The State of Chronic Obstructive Pulmonary Disease (COPD) in Vermont

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VERMONT
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Contents

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Introduction

This State Indicator Report outlines statewide measures and evidence-based strategies for preventing, treating, and managing COPD in Vermont. This report is intended to increase awareness of public health surveillance data and evidence-based strategies for COPD among public health professionals, as well as health care professionals and the public. Increasing awareness is the step towards building knowledge to enhance prevention efforts, diagnose COPD earlier, increase the availability of treatments to slow its progression, and ensure that all people in Vermont with COPD and their caregivers have the supports needed to improve their quality of life.

If you need help accessing or understanding this information, contact AHS.VDHCOPDProgram@vermont.gov.

What is COPD?

Chronic obstructive pulmonary disease, or COPD, is a lung condition where the lungs are damaged, remodeled, or lose functioning, in a way that they can't go back to normal, leading to long-term breathing problems.

- Chronic: long-term
- Obstructive: limited air flow
- Pulmonary: lung
- Disease: a harmful condition that can compromise health and quality of life

> **"I was having a hard time doing any daily tasks, breathing was difficult. Even the little things seemed hard to do like getting dressed each day, loading the dishwasher, walking to the mailbox…"**
>
> - Vermonter with COPD

COPD is associated with inflammation, mucus build-up, and tightening of the muscle bands around the airways (often seen in chronic bronchitis) and deterioration of the air sacs (often seen in emphysema). COPD may also be linked to certain genetic conditions, and injuries of the brain or spine. The damage caused by COPD reduces the ability to move air in and out of the lungs. Over time, the disease typically worsens, and it becomes harder to breathe. As lung function decreases, sleep is disrupted, concentration and alertness can decline, and activities are usually limited. This all leads to negative impacts on quality of life. Although there is no cure for COPD, there are action steps to prevent its development as well as treatments to manage COPD once diagnosed.

Approximately 34,000 Vermonters, or 6% of adults, have COPD (BRFSS 2023). **COPD is among the top five leading causes of death among Vermont residents** (VT Vital Statistics 2023).

Learn more on the Vermont Department of Health COPD webpage.

What is the Vermont COPD Program?

The Vermont Department of Health COPD Program is supported by a cooperative agreement with the Centers for Disease Control and Prevention (CDC). In alignment with the cooperative agreement, *Building Capacity for Chronic Disease Education and Awareness*, the program is working towards the three long-term outcomes below.

Increase the number of public health professionals who are aware of the public health surveillance data and evidence-based strategies for COPD.

Increase the number of people who are aware of information related to prevention, screening, and treatment and/or management of COPD.

Increase the number of health care professionals who are aware of tools and best practices for screening, referral, and treatment and/or management options for COPD.

To accomplish these outcomes, the COPD Program collaborates with national and state partners to create messaging and products for dissemination, convenes partners via a statewide Advisory Panel to discuss key topics and elevate COPD as chronic health condition of priority among state leadership, gathers subject matter experts on areas of improvement, and conducts surveillance and evaluation efforts to inform program efforts.

What data are available to understand COPD in Vermont?

Data on COPD in Vermont come from a variety of sources. Appendix A includes descriptions of the data sources and examples of the types of data from each source, as well as definitions of the main indicators included in this report.

Data Notes

The following notations are used throughout this report:

* Denotes statistically significant differences were found between two groups. Please note that when more than two categories are being compared, significant results will be described in the text.

** Sample size is too small to report

† Data year may differ from other data points presented – see figure footnote

Statistical Comparisons: A confidence interval, calculated based on observed data, represents the range in which an estimated data point could fall. For analyses in this report,

we used a 95% confidence interval, meaning that we are 95% confident that the true value of the data point being examined falls within the specified confidence interval range.

Statistical significance in this document is assessed by comparing the confidence intervals. If the confidence intervals from two groups do not overlap, we consider the estimates to be significantly different from one another. Statistical difference is noted throughout this document by an asterisk (*) or the terms "significantly different," or "significantly higher or lower." If confidence intervals do overlap, it indicates that we are unable to detect a significant difference, and these results are denoted as "similar.

The following may also be important things to consider when interpreting differences in results:

- A 95% confidence interval can vary due to the size of a particular population. Sometimes, when comparing the data points of two or more groups, the overall data points may look very different, but the values are not statistically different. Other times, the values may be very close but differ statistically.
- It is important to consider whether observed differences between groups or categories may be meaningful, in addition to whether they are statistically significant. Consider whether a disparity might merit a targeted intervention or mean something important to the community.

Data Acknowledgement

The Vermont Department of Health recognizes the many social, economic and environmental variations which drive the data in this report. The COPD Program is working to incorporate both quantitative and qualitative data reflective of these lived experiences among all Vermonters. For this report, demographic and population characteristic data (i.e., sex, race/ethnicity, sexual orientation, gender identity, disability status, etc.) was collected according to categories from a variety of data owners with different collection methods.

COPD Evidence-based Strategies

The following section describes evidence-based strategies for preventing, diagnosing, treating, and managing COPD. **Evidence-based strategies** are strategies that include programs, practices, and polices that are demonstrated to be effective through research and evaluation to improve outcomes. There are also references throughout the text to other sections of the State Indicator Report where there is relevant Vermont data, as well as quotes from individuals in Vermont whose lives have been impacted by COPD.

Prevention

There are many factors that may raise an individual's risk of developing COPD, including smoking, long-term exposure to other lung irritants, infections, age, and a condition that runs in families, called alpha-1 antitrypsin (AAT) deficiency.

> **"Do not smoke, and if you don't yet, don't start."**
>
> - Vermonter with COPD

Quitting use of tobacco products, or never starting, is the best way to prevent COPD. 802Quits is Vermont's 24/7 quitline, providing a range of free evidence-based tools and services to support individuals ready to quit any nicotine or tobacco product.

Reducing exposure of the lungs to irritants, including:

- Tobacco smoke (including secondhand smoke)

  ▶ *See page 22 for more information on COPD and tobacco use in Vermont.*

- Indoor and outdoor air pollution (wildfires, fireplaces, wood and gas stoves, ozone, particle pollution, fumes, chemicals, certain cleaning products, gases, and industrial dusts)
- Occupational or work-related exposures (mineral dust, pesticides, exhaust fumes, and vapor-gas[1])

Early Diagnosis

It is important for those who at risk of COPD to get routine check-ups with their provider to ensure early diagnosis to slow the progression of COPD by starting treatment earlier. An accurate diagnosis is confirmed through medical history, physical examination, lung imaging, and spirometry, or pulmonary function test (PFT). A PFT measures how much air an individual can inhale and exhale and is one of the best ways to ensure a proper diagnosis.

[1] https://blogs.cdc.gov/niosh-science-blog/2022/11/16/copd-month/

Multiple risk factors may increase the likelihood of someone having COPD. The following groups are at greatest risk of COPD in Vermont according to surveillance data and national studies.

- Adults who have a history of asthma
- Vermonters who smoke cigarettes, are exposed to secondhand smoke, or are former smokers
- Vermonters with less education and lower household incomes
- Vermonters with disabilities
- Vermonters on Medicaid
- Military veterans, National Guard members, firefighters, industrial and construction workers, quarry or marble workers, farmers, and certain artisans
- Older adults
- People with certain genetic conditions (AAT deficiency) or with brain or spinal cord injuries

► *See page 18 for more information on which groups are more likely to have COPD in Vermont according to the most recent surveillance data.*

Symptoms and early warning signs of COPD can be different for each person, but common signs and symptoms are:

- Frequent or lingering coughing (may include sputum, phlegm or mucus)
- Shortness of breath (dyspnea) – unable to take a deep breath or feeling of not getting enough air
- Missed workdays
- Urgent care visits due to cold or virus
- Ongoing/unusual tiredness
- Activity limitations due to difficulty breathing
- Wheezing
- Tightness in the chest
- Being in one or more of the high-risk groups described above

"I began to notice I got rather [out of] breath doing the simplest things."

- Vermonter with COPD

▶ *See page 14 for more information on health care system utilization among those with COPD and page 26 for impacts of COPD on quality of life.*

Management & Treatment

Managing COPD effectively involves daily self-care to slow disease progression, reducing further damage to the lungs, and helping maintain an active, fulfilling life.

Effective COPD management involves a combination of medications, devices, and health support actions.

- **Adhere to prescribed medication regimens and ensure proper device use.**

  Once diagnosed, individuals with COPD may be prescribed medication to help manage their COPD, slow its progression, and make it easier to breathe. This may include quick relief (or short acting) medicine to take when there are symptoms and long-acting medicine taken every day.

- **Follow a personalized COPD Action Plan.**

  These plans should be kept up-to-date with any changes to medications and other recommendations. This written plan can also help family members and caretakers understand how they can support those with COPD. Diet, smoking cessation and exercise guidance may also be included in a COPD Action Plan.

- **Reduce exposure to lung irritants,** including tobacco smoke, outdoor and indoor air pollutants, etc., that may make symptoms worse.

  ▶ *See page 24 for more information on COPD and environmental exposures.*

- **Get vaccinated** – including flu, pneumonia, and COVID-19.

  ▶ *See page 25 for more information on COPD and vaccinations.*

Supplemental Supports & Specialty Care

In some cases, people with COPD might need supplemental therapies and more advanced treatment and care options. There are many different options for treatment and care depending on each person's COPD symptoms and situation, so individuals need to work together with their provider to ensure treatment plans fit their unique needs.

Below are some examples of COPD treatment options:

- **Pulmonary Rehabilitation (Rehab):** Pulmonary rehab is a program that combines physical activity and education to help people with COPD maintain and improve their ability to do the things they want to do. It can help improve quality of life and provide education on self-management tools to manage COPD.
- **Palliative Care:** Palliative care focuses on improving the quality of life of an individual living with serious illnesses, like COPD. Palliative care can be helpful at any stage of COPD to support you and your family with treatment planning, surgery, stress, and navigating the medical system.
- **Oxygen Therapy or Supplemental Oxygen:** Oxygen therapy provides supplemental oxygen, typically via nasal prongs or a face mask, to help those with chronic lung disease breathe. Oxygen therapy can be provided in a hospital, as well as at home.

"[My doctor] sent me to pulmonary rehab and they were the best. They don't make you feel guilty or bad if you can't keep up with the other patients there. They treated me as an individual with an illness... Rehab changed my life."

- Vermonter with COPD

- **Endobronchial Valve (EBV) Therapy:** According to the American Lung Association, EBVs are "removable, one-way valves that reduce lung hyperinflation by allowing the trapped air to escape".
- **Noninvasive Ventilation (NIV):** NIV can provide ventilatory support without using an endobronchial tube or airway.
- **Surgery:** Surgery, such as lung volume reduction survey and lung transplants, may be considered for some people with COPD who have severe symptoms.
- **Hospice Care:** Hospice care is a supportive service provided to individuals during advanced or end stage COPD. It can provide support for caregivers.

Learn more about many of these advanced treatment options on the American Lung Association's webpage, How Is COPD Treated?.

COPD Trends in Vermont

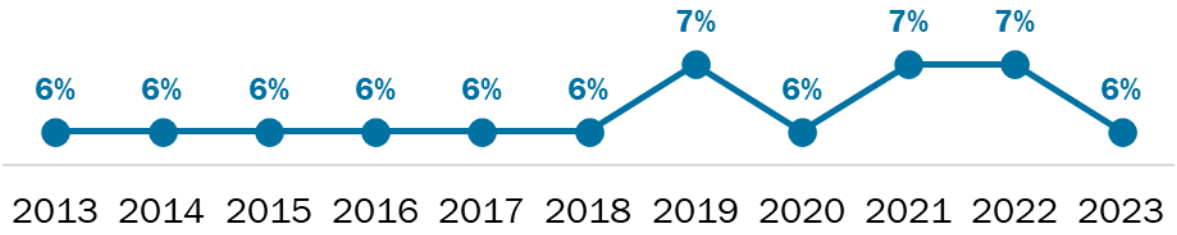
This section outlines data used to understand the distribution and trends of COPD in Vermont using the most recent available data. Looking at trends helps to understand how COPD may be changing over time, as well as which geographic areas or populations are at the highest risk of developing COPD or experiencing COPD exacerbations.

▶ See the section COPD by Population Group to view data showing which populations in Vermont have the highest prevalence of COPD.

Prevalence

- COPD is a common chronic disease that impacts many Vermonters. Lung disease, including COPD and asthma, is considered one of the four chronic diseases responsible for 50% of all Vermont deaths. Behaviors such as lack of physical activity, poor nutrition, and tobacco use contribute significantly to the development and severity of these conditions.
- In Vermont, 34,000 adults have COPD. The number of adults with COPD includes individuals who have ever had a doctor, nurse, or other health professional tell them they have COPD, emphysema, or chronic bronchitis.
- This data relies on individuals to recall a diagnosis, which may result in these numbers underestimating the true number of Vermont adults with COPD.

6% of Vermont adults have COPD, a rate that has remained stable since 2013 and is similar to the national rate of COPD.

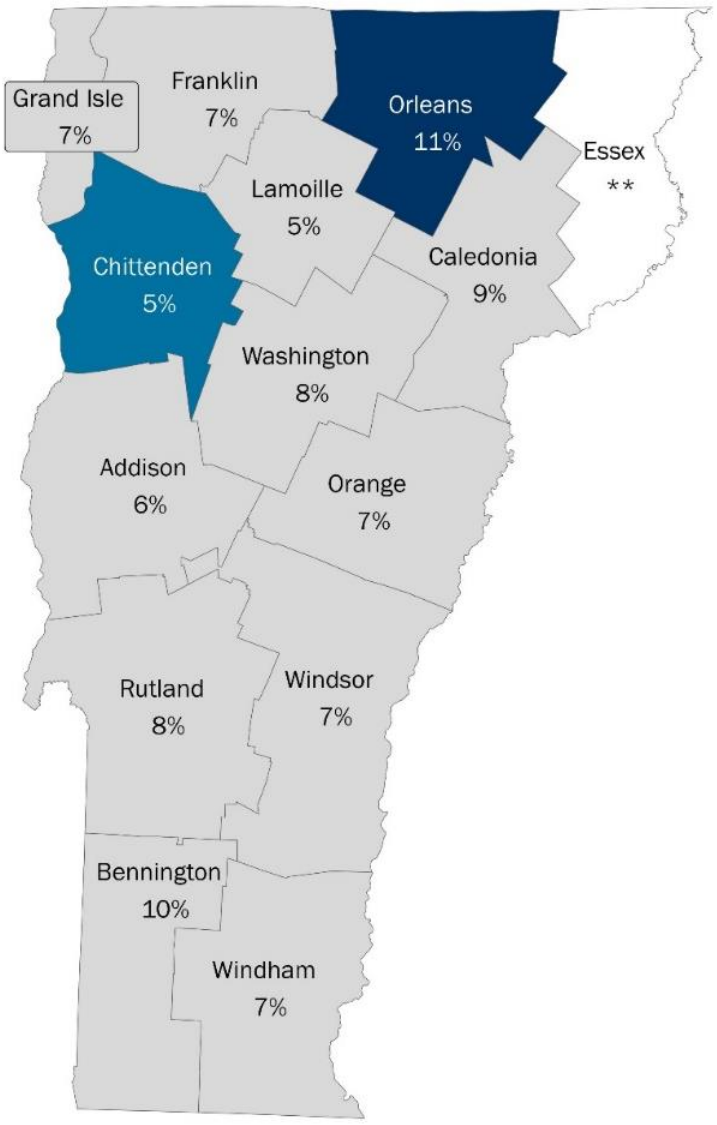


Data Source: BRFSS 2013-2023

Prevalence by County

- The percent of adults with COPD by county ranges from 5% in Chittenden County to 11% in Orleans County.
- Other than Chittenden County and Orleans County, all other counties have a similar prevalence of COPD to Vermont as a whole.

COPD is significantly less prevalent in Chittenden County than Vermont as a whole, while the rate in Orleans County is significantly higher than the state rate.



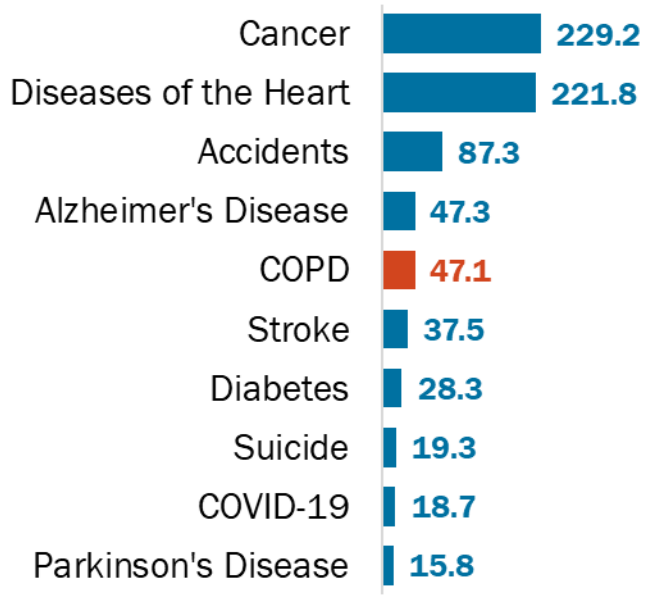
Data Source: BRFSS 2022-2023

Mortality

- COPD is consistently among the five leading causes of death in Vermont.
- In 2023, the death rate from COPD was 47.1 per 100,000 population, only lower than cancer, diseases of the heart, accidents, and Alzheimer's.
- Since 2013, at least 280 people died due to a primary cause of COPD each year. 305 people died in 2023 due to a primary cause of COPD.
- The death rate from COPD in Vermont in 2023 has remained statistically similar to all preceding years.

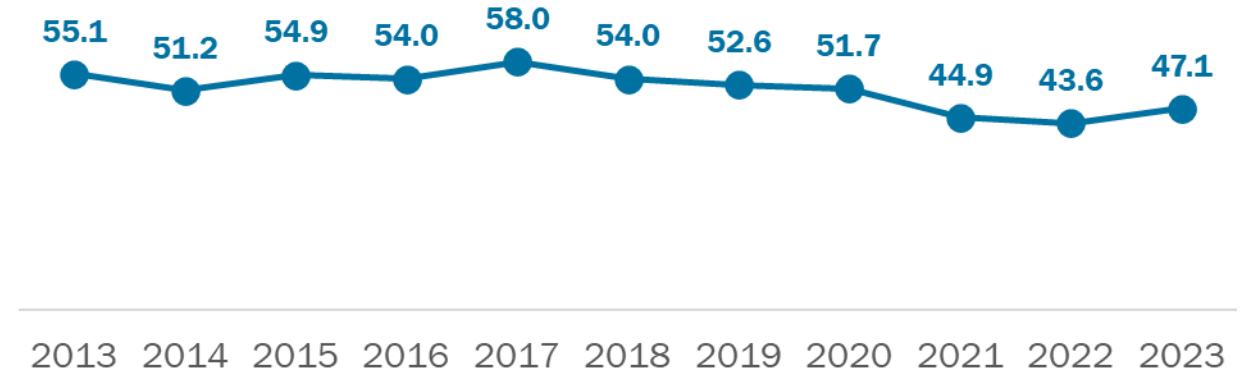
COPD was the fifth leading cause of death in Vermont in 2023.

Mortality rates per 100,000 Vermont residents



Data Source: Vermont Vital Records, 2013-2023

The death rate from COPD in Vermont was 47.1 per 100,000 population in 2023, slightly lower than the 2013 rate of 55.1, though not significantly so.

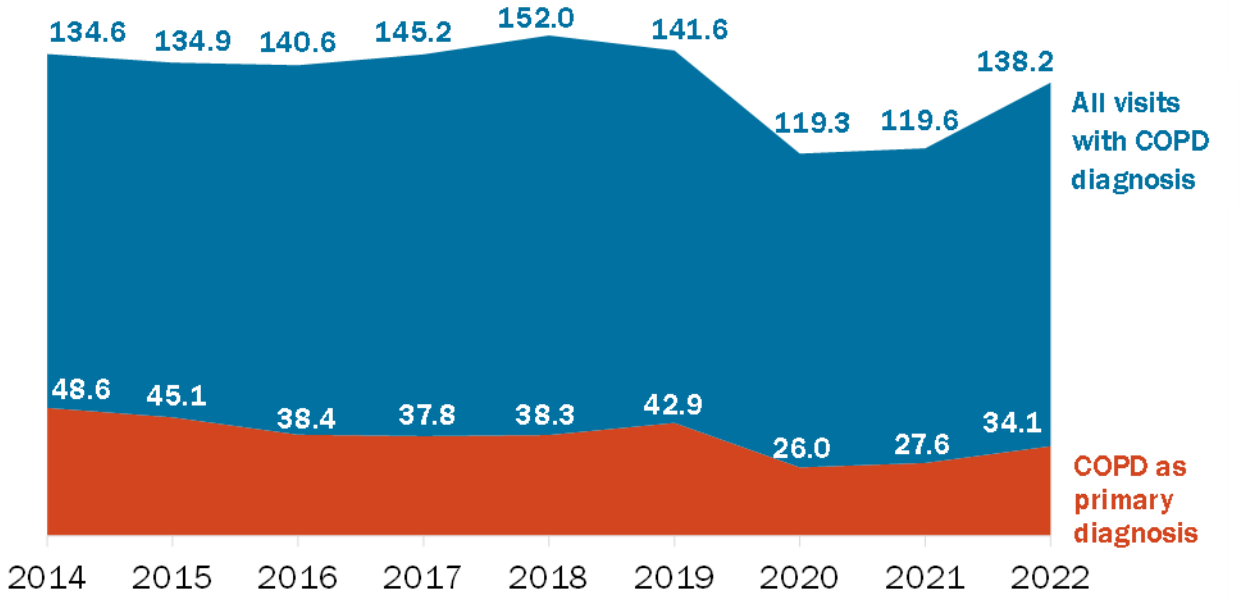


Data Source: Vermont Vital Statistics 2013-2023

Health Care System Utilization

Looking at health care system utilization through emergency department visits and inpatient hospital stays among those with COPD can indicate how well managed COPD is, as well as the potential economic costs related to COPD.

There was a significant increase in emergency department visits with a primary diagnosis of COPD in Vermont from 2021 to 2022, but the rate in 2022 represents a significant decrease since 2014.
Rates per 10,000 Vermont residents



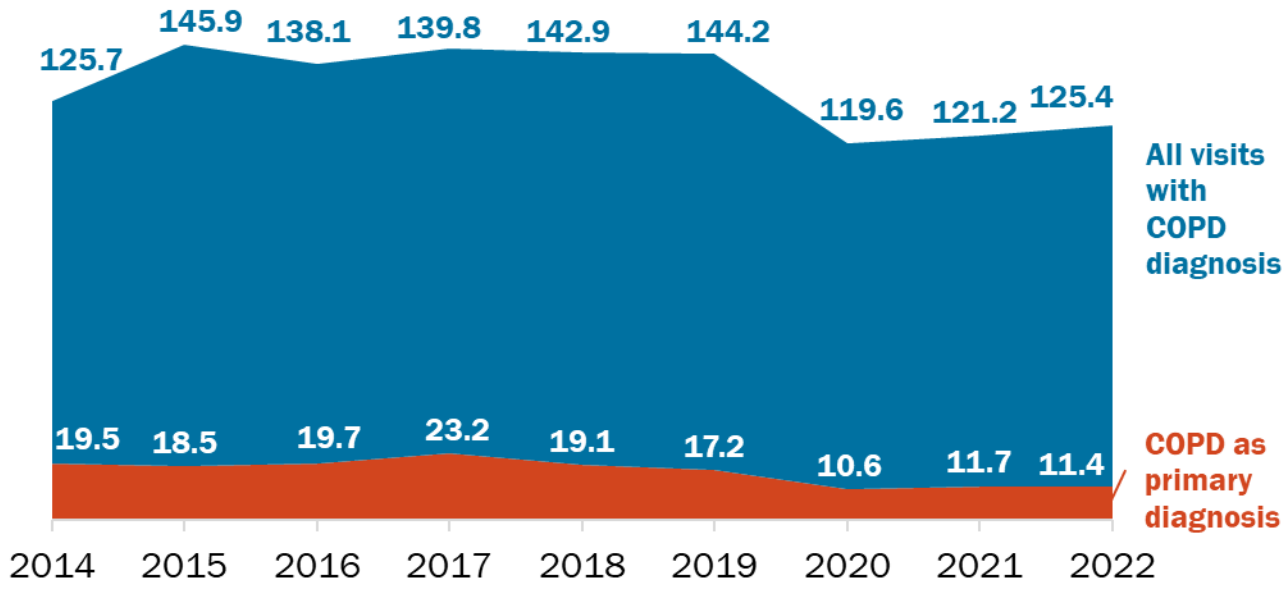
Data Source: VUHDDS 2014-2022, New Hampshire & Massachusetts Hospital Discharge Data 2014-2022

Date Notes: Data on primary diagnoses of COPD for 2014 and 2019-2022 may undercount the number of visits by up to 11.

- In 2022, there were 2,358 emergency department visits for a primary diagnosis of COPD, and 8,945 visits with any diagnosis of COPD. The higher rate of all visits with a COPD diagnosis highlights that even when not the primary reason for an emergency department visit, COPD is a burden by contributing to or worsening other diagnoses.
- The rate of emergency department visits for a primary diagnosis of COPD was 34.1 per 10,000 population, a rate significantly higher than 2021 but significantly lower than 2014.

- After a dip during the COVID-19 pandemic, due to a general decrease in health care-seeking behavior, it appears emergency department visits for COPD may be increasing back toward pre-pandemic levels, but in 2022 they remained lower than they were in 2014.

There was no significant change in the rate of inpatient hospitalizations with a primary diagnosis of COPD in Vermont from 2021 to 2022, but there has been a significant decrease in hospitalizations for COPD since 2014.
Rates per 10,000 Vermont residents



Data Source: VUHDDS 2014-2022, New Hampshire & Massachusetts Hospital Discharge Data 2014-2022

Date Note: Data on primary diagnoses of COPD for all years except 2018 may undercount the number of visits by up to 11.

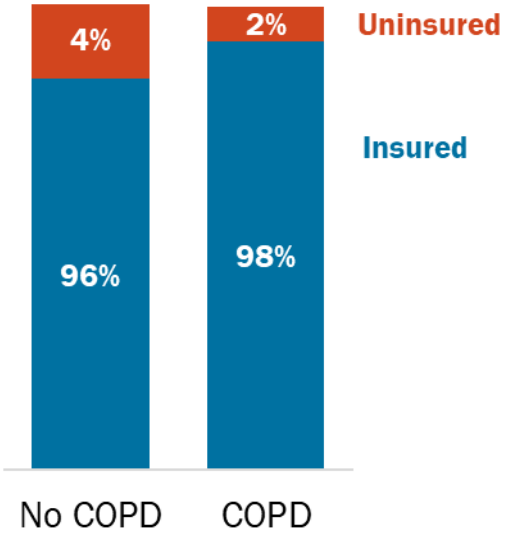
- In 2022, there were 739 inpatient hospitalizations for a primary diagnosis of COPD, and 8,111 visits with any diagnosis of COPD. Similarly to emergency department visits, the higher rate of all hospitalizations with a COPD diagnosis highlights the ways in which COPD may be amplifying the impact of other diagnoses.
- After a dip in 2020, potentially related to the COVID-19 pandemic, the rate of inpatient visits for a primary diagnosis of COPD was 11.4 per 10,000 population in 2022. This rate is statistically similar to 2021 but significantly lower than 2014.

Medical Health Insurance Coverage

COPD often requires ongoing care. Understanding medical health plan coverage can help in understanding whether those with COPD have access to the care they need while managing costs.

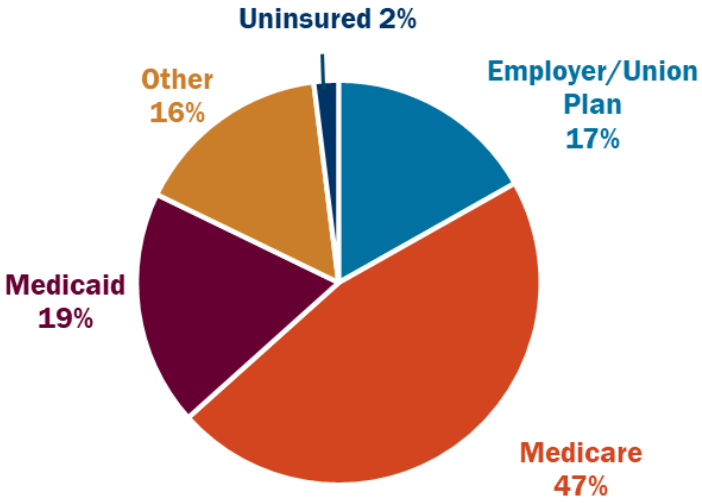
- The majority of Vermont adults have health insurance, but those with COPD are even more likely to have health insurance than those without COPD.
- The most common insurance providers for those with COPD are Medicare, Medicaid, and employer or union plan.
- Adults on Medicaid and adults on Medicare are two times as likely to have COPD compared to Vermont as a whole.
- Vermont adults with no health insurance, a private health insurance plan, or an employer or union insurance plan are significantly less likely to have COPD.

Vermont adults with COPD are slightly more likely to have health insurance than those without COPD.



Data Source: BRFSS 2021-2023

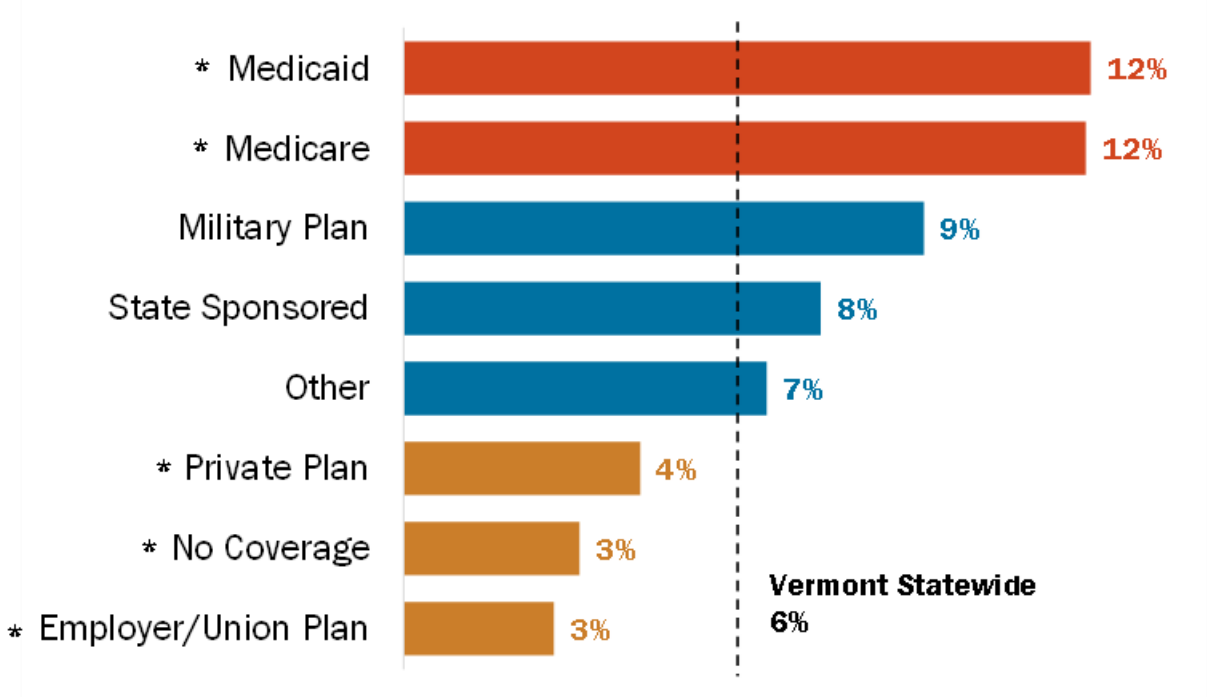
Nearly half of all Vermont adults with COPD are on Medicare (47%).



Data Source: BRFSS 2021-2023

Data Note: "Other" includes the following insurance types: Private plans, state sponsored plans, military plans, and any other insurance plans.

Vermont adults on Medicaid or Medicare are significantly more likely to report having COPD than the state as a whole, while those on a private plan, an employer plan, or who are uninsured are significantly less likely to report having COPD.



Data Source: BRFSS 2021-2023

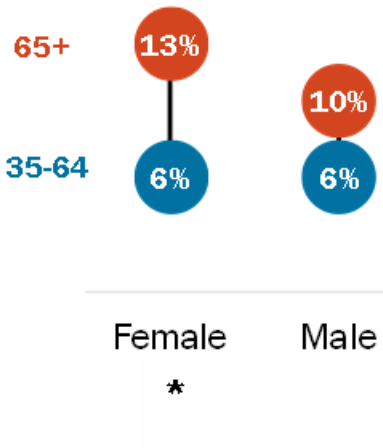
COPD by Population Group

Certain population groups are more likely to have or die from COPD than others. This data highlights populations that may need additional outreach for COPD prevention and management in Vermont.

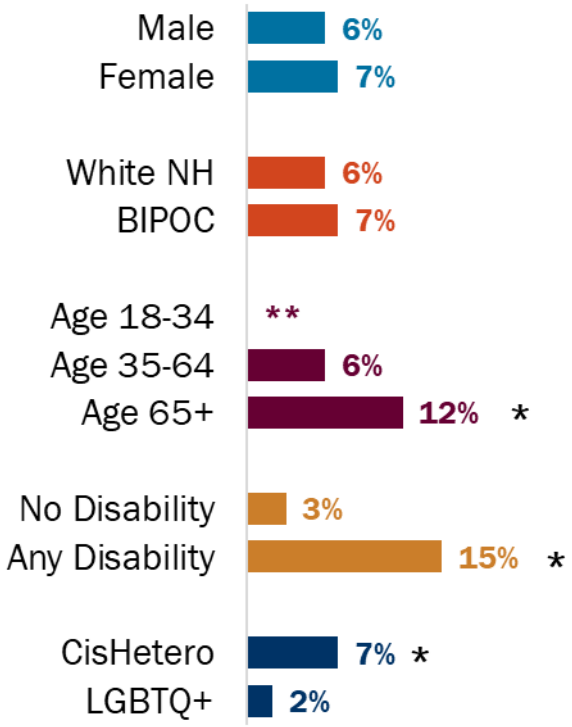
Demographics

- There are no significant differences in the prevalence of COPD by race/ethnicity.
- Those with disabilities are five times as likely to have COPD compared to those with no disabilities.
- Age differences are only significant for females, with females 65+ being two times more likely to have COPD than those 35-64.
- Although there are no significant differences in the prevalence of COPD by sex, significantly more females died due to COPD in 2023 than males.
- The rate of death due to COPD was similar for males and females in 2022 and 2013.

Age differences are only significant for females, with females 65+ being two times more likely to have COPD than those 35-64.



Certain groups are more likely to have COPD in Vermont, including those over 65 years old, those with disabilities, and cisgender and heterosexual individuals.

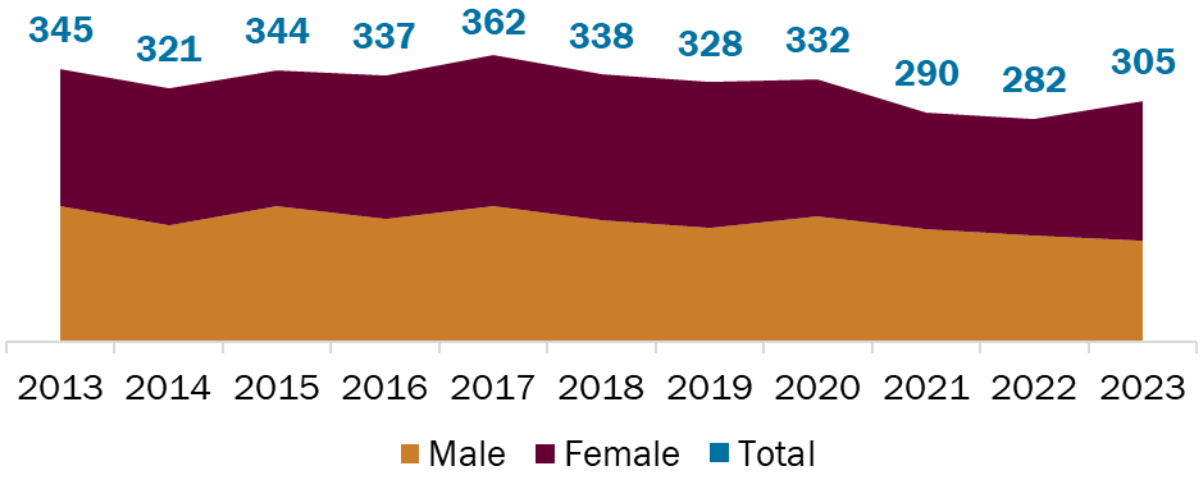


Data Source: BRFSS 2023

Data Note: The 18-34 age group is not shown due to small sample size.

Significantly more females died due to COPD in 2023 than males.

Deaths per year due to COPD

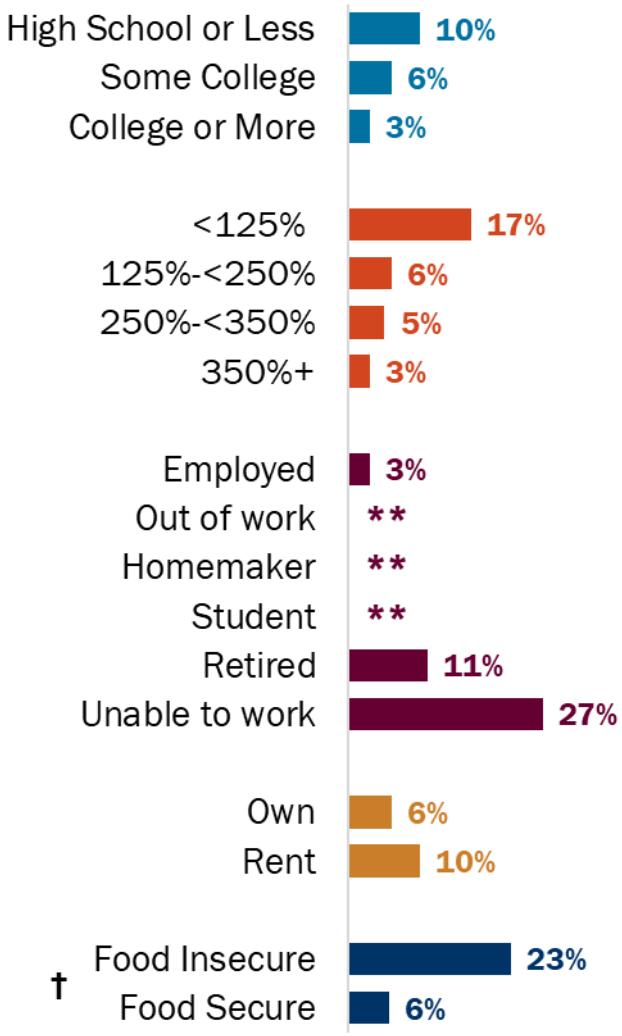


Data Source: Vermont Vital Statistics 2013-2023

Socioeconomic Status

- Vermont adults with less than a high school education have a significantly higher prevalence of COPD than those with some college education or more.
- Vermont adults below 125% of the Federal Poverty level are also at significantly higher risk for having COPD than those at 125% or higher, and those who rent their housing are significantly more likely to have COPD than those who own.
- Vermont adults experiencing food insecurity are significantly more likely to have COPD compared to those who are food secure, with a four times higher rate of COPD.
- Vermont adults who report being unable to work are nine times as likely to have COPD compared to those who are employed and are significantly more likely to have COPD than adults of any other employment status.

Vermont adults with less education, lower income, and who are experiencing food insecurity are significantly more likely to have COPD.



† Data on food insecurity is from 2022. All other data in this figure is from 2023.

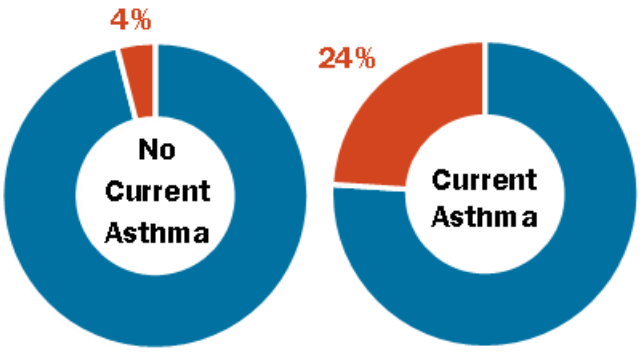
Data Source: BRFSS 2023

Asthma

Asthma is another chronic respiratory condition, different than COPD. It is possible to have both asthma and COPD, although not everyone with asthma will develop COPD and not all with COPD have asthma.

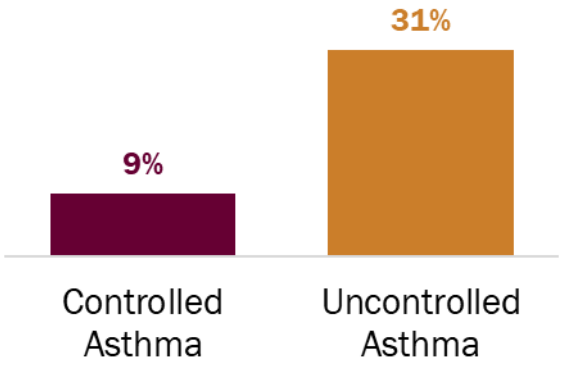
- In Vermont, 11% of adults have current asthma, a rate significantly higher than the national rate.
- Vermont adults with current asthma are also six times as likely to have COPD compared to those with no asthma. This may indicate that Vermonters with asthma may be at higher risk for developing COPD.
- Nearly one in three Vermont adults who report that their asthma is uncontrolled[2] also report having COPD.

Vermont adults with current asthma are six times as likely to have COPD compared to those with no asthma.



Data Source: BRFSS 2023

Vermont adults with current asthma are also nearly three times as likely to also have COPD if their asthma is uncontrolled.



Data Source: BRFSS 2023 & ACBS 2023

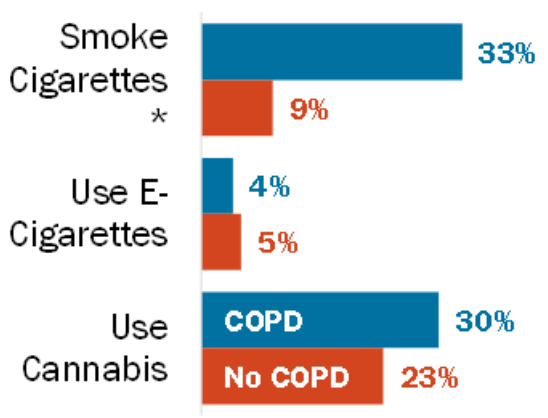
[2] Uncontrolled asthma is defined as asthma any of the following: 9 or more symptomatic days in the past month, 3 or more days with nighttime symptoms in the past month, activity limitation, and SABA use 2 or more times per week.

Smoking

Smoking is the most common risk factor for COPD. Quitting tobacco use, even after being diagnosed with COPD, can help improve symptoms and slow disease progression.

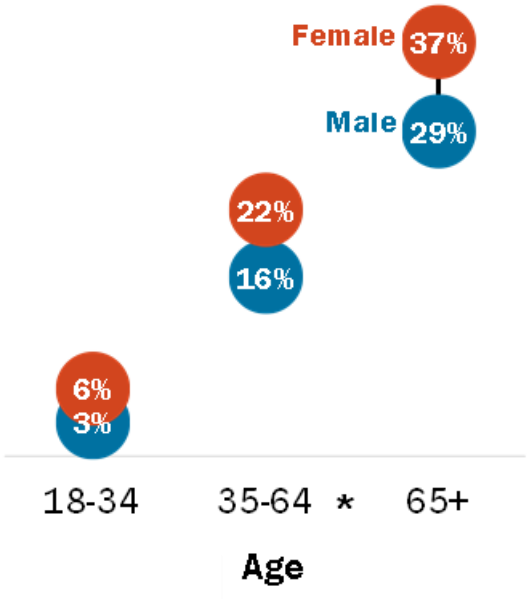
- Vermont adults with COPD use e-cigarettes and cannabis at a similar rate to those without COPD.
- One in five (20%) Vermont adults who currently smoke cigarettes have COPD, a rate two times higher than adults who formerly smoked cigarettes (10%) (see page 24).
- Vermont adults with COPD are significantly more likely to be former smokers than those without COPD. However, one third (33%) of those with COPD still report smoking some days or every day, reinforcing the need for cessation resources in Vermont (see page 24).
- Females 35-64 who smoke cigarettes have a significantly higher prevalence of COPD than males 35-64.
- Females 65+ years old who smoke also have a higher rate of COPD than males 65+, although not significantly so.

Vermont adults with COPD are three times more likely to smoke cigarettes than those without COPD.



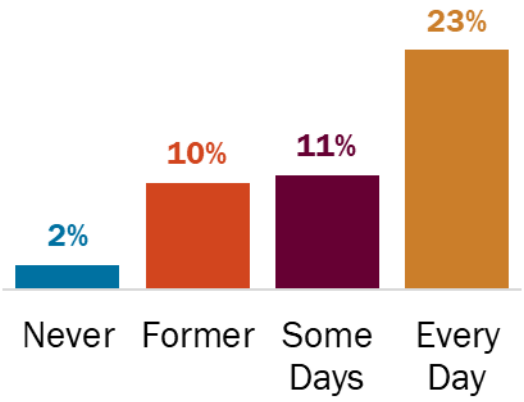
Data Source: BRFSS 2023

The risk of having COPD for both females and males who smoke cigarettes increases significantly with age.



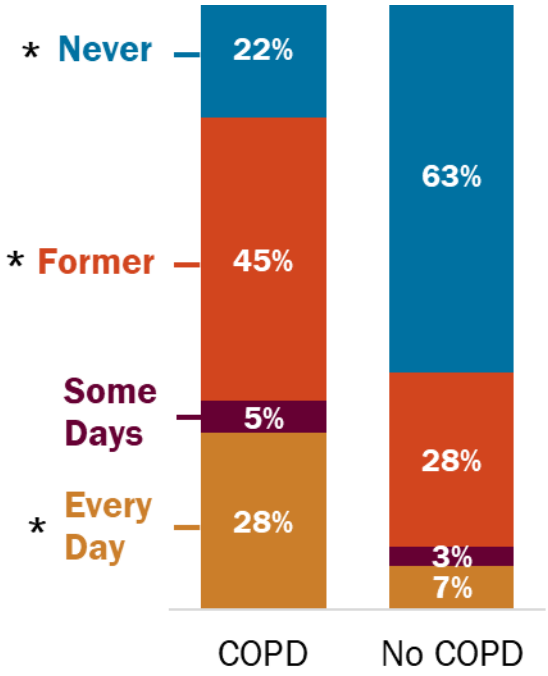
Data Source: BRFSS 2021-2023

Those who formerly smoked cigarettes or smoke cigarettes some days have a lower risk of COPD compared to those who smoke every day.



Data Source: BRFSS 2023

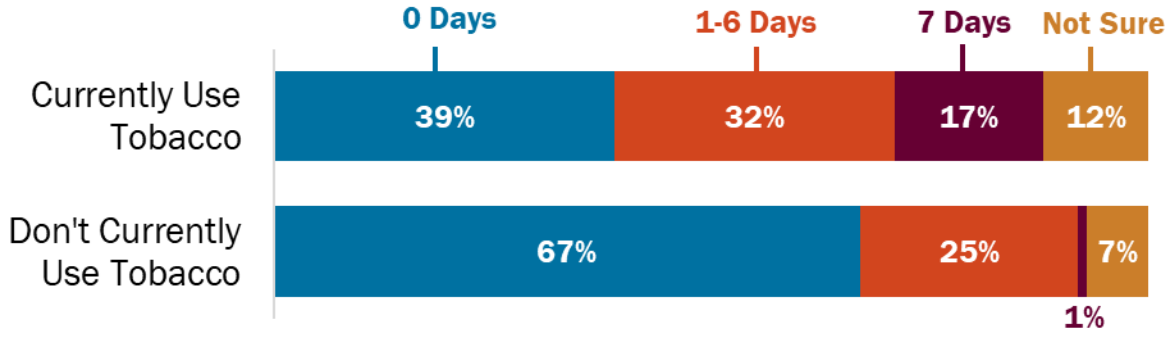
Adults with COPD are significantly more likely to be former smokers than those without COPD.



Secondhand Smoke Exposure

- 1 in 2 (49%) Vermonters who use tobacco report exposure to secondhand smoke.
- 1 in 4 (26%) Vermonters who do not use tobacco still report exposure to secondhand smoke.

Secondhand smoke exposure is prevalent in Vermont, particularly among those who currently use tobacco.



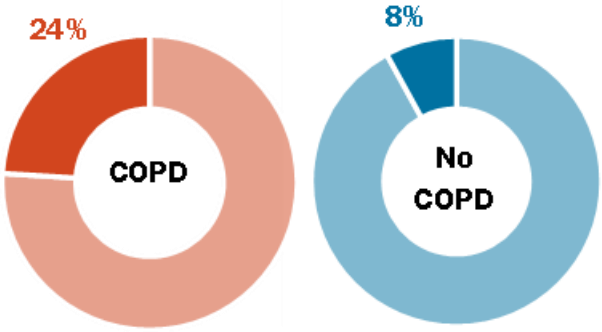
Data Source: Adult Tobacco Survey 2022

Indoor and Outdoor Environmental Exposures

Many exposures in both the indoor and outdoor environment can make COPD symptoms worse, sometimes even contributing to emergency department visits and hospitalizations. These irritants include indoor air quality, mold, pests, carpeting, fragrances, extreme heat or cold, and more. Data on how these irritants impact COPD is limited in Vermont.

- One in four (24%) Vermont adults with COPD report an illness or symptom that was caused or made worse by a lung irritant in their home.

Vermont adults with COPD are three times more likely to report an illness or symptom that was caused or worsened by air quality, mold, pests, furnishings, or excessive heat or cold in their home than those without COPD.



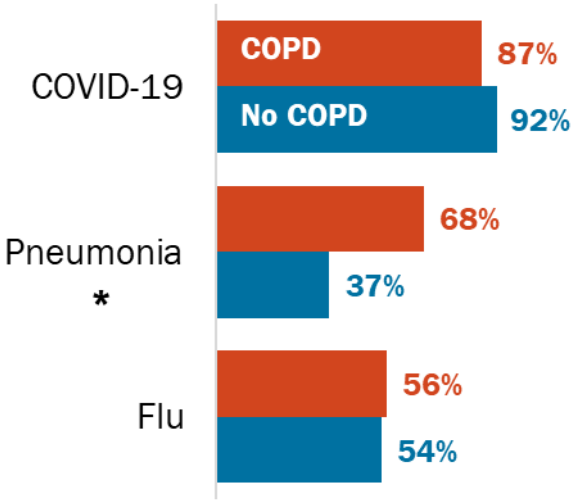
Data Source: BRFSS 2023

Vaccinations

Respiratory vaccinations for those with COPD can help prevent and reduce the risk of respiratory infections that may exacerbate COPD[3]. It's important that Vermonters with COPD receive all vaccinations recommended by their provider.

- Those with COPD are vaccinated against the flu and COVID-19 at a similar rate to those without COPD.

Those with COPD are significantly more likely to have had a pneumonia vaccine than those without COPD, which may be related to the older age of those with COPD.



Data Source: BRFSS 2023

[3] Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease report; 2023.

Quality of Life

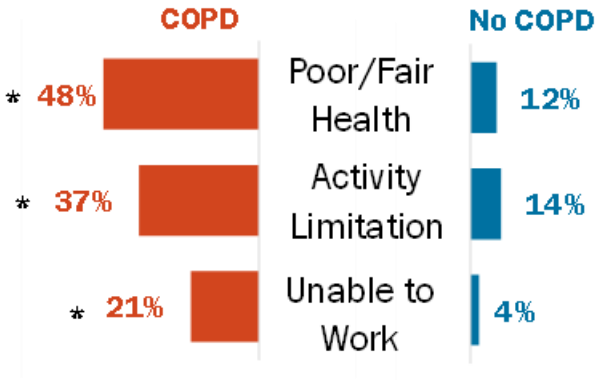
Difficulty breathing brought on by COPD can impact people's ability to carry out daily activities and prevent them from doing the things they want to do. Those with COPD may also have co-occurring chronic diseases or mental health conditions that influence each other and are impacted by the same risk factors and social drivers.

▶ *See the section COPD by Population Group to view data showing which populations in Vermont have the highest prevalence of COPD.*

General Health Status & Activity Limitation

- Nearly half of Vermont adults with COPD rate their health as fair or poor: a rate four times higher than adults without COPD.
- Vermont adults with COPD are more likely to miss out on their usual activities for 10 days in a row due to their health than those without COPD.
- Vermont adults with COPD report that they are unable to work at a rate over five times higher than adults without COPD.

Vermont adults with COPD are significantly more likely to report poor health, have limited activities 14+ days per month, and be unable to work than those without COPD.

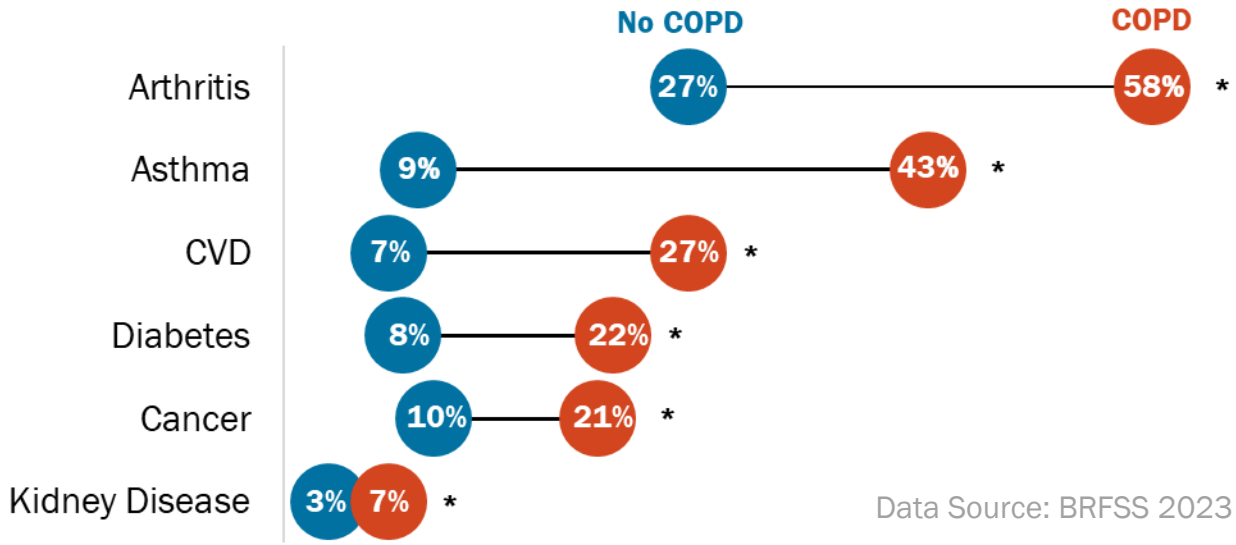


Data Source: BRFSS 2023

Co-Occurring Chronic Diseases & Mental Health Conditions

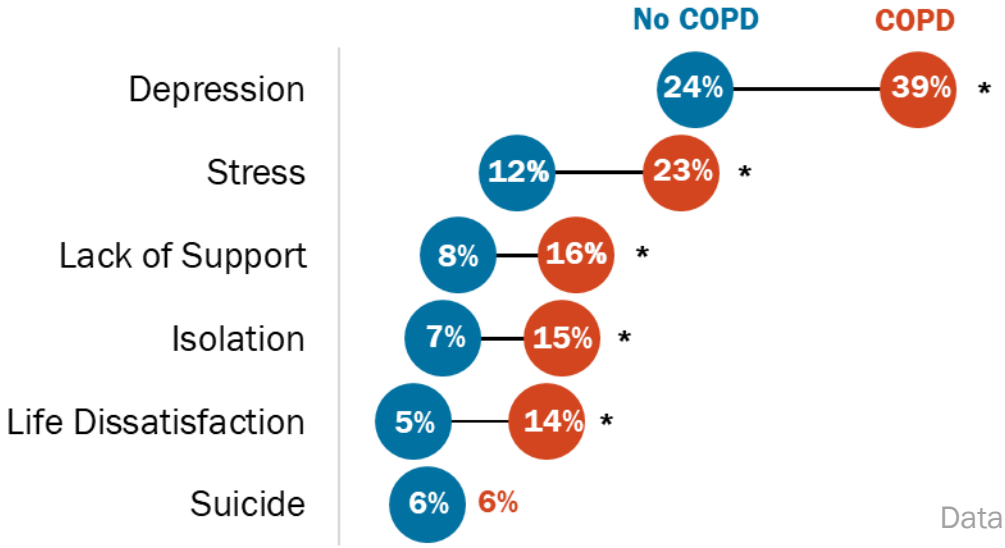
- Vermont adults with COPD are significantly more likely to be diagnosed with additional chronic diseases and mental health conditions.
- Those with COPD are nearly four times as likely to have cardiovascular disease (CVD) and nearly three times as likely to have diabetes, compared with those who do not.
- Those with COPD are significantly more likely to experience depression, lack of social or emotional support, severe stress, isolation, and life dissatisfaction compared to those without COPD.

Vermont adults with COPD are significantly more likely to have co-occurring chronic diseases compared to those without COPD.



Data Source: BRFSS 2023

Vermont adults with COPD have a higher prevalence of co-occurring mental health conditions compared to those without COPD.



Data Source: BRFSS 2022

A Coordinated Approach to COPD

Ensuring a coordinated approach to address COPD involves a variety of efforts to prevent screen, treat, and manage COPD:

- Track key indicators through surveillance and evaluation activities to understand the statewide burden of COPD.
- Form, expand, and strengthen networks of COPD partners to promote guideline care standards and best practices, quality improvement, policy development, and information sharing.
- Implement quality improvement initiatives to systematically change processes and systems to improve outcomes.
- Identify, develop, and disseminate resources to increase the awareness and knowledge of COPD among the public and health care and public health professionals.
- Strengthen and promote referral linkages for more comprehensive and coordinated care for COPD patients, families, and caregivers.
- Promote increased utilization of pulmonary rehab, nutrition counseling, tobacco cessation available through 802Quits, and other lifestyle modification that benefit respiratory health.

Vermont's COPD efforts align with numerous other frameworks and objectives outlined in state and national efforts to monitor COPD outcomes nationally and statewide. Below are brief descriptions of each of these efforts.

Healthy Vermonters 2030

Healthy Vermonters 2030 is a dataset made up of indicators that measure the overall health of Vermont over the current decade which contributes to the understanding of whether the public health system is helping people in Vermont lead their healthiest lives. COPD is impacted by multiple Healthy Vermonters 2030 areas of focus, including substance use and tobacco, chronic disease, environment, and healthy behaviors and prevention. Several Healthy Vermonters 2030 goals relate to COPD:

- Percent of adults aged 18 and older who currently smoke cigarettes, e-cigarettes, or smokeless tobacco.
- Percent of people who were vaccinated against seasonal influenza for the most recent flu season.
- Rate of emergency department visits with a primary cause of asthma per 10,000 people aged 5 and older.

Vermont State Health Assessment and Improvement Plan

VDH published the 2025-2030 State Health Assessment (SHA) and State Health Improvement Plan (SHIP) in partnership with numerous community partners. The SHIP combines data from the SHA and includes strategies to improve health outcomes and reduce inequities in priority areas. The strategies outlined in the SHIP include priority areas that improve the quality of life for Vermonters with COPD, in alignment with the Vermont COPD Program's efforts.

- Improve the availability of affordable, accessible, and safe housing.
- Improve health and quality of life by addressing the impact of the high cost of living.
- Increase access to inclusive, equitable, and affordable health care services.
- Strengthen the capacity of the mental health and substance use services system to support individuals and communities.

3-4-50: Prevent Chronic Disease

3-4-50 is a simple concept to help grasp the reality that 3 health behaviors lead to 4 chronic diseases that claim the lives of more than 50 percent of Vermonters. Lung disease, including COPD, is one of the 4 diseases.

- **3 behaviors:** Increase physical activity and good nutrition, and decrease tobacco use.
- **Lead to 4 chronic diseases:** Decrease the burden of cancer, lung disease, diabetes, and heart disease.
- **Resulting in more than 50% of deaths:** Reduce preventable deaths from chronic disease.

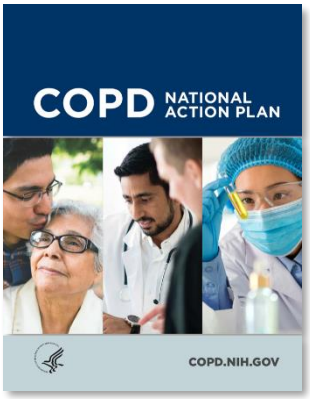
Healthy People 2030

Healthy People 2030 is a nationwide health initiative th"sets data-driven national objectives to improve health and well-being over the next decade" and includes the goal to "improve respiratory health", along with the following COPD-related objectives.

- Reduce death from COPD in adults.
- Reduce emergency department visits for COPD in adults.

- Reduce hospitalizations for COPD.

COPD National Action Plan



The COPD National Action Plan is the first-ever blueprint for a multi-faceted, unified fight against the disease. Developed at the request of the United States Congress with input from the broad COPD community – patients, caregivers, federal agencies, nonprofits, researchers, policymakers, industry representatives, and advocates – the Action Plan describes how we can all work together to raise awareness about COPD and reduce its impact.

The Vermont COPD Program's efforts align with the five goals of the COPD National Action Plan:

1. Empower people with COPD, their families, and caregivers to recognize and reduce the burden of COPD.
2. Improve the prevention, diagnosis, treatment, and management of COPD by improving the quality of care delivered across the health care continuum.
3. Collect, analyze, report, and disseminate COPD-related public health data that drive change and track progress.
4. Increase and sustain research to better understand the prevention, pathogenesis, diagnosis, treatment, and management of COPD.
5. Translate national policy, education, and program recommendations into research and public health care actions.

National Heart, Lung, and Blood Institute

The National Heart Lung, and Blood Institute (NHLBI) has a COPD Caregiver's Toolkit with information, advice, and tools from Learn more Breathe Better® and Respiratory Health Association to help care for someone with COPD.

American Lung Association

The American Lung Association (ALA) shared important COPD resources and supports program and initiatives.

COPD Foundation

The COPD Foundation is a 501(c)(3) not-for-profit organization with the mission to help millions of people live longer and healthier lives by advancing research, advocacy, and awareness to stop COPD, bronchiectasis, and Nontuberculous mycobacterial (NTM) lung disease.

Future Directions

As part of addressing COPD in Vermont through a coordinated approach, there are possible shared goals and priorities for future efforts. The following priorities were informed by surveillance data, evaluation findings, and conversations with partners from across Vermont. These priorities are intended to begin conversations around shared goals and collaborative efforts and may evolve as the context partners work in continues to change.

1. **Sustain and expand efforts to identify, track, and disseminate relevant data to understand the impact of COPD in Vermont.**

   Maintain surveillance efforts by analyzing available measures of COPD and related factors, such as those included in this report, monitoring trends over time, and disseminating results to a diverse set of partners to inform their work serving Vermonters with COPD.

   Expand the collection and analysis of COPD and related factors through the exploration of additional data sources and indicators. This might include analyses of the economic burden of COPD in Vermont using data from the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES), the impact of environmental exposures on COPD prevalence and outcomes using VT Environmental Public Health Tracking data, and the use of Z codes and 2025-IC-10-CM Diagnosis Code Z77.22 for secondhand smoke as it relates to COPD in VHCURES. This may also include continuing efforts to add questions to statewide surveys related to COPD to fill data gaps and better understand the impact of COPD in Vermont. Topics for expanded data collection might include caregiving for someone with COPD, occupational exposures, prevalence of home triggers and other environmental exposures, quality of life of those with COPD, and knowledge of self-management.

2. **Increase awareness of COPD among the public, providers, and public health professionals to assist in early detection and access to supplemental supports.**

   Helping Vermonters better understand the populations at highest risk due to environmental factors, behavioral risks, family history and health history, and awareness of early warning symptoms are key to helping prompt earlier screening for COPD. Early diagnosis of COPD is important for slowing its progression.

   Access to pulmonary rehabilitation, including patient education on ways they can manage their COPD symptoms, is a challenge in Vermont. Increasing awareness may also increase referrals and supports for ensuring pulmonary rehabilitation is available to all Vermonters with COPD who would benefit.

3. **Incorporate quality improvement metrics into practices to ensure best practices are followed.**

Hospitals may already track some metrics, such as 30-day hospital readmission for COPD through a Centers for Medicare and Medicaid Services program. There are additional quality improvement metrics that would help track whether the COPD diagnoses are confirmed using spirometry or chest imagery, referrals to quit tobacco or participate in pulmonary rehabilitation, and prescription fills.

4. **Communicate the impacts of occupational exposures on likelihood of developing COPD and having a COPD exacerbation.**

   The role of occupational exposures in COPD is well documented nationally. Vermont has many individuals who work in occupations correlated with higher rates of COPD. Ensuring workplaces are carrying out preventative measures and that individuals working in these areas are aware that they are at higher risk of developing COPD are possible priority areas.

5. **Continue to monitor, communicate, investigate and further prepare for how climate change and extreme weather events impacts on respiratory health, including COPD.**

   Vermont's continues to experience extreme weather events such as flooding, high temperatures, and poor air quality from wildfire smoke with increasing frequency. This impacts how those with COPD live and access care, having a direct impact on quality of life. Communicating how COPD is impacted by these events and what people can do to mitigate those effects will continue to be an important area of focus for public health and health care professionals.

Appendix

Below is a description of the main sources of COPD surveillance data in Vermont, as well as some examples of the types of data drawn from each source.

Data Sources

Data Source	Data Available
Behavioral Risk Factor Surveillance System (BRFSS): Vermont tracks risk behaviors using this telephone survey of non-institutionalized adults. Approximately 7,000 Vermonters are randomly and anonymously selected annually. An adult (18 or older) in the household is asked a uniform set of questions. The results are weighted to represent the adult population of the state.	• Self-reported COPD diagnosis • Demographic information (age, sex, race/ethnicity, sexual orientation and gender identity, disability status, etc.) • Socioeconomic status (income, education, food insecurity, etc.) • Tobacco use • Health status • Immunizations
Asthma Callback Survey (ACBS): The ACBS is a follow up to the BRFSS survey and addresses critical questions surrounding the health and experiences of people with asthma. BRFSS respondents who report ever having been diagnosed with asthma are eligible for the ACBS.	• Self-reported COPD diagnosis • Self-reported asthma diagnosis • Uncontrolled asthma
Vermont Vital Records: The Vermont Department of Health vital statistics system tracks Vermont births and deaths. The Department of Health also receives extracts for Vermont resident births and deaths that occur in other states which allows the Department to do statistical analyses of vital events involving all Vermont residents, including those events which occurred outside of the state.	• Deaths due to a primary cause of COPD
Green Mountain Care Board (GMCB) Vermont Uniform Hospital Discharge Data Set (VUHDDS): Hospital and emergency department discharge data are collected from in-state hospitals. Patients admitted to the hospital from the emergency department are included in the hospital discharge data set and are not included	• Emergency department visits for a primary cause of COPD • Emergency department visits with any mention of COPD • Inpatient hospitalizations for a primary cause of COPD

Data Source	Data Available
in the emergency department data set. Discharge data documenting hospital and emergency department visits to New Hampshire and Massachusetts facilities by Vermont residents were obtained from those states and are included in this report. NOTE: All analyses, conclusions, and recommendations provided here from VUHDDS are solely those of the Department of Health and not necessarily those of the GMCB.	• Inpatient hospitalizations with any mention of COPD
Adult Tobacco Survey: The Vermont Adult Tobacco Survey is a survey of Vermont adults (18+) last administered in 2022. The sample includes 1,600 to 3,000 respondents each year. Half are Vermonters who smoke and half are Vermonters who do not smoke.	• Initiation of tobacco use • Secondhand smoke exposure • Awareness and utilization of cessation services • Risk perception & social influences

Indicator Definitions

Indicator	Definition
COPD	For all data taken from the Behavioral Risk Factor Surveillance System and the Asthma Callback Survey, defined as having ever had a doctor tell you that you had COPD For data taken from Vermont Vital Records or VUHDDS, COPD is defined as a diagnosis with ICD-10 codes J40-J44
Sex	Self-reported response to *Are you male or female?* With response options: 'Male' and 'Female'
Any Disability	A composite measure of any self-reported disability (mobility, cognitive, visual, hearing, self-care, independent living) of any duration or permanence
LGBTQ+	Self-reports one of the following responses to *Do you consider yourself to be*: 'Lesbian or Gay', 'Bisexual', and 'Other' **or** Self-reports one of the following responses to *Do you consider yourself to be transgender:* 'Transgender', 'Gender nonconforming'
CisHetero	Self-reports as 'Straight' and 'Cisgender' (i.e. not transgender).

Indicator	Definition
Race/Ethnicity	Self-reported race/ethnicity selected from non-mutually exclusive response options. May be collapsed to 'BIPOC': Black, Indigenous, and People of Color and 'White non-Hispanic.'
Suicidal Ideation	Seriously considered attempting suicide in the past 12 months
Stress	Usually or always felt tense, restless, nervous or anxious in the past 30 days
Life Dissatisfaction	A person reports feeling dissatisfied or very dissatisfied with their life
Depression	A person has ever been told by a doctor that they have depression disorder
Isolation	Usually or always feels socially isolated from others
Social & Emotional Support	Rarely or never gets the social and emotional support they feel they need
Cigarette Smoking	Smoked at least 100 cigarettes in life and now smokes every or some days
Secondhand smoke	Self-reports having breathed the smoke from someone who was smoking tobacco (for example cigarettes, cigars, or pipes) in an indoor or outdoor public place

Increasing awareness of COPD and how it impacts Vermonters is the first step toward ensuring that individuals with and at-risk of COPD breathe better, feel better, and move better.