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Helena, MT
59620-2951

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Arthritis among Montana Adults 2007 BRFSS findings

Arthritis means joint inflammation and includes more than 100 conditions that affect the joints, surrounding tissues, and other connective tissues.¹ The pattern, severity, and location of symptoms can vary depending on the specific form of the disease. The most common of these forms are osteoarthritis, rheumatoid arthritis, lupus, gout, and fibromyalgia.² Arthritis is one of the most common chronic conditions affecting more than one-fourth of US adults and is the leading cause of disability in the United States.² Furthermore, the prevalence is likely to increase in the coming years as the population ages.¹ Its high prevalence and severe impact on quality of life make arthritis a very pressing public health issue across the United States and Montana.

There is a widespread belief that arthritis is an inevitable part of growing older, but it does affect people of all ages.¹ Arthritis affects people in a variety of ways, from physical symptoms, including pain, loss of joint motion and fatigue, to social and emotional well-being, including being

less able to participate in normal social activities and increased risk of depression. It also negatively impacts overall health by placing the individual at higher risk for other health conditions such as heart disease, high blood pressure, diabetes and diseases that are also influenced by the physical limitations that arthritis can invoke. These symptoms can develop gradually or suddenly and can interfere with daily living, like walking, climbing stairs, or using a computer keyboard. Some forms of arthritis also affect the immune system and internal organs of the body.

As part of the national effort to address the growing problem of arthritis and arthritis-associated disability, the Arthritis Burden Module was added to the Behavioral Risk Factor Surveillance System (BRFSS) starting in 2001. Three of the five questions in the module assess prevalence of arthritis through both doctor-diagnosed arthritis and presence of pain or stiffness in or around joints (excluding the neck and back) that has lasted for at least 3 months. The latter category is called possible arthritis in this report. The remaining questions ask about seeking health care to treat joint symptoms and limitation in usual activities due to joint symptoms.

Table 1. Arthritis, Montana Adults, 2007 (with 95% confidence intervals)

	Doctor Diagnosed Arthritis †			Possible Arthritis ‡		
	Unwt. N.	Wt.%	95% CI	Unwt. N.	Wt.%	95% CI
All Adults	2150	29.0	27.6 - 30.5	2523	37.9	36.2 - 39.5
Sex:						
Male	767	25.9	23.8 - 28.1	987	37.6	35.0 - 40.2
Female	1383	32.1	30.2 - 34.1	1536	38.1	36.1 - 40.2
Age:						
18 - 24	18	6.9	3.9 - 11.9	55	20.5	14.9 - 27.4
25 - 34	78	13.4	10.2 - 17.4	115	21.8	17.7 - 26.6
35 - 44	161	17.9	15.2 - 21.1	281	32.9	29.2 - 36.7
45 - 54	386	29.7	26.7 - 32.9	565	44.3	41.0 - 47.7
55 - 64	559	42.4	39.3 - 45.5	654	50.1	46.9 - 53.2
65+	937	55.4	52.6 - 58.1	841	50.5	47.7 - 53.3
Education:						
<High School	187	33.8	27.8 - 40.3	190	39.8	33.1 - 47.0
High School	749	31.8	29.1 - 34.6	861	41.1	38.1 - 44.3
Some College	612	27.9	25.3 - 30.6	746	38.3	35.3 - 41.4
College Degree	598	26.4	24.1 - 28.9	721	33.9	31.4 - 36.6
Income:						
<\$15,000	282	36.7	31.7 - 42.0	302	44.7	39.0 - 50.5
\$15,000 - \$24,999	428	34.9	31.1 - 38.9	507	44.9	40.6 - 49.3
\$25,000 - \$49,999	618	29.5	26.9 - 32.2	730	38.0	35.1 - 41.0
\$50,000 - \$74,999	280	25.2	22.1 - 28.7	355	34.6	30.8 - 38.5
\$75,000+	238	21.3	18.3 - 24.6	335	32.6	28.8 - 36.5
Race/Ethnicity:						
White, non-Hispanic	1920	29.1	27.6 - 30.6	2265	38.4	36.7 - 40.2
AI/AN*	128	21.1	16.7 - 26.3	144	26.8	21.5 - 32.9
Other or Hispanic**	80	33.2	24.7 - 42.8	92	36.9	28.3 - 46.4
Region:						
1- Eastern MT	236	31.5	27.6 - 35.7	283	37.9	33.6 - 42.4
2- N Central MT	426	33.3	30.0 - 36.7	491	40.3	36.8 - 44.0
3- S Central MT	301	29.1	25.5 - 33.0	360	37.8	33.8 - 41.9
4- Southwest MT	460	27.8	25.0 - 30.8	525	36.3	32.9 - 39.8
5- Northwest MT	676	27.8	25.4 - 30.4	806	38.1	35.2 - 41.2

* American Indian or Alaska Native only

** All other non-White (including multiracial) or Hispanic

† Proportion who reported ever being told by a health care professional that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia. Total Sample Size=5901; Weighted Prevalence Est.=211.657

‡ Possible arthritis is defined as pain, aching, or stiffness in or around a joint (excluding the back or neck) occurring in the past 30 days and first starting > 3 months ago. Total Sample Size=5888; Weighted Prevalence Est.=275.157

Doctor-Diagnosed Arthritis and Possible Arthritis

Nationally, in 2007, about 28% of adults reported doctor-diagnosed arthritis. The highest prevalence of arthritis was found in West Virginia, Alabama and Tennessee at about 35% and the lowest prevalence was in Guam at about 14%. **Approximately 212,000 Montana adults (29%) reported having doctor-diagnosed arthritis and an additional 122,000 (23.8%) reported having joint pain or stiffness that had lasted for at least 3 months (possible arthritis).** Since 2001, the prevalence of doctor-diagnosed arthritis has increased significantly from 24.2% to 29% of the Montana population over the age of 18 (See Figure 1).

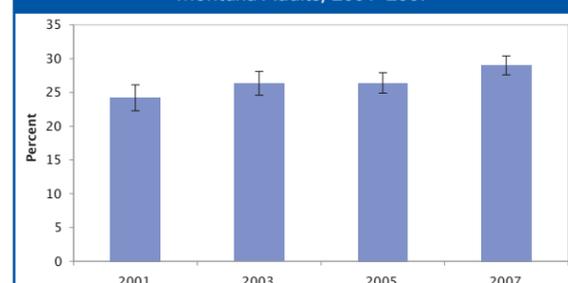
Prevalence estimates of doctor-diagnosed arthritis and possible arthritis by socio-demographic characteristics are provided in Table 1. Women (32.1%) were more likely to report arthritis than men (25.9%). The prevalence of arthritis increased with increasing age affecting more than half (55.4%) of all adults aged 65 and older. However, arthritis is not exclusively a disease of the elderly.

One out of four (23.2%) Montanans aged 18 to 64 had doctor-diagnosed arthritis and of all Montana adults with doctor-diagnosed arthritis 65.2% are between 18 and 64 years old. Arthritis affected all races and ethnicities, but American Indians (21.1%) were less likely to have doctor-diagnosed arthritis than Whites (29.1%). Adults with a college degree (26.4%) were less likely to have doctor-diagnosed arthritis than adults with only a high school education (≥31.8%). Further, the prevalence of arthritis decreased with increasing household income. Adults in households earning less than \$25,000 per year (≥34.9%) reported having significantly higher rates of arthritis than

adults in households with \$50,000 or higher reported earnings (≤25.2%). The characteristics of the population that has possible arthritis (those that reported having joint pain or stiffness that had

lasted for at least 3 months) were different in some ways from the population with doctor-diagnosed arthritis. The population with possible arthritis differed from the population with doctor-diagnosed arthritis in that there was no difference in prevalence of possible arthritis among females (38.1%) and males (37.6%). Additionally, possible arthritis was much more common among young adults aged 18 to 24 (20.5%) than doctor-diagnosed arthritis (6.9%). Interestingly, adults aged 18 to 24 (37.2%) were also significantly more likely to have never seen a doctor regarding their possible arthritis than adults aged 65 or older (15.8%), data not shown.

Figure 1. Prevalence of Doctor-Diagnosed Arthritis, Montana Adults, 2001-2007



Activity Limitation Attributable to Arthritis or Joint Symptoms

Approximately one third (30.0%) of Montana adults with reported arthritis or possible arthritis, also reported being limited in their usual activities because of their joint symptoms (Table 2 see back page). For these individuals, the prevalence of joint symptom related activity limitations slightly increased with increasing age with adults aged 65 and older (35.5%) being significantly

more likely to be limited in activities than adults aged 25 to 34 years of age (21.3%). Even though they are less likely to have possible or doctor-diagnosed arthritis, American Indians (43.7%) were more likely to have activity limitation due to their joint symptoms than Whites (29.1%). Adults with a college degree (29.1%) were less likely to experience activity limitation due to their

joint symptoms than adults with less than high school education (43.0%). Similarly, adults in households earning less than \$50,000 per year (≥31.3%) reported having significantly higher rates of joint symptom associated activity limitation than adults in households with \$75,000 or higher reported earnings (17.4%).

Table 2. Activity Limitation and Arthritis, Montana Adults, 2007 (with 95% confidence intervals)

	Activities Limited Due to Joint Symptoms †		
	Unwt. N.	Wt.%	95% CI
All Adults	1006	30.0	28.0 - 32.1
Sex:			
Male	374	27.6	24.5 - 30.8
Female	632	32.2	29.6 - 35.0
Age:			
18 - 24	12	21.1	10.9 - 36.9
25 - 34	30	21.3	13.7 - 31.5
35 - 44	97	26.9	21.7 - 32.9
45 - 54	213	28.8	24.9 - 33.1
55 - 64	262	32.6	28.9 - 36.6
65+	388	35.5	32.4 - 38.8
Education:			
<High School	96	43.0	34.2 - 52.3
High School	359	32.0	28.4 - 35.9
Some College	270	25.2	22.0 - 28.7
College Degree	280	29.1	25.7 - 32.9
Income:			
<\$15,000	175	46.7	39.7 - 53.8
\$15,000 - \$24,999	238	37.3	32.4 - 42.4
\$25,000 - \$49,999	273	31.3	27.7 - 35.1
\$50,000 - \$74,999	107	23.6	19.2 - 28.8
\$75,000+	90	17.4	13.8 - 21.6
Race/Ethnicity:			
White, non-Hispanic	881	29.1	27.0 - 31.2
AI/AN*	74	43.7	34.2 - 53.7
Other or Hispanic**	39	34.6	22.1 - 49.8
Region:			
1- Eastern MT	100	27.1	22.1 - 32.7
2- N Central MT	203	32.3	27.8 - 37.2
3- S Central MT	146	30.1	25.0 - 35.7
4- Southwest MT	216	30.6	26.5 - 35.0
5- Northwest MT	309	28.2	24.8 - 31.9

* American Indian or Alaska Native only
 ** All other non-White (including multiracial) or Hispanic
 † Among those with doctor-diagnosed arthritis or possible arthritis
 Total Sample Size=3053; Weighted Prevalence Est.=99,484.

Disability Status and Arthritis

Montanans with disability due to any cause (reported being limited in any way in any activities because of physical, mental or emotional problems or reported having any health problems that required the use of special equipment) were more than twice as likely to report doctor-diagnosed arthritis (55.8% vs. 21.0%) and possible arthritis (65.0% vs. 29.7%) than those adults with no disability (See Table 3). In fact, about **6 out of 10 (63.1%) Montanans with a disability reported that joint symptoms had limited their usual activities. This is six times as many as adults with disability reporting arthritis-attributable activity limitations than adults without disability (10.3%) who experienced such limitations.** Further, while adults without a reported disability were more likely not to see a doctor for their joint symptoms (35.7%), more than one in ten adults with a reported disability (13%) did not see a doctor for their joint symptoms.

Table 3. Disability & Arthritis, Montana Adults, 2007 (with 95% confidence intervals)

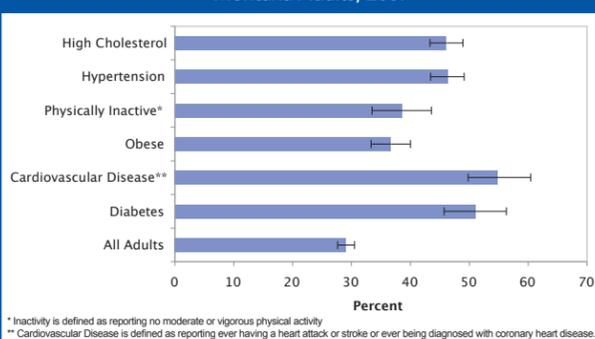
	Disability			No Disability		
	Unwt. N.	Wt.%	95% CI	Unwt. N.	Wt.%	95% CI
Doctor-Dx Arthritis	994	55.8	52.3 - 59.3	1143	21.0	19.6 - 22.5
Joint Symptoms	1069	65.0	61.4 - 68.3	1437	29.7	28.0 - 31.5
Activities Limited by Joint Symptoms*	794	63.1	59.5 - 66.6	208	10.3	8.7 - 12.1
Never Seen a Dr. for Joint Symptoms*	128	13.0	10.4 - 16.1	510	35.7	32.5 - 39.0

* Among those reporting either doctor diagnosed arthritis or possible arthritis

Relationships to Selected Risk Behaviors and Chronic Health Conditions

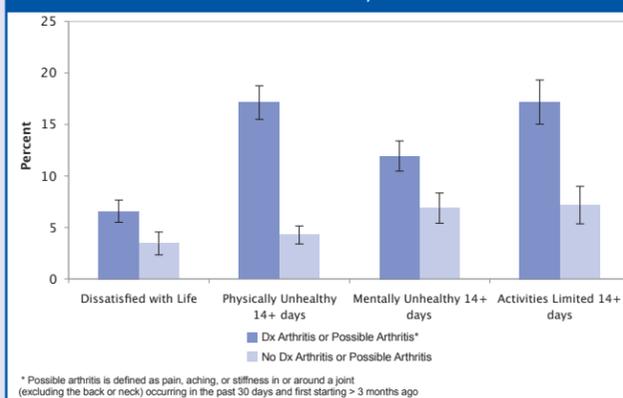
Arthritis is significantly associated with many other chronic conditions (Figure 2). In fact, more than half of Montana adults with diabetes (51.0%) and cardiovascular disease (54.8%) reported having arthritis. What this means is that arthritis, already a common and disabling condition, is exceptionally common among people with diabetes and those with cardiovascular disease. Further, almost half of all adults with hypertension (46.3%) and high cholesterol (46.1%) reported having doctor-diagnosed arthritis. For adults who are overweight (25.0 ≤ BMI < 30.0) about one-third also have arthritis (31.1%), and more than one-third of those who are obese (36.7%) and physically inactive (38.5%) also reported having arthritis.

Figure 2. Doctor Diagnosed Arthritis By Health Risks or Conditions, Montana Adults, 2007



* Inactivity is defined as reporting no moderate or vigorous physical activity
 ** Cardiovascular Disease is defined as reporting ever having a heart attack or stroke or ever being diagnosed with coronary heart disease.

Figure 3. Quality of Life Measures by Arthritis Status, Montana Adults, 2007



* Possible arthritis is defined as pain, aching, or stiffness in or around a joint (excluding the back or neck) occurring in the past 30 days and first starting > 3 months ago

Arthritis and Quality of Life

As shown in Figure 3, adults who reported arthritis or possible arthritis were more likely to have diminished quality of life as measured by the number of physically or mentally unhealthy days in a month, life satisfaction, and activity limitations than those adults without arthritis or possible arthritis. Montana adults with arthritis or possible arthritis (17.1%) were significantly more likely than those without (7.2%) to be limited in their regular activities such as self-care or recreation on 14 or more days in the past 30 because of poor health. People with arthritis or possible arthritis (11.0%) were also almost two times more likely than those without (6.9%) to report 14 or more days in the past 30 where their mental health was not good. Striking differences were apparent in all these measures by arthritis status, suggesting poorer quality of life among adults with arthritis.

Discussion and Recommendations

Arthritis is a common, serious chronic health problem. For Montana adults in 2007, arthritis disproportionately affected women and people with lower educational attainment and household income. People living with arthritis are far more likely to be limited in their usual activities and suffer a lower quality of life. For all types of arthritis, early diagnosis and appropriate management are important in alleviating symptoms, improving quality of life, and improving long-term outcomes.³

Although there is no cure for most types of arthritis, increasing public awareness about the importance of early diagnosis should increase appropriate management for all types of arthritis, particularly inflammatory types of arthritis and connective tissue diseases. Early and aggressive management of inflammatory arthritis and associated autoimmune diseases can reduce complications and delay costly procedures like joint replacement.^{2,3} Management includes not only medical treatment, but also self-management strategies, such as education and self-help courses, injury prevention, weight control, and physical activity, which can help people with arthritis function better, stay productive, and have lower health care costs.^{2,3} Achieving a healthy weight lowers a person's risk for developing "wear and tear" arthritis or osteoarthritis in the knees and hips and like so many other chronic diseases, weight control can slow progression of the disease for those who already have it and delay costly surgery. Moderate physical activity also helps to relieve pain and stiffness and improves a person's mood, outlook, and functional independence.²

Public health is working to lower the burden of arthritis for all Montanans by getting the message out about the benefits of a healthy weight, moderate physical activity, and avoiding joint injury, which all help people with arthritis, as well as most chronic health conditions. Paying

attention to symptoms, seeing your doctor and getting an accurate diagnosis can result in better disease management. For the one-quarter of adult Montanans who reported having possible arthritis, early diagnosis and appropriate treatment are particularly important to help decrease symptoms of pain, reduce disability, and prevent long-term complications that can result from bone damage caused by the disease.

State-level surveillance information provided by the BRFSS is also an important part of the public health efforts. By monitoring the prevalence of arthritis as well as other chronic conditions and behavioral risk factors, the BRFSS helps public health professionals and lay people better understand the complex interactions of all these factors in individuals and communities. Analysis of state-level surveillance data supports evidence-based policies and improves the ability to make recommendations to reduce the burden of arthritis in Montana.

During the last decade, CDC has been working with the Arthritis Foundation and other partners to carry out the *National Arthritis Action Plan: A Public Health Strategy* to guide the nation's resources to increase the quality of life of those affected by arthritis, reduce pain, activity limitations, and disability, as well as prevent certain types of arthritis. As the BRFSS continues to track the arthritis burden in the state it is also crucial that agencies and organizations in Montana provide avenues to address this health problem. One such strategy may be to increase health care and public health resources earmarked for arthritis self-help and physical activity programs. Many proven public health interventions that are easily accessible and affordable need to be made available at the community level and persons with arthritis who could benefit from such interventions should be encouraged to receive them.^{4,5} For further information about arthritis and its management see: <http://www.cdc.gov/arthritis/> and <http://www.arthritis.org/chapters/rocky-mountain/montana-branch.php>.

Survey Limitations The BRFSS relies on self-reported data. This type of survey has certain limitations: many times, respondents have the tendency to underreport some behaviors that may be considered socially unacceptable (e.g., smoking, heavy alcohol use); conversely, respondents may over report behaviors that are desirable (e.g., physical activity, nutrition).

Background The Montana Behavioral Risk Factor Surveillance System (BRFSS) has been collecting and reporting state-specific, population-based estimates of health-related data since 1984. The purpose of this statewide telephone survey of Montana residents aged 18 and older is to gather information regarding personal health risk behaviors, selected medical conditions, and the prevalence of preventive health care practices among Montana adults. These BRFSS results have been used by public health agencies, academic institutions, non-profit organizations, and others to develop programs that promote the health of Montana adults and reduce risks that contribute to the leading causes of death in the state. A full set of Montana yearly questionnaires and health indicators can be found on the Department of Public Health and Human Services (DPHHS) BRFSS database query system website at www.brfss.mt.gov. The CDC website www.cdc.gov/brfss also provides national, state, and some local area prevalence estimates of health indicators, as well as access to downloadable datasets for further analyses.

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Endnotes

- 1 Arthritis Foundation; Association of State and Territorial Health Officials; Centers for Disease Control and Prevention. National Arthritis Action Plan: A Public Health Strategy. 1999.
- 2 Centers for Disease Control and Prevention Arthritis Home Page <http://www.cdc.gov/arthritis/>.
- 3 Centers for Disease Control and Prevention Arthritis intervention programs. Available at <http://www.cdc.gov/arthritis/intervention/index.htm>.
- 4 Smith SC Jr, Allen J, Blair SN, et al. AHA/ACC guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease: 2006 update. *Circulation* 2006;113:2363-72.
- 5 US Department of Health and Human Services. 2008 physical activity guidelines for Americans. Hyattsville, MD: US Department of Health and Human Services; 2008. Available at <http://www.health.gov/pageguidelines>.