

# Asthma– COPD Overlap Syndrome

## Report Highlights

- **Similar to the US, 2.4% of adults over age 35 years had asthma-COPD overlap syndrome (ACOS) in Montana.**
- **People with ACOS reported poor quality of life and high prevalence of smoking.**
- **ACOS was associated with low income, older age, and not being married or partnered.**

## Upcoming Events

### Webinar-Introduction to e-cigarettes and hookah

- August 18th 12pm-1pm
- Contact [avongohren@mt.gov](mailto:avongohren@mt.gov) for log in information

### Montana Asthma Advisory Group Meeting

- August 26th, 10am-3pm
- Helena, MT

## Montana Asthma Control Program

1400 E Broadway  
Helena, Montana 59620-2951

<http://www.dphhs.mt.gov/asthma>



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## Current knowledge

Asthma is characterized by chronic airway inflammation that varies over time with reversible airflow obstruction after treatment with a bronchodilator, whereas chronic obstructive pulmonary disease (COPD) is characterized by persistent airflow obstruction that is usually progressive and associated with chronic inflammatory responses in the airways. Some people experience overlapping clinical features of both diseases, termed Asthma-COPD Overlap Syndrome (ACOS).<sup>1</sup> Due to systematic exclusion from studies, people with ACOS are a poorly characterized group. A better understanding of ACOS and its phenotypes may lead to better management and treatment for people with chronic obstructive airways disease.

## The Guidelines

A stepwise approach to diagnosing patients with respiratory symptoms is proposed in the Diagnosis of Diseases of Chronic Airflow Limitation: Asthma, COPD, and ACOS guidelines.<sup>1</sup>

- Step 1 includes taking a clinical history, performing a physical examination, conducting radiology, and using screening questionnaires.
- Step 2 is the syndromic diagnosis of asthma, COPD, and ACOS in an adult patient. A diagnosis of ACOS should be considered when a patient has a similar number of features that suggest both asthma and COPD. Features that a diagnosis is based on are age of onset, pattern of respiratory symptoms, lung function between symptoms, past history or family history, time course, chest x-ray, exacerbations, and typical airway inflammation.
- Step 3 includes performing spirometry.
- Step 4 is the initiation of therapy following guideline suggestions.
- Step 5 includes a referral for specialized investigations (if necessary).

## Measuring ACOS

The Montana Behavioral Risk Factor Surveillance System (BRFSS) is a telephone survey of non-institutionalized adults aged 18 years and older. Participants are asked questions about their health and health behaviors and results are weighted to represent the state's population.

For the purpose of this report, ACOS among Montanans was estimated from the BRFSS for adults over the age of 35 years.<sup>2,3</sup> An algorithm combining responses from several questions about asthma and COPD was used to define ACOS.

## References

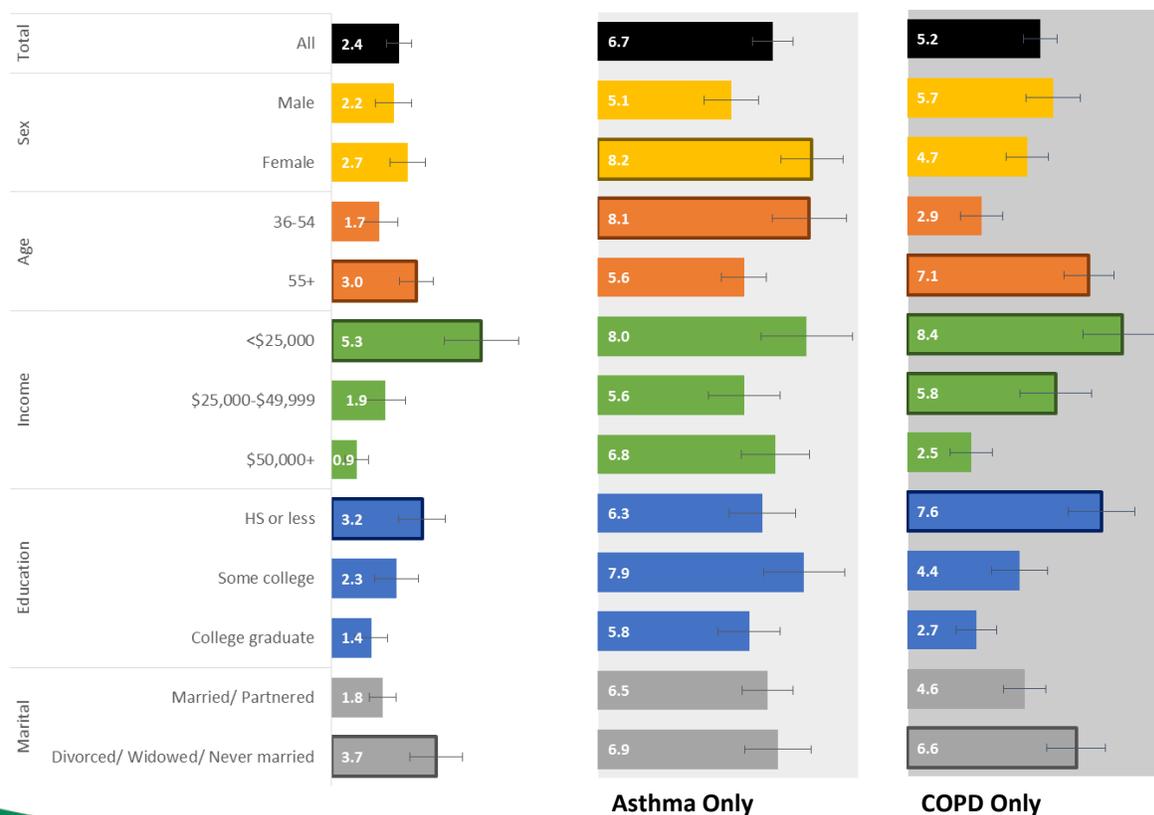
1. Global Initiative for Chronic Obstructive Lung Disease. Diagnosis of Diseases of Chronic Airflow Limitation: Asthma, COPD and Asthma-COPD Overlap Syndrome (ACOS). 2014.
2. ACOS is assessed by responding yes to the questions:  
(a) Have you ever been told by a doctor, nurse, or health professional that you had asthma? and Do you still have asthma?  
and (b) Have you ever been told by a doctor, nurse, or health professional that you had chronic obstructive pulmonary disease, chronic bronchitis, or emphysema?
3. Kumbhare S, Pleasants R, Ohar J, Strange C. Characteristics and prevalence of asthma/chronic obstructive pulmonary disease overlap in the United States. *Annals of the American Thoracic Society*. epub ahead of print. March 14, 2016.
4. Ford ES, Mannino DM, Homa DM, Gwynn C, Redd SC, Moriarty DG, Mokdad AH: Self-reported asthma and health-related quality of life: findings from the behavioral risk factor surveillance system. *Chest* 2003, 123:119-127.
5. Opolski M and Wilson I. Asthma and depression: a pragmatic review of the literature and recommendations for future research. 2005. *Clin Prac Epi Mental Health* 1;1:7.
6. Papaiwannou A, Zarogoulidis P, Porpodis K, *et al.* Asthma-chronic obstructive pulmonary disease overlap syndrome (ACOS): current literature review. *J Thorac Dis* 2014 Mar; 6(Suppl 1): S146-S151.

## Demographic and Socioeconomic Factors of Adults with ACOS

Among US adults over the age of 35 years, an estimated 3.2% had ACOS, 6.0% had COPD alone, and 5.6% had asthma alone.<sup>3</sup> In Montana, an estimated 2.4% of people over the age of 35 years had ACOS, 5.2% had COPD alone, and 6.7% had asthma alone (Figure 1).

- The prevalence of asthma alone was higher among females. The prevalence of COPD alone and ACOS were not significantly different between males and females.
- ACOS was significantly higher among adults 55 years or older than those between the ages of 36-54 years. Asthma alone was more common among the younger age group, while COPD alone was more frequent among the older age group.
- Asthma alone was not associated with income or education while COPD alone and ACOS were more frequent among the lowest income and educational categories.
- Marital status was not associated with having asthma alone. The prevalence of COPD alone and ACOS was lower among people who were married or partnered than those who were divorced, widowed, or had never married.
- The prevalence of ACOS, COPD alone, or asthma alone were not significantly different between racial or body mass index categories (data not shown).

Figure 1. Percentage of Montana adults over the age of 35 years with ACOS, asthma alone, and COPD alone by demographic and socioeconomic factors

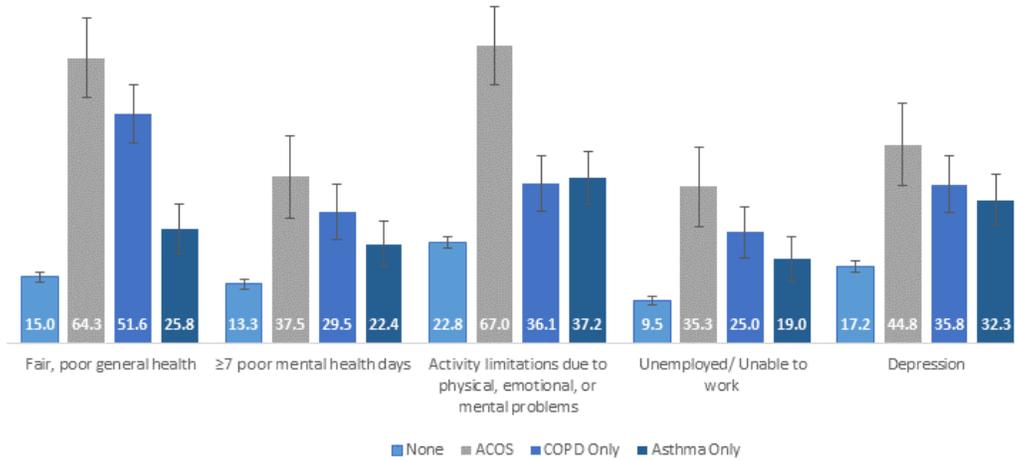


Data source: Montana BRFSS, 2011-2012  
 Outlined bars indicate non-overlapping confidence intervals

## Managing ACOS

The association between poor mental health and asthma and/or COPD is well documented.<sup>4,5,6</sup> However, people with ACOS experienced significantly worse quality of life than people with only asthma (Figure 2). People with ACOS, COPD only, or asthma only reported poor mental health more frequently than people without any of those conditions.

Figure 2. Percentage of Montana adults over the age of 35 years with ACOS, asthma alone, and COPD by health outcomes



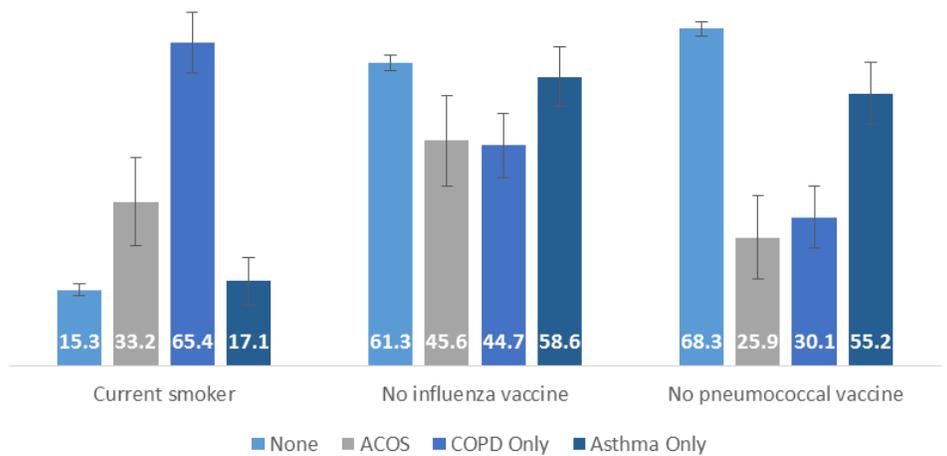
Data source: Montana ACBS, 2012-2014

Common risk factors for asthma and COPD overlap syndrome include increasing age, smoking, bronchial hyperresponsiveness, inflammation, remodeling and exacerbations.<sup>6</sup> Modifiable behaviors that address these risks include:

- quitting smoking,
- receiving important vaccines,
- and using medication as prescribed.

Smoking tobacco was nearly four times more frequent among people with only COPD and twice as frequent among people with ACOS as people with only asthma (Figure 3). People with ACOS and COPD more frequently had received an influenza or pneumococcal vaccine than people with asthma alone or none of these conditions (Figure 3). However, more could be done to ensure people with these conditions receive proper tobacco cessation therapy and vaccinations.

Figure 3. Percentage Montana adults over the age of 35 years with ACOS, asthma alone, and COPD by risk factor



Data source: Montana ACBS, 2012-2014



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## Clinical Recommendations

- Screen patients with symptoms of both asthma and COPD according to guidelines.
- Perform spirometry regularly for all patients with asthma and COPD.
- Assess mental health and quality of life for patients with asthma, COPD, or both.
- Follow guidelines to provide adequate treatment for asthma, COPD, or both.
- Refer to healthcare specialists and tobacco cessation programs, if necessary.

## Report Highlights: Asthma and COPD

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