



## Center for Health Statistics



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### COUNTY HEALTH FACTS No. 03-01

County Health Facts is a series of reports using CHIS 2001 data to describe the health status of California's counties.

#### HIGHLIGHTS:

About one in five adults in California, about 4.8 million people, had arthritis in 2001.

More than three million Californians with arthritis experienced symptoms of arthritis, such as joint pain, swelling, or stiffness for one month or longer during the survey year.

The Mendocino/Lake County region had the highest proportion of residents diagnosed with arthritis of any California county, 32.5 percent.

Santa Clara County had the lowest proportion of residents diagnosed with arthritis, about 14.4 percent.

## Prevalence of Arthritis in California Counties, 2001

By Laura E. Lund, M.A.

Arthritis is a painful and potentially disabling condition affecting the joints and connective tissues. Common symptoms include pain, aching, stiffness, and swelling in or around the joints. It is the most common cause of disability among adults in the United States.<sup>1</sup> The national Centers for Disease Control and Prevention has identified arthritis as a serious public health problem, and is working to reduce the burden of arthritis on individuals and the health care system.<sup>2</sup>

This report presents data on arthritis in adults in California's counties. All data come from the California Health Interview Survey (CHIS 2001). (See "Methods" on page three for a description of the survey and analytic methods used in this report.) CHIS 2001 defined persons as having arthritis if a doctor ever told them that they had some type of arthritis. This definition provides a conservative estimate of the actual number of persons with arthritis. It excludes persons who have signs and symptoms of arthritis but have never received a diagnosis from a doctor.

### Arthritis Prevalence

**Crude rates.** More than 4.8 million Californians, about 19.3 percent of all adults, had arthritis in 2001 (Table 1, page 4). There was considerable variation across counties in crude arthritis rates, from a low of 14.4 percent in Santa Clara County to a high of 32.5 percent in the Mendocino/Lake County region.

**Age-adjusted rates.** After adjusting for differences in county age distributions, Santa Clara County still had the lowest arthritis rate, 15.4 percent (Table 1). The Mendocino/Lake County region continued to have the highest rate, 28.6 percent. Comparing county rates to the overall California rate, three counties (Marin, San Francisco, and Santa Clara) had arthritis rates significantly below the age-adjusted State rate of 19.9 percent. Thirteen counties or regions (Stanislaus, Tuolumne/Calaveras/Amador/Inyo

<sup>1</sup> Centers for Disease Control and Prevention. Prevalence Of Disabilities And Associated Health Conditions Among Adults—United States, 1999. *MMWR*. 2001;50:120–5.

<sup>2</sup> Centers for Disease Control and Prevention. Targeting Arthritis: The Nation's Leading Cause of Disability. Accessed October, 2003. URL: [http://www.cdc.gov/nccdphp/aag/aag\\_arthritis.htm](http://www.cdc.gov/nccdphp/aag/aag_arthritis.htm)

Mariposa/Mono/Alpine, Tulare, Shasta, Butte, Kern, Siskiyou/Lassen/Trinity/Modoc, Nevada/Plumas/Sierra, Sutter/Yuba, Mendocino/Lake, Humboldt/Del Norte, Tehama/Glenn/Colusa, and Kings) had rates significantly higher than the State rate.

## **Prevalence Of Arthritis Symptoms**

CHIS 2001 asked persons with arthritis if they experienced arthritis symptoms in the past year (defined as joint pain, swelling, or stiffness for at least one month). About 63 percent of Californians with arthritis experienced arthritis symptoms, more than three million people (Table 2, page 5). The symptom rate varied in counties from a low of 56.4 percent of persons with arthritis in San Luis Obispo County to a high of 71.7 percent in Imperial County. In one county (Imperial) and one region (Siskiyou/Lassen/Trinity/Modoc), persons with arthritis experienced symptoms at significantly higher rates than the overall California rate of 63.1 percent. There were no counties or regions with symptom rates significantly lower than the State rate.

One measure of the public health impact of arthritis is the proportion of persons with symptomatic arthritis (i.e., having a diagnosis of arthritis and also experiencing symptoms) in the overall population. In California, 12.1 percent of the adult population had symptomatic arthritis in 2001 (Table 2). The Mendocino/Lake County region had the highest rate of symptomatic arthritis, about 22.3 percent. Yolo County had the lowest rate of symptomatic arthritis; only 8.9 percent of the population had arthritis and experienced symptoms. Four counties (Yolo, Los Angeles, San Francisco, and Santa Clara) had symptomatic arthritis rates significantly below California's overall rate of 12.1 percent. Fourteen counties and regions (Nevada/Plumas/Sierra, Mendocino/Lake, Riverside, Butte, Tulare, Sutter/Yuba, Solano, Tuolumne/Calaveras/Amador/Inyo/Mariposa/Mono/Alpine, Stanislaus, Shasta, San Joaquin, Humboldt/Del Norte, Tehama/Glenn/Colusa, and Siskiyou/Lassen/Trinity/Modoc) had symptomatic arthritis rates significantly higher than the State rate.

## **Summary**

Arthritis is very common in California, with 19.3 percent of adults, or 4.8 million Californians, diagnosed with the disease. In 2001, three million people with arthritis in California experienced arthritis symptoms, such as joint pain, swelling, and stiffness, for at least one month. This represents 12.1 percent of the adult population. Diagnosed arthritis rates for counties ranged from 14.4 to 32.5 percent, and symptomatic arthritis rates ranged from 8.9 to 22.3 percent, suggesting that this condition is a significant public health problem for many counties. For more information on arthritis prevention activities in California, contact the California Arthritis Partnership Program, California Department of Health Services, MS 7210, P.O. Box 942732, Sacramento, CA, 94234-7320, [oaunit@dhs.ca.gov](mailto:oaunit@dhs.ca.gov), (916) 552-9916.

## Methods

**Data.** CHIS 2001 is a population-based household telephone survey, representative of the non-institutionalized adult population of California, with more than 55,000 Californians participating. In addition to statewide data, CHIS 2001 provides representative samples for California counties with populations greater than 100,000. For smaller counties, CHIS provides representative data estimates for contiguous county groups, referred to as “regions” in this report. Respondents to the survey were randomly selected California residents aged 18 and older living in households with telephones. More information on the CHIS sample is available at <http://www.chis.ucla.edu>.

**Analysis.** In this report, both crude rates and age-adjusted rates are provided as measures of arthritis prevalence. Crude rates reflect the actual number of persons with arthritis in a county. However, since arthritis is much more common among older persons than in young adults, counties with a larger proportion of older persons will tend to have higher crude rates of arthritis than counties with fewer older persons. Age-adjustment statistically controls for these differences in county age structures. Therefore, age-adjusted rates rather than crude rates should be used for comparing prevalence differences between counties or between a county and the State. Age-adjusted rates have not been provided for symptoms, since the presence of symptoms in persons with arthritis should not be affected by the age distribution of the county. Examining the relationship between age and symptom occurrence is beyond the scope of this report. Details on the methods used to calculate crude and age-adjusted rates are available from the author.

The 95 percent confidence intervals (CIs) are presented for each rate. Because CHIS data are collected through a sampling method, there may be some random error in the rate estimate. The CIs represent the range of values likely to contain the “true” population rate 95 percent of the time. Rates are significantly different from each other when their confidence intervals do not overlap. Cases with missing information for arthritis were excluded from this analysis.

**Limitations.** The CHIS data are self-reported by respondents to the survey, and may be subject to error, such as respondent failure to recall information about existing health conditions. Only persons living in households with telephones were included in the survey. Participation in CHIS is voluntary; persons who refused to participate may be different than those who were interviewed. Details on response rates, respondent characteristics, and other survey information can be obtained at <http://www.chis.ucla.edu>.

For more information on CHIS 2001 contact: Laura E. Lund, CHIS Coordinator, California Department of Health Services, Office of Health Information and Research, MS 5103, PO Box 997410, Sacramento, CA 95899-7410.

**TABLE 1  
ARTHRITIS PREVALENCE IN CALIFORNIA, BY COUNTY OR REGION, 2001**

County of residence	Age-adjusted rate <sup>1</sup>	95% Confidence Interval		Crude rate <sup>1</sup>	95% Confidence Interval		Estimated N <sup>2</sup>
		Lower	Upper		Lower	Upper	
Santa Clara	15.4	13.6	17.3	14.4	12.6	16.3	188,000
San Francisco	16.5	14.8	18.3	16.3	14.4	18.2	104,000
Marin	16.6	14.0	19.3	19.0	16.0	22.1	38,000
Napa	17.5	15.0	20.0	20.0	17.1	23.0	20,000
Yolo	18.5	15.7	21.3	15.6	13.0	18.2	19,000
Orange	18.5	16.9	20.0	17.3	15.7	18.9	351,000
San Diego	18.5	17.0	20.0	17.8	16.3	19.4	380,000
Santa Barbara	18.9	16.5	21.4	18.7	16.1	21.3	57,000
Contra Costa	18.9	16.7	21.2	19.8	17.4	22.3	138,000
Alameda	19.1	17.2	20.9	17.9	15.7	20.1	194,000
San Mateo	19.2	16.7	21.7	20.0	17.2	22.8	113,000
Los Angeles	19.3	18.5	20.0	17.8	17.1	18.6	1,238,000
Ventura	19.3	16.7	21.9	19.3	16.5	22.1	105,000
<b>California</b>	<b>19.9</b>	<b>19.6</b>	<b>20.2</b>	<b>19.3</b>	<b>18.9</b>	<b>19.7</b>	<b>4,802,000</b>
Placer	20.0	16.9	23.0	22.2	19.0	25.4	40,000
Monterey, San Benito	20.5	17.5	23.5	19.7	16.6	22.7	62,000
Santa Cruz	20.8	17.8	23.9	20.0	17.0	23.1	39,000
Sacramento	20.8	18.4	23.1	20.8	18.4	23.2	182,000
Imperial	21.2	18.2	24.1	20.9	17.7	24.0	22,000
Sonoma	21.3	18.4	24.2	22.6	19.5	25.7	78,000
El Dorado	21.4	18.5	24.3	23.9	20.2	27.6	29,000
Riverside	22.2	20.0	24.4	23.3	20.9	25.7	257,000
Merced	22.4	19.4	25.4	21.4	18.4	24.4	31,000
Solano	22.5	20.3	24.8	21.7	19.5	23.9	62,000
Fresno	22.5	19.8	25.1	21.0	18.4	23.7	116,000
San Joaquin	22.6	20.0	25.3	22.4	19.6	25.1	91,000
San Bernardino	22.8	20.6	25.1	21.1	18.9	23.3	247,000
Madera	23.0	20.1	25.8	23.5	20.4	26.6	21,000
San Luis Obispo	23.2	20.1	26.3	24.4	21.2	27.5	48,000
Kern	23.8	21.1	26.5	22.7	20.1	25.4	105,000
Butte	24.2	21.1	27.4	26.1	22.9	29.3	41,000
Tehama, Glenn, Colusa	24.3	21.2	27.4	26.6	23.2	30.0	21,000
Tuolumne, Calaveras, Amador, Inyo, Mariposa, Mono, Alpine	24.5	21.2	27.8	29.4	25.9	32.8	42,000
Humboldt, Del Norte	24.5	21.4	27.6	25.1	21.9	28.4	32,000
Nevada, Plumas, Sierra	24.7	21.3	28.0	29.9	26.3	33.5	29,000
Stanislaus	24.8	21.7	28.0	24.0	20.8	27.2	77,000
Kings	25.1	21.9	28.3	23.2	19.8	26.5	20,000
Shasta	25.4	21.9	28.9	28.1	24.6	31.5	37,000
Tulare	25.8	22.6	29.0	24.3	21.1	27.6	62,000
Sutter, Yuba	26.1	22.8	29.4	26.4	23.1	29.8	27,000
Siskiyou, Lassen, Trinity, Modoc	27.3	23.9	30.6	31.0	27.5	34.4	25,000
Mendocino, Lake	28.6	24.9	32.4	32.5	28.8	36.3	37,000

<sup>1</sup>Rate is per 100 county or State population.

<sup>2</sup>Estimated by multiplying the crude rate times the county or State population, rounded to the nearest thousand.

Sources: University of California, Los Angeles and State of California, Department of Health Services. 2001 California Health Interview Survey. State of California, Department of Finance. Race/Ethnic Population with Age and Sex Detail, 2000.  
Prepared by: Department of Health Services, Center for Health Statistics.

**TABLE 2  
PREVALENCE OF ARTHRITIS SYMPTOMS WITHIN THE PAST YEAR IN CALIFORNIA,  
BY COUNTY OR REGION, 2001**

County of residence	Symptom Rate <sup>1</sup>	95% Confidence Interval		Symptomatic arthritis rate <sup>2</sup>	95% Confidence Interval		Estimated N <sup>3</sup>
		Lower	Upper				
San Luis Obispo	56.4	49.3	63.5	13.6	11.1	16.1	27,000
Kings	57.9	49.9	65.8	13.4	10.9	15.9	12,000
Yolo	58.2	49.5	66.8	8.9	7.0	10.9	11,000
Sacramento	59.0	52.9	65.1	12.2	10.3	14.1	107,000
El Dorado	59.3	50.4	68.3	14.1	11.3	16.8	17,000
Ventura	59.6	51.4	67.7	11.5	9.5	13.5	62,000
Madera	60.1	53.3	66.9	14.0	11.6	16.4	13,000
Marin	60.9	52.6	69.2	11.5	9.0	14.0	23,000
Los Angeles	61.3	59.1	63.5	10.9	10.3	11.5	759,000
Orange	61.5	56.7	66.2	10.6	9.3	11.9	216,000
Santa Cruz	61.7	53.9	69.6	12.4	9.8	14.9	24,000
Alameda	62.1	55.5	68.7	10.9	9.1	12.6	120,000
San Francisco	62.2	56.1	68.3	10.1	8.5	11.6	65,000
Sonoma	62.3	55.1	69.4	14.0	11.4	16.5	49,000
Placer	62.7	55.2	70.3	13.9	11.3	16.6	25,000
Kern	62.8	56.7	68.8	14.1	11.9	16.3	66,000
<b>California</b>	<b>63.1</b>	<b>62.0</b>	<b>64.2</b>	<b>12.1</b>	<b>11.8</b>	<b>12.5</b>	<b>3,030,000</b>
Riverside	63.2	57.7	68.6	14.7	12.8	16.6	162,000
Butte	63.2	56.7	69.7	16.3	13.6	18.9	26,000
San Diego	63.4	59.0	67.8	11.2	10.0	12.5	241,000
Santa Barbara	63.7	56.5	70.8	11.8	9.8	13.9	36,000
Contra Costa	63.7	57.2	70.2	12.5	10.5	14.6	88,000
Napa	63.7	56.4	70.9	12.7	10.2	15.2	12,000
Santa Clara	63.8	57.3	70.3	9.2	7.7	10.7	120,000
Tuolumne, Calaveras, Amador, Inyo, Mariposa, Mono, Alpine	64.2	57.5	70.8	18.7	15.8	21.7	27,000
Merced	64.8	57.5	72.2	13.6	11.2	16.0	20,000
Stanislaus	65.0	58.2	71.9	15.6	13.0	18.3	50,000
San Bernardino	65.4	60.1	70.7	13.8	12.0	15.6	161,000
Nevada, Plumas, Sierra	66.8	60.1	73.5	19.8	16.7	23.0	19,000
San Mateo	66.8	60.2	73.4	13.3	10.9	15.8	75,000
Solano	67.5	62.2	72.7	14.5	12.6	16.5	42,000
Fresno	68.7	62.6	74.9	14.4	12.1	16.7	80,000
Mendocino, Lake	69.0	62.9	75.2	22.3	19.0	25.7	26,000
Humboldt, Del Norte	69.1	62.5	75.7	17.1	14.4	19.9	21,000
San Joaquin	69.1	63.1	75.1	15.4	13.0	17.8	63,000
Shasta	69.3	63.0	75.5	19.4	16.4	22.4	25,000
Monterey, San Benito	69.5	62.0	76.9	13.6	10.9	16.2	43,000
Sutter, Yuba	70.3	63.9	76.8	18.5	15.6	21.4	19,000
Tulare	70.4	63.8	76.9	17.1	14.3	19.9	44,000
Tehama, Glenn, Colusa	70.7	64.2	77.2	18.6	15.6	21.6	15,000
Siskiyou, Lassen, Trinity, Modoc	70.7	64.8	76.6	21.8	18.8	24.8	18,000
Imperial	71.7	64.6	78.8	15.0	12.2	17.7	16,000

<sup>1</sup>Rate is per 100 persons with arthritis.  
<sup>2</sup>Rate is per 100 county or State population.  
<sup>3</sup>Estimated by multiplying the symptom rate times the number of people with arthritis, rounded to the nearest thousand.

Sources: UCLA and State of California, Department of Health Services. 2001 California Health Interview Survey. State of California, Department of Finance. Race/Ethnic Population with Age and Sex Detail, 2000. Prepared by: Department of Health Services, Center for Health Statistics.