Impairments and disability associated with arthritis and osteoporosis

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Impairments and disability associated with arthritis and osteoporosis

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Contents

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Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
CURF	confidentialised unit record file
HRQoL	health-related quality of life
ICF	International Classification of Functioning, Disability and Health
K10	Kessler 10-item Psychological Distress Scale
NHS	National Health Survey
SDAC	Survey of Disability, Ageing and Carers
WHO	World Health Organization

Key findings

This report describes the impairments and disability associated with arthritis and osteoporosis among Australians aged 35 years or over. These conditions are major contributors to disability through a variety of physical and functional impairments.

Physical impairments may include reduced mobility of joints, pain (acute or chronic) and body stiffness. Functional impairments are generally limitations or restrictions in carrying out everyday activities of daily living, working or participating in social activities. For arthritis the type and number of joints involved influences the type and severity of any impairments, whereas impairments associated with osteoporosis are mostly the result of fractures or fracture-related complications.

Number of people affected

Arthritis and osteoporosis are frequently reported long-term conditions, particularly among older Australians. These conditions are among the most common causes of disability in Australia.

- Self-reported data indicate that almost 3 million Australians (16%) have arthritis or a related disorder (such as gout), and almost 586,000 Australians (3%) have osteoporosis.
- There were an estimated 3.9 million Australians with disability (20% of the population) in 2003.
- Arthritis was the main disabling condition for 546,000 people with disability aged 35 years or over in 2003, while osteoporosis was the main disabling condition for 50,000 people of this age.
- More than one-quarter of people with arthritis- or osteoporosis-associated disability in 2003 were aged 75 years or over.
- Around 253,000 people with arthritis-associated disability and 12,000 people with osteoporosis-associated disability in 2003 were of working age (35–64 years).

Specific impairments

Disability associated with arthritis or osteoporosis is more commonly reported by females than males. The majority of people with disability associated with arthritis or osteoporosis require assistance with various activities of daily living.

- More than 30% of people with arthritis-associated disability and almost 45% of people with osteoporosis-associated disability report profound or severe core activity restrictions. These people are unable to do or always need help with one or more core activities of daily living, such as self-care or mobility.
- Almost 172,000 people with arthritis-associated disability and 10,000 with osteoporosis-associated disability have limitations relating to employment, such as restrictions in the type of job undertaken, difficulty in changing jobs or in getting a preferred job.
- Half of those people with arthritis-associated disability report difficulty in gripping or holding things. This can affect a range of basic daily activities including writing, turning taps or doorknobs, opening bottles and jars, preparing and eating meals, and brushing teeth and hair.

- Almost two-thirds of people with osteoporosis-associated disability require assistance when using public transport, and 40% require assistance with mobility outside their own home. This can reduce social participation and affect the ability to undertake everyday activities such as shopping or attending health services.

Effects on quality of life and self-assessed health

Physical or functional impairments are often a blow to self-esteem and self-image, affecting the quality of life. The quality of life of people with disability associated with arthritis or osteoporosis is generally poorer than that of people in the general community.

- People with disability associated with osteoporosis rated their health as fair or poor more frequently than those with disability associated with arthritis (52% compared with 40%).
- Poorer self-rated health was associated with the inability to do daily activities, and the presence of other long-term conditions such as hypertension, back problems, diabetes and asthma. These are issues commonly affecting people with arthritis and osteoporosis.

Improvement through intervention

The functional capacity and quality of life of people with disability can be improved through rehabilitation and modification of the physical environment. Interventions such as the use of assistive devices, home modifications, occupational modifications and help from family members can greatly reduce the impact of disability, allowing the person to maintain independence and reducing the need for nursing home care.

- Assistive devices are commonly used by people with disability to help with mobility, showering, toileting and meal preparation.
- Devices that assist with reaching or balance are frequently used by people with disability associated with osteoporosis. These include long-handled reachers, shoe horns, special brushes, grab bars and walking frames.
- People with disability associated with arthritis frequently use devices that assist with mobility. These include crutches, walking sticks, walking frames, wheelchairs, electric scooters and ejector chairs.
- Modifications to the toilet, bathroom or laundry (such as altering the height of the toilet or sink) were reported by 11% of people with disability associated with osteoporosis and 7% of those with disability associated with arthritis.
- Occupational changes, in particular the provision of special equipment by an employer, were more likely to be reported by people with disability associated with arthritis than by those with osteoporosis-associated disability.
- Many people with disability associated with arthritis or osteoporosis receive care and support from their family, especially those who require assistance with activities of daily living. This support is most likely to be provided by the person's spouse/partner, son or daughter.

1 Introduction

Arthritis and osteoporosis are significant contributors to disability, with almost 16% (in 2003) of Australians with a disability reporting one of the two to be their main disabling condition. These conditions not only limit a variety of activities of daily living but also impact upon the independence of affected persons, affect employment choices, and contribute to reduced quality of life.

Disability associated with arthritis and osteoporosis results from a variety of impairments. These include reduced mobility of joints, pain (acute or chronic) and body stiffness. In osteoarthritis, the most common form of arthritis, the hands, spine and weight-bearing joints such as hips, knees and feet are affected. Rheumatoid arthritis, another common form of arthritis, affects considerably more parts of the body including the hand joints, fingers, toes, wrists, knees, elbows and ankles. Impairments associated with osteoporosis are mostly the result of fractures or fracture-related complications. People with osteoporosis may sometimes experience chronic, ongoing pain, but this particular impairment is usually only prominent in people who have experienced spinal fractures.

This report provides an overview of the impairments and disability associated with arthritis and osteoporosis. Impairments leading to disability are described in terms of activity limitation, problems at work and social participation. A wide range of quality of life issues and adaptation methods are also reviewed. Quantifying these aspects helps to monitor poor health outcomes associated with arthritis and osteoporosis.

Structure of the report

This report considers a broad range of issues in describing disability associated with arthritis and osteoporosis. The introductory chapter discusses a theoretical framework, data sources and limitations, and provides two different views of the Australian population to put the report in context.

The structure of the remainder of the report is as follows:

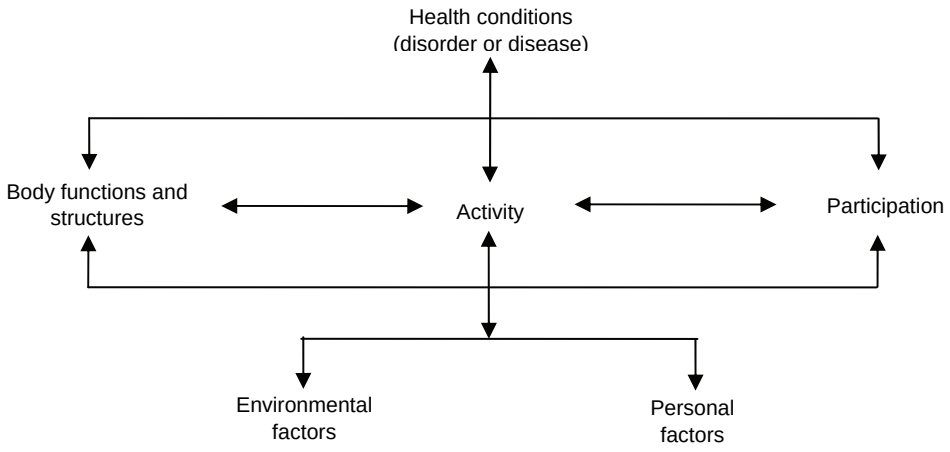
- Chapter 2 provides information about the sociodemographic characteristics of people with disability associated with arthritis or osteoporosis.
- Chapter 3 describes the various impairments relating to arthritis and osteoporosis, and their impact in terms of activity limitations, focusing on core activities of daily living, restriction in work and social participation.
- Chapter 4 covers a range of quality of life issues associated with arthritis and osteoporosis.
- Chapter 5 describes how people adapt to their situation, continue functioning, and maintain some degree of independence by using a range of equipment and environmental adjustments such as assistive devices, home modifications and occupational adjustments, and seeking support from family members.

Theoretical framework

Disability associated with arthritis and osteoporosis may be better understood by considering the International Classification of Functioning, Disability and Health (ICF) framework, developed by the World Health Organization (WHO 2001). The ICF provides a general, conceptual framework for human functioning, viewing disability as a multi-dimensional concept relating to body functions and structure, the activities people do and the life areas in which they participate (Figure 1.1). A range of environmental and personal factors affect these experiences. In the ICF, a person's functioning or disability is considered as a dynamic interaction between the health condition and environmental and personal factors.

The ICF has four major components (Box 1.1):

- body functions and structures
- activities
- participation
- environmental and personal factors.



Source: WHO 2001.

Figure 1.1: Interactions between various components of the ICF framework

These components can be operationalised in different ways. The first three can be used to describe neutral or positive aspects of health states, summarised under the term 'functioning', or as problems (impairments, activity limitations or participation restrictions), which are labelled as 'disability'. Factors under the fourth component can be described as either facilitators or barriers, to indicate the effect they have on a person's functioning. Personal factors relate more to the individual, for example, their age, gender or socioeconomic status. Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives.

Box 1.1: Definitions of various components of the International Classification of Functioning, Disability and Health (ICF) in the context of arthritis

***Body functions**: the physiological functions of body systems (including psychological functions).*

***Body structures**: anatomical parts of the body, such as organs, limbs and their components.*

***Impairments**: problems in body function and structure, such as significant deviation or loss. For example, pain, or reduced range or control of movement.*

***Activity**: the execution of a task or action by an individual.*

***Participation**: involvement in a life situation.*

***Activity limitations**: difficulties an individual may have in executing activities. For example, difficulties with bathing, cooking, or moving in and around the house.*

***Participation restrictions**: problems an individual may experience in involvement in life situations. For example, attending school or participating in recreational activities.*

***Environmental factors**: the physical, social and attitudinal environment in which people live and conduct their lives.*

Source: WHO 2001.

Operationalising disability

The ICF provides a good framework within which to relate impairments to activity limitations and participation restrictions (or disability). It links the impact of these limitations and restrictions to the context of the environment in which a person operates, and relates impairments to a health condition.

The Survey of Disability, Ageing and Carers (SDAC), conducted by the Australian Bureau of Statistics (ABS), generates information that can be used to identify diseases and conditions which contribute to disability. Five surveys have been conducted since 1981. The latest SDAC collected information from a sample of 41,200 respondents in 2003. Items within the SDAC relate to each of the ICF components, collecting data on health conditions, impairments, activity limitations, body functions and structures, and a range of environmental and personal factors.

In the SDAC, a person is considered to have a disability if he/she has at least one of 17 limitations, restrictions or impairments (listed in Box 1.2, also referred to as items) which has lasted or is likely to last for at least 6 months and which restricts everyday activities (ABS 2004). When a survey respondent states that they experience one or more of these items, they are then asked to provide details about health conditions they may have, how much personal assistance they require with specified tasks, whether this assistance is provided formally or informally, and whether they use aids or equipment for specified tasks.

Box 1.2: Limitations, restrictions or impairments identified in the Survey of Disability, Ageing and Carers, 2003

Affirmative responses to any of the following items, where the limitation, restriction or impairment has lasted or was likely to last for 6 months or more 'screen' the person into the survey:

- *loss of sight, not corrected by glasses or contact lenses*
- *loss of hearing, with difficulty communicating or use of aids*
- *speech difficulties (including speech loss)*
- *chronic or recurring pain or discomfort that restricts everyday activities*
- *shortness of breath or breathing difficulties that restrict everyday activities*
- *blackouts, fits, or loss of consciousness*
- *difficulty learning or understanding*
- *incomplete use of arms or fingers*
- *difficulty gripping or holding things*
- *incomplete use of feet or legs*
- *a nervous or emotional condition that restricts everyday activities*
- *restriction in physical activities or in doing physical work*
- *disfigurement or deformity*
- *head injury, stroke or any other brain damage with long-term effects that restrict everyday activities*
- *needing help or supervision because of a mental illness or condition*
- *receiving treatment or medication for any other long-term condition or ailment and still restricted in everyday activities*
- *any other long-term condition that restricts everyday activities.*

Source: ABS 2004.

The survey definition of disability is relatively broad, aiming to capture a broad range of people who have one or more impairments or limitations, or who have one or more conditions that restrict everyday life. Thus, the 17 items can be used as criteria to create the 'base' disability population with multidimensional disability experiences. Items relevant to arthritis and osteoporosis are:

- chronic or recurring pain or discomfort that restricts everyday activities
- incomplete use of arms or fingers
- difficulty gripping or holding things
- incomplete use of feet or legs
- restriction in physical activities or in doing physical work
- disfigurement or deformity.

The SDAC identifies both arthritis and osteoporosis as long-term conditions that contribute to impairments or activity limitations. Although the survey collected information on different forms of arthritis, these data are grouped in the confidentialised unit record file (CURF). Therefore, for analysis, no distinction can be made between different forms of arthritis, such as osteoarthritis and rheumatoid arthritis. These conditions are therefore collectively labelled as 'arthritis and related disorders'.

In addition to information on restrictions, impairments and limitations, the survey also provides information on respondents' current and future care needs, and the role of carers in providing assistance to reduce the impact of disability. Issues relating to the quality of life are also examined.

Disability data presented in this report

Respondents to the SDAC are asked to identify the health condition that causes them the most problems. This is referred to as the **main disabling condition**. It is not possible, based on the data collected in the SDAC, to relate various aspects of a person's disability to different causes. Neither is it possible to account for any disability due to arthritis or osteoporosis where the respondent did not identify one of these conditions as the one causing them the most problems. It is therefore likely that these data underestimate the true impact of arthritis and osteoporosis on disability.

In this report, disability-related data relate only to the main disabling condition. As arthritis and osteoporosis are problems generally associated with older age (with only small numbers below 35 years) all information is presented for people aged 35 years or over reporting disability associated with arthritis (that is, arthritis and related disorders) and osteoporosis.

Arthritis, osteoporosis and disability in the Australian population

The number of Australians reporting arthritis or osteoporosis as a long-term condition is much greater than those reporting disability associated with these conditions. This is to be expected because having arthritis or osteoporosis does not necessarily equate with disability. Putting the information about disability associated with arthritis and osteoporosis in the context of the overall prevalence of these conditions helps to illustrate the relative burden of disability among people with arthritis and osteoporosis, and to highlight the contribution of arthritis and osteoporosis to disability.

The analyses presented below are based on data from the 2004–05 National Health Survey (NHS) and 2003 Survey of Disability, Ageing and Carers (SDAC), both conducted by the Australian Bureau of Statistics. The information gained from these two surveys is different. Although both NHS and SDAC are based on self-reports, they employ different sampling strategies and survey methods.

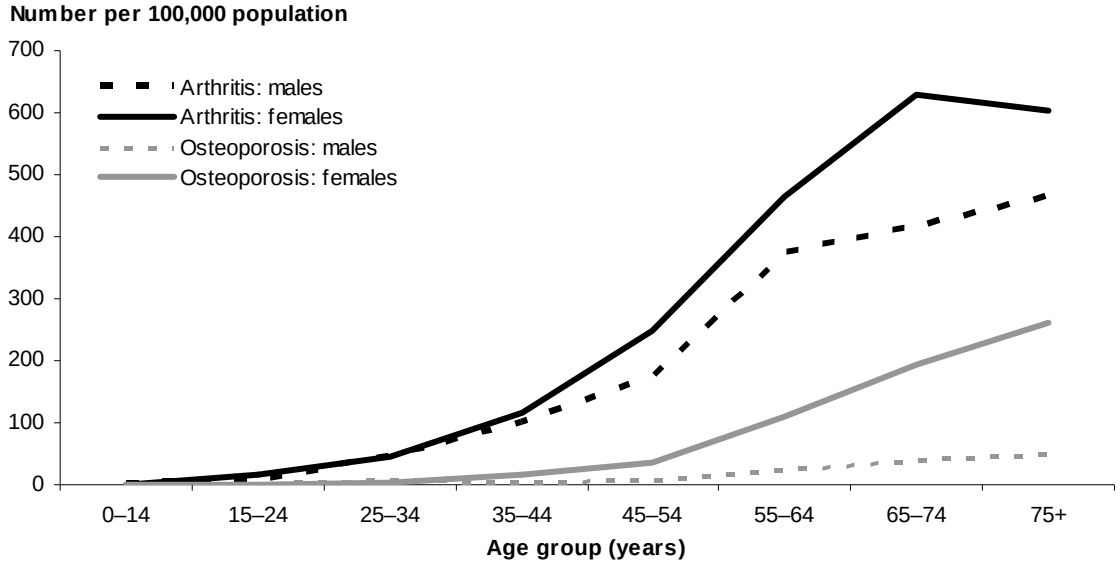
The purpose of NHS is to obtain information on the health status of Australians and their use of health services. The NHS provides information on arthritis and osteoporosis as long-term conditions, which may or may not be associated with disability. The SDAC, on the other hand, is focused on the extent of disability associated with long-term conditions such as arthritis and osteoporosis. The SDAC also generates information on the prevalence of these conditions long-term, but the SDAC data are more likely to be associated with an existing impairment or activity limitation than are NHS data. In addition, the SDAC includes people residing in non-private dwellings (institutions) such as aged-care homes and hospitals; the NHS does not (AIHW 2004a).

Prevalence of arthritis and osteoporosis

Almost 14% of respondents to the 2004–05 NHS reported arthritis as a long-term condition, meaning that it had lasted or was likely to last 6 months or more. This included mainly the conditions of osteoarthritis and rheumatoid arthritis. Another 2% reported that they had other arthropathies (such as gout) long-term. Combined, these data suggest that almost 3 million Australians had arthritis and related conditions in 2004–05.

Arthritis is reported more frequently by females than males (158 compared with 123 per 1,000 persons in 2004–05). It is also strongly age-related; the prevalence rate was 630 per 1,000 females aged 65–74, slightly declining to 603 per 1,000 among those aged 75 years or over. Corresponding rates among males were 416 and 463 per 1,000 (Figure 1.2).

An estimated 585,785 people had osteoporosis in 2004–05. Almost 79% were aged 55 years or over. Females reported osteoporosis four times as often as males (Figure 1.2).



Source: AIHW analysis of ABS 2004–05 National Health Survey CURF.

Figure 1.2: Age-specific prevalence of arthritis and osteoporosis, 2004–05

Although the prevalence of arthritis and osteoporosis reported above is long-term, the information provides limited insight into the severity of the conditions. Their association with disability is not fully recorded in the NHS. Information on psychological distress provides some insight into the extent of associated disability (details in Chapter 4).

Comorbidities also provide some insights into the extent of possible disability. While some of these associations are no more than that expected from the concurrence of age-dependent problems, others are more likely to occur because of similar underlying causes or risk factors. Hypertensive disease, deafness (total/partial) and asthma were the most commonly reported conditions among people with arthritis or osteoporosis (Table 1.1).

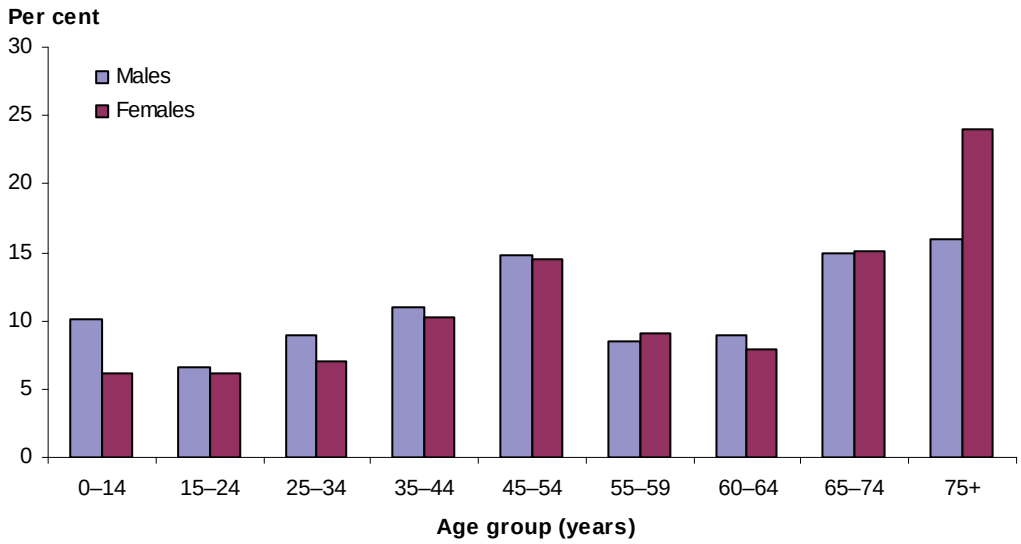
Table 1.1: Selected long-term conditions among people with arthritis or osteoporosis, 2004–05

	People reporting the condition	People with arthritis reporting the condition		People with osteoporosis reporting the condition	
Long-term condition	Number '000	Number '000	Per cent	Number '000	Per cent
Hypertensive disease	2,101	894	29.6	186	31.8
Total/partial deafness	2,014	747	24.7	158	26.9
Asthma	2,014	402	13.3	74	12.7
Diseases of genitourinary system	642	261	8.7	67	11.6
Diabetes mellitus	699	285	9.5	40	6.8
Heart disease (ischaemic heart disease and other diseases)	337	172	5.6	38	6.4
Depression	395	125	4.1	21	3.5

Source: AIHW analysis of the ABS 2004–05 National Health Survey CURF.

Prevalence of disability

There were an estimated 3.9 million Australians with disability (20% of the total population) in 2003. Disability, more common in females than males, varies with age (Figure 1.3). The prevalence is lower among adolescents than children. The rates begin to rise again for age groups 25–54 years. This is to be expected as people in this age group are at more risk: for example, young adult males in particular are at increased risk of injuries. People in the middle years may experience work-related injuries or the onset of certain long-term health conditions such as arthritis, cardiovascular disease, hearing loss or psychiatric conditions. The prevalence rates start to increase more sharply for people aged 65 years or over. Rates are higher for females than for males at all ages over 65.



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

Figure 1.3: Age and sex distribution of people with disability, 2003

People with disability usually report activity limitations. They are unable to do, have a need for assistance with, or have difficulty with activities such as self-care, mobility, communication, health care, housework, meal preparation, paperwork, property maintenance, transport and guidance. The majority (85%) of people with disability had specific restrictions, particularly in the areas of core activities (75%) and schooling or employment (10%).

Core activity restrictions are divided into three groups:

- self-care—bathing or showering, dressing, eating, using the toilet and managing incontinence
- mobility—moving around at home and away from home, getting into or out of a bed or chair, and using public transport
- communication—understanding and being understood by others (strangers, family and friends).

Not everyone reports the same level of disability. Depending on the nature and severity of the condition, the level of disability can range from profound or severe to mild. In 2003:

- an estimated 592,000 people had profound disability, meaning that they were unable to do, or always needed help with, one or more core activity.
- an estimated 646,000 people had severe disability. These people sometimes needed help with a core activity.
- an estimated 699,000 people had moderate disability, meaning they did not need assistance but had difficulty performing a core activity.
- an estimated 1,057,000 people had mild disability, meaning they had no difficulty performing a core activity but used aids or equipment because of their disability. These people were unable to:
  - walk 200 metres
  - walk up and down stairs without a handrail
  - easily bend to pick up an object from the floor
  - use public transport
  - use public transport without help or supervision.

Health conditions and disability

The amount and level of disability experienced varies with the type of health condition a person has. For example, heart disease is associated with difficulties in activities requiring endurance. Visual impairments can compromise the ability to perform many activities of daily living. Arthritis and osteoporosis on the other hand contribute to a greater amount of difficulty with physical functions, notably personal care and household care. In the 2003 SDAC, health conditions are reported in three different ways:

- long-term health condition: a disease or disorder that has lasted or is likely to last for at least 6 months. A person may report more than one long-term condition. In 2003, an estimated 5,876,000 people aged 35 years or over had at least one long-term condition, of whom 1,744,000 (30%) had arthritis and 333,000 (6%) had osteoporosis.
- main condition: the most prominent condition amongst the list of long-term conditions reported by a person. The main condition can cause some amount of discomfort, but may not be associated with impairment or restriction. An estimated 899,000 people aged

35 years or over reported arthritis and 98,000 reported osteoporosis as their main condition in 2003. These people however did not necessarily have any disability associated with their condition.

- main disabling condition: the condition that is responsible for the most disability. In 2003, an estimated 546,000 people aged 35 years or over had arthritis and 50,000 had osteoporosis as their main disabling condition. These people were restricted in their activities, and most of them needed some form of assistance.

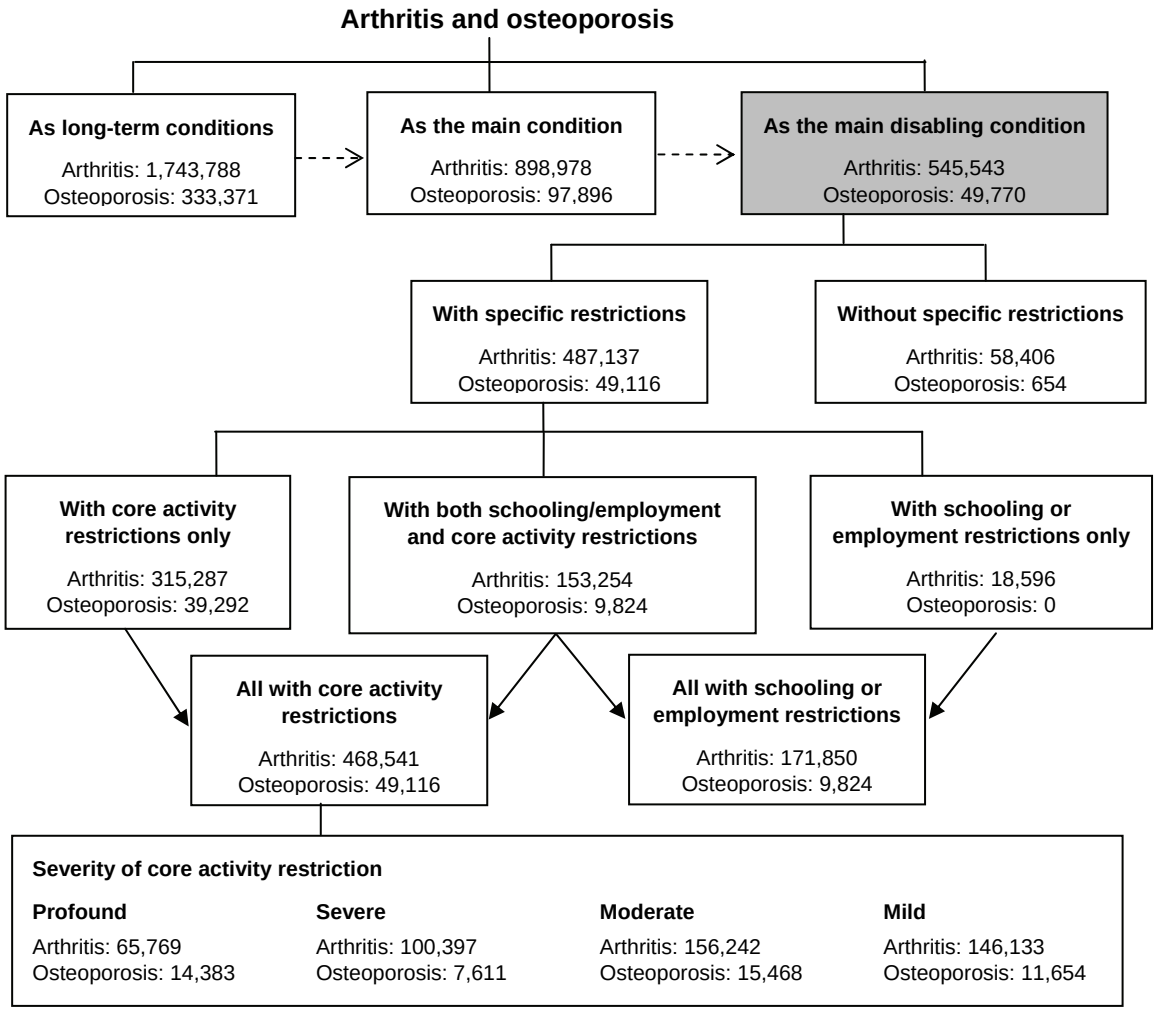
The remainder of this report focuses on people aged 35 years or over who reported arthritis or osteoporosis as their main disabling condition.

2 Disability associated with arthritis and osteoporosis

This chapter provides information on the extent of disability associated with arthritis and osteoporosis among Australians aged 35 years or over. Sociodemographic profiles of people with disability associated with these conditions are also included.

The progression of arthritis or osteoporosis and the experience of disability are affected by a variety of factors such as ageing, health care (access to and utilisation of medical, surgical and/or rehabilitative care) and health financing. Socioeconomic and environmental factors also affect the progression of disability in people with arthritis or osteoporosis.

Figure 2.1 shows the different ways arthritis and osteoporosis are reported in the 2003 Survey of Disability, Ageing and Carers (SDAC), and how this relates to the severity of core activity restrictions.



Note: The numbers given in the boxes are estimates based on the 2003 SDAC.

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

Figure 2.1: The role of arthritis and osteoporosis in core activity restrictions in the Survey of Disability, Ageing and Carers, people aged 35 years or over, 2003

People with disability associated with arthritis

In 2003, an estimated 545,543 people aged 35 years or over reported arthritis to be their main disabling condition (Figure 2.1). The majority (89%) of these people experienced specific restrictions: they required assistance in various activities of daily living such as self-care and mobility (described in Chapter 3). Around one in three reported schooling or employment restrictions, however, a large proportion of people were retired. More than 34% of those with specific restrictions reported profound or severe core activity restriction.

The age and sex profile of people with disability associated with arthritis is highly characteristic of the population with arthritis. Most are females aged 45 years or over. This age and sex distribution contrasts with that noted for people with disability in general (Table 2.1).

Table 2.1: Age and sex distribution of people with disability associated with arthritis, ages 35 years or over, 2003

	Disability associated with arthritis		People with disability (general)	
Demographic characteristic	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Gender				
Males	162.6	29.8	1,453.7	47.4
Females	382.9	70.2	1,611.2	52.6
Total	**545.5**	**100.0**	**3064.9**	**100.0**
Age group (years)				
35–44	28.6	5.2	418.5	13.7
45–54	76.7	14.1	578.8	18.9
55–64	147.7	27.1	677.1	22.1
65–74	144.3	26.5	592.3	19.3
75–84	111.2	20.4	564.7	18.4
85 or over	37.0	6.7	233.4	7.6
Total	**545.5**	**100.0**	**3,064.9**	**100.0**

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

The personal characteristics of people with disability associated with arthritis are quite similar to people with disability in general (Table 2.2). A relatively large number of people with disability associated with arthritis had grade 8 or less education. Most were in the low income bracket (that is, a weekly cash income of $130–$224). This is to be expected, as most of them were elderly people with no employment and mostly receiving a disability pension. It is also noteworthy that the proportion of people with disability associated with arthritis living in special dwellings was small, at 3%.

Table 2.2: Personal characteristics of people with disability associated with arthritis, ages 35 years or over, 2003

	Disability associated with arthritis		People with disability (general)	
Characteristic	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Marital status				
Married	332.4	60.9	1,737.4	56.7
Separated/divorced	65.4	11.9	477.6	15.5
Widowed	109.9	20.2	550.2	18.0
Never married	37.6	6.9	295.8	9.7
Not applicable	0.2	0.1	0.9	0.1
Educational level				
Year 8 or less	156.9	28.8	1,348.0	13.3
Secondary	191.8	35.2	3,678.0	36.3
Vocational/university	179.4	32.9	4,849.3	47.8
Not applicable	17.3	3.1	258.1	2.6
Total weekly cash income				
<$130	32.2	5.9	169.9	5.5
$130–$224	229.1	42.0	1,009.0	32.9
$225–$449	120.3	22.1	610.5	19.9
$450–$701	33.3	6.1	298.8	9.7
$702–$1,150	20.5	3.8	206.6	6.7
>$1,150	9.9	1.8	115.9	3.7
Not applicable	100.2	18.3	663.0	21.6
Dwelling type				
Private	517.2	94.8	2,794.9	91.2
Special	16.5	3.0	96.1	3.1
Not applicable	11.9	2.2	173.9	5.7
Country of birth				
Australia	356.3	65.3	2,160.5	70.5
Other English-speaking countries	82.2	15.1	368.2	12.0
Other countries	107.0	19.6	536.2	17.5
Area of residence				
Major cities of Australia	332.1	60.9	1,895.8	61.9
Inner regional Australia	140.4	25.7	742.6	24.2
Other areas	73.1	13.4	426.5	13.9

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

People with disability associated with osteoporosis

According to the 2003 SDAC, an estimated 49,770 people aged 35 years or over had osteoporosis as their main disabling condition in 2003 (Figure 2.1). Almost half of those with disability associated with osteoporosis had a severe or profound core activity limitation. These people could not do, or always needed assistance with, one or more activities of daily living, such as self-care or mobility (details in Chapter 3). People with osteoporosis were less likely to report schooling or employment restrictions. This is to be expected, as two-thirds are 65 years or older and are most likely to be retired.

Females outnumbered males (5:1) among those with disability associated with osteoporosis. The majority were aged 55 years or over (Table 2.3). The age and sex profile of people with disability associated with osteoporosis was very different from people with disability in general. Not only was the sex ratio more uneven (5:1 vs. 1:1) the age distribution was also more skewed towards the older age groups.

Table 2.3: Age and sex distribution of people with disability associated with osteoporosis, ages 35 years or over, 2003

	Disability associated with osteoporosis		People with disability (general)	
Demographic characteristic	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Gender				
Males	8.3	16.7	1,453.7	47.4
Females	41.5	83.3	1,611.2	52.6
Total	**49.8**	**100.0**	**3,064.9**	**100.0**
Age group (years)				
35–44	1.1	2.2	418.5	13.7
45–54	3.2	6.4	578.8	18.9
55–64	7.8	15.7	677.1	22.1
65–74	14.1	28.3	592.3	19.3
75–84	16.1	32.3	564.7	18.4
85 or over	7.5	15.1	233.4	7.6
Total	**49.8**	**100.0**	**3,064.9**	**100.0**

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

The general characteristics of people with disability associated with osteoporosis otherwise do not differ much from those people with disability in general (Table 2.4). People with disability associated with osteoporosis were more likely to be widowed. This is to be expected as most are older females and, because of higher female life expectancy, they are more likely to outlive their spouses/partners. The overall educational level of people with disability associated with osteoporosis was lower than people with disability in general, most of them reporting a grade 8 qualification. Most were in the low income bracket (that is, a weekly cash income between $130 and $224). This also is to be expected, as people with osteoporosis are mainly older people, less likely to be in the workforce.

Table 2.4: Personal characteristics of people with disability associated with osteoporosis, ages 35 years or over, 2003

	Disability associated with osteoporosis		People with disability (general)	
Characteristics	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Marital status				
Married	19.9	39.9	1,737.4	56.7
Separated/ divorced	7.2	14.7	477.6	15.5
Widowed	19.1	38.3	550.2	18.0
Never married	3.4	6.9	295.8	9.7
Not applicable	0.1	0.2	0.9	0.1
Educational level				
Year 8 or less	19.8	29.8	1,348.0	13.3
Secondary	17.5	35.1	3,678.0	36.3
Vocational/university	13.2	26.5	4,849.3	47.8
Not applicable	4.3	8.6	258.1	2.6
Total weekly cash income				
<$130	1.7	3.4	169.9	5.5
$130–$224	21.0	42.2	1,009.0	32.9
$225–$449	13.9	27.9	610.5	19.9
$450–$701	3.0	6.0	298.8	9.7
$702–$1,150	0.7	1.4	206.6	6.7
>$1,150	0.0	0.0	115.9	3.7
Not applicable	9.5	19.1	663.0	21.6
Dwelling type				
Private	44.9	90.2	2,794.9	91.2
Special	2.1	4.2	96.1	3.1
Not applicable	2.8	5.6	173.9	5.7
Country of birth				
Australia	37.8	75.9	2,160.5	70.5
Other English-speaking countries	2.3	4.7	368.2	12.0
Other countries	9.6	19.4	536.2	17.5
Area of residence				
Major cities of Australia	30.0	60.3	1,895.8	61.9
Inner regional Australia	12.9	25.9	742.6	24.2
Other areas	6.9	13.8	426.5	13.9

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

Summary

Arthritis and osteoporosis are associated with significant disability in people aged 35 years or over. Disability is more commonly reported by females than males. The majority experience specific restrictions, requiring assistance with various activities of daily living such as self-care and mobility. A small number of people with disability associated with arthritis report employment restrictions. More than 30% of people with disability associated with arthritis and almost half of those with disability associated with osteoporosis had a profound or severe core activity limitation. These people were unable to do, or always needed help with, one or more core activity.

3 Impairments and activity limitations

Disability associated with arthritis and osteoporosis mostly results from a variety of physical impairments that limit activities. Physical impairments may include limitation in manual performance, incomplete use of feet or legs, incomplete use of arms or fingers, disfigurement or deformity, and difficulty gripping or holding things. Pain is the central feature of many of these impairments. The resultant activity limitations are generally difficulties in carrying out everyday activities of living as well as working or participating in social activities.

This chapter provides an overview of impairments associated with arthritis and osteoporosis among people aged 35 years or over, and the resulting activity limitations. Functional limitations and restrictions in performing activities of daily living are also described and their impact upon employment and social participation is examined.

Physical impairments

Physical impairment leading to disability, as an outcome of arthritis or osteoporosis, may lead to a limitation in manual performance, incomplete use of body parts, and disfigurement and deformity. Not everyone, however, has the same type of impairment. The relationship between a condition and disability is complex and varies from condition to condition.

People with arthritis tend to have stiffness, particularly after periods of joint rest, which can inhibit spontaneous mobility. The typical pattern is one of stiffness on rising in the morning. As the disease progresses, the pain may become more severe and the body stiffer. Consequently, the capacity to perform many activities decreases. Routine activities (such as rising from bed in the morning; the ability to do housework, shop and prepare meals; walking long distances; using public transport; walking up and down stairs; bending to pick up an object from the floor; or managing medication and transportation) may all become limited to some degree. Chronic fatigue associated with physical deconditioning and other ill-understood factors is also prominent and may further limit function. In rheumatoid arthritis, in particular, the limitations may arrive soon after the onset of the disease and worsen with the passage of time, resulting in loss of independence (Young et al. 2000).

In the case of osteoporosis, disability mainly occurs after a fracture. The impairments and activity limitations after a fracture are highly variable, and in several cases long-term. The impact of certain osteoporotic fractures, such as hip fractures, may be severe, or even profound. About 40% of people are unable to walk independently 1 year after hip fracture, about 60% have difficulty with at least one essential activity of daily living, and about 80% are limited in activities such as driving and shopping (Cooper 1997). Almost 50% are likely to be permanently disabled and not regain their former independence (Johnell 1997).

Added to the physical impairments are the psychosocial problems caused by arthritis or osteoporosis. The limitations and restrictions imposed by the two conditions are a blow to a person's self-esteem and self-image. These limitations can be particularly discomfiting for young people.

Both environmental and personal factors can modify the experience of disability associated with arthritis or osteoporosis. For example, poor access to public buildings, difficult modes of transportation and workplace requirements can severely limit an affected person's ability to adjust to the newer circumstances. The ability to cope with chronic pain and disability will depend upon a variety of factors, including attitude towards illness, fear of deformity and

altered body image, fear of falling, and feelings about dependency and accepting help from others. There may also be consequences for the person's participation in work or leisure.

According to the 2003 Survey of Disability, Ageing and Carers (SDAC), the most common impairment associated with arthritis and osteoporosis is chronic or recurrent pain. One in two SDAC respondents with arthritis and more than one in four with osteoporosis also reported difficulty in gripping or holding things (Table 3.1). Another major upper body impairment reported was incomplete use of arms or fingers. Disfigurement or deformity caused by osteoporosis was greater than that caused by arthritis.

Table 3.1: Physical impairments associated with arthritis and osteoporosis, ages 35 years or over, 2003

	Arthritis		Osteoporosis	
Impairment/limitation	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Chronic or recurrent pain or discomfort	304.8	55.9	32.6	65.5
Difficulty gripping or holding things	272.7	50.0	14.3	28.7
Incomplete use of feet or legs	135.5	24.8	12.4	24.9
Incomplete use of arms or fingers	92.7	17.0	6.7	13.5
Disfigurement or deformity	15.6	2.9	4.4	8.8

Note: The proportions are based on the estimated number of people aged 35 years or over with disability associated with arthritis (545,543) and osteoporosis (49,770).

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

Activity limitations

The impairments associated with arthritis and osteoporosis affect peoples' ability to perform daily activities, to work and to participate in social activities. But not everyone with arthritis or osteoporosis is affected in the same way. The ability to function may worsen over time depending on the nature and severity of the condition. For example, in the case of arthritis, as the disease progresses, the pain may become more severe, the body stiffer, and the capacity to perform activities may decrease. The type and number of joints involved influences the severity of functional limitations. The limitations caused by osteoporosis mostly result from fractures or fracture-related complications; many may lose their independence after multiple fractures.

Activity limitations are mainly noticed in the areas of self-care (showering, toileting and dressing), or mobility (transferring from beds to chairs, and even walking around the house), referred to as activities of daily living (ADL). Some people may have difficulty doing housework, shopping, preparing meals, or managing medication and transportation. The level of activity limitation, however, depends on the nature and severity of the condition. Some may have greater difficulty performing these tasks, others may have moderate difficulty, while others may not have any difficulty at all except for walking long distances, using public transport, walking up and down stairs, or bending to pick up an object from the floor (ABS 2004). Many people would be able to overcome these limitations either by modifying their circumstances or adjusting to the newer situations.

In 2003, one-fifth of the Australian population, or about 4 million people, had a disability. More than 30% of these people (over 1.2 million) had severe or profound disability. Arthritis and osteoporosis were contributors to both the mild and severe ends of the spectrum of disability. The majority of people indicated limitations in one or more core activities.

However, most of these people, other than those aged 80 years or over, did not actually need assistance in undertaking these activities.

Self-care activities

Activity limitation was reported by people with arthritis in showering, eating, toileting and bladder/bowel control. A relatively small number of people required assistance with these activities of self-care (Table 3.2). Dressing, however, is one self-care activity where people with arthritis do require assistance more often. This is particularly the case for those aged 85 years or over.

Table 3.2: Need for assistance with self-care activities, people with disability associated with arthritis, ages 35 years or over, 2003

	Age group (years)					All aged 35
Activity requiring assistance	35–44	45–64	65–84	85+	Total	years or over
			Per cent			Number ('000)
Showering/bathing	10.1	5.2	7.3	33.8	**8.4**	45.8
Dressing	10.5	10.6	13.7	34.9	**13.7**	74.6
Eating	1.7	3.3	3.8	19.7	**4.6**	25.1
Toileting	6.3	0.9	2.7	16.8	**3.1**	16.8
Bladder/bowel control	0.0	0.4	2.2	23.0	**2.7**	15.0

Note: A person may need assistance with more than one activity.

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

People with osteoporosis required significantly more assistance with showering, eating, toileting and bladder/bowel control (Table 3.3). Dressing and showering/bathing were the self-care activities with which people required the most assistance.

Table 3.3: Need for assistance with self-care activities, people with disability associated with osteoporosis, ages 35 years or over, 2003

	Age group (years)					All aged 35
Activity requiring assistance	35–44	45–64	65–84	85+	Total	years or over
			Per cent			Number ('000)
Showering/bathing	0.0	0.0	10.9	50.0	**14.1**	7.0
Dressing	36.4	11.8	14.9	48.6	**19.7**	9.8
Eating	0.0	0.0	5.0	32.4	**7.8**	3.9
Toileting	0.0	0.0	8.6	27.0	**9.2**	4.6
Bladder/bowel control	0.0	5.5	4.6	35.1	**9.2**	4.6

Note: A person may need assistance with more than one activity.

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

Daily activities

A relatively larger proportion of people with disability associated with arthritis are unable to undertake property maintenance and health care without assistance (Table 3.4). The need for help increases with age, and is greatest among those aged 85 years or over.

Table 3.4: Need for assistance with daily activities, people with disability associated with arthritis, ages 35 years or over, 2003

	Age group (years)					All aged 35 years or over
Activity requiring assistance	35–44	45–64	65–84	85+	Total	
			Per cent			Number ('000)
Health care	30.1	41.4	65.9	82.2	**55.0**	300.2
Housework	25.9	36.5	45.7	59.5	**41.8**	228.1
Property maintenance	47.6	50.1	57.3	55.1	**53.7**	292.9
Paperwork	6.6	5.3	10.6	42.2	**10.4**	56.6
Meal preparation	11.2	7.7	11.9	29.5	**11.3**	61.8
Transportation	28.0	27.2	38.9	68.6	**35.6**	194.0

Note: A person may need assistance with more than one activity.

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

People with osteoporosis also mainly required assistance with property maintenance and health care. The need for assistance for health care was greatest among those aged 85 years or over, while for property maintenance it was greatest among those aged 35–44 years (Table 3.5).

Table 3.5: Need for assistance with daily activities, people with disability associated with osteoporosis, ages 35 years or over, 2003

	Age group (years)					All aged 35 years or over
Activity requiring assistance	35–44	45–64	65–84	85+	Total	
			Per cent			Number ('000)
Health care	100.0	70.0	62.7	100.0	**70.7**	35.2
Housework	100.0	75.5	58.7	64.9	**64.3**	32.0
Property maintenance	100.0	76.4	71.9	68.9	**73.1**	36.4
Paperwork	36.4	12.7	13.2	54.1	**19.7**	9.8
Meal preparation	0.0	10.9	7.9	25.7	**11.0**	5.5
Transportation	36.4	34.5	38.3	64.9	**41.4**	20.6

Note: A person may need assistance with more than one activity.

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

Mobility and transport

Mobility away from home is another activity in which older people with arthritis require assistance. People in older age groups are also likely to need assistance in moving about the house (Table 3.6). Those younger than 65 years are less likely to ask for assistance with mobility and transport.

Table 3.6: Need for assistance with mobility and transport, people with disability associated with arthritis, ages 35 years or over, 2003

Activity requiring assistance[a]	Age group (years)					All aged 35 years or over
	35–44	45–64	65–84	85+	Total	
			Per cent			Number ('000)
Using public transport	5.6	4.2	5.1	23.5	**6.0**	32.7
Mobility away from the home	18.5	10.8	21.1	76.2	**20.5**	111.7
Moving about the house	11.9	5.8	9.6	33.0	**9.7**	53.1
Transferring to and from bed[b]	19.2	10.2	8.6	29.2	**11.2**	61.3

(a) A person may need assistance in more than one activity.

(b) Transferring to and from bed or chair.

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

People with osteoporosis on the other hand require more assistance with using public transport and moving around outside the house (Table 3.7). Like people with arthritis, those younger than 65 years reporting osteoporosis are less likely to require assistance with mobility.

Table 3.7: Need for assistance with mobility and transport, people with disability associated with osteoporosis, ages 35 years or over, 2003

Activity requiring assistance[a]	Age group					All aged 35 years or over
	35–44	45–64	65–84	85+	Total	
			Per cent			Number ('000)
Using public transport	14.5	85.5	42.9	17.6	**65.7**	32.7
Mobility away from the home	36.4	30.9	33.7	82.4	**40.4**	20.1
Moving about the house	36.4	0.0	9.2	47.3	**13.5**	6.7
Transferring to and from bed[b]	36.4	4.5	13.9	58.1	**18.9**	9.4

(a) A person may need assistance in more than one activity.

(b) Transferring to and from bed or chair.

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

Participation in work

Arthritis and musculoskeletal conditions are frequently associated with work loss (Kraus et al. 1996). They have a major impact on the capacity to work or gain employment. Many working-aged people may not able to continue working at the same level as they would have if they had not developed the disease or condition; many others need to adapt to new circumstances such as workplace modifications to accommodate changes in bones or joints. An adverse outcome may be reduced work hours or an inability to work outside the home (Reisine et al. 1995). Some people may need to change jobs (Cunningham & Kelsey 1984).

Work disabilities associated with arthritis are diverse; they include issues with mobility, manual dexterity, fatigue and depression. External contributing factors include the physical demands of the job, the ability to control the pace of work, and difficulty in managing their transport needs. Many personal and environmental factors have the potential for modification, indicating that early management and attention to the workplace environment should reduce this form of work disability.

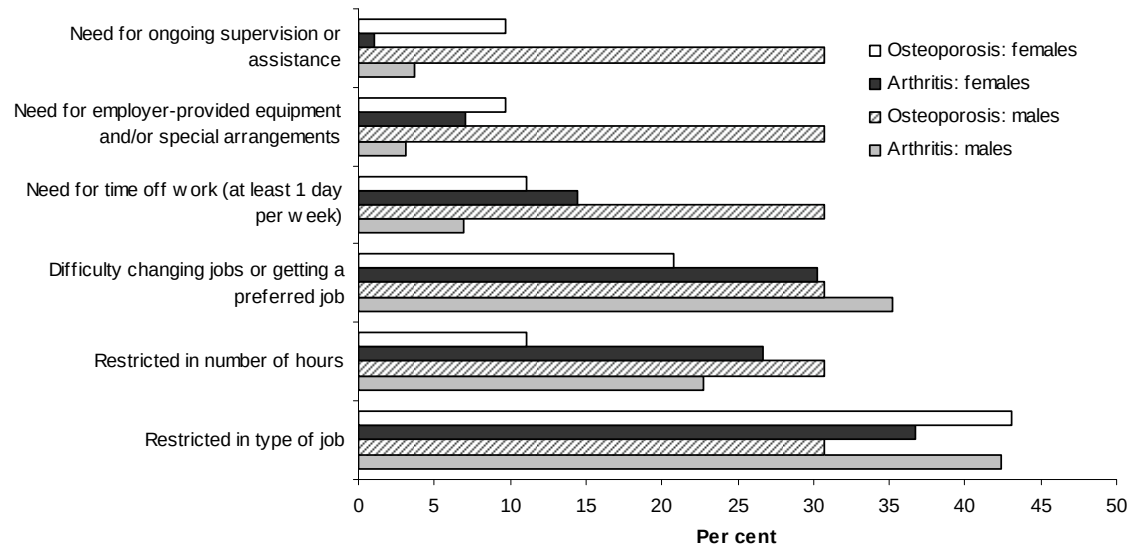
People with certain types of arthritis are more at risk of work disability than others. Those with rheumatoid arthritis are at risk from the onset of their symptoms (Sokka 2003). With osteoarthritis, work disability is common after the age of 50 (Lawrence et al. 1998).

Osteoporotic fractures, mainly hip fractures, may result in permanent or temporary loss of working ability. Hip fractures are a common cause of needing a disability pension (Wolf 2005), with up to a third of people with hip fractures becoming totally dependent, and many needing institutional care.

According to the 2003 SDAC, more than 2.2 million Australians of working age (15–64 years) had a disability. Among people with disability aged 35–64 years, 252,995 reported arthritis and 12,109 reported osteoporosis as their main disabling condition. More than one-third of these people were permanently unable to work. On the other hand, about 31% of people aged 35–64 years with disability associated with arthritis and 19% with osteoporosis had no employment restrictions (though they may have had core activity restrictions). The remainder reported several employment restrictions, as described below.

Types of employment restrictions

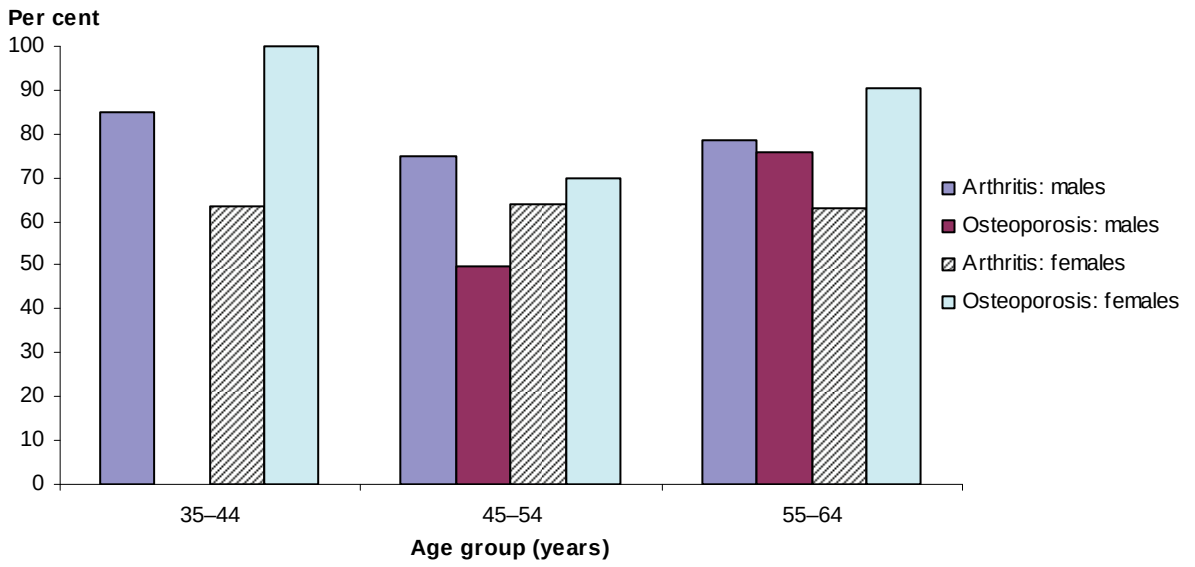
More than 40% of the 2003 SDAC respondents with arthritis or osteoporosis felt that they were restricted in the type of job they could do. A similar proportion felt that they had difficulty changing jobs or getting a preferred job. All these difficulties had an effect on their continued employment. One out of four respondents was restricted in the number of hours he or she could work; many needed time off work. A small proportion felt the need for ongoing supervision or assistance (Figure 3.1).



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

Figure 3.1: Types of employment restrictions associated with arthritis and osteoporosis, people aged 35–64 years, 2003

Proportionately more males than females with arthritis had employment restrictions (Figure 3.2). This could be related to the greater number of males in the workforce. Although no clear age-specific pattern was noted in these restrictions, younger females with osteoporosis reported the most restriction.



Note: There were no males aged 35–44 years with disability associated with osteoporosis.

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

Figure 3.2: Proportion of people with disability associated with arthritis or osteoporosis who have employment restrictions, ages 35–64 years, 2003

Participation in social activities

Arthritis has a considerable impact on social participation (Arthritis Australia 2004). Emotional distress arising from high physical disability is reported to be the most important factor in low social participation (Fyrand et al. 2002).

There is much variation in the extent to which people with arthritis or a specific type of musculoskeletal condition can participate socially. People with rheumatoid arthritis are generally more restricted. As rheumatoid arthritis progresses, it takes a considerable toll on the ability of those affected to perform valued life activities. Several studies report the negative influence that the disease has on social participation within the first few years of its onset (van Jaarsveld et al. 1998).

People with osteoporosis may be more restricted after a hip fracture because of fracture-related complications. Limitation in physical activity related to spinal deformity and hip fracture lead to activity limitation and decreased participation in recreational activities, which in turn may result in social isolation (Geusens 2003).

Although the majority of people with arthritis- or osteoporosis-associated disability had limitations in activities of daily living, most were able to participate in social and cultural activities and could go out of their house as often they wanted to (Table 3.8). Those who were able to go out were most likely to visit friends or go to restaurants or clubs. One-third of respondents, however, were unable to go out as often as they wished; almost 1% did not leave home at all.

Table 3.8: Participation in social activities among people with disability associated with arthritis, ages 35 years or over, 2003

	Males		Females		Persons	
Level of participation	**Number '000**	**Per cent**	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Can go out as often as would like	117.0	72.0	253.1	66.1	370.1	67.8
Can not go out as often as would like because of the condition	40.6	25.0	116.7	30.5	157.3	28.8
Does not leave home at all	2.9	1.8	1.3	0.3	4.2	0.8
Not applicable	2.2	1.4	11.8	3.1	14.0	2.6

Note: The proportions are based on the estimated number of people aged 35 years or over with disability associated with arthritis (545,543).
Source: AIHW analysis of ABS 2003 Survey of Disability, Ageing and Carers CURF.

A similar pattern is observed for people with osteoporosis. The majority were able to participate in social and cultural activities, but almost 5% were severely restricted, not being able to leave home at all (Table 3.9).

Table 3.9: Participation in social activities among people with disability associated with osteoporosis, ages 35 years or over, 2003

	Males		Females		Persons	
Level of participation	**Number '000**	**Per cent**	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Can go out as often as would like	4.8	51.8	22.5	54.2	27.3	54.8
Can not go out as often as would like because of the condition	3.4	41.0	14.0	33.7	17.4	34.9
Does not leave home at all	0.0	0.0	2.3	5.5	2.3	4.6
Not applicable	0.1	1.2	2.6	6.3	2.7	5.4

Note: The proportions are based on the estimated number of people aged 35 years or over with disability associated with osteoporosis (49,770).
Source: AIHW analysis of ABS 2003 Survey of Disability, Ageing and Carers CURF.

Summary

Disability associated with arthritis or osteoporosis may include a variety of physical impairments as well as activity limitations. The most commonly reported physical impairments were chronic or recurrent pain, difficulty gripping or holding things, and incomplete use of arms or fingers.

Because of their disability, people with arthritis or osteoporosis mainly require assistance with self-care activities such as dressing and showering/bathing. They also require assistance with mobility, using public transport and moving around outside the house.

Participation in work was a common problem, particularly among people with arthritis. These people were restricted in the type of job they could do and had difficulty changing jobs or getting a preferred job.

The physical impairments and activity limitations associated with arthritis or osteoporosis also have a considerable impact on social participation. Emotional distress arising from high physical disability is likely to be the main reason for low social participation, leading to

social isolation in severe cases. People with osteoporosis are likely to be worse off after a hip fracture or fracture-related complications. Many require high-level care and may lose their independence.

4 Health-related quality of life

The impairments and activity limitations associated with arthritis and osteoporosis affect not only a person's day-to-day activities but also their quality of life. Arthritis and musculoskeletal conditions are ranked third after ischaemic heart disease and stroke in their impact on quality of life (Reginster & Khaltaev 2002). Several studies have recorded differences in the impact of arthritis and osteoporosis on the quality of life of people who have these conditions.

Arthritis is associated with limitations, and forces life-altering changes for many people living with the disease. Daily pain, stiffness and fatigue substantially affect function. Chronic pain associated with arthritis also has a psychological impact; people may experience negative emotional states, anxiety and depression, and feelings of helplessness (Keefe & Bonk 1999). Large differences in quality of life are noted with different forms of arthritis. Those with osteoarthritis report lower quality of life (Hill et al. 1999) and suffer from anxiety, depression and a sense of helplessness (Keefe et al. 2002; Creamer et al. 1999). Rheumatoid arthritis, on the other hand, has a substantial impact owing to its painful and disabling nature. It impinges significantly on comfort, physical function, social and emotional relationships and mental health (Hill et al. 1999; Rupp et al. 2004). Between 20% and 25% of people with severely disabling rheumatoid arthritis are affected by anxiety and depression (Dickens et al. 2003).

With osteoporosis, the decreased physical, psychological and social functioning after fracture has a significant impact on the overall quality of life (Gold 2001). For people with hip fractures in particular, the quality of life is significantly lower than normal in regard to physical functioning and roles, as well as social participation, for up to 2 years after the event (Hallberg et al. 2004).

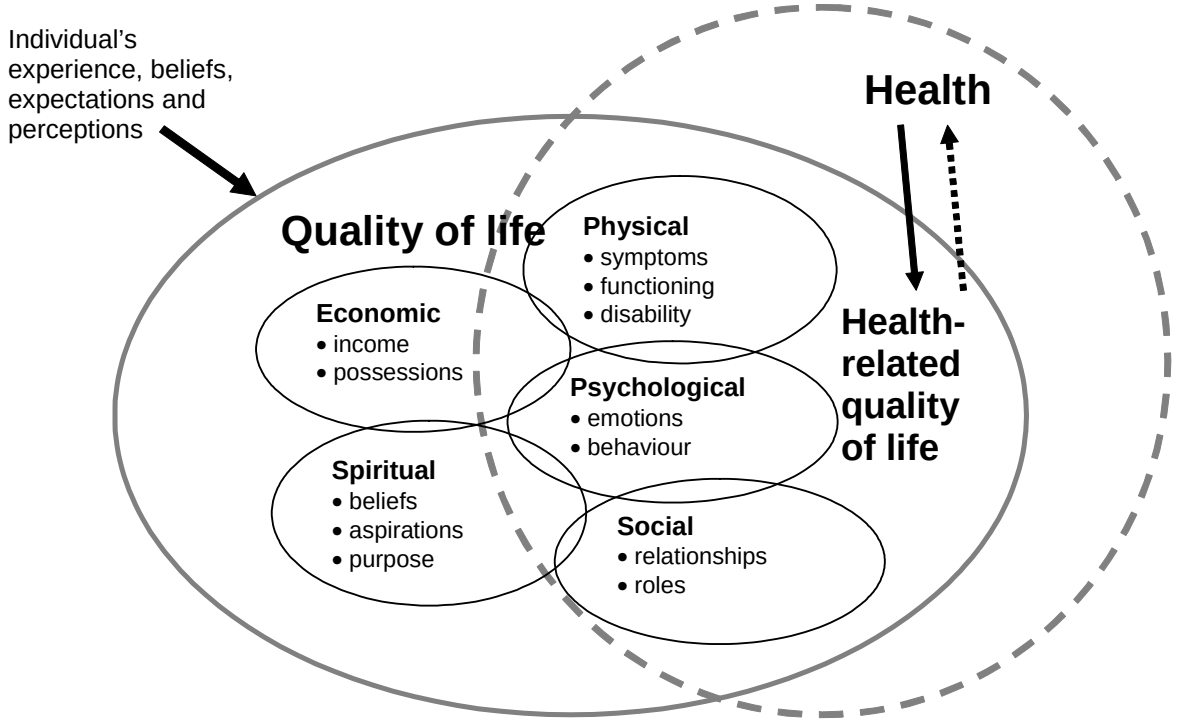
Other factors in conjunction with arthritis and osteoporosis may also affect the quality of life. As most of the people with arthritis or osteoporosis are older, they are likely to have other long-term health conditions such as glaucoma, hearing loss, vision loss and heart disease. The presence of multiple conditions may affect their quality of life and give them a poor perception of their health status.

This chapter provides an overview of the health-related quality of life of people with disability associated with arthritis or osteoporosis. The overall impact is summarised using the measures of life satisfaction, psychological effects and self-perceived health status. Life satisfaction, a measure of overall wellbeing, can also be considered a measure of the global domain of health-related quality of life. Health-related quality of life is also summarised in terms of the impact of disability associated with arthritis and osteoporosis on self-perceived health status. The impact of other comorbidities on self-perceived health status is also highlighted. Data on these issues are derived from the 2004–05 National Health Survey and the 2003 Survey of Disability, Ageing and Carers.

QoL and HRQoL

'Quality of life' (QoL) is a subjective concept based on a person's perception of the effect of events and experiences on their life. It includes their satisfaction or happiness with life in important areas (American Thoracic Society 2004). A conceptual framework operationalising QoL would thus cover a variety of domains, including health perceptions, pain, energy/fatigue, loss of functional capacity and psychological wellbeing (AIHW 2005). It is,

however, different from **health-related quality of life** (HRQoL) which represents overall quality of life as affected by health status (Juniper 2001). The focus areas of HRQoL are the physical, psychological and social domains of life. Although there are no direct measures of quality of life, the physical, psychological and social domains are considered relevant to quality of life (Testa & Simonson 1996). Figure 4.1 illustrates the interrelationships between QoL, the domains of quality of life and HRQoL. According to this model, the physical domain measures symptoms, physical functioning and disability; the psychological domain covers positive and negative emotions and behaviour. The person's relationships and roles, including work, and leisure are all measured in the social domain.



Source: Adapted from Australian Centre for Asthma Monitoring 2004.

Figure 4.1: The interrelationships between health, quality of life and health-related quality of life

Aspects of HRQoL

Using the 2001 National Health Survey, the correlation between life satisfaction, self-perceived health status and grouped psychological effects (low, moderate, high and very high psychological distress) were examined. The correlations between the variables ranged from medium (0.33 for self-perceived health status and grouped psychological effects) to high (0.69 for life satisfaction and self-perceived health status). This means that these three variables measure similar yet not identical concepts relating to health-related quality of life. The effect of arthritis, osteoporosis and related disability on each of these concepts is described below.

Life satisfaction

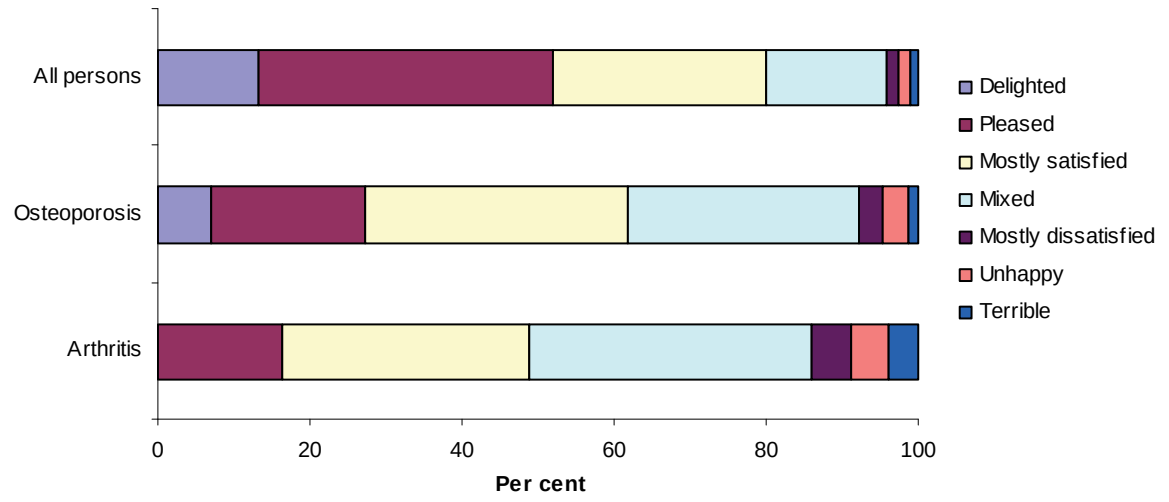
People with arthritis report more physically and/or mentally unhealthy days than those without arthritis (Mili et al. 2003). Different types of arthritis have different effects:

osteoarthritis of the hip, osteoporosis and rheumatoid arthritis affect quality of life more severely than other conditions (Picavet & Hoeymans 2004).

Information on satisfaction with life among people with arthritis or osteoporosis was derived from the quality of life measure in the 2001 NHS –'*The Delighted–Terrible Scale*' (Andrews & Withy 1987). The 2004–05 NHS did not collect information in this area. This is a seven-point scale that provides a general indicator of satisfaction with life. In the 2001 NHS, adult respondents were asked to choose from seven options in response to the question 'How do you feel about your life as a whole, taking into account what has happened in the last year, and what you expect to happen in the future?'. The response options were:

- 1 – Delighted
- 2 – Pleased
- 3 – Mostly satisfied
- 4 – Mixed
- 5 – Mostly dissatisfied
- 6 – Unhappy
- 7 – Terrible

The majority of people with arthritis or osteoporosis reported being mostly satisfied or pleased with their life, but were less likely to be satisfied compared with the general population. Those with osteoporosis were somewhat more satisfied with their life than those with arthritis (Figure 4.2). A relatively large proportion of people with arthritis were dissatisfied with their life. This may be associated with the presence of various debilitating forms of arthritis, such as rheumatoid arthritis. The loss of independence, including an inability to work, is higher in people with rheumatoid arthritis, as functional limitations occur soon after the onset of the disease and worsen with the passage of time.



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

Figure 4.2: Life satisfaction in people with arthritis or osteoporosis, 2001

Psychological effects

The pervasive nature of arthritis and osteoporosis, in conjunction with chronic pain, can have a profound psychological impact on those living with the disease. People living with persistent pain are four times more likely than those without pain to suffer from depression or anxiety and more than twice as likely to have difficulty working (Gureje et al. 1998).

Data on the distribution of psychological problems among people reporting arthritis or osteoporosis is derived from the Kessler Psychological Distress Scale (K10) on the 2004–05 NHS. The K10 is a 10-item scale yielding a measure of psychological distress based on questions about negative emotional states experienced in the 4 weeks prior to interview. It contains low- through to high-threshold items. For each item, there is a five-level response scale based on the amount of time that a respondent experienced the particular problem. The response options were none of the time, a little of the time, some of the time, most of the time, and all of the time. Each item was scored from 1 (for none of the time) to 5 (for all of the time). Scores for the 10 items were summed, with high scores indicating high levels of psychological distress, which may indicate a need for professional help. The scores were grouped as follows:

- low (scores of 10–15, indicating little or no psychological distress);
- moderate (scores of 16–21);
- high (scores of 22–29); and
- very high (scores of 30–50, indicating very high levels of psychological distress).

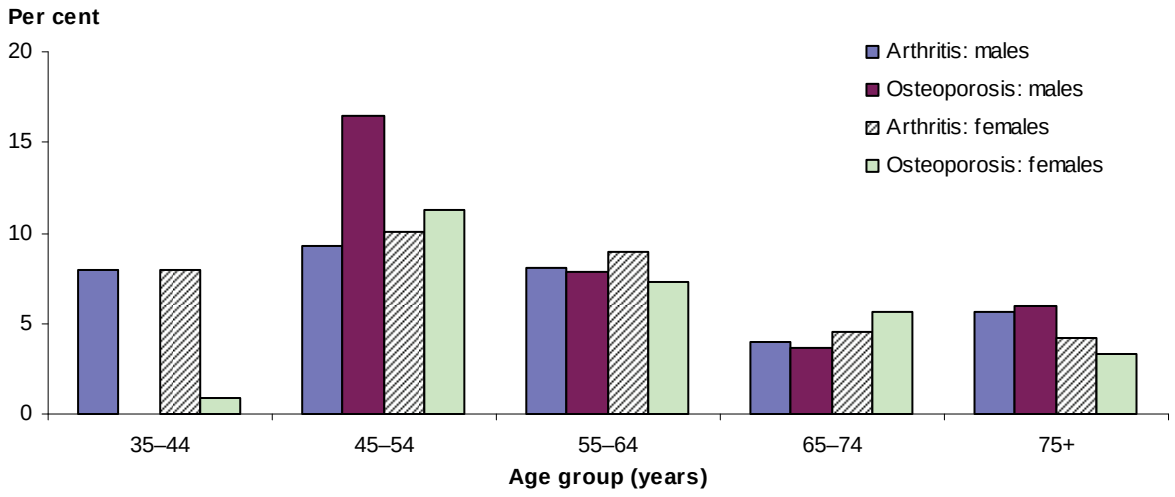
A very high level of psychological distress was reported more often by people with arthritis than those with osteoporosis. Similar proportions of males and females reported a high or very high level of psychological distress in association with arthritis, but comparatively more males with osteoporosis reported a very high level of psychological distress (Table 4.1). No information on psychological distress experienced by people with disability associated with arthritis or osteoporosis is available at the national level.

Table 4.1: Psychological distress associated with arthritis or osteoporosis, people aged 35 years or over, 2004–05

	Arthritis				Osteoporosis				Total population			
	Low	Moderate	High	Very high	Low	Moderate	High	Very high	Low	Moderate	High	Very high
	Per cent											
Males	58.5	21.7	12.8	7.0	44.7	31.1	17.5	6.6	68.6	20.4	7.3	3.7
Females	53.8	25.9	14.0	6.3	57.8	23.7	12.8	5.6	62.3	23.1	9.9	4.7
Total	**55.7**	**24.2**	**13.5**	**6.6**	**55.9**	**24.8**	**13.5**	**5.8**	**65.4**	**21.8**	**8.6**	**4.2**

Source: AIHW analysis of ABS 2004–05 National Health Survey CURF.

A very high level of psychological distress was most frequently recorded among people aged 45 years or over in association with arthritis or osteoporosis (Figure 4.3). Females reporting arthritis recorded higher rates than males across all ages except in the 45–64 age groups, whereas a high level of psychological distress was highly reported by 45–74-year-old males with osteoporosis.



Note: There were no males aged 35–44 years with disability associated with osteoporosis.

Source: AIHW analysis of ABS 2004–05 National Health Survey CURF.

Figure 4.3: Very high levels of psychological distress among people with arthritis or osteoporosis, ages 35 years or over, 2004–05

Self-reported health status

The chronic, debilitating nature of arthritis and osteoporosis is also likely to strongly affect the person's perception of their own health. Data from the 2004–05 NHS show that people with arthritis or osteoporosis were more likely to rate their health as fair or poor compared with the general population (Table 4.2). People with osteoporosis are more likely to report their health as poor compared with those with arthritis.

Table 4.2: Self-reported health status among people with arthritis or osteoporosis, ages 35 years or over, 2004–05

Status	Arthritis	Osteoporosis	Total population
		Per cent	
Excellent/ very good	32.3	30.0	50.6
Good	31.0	29.5	28.9
Fair	23.6	26.1	14.2
Poor	13.0	14.3	6.2

Note: People in nursing homes and hostels were not included in the survey.

Source: AIHW analysis of ABS 2004–05 National Health Survey CURF.

The distribution of responses was similar for both sexes but varied considerably by age. The proportion of people with arthritis or osteoporosis reporting poor health increased with age. Those reporting their health as fair were also most frequently aged 65 years or over. People between the ages of 35 and 54 years, mainly females with osteoporosis, were more likely to report very good health.

Disability and self-reported health status

People with a disability are more likely to report lower levels of health than the general population because of their impairments and activity limitations (AIHW 2004b). Perceptions of health may also be affected by the presence of other long-term health conditions.

According to the 2003 SDAC, people with disability associated with arthritis or osteoporosis were less likely than people without disability to report that their health was excellent or very good (Table 4.3). People with disability associated with osteoporosis were more likely to report fair or poor health than either people with arthritis-associated disability or people with disability in general. This is to be expected as people with osteoporosis, in particular after hip fracture, experience loss of independence; many may be permanently disabled and not regain their former independence. Studies indicate that while about a third of people older than 65 years fall once or more each year, the consequences can be more far reaching than just any injury caused. About 50% of people who fall are frightened that they will fall again, and 25% of people who fall develop a psychological reaction, sometimes referred to as 'post-fall syndrome' (Fromage 2005). This causes a decrease in activity, disturbance in gait and an increased dependency (Fletcher & Hirdes 2004).

Table 4.3: Self-perceived health status among people with disability associated with arthritis or osteoporosis, ages 35 years or over, 2003

Status	Arthritis-associated disability	Osteoporosis-associated disability	People with disability (general)	People without disability
		Per cent		
Excellent/ very good	19.9	9.6	21.0	44.2
Good	29.1	25.6	29.9	30.9
Fair	32.1	39.8	25.4	15.7
Poor	8.2	11.9	9.7	6.1

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

The distribution of responses for both conditions was similar in the two sexes but varied considerably by age group. Older people reported their health to be only fair more often, particularly those in the 55–64 and 75–84 year age groups.

Specific limitations and self-reported health status

People with disability associated with arthritis or osteoporosis reporting fair or poor health may do so as a result of certain specific limitations (Table 4.4). According to the 2003 SDAC, lower perception of health in people with disability associated with arthritis was most likely due to limitations in performing regular activities. Pain had the least impact on self-assessed health in both conditions.

Table 4.4: Proportion of people with specific limitations reporting fair or poor health, by main cause of disability, ages 35 years or over, 2003

Limitations	Arthritis-associated disability	Osteoporosis-associated disability	People with disability (general)
		Per cent	
Accomplished less because of physical health	29.4	46.2	24.3
Limited in climbing stairs	26.5	33.0	24.5
Limited in moderate activities	23.8	38.8	20.6
Pain interfered with work	5.1	9.2	3.5
Limited in kind of work or regular activities	33.3	46.9	17.0

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

Associated long-term conditions

Being mostly elderly, people with disability associated with arthritis or osteoporosis are often predisposed to many other diseases and conditions such as heart and vascular diseases, Type 2 diabetes, respiratory and infectious diseases, and gastrointestinal disorders (Scott & Hochberg 1998). Some of these associations are no more than that expected from the concurrence of age-dependent problems. In other long-term conditions, the comorbidities are more likely to occur together because of similar underlying disease processes or the presence of common risk factors.

The 2003 SDAC data indicate the presence of hypertension, back problems, diabetes and asthma each in more than one out of 10 respondents who had arthritis or osteoporosis as their main disabling condition (Table 4.5). The majority of long-term conditions were more commonly reported by people with disability associated with osteoporosis.

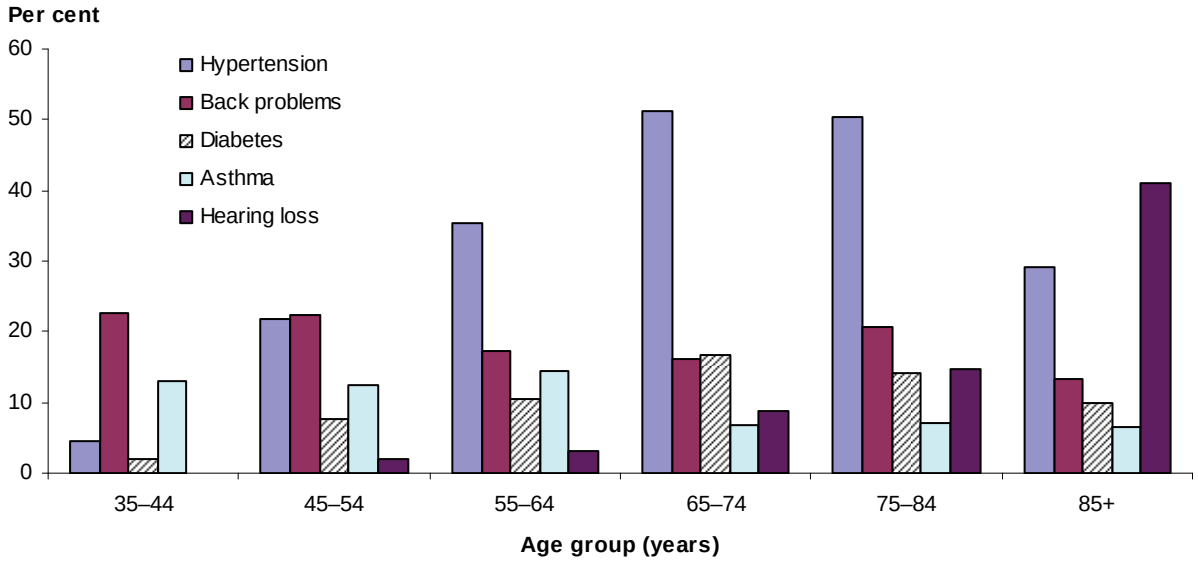
Table 4.5: Other long-term conditions reported by people with disability associated with arthritis or osteoporosis, ages 35 years or over, 2003

Long-term conditions	Arthritis as the main disabling condition		Osteoporosis as the main disabling condition	
	Number '000	Per cent	Number '000	Per cent
Hypertension	211.0	38.7	14.9	29.9
Back problems	100.5	18.4	14.5	29.1
Diabetes	65.8	12.1	6.9	13.9
Asthma	54.8	10.0	6.2	12.4
Total hearing loss	50.3	9.2	9.4	18.9
Stroke	34.5	6.3	5.6	11.2
Depression	30.5	5.6	2.4	4.8
Heart disease	24.1	4.4	2.8	5.6
Total vision	10.6	1.9	0.1	0.2
Glaucoma	8.5	1.6	0.4	0.8
Dementia	3.3	0.6	0.6	1.2

Note: Proportions are based on the estimated number of people aged 35 years or over with disability associated with arthritis (545,543) or osteoporosis (49,770).

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

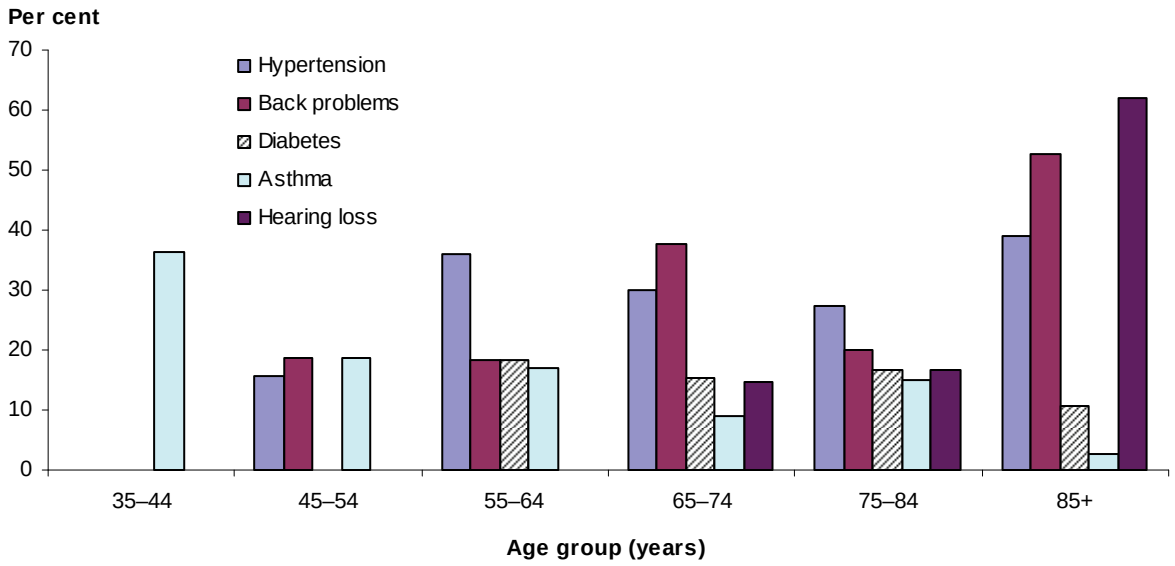
The coexistence of long-term conditions in people with disability associated with arthritis or osteoporosis varied by sex and age. Females with disability associated with arthritis were more likely than males to report hypertension and asthma, whereas back problems and diabetes were more commonly reported by males. The proportion with hearing loss was similar in both males and females. Prevalence of hypertension decreased slightly with age, reported mostly among 65–84 year olds. Back problems were common among 35–54-year-olds, declining thereafter. Hearing loss was a common problem among people aged 85 years or over (Figure 4.4).



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

Figure 4.4: Long-term conditions reported by people with disability associated with arthritis, ages 35 years or over, 2003

Variation is also noted among people with disability associated with osteoporosis. Hypertension and diabetes were more likely to be reported by males, whereas back problems, hearing loss and asthma were more prominent among females (Figure 4.5). Results for people reporting hypertension, back problems and hearing loss show a similar pattern, with the prevalence increasing with age. Prevalence of diabetes was highest among 55–64 year olds, declining thereafter.



Note: Missing bars in the 35–44 and 45–54 years age groups indicate there were no cases of these conditions among people of this age with disability associated with osteoporosis.

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

Figure 4.5: Long-term conditions reported by people with disability associated with osteoporosis, ages 35 years or over, 2003

Associated long-term conditions and self-reported health status

Some of the long-term health conditions mentioned above contribute to a greater level of difficulty in physical functions, personal care and household care—limitations and restrictions generally associated with arthritis and osteoporosis. The increased deficit is in physical functions such as walking, reaching, stooping, etc., and in physical work that requires endurance and strength. For example, heart disease is associated with difficulties in activities requiring endurance. Similarly, visual impairments can compromise the ability to perform many activities of daily living. The presence of multiple conditions is also likely to be associated with poor health status, resulting in more severe experience of disability.

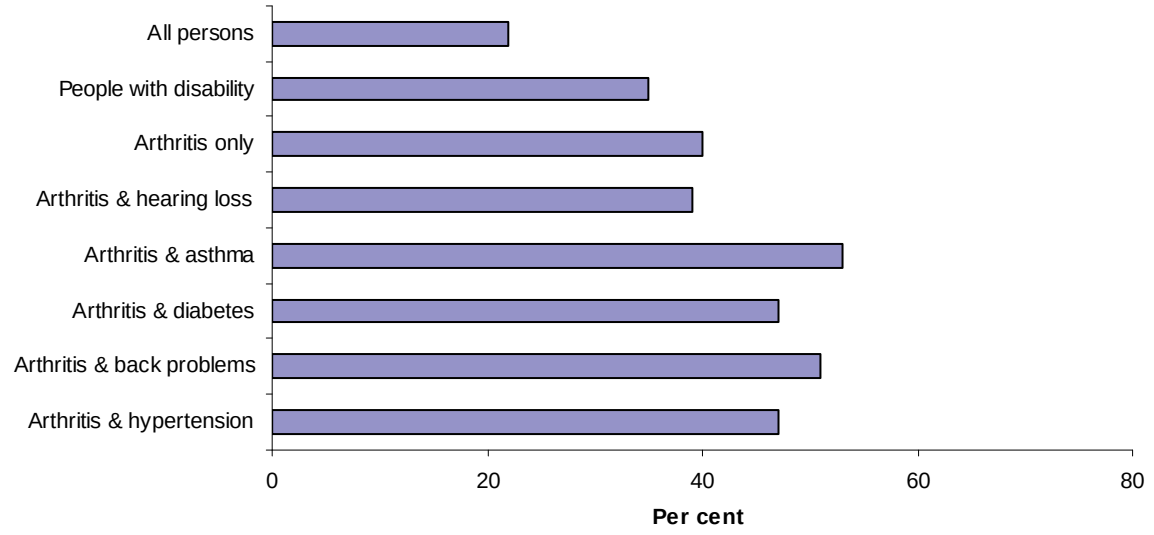
Those with disability associated with osteoporosis and also reporting hypertension, back problems, diabetes or asthma reported fair or poor health more commonly than those reporting similar long-term conditions but disability associated with arthritis. The only exception was for hearing loss, where fair or poor health was reported mainly by those with disability associated with arthritis (Table 4.6).

Table 4.6: Fair/poor health reported by people with disability associated with arthritis or osteoporosis and selected long-term conditions, ages 35 years or over, 2003

	Arthritis-associated disability		Osteoporosis-associated disability	
Comorbidities	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Hypertension	99.8	47.3	7.8	52.3
Back problems	51.4	51.1	8.1	55.9
Diabetes	30.8	46.8	5.1	71.2
Asthma	28.9	52.7	4.5	72.6
Hearing loss	19.5	38.8	2.1	22.3

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

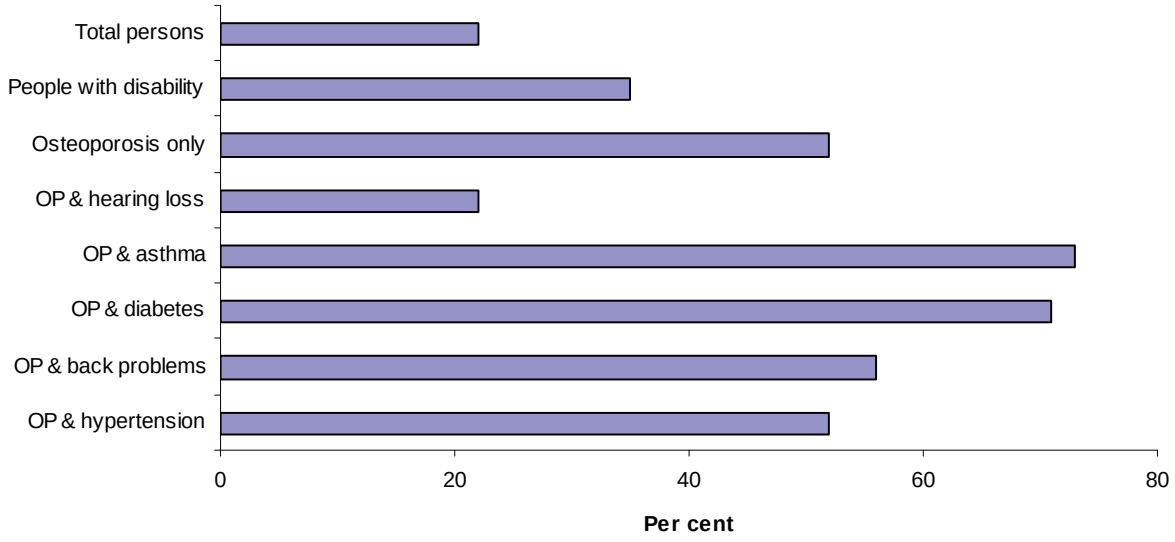
Variation in self-rated health not only exists between people with arthritis and people with osteoporosis, but also within people with a particular condition. Perceptions of health vary depending on other long-term conditions a person has. For example, reporting of fair or poor health was higher in people with arthritis and asthma (53%), arthritis and back problems (51%) and arthritis and hypertension or diabetes (47%) compared with those reporting arthritis alone (Figure 4.6). The proportion of people with disability associated with arthritis with or without other long-term conditions reporting fair or poor health was also higher compared with people with disability in general and the total population.



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

Figure 4.6: Fair/poor health reported by people with disability associated with arthritis and other long-term conditions, ages 35 years or over, 2003

People with osteoporosis who also had asthma, diabetes or back problems reported fair or poor health more commonly than those reporting osteoporosis alone. The presence of hearing loss with osteoporosis, however, did not have much impact on self-perceived health status (Figure 4.7).



OP osteoporosis

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

Figure 4.7: Fair/poor health reported by people with disability associated with osteoporosis and other long-term conditions, ages 35 years or over, 2003

Summary

The impact of arthritis and osteoporosis on quality of life is considerable, not only in terms of activity limitation and functional restrictions but also in terms of psychological distress and self-perceived health status. The conditions have significant psychological impact on sufferers, in particular on people with arthritis, as shown by measures related to HRQoL. A very high level of psychological distress was reported more often by people with arthritis than those with osteoporosis, and was more common among females than males. The health-related quality of life of people with arthritis is generally poorer than that of people living in the community at large. This is particularly the case for people with rheumatoid arthritis. People with arthritis or osteoporosis are also more likely to rate their health as fair or poor compared with the general population. The proportion of those reporting fair/poor health was considerably larger among those with osteoporosis than among those with arthritis or other disabilities. Lower perception of health was more likely to be associated with the inability to do daily activities. The presence of certain other long-term conditions, such as hypertension, back problems, diabetes and asthma, also affected people's satisfaction with life and perception of health status.

5 Environment and adjustments

The ability to cope with disability will depend upon the environment in which one operates. Limited mobility, regular pain and deformities are some of the impairments and limitations with which people with arthritis or osteoporosis regularly contend. Environmental factors, combined with the age-associated decline in physical fitness, may accentuate these problems. However, successful adjustments can be made to reduce the effect impairments and limitations have on daily life.

The provision of rehabilitation and modification of the physical environment can greatly enhance functioning. Interventions such as accessing appropriate care, pursuing proper disease management strategies, and using assistive devices can help people with disability to improve their functional capacity and thus their quality of life. Environmental changes at both the individual and community levels, such as adequate public transport, availability of lifts, ramps, adapted kitchenware, or grab rails near the toilet, can reduce the impact of disability. For people with osteoporosis, assistive devices and environmental changes can reduce the risk of the fractures that cause disability.

This chapter describes the various adjustments people with disability associated with arthritis or osteoporosis make to improve participation and quality of life, in particular to undertake activities of daily living and to maintain some degree of independence. The types of adjustments covered are:

- use of assistive devices
- home modifications
- occupational modifications
- assistance from family members.

The environment

The environment in this context can be the natural environment or the built environment. The natural environment is the topography and climate. For example, a person with arthritis, who has limited walking ability, will be less disabled in a flat geographical location than he or she would be in a hilly location. But a change to the natural environment, for example by moving to a different city, is not always a practical option.

The built environment is one where objects are created and constructed by people to suit their needs. The built environment can have a profound affect on people with arthritis or osteoporosis. Limitations in grip strength and reach, together with pain on movement, can affect not only life inside the home but also the ability to get out of the home and move around outside. For example, as most people live in standard houses (not specially designed accommodations), steps at the exit of the house may prevent a person with mobility problems from going out and participating in social activities. Others may find window catches, door handles and electric sockets difficult to manipulate. The toilet may be too low for those with poor quadriceps strength.

The occupational environment is a specific part of the built environment. In the case of musculoskeletal problems like arthritis, the occupational environment may contribute to the development or worsening of the condition. This is particularly true among those who work in occupations requiring repetitive load-bearing activities, as these activities can cause joint trauma.

Many of the functional limitations that people have can be reduced by changes to the built environment and the use of assistive devices.

Use of assistive devices

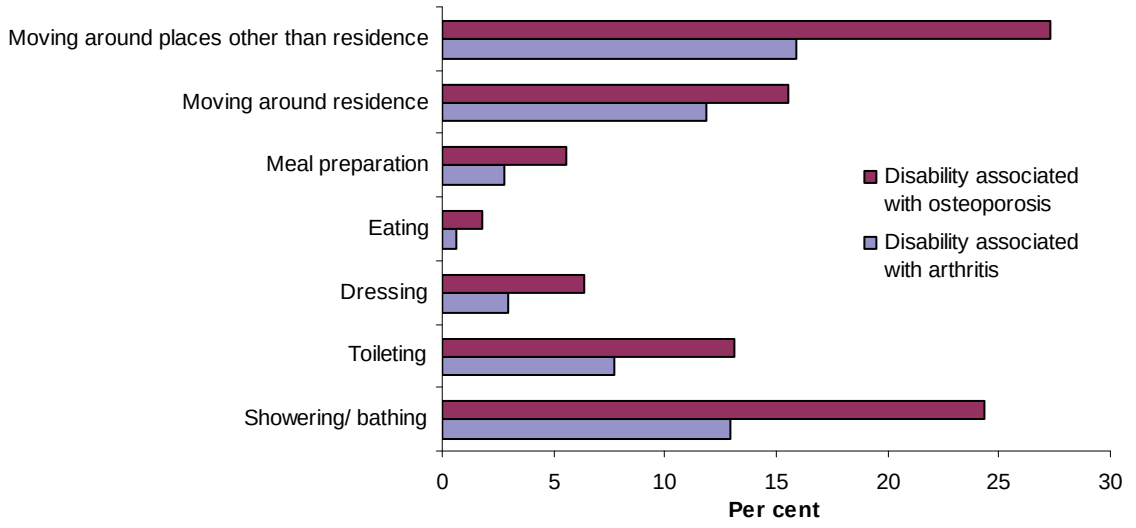
An assistive device is any item, piece of equipment, or product (whether acquired commercially off-the-shelf, modified, or customised) that is used to increase, maintain, or improve the functional capabilities of an individual with a disability. These devices do not always need to be complex; a person who uses a wheelchair and who works in an office could work effectively if the simple technology of an adjustable desk allowed the desk to be raised to allow the wheelchair to fit under it.

Depending on the particular need in specific areas, a number of devices are available to assist people with arthritis or osteoporosis to maintain some degree of independence. Some devices allow people to do the daily activities related to personal care with greater ease, like picking up things, holding things and getting dressed. Others simplify the instrumental activities of daily living such as meal preparation, shopping, getting around the house, doing light housework and going out of the house.

The use of assistive devices and appliances in performing activities of daily living is common among people with arthritis and osteoporosis to ease discomfort or disability associated with their condition. Those with hand arthritis may find it difficult to grasp things, hold a fork, use keys, hold a pen or open a jar. There are devices available to help, for example, eating utensils can be modified by building up or lengthening handles. Other devices help with gripping to open bottles, a pen or a door. There are devices to ease the struggle to get in and out of a chair, to get on or off the toilet, and to do other activities that involve sitting and standing up. In the bathroom, safety frames for the toilet provide arms for stability when sitting or standing.

Several devices are available to make bathing and grooming easier for people who have arthritis. For those having difficulty using arms or hands, back scrubbers, bath brushes, combs with long handles, and hair brushes with hand straps can be helpful. For those people with arthritis affecting the legs, grab bars in the shower or bathtub provide support while standing or getting in and out of the bathtub or shower. Walkers, scooters and wheelchairs are useful for moving around. Powered wheelchairs are available for those who do not have the strength or stamina to wheel them. These chairs can be simple transportation devices or they can be equipped with sophisticated controls and electronics, depending on the person's needs. Attaching a basket, tray, bag or hook to a walker may assist with carrying groceries or can be used around the house to transport laundry or other items.

According to the 2003 Survey of Disability, Ageing and Carers (SDAC), almost 51% of people with disability associated with arthritis and 56% with disability associated with osteoporosis reported using some sort of device to help them lead independent life. The most common types of devices were those for mobility, showering and toileting (Figure 5.1). These included long-handled reachers and grab bars, shoehorns, sponges with handles, and special brushes and toothbrushes. These aids were used more frequently by people with disability associated with osteoporosis than by those with disability associated with arthritis. Walk-in showers and grab bars may prevent hip fractures and allow those who have had a fracture to live independently.



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

Figure 5.1: Use of assistive devices for daily activities among people with disability associated with arthritis or osteoporosis, ages 35 years or over, 2003

Specific types of medical and mobility aids are helpful in moving around the house and around places other than the place of residence. Of a wide variety of devices, the most common were crutches or a walking stick, walking frames and manual wheelchairs (Table 5.1). Wheelchairs are most useful for people with arthritis when gait problems are too severe to safely use a walker or cane, or when the person is non-weight-bearing altogether. People with disability associated with osteoporosis commonly reported the use of crutches or a walking stick, a cane or a walking frame. These mobility devices are of greater use for people who have lower extremity weakness, gait and balance instability. Mobility aids were mostly used by females and by those aged 75 years or over. Since mobility device use is much more prevalent among the older age groups, and since women have greater longevity than men, it is not surprising that more women than men rely on assistive devices to help with mobility.

Table 5.1: Use of devices for mobility among people with disability associated with arthritis or osteoporosis, ages 35 years or over, 2003

	Disability associated with arthritis		Disability associated with osteoporosis	
Type of aids	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Callipers, splints or built-up shoe(s)	3.0	0.5	0.2	0.4
Crutches or walking stick	66.2	12.1	6.9	13.9
Electric wheelchair or scooter	10.3	1.9	0.4	0.8
Braces, belts or corsets	4.7	0.9	0.1	0.2
Cane	13.0	2.4	1.7	3.4
Ejector chair	7.9	1.4	0.1	0.2
Walking frame	38.0	7.0	6.4	12.9
Manual wheelchair	13.2	2.4	1.9	3.8
Other	8.0	1.5	1.1	2.2

Note: The proportions are based on the estimated number of people ages 35 years or over with disability associated with arthritis and related disorders (545,543) or with osteoporosis (49,770).

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

Home modifications

The built environment can also be modified permanently so that functional limitations become less disabling and personal or temporary assistive devices are not needed. For example, the presence of ramps increases the ability of wheelchair users to get around. White and colleagues (1995) found an increased frequency of trips out of the house and into the community for two-thirds of wheelchair users after ramps were installed in their houses. In severe cases, where these modifications are not sufficient for independent functioning, people seek help from family members for activities of daily living.

People with disability associated with arthritis or osteoporosis can make structural changes and modifications to their homes. Although most people with arthritis- or osteoporosis-associated disability are still able to walk either with or without assistance, steps and stairs may present one of their greatest challenges. They also have limited grip strength and reach, and have pain on movement. The modern toilet may be too low and the vanity unit too high for them to use. Doorway enlargement, bathroom modifications and ramps may be necessary to allow for wheelchair use. In view of these difficulties, various types of home modifications are required.

About 16% of respondents with disability associated with arthritis and 18% with osteoporosis in the 2003 SDAC reported one or more modifications to their house. The addition of hand grabs and rails was the most common home modification reported, followed by changes to toilets, bathrooms and laundry. The addition of ramps and a variety of other structural changes to the building were also reported (Table 5.2). Structural changes to the house were reported more often by people with disability associated with osteoporosis than those with disability associated with arthritis. This is to be expected as people with osteoporosis are more likely to have gait and balance instability or have sustained hip fracture and use walkers or wheelchairs for moving around the house.

Table 5.2: Home modifications among people with disability associated with arthritis or osteoporosis, ages 35 years or over, 2003

	Disability associated with arthritis		Disability associated with osteoporosis	
Modification	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Structural	7.1	1.3	1.5	3.0
Ramps	13.3	2.4	1.4	2.8
Toilet, bath, laundry	40.1	7.4	5.6	11.2
Hand grab and rails	56.1	10.3	5.9	11.8
Other changes	11.4	2.1	4.0	8.0

Note: The proportions are based on the estimated number of people aged 35 years or over with disability associated with arthritis and related disorders (545,543) or with osteoporosis (49,770).

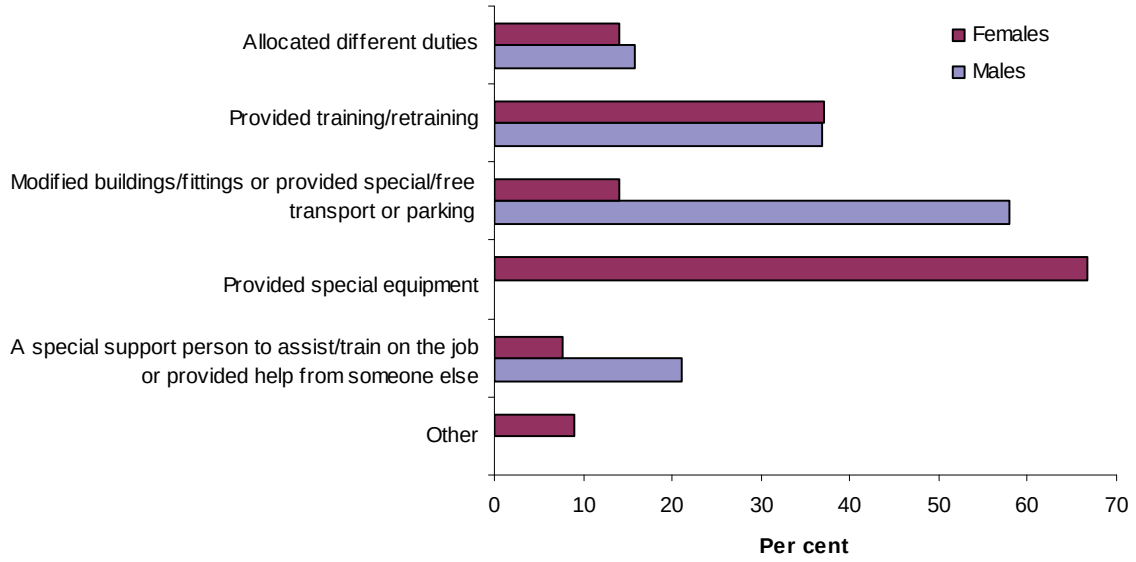
Source: AIHW analysis of ABS 2003 Survey of Disability, Ageing and Carers CURF

Workplace modifications

For people still in the workforce, many of the employment restrictions or problems at work may be reduced by effective workplace accommodation. Several potential work-related modifications have been identified that should help people with arthritis stay employed (Yelin et al. 1987).

Many of the people with employment restrictions due to arthritis- or osteoporosis-associated disability who indicated a need for special arrangements in the workplace reported that their employers had made these arrangements. The types of arrangements made correspond well with the stated needs (Chapter 3; Figure 3.1). Special arrangements were required more commonly among people with arthritis than among those with osteoporosis.

The most common arrangements made were the provision of special equipment, modifications to fittings or provision of special transport or parking (Figure 5.2). Many were also given training or retraining to suit their jobs, while some were allocated new duties that better suited their abilities.



Note: Respondents may report more than one type of arrangement.

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

Figure 5.2: Arrangements made by employers for people with disability associated with arthritis, ages 35–64 years, 2003

Assistance from carers

Sometimes the use of assistive devices and home modification is not enough for a person with disability to continue independent functioning. In this case, many people seek help from family members and/or friends to assist with housework, shopping, meal preparation and transportation. Help from family members is often perceived to be the best option for those who require assistance with activities of daily living.

Any person who provides informal assistance (that is, not in a professional capacity) to an older person or a person with disability because of their age or condition is known as a carer. Support from carers is more likely to ensure recovery, help with the maintaining of independence and prevent people with arthritis or osteoporosis from experiencing considerable difficulty coping with a change in lifestyle (Gooberman-Hill & Ebrahim 2006).

The 2003 SDAC defines a primary carer as the person aged 15 years or over who provides the most help or supervision with core activities (self-care, mobility and communication) to an older person or a person with disability. A primary carer provides care on a regular, unpaid basis and in a way that is ongoing or is likely to be ongoing for at least 6 months (ABS 2003). Detailed information about the personal characteristics of the carer and the type

of care they provide is only available for those carers who live with the care recipient (known as co-resident carers).

The survey suggests that more than 45,500 co-resident primary carers were providing assistance to people with disability associated with arthritis and almost 5,700 were providing care to people with disability associated with osteoporosis. A slightly larger proportion of males took on the task of caring for a person with disability associated with arthritis, and more females were caring for those with disability associated with osteoporosis (Table 5.3). Two-thirds of carers of people with arthritis-associated disability were providing assistance to their spouse or partner, whereas carers of those with disability associated with osteoporosis were equally likely to be partners or children. Many carers had spent at least 10 years in the role.

Table 5.3: Primary carers[(a)] of people aged 35 years or over with disability associated with arthritis or osteoporosis, 2003

	Disability associated with arthritis		Disability associated with osteoporosis	
Characteristic	**Number '000**	**Per cent**	**Number '000**	**Per cent**
Sex of carer				
Male	24.6	54.2	2.4	42.7
Female	20.9	45.8	3.2	57.3
Age of carer				
Less than 65 years	25.6	56.3	3.7	64.5
65 years or over	19.9	43.7	2.0	35.5
Relationship to care recipient				
Spouse/ partner	30.5	67.0	2.8	50.0
Father or mother	1.2	2.7	0	0.0
Son or daughter	11.7	25.8	2.8	50.0
Other relative or friend	2.1	4.5	0	0.0
Length of time as carer[(b)]				
Less than 5 years	16.6	36.6	1.8	31.8
5–9 years	11.0	24.2	1.1	18.7
10 years or more	16.4	36.0	2.8	49.5
Hours of care provided per week[(b)]				
Less than 20 hours	15.9	34.9	2.1	37.0
20–39 hours	6.7	14.7	0.7	13.0
40 hours or more	17.8	41.2	2.8	50.0

(a) A primary carer is the person aged 15 years or over who provides the most help or assistance with core activities.

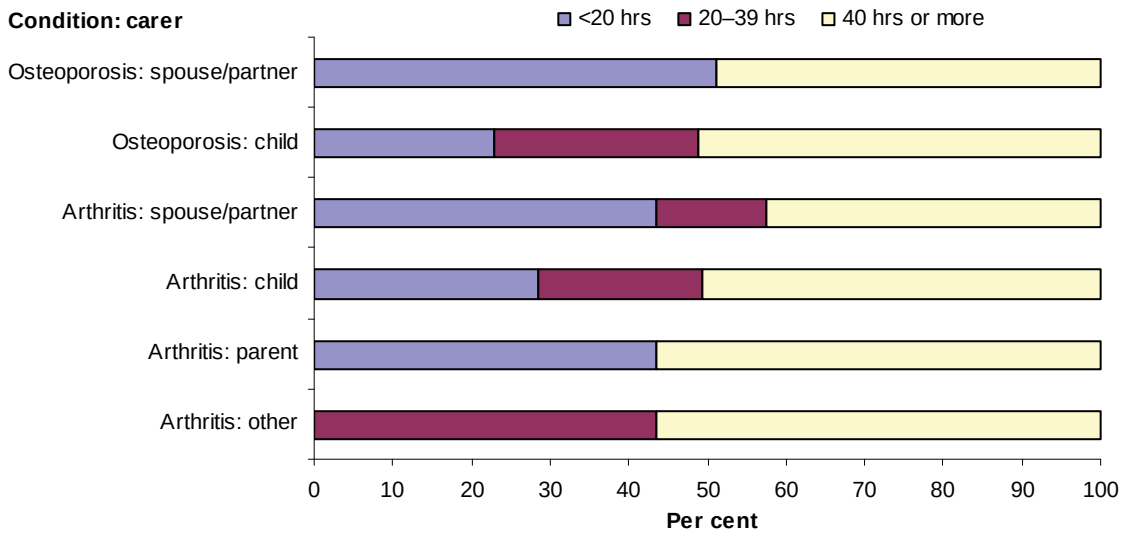
(b) Data were not available for all carers.

Note: The proportions are based on the estimated number of primary carers aged 15 years or over providing care to people aged 35 years or over with disability associated with arthritis and related disorders (45,516) or with osteoporosis (5,668).

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

A large proportion of carers of people with arthritis- or osteoporosis-associated disability reported providing long hours of care (40 hours or more per week). This was more common among carers of people with osteoporosis-associated disability (50%) than among those caring for people with disability associated with arthritis (41%). Parents, more removed

relatives and friends were as likely as spouses and children to be providing long hours of care for people with arthritis-associated disability (Figure 5.3).



(a) A primary carer is the person aged 15 years or over who provides the most help or assistance with core activities.

Note: Proportions are based on the estimated number of primary carers aged 15 years or over providing care to people aged 35 years or over with disability associated with arthritis and related disorders (41,338) or with osteoporosis (5,668) for whom information about hours of care provided was available.

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

Figure 5.3: Hours of care provided by primary carers[(a)] to people aged 35 years or over with disability associated with arthritis or osteoporosis, by provider of care, 2003

Types of assistance provided

Primary carers of people with disability associated with arthritis or osteoporosis provided assistance with a range of areas of everyday life, such as transport, mobility, household chores and health care (Table 5.4). This may be because few people have the home accessibility features that would facilitate basic household tasks and moving about inside. Those caring for people with disability associated with arthritis reported providing more assistance in these areas than those caring for people with disability associated with osteoporosis. For people with arthritis, who may have difficulty using their arms or hands, assistance in bathing and grooming, dressing, fixing meals, and getting around the house increases their ability to continue living in their own homes.

Mobility away from home is an activity for which many carers provided assistance (Figure 5.4). The vast majority of people with arthritis- or osteoporosis-associated disability report difficulty with using public transport; for many, the difficulty may be insurmountable.

Table 5.4: Assistance with general activities provided by primary carers[(a)] to people with disability associated with arthritis or osteoporosis, ages 35 years or over, 2003

Area where assistance provided	Disability associated with arthritis		Disability associated with osteoporosis	
	Number '000	Per cent	Number '000	Per cent
Self-care	33.3	73.2	4.1	72.5
Health care	32.6	71.7	3.4	59.6
Household	40.6	89.3	5.7	100.0
Property maintenance	30.9	67.9	5.0	89.1
Paperwork	23.1	50.6	2.2	39.4
Mobility	37.6	82.6	4.8	85.0
Transport	34.5	75.9	4.6	80.5

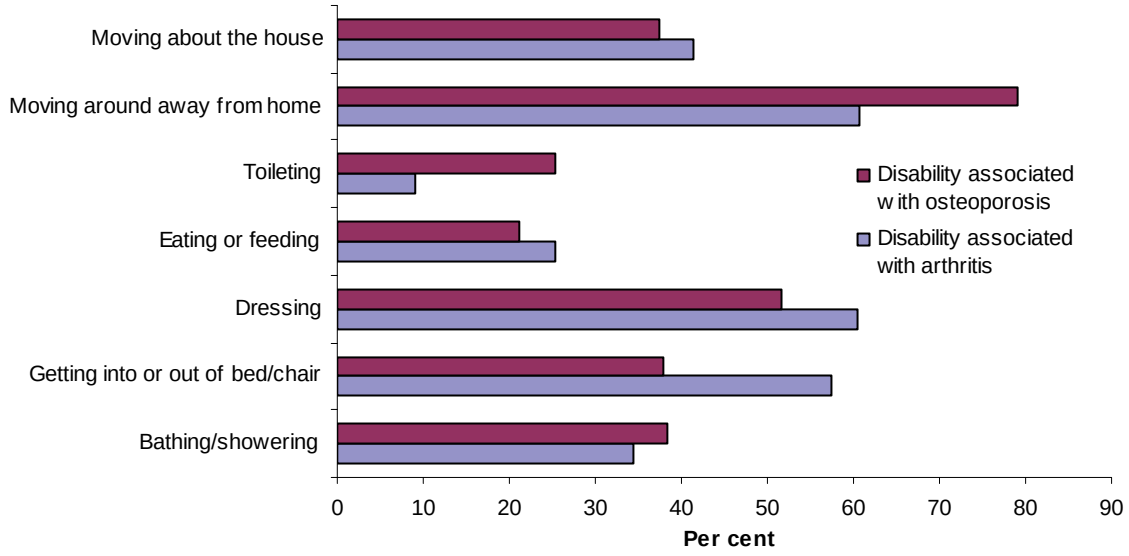
(a) A primary carer is the person aged 15 years or over who provides the most help or assistance with core activities.

Notes

1. A person may need assistance with more than one activity.
2. Proportions are based on the estimated number of primary carers aged 15 years or over providing care to people aged 35 years or over with disability associated with arthritis and related disorders (45,516) or with osteoporosis (5,668).

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

Those with disability associated with osteoporosis were more likely to receive assistance with self-care activities such as dressing, eating and getting in and out of bed/chair than those with disability associated with arthritis.



(a) A primary carer is the person aged 15 years or over who provides the most help or assistance with core activities.

Notes

1. A person may need assistance with more than one activity.
2. Proportions are based on the estimated number of primary carers aged 15 years or over providing care to people aged 35 years or over with disability associated with arthritis and related disorders (44,613) or with osteoporosis (5,668).

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

Figure 5.4: Proportion of primary carers[(a)] of people aged 35 years or over with disability associated with arthritis or osteoporosis providing assistance with specific activities, 2003

Summary

People with arthritis or osteoporosis are often able to maintain independent functioning by using specialised devices, modifying their dwelling or making some workplace adjustments. The SDAC showed that aids for self-care, such as long-handled reachers, shoehorns, sponges, brushes and special toothbrushes, were commonly used. Devices such as crutches or a walking stick, walking frames and manual wheelchairs were also very useful for mobility. Some people benefited from making structural changes and modifications to their homes, such as the addition of hand grabs, rails or ramps, or changes to the toilet, bathroom and laundry. A variety of arrangements were reported to have been made by employers, including the provision of special equipment, training and altering the duties of the job. Such arrangements can enable people with disability to continue with their work.

Family support of people with disability is common, especially for those requiring assistance with activities of daily living. Help from family carers (usually a spouse/partner or child) with housework, shopping, meal preparation and transportation pave the way to maintaining independence and coping with changes in lifestyle associated with disability. The use of assistive devices and support from family carers may also be particularly important in reducing the need for nursing home placement.

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