



### Key Messages

Obesity is the second most important modifiable cancer risk behind tobacco use.

2,100 new cases of obesity-associated cancers are diagnosed among Montanans each year.

American Indian Montanans have a 50% higher rate of obesity associated cancers than White Montanans.

Employers, community leaders, and health professionals can support healthy lifestyles by designing environments that make the healthy choice the easy choice.

Learn more about how to design healthy environments at:

<https://dphhs.mt.gov/publichealth/NAPA>

And

<https://dphhs.mt.gov/publichealth/WorksiteWellness>

### Montana Cancer Control Programs

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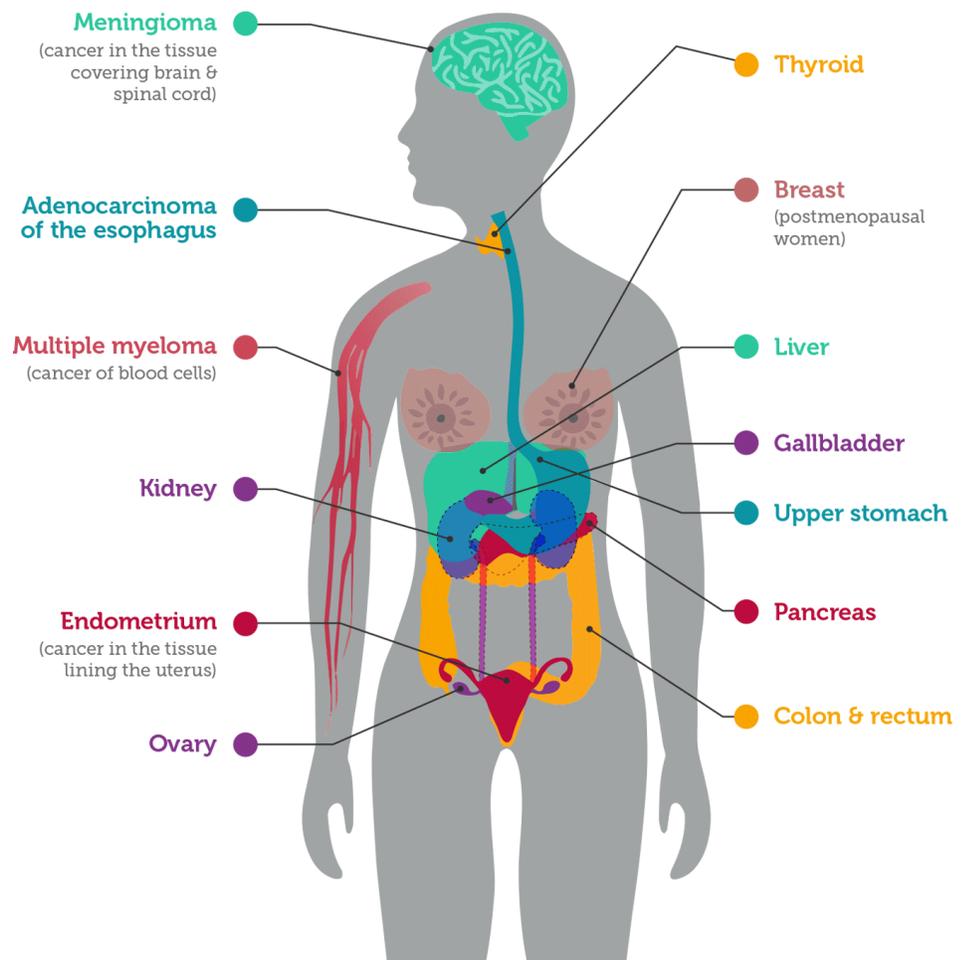
<https://dphhs.mt.gov/publichealth/cancer>

## Obesity Increases the Risk of Cancer

In 2017, **3 in 5** Montana adults were overweight (BMI 25–29 kg/m<sup>2</sup>) or obese (BMI ≥ 30).<sup>1</sup> Obesity is a major risk factor for many chronic diseases: diabetes, heart disease, arthritis, and 13 types of cancer. Obesity increases the risk of adenocarcinoma of the esophagus; cancers of the breast (in postmenopausal women), colon and rectum, endometrium (uterus), gallbladder, upper stomach, kidney, liver, ovary, pancreas, and thyroid; meningioma, and multiple myeloma.<sup>2</sup> This report describes the burden of obesity associated cancers in Montana and how Montanans can reduce their risk.

NATIONAL CANCER INSTITUTE

### Cancers Associated with Overweight & Obesity



cancer.gov/obesity-fact-sheet

Adapted from Centers for Disease Control & Prevention



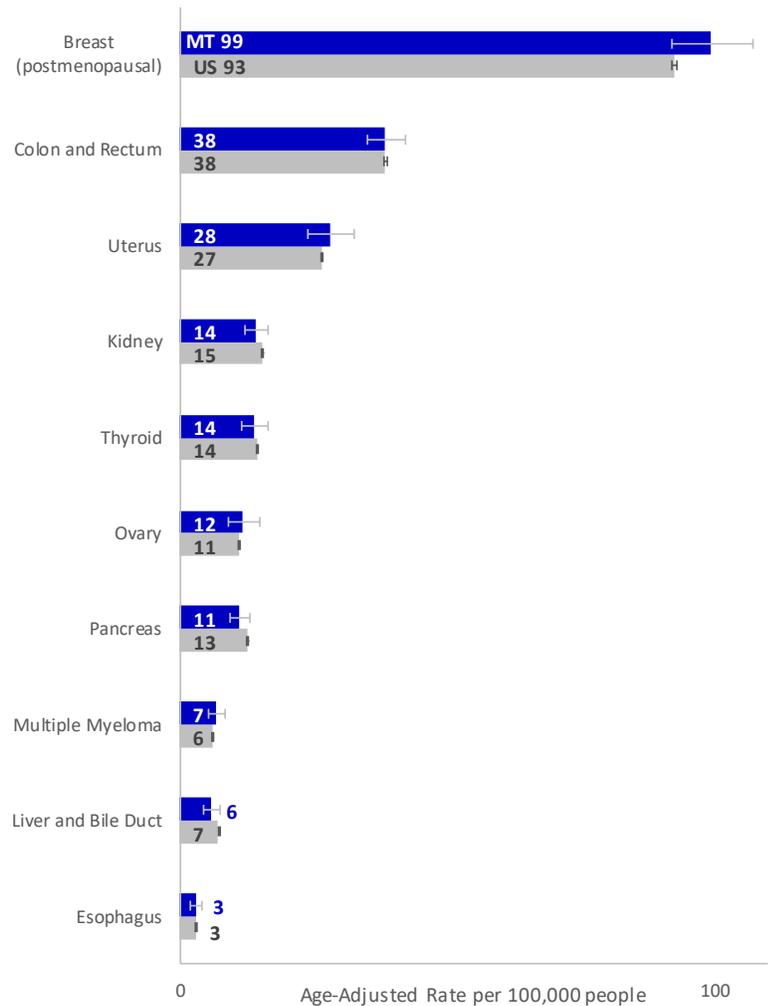
Incidence rates of obesity associated cancers in Montana were calculated with data from the Montana Central Tumor Registry. Obesity associated cancers were classified by anatomic site and histology according to the definitions of CDC’s National Program of Cancer Registries.<sup>3</sup> Only cases of invasive cancer diagnosed among Montana residents from 2007 to 2016 were included. Rates of obesity associated cancers in the United States were taken from the Vital Signs report *Trends in Incidence of Cancers Associated with Overweight and Obesity—United States, 2005–2014* published in the Morbidity and Mortality Weekly Report on October 6, 2017.

### How common are obesity associated cancers?

About 2,100 new cases of obesity associated cancers are diagnosed in Montanans each year and they represent 37% of all new cancer diagnoses. The most common types of obesity associated cancer are breast cancer among postmenopausal women, colon and rectum cancer, and uterine cancer (Figure 1). These three types account for 64% of all obesity associated cancers in Montana.

The rate of new cases of all obesity associated cancers combined was statistically the same in Montana (168 new cases per 100,000 people) as in the United States (170 per 100,000 people) during 2014. There was also no significant difference in the rates of each type of obesity associated cancer in Montana compared to the United States (Figure 1).

**Figure 1:** Incidence of Obesity Associated Cancers in Montana and the United States, 2014



1 Montana Behavioral Risk Factor Surveillance System, 2017, Montana Department of Public Health and Human Services, and supported by the Centers for Disease Control and Prevention Cooperative Agreement NU58DP006044-03

2 National Cancer Institute, *Cancers Associated with Overweight & Obesity*. Accessed September, 2018 at <https://www.cancer.gov/about-cancer/causes-prevention/risk/obesity/overweight-cancers-infographic>

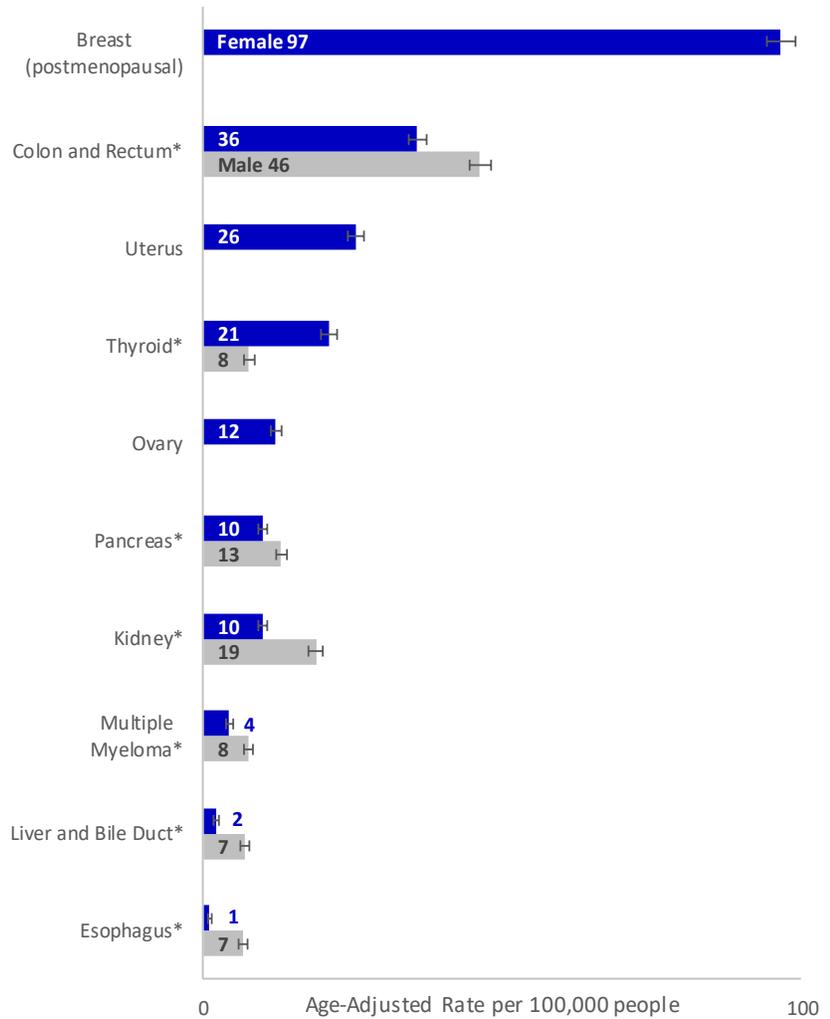
3 S. Jane Henley, Mary Elizabeth O’Neil, Jessica B. King, Mary Lewis, *Defining Risk Factor Associated Cancers*. Cancer Surveillance Branch, Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, GA. Presented at the North American Association of Central Cancer Registries Annual Conference, June 2017.

### Do males or females have higher rates of obesity associated cancers?

Montana women have about twice the rate of obesity associated cancers than men (220 new cases per 100,000 women vs. 112 per 100,000 men). This difference is driven by the fact that three of the 13 types of cancer associated with obesity are only present in women: postmenopausal breast cancer, uterine cancer, and ovarian cancer. Women had a significantly higher rate than men in only 1 of the remaining 10 sites, thyroid cancer (Figure 2).

Montana men had significantly higher rates of colon and rectum cancer, pancreatic cancer, kidney cancer, multiple myeloma, liver cancer, and adenocarcinoma of the esophagus (Figure 2).

**Figure 2:** Incidence of Obesity Associated Cancers among Females and Males in Montana, 2007–2016



\* Rate among females is significantly different than the rate among males



### Do American Indian Montanans have higher rates of obesity associated cancers?

American Indians (AI) in Montana have a significantly higher rate of all obesity associated cancers combined than White Montanans (246 new case vs. 164 per 100,000 people).

Three of the individual cancer types: colon and rectum cancer, kidney cancer, and liver cancer were diagnosed among AI in Montana at a significantly higher rate than among White Montanans (Figure 3). The biggest difference was seen in liver cancer; AI Montanans had more than three times higher rate of liver cancer.

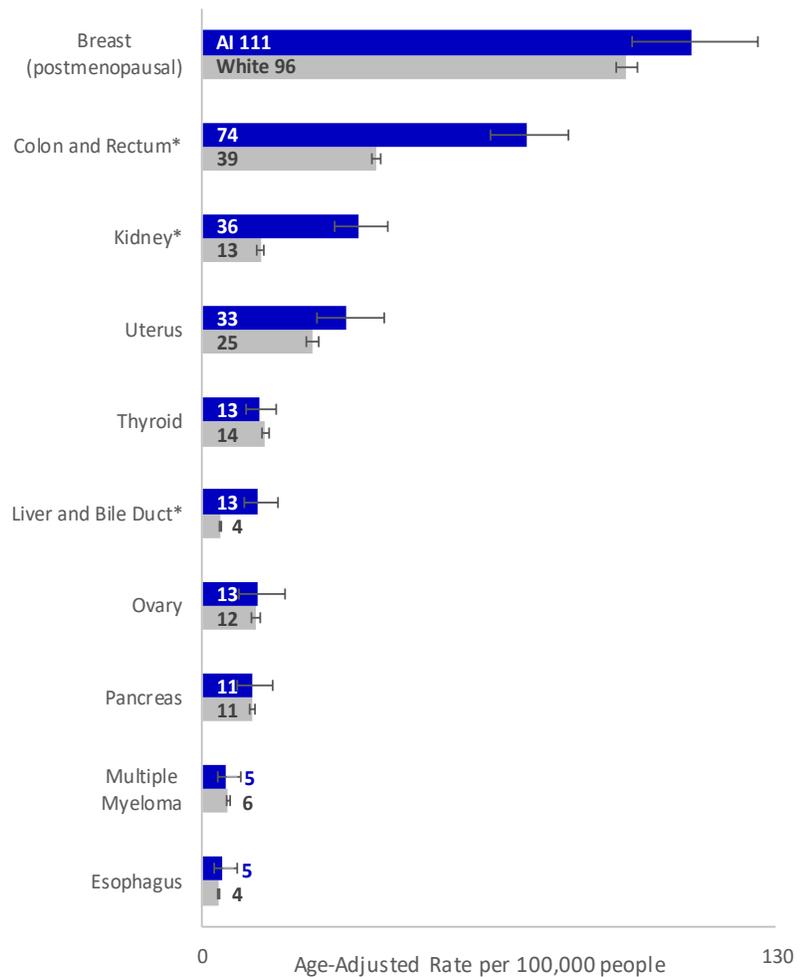
### Conclusions

For most Americans who do not use tobacco, the most important cancer risk factors that can be changed are body weight, diet, and physical activity. The World Cancer Research Fund estimates that about 20% of all cancers diagnosed in the US are related to obesity, physical inactivity, excess alcohol consumption, and/or poor nutrition, and thus could be prevented.<sup>4</sup> A person's lifetime risk of developing or dying from cancer is greatly reduce by:

- Avoiding tobacco products
- Staying at a healthy weight
- Staying physically active throughout life
- Eating a healthy diet

These same behaviors also lower the risk of

**Figure 3:** Incidence of Obesity Associated Cancers among American Indian (AI) and White Montanans, 2007–2016



\* Rate among American Indians is significantly higher than the rate among Whites

4 World Cancer Research Fund, American Institute for Cancer Research. *Diet, Nutrition, Physical Activity and Cancer: A Global Perspective*. Accessed October 2018 at <https://www.wcrf.org/dietandcancer/about>.



developing heart disease and diabetes.

The best way to help people maintain a healthy lifestyle is to create environments that make the healthy choice the easy choice.

The Building Active Communities Initiative helps communities create or enhance community environments so that people of all ages, abilities and income levels can safely walk, bike or take public transportation to places they need to go. Find out more at <https://dphhs.mt.gov/publichealth/NAPA>.

Worksite wellness initiatives help employers create work environments to support and promote physical activity, good nutrition, and tobacco free workplaces.

School health initiatives help teachers and students incorporate physical activity into the school day and teaches students about how to build healthy eating habits they can maintain for the rest of their lives.

### Limitations

The weights and BMI history of cancer patients were not known and this report does not measure what proportion of cancer cases are attributable to obesity. Many different risk factors might contribute to the development of obesity associated cancers such as genetic mutations; chronic infections; and tobacco, hormone, and alcohol use. . Differences in the incidence of obesity associated cancers are affected by all of these risk factors combined and this report cannot determine how much of the difference is due to obesity.