OREGON'S ARTHRITIS REPORT 2011

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Introduction

Nationally, an estimated 50 million adults in the United States reported in 2010 being told by a doctor that they have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia. (1) One in five adults in the U.S. report having doctor-diagnosed arthritis. By the year 2030, an estimated 67 million Americans age 18 years or older are projected to have doctor-diagnosed arthritis. (2) A greater cause for concern is the fact that arthritis and related conditions are the leading causes of disability for people in this country. It has a substantial effect on the quality of life of those who experience its painful and disabling symptoms. Arthritis commonly occurs with other chronic conditions, such as diabetes, heart disease, and obesity. In 2003, the total cost attributed to arthritis and other rheumatic conditions in the United States was $128 billion (direct and indirect costs), up from $86 billion in 1997. (3) The total medical cost for arthritis in Oregon was $1.6 billion in 2003.

Arthritis consists of over 100 different diseases and conditions that affect the joints, surrounding tissues, and other connective tissues. Common symptoms include pain, achiness, stiffness, and swelling in or around the joints. The two most common forms of arthritis and other rheumatic conditions are osteoarthritis and rheumatoid arthritis.

Arthritis affects people of all ages and racial and ethnic groups; however, it is more common in women and older Americans. In 2009, 50% of adults age 65 years or older reported an arthritis diagnosis. (1) This population group is expected to more than double between 2000 and 2030.

Definition of arthritis

This report focuses on the two most common forms of arthritis, osteoarthritis and rheumatoid arthritis.

Osteoarthritis (OA) is the most common kind of arthritis. It can affect several joints of the body, and most often affects the hips, knees, feet, and hands. It occurs when the cartilage lining of the joints wears away, causing the bones to rub together. This leads to pain, stiffness, inflammation and loss of mobility. Disease onset is gradual and usually begins after the age of 40.

Rheumatoid arthritis (RA) is a chronic inflammatory condition in which the body's immune system attacks cartilage, bone, and sometimes internal organs, usually causing joint disease. Chronic inflammation of the joint lining occurs, which may spread to other joint tissues resulting in bone and cartilage erosion, joint deformities, and movement limitations. Wrists, fingers, knees, feet, and ankles are most commonly affected.

The Centers for Disease Control and Prevention (CDC) defines people with arthritis as those who have doctor-diagnosed arthritis. People are considered to have doctor-diagnosed arthritis if they answered "yes" to the following question on the Behavioral Risk Factor Surveillance System (BRFSS) survey: "Have you ever been told by a doctor or other health professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?"

Who gets arthritis?

Arthritis is not only an older person's disease. Arthritis affects young people too, as well as people of all racial and ethnic groups. An estimated 294,000 children in the United States under age 18, about one in every 250, have some form of arthritis or other rheumatic condition. (4) However, the prevalence of arthritis increases with age, and this condition is more common among older Americans.

Why is arthritis a public health problem?

Arthritis continues to be the most common cause of disability, affecting one in five Americans. Older Americans are disproportionately affected, so arthritis is expected to increase dramatically as the population ages. Women are more likely to be affected than men and since women tend to live longer than men, this further adds to the high prevalence of arthritis in the older population.

This demographic transition will place a great challenge on the public health system. In order to lessen the burden, the public health system needs to expand prevention efforts and promote cost-effective, evidence-based interventions for those who have arthritis.

Arthritis is the leading cause of disability in the United States, potentially limiting affected persons from doing regular activities, such as walking a few blocks. In Oregon, arthritis results in $1.0 billion in direct medical cost and another $586 million in indirect costs (i.e., lost earnings attributable to arthritis) among adults.

Although cost-effective interventions that support people with arthritis in managing their conditions are available, these supports are considerably underutilized. Public health organizations and partners need to continue to promote self-management programs and practices that have been proven to be effective. These main practices are physical activity (e.g., the Arthritis Foundation Exercise Program), healthy weight maintenance and self-management education, (e.g., Living Well with Chronic Conditions program).

Characteristics of people with arthritis

Risk factors are characteristics or attributes that increase a person's risk for developing a disease or condition. A number of risk factors have been linked to the development of arthritis or to increased morbidity from arthritis among those who have it (Table 1). Some of these risk factors (such as age, gender, and genetic predisposition) are not modifiable. Some risk factors, however, can be addressed through changes in lifestyle, potentially decreasing the risk of arthritis onset or morbidity.

Table 1. Arthritis risk factors

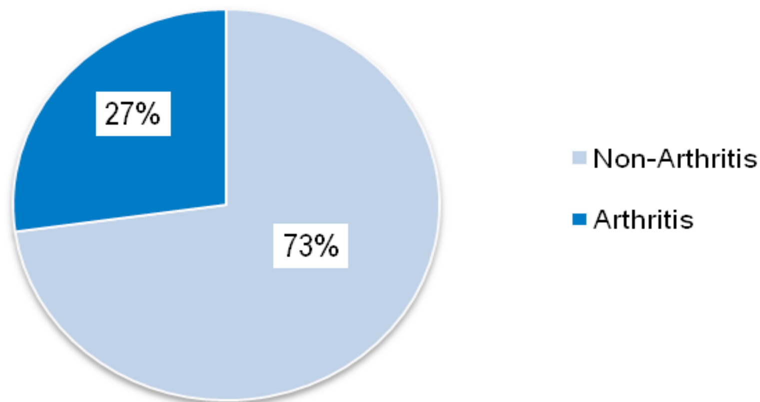
Non-Modifiable	Modifiable
Age	Sedentary Lifestyle
Gender	Obesity/Overweight
Genetic predisposition	Joint Injury
	Infections
	Work-Related Joint Trauma

Prevalence of arthritis in Oregon

The Oregon Health Authority conducts the Behavioral Risk Factor Surveillance System (BRFSS) telephone survey annually among Oregonians who are 18 years or older. In 2009, a random sample of 4,125 adult Oregonians participated in the survey and the information in this report is based on their responses. The 2009 BRFSS defines arthritis solely on the basis of self-reported diagnosis by a health care provider.

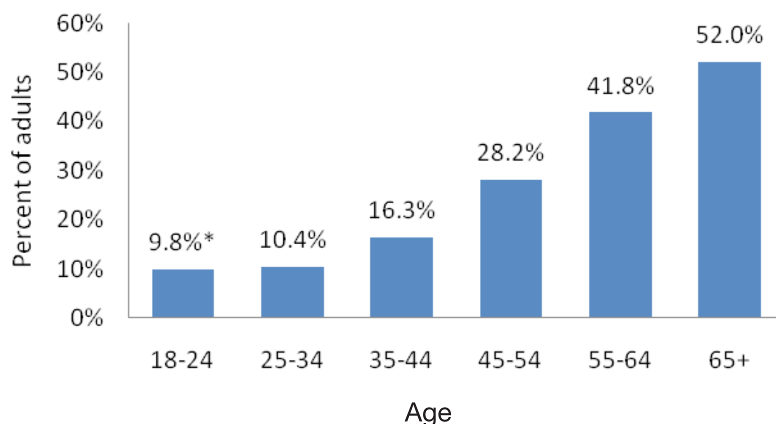
Results from the 2009 Oregon BRFSS demonstrate that arthritis is a major public health issue in the state; the prevalence of clinically diagnosed arthritis among adult Oregonians is 27% (Figure 1). An estimated 760,000 adult Oregonians have arthritis, which is based on the 2009 Oregon BRFSS. Since 2002, the prevalence of arthritis in Oregon had not changed.

Figure 1. Percentage of adult Oregonians with arthritis, 2009



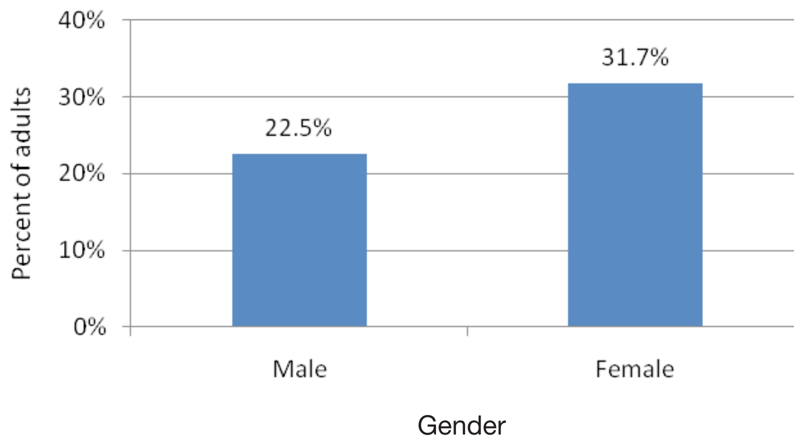
Older Oregonians are more commonly affected by arthritis. The prevalence of arthritis increases with age (Figure 2). Older adults are not the only ones affected by arthritis, however. In 2009, 66% of Oregonians with clinically diagnosed arthritis were under 65 years old.

Figure 2. Percentage of Oregon adults who report having arthritis by age, 2009



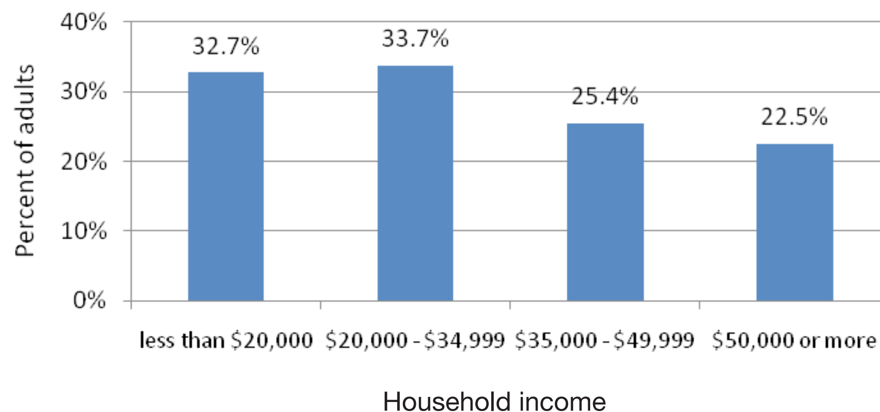
Although arthritis affects both sexes, women are more likely to have this condition than men. Among females, 32% have arthritis, compared with 23% of the male population (Figure 3).

Figure 3. Percentage of Oregon adults who report having arthritis by gender, 2009



Thirty-three percent of adult Oregonians with an annual household income less than $35,000 a year reported having arthritis. Prevalence of arthritis is lower among people living in households with higher income levels (Figure 4).

Figure 4. Percentage of Oregon adults who report having arthritis by annual household income, 2009



The 2009 Oregon BRFSS survey suggests that people with arthritis are more likely to be physically inactive. Fourteen percent of Oregon adults with arthritis report getting no physical activity compared to 7% of adults without arthritis. In addition, 32% of adults with arthritis are obese, whereas among adults without arthritis, only 21% are obese.

Figure 5. Obesity status and no physical activity among Oregon adults with and without arthritis, 2009

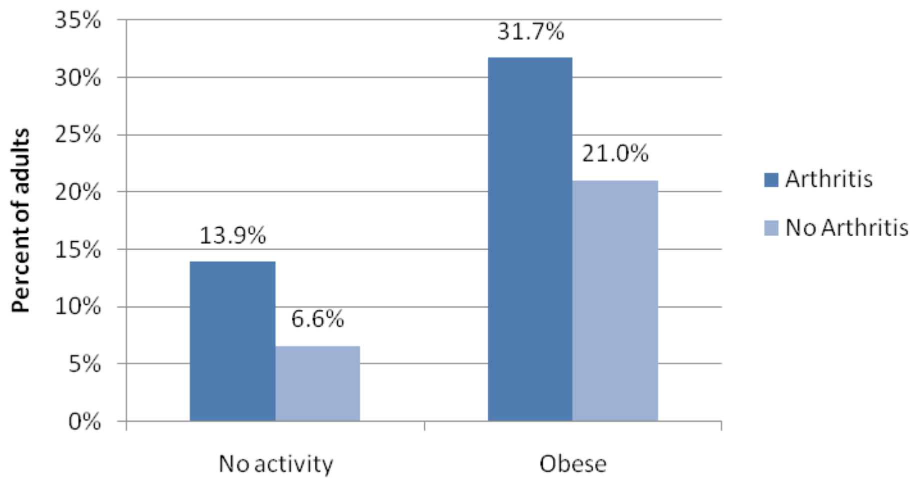


Figure 6 presents the prevalence of doctor-diagnosed arthritis by county within Oregon using a combined dataset from the 2006 to 2009 Oregon BRFSS. Clatsop and Douglas counties showed a significantly greater prevalence of doctor-diagnosed arthritis compared to the Oregon average (Table 2); this difference might be due to the labor force being mostly employed in the forest products industry where heavy labor is involved and they could experience work-related joint trauma.

Figure 6. Adults with doctor-diagnosed arthritis by county (age-adjusted), 2006-2009

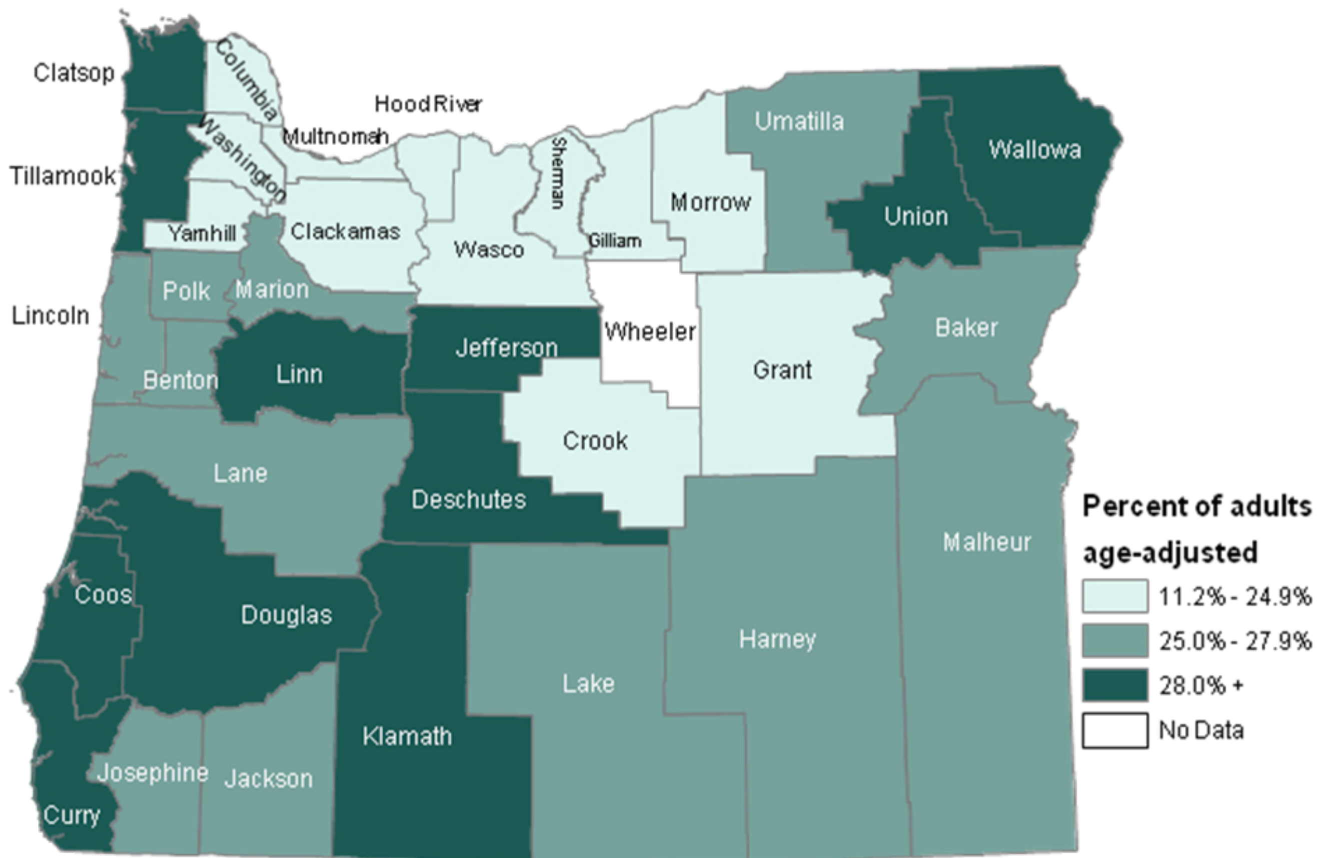


Table 2. Percentage (age-adjusted and unadjusted) of adults with doctor-diagnosed arthritis by county, 2006-2009

County	Arthritis	
	Unadjusted %	Age-adjusted %
Oregon		25.8%
Baker	31.6%	27.9%
Benton	26.0%	27.9%
Clackamas	23.7%	22.4%
Clatsop	39.7%	39.1%*
Columbia	24.4%	22.4%
Coos	34.3%	28.4%
Crook	25.2%	22.4%
Curry	31.5%	34.1%†
Deschutes	29.9%	28.0%
Douglas	40.8%	36.8%*
Grant	18.3%†	11.2%†
Harney	30.6%†	26.8%†
Hood River	25.2%†	24.2%
Jackson	28.6%	25.4%
Jefferson	48.0%	47.5%
Josephine	31.2%	26.4%
Klamath	36.2%	32.5%
Lake	29.8%†	25.2%†
Lane	28.3%	27.1%
Lincoln	31.8%	27.9%
Linn	32.6%	29.5%
Malheur	27.3%	27.1%
Marion	25.1%	25.0%
Morrow	27.9%†	24.3%†
Multnomah	23.9%	24.3%
Polk	26.5%	25.6%
Tillamook	32.9%	28.7%
Umatilla	28.9%	27.8%
Union	31.9%	31.0%
Wallowa	45.8%	38.2%
Washington	22.2%	38.2%
Wheeler	—	—
Yamhill	24.6%	24.9%
Gilliam/Sherman/Wasco	21.7%	17.5%

* Statistically significant difference compared to Oregon.
† This number may be statistically unreliable and should be interpreted with caution.
– This number is suppressed because it is statistically unreliable.
Age-adjusted estimates are adjusted to the 2000 Standard Population using 3 age groups (18-34, 35-54, and 55+).
Source: Oregon BRFSS County Combined Dataset 2006-2009

Table 3 reveals that the reported prevalence of arthritis is significantly lower among Latinos compared to non-Latino whites. American Indians and Alaska Natives have a significantly higher rate of doctor-diagnosed arthritis compared to non-Latino whites.

Table 3. Percentage (age-adjusted) of adults with doctor-diagnosed arthritis by race/ethnicity, 2004-2005

Race/Ethnicity	Percent of adults (95% CI)
Whites, Non-Latino	27.9% (26.9 – 28.9)
African Americans, Non-Latino	35.5% (25.5 – 47.1)
Asians/Pacific Islanders, Non-Latino	23.5% (17.0 – 31.4)
American Indians/Alaska Natives, Non-Latino	41.3%* (34.0 – 49.1)
Latinos	14.5%* (10.9 – 19.0)

Hospitalizations for arthritis in Oregon

The many forms of arthritis conditions included in the Centers for Disease Control and Prevention (CDC) surveillance definition of arthritis makes a complete assessment of hospitalizations related to arthritis problematic, wherein a brief look at hospitalizations for the two most common forms of arthritis, osteoarthritis and rheumatoid arthritis, is instructive.

In Oregon, during 2009, there were 11,072 hospitalizations with osteoarthritis as the principal diagnosis, and 141 with rheumatoid arthritis as the principal diagnosis. In all, 10,723 of the hospitalizations for these two conditions resulted in surgical replacement of a major joint (knee, shoulder or hip) with an estimated total cost of $398 million, or an average of $37,000 per patient who had surgical replacement of a major joint in 2009. When these data are compared to 2001 data, the number of hospitalizations for rheumatoid arthritis has decreased by 29%, while the number of osteoarthritis hospitalizations increased by 78%. The overall cost has risen by $280 million (Table 4). Figure 7 shows the average cost of surgical knee replacement among rheumatoid arthritis or osteoarthritis hospitalizations has risen over time.

Joint replacement hospitalization costs related to arthritis are only a portion of the disease's total economic impact. If the costs of non-surgical hospitalizations, outpatient medical care, medications, and lost productivity in the form of missed work were included, the total would be much higher.

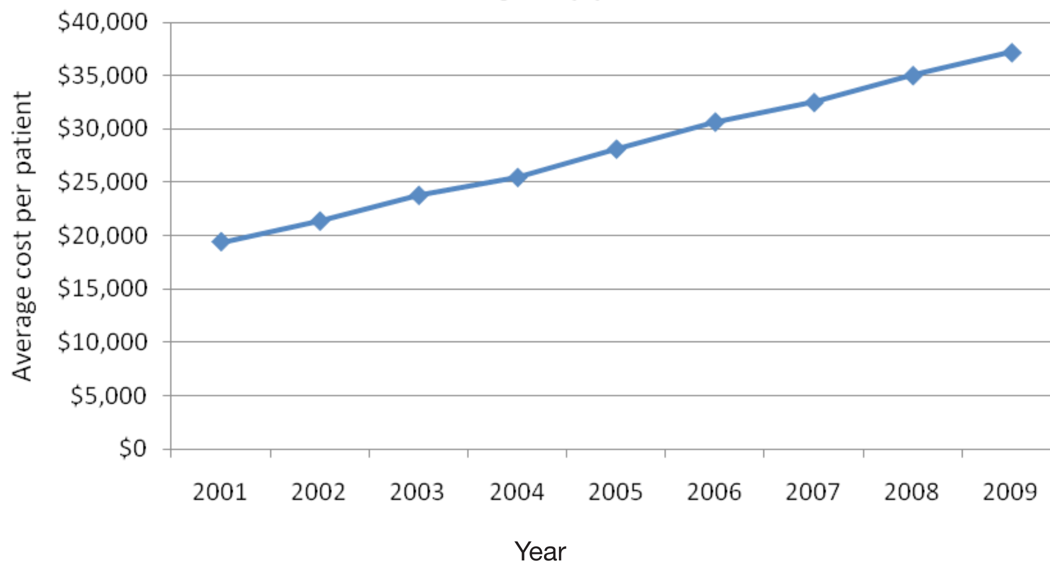
Table 4. Arthritis hospitalization in Oregon

Hospitalization Type	2001	2009
Hospitalizations with rheumatoid arthritis (RA) as principal diagnosis	199	141
Hospitalizations with osteoarthritis (OA) as principal diagnosis	6,208	11,072
Hospitalizations for RA or OA that involved replacement of major joint*	5,754	10,723
Cost of hospitalizations involving joint* replacement among those with RA or OA as principal diagnosis	$177,938,000	$397,956,245

* Knee, shoulder, or other replacement

Source: HDI 2001 and 2009

Figure 7. Average hospitalization cost among persons with rheumatoid or osteoarthritis who had surgical knee replacement in Oregon by year, 2001-2009



Impact of arthritis on associated chronic conditions

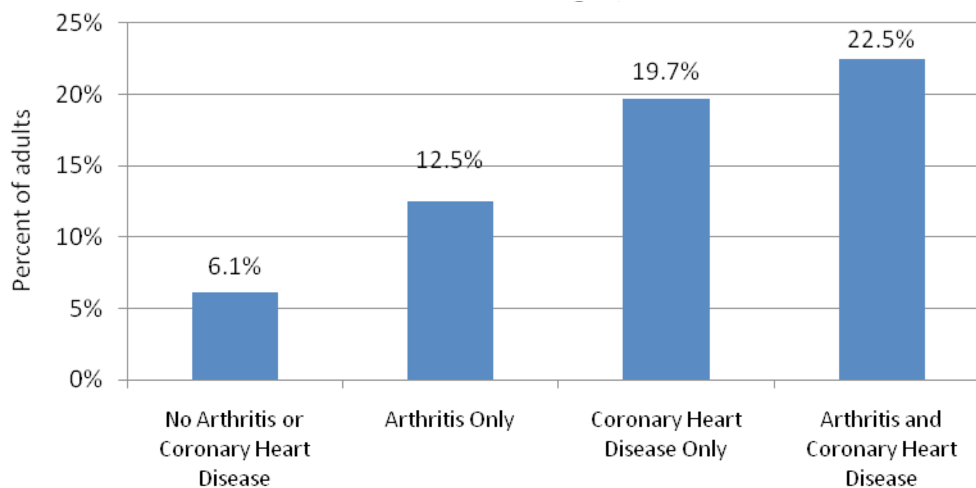
A majority of people with arthritis also are impacted by other chronic conditions, such as coronary heart disease and diabetes. Co-morbidity is defined as the presence of more than one disease or condition in the same person at the same time. Co-morbidities can decrease quality of life for people with arthritis because it makes disease management and treatment more complicated. When arthritis is co-morbid with diabetes and coronary heart disease, it may hinder efforts to be more physically active, which is an important part of self-managing arthritis.

Coronary heart disease

In 2008, coronary heart disease claimed roughly 6,500 lives in Oregon, making it the second leading cause of death. More Oregonians die from diseases of the heart than the total number of people who die from, diabetes, Alzheimer's disease, pneumonia, influenza, car accidents and HIV combined. Both coronary heart disease morbidity and mortality increase with age and the population is aging rapidly. Coronary heart disease significantly affects older adults in Oregon.

In 2009, 12% of Oregon adults reported having arthritis and coronary heart disease. The prevalence of both arthritis and coronary heart disease is higher in males and increases significantly with advancing age. Although a small proportion of Oregon adults reported having coronary heart disease and arthritis, this group reports the highest level of physical inactivity (Figure 8).

Figure 8. Physical inactivity by Arthritis and Coronary Heart Disease Status in Oregon, 2009



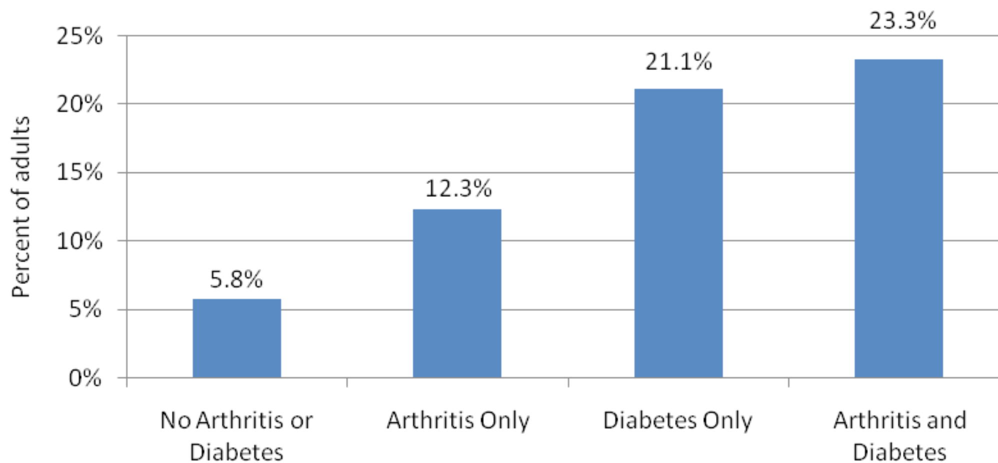
Diabetes

Diabetes, the seventh leading cause of death in Oregon, has a major impact on public health and medical care. Diabetes claims about 1,100 lives each year in Oregon. In 2009, 241,000 Oregon adults and 2,600 Oregon children had diabetes, and an additional 7,100 adults are diagnosed every year.

In 2009, 15% of Oregon adults reported having both diabetes and arthritis. The prevalence of both conditions is higher in females, and increases significantly with age. In addition, prevalence for both conditions is three times higher in obese individuals compared to those with a healthy weight.

Physical inactivity is significantly higher in persons with arthritis and diabetes (Figure 9) than those with neither condition. Twenty-three percent of those with both diabetes and arthritis report having no physical activity, whereas only 6% of those Oregonians with neither condition report having no physical activity.

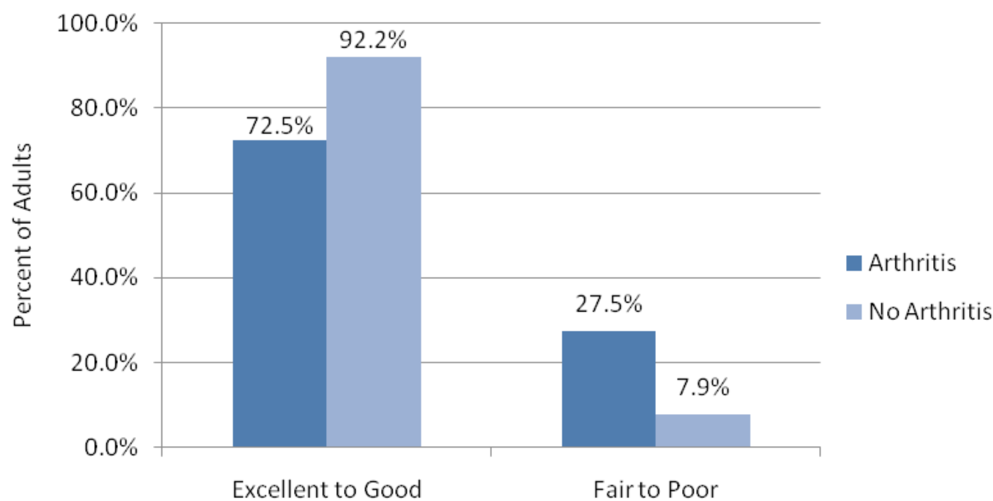
Figure 9. Physical inactivity by Arthritis and Diabetes Status in Oregon, 2009



Quality of life

Those living with arthritis report decreased quality of life. Figure 10 shows adult Oregonians with arthritis are more likely to report poorer health status (28%) compared to those without arthritis (8%).

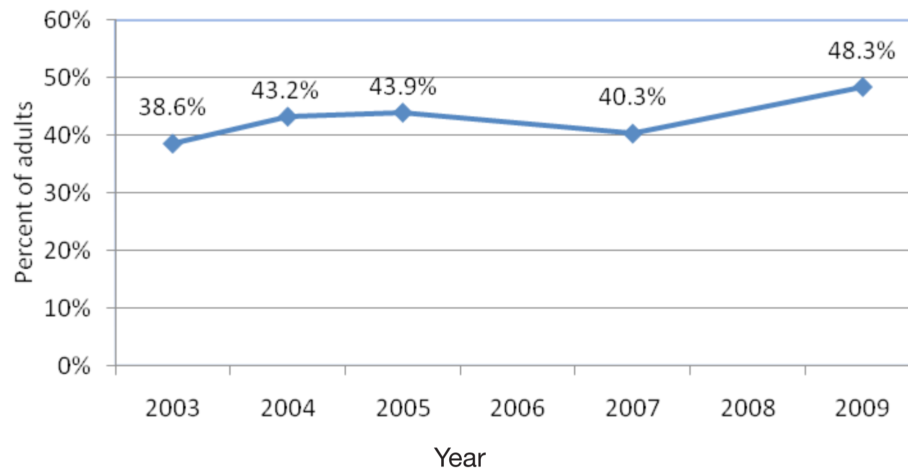
Figure 10. Health Status Among Oregon Adults with and without Arthritis, 2009



Activity limitation attributable to arthritis in Oregon

In 2009, 47% of Oregon adults with arthritis reported limitation in their usual activities because of arthritis. Females are more likely to be affected by activity limitation than males. Activity limitation increases with age, but decreases with increasing educational levels. Figure 11 shows a steady increase in activity limitation among those who have doctor-diagnosed arthritis from 2003 (39%).

Figure 11. Age-adjusted prevalence of activity limitation among doctor-diagnosed arthritis in Oregon, 2003-2009

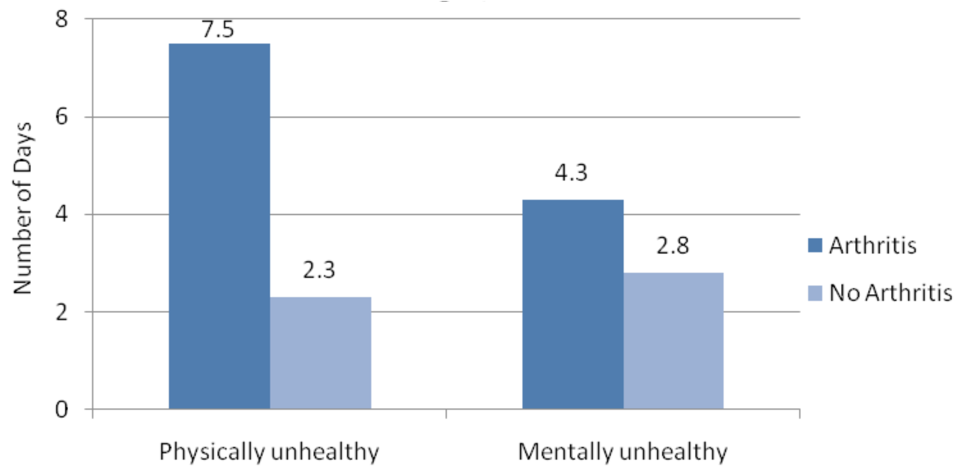


Of adults with doctor-diagnosed arthritis, 26% reported that arthritis affected their work. For those having arthritis or joint symptoms, 14% self-reported that arthritis affected a lot of their normal social activity during the past 30 days. Also during the past 30 days, 6% of those having doctor-diagnosed arthritis reported their level of pain was anywhere between 7 to 10, with 10 defined as pain or aching as bad as it can be.

Effects of arthritis on physical and mental health in Oregon

When asked about their physical health, people with doctor-diagnosed arthritis reported a higher average number of days of poor physical health than people without arthritis. Oregonians with arthritis also reported a higher average number of days of poor mental health. Figure 12 shows the population with doctor-diagnosed arthritis had more than three times as many days of impaired physical health and almost twice as many days of impaired mental health as those without arthritis.

Figure 12. Mean physically or mentally unhealthy days in past 30 days among Oregon adults with and without arthritis, Oregon 2009



Access to health care in Oregon

In 2007, 38% of adult Oregonians reported chronic joint symptoms in the absence of a diagnosis by a health care provider. For respondents not receiving treatment for their chronic joint symptoms, their reasons associated with not seeking treatment were: not having a medical insurance plan, not having a primary doctor, or not being able to see a doctor because of cost.

Among those who were under treatment by a doctor for arthritis, 57% reported their doctor had recommended exercise or physical activity to decrease their arthritic symptoms. More than half of those under treatment by a doctor for arthritis who were obese said their doctor recommended they lose weight to help with their arthritic symptoms.

Self-management of arthritis

About 16% of Oregon adults with arthritis said they had attended a class to help them self-manage their symptoms. Males were more likely to have taken a class for self-management of arthritis symptoms than females.

Of those with doctor-diagnosed arthritis, 6% self-reported that they could hardly do anything they wanted to do, and 21% reported that they could do some things they wanted to do. Only 24% reported they could do everything they wanted to do.

What can be done to prevent and control arthritis?

Many studies have shown that physical activity decreases pain, improves mobility and delays disability related to arthritis. In addition, research studies suggest that maintaining an ideal body weight and avoiding joint injuries reduce the risk of developing arthritis and may slow disease progression. Education about the multiple benefits of exercise and reducing strain on joints needs to be strongly encouraged at all stages of life, starting at a young age and continuing throughout formal education and at the workplace.

Getting an early diagnosis so that appropriate management can be initiated may improve the quality of life for people with arthritis. Early diagnosis and appropriate management of arthritis, including self-management activities such as weight control and physical activity, can help people with arthritis function better, stay productive and lower health care costs.

Arthritis in Oregon: Conclusions

Based on the 2009 Oregon Behavioral Risk Factor Surveillance System (BRFSS), 27% of adult Oregonians (about 760,000 people) suffer from arthritis. In addition, arthritis has an impact on associated chronic conditions such as coronary heart disease and diabetes. Arthritis limits activities and productivity. Reported health status was also poorer in persons with arthritis than in those without the condition. Further, $398 million was spent in 2009 on joint replacements due to osteoarthritis and rheumatoid arthritis alone.

More than half of Oregonians with clinically diagnosed arthritis have received counseling from their physician to incorporate physical activity into their lives as a way to decrease arthritis morbidity. Arthritis is more prevalent among older adults and is associated with overweight and obesity.

In light of increasing rates of obesity and the aging of the population, arthritis is likely to become even more prominent as a cause of disability. Efforts to address modifiable risk factors, for example through physical activity interventions such as the Arthritis Foundation Exercise Program, may help limit this anticipated rise in morbidity.

Arthritis is the leading cause of disability in the United States. It affects one in five Americans. However, only 9% of Oregonians are aware that arthritis is the most common cause of disability. Seventy-six percent are aware of the benefits of exercise for people with arthritis.

References

1. MMWR 2010;59(39);1261-1265. [Data Source: 2007–2009 NHIS]

2. Arthritis & Rheumatism 2006;54(1):226-229 [Data Source: 2003 NHIS]

3. MMWR 2007;56(01):4-7. [Data Source: 2003 Medical Expenditure Panel Survey]

4. Arthritis Care Res 2007;57:1439-1445 [Data Source: 2001–2004 National Ambulatory Medical Care Survey and 2001–2004 National Hospital Ambulatory Medical Care Survey]

Appendix A: Data source descriptions

Behavioral Risk Factor Surveillance System (BRFSS)

The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing random-digit dialed telephone survey of adults concerning health conditions and health-related behaviors. The BRFSS was developed by the Centers for Diseases Control and Prevention (CDC) and is conducted in all states in the United States. Each year, between 5,000 and 12,000 adult Oregonians are interviewed. Since 2009, a cell phone survey of adults has been collected in addition to the landline survey. The BRFSS includes questions on health behavior risk factors such as health status, diet, weight control, tobacco and alcohol use, physical activity, preventive health screenings, and use of preventive and other health care services. The data are weighted to represent all adults age 18 years and older. A core set of questions is asked annually and other topics are surveyed on a rotating basis. County-level information was obtained by combining BRFSS data for the four years 2006-2009.

Hospital Discharge Index

The Hospital Discharge Index provides information on hospital discharges from all acute care hospitals in Oregon except the two Veterans Administration hospitals. The dataset includes admission and discharge dates, diagnosis and procedural codes, financial charges, primary payer, and limited patient demographic information (e.g., gender). In this dataset, osteoarthritis and rheumatoid arthritis hospitalizations are defined as having a primary diagnosis with an International Classification Disease 9th Revision Clinical Modification (ICD-9-CM) code of 714 and 715. Prior to 2008, the Hospital Discharge Index did not include identifying information that would allow identification of a single person with multiple hospitalizations; therefore, the calculated rate for 2001 and 2009 is the number of hospitalizations per capita rather than number of different individuals hospitalized per capita.

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