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# **MUSCULOSKELETAL**

## DISORDERS IN THE OLDER PERSON

**Series on clinical management  
problems in the elderly**

**No 4**

Report of the Health Care Committee  
Expert panel for health care of the elderly

National Health and Medical Research Council

# **NHMRC**

RESCINDED

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The objective of the National Health and Medical Research Council is to advise the Australian community on the achievement and maintenance of the highest practicable standards of individual and public health and to foster research in the interests of improving those standards.

This report was prepared by an expert panel of the Health Care Committee. It was endorsed by the Health Care Committee in September 1993 and by the NHMRC at its 116th Session in November 1993. The Health Care Committee, a principal committee of the NHMRC, inquires into and advises on matters relating to the provision of health services and the merits of methods of disease prevention, diagnosis and treatment.



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# Foreword

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About 50 per cent of older people report being treated by their doctor for musculoskeletal disorders. Bone and joint diseases are the most common cause of disability in older people and, as a result, quality of life can be severely compromised. In a recent survey non-steroidal drugs were used by nearly 25 per cent of people over 65 years of age. This is a measure of the disability being incurred besides the significant risks of side effects from these agents.

This paper outlines a practical approach to the more common disorders including pharmacotherapy, physical therapy and surgery. The importance of a multidisciplinary approach when symptoms do not settle is emphasised as well as the place of community services and education. The subject of prevention is addressed as is the role of exercise in both causing and in the management of musculoskeletal disorders.

Dr David Fonda  
Chairman  
Expert Panel  
Health Care of the Elderly

Dr Len Gray  
President  
Australian Society of  
Geriatric Medicine

# Contents

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<b>Membership of the expert panel</b>	<b>vi</b>
<b>Executive summary</b>	<b>1</b>
<b>Background</b>	<b>2</b>
<b>Clinical presentation of musculoskeletal disease in the older person</b>	<b>3</b>
Presenting symptoms	3
Causes of musculoskeletal pain	3
Investigations	4
Management	4
<b>Treatment of specific diseases</b>	<b>5</b>
Osteoarthritis	5
Gout	6
Acute attack	6
Chronic therapy	6
Treatment of asymptomatic hyperuricaemia	6
Rheumatoid arthritis	7
Polymyalgia rheumatica	7
Cervical myelopathy and spinal canal stenosis	8
Osteoporosis	8
<b>Patient and community education</b>	<b>10</b>
<b>Multidisciplinary approach to chronic pain</b>	<b>11</b>

<b>Prevention of arthritis and its complications</b>	<b>12</b>
<b>Exercise and musculoskeletal pain in the older person</b>	<b>13</b>
Exercise and musculoskeletal disease	14
<b>Recommendations for general practitioners</b>	<b>15</b>
<b>References</b>	<b>19</b>
Useful reading	20
<b>Appendix</b>	<b>21</b>
Arthritis Foundation of Australia	21
Independent living centres	22

# Tables

---

1. Causes of musculoskeletal pain in the older person	16
2. Treatment of osteoarthritis	16
3. Principles of management for osteoarthritis of specific joints	17
4. Role of allied health professionals in musculoskeletal pain management	18

# Membership

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Prof P. Brooks (Convener)	Department of Medicine, St Vincent's Hospital, Sydney (Rheumatologist)
Dr R. Clarke	Department of Geriatrics, St Vincent's Hospital, Sydney (Geriatrician)
A / Prof P. Sambrook	Department of Rheumatology, St Vincent's Hospital, Sydney (Rheumatologist/Geriatrician)
Dr M. Cohen	Department of Rheumatology, St Vincent's Hospital, Sydney (Rheumatologist, Pain Management)
Prof J. Eisman	Garvan Institute for Medical Research St Vincent's Hospital, Sydney (Endocrinologist)
Dr P. Kelly	Garvan Institute for Medical Research St Vincent's Hospital, Sydney (Endocrinologist)
A / Prof Mark Harris	School of Community Medicine, UNSW (General Practitioner)
Corresponding member: Mrs P. Brooks	Arthritis Education Coordinator Arthritis Foundation of South Australia. Adelaide.

# Executive summary

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Musculoskeletal pain is a common cause of disability in the older person. The cause (or site) of musculoskeletal pain can usually be determined by careful history taking and physical examination leading to the appropriate diagnosis. Investigations may be misleading, since they do not always (particularly x-rays) correlate with symptoms. Early diagnosis and development of a management plan, often involving non-pharmacological approaches, will significantly reduce musculo-skeletal pain and disability.

The National Health and Medical Research Council (NHMRC) expert panel on musculoskeletal disorders and the older person recommend that:

- the cause of musculoskeletal pain and disability be determined primarily by appropriate physical examination;
- investigations, particularly imaging techniques (x-rays and bone scans), be used judiciously in these patients;
- immobilisation and excessive pharmacological treatments be avoided in these patients;
- optimum management of musculoskeletal pain in the older person usually requires a “team” approach with doctor, physiotherapist, occupational therapist, social worker and community supports working with the patient and family; and
- exercise programs be promoted to all older people (well or unwell) and tailored individually, with an emphasis on gentle range of motion exercises and hydrotherapy.

# Background

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By the year 2000, 12 per cent of Australians will be over the age of 65. Women tend to outlive men, and a significant proportion (up to 25 per cent) live alone.<sup>1,2</sup> The problems of musculoskeletal disorders, particularly osteoarthritis, increase dramatically with age, result in significant suffering and consume a significant proportion of health care resources. Health care resources are required to provide a range of treatments and community supports to the patient, to provide for joint replacement and to treat the complications of drug therapy, in particular gastrointestinal (GI) side effects. Significant radiological changes of osteoarthritis are found in 60 per cent of the population over the age of 65<sup>3</sup> while nearly 70 per cent of those people 75 years and older have Heberden's nodes.<sup>4</sup> The majority of these people will have pain at some stage as a consequence of their arthritis. Bone and joint diseases are the major source of disability in people over the age of 75<sup>5</sup> and these people have more difficulty in physical function, personal care and household care than those without musculoskeletal problems.<sup>6</sup> In a recent survey, conducted in Sydney, of more than 1,500 people aged 65 years or over, 50 per cent reported a musculoskeletal condition that was being treated by their doctor and nearly a quarter of the population were using non-steroidal anti-inflammatory drugs (NSAIDs) for pain in the back, neck, knees or hands. In this population, musculoskeletal pain was the most commonly reported source of disability.<sup>7</sup> Arthritis is the third most common diagnosis made by general practitioners (3.6 per cent of encounters) and the majority of these cases will be primarily treated in the general practice setting.<sup>8</sup>

Clearly the problems of musculoskeletal pain are going to become even more prevalent with an ageing population. Strategies for early diagnosis, intervention and prevention are required to reduce the burden of musculoskeletal disability in the community

# Clinical presentation of musculoskeletal disease in the older person

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## Presenting symptoms

The presentation of arthritis varies depending upon the age of an individual and the extent of the musculoskeletal problem. In younger seniors, arthritis is typically painful and causes reduction of joint movement and general mobility. The patient is typically well aware of how the problems experienced in daily life relate to their joints or their back. In the older and more frail seniors, musculoskeletal disease may also present as tiredness, falls, depression, decreased function, or specific problems, such as incontinence because of the inability to move rapidly enough. A vicious cycle often develops when there is chronic pain or reduced mobility due to arthritis. Other features, such as immobility or depression present as the major issue. As well as providing symptom relief, it is important to look at all relevant factors concerning the patient's problem (for example, lack of mobility) and to provide information on what may be multiple interacting factors.

## Causes of musculoskeletal pain

The major causes of musculoskeletal pain in the older person are shown in Table 1. These complaints are a common accompaniment of ageing, but with careful attention to history taking and examination, together with a few simple investigations, a diagnosis can usually be made. The most important factor is to determine where the pain is coming from, eg directly from the joint, the surrounding tissue — muscles or tendons — or is it referred pain, such as knee pain referred from the hip. It is also important to explore the impact that the musculoskeletal disease is having on the person's life, especially activities of daily living such as walking, dressing and household activities. Physical examination is very important and a simple two minute screening test for musculoskeletal disease has recently been developed.<sup>9</sup> This is known as the GALS:

- G — gait
- A — arm and hands
- L — legs and feet
- S — spine

Active and passive range of motion of the individual joints should be tested and swollen joints examined for either an effusion or bony swelling. If there is evidence

of a joint effusion, it is important to ascertain whether this is inflammatory fluid or not. The best way is to aspirate the joint and to examine the synovial fluid for cells, crystals and, in the case of a suspected septic arthritis, for organisms.

## Investigations

Investigations need to be interpreted cautiously since musculoskeletal radiographs are invariably abnormal even in the 'normal' older person and are not necessarily related to current symptomatology. Chondrocalcinosis, for example, is present on x-ray in approximately one-quarter of people over the age of 75. Hyperuricaemia and positive rheumatoid factor (in low titre) together with a mild or moderate elevation of the ESR (less than 50) are often seen in the older person. Elevation of the ESR may be particularly useful in the diagnosis of polymyalgia rheumatica or in monitoring patients with inflammatory joint disease, such as rheumatoid arthritis. Radiological investigations tend to be over utilised in the diagnosis and management of musculoskeletal disease, particularly in the older person. X-rays should be reserved for patients whose symptoms are not settling with simple measures or where there is a diagnostic dilemma. In the case of spinal pain, nocturnal symptoms suggest a malignant process and justify radiography whilst pain with fixed neurological signs is best imaged by CAT scanning.

## Management

The social and environmental circumstances of each individual patient are critical to management decisions. The home environment, availability of support people and the particular functional requirements and desires of the patient will help to establish realistic therapeutic goals. Other diseases might influence the type of therapy provided and the major aim of management should be to maintain independence.

***Immobilisation, including bedrest, and excessive pharmacological treatment should be avoided.*** Exercise is very important, especially to maintain mobility and muscle strength. In this context, it is necessary to tailor the exercises to the patients' functional status, their physical fitness and the difficulties that they have with daily activities. Emotional support should be offered, as patients with arthritis may be depressed because of the limitations caused by the disease or by the treatments. Carers also need support.

Drug therapy should be used judiciously and with recognition that adverse drug reactions are common causes of morbidity, mortality and patient dissatisfaction. Older people are often on a large number of medications, which might interact and be affected by impaired renal, hepatic or cardiac function. Management optimally requires a team effort. This team involves the patient and their family and hence it is important to assess the home environment and the availability of supports. Other health professionals who should be considered include physiotherapists, occupational therapists, podiatrists and social workers as well as self help groups and home care services (see Table 4). Lifestyle modifications are generally more effective than any specific drug therapy for non-inflammatory musculoskeletal problems of the older person.

# Treatment of specific diseases

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## Osteoarthritis

The major symptom in patients with osteoarthritis is pain. Although osteoarthritis may have an inflammatory component, it tends to be relatively mild and intermittent. The main treatment options for osteoarthritis are seen in Table 2. Great attention should be given to the non-medical and surgical forms of therapy, but pharmacological control may be required. Drug treatments should be commenced with paracetamol. Non-steroidal anti-inflammatory drugs (NSAIDs) should only be used if patients do not respond to simpler measures. Paracetamol is the analgesic of choice, although combinations (such as paracetamol and codeine) may provide some minor added pain relief and a significant increase in adverse reactions such as constipation. Analgesics should be given regularly rather than on an “as required basis” and may also be used prophylactically, for example, half to one hour before the person does something that produces pain, such as exercise or a required walk.

In situations where analgesics are not sufficient to reduce pain and increase mobility, NSAIDs can be helpful. Older people are more prone to developing adverse drug reactions to NSAIDs, particularly indigestion and upper or lower bowel ulceration, renal dysfunction with a rise in serum creatinine and increase in blood pressure or fluid retention. Any older person commenced on an NSAID should be reviewed within the first week to assess cardiac, renal and GI function. NSAIDs can also interfere with a variety of co-prescribed medications such as antihypertensive drugs and diuretics.<sup>10</sup>

Joint replacement has become an increasingly important option for patients with severe pain and disability produced by arthritis affecting the hips or knees. Joint replacement should virtually eliminate pain and significantly increase mobility and independence in the majority of patients with severe joint disease. In the major Orthopaedic Surgical Units the failure rate for hip and knee prostheses is less than 5 per cent at five years, although some patients continue to have a degree of pain in weight bearing. There are now few, if any, situations where this operation should not at least be considered. Spinal anaesthesia negates the requirement for general anaesthetic, but pre-operative assessment with weight reduction and an exercise program can positively influence outcome.

Approaches by a general practitioner to individual joints may vary somewhat and are outlined in Table 3.

## Gout

Gout is being seen more frequently in the older person, particularly in women on thiazide diuretics. Although the classical presentation of acute pain affecting the first metatarsophalangeal joint is still relatively common, any other joint in the body can be affected and polyarticular disease with multiple tophi developing over already existed Heberden's nodes is being seen increasingly. The management of gout can be divided into three stages:

- i Acute attack.
- ii Chronic therapy.
- iii Treatment of asymptomatic hyperuricaemia.

### i Acute attack

An acute attack of gout may be treated with colchicine or a NSAID. Colchicine has the disadvantage of causing diarrhoea in the doses which may be required to suppress pain and inflammation, while NSAIDs may produce fluid retention, indigestion and interference with blood pressure control. Intra-articular or systemic steroids may be beneficial in suppressing joint inflammation which has not responded rapidly to colchicine or NSAIDs.

### ii Chronic therapy

Once the acute attack has settled, a decision needs to be made regarding long term therapy. Use of a drug to lower serum urate (allopurinol or a uricosuric agent) is probably not justified if only one attack of clinical gout has occurred. Gouty arthritis needs to be recurrent before prophylactic therapy can be justified. The serum urate should be monitored and risk factors that increase the serum urate, such as obesity, alcohol intake, thiazide diuretics and low dose aspirin, should be addressed. If the serum urate remains elevated and recurrent attacks of gout occur, then treatment with urate lowering drugs, for example allopurinol or a uricosuric agent, should be started. Allopurinol blocks the production of uric acid by interfering with xanthine oxidase. Allopurinol should be commenced in a dose of 100mg daily and only increased if the serum urate does not fall within two weeks. Care should be taken in patients with renal dysfunction as side effects of allopurinol (particularly skin rashes) are more common in this group. A uricosuric agent such as probenecid may be commenced in a dose of 1mg daily, as long as there is no evidence of renal dysfunction or a history of renal calculi. All patients commencing on urate lowering therapy should be treated with colchicine, 0.5mg two or three times daily, or a low dose NSAID for approximately 4-6 weeks to prevent precipitation of acute episodes of gout.

### iii Treatment of asymptomatic hyperuricaemia

There is no place for the routine treatment of asymptomatic hyperuricaemia, unless the serum urate is extremely high or renal function is deteriorating without any other obvious reason.

## Rheumatoid arthritis

Rheumatoid arthritis (RA) usually presents as a polyarthritis sometimes of quite explosive onset. Other causes of acute inflammatory arthritis, such as viral, crystal and polymyalgia rheumatica, should be excluded. The treatment of rheumatoid arthritis in the older person is no different from that in younger patients. Treatment options include NSAIDs, slow acting antirheumatic drugs (gold, d-penicillamine, hydroxychloroquine, sulphasalazine and methotrexate), corticosteroids and immunosuppressive agents. When RA presents acutely, corticosteroids may be used in this situation to suppress inflammation and maintain mobility. Although corticosteroids are extremely useful in this situation, the dose should be reduced rapidly to avoid adverse drug reactions which may occur even at very small doses in the older person. These include osteoporosis, exacerbation of hypertension and multiple skin bruising with the risk of tissue break down and slow healing. Drugs such as methotrexate or salazopyrin should be commenced early in the disease before joint damage has occurred. There is little evidence from the literature to suggest that older people with RA are more likely to suffer adverse reactions to these agents than younger people. The general practitioner plays a very important role in monitoring patients with RA on slow acting antirheumatic drugs and guidelines for these monitoring procedures have recently been developed." These include regular full blood count and urine check with gold and regular liver function tests in patients on methotrexate and salazopyrine. As in other forms of arthritis, assessment by a physiotherapist with regular exercise, hydrotherapy and a patient education program are important. Exercises need to be directed at specific painful joints, but it is also important that a general range of motion program, be undertaken. Patients should put their joints through a full range of motion each day, either during or just after they have taken their bath or shower. Home assessment and referral to an Occupational Therapist are very important. The patient should be encouraged to visit a local Independent Living Centre where a variety of devices used in self care can be demonstrated.

## Polymyalgia rheumatica

Polymyalgia rheumatica (PMR) is a clinical syndrome comprising stiffness in the upper or lower limb girdle muscles associated with constitutional symptoms of fever and weight loss. Occasionally a peripheral synovitis occurs. Invariably morning stiffness lasts longer than one hour and there is often tenderness detected over the upper arms. The diagnosis should be reconsidered if the ESR is not significantly elevated ( $> 50$ ). Liver function test abnormalities (raised alkaline phosphatase) are often noted and there may be an associated normochromic anaemia. PMR should be distinguished from local shoulder disorders (which are usually unilateral), referred pain from cervical spondylosis and other inflammatory forms of arthritis (rheumatoid arthritis or viral infections). PMR is very responsive to 20mg prednisolone and patients not responding to that dose within 48 hours should be reviewed for an alternative diagnosis. Patients who also complain of headaches or transient visual disturbances and have tenderness or nodularity over the temporal arteries should be subjected to temporal artery biopsy for definitive

diagnosis of temporal arteritis and a higher dose (60mg) of prednisolone commenced. Once symptoms are under control, steroid withdrawal should be extremely slow (at a rate of 1mg per month when the dose of steroids has fallen to 10mg daily) and up to 50 per cent of patients will require steroids after two years. Even in patients on long term treatment, slow withdrawal of prednisolone should be attempted if symptoms and the ESR remain normal. Associated cervical and shoulder osteoarthritis may provide confounding symptoms and make steroid withdrawal and the activity of the PMR difficult to assess.

## Cervical myelopathy and spinal canal stenosis

Narrowing of the spinal canal may occur in the cervical or lumbar regions as a consequence of osteoarthritis with or without superimposed disc herniation. In the neck this may give rise to cervical myelopathy with specific neurological lesions in the arms or the onset of a progressive spastic paraparesis. The occurrence of these symptoms and signs demands urgent radiological investigation including computed tomography and myelography and possibly MRI. Neurological or neurosurgical consultation is advised as a prelude to these investigations.

Narrowing of the lumbar spinal canal as a consequence of osteoarthritis, with or without superimposed disc herniation, may produce claudicant sciatica (pain radiating down the back of the leg with walking). The patient classically notices pain relief on sitting or bending forward and features of vascular insufficiency in the legs (reduced or absent pulses) are not found. Deep tendon reflexes may be absent, but the diagnostic feature of disappearance of knee and ankle jerks with exercise is unusual. Computerised tomography of the spine allows visualisation of the canal, but combination with contrast may be required prior to surgery.

Some patients will settle with rest, a gentle physiotherapy program, including abdominal strengthening exercises and analgesics and/or NSAIDs. However, if the symptoms persist, and are significantly restricting lifestyle, or neurological signs are present, spinal decompression may be of great benefit.

## Osteoporosis

Osteoporosis is a common cause of musculoskeletal pain (particularly back pain) in the older person when associated with fractures (sometimes spontaneous or after minimal trauma), usually of the pelvis, femur or wrist. The advent of accurate and precise densitometric techniques for quantitation of bone mass has greatly increased our understanding of osteoporosis. A variety of methods are now available and each has substantial predictive value of the overall fracture risk. Their selective use, particularly in patients with risk factors or a family history, to confirm or preclude the presence of osteoporosis (or reduced bone density) is recommended to allow decisions about appropriate treatments such as oestrogen replacement therapy. *It should be remembered that back pain does not occur in osteoporosis in the absence of vertebral fracture.*

In both men and women bone density increases from early childhood to a peak in the late teens or early adulthood. This “peak bone mass” appears to be determined

largely by genetic factors, but is also influenced by environmental and lifestyle issues. With increased age, both men and women start to lose bone gradually (so-called age related bone loss). In addition, in women there is usually a rapid phase of bone loss immediately after the menopause. Bone loss appears to be less rapid after the age of 65, but even in older people with established osteoporosis bone loss may continue. Fracture risk in later life is directly related to bone density, and because of this, prevention of osteoporosis can be considered in the following terms:

- maximisation of peak bone mass;
- avoidance/modification of lifestyle and environmental factors which cause bone loss;
- use of oestrogen therapy to prevent postmenopausal bone loss; and
- maintenance of postural stability and prevention of falls.

Physical activity has a beneficial effect on bone density and may prevent future falls. Specific optimal exercise regimens have not been identified, but a reasonable approach is to encourage daily weight bearing exercises, such as, walking and if more active, tennis and golf. The relationship between dietary calcium and osteoporosis has been controversial, but recent data suggests that, as for exercise, there is a significant effect over the long term. An adequate dietary calcium intake requires an intake of at least 1,000mg calcium per day in postmenopausal women. Therapies are available that have been demonstrated to decrease the rate of vertebral fracture in women with established vertebral osteoporosis and previous spinal fracture. These include calcitriol, oestrogen, bisphosphonates and anabolic steroids. Other lifestyle factors such as cigarette smoking, lack of exercise and low calcium intake, can also adversely affect bone density with heavy smoking effectively doubling the risk of hip fracture at any age.<sup>12</sup> Corticosteroids are probably not related to an increased risk of osteoporosis as long as the daily dose does not exceed 7.5mg.

The 3-5 years post-menopause is associated with an accelerated phase of bone loss. Bone loss occurs at a slower rate thereafter (approximately 1 per cent bone mass per annum) and can exceed 25 per cent of peak bone mass. Studies have clearly shown that oestrogen replacement therapy can prevent postmenopausal bone loss and is the only therapy that has been shown in case control and population studies to reduce the incidence of both hip and spinal fractures. Moreover, although post-menopausal bone loss may be most rapid in the first few years after the menopause, the beneficial effect of oestrogen replacement therapy has been shown even in women at age 70.

Although oestrogen replacement therapy is the most effective treatment in prevention of menopausal bone loss, a combination of regular daily exercise and high dietary calcium intake (1,000-1,500mg/day) may reduce bone loss in postmenopausal women.<sup>13</sup> Oestrogen replacement therapy should be considered for all women at the menopause and a bone density measurement can assist in this decision by identifying those women at greater risk. This approach can be considered analogous to medical practice in relation to hyper-cholesterolaemia.

## Patient and community education

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The growing prevalence of musculoskeletal diseases has led to the development of well evaluated patient and community education programs within clinical and community settings. Organisations such as the Arthritis Foundation of Australia conduct self management programs specifically designed to give people the skills to participate positively in managing the problems associated with musculoskeletal diseases although these tend to cater for the 'fit'. Of particular relevance are 'The Arthritis Self Management' and 'Osteoporosis — Prevention and Self Management Course'. They can be modified for frail older people as well.

Advice on other programs can be obtained from the State arthritis groups (see the list of addresses in the Appendix).

# Multidisciplinary approach to chronic pain

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Even older patients with chronic musculoskeletal pain may benefit from a review by a multidisciplinary pain clinic. In these clinics, emphasis is usually placed on the cognitive and affective aspects of chronic pain management through a variety of educational and behavioural strategies. These pain clinics should always include a psychologist on their panel.

# Prevention of arthritis and its complications

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Prevention of the consequences of arthritis primarily relates to early management of inflammatory episodes, whether they are caused by rheumatoid arthritis, osteoarthritis or crystal arthropathy. Any acute inflammation within a joint can significantly affect cartilage integrity in the long term and lead to progressive cartilage destruction and joint dysfunction.

However, risk factors are now emerging for osteoarthritis and they may be important to other inflammatory rheumatic diseases as well. The incidence of idiopathic symptomatic knee and hip osteoarthritis increases with advancing age in men and in women until after the menopause, when rates at both sites plateau.<sup>14</sup> In a follow-up of the Framingham Osteoarthritis Survey<sup>15</sup> risk factors for radiographic osteoarthritis of the knee included obesity, knee injury, chondrocalcinosis, occupational knee bending and physical labour. These data emphasise the importance of maintaining ideal body weight throughout life and in caring for injuries (particularly sporting) in the early years.

Another major issue in arthritis prevention is reducing complications of treatment to a minimum. Since NSAIDs are associated with a significant incidence of gastrointestinal blood loss, particularly in the frail older person, they should always be prescribed judiciously in the lowest dose to provide symptom relief and for the shortest possible time.

NSAIDs are not the drug of first choice for osteoarthritis or soft tissue rheumatism when analgesic agents and local physiotherapy are more appropriate. Patients at particular risk of gastrointestinal haemorrhage, for example women over 65 years of age, previous peptic ulcer, on corticosteroids and with significant disability from co-morbidity who require NSAID therapy, should be considered for antiulcer prophylaxis with H<sub>2</sub> antagonists or prostaglandin analogues.

# Exercise and musculoskeletal pain in the older person

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For further information about exercise, please refer to the National Health and Medical Research Council paper, "Exercise and the Older Person" (June 1993).

"Physical activity has more potential for promoting healthy ageing than anything else science or medicine has to offer today".<sup>15</sup> There is now good evidence to show that there is a significant loss of muscle and bone tissue both with ageing and with disuse. With ageing, muscles undergo a reduction in size and consequently strength which is related to a loss of muscle fibre and a reduction in the number of existing fibres.<sup>15</sup> Inactivity is also a significant risk factor in osteoporosis. The effect of exercise in increasing total body calcium and reducing morbidity due to arthritis has recently been reviewed by Twomey.<sup>16</sup> Modest exercise appears to retard the progression of osteoporosis and maintaining muscle bulk also has important implications for a more rapid recovery from illness and surgery and for reducing the impact of osteoarthritis. There is good evidence that even 90 year olds who exercise can increase strength and muscle mass as readily as younger people.<sup>17</sup> Fisher et al<sup>18</sup> have shown, that three one hour exercise sessions given each week for 16 weeks, can produce significant increase in strength, endurance and walking time in a group of men with osteoarthritis of the knees. Measurements of dependency, disability and pain were also improved and these improvements were maintained for a period of at least eight months.

Exercise programs for the older person need to be both specific and general. Specific exercises and physiotherapy may be directed at those with diseases of certain joints, but a general exercise program should be designed to provide at least 20-30 minutes of activity at approximately 60 per cent of aerobic power, three to four times a week. Exercise programs need to be individualised, but should include warm-up and warm-down exercises to stretch muscles and reduce the risk of injury and cardiac arrhythmias. If tolerated, exercises that are particularly useful are; walking swimming, aquaerobics in a warm pool, tennis, golf, Tai Chi, yoga. Many patients with musculoskeletal pain may be helped by treatment at a day hospital or other ambulatory care facility — particularly as regards exercise and education programs.

# Exercise and musculoskeletal disease

Points in brief:

1. Bone loss occurs in the absence of exercise.
2. A decreased rate of bone loss follows increased levels of physical activity.
3. Bones and joints require the continuing stresses of exercise and physical activity.
4. Exercise programs must be tailored to suit individual circumstances.
5. The doctor and exercise therapist should consult very closely on exercise programs for the older person and make sure they are appropriate and easily tolerated.
6. Controlled back extension movements are preferable to flexion, which is in the direction of thoracic kyphotic deformities. [Adapted from Twomey<sup>19</sup>]
7. To bring about long term positive changes in behaviour and to maintain exercise regimes in musculoskeletal diseases in particular, the Exercise Prescription must be seen to have perceived relevance, for example, reduces pain, increases mobility, maintains independence and can be delivered as part of an effective educative process.
8. Hydrotherapy is good for pain relief and gentle muscle strengthening while walking and back exercises are good for general muscle strengthening.

# Recommendations for general practitioners

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1. Try to determine exactly what is causing the pain — remember physical examination and history are most important.
2. Do not over-interpret x-ray findings — they are usually abnormal in this age group and might not be the reason for the pain.
3. Remember to avoid **bedrest** and immobilisation — make sure people put their joints through a full range of movement each day.
4. Always try pure analgesic agents plus local physical measures in patients with osteoarthritis. If patients do not respond, then a small dose of NSAID can be **tried**.
5. In all patients on long term therapy, review treatment regimens frequently and try to reduce dose or cease them.
6. Total joint replacements can be extremely useful for those with severe hip and knee pain not responding to other therapies.
7. Back pain occurring at night or in association with neurological signs should be investigated carefully.
8. An indication of the physical disability produced by the musculoskeletal pain should always be sought.
9. Gentle exercise programs should be tailored to each patient.
10. Community resources such as Arthritis Foundations and Independent Living Centres should be utilised.

# Tables

**Table 1: Causes of musculoskeletal pain in the older person**

	Major site of pains
Osteoarthritis	Back, neck, hip, knee, hands
Rheumatoid arthritis	Hands, wrists, feet, knees
Osteoporosis	Back
Polymyalgia rheumatica	Shoulder, neck, arms
Soft tissue rheumatism	Generalised aches and joint stiffness
Crystal arthritis (gout, pseudogout monoarthritis)	Feet, knee, wrists
Lumbar/cervical canal stenosis	Claudicant sciatica (lumbar)
Bone pain due to malignancy (2° carcinoma myeloma)	Back or site of lesion

**Table 2: Treatment of osteoarthritis**

Objective	Treatment
Pain control	Paracetamol ( $\pm$ NSAID) Education programs Rubefacients Exercise programs Relaxation techniques
Maintain function	Regular modest exercise Weight reduction Footwear (extra depth, innersoles) Hydrotherapy Walking aids Occupational therapy Assessment (at home) Visit to independent living centre (see addresses at Appendix)

**Table 3: Principles of management for osteoarthritis of specific joints**

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Hips	Exclude trochanteric bursitis – <i>if diagnosed, inject with steroid</i> Weight reduction Rubefacients
Knees	Exclude <b>meniscal</b> tears (history of locking) <i>If diagnosed, refer for arthroscopy</i> <i>If effusion, aspirate and try steroid injection (once)</i> Quadriceps exercises Advice on weight reduction Rubefacients
shoulder	May respond to steroid injection Gentle exercises (rotational or pendular) Rubefacients
Cervical spine	Exclude malalignment (x-ray) Isometric exercises Maintain mobility
Lumbar spine	Exclude pathology other than OA Abdominal exercises Hydrotherapy Rubefacients

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**Table 4: Role of allied health professionals in musculoskeletal pain management**

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Occupational therapist	Home assessment and modification Life style assessment and modification Work simplification
Physiotherapists	Devices; splinting Exercises; splinting Pain management Hydrotherapy
Social workers	Home and social assessment Community supports
Podiatrists	Assessment/treatment of foot problems devices – orthotics
Self help groups (arthritis foundations)	Educational programs Social contact

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## References

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1. Australian Bureau of Statistics- Projections of the population of Australia, States and Territories, 1989-2031. Cat No. 32220. Series A & B, Canberra, ABS, 1990.
2. Australian Bureau of Statistics Census of Population and Housing, Cat. No. 3302.0. Canberra, ABS, 1986.
3. Lawrence JS, Bremner JM and Bier F. Osteoarthritis-Prevalence in the population and relationship between symptoms and x-ray changes. *Annals of Rheumatic Diseases*, 1986; 25: 1-24.
4. Yazici H, Savvel PD, Salvarti EA, Bohme WHO and Wilson I'D Jr. Primary osteoarthritis of the knee and hip. Prevalence of Heberden's nodes in relation to age and sex. *JAMA*, 1975; 231: 1256-1260.
5. Verbrugge LM. From sneezes to adieux- Stages of health for American men and women. In: Ward RA and Tobin SS (Eds), *Health in Ageing — Sociological Issues and Policy Directions*. Springer, 1987; pp 17-57.
6. Verbrugge LM, Lepkowski JM and Komkol LL. Levels of disability among US adults with arthritis. *J Gerontol*, 1991; 46: 781-783.
7. March LM, et al. Musculoskeletal disability in an elderly population living independently. *Proceedings ARA Scientific Meeting, Sydney 1992*.
8. Bridges-Webb C, Britt H, Miles PA, Neary S, Charles J and Traynor V. Morbidity and treatment in general practice in Australia 1990-1991. *Med J Aust* 1992; Suppl 1,157: S1-S50.
9. Doherty M, Dacre J, Dieppe P, Snaith M. The GALS motor screen. *Annals Rheum Dis* 1992; 51: 1165-1169.
10. Brooks PM and Day RO. Non-steroidal anti-inflammatory drugs — Similarities and differences. *N Engl J Med*, 1991; 324: 1716-1725.
11. Brooks PM. Clinical management of rheumatoid arthritis. *Lancet* 1993; 1: 286-290.
12. Prince RL, Smith M, Dick IM, Price RI, Webb PG, Henderson NK, Harris MM. Prevention of postmenopausal osteoporosis: A comparative study of exercise, calcium supplementation and hormone replacement therapy. *New Eng J Med* 1991; 325: 1189-95.
13. Pocock NA, Eisman JA, Yeates MG, Sambrook PN, Eberi S. Physical fitness is a major determinant of femoral neck and lumbar spine bone mineral density. *J Clin Invest*, 1986; 78: 618-621.
14. Wilson MG, Michet CJ, Ilstrup DM and Melton LJ. Idiopathic symptomatic osteoarthritis of the hip and knee — a population based study. *Mayo Clinic Proceedings*, 1990p 65: 1214-1221.
15. Felson DT. The epidemiology of knee osteoarthritis. The results from the Framingham Osteoarthritis Study. *Seminars of Arthritis and Rheumatism*, 1990; 20-42-50.

16. Twomey L. Age, exercise and the musculoskeletal system. *J on Ageing*, 1989; 8: 36-41.
17. Fiatarone M, Marks BC, Ryan ND, Meredith CN, Lipsitz LA and Evans WJ. High intensity strength training on nonagenarians. *JAMA*, 1990; 263: 3029-3034.
18. Fisher NM, Prentergast DR, Gresham GE and Calkins E. Muscle rehabilitation — its effect on muscular and functional performance of patients with knee osteoarthritis. *Arch Phys Med Rehabil*, 1991; 72: 365-374.
19. Twomey L. *Patient Management*, August 1989; pp 27-34.

## Useful reading

### Patient education programs

1. “The Arthritis Self Management Course” — K. Lorig, Senior Research Associate, Department of Medicine, Stanford University, HRP Building, Stanford, CA 94305.
2. ‘Osteoporosis-Prevention and Self Management Course’ -Arthritis Foundation of Victoria.

### Pharmacological management of pain

Analgesics Guidelines. 2nd Edition 1992, Vic. Medical Postgrad Foundation.

# Appendix

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## Arthritis Foundation of Australia

### National Office

Arthritis Foundation of Australia,  
Suite 421, Wingello House,  
Angel Place, Sydney, NSW 2000  
GPO Box 121, Sydney, 2001  
Telephone: (02) 221 2456  
Facsimile: (02) 232 2538

### New South Wales

Arthritis Foundation of NSW,  
3rd Floor, 69-75 Reservoir Street,  
Surry Hills, NSW 2010  
PO Box 370, Darlinghurst, 2010  
Telephone: (02) 281 1611  
Facsimile: (02) 281 4473

### Victoria

Arthritis Foundation of Victoria,  
Yarra Boulevard, Kew, VIC 3101  
PO Box 195, Kew, 3101.  
Telephone: (03) 853 2555  
Facsimile: (03) 853 0385

### Queensland

Arthritis Foundation of Queensland,  
3rd Floor, Boral Resource Bldg,  
Cnr. Chasenly Rd. & Coronation Drive,  
Auchenflower, QLD 4066.  
PO Box 901, Toowong, QLD 4066  
Telephone: (07) 371 9755  
Facsimile: (07) 371 8638

### South Australia

Arthritis Foundation of South Australia,  
99 Anzac Highway, Ashford, SA 5035  
Telephone: (08) 297 2488  
Facsimile: (08) 293 1177

### Western Australia

Arthritis Foundation of Western  
Australia,  
Goatcher House, 42 Jersey Street,  
Jolimont, WA 6014  
PO Box 34, Wembley, WA. 6014  
Telephone: (09) 387 7066  
Facsimile: (09) 387 3301

### Tasmania

Arthritis Foundation of Tasmania,  
30/84 Hampden Road, Battery Point,  
TAS 7004  
Telephone: (002) 34 6489  
Facsimile: (002) 23 6136

### Australian Capital Territory

Arthritis Foundation of ACT,  
Health Promotions Centre, Childers  
Street, Canberra City, ACT. 2600  
GPO Box 1642, Canberra, 2601  
Telephone: (06) 249 6999  
Facsimile: (06) 249 6999

### Northern Territory

Arthritis Foundation of NT,  
PO Box 37582, Winnellie, NT 0821  
Telephone: (089) 832 071 (Home)  
Facsimile: (089) 832 449

## Independent living centres

### Australian Capital Territory

24 Parkinson Street, Weston, ACT 2611

Telephone: (06) 205 1900

Facsimile: (06) 205 1906

### New South Wales

600 Victoria Road, PO Box 706,

Ryde, NSW 2112

INFOLINE: (02) 808 2477

Telephone: (02) 808 2233 (008) 800 523

Facsimile: (02) 809 7132

### Queensland

Newdegate Street, Greenslopes,

QLD 4120

Telephone: (07) 394 7471

Facsimile: (07) 394 1013

### South Australia

180 Daws Road, Daw Park, SA 5041

Telephone: (08) 276 3455 (008) 800 523

Facsimile: (08) 276 7417

### Victoria

52 Thistlethwaite Street,

South Melbourne, VIC 3205

Telephone: (03) 690 9177

Facsimile: (03) 696 1956

### Western Australia

3 Lemnos Street, Shenton Park,

WA 6008

Telephone: (09) 382 2011 (008) 800 523

Facsimile: (09) 382 2896

### Tasmania

C / - Douglas Parker Rehabilitation

Centre, New Town, TAS 7008

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