

2 > Burden of arthritis and musculoskeletal conditions

KEY POINTS

- Arthritis and musculoskeletal conditions constitute a major public health burden in Australia, as large contributors to illness, pain and disability.
- More than 6.1 million Australians are estimated to have arthritis or a musculoskeletal condition long term, based on the 2001 National Health Survey (NHS). These numbers are not based on doctor diagnosis.
- Back pain was the most commonly reported musculoskeletal condition, followed by osteoarthritis.
- Around 14% of people with disability report arthritis and related disorders as their main disabling condition. About one-third of these people had chronic or recurrent pain due to these disorders.
- Mobility limitation was the most common core-activity limitation reported. Individuals mainly needed assistance with going out of the house, transferring to and from bed, and getting about in the house.
- More than 170,000 people had a severe or profound core-activity restriction in 2003. These people always needed assistance with some activities of daily living.
- General practitioners (GPs) are probably the most common source of health care. After respiratory conditions, arthritis and musculoskeletal conditions were the problem managed most frequently by GPs in 2003–04 (17 per 100 encounters).
- Back complaint was the most common musculoskeletal condition managed by GPs, followed by osteoarthritis. A variety of management strategies has been reported by GPs to treat or manage these conditions.
- The use of allied health services, such as those provided by physiotherapists, is also high among people with arthritis and musculoskeletal conditions.
- A large proportion of hospital separations for arthritis and musculoskeletal conditions is for surgical interventions such as arthroscopy and arthroplasty, undertaken to repair damage to a joint, to restore function or to relieve pain. The use of both these procedures has increased over the last several years.
- Family members are the main providers of help or informal care for people with disability that is due to arthritis and musculoskeletal conditions.

Measuring the burden of a disease is central to describing its contribution to the overall health of a population. These measures are useful in allocating health care resources and in evaluating the potential costs and benefits of public health interventions. The information is also relevant to setting National Health Priority Area goals.

Arthritis and musculoskeletal conditions constitute a major public health problem, as large contributors to illness, pain and disability. They occur frequently, placing a high economic and personal burden on the community. This burden includes the use of hospital and primary care services, disruptions to daily life, and lost productivity through functional limitations and activity restriction.

A variety of measures can be used to describe the burden of these diseases and conditions. Prominent among these are distribution and prevalence, and associated functional limitations. The use of health care services can also be used as an indicator of the disease burden. Measures such as quality of life, health system expenditure and disability-adjusted life years summarise their impact overall. Mortality is not a great descriptor of the burden associated with arthritis and musculoskeletal conditions.

This chapter provides information on illness, discomfort and pain, functional limitations and activity restriction, and on the use of health care services, for arthritis and musculoskeletal conditions in Australia. The data to operationalise these measures are far from complete or accurate at both national and jurisdictional levels. Yet, an attempt has been made to put baseline information on several of these epidemiological measures in the public domain. Where available, time series information is also included.

Chapters 3, 4 and 5 describe the burden of disease for osteoarthritis, rheumatoid arthritis and osteoporosis respectively. Information on quality of life and on health expenditure as indicators of disease burden is contained in Chapters 6 and 7, respectively.

Illness, discomfort and pain

Arthritis and musculoskeletal conditions cause considerable illness (a state of feeling unwell), discomfort and pain (NIAMS 2001). The concepts of illness and discomfort can be broadly operationalised by using the epidemiological measures of incidence and prevalence. The measurement of pain is, however, much more subjective and requires separate consideration.

Incidence and prevalence

Arthritis and musculoskeletal conditions are some of the most common chronic conditions in Australia. Yet, their incidence and prevalence are difficult to determine reliably. In the absence of disease registers and other sources of suitable information, the incidence data are difficult to obtain. The prevalence estimates, limited mostly to self-reports, are also the best approximations.

Almost one-third (32.3%) of respondents to the 2001 National Health Survey (NHS)—a population-based survey conducted by the Australian Bureau of Statistics (ABS)—reported arthritis or a musculoskeletal condition long term (Table 2.1). This equates to more than 6.1 million Australians experiencing chronic illness, discomfort or pain. These numbers cover not only various forms of arthritis but also back pain, osteoporosis and osteoporotic fractures, as well as other diseases of the musculoskeletal system and connective tissues. The symptoms covered include some type of swelling in joints, limitations in motion, or pain when moving. These reports are not necessarily based on doctor diagnosis (ABS 2002).

A disease is considered to be a long-term disease if it has lasted at least six months or is likely to last six months or more (ABS 2002). This specification is designed to define a disease as long term rather than to elicit information on period prevalence. However, the application of this specification may not always be valid in NHS.

Almost two-thirds of the NHS respondents reporting arthritis or a musculoskeletal condition identified back pain as their major problem. Three out of eight respondents specified arthritis, which included the clinical stereotypes of rheumatoid arthritis, osteoarthritis and other forms of arthritis as their condition. More than 1% reported rheumatism as their form of the disease.

Table 2.1: Prevalence of diseases of musculoskeletal system and connective tissues, as reported in the 2001 National Health Survey

Type of disease/condition	Prevalence	
	Number '000	Per cent ^(a)
Back pain	3,937	20.8
Arthritis	2,576	13.6
Other arthropathies	367	1.9
Osteoporosis	300	1.6
Rheumatism	248	1.3
All diseases of musculoskeletal system and connective tissues	6,058	32.3

(a) Per cent of total population.

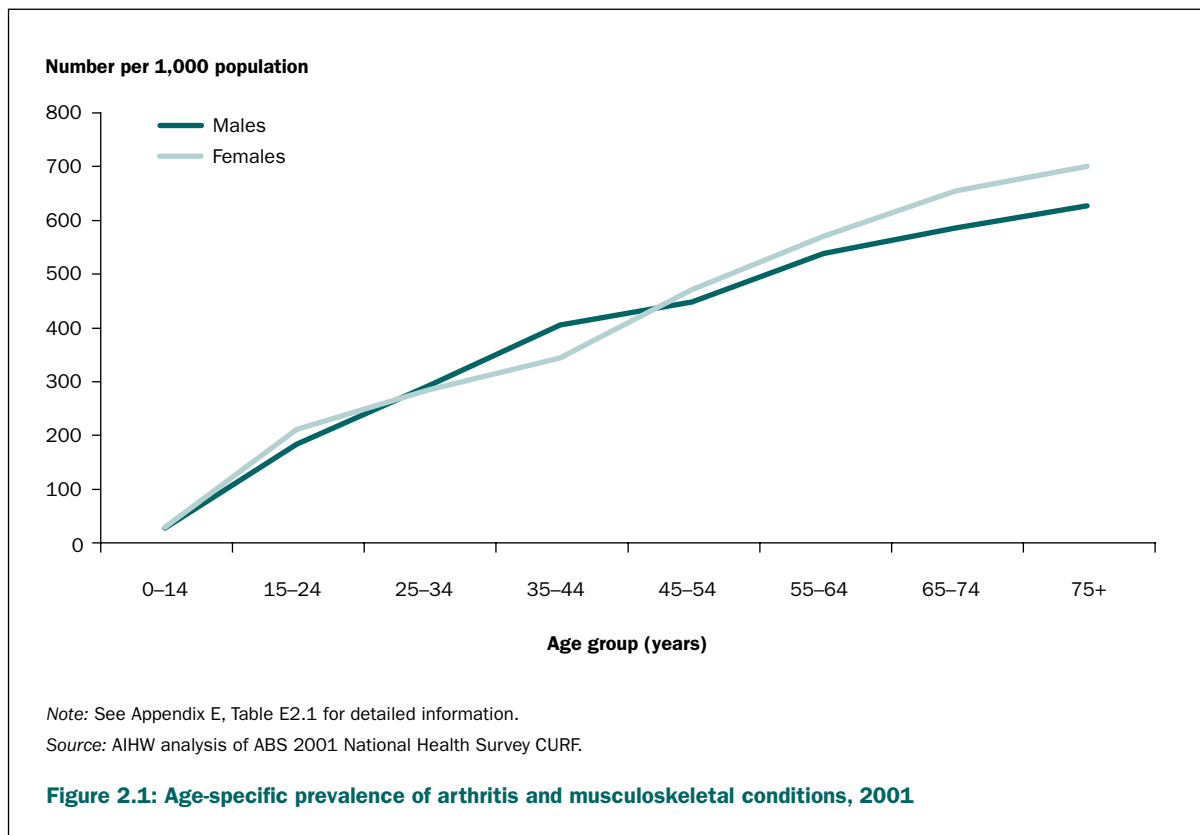
Note: The total is considerably smaller than the sum of numbers and proportions because of the occurrence of more than one disease or condition in the same individual.

Source: AIHW analysis of ABS 2001 National Health Survey CURF.

Diseases of the musculoskeletal system and connective tissues, as they are referred to in the 2001 NHS, were equally common for both sexes. However, certain disorders were more common in one or the other sex. While back pain was more commonly reported by males, osteoarthritis and rheumatoid arthritis were more prevalent in females.

Age is a strong determinant, being almost synonymous with the presence of arthritis and musculoskeletal conditions (Figure 2.1). However, these diseases and conditions do not affect the aged only. Nearly three out of five people reporting arthritis are younger than 65 years. By that age, however, over half of the females and 40% of the males report having some form of arthritis or a musculoskeletal condition (March et al. 1998).

The NHS does not cover individuals residing in institutions, including hostels and aged care units. As arthritis and musculoskeletal conditions are more commonly prevalent among the aged, the NHS underestimates their prevalence in the population.



Other sources of prevalence data

Another useful source of information for the prevalence of arthritis and musculoskeletal conditions is the ABS Survey of Disability, Ageing and Carers (SDAC). The SDAC not only samples the general population but also, unlike the NHS, covers nursing homes and other related institutions.

According to the 2003 SDAC, over 21% of the Australian population reported arthritis or a musculoskeletal condition as being long term. The most commonly reported conditions were arthritis and related disorders, followed by back problems (Table 2.2). Arthritis and related disorders were more common among those aged 65 years and over.

Table 2.2: Prevalence of diseases of the musculoskeletal system and connective tissues, as reported in the ABS 2003 Survey of Disability, Ageing and Carers

Type of disease/condition	Prevalence	
	Number '000	Per cent ^(a)
Arthritis and related disorders	1,816	9.2
Back problems (dorsopathies)	1,766	9.0
Osteoporosis	337	1.7
Other diseases of the musculoskeletal system and connective tissues	178	0.9
Other soft tissue/muscle disorders (including rheumatism)	105	0.5
Repetitive strain injury/occupational overuse syndrome	43	0.2
All diseases of musculoskeletal system and connective tissues	4,246	21.5

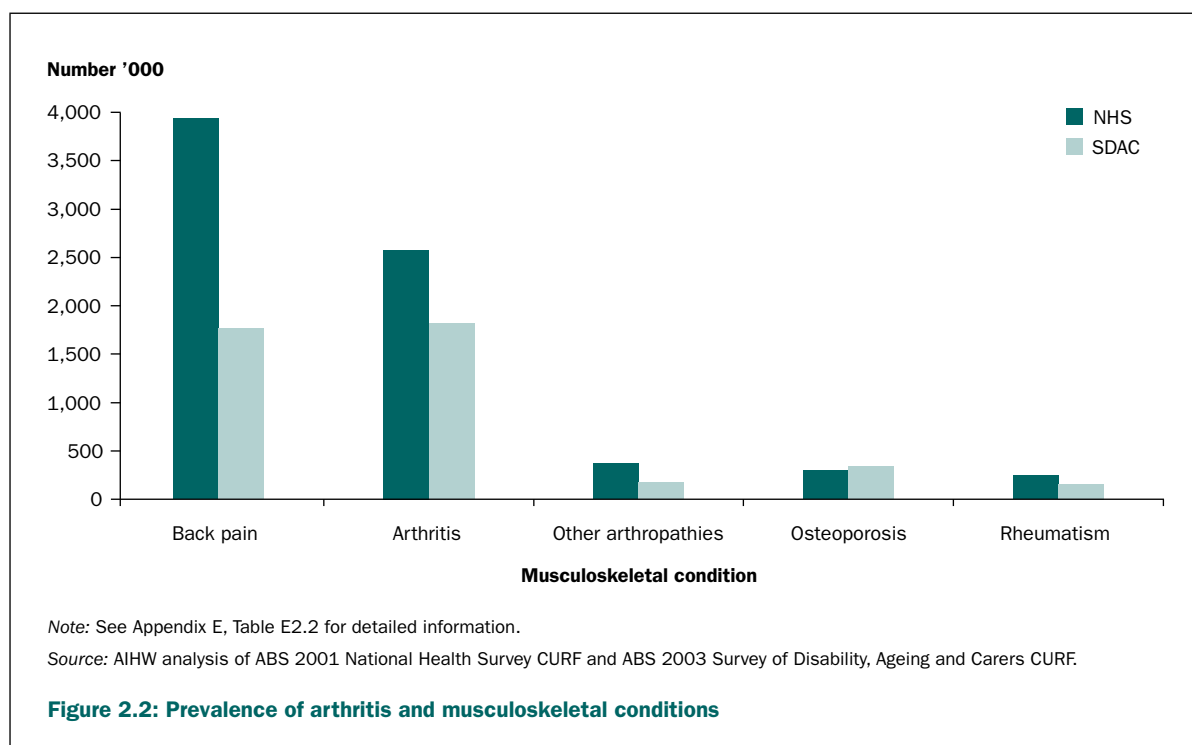
(a) Per cent of total population.

Note: The total is considerably smaller than the sum of numbers and proportions because of the occurrence of more than one disease or condition in the same individual.

Source: AIHW analysis of ABS 2003 Survey of Disability, Ageing and Carers CURF.

The proportions of people reporting diseases of the musculoskeletal system and connective tissues in the two ABS surveys, namely the 2001 NHS and 2003 SDAC, differ considerably (Tables 2.1 and 2.2). They also differ in the relative prevalence of various diseases and conditions. The proportion of people reporting back problems in the 2003 SDAC, for example, is less than half the proportion in the 2001 NHS. On the other hand, people reporting arthritis and related disorders rank the highest in the 2003 SDAC. Coincidentally, osteoporosis is reported in similar proportions by respondents in both the surveys (Figure 2.2).

The difference in prevalence estimates between the two surveys may be explained partly by the survey methods used. The purpose of the NHS is to obtain information on the health status of Australians in the community and their use of health services and facilities. The SDAC, on the other hand, is specifically designed to collect information about disability in the Australian population. The NHS uses a general question about any long-term condition, including those conditions not necessarily associated with disability. In contrast, the SDAC long-term health conditions are more likely to be associated with an impairment or activity limitation. In addition, the SDAC includes people residing in non-private dwellings (institutions) such as aged care homes and hospitals, while the NHS does not (AIHW 2004a).



Limitations of self-reported information

Determining the prevalence of arthritis and musculoskeletal conditions through self-reports is subject to several limitations (Box 2.1). First, the set of questions used to enumerate these conditions (both in the NHS and the SDAC) is not based on any clinical diagnosis or objective criteria. The survey may pick up cases of self-diagnosis but, on the other hand, may miss out on real cases. Second, as the NHS sample does not include the institutionalised population, it is likely to underestimate disease prevalence. Third, the self-reporting of illness is complex and dynamic, and often a function of the respondent's knowledge and attitudes. These, in turn, may be influenced by the availability of health services and health information made available through public education and awareness programs (ABS 2003).

Box 2.1: Sources of error in time series information based on self reports

- More public awareness of arthritis and osteoporosis
- Increased acceptability of various conditions
- Ignoring of mild or moderate conditions
- Improved, early diagnosis
- Lack of standard definitional criteria
- Scope of the field of conditions
- Variation in survey or study designs

These difficulties are acutely reflected in the NHS time series. The self-reported prevalence of arthritis and musculoskeletal conditions declined from 26% in 1989–90 to 23% in 1995, and then increased to 32% in 2001. Although the ageing of the population may have contributed to some of the increase overall, the fluctuations over time are more likely to be due to differences in the survey methodology. The nature and type of questions used to generate the data impose severe limitations on the quality of the information and reliability of the estimates obtained.

International comparisons

Large-population based surveys indicate that the prevalence of arthritis and musculoskeletal conditions in Australia or in similarly aged populations internationally is high. The self-reported prevalence of arthritis or chronic joint symptoms was 30% in the United States at the turn of the century (CDC 2002). The estimates were much lower in Canada (16%; Wang et al. 2000) and in the United Kingdom (14%; Access Economics 2001).

The interpretation of these rates is problematic as the definition of various conditions and the methods of data collection vary considerably. For example:

- The ABS health surveys refer to the entire chapter of diseases of the musculoskeletal system and connective tissues. The reporting is not necessarily based on doctor diagnosis.
- The US study, on the other hand, limits itself to arthritis and chronic joint symptoms (CJS). Respondents were classified as having CJS if they answered 'yes' to two questions:
 - 'In the past months have you had pain, aching, stiffness, or swelling in or around a joint?', and
 - 'Were these symptoms present on most days for at least a month?'
- In the Canadian study, arthritis was defined as a long-term health condition of 'arthritis or rheumatism', as diagnosed by a health professional.

Pain

Pain, acute or chronic, is the key symptom in most forms of arthritis and musculoskeletal conditions. Acute pain lasts a few seconds or longer but wanes as healing occurs. On the other hand, chronic pain, such as that seen in people with osteoarthritis and rheumatoid arthritis ranges from mild to severe, and can last weeks, months, years or a lifetime.

The pain of arthritis and musculoskeletal conditions may originate from different sources. These include inflammation of the synovial membrane (tissue that lines the joints), the tendons, or the ligaments; muscle strain; and fatigue. A combination of these factors may contribute to the intensity of the pain.

The pain also varies greatly from joint to joint, depending on the swelling within the joint, the amount of heat or redness present, or damage that has occurred within the joint. In addition, activities affect pain differently so that some people note pain in their joints after first getting out of bed in the morning, whereas others develop pain after prolonged use of the joint (Box 2.2).

The measurement of pain is highly subjective and is usually investigated by asking about the incidence of chronic/recurrent pain. In the SDAC, pain was asked about by screening the question as: 'Whether has chronic or recurrent pain or discomfort, limiting activities'. About 7% of the 2003 SDAC sample reported chronic/recurrent pain. In comparison, around 12% reported having arthritis and related disorders; however, of these, only one-third reported chronic/recurrent pain as caused by their condition. This is because the questions required the respondents to report 'main conditions'. People with 'pain' or 'discomfort' associated with multiple conditions can report only one main condition. These people may or may not have a long-term disability relating to restrictions in activities from the pain of arthritis or past osteoporotic fractures.

Box 2.2: Pain in arthritis and musculoskeletal conditions

Source

- Inflammation of synovial membrane, tendons or ligaments
- Muscle strain
- Fatigue
- Abnormal contact between surfaces
- Combination of the above

Variation

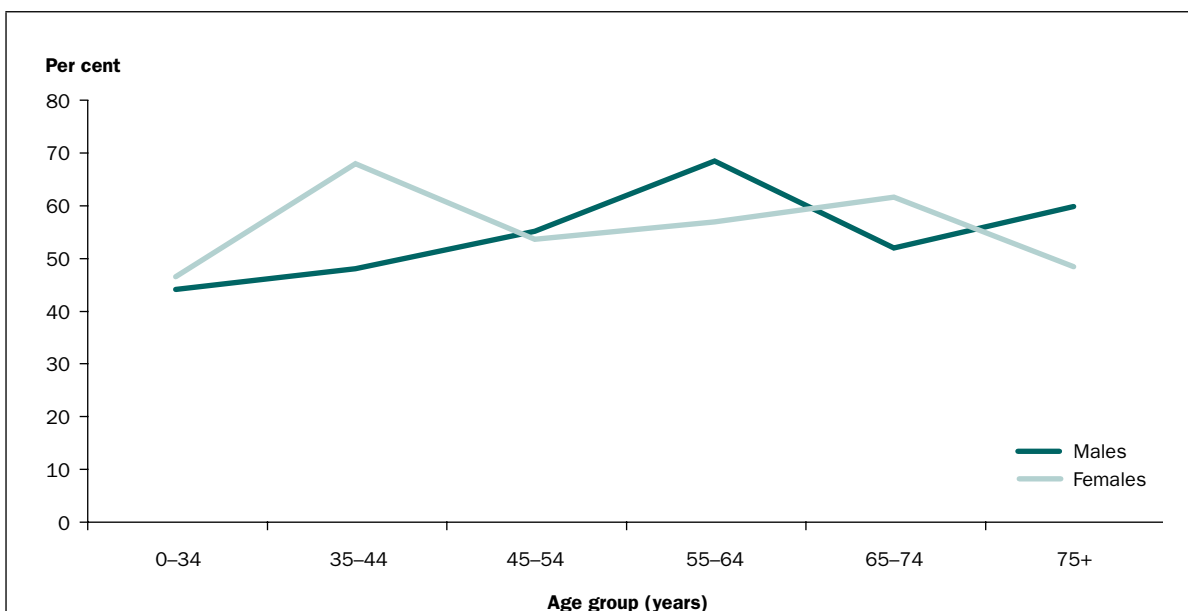
- From joint to joint
- Amount of swelling
- Amount of heat or redness
- Damage within the joint

Timing

- Morning stiffness
- After extensive use

The SDAC also enumerates the number of people having disability specifically linked to their condition. It could be their 'main disabling condition' or an 'associated condition'. The SDAC estimates indicate that around 14% of people with disability reported arthritis and related disorders as their main disabling condition. Around half (56%) of these people reported chronic or recurrent pain, caused by arthritis and related disorders.

The reporting of chronic or recurrent pain by persons with disability associated with arthritis and related disorders was closely associated with age (Figure 2.3). About 13% of males and 11% of females reported that chronic pain was an extreme interference with their work (during the last four weeks). The proportion was highest in the 85 and over age group—39% for males and 22% for females (ABS 2004a).



Notes

1. See Appendix E, Table E2.3 for detailed information.
2. Per cent of persons with disability.

Source: AIHW analysis of ABS 2003 Survey of Disability, Ageing and Carers CURF.

Figure 2.3: Chronic or recurrent pain reported in disability associated with arthritis and related disorders, 2003

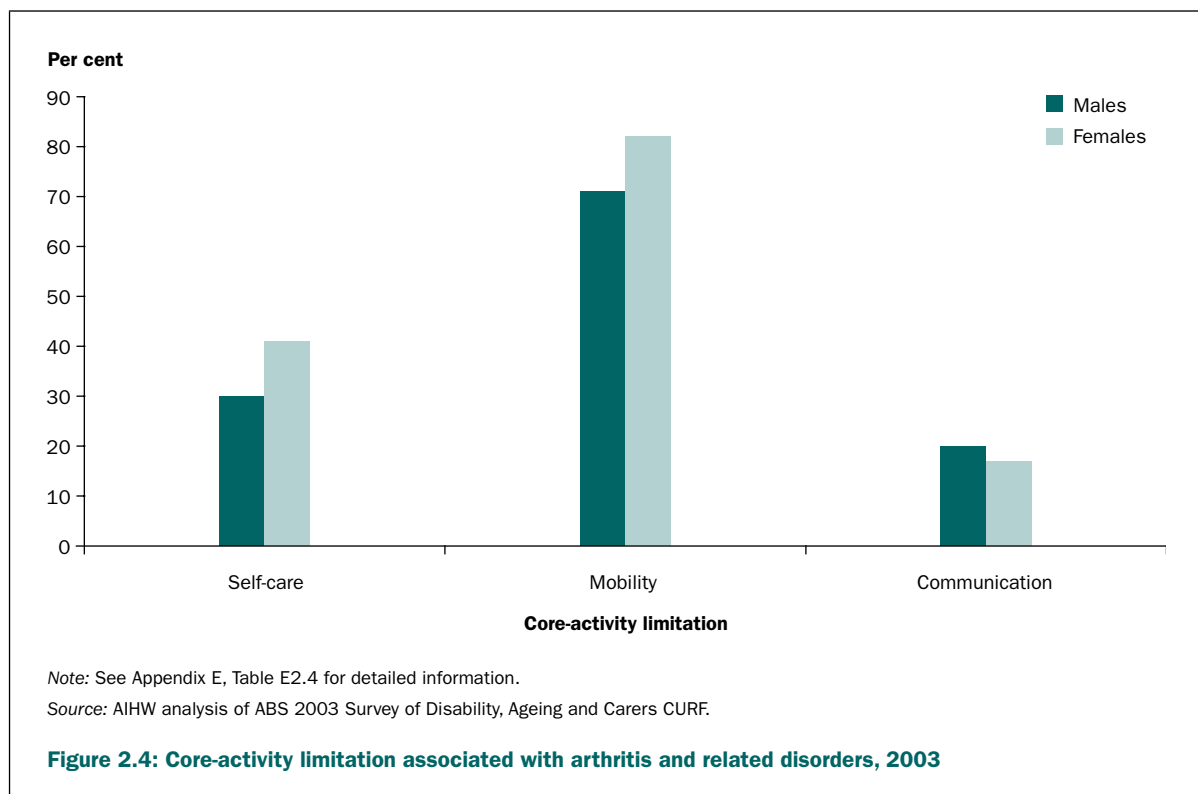
Disease severity and disability

Not everyone is affected the same way by arthritis and musculoskeletal conditions. As the disease or condition progresses, decreased quality of life in terms of disability occurs due to more severe pain and limitations on activity. Depending on the amount of pain and stiffness, some people experience profound or severe activity limitation, while others have comparatively less.

People experiencing severe activity limitation need help with daily activities. Some may need to change jobs because of their disability (Cunningham & Kelsey 1984). Those experiencing moderate activity limitation have some difficulty in performing daily activities; those with mild activity limitation have no difficulty in performing these activities but have problems with walking long distances, using public transport, walking up and down stairs or bending to pick up an object from the floor (ABS 2004a).

According to the 2003 SDAC, 14% of all persons with a disability reported arthritis and related disorders to be their main disabling condition. The proportion is much smaller than the 21% of respondents who reported arthritis and related disorders (Table 2.2), because not everyone with the condition reported that it restricted their everyday activities.

The 2003 SDAC indicates that of those with a disability associated with arthritis and related disorders, 168,800 had a severe or profound core-activity restriction. These people always needed assistance with activities of daily living. The most common core-activity restriction was mobility limitation. People mainly needed assistance with going out of the house (67%), transferring to and from bed (39%) and getting about in the house (30%). Self-care was the second highest reported form of core-activity limitation. People in this group needed assistance with dressing (45%) and showering/bathing (31%). In both cases, the proportion with core-activity restriction was higher among females than males (Figure 2.4).



Psychological effects

The pervasive nature of arthritis and musculoskeletal conditions in conjunction with chronic pain can have psychological impact on sufferers. They may experience psychological sequelae (morbid conditions resulting from earlier disease), including negative emotional states, anxiety and depression, and feelings of helplessness (Keefe & Bonk 1999). Several studies have demonstrated a strong relationship between arthritis and depression (Lin et al. 2003). Others argue that the relationship exists, but is weaker (Keefe et al. 1986).

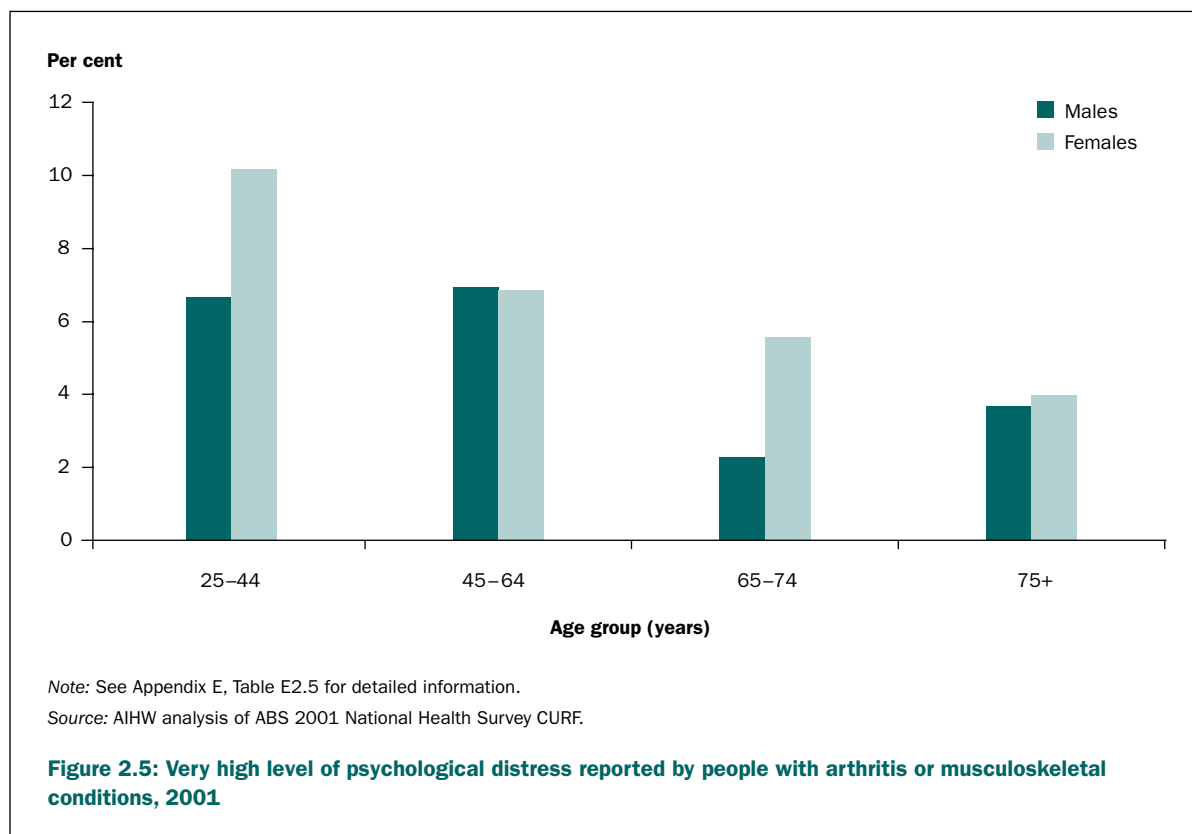
According to the 2001 NHS, 6% of respondents with arthritis aged 25 and over reported a very high level of psychological distress as measured by the Kessler Psychological Distress Scale–10 (K10). K10 is a measure of non-specific psychological distress. A very high level of psychological distress, as shown by the K10, may indicate a need for professional help. Proportionately more females than males reported a high or a very high level of psychological distress in association with arthritis or other musculoskeletal condition (Table 2.3).

Table 2.3: Psychological distress associated with arthritis and musculoskeletal conditions, ages 25 and over, 2001

Population	Low (10–15)		Moderate (16–21)		High (22–29)		Very high (30–50)		Total	
	'000	%	'000	%	'000	%	'000	%	'000	%
Males	651	63.6	204	19.9	113	11.1	55	5.4	1,023	100.0
Females	854	56.4	376	24.9	186	12.3	97	6.4	1,513	100.0
Total	1,504	59.3	580	22.9	299	11.8	152	6.0	2,535	100.0

Source: AIHW analysis of ABS 2001 National Health Survey CURF.

A very high level of psychological distress was most frequently recorded among persons aged 25–44 years in association with arthritis or other musculoskeletal condition (8.6%) (Figure 2.5). Females recorded higher rates than males across all ages except in the 45–64 years age group, whereas a high level of psychological distress was equally reported by both sexes in that age group.



Co-morbidities

People with arthritis and musculoskeletal conditions are often predisposed to many other diseases and conditions such as heart and vascular diseases, Type 2 diabetes, respiratory and infectious diseases, gastrointestinal disorders and non-Hodgkin's lymphoma (Scott & Hochberg 1998). Some of these associations are no more than that expected from the concurrence of age-dependent problems. In others, the co-morbidities are more likely to occur together because of similar underlying disease processes or the presence of common risk factors (e.g. the tendency to autoimmunity or excess weight).

Some insight into co-morbidities of arthritis and musculoskeletal conditions can be obtained from the NHS data. In 2001, a number of long-term conditions were reported by people with arthritis and musculoskeletal conditions. Of these, hypertensive disease, deafness (total/partial) and asthma were the most commonly reported conditions (Table 2.4).

Table 2.4: Long-term conditions reported by people with arthritis and musculoskeletal conditions, 2001

Long-term condition	Number of people reporting the condition	People with arthritis reporting the condition	Proportion of people with arthritis
	Number '000	Number '000	Per cent
Hypertensive disease	1,909	742	28.8
Total/partial deafness	2,013	664	25.8
Asthma	2,197	340	13.2
Diseases of genito-urinary system	587	212	8.2
Diabetes mellitus	554	203	7.9
Heart disease (ischaemic heart disease and other diseases)	138	188	7.3
Depression	103	25	1.0
Total	2,576	2,576	100.0

Source: AIHW analysis of the ABS 2001 National Health Survey CURF.

Health care/service use

Treatment for arthritis and musculoskeletal conditions is mostly aimed at controlling pain and improving functioning and health-related quality of life. The treatment and care options for these diseases and conditions cover a wide variety of settings and phases of care. These include primary care by general practitioners; use of allied health services such as physiotherapists, chiropractors and podiatrists; and in hospitals.

GP visits

General practitioners (GPs) are probably the first and most common source of care for people with arthritis and musculoskeletal conditions. Depending on the nature of the problem, GPs manage these problems in a variety of ways: they prescribe/recommend medications, order imaging or pathology tests, and co-ordinate referrals.

In 2003–04, arthritis and musculoskeletal conditions were the problem most frequently managed by GPs (17 per 100 encounters), after respiratory conditions. They accounted for 12% of problems managed by GPs that year. Back complaint was the most common musculoskeletal condition managed, followed by osteoarthritis.

A variety of strategies has been reported by GPs for the management of arthritis and musculoskeletal conditions (Table 2.5). The most common form of management was medication prescribed/ advised/ supplied, followed by imaging and referrals. Cox-2 inhibitors (NSAIDs) were the most common medication prescribed or advised (32%), followed by paracetamol (25%).

Nearly all imaging ordered for arthritis involved diagnostic radiology, to identify mainly radiological changes of the knee, hip and hands. Densitometry tests were ordered for osteoporosis. Other clinical treatment included advice, education or counselling (23%), mostly in respect to exercise and weight management.

Table 2.5: Management of arthritis and musculoskeletal conditions by general practitioners, 2003–04

Type of management	Number	Per cent ^(a)
Medication	11,999	71.0
Referral	2,350	13.9
Physiotherapist	884	5.2
Orthopaedic surgeon	620	3.7
Rheumatologist	135	0.8
Pathology	1,869	11.1
Full blood count	396	2.3
Erythrocyte sedimentation rate (ESR test)	289	1.7
Liver function test	142	0.8
Rheumatoid factor	116	0.7
Imaging	3,194	18.9
X-ray	1,896	11.2
Ultrasound	486	2.9
Densitometry test	63	0.4

(a) Per cent of arthritis and musculoskeletal problems managed

Source: AIHW analysis of BEACH data.

Hospitalisation

Hospital separations for arthritis and musculoskeletal conditions are less frequent and of shorter duration than for many other diseases and conditions. Long-term hospitalisation occurs usually when surgical intervention is the considered option for treatment.

The hospital separation rate for arthritis and musculoskeletal conditions was 1,799 per 100,000 persons in 2003–04, with an average length of stay of 3.7 days. Males were more likely to be hospitalised for these diseases and conditions than females (1,856 per 100,000 males compared with 1,738 per 100,000 females). There were fewer separations among younger people, with the rate being the highest in the 50–79 years age group, accounting for 51% of all separations. Principal diagnoses of other primary gonarthrosis, back pain and derangement of meniscus due to an old tear (e.g. torn ligament) or injury accounted for the largest proportions of these separations (Figure 2.6).

Procedures

Surgical intervention is the most frequent form of hospital-based treatment. These procedures are generally required to repair damage to a joint after injury or to restore function or relieve pain in a joint damaged by arthritis (NIAMS 2001).

Surgical procedures

During 2003–04, 310,198 surgical procedures were performed on people with the principal diagnosis of arthritis or a musculoskeletal condition. The ten most frequently reported surgical procedure groups, and common procedures within those groups, are shown in Table 2.6.

Data on the procedures to diagnose and treat people with these diseases and conditions indicate an increasing uptake of new technologies and methods. Arthroscopic surgery (e.g. surgery in which bones in the joint are fused or joined together) and arthroplasty (known as total joint replacement, in which the damaged joint is removed and replaced with an artificial one) are two of the common surgical procedures. In 2003–04, arthroscopy was more common among males than females (62% compared with 38%), and was highest among those in the 50–54 years age group. Arthroplasty, on the other hand, was most likely to be performed on those in the 70–74 years age group.

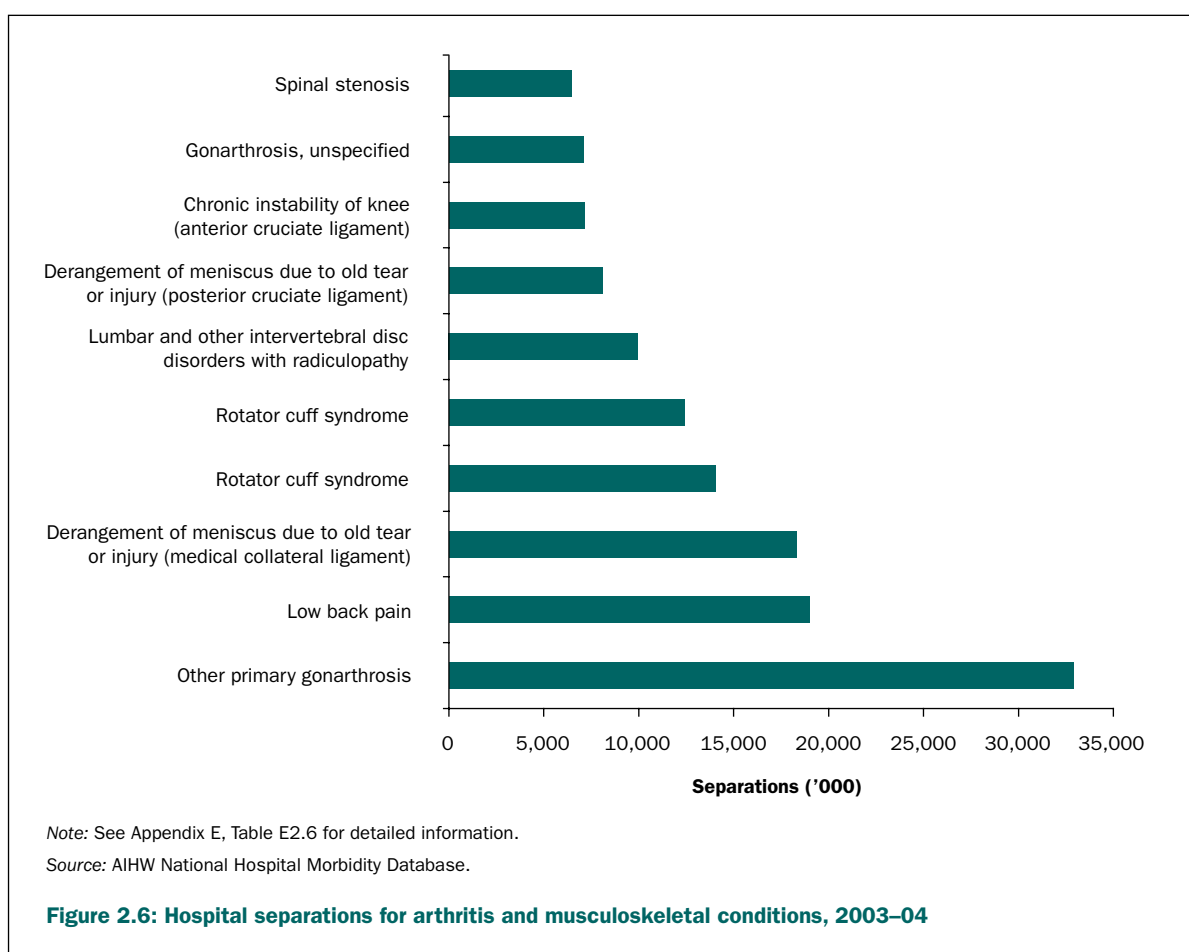


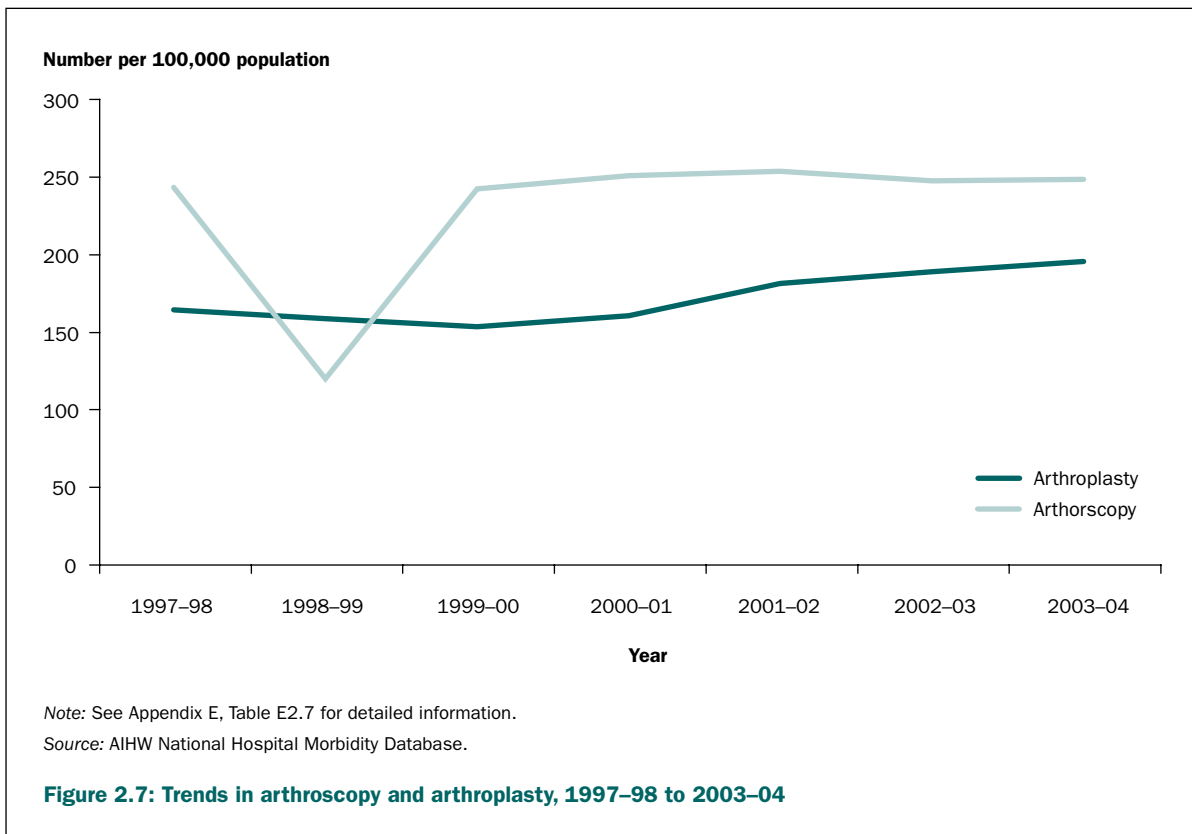
Table 2.6: Top ten surgical procedures performed on people with arthritis and musculoskeletal conditions, 2003-04

Procedure block	Main procedure performed	Number	Per cent ^(a)
Arthroscopic meniscectomy of knee with repair	Arthroscopic meniscectomy of knee with debridement, osteoplasty or chondroplasty	33,075	10.7
Arthroplasty of knee	Total arthroplasty of knee, unilateral	20,699	6.7
Arthroplasty of hip	Total arthroplasty of hip, unilateral	18,249	5.9
Arthroscopic excision of knee	Arthroscopic meniscectomy of knee	14,449	4.7
Reconstruction procedures on shoulder	Arthroscopic reconstruction of shoulder	6,981	2.3
Incision procedures on muscle, tendon or fascia of hand	Subcutaneous fasciotomy for Dupuytren's contracture	6,825	2.2
Other excision on shoulder	Excision of coraco-acromial ligament	6,811	2.2
Other incision procedures on knee	Arthroscopy of knee	6,210	2.0
Other repair procedures on knee or leg	Arthroscopic chondroplasty of knee	5,147	1.7
Other repair procedure on shoulder	Repair of rotator cuff with decompression of subacromial space	5,014	1.6
Other procedures		186,738	60.2
Total		310,198	100.0

(a) Per cent of total procedures performed

Source: AIHW National Hospital Morbidity Database.

The use of arthroplasty has increased over the last several years (Figure 2.7). The subsequent increase and later sustained level of use of arthroplasty reflects the trend that these procedures are now the mainstay of surgical treatment for severe arthritis (Felson et al. 2000). They result in a dramatic improvement in pain and function in the short term, and continued good function for at least 10 years (Harris & Sledge 1990).



Non-surgical procedures

In 2003-04, 732,700 non-surgical procedures were listed in hospital separations with the principal diagnosis of arthritis or a musculoskeletal condition. These procedures, mainly non-invasive in nature, included cognitive, therapeutic or diagnostic interventions.

Visits to other/allied health professionals

In addition to hospital care, people with arthritis and musculoskeletal conditions also seek help and support from many community-based services provided by private domiciliary nursing services and allied health professionals (e.g. physiotherapists, chemists, chiropractors and podiatrists).

According to the 2001 NHS, about 23% of people with arthritis and musculoskeletal conditions had consulted an allied or other health professional within the previous two weeks of the survey. The professionals most frequently consulted were chemists (by 5% of the population), physiotherapists/ hydrotherapists, and chiropractors (4%).

Persons aged 65 and over are more likely to have visited at least one allied or other health professional than people in younger age groups. The most frequently consulted health professionals by these people were chemists (10%), chiropractors (3%) and physiotherapists/ hydrotherapists (2%). For those aged 45-64, the most frequently consulted allied or other health professionals were chemists (6%), physiotherapists/ hydrotherapists (5%) and chiropractors (3%).

Mortality

Death is not commonly caused by arthritis and musculoskeletal conditions. Most arthritis and musculoskeletal conditions cripple but do not kill (Calkins 1993). Nearly five deaths per 100,000 persons were recorded in 2003 in Australia due to these conditions.

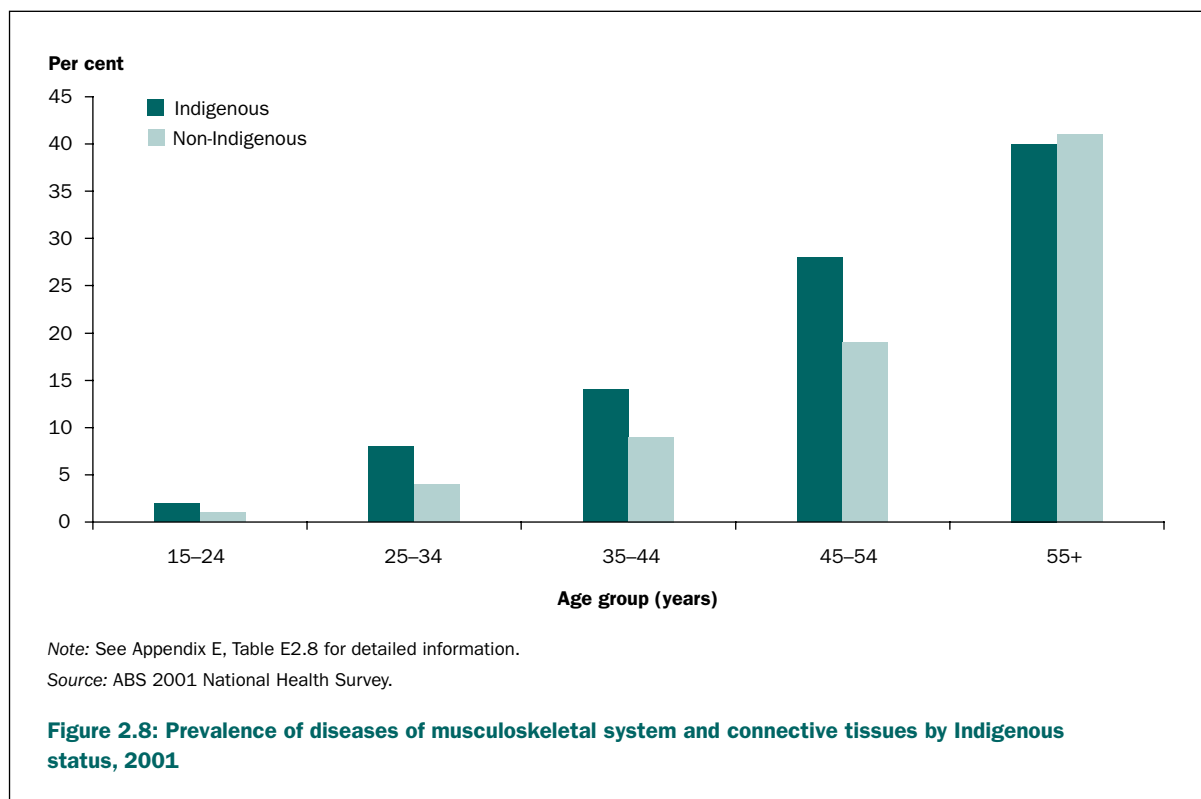
Premature mortality may be recorded for people with arthritis, resulting from perforated stomach ulcers, mainly induced by non-steroidal anti-inflammatory drugs (NSAIDs) (Graumlich 2001). Osteoporosis-related mortality is high in older people following certain types of fractures. Details of mortality associated with major types of fractures, particularly hip fractures, are given in Chapter 5.

Inequalities

The burden and impact of arthritis and musculoskeletal conditions is not equally shared in Australia. The health issues for various groups are different. This variation may not only result from differences in the prevalence of risk factors but the extent of treatment and management of the disease may also vary. Socio-economic differences may get built into disease prevalence to produce health inequalities. Differences in disease incidence/ prevalence may also arise due to varying genetic composition of the population groups.

Indigenous Australians

The prevalence of arthritis and musculoskeletal conditions in Indigenous Australians is close to that for other Australians. According to the 2001 NHS Indigenous self-reports, about 35% of Indigenous people had a long-term condition of the musculoskeletal system and connective tissues, compared with 32% of non-Indigenous Australians. However, a much higher prevalence was reported in Indigenous age groups below 55 compared with non-Indigenous age groups (Figure 2.8).



A large proportion of arthritis reported by Indigenous Australians is osteoarthritis. Rheumatoid arthritis, by comparison with other Australians, is relatively uncommon among Indigenous people (Douglas 1996; Chin & Segasothy 2000). On the other hand, systemic lupus erythematosus, a connective tissue disorder, has much higher prevalence among Indigenous Australians from north Queensland and the Northern Territory (Anstey et al. 1995; Grennan & Bossingham 1995).

At present, there are no national data on the prevalence of arthritis or osteoporosis-related disability among Indigenous Australians. Information on arthritis-related hospitalisation among Indigenous people is also limited in scope. In 2000–01, these diseases and conditions accounted for about 1% of Indigenous hospital separations. These included hospitalisation for both joint and back problems.

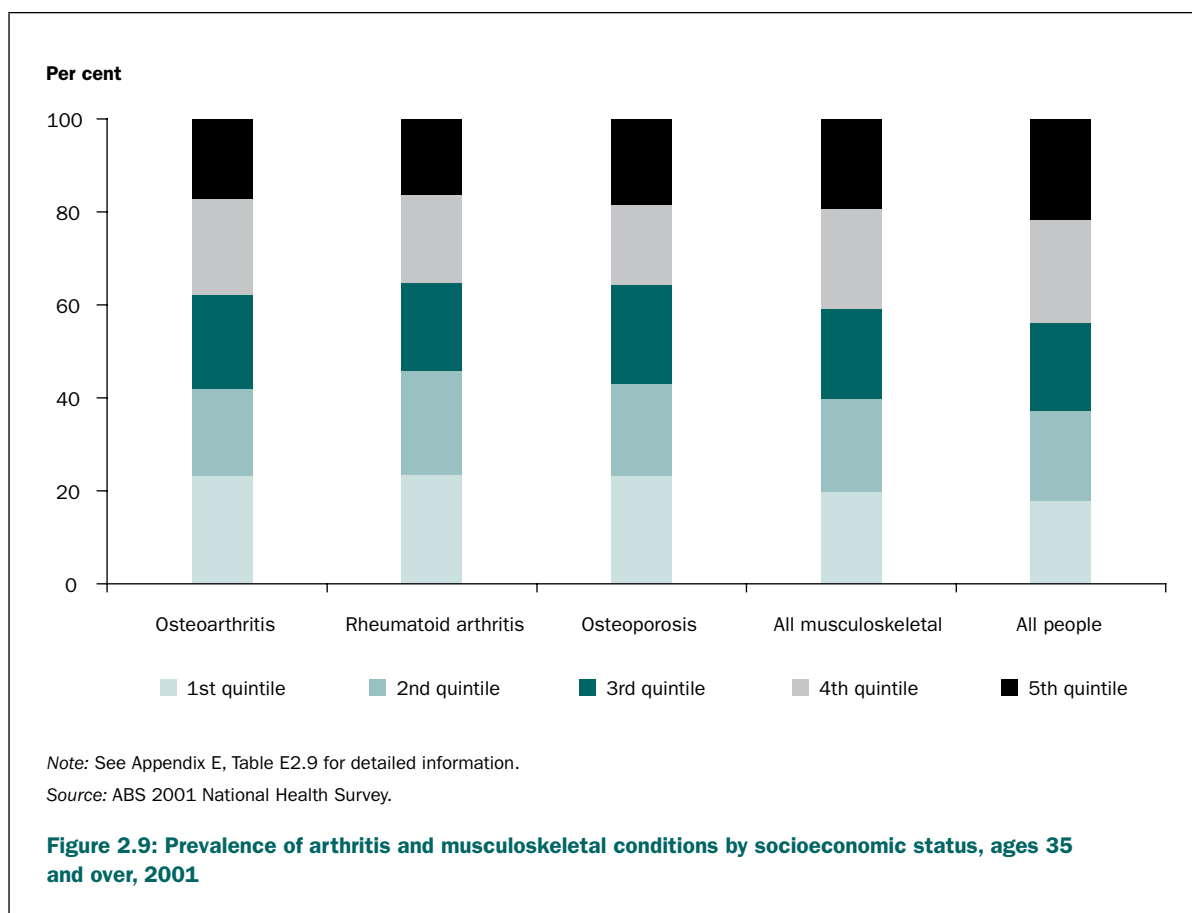
Socioeconomic status

The prevalence of arthritis and musculoskeletal conditions, and associated activity limitations, is reported to be greater in persons of low socioeconomic status (Badley and Ibanez 1994; Creamer et al. 1999). Socioeconomic-epidemiologic associations have also been reported at a more specific disease or condition level, including osteoarthritis, rheumatoid arthritis and osteoporosis (Morales-Torres et al. 1996; Jacobi et al. 2003; Gordon & Hastings 2003).

A study in South Australia has confirmed socio-economic disparity in arthritis prevalence (Hill et al. 1999) but however, no such association has been reported at a national level. The 2001 National Health Survey disease prevalence data can be organised, however, by the Index of Relative Socioeconomic Disadvantage (SEIFA) to draw relationships between socioeconomic status and the presence of arthritis and musculoskeletal conditions.

The SEIFA summarises a number of socioeconomic attributes by location. These attributes include low income, low educational attainment, high unemployment, and jobs in relatively unskilled occupations. The index refers to the area (the census collector's district) in which a person lives; it does not describe the socioeconomic situation of a particular individual. SEIFA scores are categorised from quintile 1 (low index scores) to quintile 5 (high index scores), with quintile 1 referring to the most disadvantaged group and quintile 5 to the least disadvantaged group.

No noteworthy relationship exists between socioeconomic status and arthritis and musculoskeletal conditions as a whole among Australians aged 35 and over (Figure 2.9). However, at a more specific disease level, some association is discernible. The prevalence of rheumatoid arthritis declines with increasing SEIFA quintile. A similar picture emerges for self-reports of osteoporosis. However, osteoarthritis shows no regular pattern in its distribution by SEIFA.



The age-standardised rate ratios between the bottom and top SEIFA quintiles further confirm this variation in association between the socioeconomic status and the presence of arthritis and musculoskeletal conditions. While no difference was noted in prevalence between the top and bottom SEIFA quintiles for all musculoskeletal conditions pooled, the ratio was greater than 1.3 at a specific disease level.

Several different explanations have been offered for some of these associations. The disability associated with arthritis reduces the opportunities for employment and higher education, which, in turn, may contribute to less effective management (Morales-Torres et al. 1996). Lower socioeconomic status has also been linked with inactivity (Clark 1996) and obesity (WHO Scientific Group 2003), both established risk factors for certain types of arthritis.

There are conflicting reports regarding the association of various epidemiological features of rheumatoid arthritis with socioeconomic status. The disease is more prevalent in lower socioeconomic groups (Jacobi et al. 2003; Gordon & Hastings 2003). The socioeconomic status has also been linked with progression of the disease (Symmons 2003; Bankhead et al. 1996). The South Australian study has shown that the prevalence of rheumatoid arthritis is lowest among those with university education and highest among those leaving school before 15 years of age (Hill et al. 1999). The association between type of occupation and the risk of developing rheumatoid arthritis, however, has not been confirmed.

Country of birth

International comparisons suggest variation in the prevalence of arthritis and musculoskeletal conditions by country of birth (Ota 1979; Inoue et al. 2000; Wang et al. 2000). This variation may result from differing genetic and socio-demographic backgrounds. Some of this variation is also likely to be reflected within the Australian population, owing to its diverse racial and ethnic composition. On the other hand, common environmental factors may have blurred the known differences.

Not much difference is noted in the prevalence of arthritis and musculoskeletal conditions as a whole in Australia by country of birth (Table 2.7). The disease prevalence broadly reflects the composition of the Australian population. However, some differences are noted at a more specific disease level. Lower prevalence of rheumatoid arthritis is noted among persons born in Asia and Africa. No significant differences however exist for osteoarthritis and osteoporosis.

Table 2.7: Prevalence of arthritis or musculoskeletal condition by country of birth, ages 35 and over, 2001

Country of birth	Osteoarthritis		Rheumatoid arthritis		Osteoporosis		All musculoskeletal ^(a)		All people	
	Number '000	Per cent	Number '000	Per cent	Number '000	Per cent	Number '000	Per cent	Number '000	Per cent
Australia	970.6	72.3	290.2	73.4	222.4	74.8	3,296.1	70.6	6,535.5	68.1
New Zealand	20.5	1.5	5.3	1.3	2.8	0.9	79.2	1.7	199.9	2.1
Other Oceania	2.9	0.2	0.0	0.0	0.0	0.0	17.7	0.4	56.3	0.6
UK and Ireland	142.8	10.6	37.1	9.4	28.3	9.5	423.9	9.1	922.9	9.6
Other North/ West Europe	41.8	3.1	8.2	2.1	7.2	2.4	123.0	2.6	248.4	2.6
Southern and Eastern Europe	104.4	7.8	40.9	10.3	18.9	6.4	415.3	8.9	750.5	7.8
North Africa	7.4	0.6	2.3	0.6	1.8	0.6	20.5	0.4	44.9	0.5
Middle East	7.6	0.6	0.8	0.2	1.3	0.4	38.5	0.8	94.0	1.0
Other Africa	6.5	0.5	0.6	0.2	1.6	0.5	26.0	0.6	87.9	0.9
South East Asia	15.5	1.2	2.0	0.5	4.7	1.6	102.5	2.2	277.7	2.9
Other Asia	9.0	0.7	5.4	1.4	4.7	1.6	35.0	0.7	113.3	1.2
Americas	9.0	0.7	1.3	0.3	1.9	0.6	43.6	0.9	102.9	1.1
Other	4.9	0.4	1.3	0.3	1.8	0.6	49.7	1.1	162.1	1.7
Total	1,342.9	100.0	395.4	100.0	297.4	100.0	4,671.0	100.0	9,596.3	100.0

(a) Includes all arthritis and musculoskeletal conditions.

Note: The classification of country of birth is based on the Standard Australian Classifications of Countries (ABS 2004b).

Source: AIHW analysis of 2001 National Health Survey CURF.

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