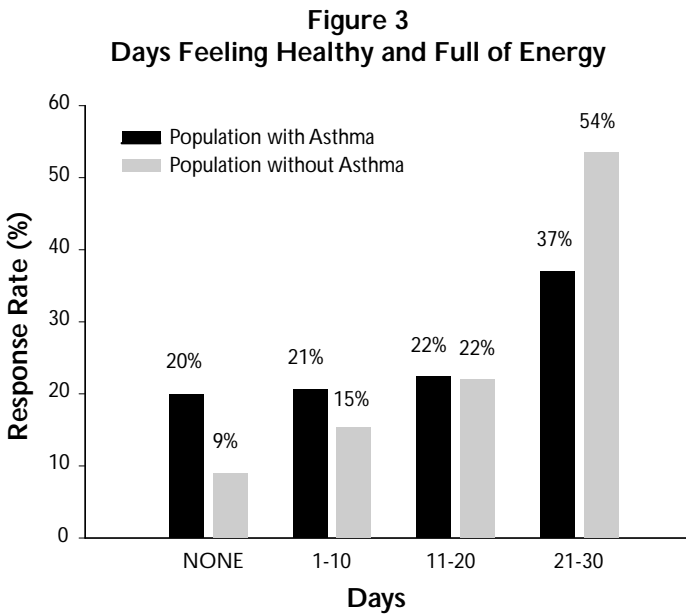
Pets and smoke can be sources of allergens and irritants that can aggravate asthma. The 1997 BRFSS found that people with self-reported, diagnosed asthma were slightly more likely to have a pet (cat, dog or bird) in the home (48% (95% CI 44 - 52) versus 39% (95% CI 37 - 41) for those without asthma). Smoking history (defined as having smoked at least 100 cigarettes in a lifetime) did not differ between adults with reported, diagnosed asthma and the rest of the adult population. Similarly, of those who ever smoked, people with asthma were as likely to be current smokers as were people without asthma (50% (95% CI 42 - 58) and 49 % (95% CI 47 - 52) are current smokers respectively).

The BRFSS contains several questions that address quality of life issues. Responses to these questions do not focus on the influence of any particular health factor on the quality of life. The responses provide an individual's overall assessment of each measure and allow for general comparison.

Figure 2
New Yorker's Participation in Regular Physical Exercise and Reported Physical Limitations



For many of the questions, there was an overall tendency for negative impacts on quality of life measures to be reported by those with asthma. People with asthma were far more likely (43 % (95% CI 38 - 49) versus 16 % (95% CI 15 - 17) for the rest of the population) to report activity limitations due to any impairment or health problem. However, they were as likely as those without asthma to report participating in some form of regular physical exercise (Figure 2). Those with asthma differed from those without asthma in their response to a question characterizing the previous 30 days in terms of the number of days they felt healthy and full of energy (Figure 3). The occurrence of asthma symptoms severe enough to disturb sleep is common among those with asthma. Nocturnal awakenings and the frequency and severity of nighttime asthma symptoms are used as measures of asthma morbidity in epidemiological and pharmaceutical studies of children and adults with asthma⁴. The BRFSS found those with asthma less likely to report having had enough rest or sleep in the previous thirty days than those without asthma (28% (95% CI 22 - 33) and 37% (95% CI 35 - 38), respectively).



Summary

The 1996 and 1997 BRFSS survey found current, diagnosed asthma prevalence among New York State adults to be over 6%. While the survey found that the majority of New York State's adults with asthma had received counseling on ways to use their medications and modify their homes to reduce or prevent asthma symptoms, the survey did not obtain information on whether patients were following that advice. Effective asthma management should result in fewer asthma episodes requiring emergency interventions. Approximately one of every five adults with diagnosed asthma in New York State required emergency room or urgent care treatment at least once in the previous twelve months indicating that a significant number of patients are not able to effectively manage their disease. The available survey data are inadequate to determine whether this failure in asthma management is associated with deficiencies in counseling, in applying the advice received or reflective of asthma severity. Successful management of asthma requires the patient to be aware of factors that aggravate their asthma and adjust their behavior or their environment to reduce or eliminate the influence of those factors. The survey results suggest that asthma patients are not reducing exposures to certain asthma triggers, as prevalence of pet ownership and prevalence of current smoking do not differ between those with and without diagnosed asthma. In general, current, diagnosed asthma is associated with negative impacts on quality of life. The pattern of responses supports findings elsewhere regarding the toll of asthma as measured by missed work and school days.

BRFSS surveys, past and future, have the potential to help gauge changes in asthma prevalence within the New York State population over time, and the impact of new asthma management strategies aimed at reducing morbidity and mortality.

References

1. United States Census Bureau; Population Projections of the United States by Age, Sex, and Hispanic Origin: 1995 to 2050.
2. United States Centers for Disease Control and Prevention. April 24, 1998. Surveillance for Asthma-United States, 1960-1995. Morbidity and Mortality Weekly Report. Volume 47.
3. National Institutes of Health, National Heart Lung and Blood Institute. Global Initiative for Asthma. NHBLI/WHO Workshop Report. Publication Number 95-3659.
4. Pearce N, Beasley R, Burgess R, Crane J (1998) Asthma Epidemiology, Principles and Methods. New York: Oxford University Press.