



## DISABILITY AND CHRONIC DISEASE IN MONTANA

### Quick Facts

Disability occurred in **29%** of Montana adults in 2017.

Prevalence of chronic disease in adults with disability was **1.8 times higher** than in adults with no disability.

**Forty percent** of adults with disability had two or more chronic diseases.

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Having a disability does not mean an individual is not healthy or cannot be healthy. However, people with disabilities experience higher rates of chronic disease and other health disparities compared to those without disabilities. By identifying these disparities, health care programs can be tailored to inform healthy choices and prevent illness among this population.

This report examines disability and chronic disease in Montana, utilizing the Behavioral Risk Factor Surveillance System (BRFSS) data from 2017. BRFSS is an annual telephone survey assessing the health of non-institutional adults in Montana and nationally. Six yes/no questions were used to determine disability status. Respondents answering yes to at least one of the questions were considered to have a disability. The six questions were: (Disability type)

- 1) *Are you blind or do you have serious difficulty seeing, even when wearing glasses? (Vision)*
- 2) *Are you deaf or do you have serious difficulty hearing? (Hearing)*
- 3) *Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions? (Cognition)*
- 4) *Do you have serious difficulty walking or climbing stairs? (Mobility)*
- 5) *Do you have difficulty dressing or bathing? (Self-care)*
- 6) *Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping? (Independent living)*

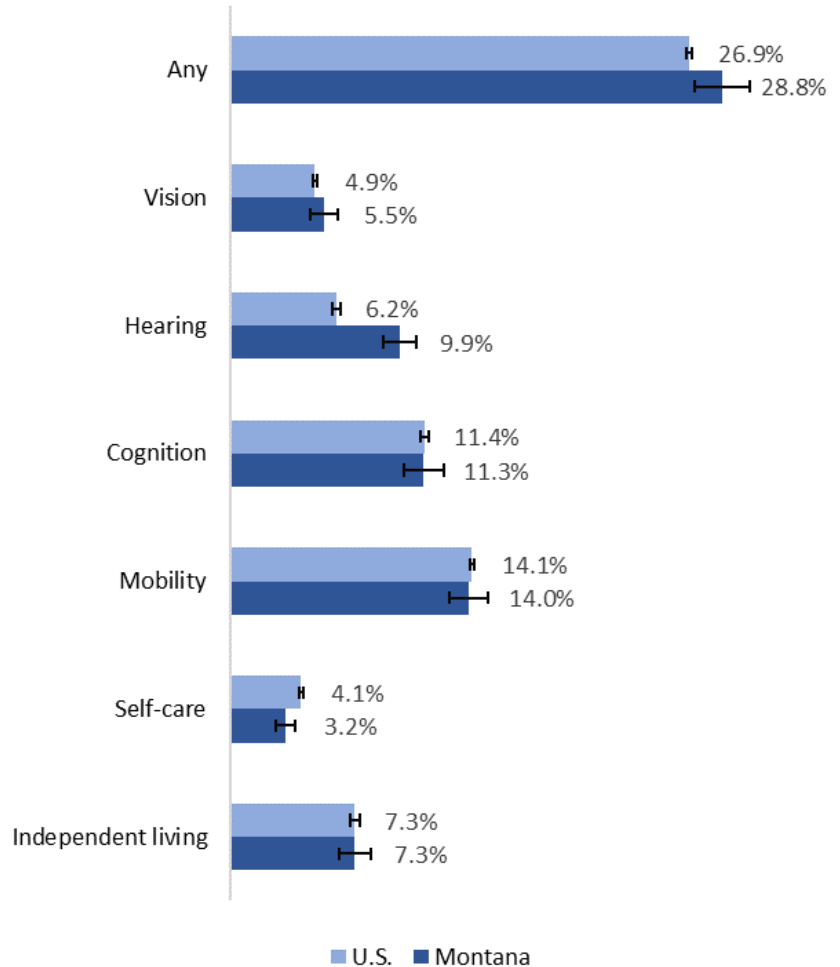
Eleven questions on chronic disease conditions were used in the analysis. Each question began with the prologue - *Has a doctor, nurse, or other health professional ever told you that you have the following:*

- 1) *a heart attack, also called myocardial infarction?*
- 2) *angina or coronary heart disease?*
- 3) *a stroke?*
- 4) *asthma?*
- 5) *skin cancer?*
- 6) *any other types of cancer?*
- 7) *chronic obstructive pulmonary disease, C.O.P.D., emphysema or chronic bronchitis?*
- 8) *Any form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?*
- 9) *a depressive disorder (including depression, major depression, dysthymia, or minor depression)?*
- 10) *kidney disease?*
- 11) *diabetes?*

## Prevalence of Disability

Having any type of Disability was reported by 28.8% (95% CI: 27.2%-30.4%) of Montana adults in 2017, which was significantly higher than the national prevalence of 26.9% (26.6%-27.2%). The percent of adults who were deaf or hard-of-hearing was also significantly higher in Montana compared to the U.S., at 9.9% (8.9%-10.9%) vs. 6.2% (6.1%-6.3%), respectively. Difficulty with self-care was significantly higher nationally than in Montana. Mobility impairment was the most common type of disability, affecting roughly 14% of adults in both Montana and the U.S. (Figure 1).

Figure 1. Percent (weighted) disability by type in Montana compared to U.S., 2017.



There was no significant difference in the prevalence of disability for men and women in five of the six disability types. However, the percent of men who were deaf or hard-of-hearing was more than twice that of women, 13.6% vs. 6.2%, respectively (Figure 2). The percent of adults with a hearing or mobility disability tended to increase with age, whereas the percent with a cognitive disability was similar across age groups (Figure 3).



Figure 2. Percent (weighted) disability for males compared to females, Montana 2017.

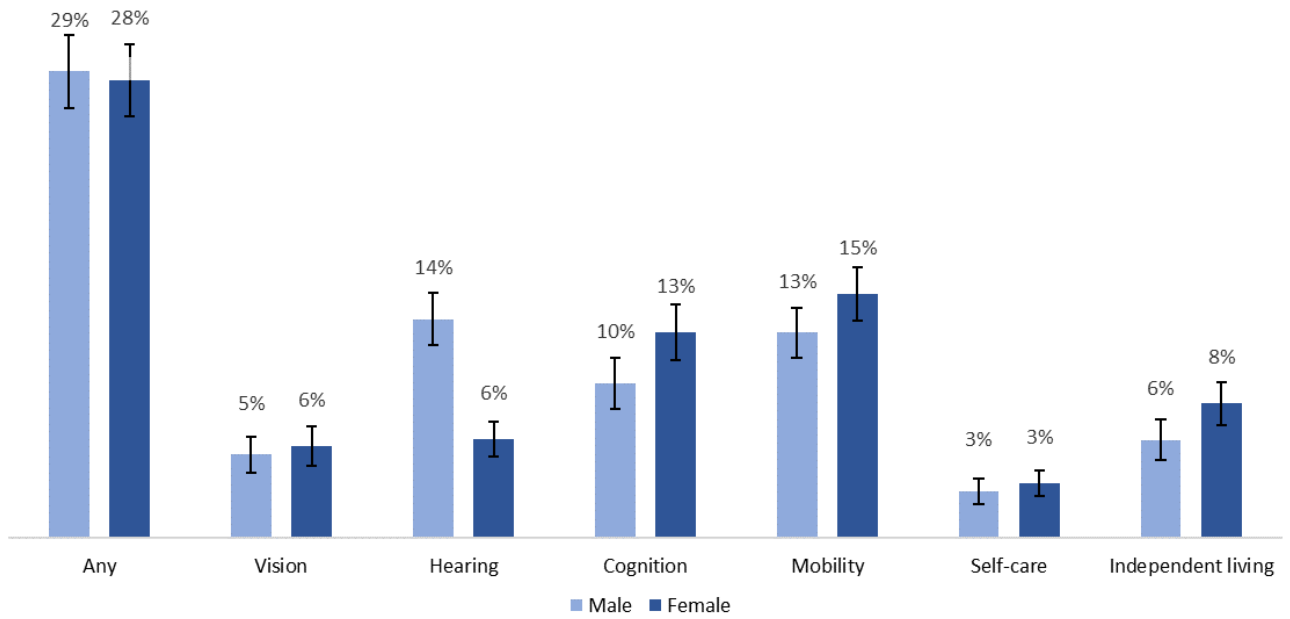
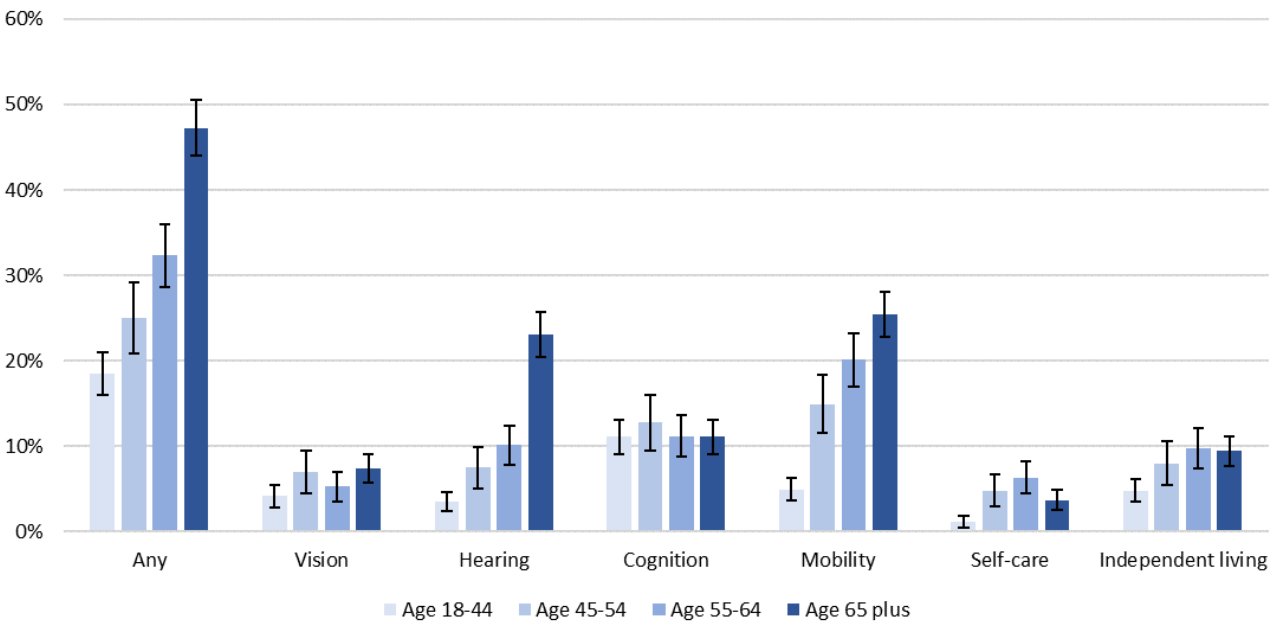


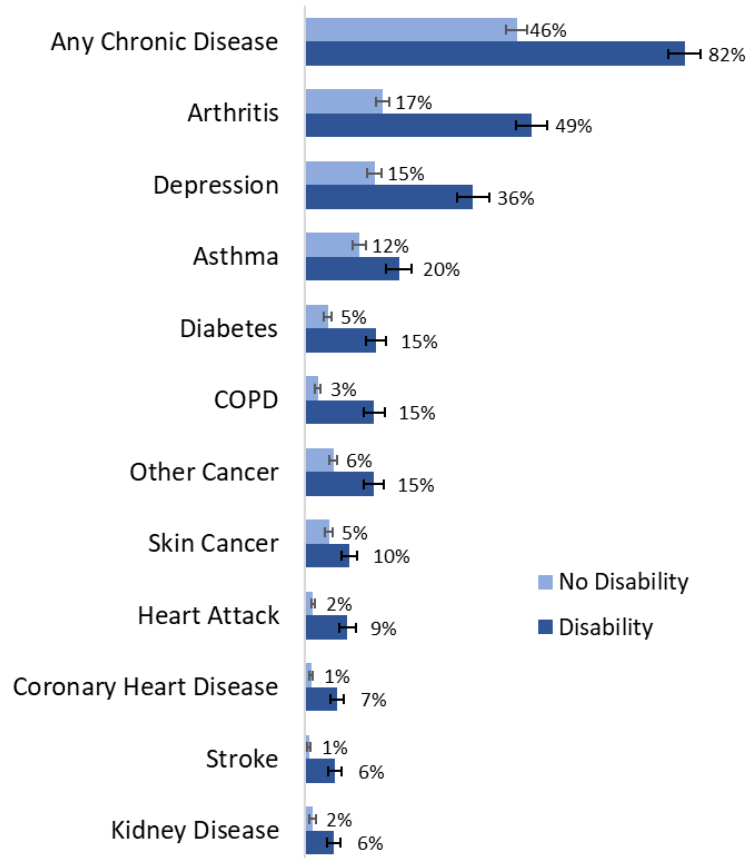
Figure 3. Percent (weighted) disability by age group, Montana 2017.



## Chronic Diseases

The prevalence of chronic disease is extremely high in adults with disability. Eighty-two percent of adults with disability had at least one chronic disease (Figure 4). On average, the prevalence of chronic disease was about four times higher among adults with disability compared to adults without disability. Adults with disability had higher rates of each chronic disease surveyed in BRFSS. Almost half, 49%, of adults with a disability had arthritis, whereas only one in six, 17%, with no disability had arthritis. More than a third, 36%, of adults with a disability had depression, whereas only 15% with no disability had depression (Figure 4).

Figure 4. Percent (weighted) chronic diseases, disability and no disability, Montana, 2017.



The prevalence of chronic disease followed a similar pattern for adults with and without disability across age groups. Prevalence increased with increasing age groups, consistently higher among adults with disability versus adults without disability in all age groups. The two exceptions to this pattern were asthma and depression, where the youngest age group (18-44 years old) had significantly higher prevalence than the oldest age group (65+) (Table).

Males with and without disability had a significantly higher history of heart attack than females with and without disability. Females with and without disability had significantly higher rates of both depression and other cancer than males of corresponding disability status. Females with disability had significantly higher arthritis rates than males with disability (Table).

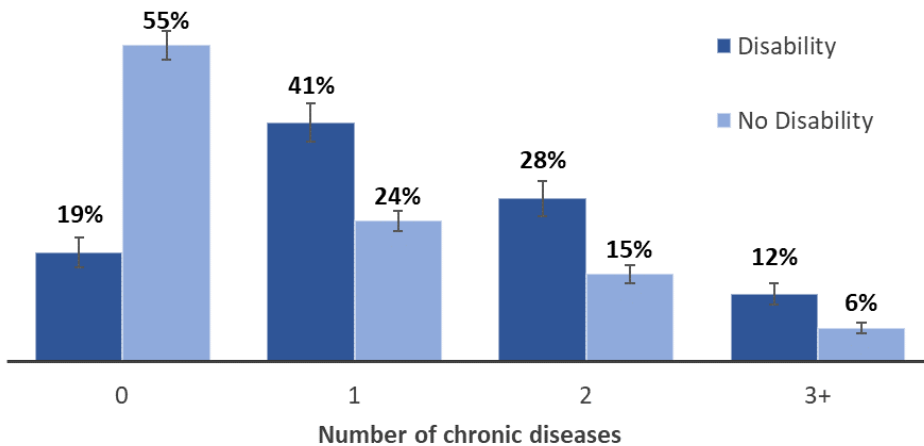
**Table.** Weighted percent of respondents with chronic disease by age group or gender and disability status, Montana BRFSS, 2017.

	18-44 % (95% CI)	45-54 % (95% CI)	55-64 % (95% CI)	65 plus % (95% CI)	Female % (95% CI)	Male % (95% CI)
<b>Any Chronic Disease</b>						
Disability	74.6 (66.8-82.4)	77.7 (68.2-87.1)	81.9 (75.0-88.8)	87.6 (83.2-92.0)	87.4 (82.6-92.1)	75.8 (70.8-80.9)
No Disability	35.6 (32.1-39.1)	42.3 (36.6-48.0)	52.3 (47.6-57.0)	68.4 (64.2-72.6)	49.7 (46.6-52.9)	41.3 (38.2-44.4)
<b>Heart Attack</b>						
Disability	DSU*	10.2 (4.3-16.2)	8.9 (4.9-12.9)	13.6 (10.4-16.8)	6.5 (4.4-8.6)	11.8 (8.9-14.7)
No Disability	DSU	DSU	2.4 (1.1-3.6)	6.4 (4.6-8.2)	0.9 (0.5-1.3)	2.8 (2.0-3.6)
<b>Coronary Heart Disease</b>						
Disability	DSU	DSU	6.8 (3.4-10.2)	12.8 (9.8-15.8)	6.7 (4.7-8.7)	7.1 (5.1-9.2)
No Disability	DSU	DSU	2.2 (1.2-3.3)	4.5 (3.0-6.0)	1.3 (0.7-1.8)	1.6 (1.1-2.1)
<b>Stroke</b>						
Disability	DSU	DSU	7.6 (4.3-10.9)	9.0 (6.4-11.6)	6.8 (4.8-8.8)	6.2 (4.1-8.2)
No Disability	DSU	DSU	DSU	3.5 (2.0-5.0)	1.0 (0.6-1.4)	1.0 (0.5-1.5)
<b>Asthma</b>						
Disability	28.5 (21.5-35.5)	15.4 (9.4-21.4)	23.2 (17.4-29.1)	14.6 (11.4-17.8)	23.6 (19.6-27.7)	17.0 (13.3-20.8)
No Disability	13.1 (10.8-15.5)	10.8 (7.0-14.5)	9.6 (6.8-12.3)	9.9 (7.5-12.2)	11.6 (9.7-13.4)	11.8 (9.6-13.9)
<b>Skin Cancer</b>						
Disability	DSU	DSU	9.3 (5.3-13.2)	18.4 (15.2-21.6)	8.2 (6.1-10.2)	11.0 (8.6-13.4)
No Disability	DSU	3.5 (1.7-5.3)	7.1 (4.9-9.2)	17.3 (14.4-20.3)	6.0 (4.9-7.1)	4.5 (3.4-5.5)
<b>Other Cancer</b>						
Disability	6.8 (3.3-10.4)	12.5 (6.3-18.7)	16.3 (11.4-21.3)	20.7 (17.1-24.4)	18.4 (15.0-21.9)	11.2 (8.7-13.8)
No Disability	1.7 (0.8-2.5)	5.6 (3.0-8.2)	9.5 (6.9-12.0)	15.0 (12.3-17.8)	8.6 (7.1-10.1)	3.8 (2.8-4.7)
<b>Chronic Obstructive Pulmonary Disease</b>						
Disability	6.4 (2.7-10.1)	17.1 (9.8-24.3)	20.7 (15.0-26.5)	17.6 (14.2-21.0)	14.9 (11.9-18.0)	15.0 (11.7-18.3)
No Disability	1.6 (0.8-2.3)	DSU	4.5 (2.5-6.4)	6.5 (4.6-8.5)	3.1 (2.1-4.0)	2.6 (1.8-3.5)
<b>Arthritis</b>						
Disability	29.4 (22.9-35.9)	52.3 (42.1-62.5)	56.6 (49.3-63.9)	57.2 (52.5-61.9)	54.8 (50.2-59.4)	43.2 (38.5-47.8)
No Disability	6.1 (4.5-7.8)	16.4 (12.1-20.7)	27.9 (23.9-31.9)	34.6 (30.7-38.5)	17.2 (15.2-19.2)	16.1 (14.0-18.2)
<b>Depression</b>						
Disability	52.6 (44.7-60.5)	37.6 (29.3-45.9)	39.8 (32.8-46.8)	22.0 (18.4-25.6)	43.2 (38.3-48.2)	28.9 (24.3-33.6)
No Disability	18.1 (15.4-20.8)	13.7 (9.8-17.5)	14.7 (11.5-17.8)	8.1 (5.9-10.3)	20.0 (17.4-22.5)	10.0 (8.1-11.9)
<b>Kidney Disease</b>						
Disability	DSU	7.6 (3.3-11.9)	DSU	8.7 (5.8-11.6)	7.1 (4.8-9.5)	5.4 (3.4-7.3)
No Disability	DSU	DSU	DSU	3.9 (2.3-5.5)	DSU	1.7 (1.0-2.4)
<b>Diabetes</b>						
Disability	DSU	13.9 (8.0-19.9)	22.4 (16.7-28.1)	19.9 (16.2-23.5)	15.9 (12.7-19.2)	15.2 (12.2-18.3)
No Disability	DSU	5.9 (3.1-8.7)	8.2 (5.7-10.6)	11.2 (8.6-13.8)	4.9 (3.7-6.1)	5.0 (3.8-6.2)

\*DSU - Data suppressed (Relative standard Error (RSE) > 30%).



Figure 5. Percent (weighted) of chronic diseases by disability status, Montana, 2017.



Nearly twice as many adults with disability had two or more chronic diseases, compared to adults with no disability. Twelve percent (8.9%-14.3%) of adults with disability had three or more chronic diseases, versus only 6% (4.5%-7.2%) with no disability (Figure 5).

### Conclusion

Chronic diseases occur at significantly higher prevalence among adults with disability than adults without disability in Montana. More adults with disability had a chronic disease and more had multiple chronic diseases compared to those without disability. The association between chronic disease and disability does not imply direction of causation. Disability may place one at increased risk for chronic disease and having a chronic disease may place one at risk for acquiring disability.

To decrease chronic disease among people with disabilities, inclusive and evidence-based practices should be implemented. These practices include: universal design, which makes products, communications and the physical environment more usable; reasonable accommodations, which allows for alterations to be made to items, procedures, or systems that enable a person with a disability to use them; and positive attitudinal changes among the community, which promotes people with disabilities as healthy and capable of staying active. In conclusion, inclusive health promotion opportunities and chronic disease management opportunities are needed to improve the health and participation of Montanans with disability.

#### Data sources:

Montana Behavioral Risk Factor Surveillance System, 2017, Behavioral Risk Factor Surveillance System Office, Montana Department of Public Health and Human Services.  
Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2017.