Estimates of the Prevalence of Arthritis and Other Rheumatic Conditions in the United States, Part II

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Abstract

Objective—To provide a single source for the best available estimates of the US prevalence of and number of individuals affected by osteoarthritis, polymyalgia rheumatica and giant cell arteritis, gout, fibromyalgia, and carpal tunnel syndrome, as well as the symptoms of neck and back pain. A companion article (part I) addresses additional conditions.

Methods—The National Arthritis Data Workgroup reviewed published analyses from available national surveys, such as the National Health and Nutrition Examination Survey and the National Health Interview Survey. Because data based on national population samples are unavailable for most specific rheumatic conditions, we derived estimates from published studies of smaller, defined populations. For specific conditions, the best available prevalence estimates were applied to the corresponding 2005 US population estimates from the Census Bureau, to estimate the number affected with each condition.

Results—We estimated that among US adults, nearly 27 million have clinical osteoarthritis (up from the estimate of 21 million for 1995), 711,000 have polymyalgia rheumatica, 228,000 have giant cell arteritis, up to 3.0 million have had self-reported gout in the past year (up from the

estimate of 2.1 million for 1995), 5.0 million have fibromyalgia, 4–10 million have carpal tunnel syndrome, 59 million have had low back pain in the past 3 months, and 30.1 million have had neck pain in the past 3 months.

Conclusion—Estimates for many specific rheumatic conditions rely on a few, small studies of uncertain generalizability to the US population. This report provides the best available prevalence estimates for the US, but for most specific conditions more studies generalizable to the US or addressing understudied populations are needed.

METHODS

The purpose of this study, definitions of general terminology, and methods used for ascertaining the data and generating the estimates are described in the companion article (1).

RESULTS

Osteoarthritis (OA)

OA is the most common type of arthritis. We estimated prevalence for each of the most commonly affected joints (knees, hips, and hands) as well as for overall OA.

Estimating the prevalence of OA is difficult because the structural changes of the disease occur in most persons as they get older, but these changes may not be accompanied by symptoms. Furthermore, prevalence estimates vary considerably depending on whether only moderate and severe radiographic changes are counted or mild changes are also included.

Clinically defined OA—Study examiners characterize a person as having OA on the basis of symptoms and physical examination findings. The National Health and Nutrition Examination Survey I (NHANES I) (2) showed that 12.1% of the US population ages 25–74 years had clinically defined OA of some joint.

Radiographically defined OA—Generally, researchers grade radiographs according to the Kellgren/Lawrence scale (3), which defines OA on the basis of the presence of osteophytes (outgrowths of bone at the margin of the joint). We summarized prevalence data primarily from 3 recent US population-based studies: the NHANES III, the Framingham Osteoarthritis Study, and the Johnston County Osteoarthritis Project. In these studies, participants had to appear in person to undergo radiographic testing, and the validity of the estimates could be compromised if only individuals who had symptoms (instead of all individuals) attended. High participation rates for radiography (>70%) in all 3 studies make this unlikely.

In phase 2 of the NHANES III (1991–1994), prevalence of knee OA was assessed in adults age ≥60 years; this was the only study to use non–weight-bearing radiographs, a method that minimizes joint space narrowing evident with weight bearing (4). The Framingham Osteoarthritis Study was a survey of knee and hand OA in ~2,400 adults age ≥26 years from suburban Boston, Massachusetts (5,6). The Johnston County Osteoarthritis Project was a study of hip and knee OA in ~3,000 African American and white adults age ≥45 years in a rural county in North Carolina (7). The prevalence of knee OA in adults age ≥45 was 19.2% in Framingham and 27.8% in Johnston County, and the prevalence among adults age ≥60 was 37.4% in the NHANES III (Table 1). The prevalence of hip OA was high (27.0%) in Johnston County adults age ≥45, but in another US community-based study of 4,855 women age ≥65 years, prevalence was found to be only 7.2% (8). In the latter study, hip OA was defined based on individual features, but the discordance among study results leaves uncertainty regarding to the prevalence of hip OA. The prevalence of hand OA in

Framingham adults was 27.2% overall and reached ≥80% among older adults, but only a minority of persons with radiographic OA have pain in these joints.

OA prevalence increased with age and affected the hands and knees of women more frequently than men, especially in persons age ≥50 years. In Johnston County and in the NHANES III, African Americans were more likely than whites to have radiographic knee OA. A study of perimenopausal women in Michigan also demonstrated that African Americans were more likely than whites to have radiographic knee and hand OA (9). In the NHANES III, the prevalence of radiographic knee OA was significantly higher in non-Hispanic African Americans than in non-Hispanic whites or Mexican Americans (52.4%, 36.2%, and 37.6%, respectively) (4). In Johnston County, the prevalence of radiographic hip OA was comparable in African Americans and whites (10).

Symptomatic OA—Persons are considered to have symptomatic OA if they have frequent pain in a joint and radiographic evidence of OA in that joint, although sometimes this pain may not actually emanate from the arthritis seen on the radiograph. Most prevalence surveys require that a person have pain in a joint on most days of a recent month, to meet the definition for presence of symptoms.

The prevalence of symptomatic knee OA was 4.9% among adults age ≥26 years in the Framingham study, 16.7% among adults age ≥45 in the Johnston County study, and 12.1% among adults aged ≥60 in the NHANES III study (Table 2).

The prevalence of symptomatic hip OA was 9.2% among adults age ≥45 in the Johnston County study. The prevalence was slightly higher among women than among men for both of these outcomes (Table 2). The prevalence of symptomatic hand OA in the Framingham subjects (6) was 6.8% overall and was especially high in older adults. Among individuals age ≥71 years, prevalence was 26.2% in women and 13.4% in men.

Using the Framingham data on age/sex prevalence among persons age ≥26 years and the corresponding 2005 population estimates from the Census Bureau, we estimated that 9,267,000 adults have symptomatic knee OA and 13,054,000 adults have symptomatic hand OA. The generalizability of the Framingham estimates to the US population has not been determined.

For estimating overall OA, we calculated weighted age/sex-specific prevalence estimates of clinical arthritis for persons ages 25–74 from the NHANES I, the only published national source of data on OA at multiple anatomic sites and the source we used in our 1998 report (11). Using the corresponding 2005 population estimates from the Census Bureau and additionally applying the NHANES I estimate for those ages 65–74 to the Census population age ≥75 years, we estimated that 26.9 million adults age 25 and older have clinical OA of some joint. Whether the 1971–1975 NHANES I estimates reflect the 2005 US population prevalence is uncertain.

Polymyalgia rheumatica (PMR) and giant cell (temporal) arteritis (GCA)

PMR and GCA, two closely related syndromes that occur almost exclusively in persons age ≥50 years, appear to be much more common in whites than in other racial or ethnic groups (12). In the US, prevalence is highest among persons of northern European descent (13,14).

The only population-based study of PMR and GCA in the US is from Olmsted County, Minnesota, where the prevalences of PMR and GCA were derived from cumulative incidence rates. GCA was diagnosed according to the American College of Rheumatology (ACR) criteria (15). Among persons age ≥50 years in 2000, the prevalence of PMR was 739

per 100,000 (95% confidence interval [95% CI] 674–808) (16) and the prevalence of GCA was 278 per 100,000 (95% CI 192–268) (17). For each, the prevalence was higher in women than in men and increased dramatically with age (for PMR, from 21 per 100,000 among persons ages 50–54 years to 4,070 per 100,000 among those age ≥90 years) (Table 3).

In addition to these data, case series of PMR and GCA suggest that these conditions are common throughout the US. In Europe, incidence rates in populations in the northern area of the continent are similar to those of Olmsted County, Minnesota, whereas rates among southern European populations are lower (18–21).

In summary, PMR is common in older adults. GCA, which is approximately one-third as common as PMR, is the most common form of vasculitis in the population over 50 years of age. Using the Olmsted County age/sex prevalence rates and the corresponding 2005 estimates from the Census Bureau, we estimated that 711,000 Americans have PMR and 228,000 have GCA. With the aging of the US population, these estimates are likely to increase in coming years. These Olmsted County estimates are generalizable to the white US population, but their generalizability to other racial/ethnic populations is uncertain.

Gout

Gout is an inflammatory arthritis that results from phagocytosis of monosodium urate monohydrate crystals within the joint and is usually associated with an elevated concentration of uric acid in the blood, i.e., hyperuricemia. Among criteria developed to classify gout, the ACR criteria (22) have been used in recent epidemiologic studies (23,24).

Our previous National Arthritis Data Workgroup (NADW) report (11) reviewed the population-based Tecumseh Community Health Study (25), the Framingham Heart Study (26), and the Sudbury Study (27) (Table 4), all of which were relatively small studies of gout conducted in confined geographic regions. All of these studies took place before the ACR criteria were developed, the age populations included were not consistent among studies.

The prevalence of gout also has been estimated using self-reported information from the National Health Interview Survey (NHIS) and the NHANES (Table 4). Because these self-reports were not verified, the data may produce an overestimate of prevalence. For example, investigators in the Sudbury Study (27) could validate only 44% of self-reported cases using Rome (28) or New York (29) criteria, and in a study of health professionals (23), only 70% of cases could be validated by ACR criteria. However, in one study of physicians (24), it was reported that 100% of self-reported cases could be validated by ACR criteria and medical record review. In the most recent NHIS survey on gout (1996), the prevalence for the 1-year period was 940 per 100,000 adults age ≥18 years in the US (30). Prevalence increased with age, was higher in men than in women at all ages, and among those age ≥45 years was higher in African Americans than in whites.

One-year period prevalence estimates derived from the NHIS over time can be compared directly because the instrument has not changed. In this survey, the presence of gout is recorded if a respondent answers "yes" to the question, "Have you or any member of your household had gout within the past year?" From 1969 to 1985 the prevalence more than doubled, with the steepest increase occurring between 1969 and 1976 (30), but the increase later slowed between 1992 and 1996 (840 and 940 per 100,000, respectively) (Table 4). In a recent study from a US managed care population, the overall prevalence of gout or hyperuricemia requiring a gout or urate-lowering medication increased by 80% from 1990 to 1999 (31); however, this increase may reflect treatment change.

The lifetime prevalence estimate from the NHANES III (1988–1994) (32), based on the question, "Has a doctor ever told you that you had gout?," was 2,600 per 100,000 overall for those age ≥20 years, with a low of 400 per 100,000 in adults ages 20–29 years and a peak of 8,000 per 100,000 in adults ages 70–79 years (Table 4). Gout was reported more often by men than by women overall, but prevalence increased with age for both, especially among women after menopause.

In summary, gout appears to be increasing in frequency. Using 1996 NHIS and NHANES III age/sex prevalence data and the corresponding 2005 population estimates from the Census Bureau, we estimated that 3.0 million adults age ≥18 years had gout in the past year, and 6.1 million adults age ≥20 have ever had gout. Both are likely overestimates because they are based on self-reported data.

Fibromyalgia

The 1990 ACR criteria for the classification of fibromyalgia require the presence of widespread pain for at least 3 months and pain on palpation in at least 11 of 18 anatomic sites (33). Despite its acceptance, a number of problems occur when the ACR criteria set is used to define fibromyalgia in populations, leading to difficulties in estimating prevalence (34–36). Also, fibromyalgia may be more common among persons with other medical conditions (37), so prevalence estimates of primary fibromyalgia may be lower than estimates that do not differentiate primary fibromyalgia from fibromyalgia secondary to other disorders.

Wolfe et al conducted the only study of the prevalence of primary fibromyalgia in the US, in Wichita, Kansas in 1993 (38). At the time of the study, the population of Wichita was ≥88% white, different from that of the overall US population. From a random sample of 3,006 adults age ≥18 years, 193 individuals with chronic widespread pain were examined and 36 cases of ACR-defined fibromyalgia were confirmed. The overall prevalence among adults was ≥2% (95% CI 1.4–2.7); prevalence was higher among women than among men (3.4% versus 0.5%). In women, the prevalence of fibromyalgia rose sharply in middle age, to a maximum of 7.4% in the 70–79-year age group, and then dropped off. Prevalence in men similarly peaked in the eighth decade of life, but was only slightly more than 1% among men in this age group. Fibromyalgia was associated with depressive and anxiety symptoms, current and past depression, and a history of depression in the family. Other characteristic symptoms, i.e., "pain all over," subjective swelling, paresthesias, stiffness, sleep disturbance, fatigue, and irritable bowel syndrome, were also associated with fibromyalgia (38). Women experienced more of these associated symptoms than men (34). Other factors associated with fibromyalgia included reduced income and education, higher rates of divorce, and application for disability benefits (38).

Although no recent prevalence studies of fibromyalgia in the US have been published, a population survey of 3,395 randomly selected adults (≥18 years of age) in Ontario, Canada showed 100 cases of fibromyalgia, yielding an even higher overall age/sex-adjusted prevalence of 3.3% (95% CI 3.2–3.4%) (4.9% in women and 1.6% in men) (39). As in the US study, the prevalence of fibromyalgia in women rose with age, to a peak of 7.9% in the 55–64-year age group, and declined thereafter. The prevalence in men also increased with age, and peaked at 2.5% in the 45–54-year age group.

Using the Wichita age/sex prevalence and the corresponding 2005 population estimates from the Census Bureau, we estimated that ~5.0 million adults age ≥18 years have primary fibromyalgia. The generalizability of the Wichita estimates to the US population is uncertain.

Carpal tunnel syndrome (CTS)

Because there is no gold standard for the diagnosis of CTS and no standard definition of the syndrome, and because some cases can be transient, challenges arise in determining the prevalence of this condition. The clinical examination findings associated with CTS have sensitivities and specificities in the range of 45–80% (40). The typical location of symptoms in the median nerve distribution has sensitivity and specificity in the range of 60–70% (41,42). On median nerve conduction testing, >20% of asymptomatic individuals exhibit abnormalities consistent with CTS (42,43).

The most well–accepted definitions of CTS involve combinations of symptom, electrophysiologic, and physical examination findings. Three population-based prevalence studies have been performed in Europe, involving a combination of history, physical examination, and nerve conduction assessments. Atroshi and colleagues (44), in a Swedish study, inquired about symptoms typical of CTS (40,42) and studied symptomatic and asymptomatic subjects further by history-taking, physical examination, and nerve conduction studies. They estimated the prevalence of symptoms typical of CTS, of symptoms accompanied by examination findings indicative of CTS, of symptoms accompanied by positive electrophysiologic results, and of symptoms accompanied by positive findings on all tests. The prevalence of CTS was consistently higher in women than in men, and rose with age. CTS prevalence ranged from 2% to 4% in men and 3% to 5% in women, depending on the stringency of the case definition.

Ferry and colleagues (45) administered a hand symptom diagram (42) to a random population sample in the UK. Persons with and persons without typical symptoms of CTS underwent physical examination and electrophysiologic testing. The prevalence of positive nerve conduction findings did not differ between subjects with typical CTS symptoms and asymptomatic subjects. Thus, although the authors reported a prevalence of electrophysiologic evidence of CTS on the order of 10%, it is difficult to draw conclusions about the prevalence of symptomatic CTS.

In an earlier study, de Krom and colleagues (46) evaluated the prevalence of CTS in 715 persons from The Netherlands. Of the respondents, 1.6% had diagnosed CTS and 9% had nocturnal finger paresthesias. The latter underwent neurologic and electrophysiologic evaluation. The overall prevalence of CTS (either diagnosed or detected via this 2-stage screening process) was 5.8% in women and 0.6% in men.

Studies using a combination of self-report, physical examination, and nerve conduction testing have not been performed in the US. Tanaka et al analyzed data from the 1988 NHIS (47). Respondents were asked if they had CTS. An estimated 1.55% of 170 million adults (2.65 million) self-reported CTS. CTS was twice as common among women as among men (47). The self-report nature of the case definition makes these data difficult to interpret.

In summary, the prevalence of electrophysiologically confirmed, symptomatic CTS, based on studies conducted outside the US, is ~1–4% in men and 3–5% in women, with prevalence increasing with age. Using these adult prevalence estimates and the corresponding 2005 population estimates from the Census Bureau, we estimated that 1–4 million men and 3–6 million women in the US have CTS.

Back and neck pain

Low back pain affects most adults at some time. Because back pain is rarely permanent, terms such as incidence and prevalence may be ambiguous. Although neck pain is less common than low back pain, it shares many similar characteristics. The thoracic spine's

mobility is limited by the rib cage, and is less often a cause of back pain except in osteoporosis. Thus, the prevalence of thoracic spine pain is rarely reported.

Back pain is a symptom, not a disease. For many, a precise pathoanatomic diagnosis is impossible (48,49). There is no definitive imaging or diagnostic test to determine its prevalence. Investigators depend on patient self-report, and many patients have few objective physical findings.

In epidemiologic surveys, back pain has been defined in many ways. These include counting any episode of back pain, counting pain lasting a certain length of time, counting only "severe" pain, or counting only pain that results in work disability. We focused on population-based estimates of self-reported symptoms, separating neck and low back pain, and attempting to distinguish reports of any back pain, frequent or persistent back pain, and pain with symptoms of radiculopathy (nerve root irritation, usually manifesting as sciatica).

In the 2002 NHIS, respondents were asked whether they had low back pain or neck pain during the past 3 months. Respondents were instructed to report pain that lasted a whole day or longer (50). Approximately one-fourth of all adults in the US reported experiencing low back pain in the past 3 months, and the prevalence of neck pain was approximately half that estimate (Table 5). The prevalence was similar among men and women and among most racial groups, with the exception of a high prevalence among American Indians and Alaskan Natives, and a low prevalence among Asian Americans. Prevalence declined with increasing levels of education.

From an analysis of the 1997 NHIS, it was estimated that 3.2% of all persons experienced activity limitations due to chronic back conditions (51). Among the poor, activity limitation was nearly 3 times more frequent than in middle- and high-income adults.

Although about half of adults report low back pain during a given year and about two-thirds report low back pain at some time in their lives (52–60), only 15–21% of the adult population reported frequent low back pain (56) and only 14% reported an episode of low back pain lasting longer than 2 weeks at any time in their lives. Pain lasting beyond 3–6 months occurs in only 5–10% of patients with back pain. Approximately 1–2% of adults report having received a diagnosis of a herniated disc.

Computed tomography and magnetic resonance imaging studies in small samples indicate that disc degeneration, fractures, herniated discs, and spinal stenosis are all common among asymptomatic persons (61,62). Thus, the prevalence of radiographic findings is substantially different from the prevalence of clinically important symptoms.

In summary, back pain is common. The etiology is often unclear and classification is controversial, but most episodes probably originate in muscles or ligaments, or are the consequences of degenerative changes in the intervertebral discs and adjacent vertebrae. These changes include osteoarthritic changes in the facet joints and similar degenerative changes in and around the intervertebral discs. Back pain remains a leading cause of work disability.

Using 2002 NHIS age-specific prevalence and the corresponding 2005 population estimates from the Census Bureau, we estimated that 59.1 million adults age ≥18 years have had low back pain "in the past 3 months." Using the 1997 NHIS age-specific prevalence and the corresponding 2005 population estimates from the Census Bureau, we estimated that 7.1 million adults age ≥18 have activity limitation due to chronic back conditions. Using the same sources, we estimated that 30.1 million adults age ≥18 have had neck pain "in the past 3 months."

DISCUSSION

As discussed in the companion article (1), the burden of a chronic condition can be measured in various ways. The NADW has chosen to focus on national disease prevalence as an important measure of burden.

The prevalence of clinical osteoarthritis has grown to nearly 27 million, up from our estimate for 1995 of 21 million (11), as would be expected for such a strongly age-related disease. Gout appears to be increasing in frequency as well, with a 1-year prevalence of 3.0 million adults, a higher frequency than in the earlier study. These increases in such common conditions suggest they will have a growing impact on the health care and public health systems in the future, one that needs to be anticipated in order to provide the early diagnosis and interventions that can help reduce that impact.

We have provided estimates of prevalence and numbers of persons affected for overall arthritis and for selected rheumatic conditions and given a rough snapshot of current burden. These estimates have been made by recognized disease experts using the best data available, but, as noted in many of the sections, must be interpreted with several limitations in mind, including those detailed in the companion report (1). Given the large and growing burden of arthritis and other rheumatic conditions, we hope this work will inspire studies that better address these gaps and limitations and provide a better understanding of the burden of these conditions.

Acknowledgments

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Table 1

Prevalence of radiographic OA in the hands, knees, and hips, by age and sex, from population-based studies[*]

Anatomic site, age, years	Source (ref.)	% with mild, moderate, or severe OA		
		Male	Female	Total
Hands, ≥26	Framingham OA study (6)	25.9	28.2	27.2
Knees[†]				
≥26	Framingham OA study (5)	14.1	13.7	13.8
≥45	Framingham OA study (5)	18.6	19.3	19.2
≥45	Johnston County OA Project (7)	24.3	30.1	27.8
≥60	NHANES III (4)	31.2	42.1	37.4
Hips, ≥45	Johnston County OA Project (10)	25.7	26.9	27.0

[*] Estimates represent prevalence per 100 persons age-standardized to the projected 2000 Census population (see ref. 63) except for National Health and Nutrition Examination Survey III (NHANES III) estimates, which were adjusted to the 1980 Census population.

[†] All data on radiographic knee osteoarthritis (OA) are based on anteroposterior radiographs and therefore capture only tibiofemoral OA. Inclusion of patellofemoral imaging would probably yield higher prevalence estimates.

Table 2

Prevalence of symptomatic OA (symptoms and radiographic changes of OA in the symptomatic joint) in the hands, knees, and hips, by age and sex, from population-based studies[*]

Anatomic site, age, years	Source (ref.)	% with symptomatic OA		
		Male	**Female**	**Total**
Hands, ≥26	Framingham OA study (6)	3.8	9.2	6.8
Knees				
≥26	Framingham OA study (5)	4.6	4.9	4.9
≥45	Framingham OA study (5)	5.9	7.2	6.7
≥45	Johnston County OA Project (7)	13.5	18.7	16.7
≥60	NHANES III (4)	10.0	13.6	12.1
Hips, ≥45	Johnston County OA Project (10)	8.7	9.3	9.2

[*] Adjusted to the projected 2000 population age ≥18 years (see ref. 63) except for National Health and Nutrition Examination Survey III (NHANES III) estimates, which were adjusted to the 1980 Census population. OA = osteoarthritis.

Table 3

Prevalence of polymyalgia rheumatica and giant cell arteritis in Olmsted County, Minnesota, by age and sex[*]

Age, years	Prevalence of polymyalgia rheumatica[†]			Prevalence of giant cell arteritis[‡]		
	Male	Female	Total	Male	Female	Total
50–54	22	21	21	0	0	0
55–59	124	102	113	0	45	23
60–64	294	328	313	37	77	58
65–69	530	659	601	92	210	156
70–74	1,015	1,401	1,238	214	460	353
75–79	1,555	2,267	1,982	298	836	617
80–84	2,239	3,055	2,737	468	1,196	913
85–89	2,685	3,425	3,127	637	1,500	1,178
≥90	4,239	4,213	4,070	1,240	2,025	1,721
Overall	532	925	739	100	344	228

[*] Values are cumulative incidence rates per 100,000 persons in each age/sex group through 1999.

[†] Data collected 1970–1999 (16).

[‡] Data collected 1950–1999 (17).

Table 4

Prevalence of gout in the United States[*]

Source and year of study/gout definition (ref.)	Age, years	Prevalence per 100,000		
		Male	**Female**	**Total**
Regional population studies				
Tecumseh Community Health Study, 1960/"Rome" (25)[†]	≥20	720	480	ND
Framingham Heart Study, 1964/arbitrary (26)[‡]	≥42 (mean 58)	2,850	390	1,480
Sudbury Study, 1972/Rome and New York (27)	≥15	660	100	370
National survey studies				
NHIS, 1988/self-report (1-year prevalence) (64)[§]	≥18	ND	ND	850
	18–44	290	90	310
	45–64	3,350	950	2,100
	≥65	4,110	1,700	2,700
NHIS, 1992/self-report (1-year prevalence) (65)[§]	≥18	ND	ND	840
	18–44	440	30	380
	45–64	2,630	810	1,680
	≥65	4,410	1,820	2,900
NHIS, 1996/self-report (1-year prevalence) (30)[§]	≥18	ND	ND	940
	18–44	340	20	180
	45–64	3,350	1,200	2,240
	≥65	4,640	1,950	3,080
NHANES III, 1988–1994/self-report (lifetime prevalence) (32)[¶]	≥20	3,800	1,600	2,600
	≥20—29	200	500	400
	30–39	2,100	100	1,100
	40–49	2,600	900	1,700
	50–59	5,600	2,300	3,900
	60–69	9,400	3,200	6,100
	70–79	11,600	5,200	8,000
	≥80	7,100	5,300	5,900

[*] ND = no data; NHIS = National Health Interview Survey; NHANES III = National Health and Nutrition Examination Survey III.

[†] "Rome" = Rome criteria used "insofar as possible."

[‡] Arbitrary = at least 2 of the following 3 features: a typical attack of arthritis, an attack of arthritis with a prompt response to colchicine therapy, and/or hyperuricemia.

[§] One-year prevalence of gout ascertained by the question, "Have you or any member of your household had gout within the past year?"

[¶] Lifetime prevalence of gout ascertained by the question, "Has a doctor ever told you that you had gout?" Interviewers were instructed to emphasize the word "doctor." If the respondent stated that it was another health professional who gave the diagnosis of gout to him or her, the answer was coded as "no."

Table 5

Prevalence of neck pain and various categories of low back pain, by race, age, and sex

	Neck pain in the past 3 months, % (95% CI)*	Low back pain			
		LBP in the past 3 months, % (95% CI)*	Any LBP in the past year, %[†]	Frequent LBP in the past year, %[†‡]	Lifetime occurrence of LBP lasting ≥2 weeks, %[§]
Race					
White	14.2 (13.7–14.8)	27.4 (26.6–28.2)	59	19	14
African American	11.7 (10.5–12.9)	23.9 (22.2–25.6)	46	19	11
Other	–	–	48	–	9
Age, years					
18–44	11.9 (11.3–12.6)	23.7 (22.9–24.5)	61	15	10
45–65	16.9 (16.0–17.8)	29.8 (28.7–30.9)	53	20	12
65–74	14.2 (12.7–15.7)	28.8 (26.9–29.8)	56	21	17
≥75	14.0 (12.5–15.5)	28.7 (26.7–30.7)	49	18	16
Sex					
Male	11.7 (11.0–12.4)	24.3 (23.4–25.2)	53	15	14
Female	15.7 (15.0–16.4)	28.3 (27.5–29.1)	57	20	13

*
Data from the 2002 National Health Interview Survey (50); 95% confidence intervals (95% CIs) calculated by the authors from published standard errors.

[†]
Data from the Louis Harris Survey Group, 1985 (52,60). Age ranges were slightly different than labeled here.

[‡]
Data from a citywide population survey (Dayton, OH, 1973) (57). Age ranges were slightly different than labeled here.

[§]
Data from the National Health and Nutrition Examination Survey II, as reported by Deyo and Tsui-Wu (53). The percentages are estimates because the reported age categories differed slightly from the ranges presented here. Although the decline in lifetime occurrence of low back pain (LBP) in the highest age category may be surprising, it has been noted in several surveys. Possible explanations are survey participants' limited recall for distant past events, selective mortality (persons with LBP have shorter survival, perhaps due to associated health habits or socioeconomic circumstances), or a "cohort" effect, in which persons over age 65, for unexplained reasons, had a lower likelihood of LBP throughout their lives.