



## REPORT HIGHLIGHTS

- Work-related asthma is asthma triggered by exposures to substances at work and tends to get better in prolonged time away from the work environment.
- From 2018 to 2022, 35% of Montana adults with asthma reported that their asthma symptoms were made worse by irritants like chemicals, smoke, dust, or mold at their current job.
- Nearly 20% of adults with asthma in Montana have **lost or quit a job** due to exposure to asthma triggers at their job site between 2018 to 2022.
- Physicians can also use Z codes under Z57 when diagnosing occupational risk factors.

## BACKGROUND

Asthma is a common chronic disease that affects the lungs and can affect anyone of any age. People with asthma experience wheezing, breathlessness, chest tightness, and nighttime or early morning coughing. Asthma can be controlled by eliminating triggers, visiting the doctor for regular asthma checkups, and taking medications as prescribed. Within the United States, 9.8% of adults reported having asthma in 2023<sup>1</sup>. In that same year, 11.7% of adults in Montana reported having asthma, slightly higher than the national average.

While there are several types of asthma, work-related asthma (also referred to as occupational asthma) is specifically triggered by exposures to substances at work<sup>2</sup>. Around 11 million American workers are exposed to at least one known substance that causes asthma symptoms in their workplace<sup>3</sup>. Symptoms of work-related asthma are the same as those of other types of asthma and can develop shortly after exposure, or even months or years after repeated exposures to harmful substances. Symptoms will tend to get better on weekends, vacations, or any prolonged time away from the work environment. People who have never had asthma can develop work-related asthma or those who have previously had asthma for years will find their symptoms are aggravated by exposures at work<sup>4</sup>.

Work-related asthma is associated with exposure to specific workplace triggers. A group of chemicals known as isocyanates, a chemical compound found in polyurethane products, is one of the most common chemical causes of work-related asthma<sup>5</sup>. Jobs that involve exposure to these chemicals may include painting, foam-blowing, and polyurethane product manufacturing. Other common triggers include animal dander; insects; dust mites; chlorine-based cleaning products; cigarette smoke; materials from cockroaches; cold air; dust from wood, grain, flour, or green coffee beans; gases; irritant chemicals; metal dust; pollen and plants; strong fumes; vapors from chemicals; and wood smoke.

Work-related asthma can lead to long-term lung damage, loss of work days, disability, or even death; however, early diagnosis and treatment of work-related asthma can lead to better health outcomes. A doctor can diagnose work-related asthma and once triggers are identified, a plan to avoid exposure to those triggers can be made with employers. This report uses data from the 2018 to 2022 Montana Behavioral Risk Factor Surveillance System (BRFSS) and the Montana Asthma Call-back Survey (ACBS) to describe the prevalence of work-related asthma in Montana.

## CONTACT

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## ASTHMA CONTROL RESOURCES

- For more asthma information, please visit the [Montana Asthma Control Program page](#).
- OSHA has created an [online guide](#) for patients and their doctors to provide details and resources for workers who may have work-related asthma.

## OCCUPATIONAL ASTHMA DATA

In Montana, 10.4% of adults reported having asthma between 2018 to 2022. American Indian or Alaska Native (AI/AN) populations reported a higher percentage of asthma (13.3%) compared to their White counterparts (10.0%)<sup>1</sup>. Adult females had a higher percentage of asthma at 13.4% compared to adult males at 7.3%. Montanan adults ages 45-64 years reported a similar percentage of asthma compared to those between 18-44 years, both being a higher percentage than those 65 years or older (11.1%, 11.0%, and 8.4% respectively, Figure 1).

In the same time period, 19.6% of Montana adults with asthma reported having their asthma specifically caused by their current or previous job. There were no significant differences in the prevalence of work-related asthma by race or sex; however, people over the age of 45 years more frequently reported work-related asthma than those 18-44 years<sup>6</sup> (Figure 1).

Figure 1. Adults 45 years of age and older reported higher percentages of **asthma caused by work** compared to average prevalence rates of **all asthma**.

Shaded bands represent 95% CI.

### All Asthma in Montana<sup>†</sup>

Data: 2018 - 2022 BRFSS

AI/AN, non-Hispanic

White, non-Hispanic

Other Races\*

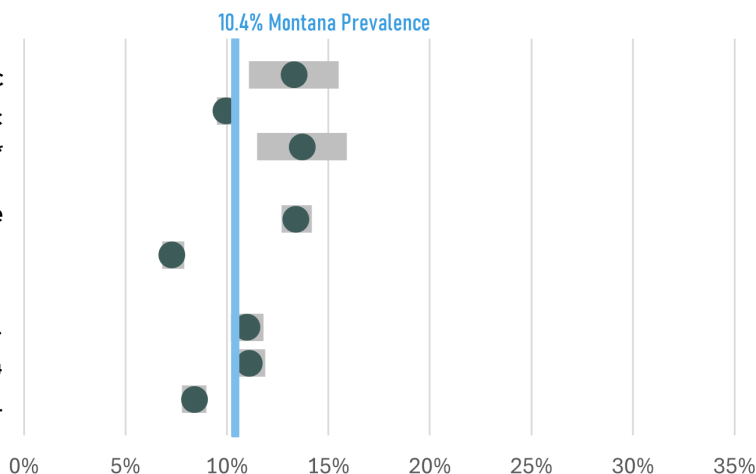
Female

Male

18-44

45-64

65+



### Asthma caused by work

Data: 2018 - 2022 ACBS

AI/AN, non-Hispanic

White, non-Hispanic

Other Races\*

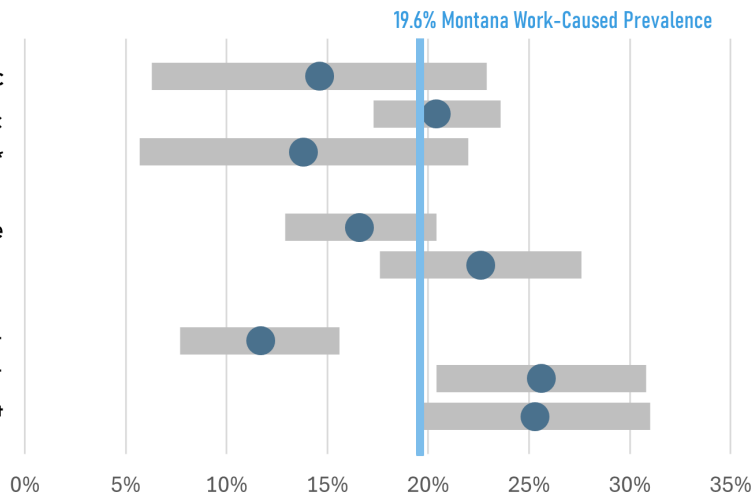
Female

Male

18-44<sup>†</sup>

45-64<sup>†</sup>

65+<sup>†</sup>



\*Other races include: Black or African American only, non-Hispanic, Asian only, non-Hispanic, Native Hawaiian or other Pacific Islander only, non-Hispanic, and multiracial, non-Hispanic, and Hispanic.

<sup>†</sup>p-value < 0.05

Over one-third (35.3%, 95% Confidence Interval (CI) [30.2, 40.5]) of Montana adults with asthma reported that their asthma symptoms were made worse by irritants like chemicals, smoke, dust, or mold at their current job. More than two of every five adults with asthma (42.1%, 95% CI [38.6, 45.7]) reported their symptoms were made worse by exposures in a previous job (Figure 2). Nearly one in five adults with asthma (18.9%, 95% CI [14.6, 23.1]) lost or quit a job because of exposures to triggers such as chemicals, smoke, dust, or mold that caused or aggravated asthma symptoms (Figure 3). Only 22.0% of those with asthma have discussed with their doctor whether their job may have caused or made asthma symptoms worse (95% CI [19.0, 24.9]) and 16.0% have ever been told by a doctor or health professional that their asthma was caused or made worse by any job they ever had (95% CI [13.4, 18.7]). Nearly 20% of those with asthma told a doctor or other health professional that their asthma was caused or symptoms were made worse by any job they ever had (95% CI [16.9, 22.4]).

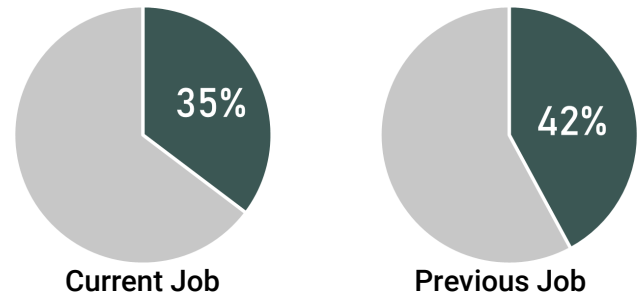
## DISCUSSION

Work-related asthma can affect anyone, of any age, at any profession, in any setting. While asthma generally tends to affect working-age (18-64) Montana adults similarly, occupational asthma appeared to affect those 45 years of age and older more significantly. This could be due to factors such as increased length of time working (and potentially increased exposures to triggers) or type of jobs worked. In Montana, 66% of adults age 55 to 64 years are in the labor force and 22% of adults 65+ are still participating in the labor force. In 2022, Montana ranked 7th by share of the working age in their retirement years<sup>7</sup>.

Work environments are not exempt from triggers that can cause or exacerbate asthma. Increasing awareness of work-related asthma in Montana can help prevent individuals with asthma from facing job loss and create a healthier workforce. Physicians can also help increase data collection for work-related asthma by using ICD-10 codes for asthma diagnosis (J45.x) and Z codes that relate to occupational exposure to risk factors (Z57). Physicians can also refer patients to an occupational health physician for necessary cases of work-related asthma.

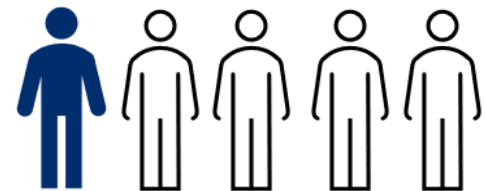
**Figure 2. Over a third of adults with asthma reported their asthma symptoms were made worse at their current job.**

Data: 2018–2022 ACBS



**Figure 3. Nearly one in five adults with asthma lost or quit a job because of exposures to triggers that worsened or caused their asthma.**

Data: 2018–2022 ACBS



### ICD-10 and Z-CODES related to work-related asthma

- J45.x—Asthma-related ICD-10 codes
- Z57— Occupational exposure to risk factors
- Z57.2— Occupational exposure to dust
- Z57.3— Occupational exposure to other air contaminants
- Z57.31— Occupational exposure to environmental tobacco smoke
- Z57.4— Occupational exposure to toxic agents in agriculture
- Z57.5— Occupational exposure to toxic agents in other industries
- Z57.6— Occupational exposure to extreme temperature
- Z57.8— Occupational exposure to other risk factors



## SOURCES

1. Montana Department of Public Health and Human Services and Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey (BRFSS) Data. 2018-2022.
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6. Montana Department of Public Health and Human Services (MT DPHHS) and Centers for Disease Control and Prevention (CDC). Adult Asthma Call Back Survey (ACBS). 2018-2022.
7. Montana Department of Labor & Industry (MT DLI). 2024 Montana Labor Day Report. 2024. [https://lmi.mt.gov/\\_docs/Publications/LMI-Pubs/Labor-Market-Publications/LDR24\\_Final.pdf](https://lmi.mt.gov/_docs/Publications/LMI-Pubs/Labor-Market-Publications/LDR24_Final.pdf)