



Osteoarthritis

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Latest edition

Osteoarthritis is a chronic and progressive condition that mostly affects the hands, spine and joints such as hips, knees and ankles. It is the most common form of arthritis and the predominant condition leading to knee and hip replacement surgery in Australia.

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Findings from this report:

- 1 in 11 Australians (9.3%) have osteoarthritis, approximately 2.2 million people in 2017-18
- People with osteoarthritis were twice as likely to describe their health as 'poor', among those aged 45 and over
- There was a 38% rise in the rate of total knee replacements for osteoarthritis from 2005-06 to 2017-18
- 3 in 5 people who have osteoarthritis are female

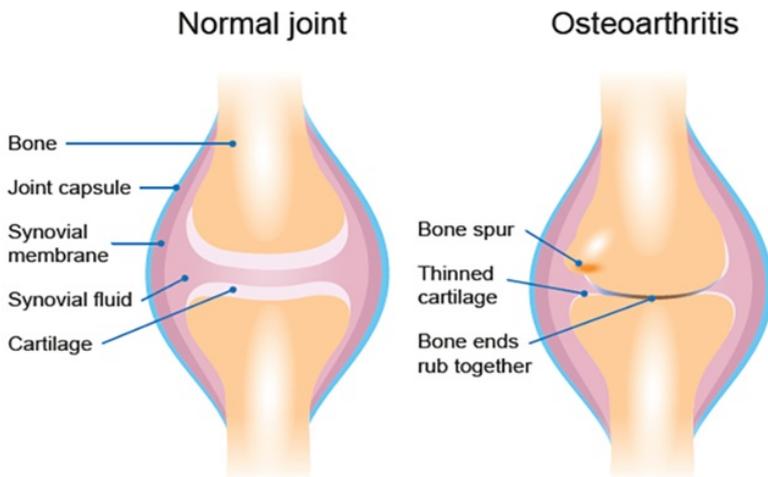
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What is osteoarthritis?

Osteoarthritis is a chronic condition characterised by the breakdown of the cartilage that overlies the ends of bones in joints. This results in the bones rubbing together, causing pain, swelling and loss of motion (Figure 1). Osteoarthritis mostly affects the hands, spine and joints such as hips, knees and ankles, and usually gets worse over time.

Figure 1: Comparison of healthy joint and joint with osteoarthritis



Source: AIHW 2015.

As osteoarthritis progresses it can become difficult to perform everyday tasks. At first pain is felt during and after activity, but as the condition worsens pain may be felt during minor movements or even at rest. Affected joints may also become swollen and tender which can affect fine motor skills.

Osteoarthritis has no specific cause, however several factors contribute to the onset and progression (Chapman & Valdes 2012), including:

- being female
- genetic factors
- excess weight
- joint misalignment
- joint injury or trauma (such as dislocation or fracture)
- repetitive joint-loading tasks (for example, kneeling, squatting and heavy lifting).

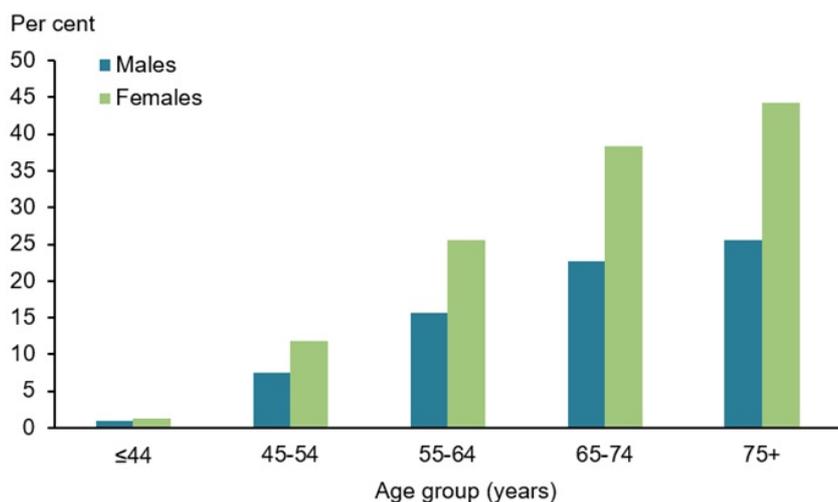
How common is osteoarthritis?

Osteoarthritis is the most common form of arthritis in Australia. An estimated 2.2 million (9.3%) Australians have this condition, according to the Australian Bureau of Statistics (ABS) 2017-18 [National Health Survey \(NHS\)](#). Osteoarthritis represented over half (62%) of all arthritic conditions in 2017-18 (ABS 2019).

Although osteoarthritis affects people of all ages, the prevalence increases sharply from the age of 45 years. 1 in 5 Australians (22%) over the age of 45 have osteoarthritis. It is most common in adults aged 75 and over, with just over one-third (36%) of people in this age group experiencing the condition (Figure 2).

Osteoarthritis is also more common among females than males, affecting 10% of females compared with 6.1% of males (after adjusting for age).

Figure 2: Prevalence of self-reported osteoarthritis, by age and sex, 2017-18



Note: refers to people who self-reported that they were diagnosed by a doctor or nurse as having osteoarthritis (current and long term) and also people who self-reported having osteoarthritis.

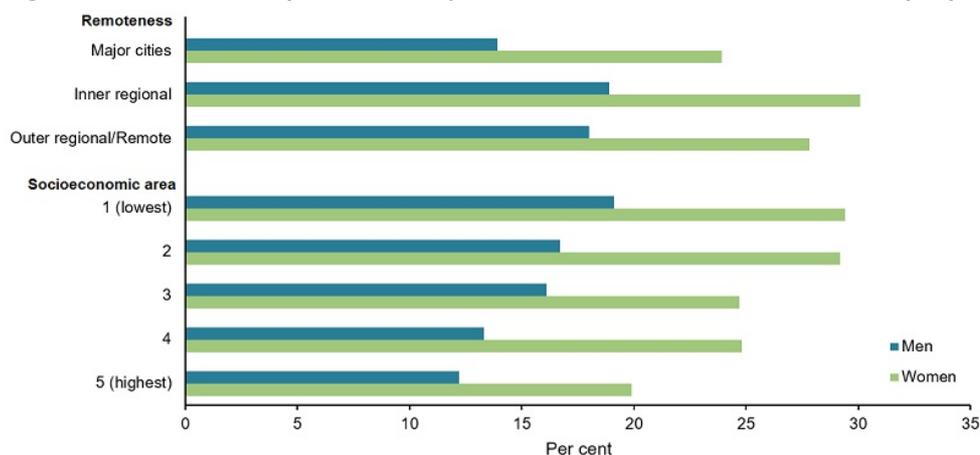
Source: AIHW analysis of ABS 2019 ([Data table](#)).

Inequalities

For people aged 45 and over the prevalence of osteoarthritis was slightly lower in *Major cities* (19%), compared with *Inner regional* and *Outer regional/Remote* areas (25% and 23%, respectively).

The prevalence of osteoarthritis was higher for people living in the lowest socioeconomic areas (25%) compared with people in the highest socioeconomic areas (16%). Women had higher rates of osteoarthritis compared with men for all regions and socioeconomic areas (Figure 3).

Figure 3: Osteoarthritis prevalence, by remoteness and socioeconomic area, people aged 45 and over, 2017-18



Note: Age-standardised to the 2001 Australian population.

Source: AIHW analysis of ABS 2019 ([Data table](#)).

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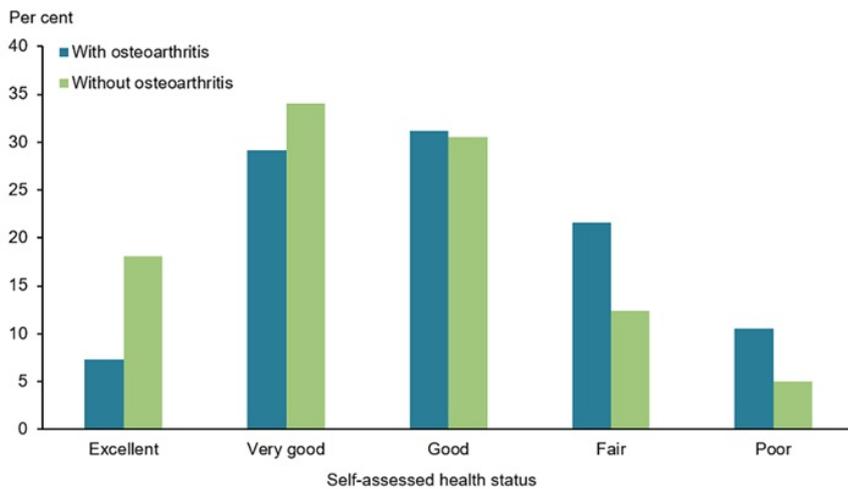
Impact of osteoarthritis

Osteoarthritis can have a profound impact on every aspect of a person's life. Ongoing pain, physical limitations and depression can affect an individual's ability to engage in social, community and occupational activities (Briggs et al. 2016). In Australia, osteoarthritis accounted for 19% of the total burden of disease due to musculoskeletal conditions in 2015 (AIHW 2019a).

Perceived health status

According to the ABS 2017-18 [National Health Survey \(NHS\)](#) people aged 45 and over with osteoarthritis are less likely to perceive their health as excellent or very good compared with people without osteoarthritis. People with osteoarthritis were 2.1 times as likely to describe their health as poor (11%) compared with those without osteoarthritis (5.0%) (Figure 1).

Figure 1: Self-assessed health of people aged 45 and over with and without osteoarthritis, 2017-18



Note: Age-standardised to the 2001 Australian population.

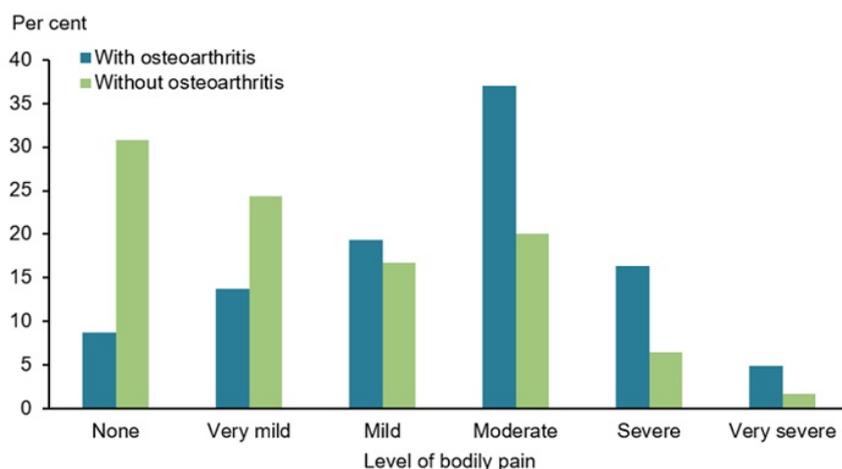
Source: AIHW analysis of ABS 2019 ([Data table](#)).

Pain

Osteoarthritis can have a profound impact on a person's physical health, as joint pain and physical limitations are major symptoms of osteoarthritis. Older people with osteoarthritis can also be more prone to falls compared with those without osteoarthritis. This increased risk is due to a number of factors caused by osteoarthritis, such as decreased physical activity, joint instability, medication use and pain (Cooper et al. 2010).

In 2017-18, over half of people (58%) with osteoarthritis experienced 'moderate' to 'very severe' pain in the last 4 weeks. People with osteoarthritis were also 2.9 times as likely to have 'very severe pain' (4.9%) compared with those without the condition (1.7%) (Figure 2). In addition, almost half (48%) of people with osteoarthritis described their pain as having a 'moderate' to 'extreme' interference with their normal work during the last 4 weeks, compared with 22% in people without osteoarthritis.

Figure 2: Pain^(a) experienced by people aged 45 and over with and without osteoarthritis, 2017-18



(a) Bodily pain experienced in the 4 weeks prior to interview.

Note: Age-standardised to the 2001 Australian population.

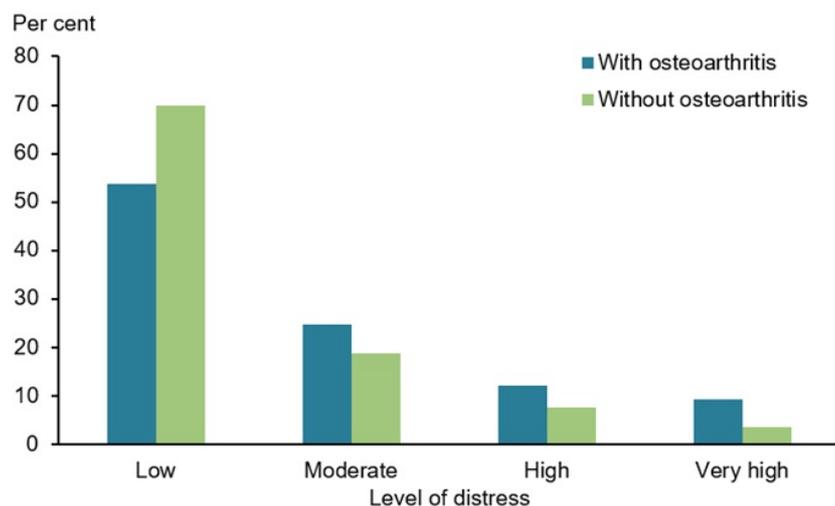
Source: AIHW analysis of ABS 2019 ([Data table](#)).

Psychological distress

People with osteoarthritis commonly experience anxiety, depression and other mental health issues. Pain, physical limitations, poor treatment outcomes and increased pharmacotherapy can impact a person's mental health and, consequently, their quality of life (Sharma et al. 2016).

According to the NHS 2017-18, one in 5 (21%) Australian adults with osteoarthritis experienced high or very high levels of distress. This was 2 times as high as those without the condition (11%) (Figure 3).

Figure 3: Psychological distress^(a) experienced by people aged 45 and over with and without osteoarthritis, 2017-18



(a) Psychological distress is measured using the Kessler Psychological Distress Scale (K10), which involves 10 questions about negative emotional states experienced in the previous 4 weeks. The scores are grouped into Low: K10 score 10-15, Moderate: 16-21, High: 22-29, Very high: 30-50.

Note: Age-standardised to the 2001 Australian population.

Source: AIHW analysis of ABS 2019 ([Data table](#)).

Economic impact

In 2015-16, osteoarthritis cost the Australian health system an estimated \$3.5 billion, representing 28% of disease expenditure on musculoskeletal conditions and 3% of total disease expenditure (AIHW 2019b).

Comorbidities of osteoarthritis

People with osteoarthritis often have other chronic conditions. Comorbidity is the term used when two or more health conditions occur at the same time. For this analysis, the selected comorbidities were reported:

- heart, stroke and vascular disease
- kidney disease
- arthritis
- mental and behavioural conditions
- asthma
- diabetes
- chronic obstructive pulmonary disease (COPD)
- osteoporosis
- cancer.

According to the ABS NHS 2017-18, among people aged 45 and over with osteoarthritis:

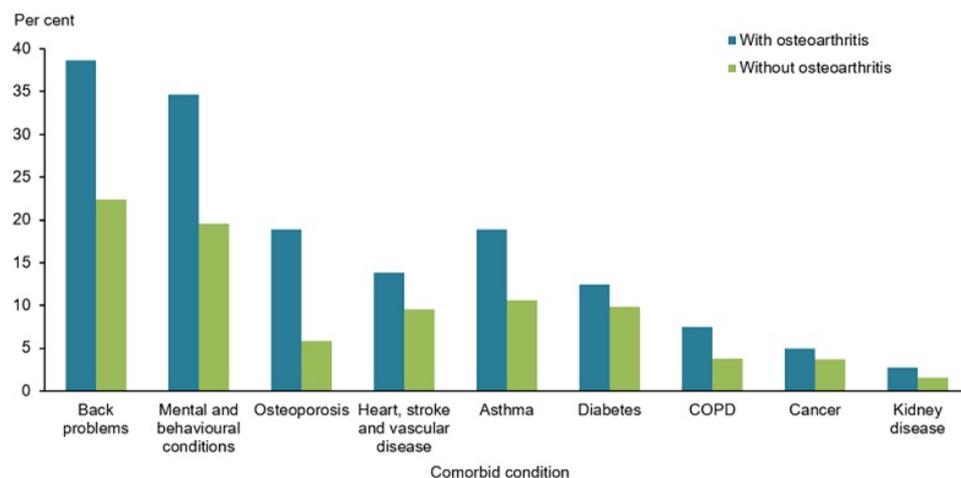
- 38% also had back problems compared with 23% of people without osteoarthritis
- 31% also had mental and behavioural conditions compared with 20% of people without osteoarthritis
- 22% also had osteoporosis compared with 6% of people without osteoarthritis ([Data tables - Table 2.5](#))

Most chronic conditions are more common in older age groups. The average age of people with osteoarthritis is older than the average age of the general population, so people with osteoarthritis are more likely to have age-related comorbidities.

After adjusting for differences in the age structure of people with and without osteoarthritis, the rates of the selected comorbidities (excluding cancer) remained significantly higher for people with osteoarthritis compared with those without (Figure 4). There was no significant difference for cancer. It is important to note that regardless of the differences in age structures, having multiple chronic health

problems is often associated with worse health outcomes (Parekh et al. 2011), in addition to a poorer quality of life (McDaid et al. 2013) and more complex clinical management and increased health costs.

Figure 4: Prevalence of other chronic conditions in people aged 45 and over with and without osteoarthritis, 2017-18



Notes:

1. Age-standardised to the 2001 Australian population.
2. Proportions do not total 100% as one person may have more than one additional diagnosis.

Source: AIHW analysis of ABS 2019 ([Data table](#)).

Data notes

The National Health Survey (NHS) uses three factors to determine whether or not a person is counted as having a particular condition: whether the condition is current, whether it is long term and whether it was medically diagnosed. The combination of these factors required for a person to count as having the condition varies according to the nature of the condition. For example, some conditions, such as diabetes and HSVD, once diagnosed, are seen to be lifelong. Even if a person no longer reports symptoms, they still count as having the condition. While other conditions, such as depression, asthma, cancer or back problems, can be lifelong, episodic or in complete remission.

Most conditions do not need the respondent to have been diagnosed by a doctor or nurse. The respondent is counted if they said they have the condition. However, in cases where the respondent said they had diabetes or HSVD and that

Table 1: Definitions used for chronic conditions

Condition	Current	Long term	Has the condition been diagnosed by a doctor or nurse?
Asthma	current	long term	no diagnosis required
Back problems	current	long term	no diagnosis required
Cancer	current	long term	no diagnosis required
COPD	current	long term	no diagnosis required
Diabetes	current	long term	no diagnosis required
(2 combinations)	ever had	not long term	diagnosis required
Heart, stroke and vascular disease (HSVD)	current	long term	no diagnosis required
(2 combinations)	ever had	not long term	diagnosis required
Kidney disease	current	long term	no diagnosis required
Mental and behavioural conditions	current	long term	no diagnosis required
Osteoporosis	current	long term	no diagnosis required
Osteoarthritis	current	long term	no diagnosis required

Note: Please see the [2017-18 NHS User Guide](#) for more information on the definitions of the conditions.

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Treatment & management

At present, there is no cure for osteoarthritis and the disease is long-term and progressive. Treatment for osteoarthritis aims to manage symptoms, increase mobility and maximise quality of life.

Treatment options for osteoarthritis include:

- physical activity
- weight management
- medication
- joint replacement surgery.

Physical activity

Exercise is an important and effective component in both management and prevention of osteoarthritis. Exercise helps improve symptoms (especially pain and joint stiffness) and quality of life by increasing range of motion (the ability to move joints through their full motion), strengthening muscles around affected joints, assists in weight control and reduces risk of other chronic diseases (e.g. diabetes and cardiovascular disease). Exercise is also beneficial for other comorbidities and overall health (RACGP 2018). A GP or Exercise Physiologist should be consulted before undertaking an exercise program.

Weight management

Being overweight increases the risk of developing osteoarthritis, due to the increased load on weight bearing joints and increased stress on cartilage. Weight management is strongly recommended for people with knee and/or hip osteoarthritis who are overweight or obese (RACGP 2018). For people with existing osteoarthritis and who are overweight or obese, weight loss can help reduce symptoms (RACGP 2018). Weight loss should be combined with exercise for the greatest benefits (RACGP 2018).

A GP or Dietitian can be consulted to discuss weight loss/management strategies.

Medications

Treatment of osteoarthritis with medication aims to relieve pain, reduce inflammation and improve functioning and quality of life. Analgesics, or pain medications, are commonly used to manage the pain of osteoarthritis. Analgesics include paracetamol, non-steroidal anti-inflammatory drugs (NSAIDs) and opioid analgesics. For those with hip and/or knee osteoarthritis requiring pain relief, it may be reasonable to trial the use of paracetamol or NSAIDs for a short period and then discontinue use if it is not effective (RACGP 2018). Corticosteroid injections may also be recommended for short term pain relief for hip and/or knee osteoarthritis if appropriate (RACGP 2018). Opioids are not recommended for the treatment of hip and/or knee osteoarthritis (RACGP 2018).

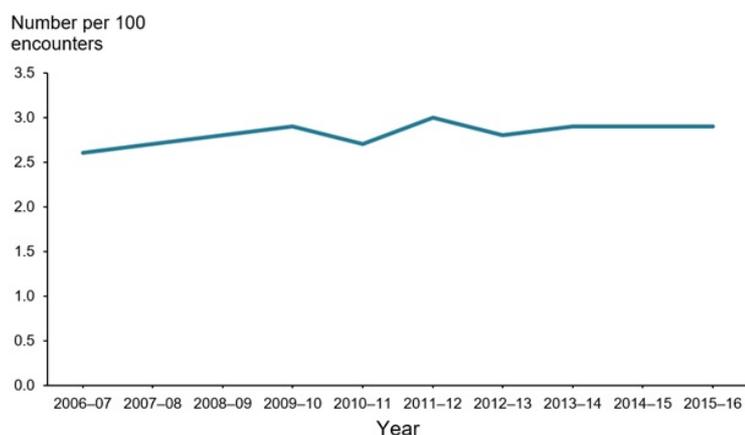
General practitioners and osteoarthritis treatment

General practitioners (GPs) are usually the first point of contact with the health care system for people with osteoarthritis (McKenzie & Torkington 2010; RACGP 2018) and are ideally placed to play the role of care coordinator to ensure treatment continuity (RACGP 2018). GP management of osteoarthritis may include assessment and diagnosis, referral to other health services, prescribing medication and providing education about the condition.

Osteoarthritis is among the most commonly managed conditions in general practice. About 2.6 of every 100 encounters were for osteoarthritis in 2015-16 (Britt et al. 2016). This has not changed significantly since 2006-07 (Figure 1).

There is currently no nationally consistent primary health care data collection monitoring provision of care by GPs. Note that statistics on general practice activities based on Bettering the Evaluation and Care of Health (BEACH) data are derived from a sample survey of GPs and their encounters with patients, and need to be interpreted with some caution.

Figure 1: Rate of osteoarthritis managed by GPs, 2006-07 to 2015-16



Source: Britt et al. 2016 (Data table).

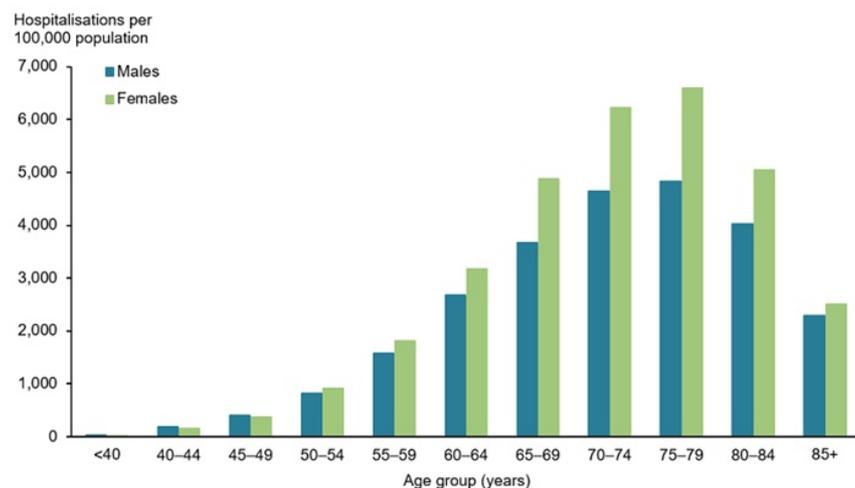
Hospitalisation and the treatment of osteoarthritis

A variety of procedures are performed in hospitals to restore joint function, help relieve pain and improve quality of life for someone with osteoarthritis (AOA 2018).

Based on the AIHW National Hospital Morbidity Database (NHMD), in 2017-18:

- there were 269,214 hospitalisations with a principal diagnosis of osteoarthritis, a rate of 1,087 hospitalisations per 100,000 population
- more than half (57%) of osteoarthritis hospitalisations were for females
- the hospitalisation rate was lowest among those aged 40 and under and steadily increased until the ages of 70-74, and then decreased again with age (Figure 2).

Figure 2: Rate of hospitalisation for osteoarthritis by sex and age, 2017-18

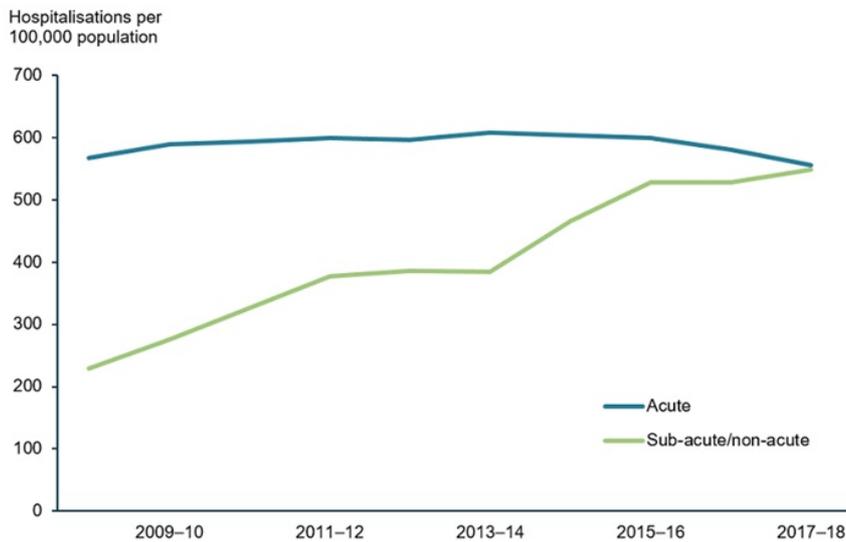


Source: AIHW National Hospital Morbidity Database (Data table).

Between 2008-09 and 2017-18, the age-standardised acute care hospitalisation rate for osteoarthritis remained stable (Figure 3). Over the same period, the hospitalisation rate for sub-acute and non-acute care for osteoarthritis increased by 2.5 times. This may be due to increased statistical collection of these separations (AIHW 2018).

In 2017-18, osteoarthritis was the most common reason for rehabilitation care with arthrosis of knee accounting for 22% and arthrosis of hip accounting for 9.0% of all rehabilitation hospitalisations (AIHW 2019). The primary purpose of rehabilitation care is to improve functioning of a patient with an impairment, activity limitation, or participation restriction due to a health condition.

Figure 3: Age-standardised rate of hospitalisations for osteoarthritis (any diagnosis), by care type, 2008-09 to 2017-18



Note: Age-standardised to the 2001 Australian population.

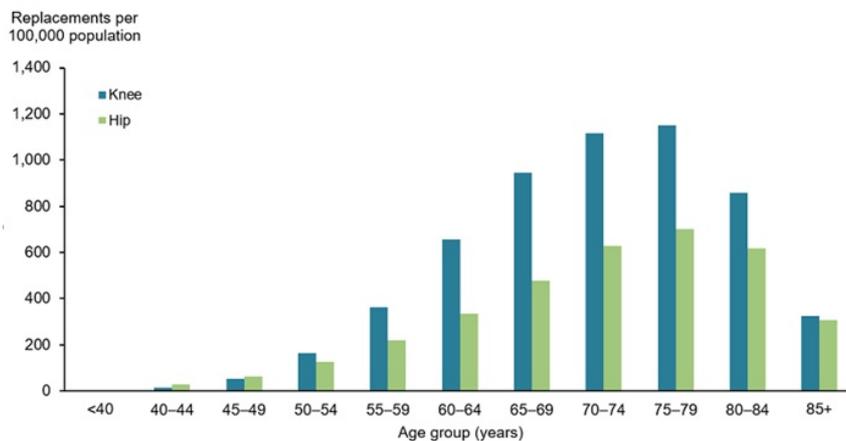
Source: AIHW National Hospital Morbidity Database ([Data table](#)).

Joint replacement surgery

Osteoarthritis is also the most common condition leading to hip and knee replacement surgery in Australia (AOANJRR 2019). Joint replacement is a cost-effective and clinically effective treatment for severe osteoarthritis (RACGP 2018). Clinical guidelines in Australia recommend considering joint replacement surgery for severe osteoarthritis if all conservative treatment options have failed (RACGP 2018). These procedures restore joint function, help relieve pain and improve the quality of life of the affected person.

In 2017-18, 54,102 knee replacements (218 per 100,000 population) and 32,929 hip replacements (133 per 100,000 population) were performed in hospitalisations with a principal diagnosis of osteoarthritis. The rate of knee or hip replacements was lowest in people aged under 40, increased with age to 75-79, and then decreased among those aged 80 and over (Figure 4).

Figure 4: Rate of total knee and hip replacements for osteoarthritis, by age, 2017-18

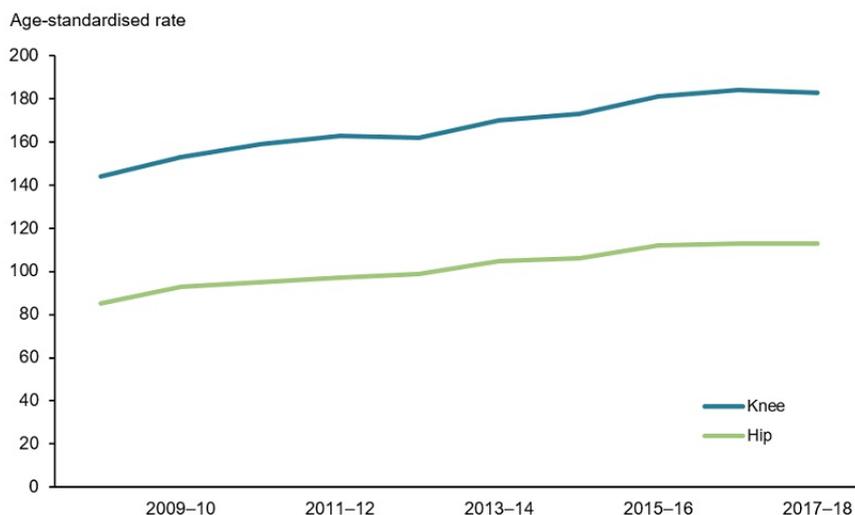


Source: AIHW National Hospital Morbidity Database ([Data table](#)).

Between 2008-09 and 2017-18, the age-standardised rate of joint replacement surgery in hospitalisations where osteoarthritis was the principal diagnosis steadily increased, by:

- 27% for total knee replacement (from 144 to 183 per 100,000 population)
- 33% for total hip replacement (from 85 to 113 per 100,000 population) (Figure 5).

Figure 5: Trends in total knee and hip replacements for osteoarthritis, 2008-09 to 2017-18



Note: Age-standardised to the 2001 Australian population.

Source: AIHW National Hospital Morbidity Database ([Data table](#)).

All joint replacements require correction (revision surgery) over time. Based on data from the Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR 2019), there were 65,266 knee replacement surgeries and 49,764 hip replacement surgeries (including primary partial, primary total and revision procedures) reported in 2018.

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Data

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