

ASTHMA

PUBLIC HEALTH BRIEF

Zachary Macas, Health Policy Analyst



OVERVIEW OF ASTHMA ^{1,2,5}

Asthma is a chronic lung disease that affects the lungs, causing narrowing and constriction of the airway, making it more difficult to breathe. Worldwide, around 300 million people have asthma, and it is likely that by 2025 a further 100 million may be affected. Asthma is also the cause of more than 350,000 deaths per year. The cause of this condition is unknown, but genetic, and environmental factors have been linked to the development of Asthma. Some are born with the condition, while others develop Asthma later in life. In order to diagnose asthma, medical professionals use a method called Spirometry, which measures how strong a person's lungs are after they take a deep breath and blow into a spirometer. X-Rays can also help in diagnosing asthma as well. Asthma cannot be cured, but the symptoms can be managed and controlled.

The most common symptoms include:

- Shortness of breath/difficulty breathing
- Coughing
- Chest tightness
- Wheezing

Asthma can be exacerbated in different ways:

- Allergens - mold spores, pet dander, pollen, dust, etc.
- Exercise
- Pollutants - smoke, cleaning chemicals, strong odors
- Illness - respiratory infection, flu
- Weather - extreme heat and cold temperatures
- Respiratory Infections
- Improper medication use

For children, asthma may impair airway development and reduce maximally attained lung function, and these lung function deficits may persist into adulthood without additional progressive loss. Adult asthma may accelerate lung function decline and increase the risk of fixed airflow obstruction.

TREATMENT OF ASTHMA ^{1,2}

Medications used to treat Asthma include Metered Dose Inhalers or Dry Powder Inhalers containing corticosteroids. Albuterol Inhalation Solution machines can be used on an as-needed basis or as prescribed by a medical professional when symptoms flare. Monitoring lung strength using a Peak Flow Meter can help in asthma management. Controlling your environment also plays a role in managing asthma exacerbations by limiting exposure to specific allergens and pollutants.

Sources:

- 1.CDC. Asthma. <https://www.cdc.gov/asthma/default.htm>
- 2.Mayo Clinic. Asthma. <https://www.mayoclinic.org/diseases-conditions/asthma/symptoms-causes/syc-20369653>
- 3.CRISP Reporting Services
- 4.ScienceDirect. The Basic Immunology of Asthma. <https://doi.org/10.1016/j.cell.2021.02.016>.
- 5.Frontiers. Epidemiology of Asthma in Children and Adults. <https://www.frontiersin.org/articles/10.3389/fped.2019.00246/full>
- 6.Harford County Health Department. <https://harfordcountyhealth.com/community-health/lead-poisoning-prevention-program/>

DATA ³

Hospital visits due to Asthma June2020 - June2022

Harford County	8,020
Maryland	292,182

Hospital visits by Age in Maryland June2020 - June2022

Ages 0-17	43,280
Ages 18+	248,902

SPOTLIGHT: CHILDREN AND ASTHMA ^{1,4,5}

Asthma is the most common chronic disease of children ages 0-17. It is the leading cause of childhood emergency department visits, hospitalizations, and missed school days. Every year, missed school days reach more than 10 million in the United States alone. This directly correlates to parents missing and/or leaving work which can negatively affect overall life at home through loss of job, and less paid hours. As previously stated, there were over 43,000 hospital visits from children due to asthma during the last two years in Maryland.

Risk factors in children are:

- Family history of asthma
- Exposure to tobacco
- Atopy
- Respiratory Tract Infections
- Obesity
- Areas with high pollution
- Being of african american/hispanic descent

Complications of childhood asthma include:

- Premature decline in lung function
- Poor sleep and fatigue
- Missed school days and falling behind

Children should have an Asthma Action Plan in place at home, child care facilities, and schools. This can be provided by the child's pediatrician, which gives individualized instructions on how to take a specific child's medications, and their restrictions, if any.

Having asthma and living in low income areas results in higher hospitalization rates due to not having necessary medications and access to healthcare facilities.

HARFORD COUNTY ^{3,6}

Harford county has approximately 254,000 residents, nearing 4000 hospital visits per year due to Asthma related issues. Harford County is home to multiple facilities specializing in Asthma and related conditions, including Upper Chesapeake Medical Center, and the Asthma, Allergy, and Sinus Center.

Families who have children with Asthma and have Medical Assistance can enroll in the Harford County Health Department's Lead and Asthma Program, which provides home visiting services and durable supplies including HEPA Vacuum cleaners, non-toxic cleaning supplies, pest management kits, and educational materials to help reduce allergens and irritants causing Asthma symptoms.