




Australian Government

Department of Health and Ageing

RURAL HEALTH
EDUCATION FOUNDATION



Musculoskeletal Guideline Series

Learning Guide

1001a Juvenile Idiopathic Arthritis: Clinical Guideline for Diagnosis and Management

1001b Early Rheumatoid Arthritis: Clinical Guideline for Diagnosis and Management

1001c Hip and Knee Osteoarthritis: Guideline for Non-surgical Management

1001d Osteoporosis: Clinical Guideline

The Australian Government has provided funding to support this project through the Better Arthritis and Osteoporosis Care Initiative

Cover photo: Scaling the heights at Camp Footlose, Lake Burrendong, NSW, 2009



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Introduction

About the Rural Health Education Foundation

Originally established in 1992, the Rural Health Education Foundation provides independent accredited education services to General Practitioners and other health professionals, working in rural and remote Australia.

Health education via satellite, the internet and DVD

The Foundation produces and broadcasts distance education programs using digital satellite technology, the internet, DVDs and other television services. The Foundation operates a growing network of more than 660 receiving sites, called the Rural Health Satellite Network.

Today, the Foundation's satellite network is one of the largest dedicated networks of its kind in the world, available to more than 90 per cent of rural doctors and other health professionals.

A non-profit lifeline to the bush

The Rural Health Education Foundation is a non-government, not-for-profit organisation that provides an education and information lifeline to rural and remote health professionals.

The latest topics via the latest technology

The satellite and internet technology ensures that health professionals gain access to continuing education, without needing to find locum support or leave their communities.

The Foundation's programs are broadcast and distributed in Australia a number of times each month to meet the professional development needs of all disciplines. They explore major health issues and provide information on the latest and best health and community care practices. They also address the prevention and current management of common health problems.

Presented by experts

The programs feature leading medical and health professionals in a panel discussion. The panels usually include a rural health professional and allow for participation from the viewing audience across Australia.

Introduction to Musculoskeletal Learning Guides

The Rural Health Education Foundation has developed a series of four professional development programs, based around the recently released Clinical Guidelines developed under the Australian Government's Better Arthritis and Osteoporosis Care (BOAC) 2006-2007 budget initiative. The project was supported by the RACGP and endorsed by the National Health and Medical Research Council (NHMRC). The guidelines focus on four of the major musculoskeletal conditions: Juvenile Idiopathic Arthritis, Early Rheumatoid Arthritis, Hip and Knee Osteoarthritis, and Osteoporosis.

As the various Guidelines note, chronic disease is a major public health burden on Australian society, and chronic musculoskeletal conditions account for over 4% of the national disease burden in terms of disability adjusted life years. It is estimated that chronic musculoskeletal disease affects over 6 million Australians, and it represents the main cause of long term pain and physical disability in the community. In 2007, the total cost of arthritis to the Australian economy was estimated to be \$23.9 billion; the disease represents a significant burden on the individual and the community due to its impact on patients' quality of life, the diminished employment capacity of many affected individuals, and increasing health care costs. Accordingly the Australian Government has identified arthritis as a National Health Priority Area and adopted a variety of initiatives aimed at decreasing the burden of chronic disease and disability, raising awareness of preventive factors, improving overall management, and providing access to evidence based knowledge of the conditions.

The four Clinical Guidelines that have recently been released are in line with the objectives of the Bone and Joint Decade (2000 to 2010), which was formally launched by the World Health Organization in 2000 (<http://www.boneandjointdecade.org/>). The goals of the Bone and Joint Decade were to improve the health-related quality of life for people with musculoskeletal disorders throughout the world by:

- raising awareness of the growing burden of musculoskeletal disorders on society.
- empowering patients to participate in decisions on their care.
- promoting cost effective prevention and treatment.
- advancing understanding of musculoskeletal disorders through research to improve prevention and treatment.

Australia was one of the participating governments in the initiative and developed its own website - <http://www.bjd.org.au/>

The Rural Health Education Foundation's programs focus on the key practice points and goals for management of the four musculoskeletal conditions presented in the Guidelines. The programs feature live panel discussions with leading clinicians in the area of musculoskeletal conditions and are chaired by Dr Geraldine Moses and Dr Norman Swan. Case studies, filmed on location, showcase innovative approaches to best practice prevention, diagnosis and management of these various conditions.

The Learning Guides that support the programs have been designed with a number of activities that can be used to facilitate group discussion and engage with the material covered in the DVD. They provide a framework for facilitating discussion of the key issues raised in the programs.

Use of the Clinical Guidelines

Each of the guidelines notes that it has been designed to provide clear information to assist clinical decision-making and to support optimal patient care. Each contains algorithms, detailing the steps in diagnosis and management of the conditions, and a series of recommendations based on the best available evidence; where appropriate, recommendations are followed by relevant 'practice points' in the form of tips on how to effectively implement the recommendations.

All guidelines note that the recommendations are not applicable to all patients in all circumstances at all times; rather they represent a general guide to appropriate practice. As such, the guidelines should be interpreted and applied on an individual basis in the light of the health care practitioner's clinical experience, taking into account the personal circumstances and preferences of the patients.

Use of the Learning Guides

In a similar fashion, the Learning Guides should be used in whatever way best supports your professional needs or those of your group. A number of activities are listed which relate to the program discussion and you can adapt them to your own educational activities or training accordingly.

A Guide to Facilitating Adult Learning booklet has also been developed by the Foundation to support the facilitation of discussion with small groups. It covers the basic aspects of how people think and learn, running groups and facilitating learning in face-to-face settings. It is designed to provide some basic instructional information to assist people facilitating face to face learning. The Guide to Facilitating Adult Learning can be found on the Foundation's website at www.rhef.com.au.

The programs covered in this Learning Guide are based on the following guidelines:

Juvenile Idiopathic Arthritis: Clinical Guideline for Diagnosis and Management
Early Rheumatoid Arthritis: Clinical Guideline for Diagnosis and Management
Hip and Knee Osteoarthritis: Clinical Guideline for Non-surgical Management
Prevention and Treatment of Osteoporosis in Postmenopausal Women and Older Men

Some Basic Facts on Musculoskeletal Conditions

- According to the website of the Bone and Joint Decade, musculoskeletal conditions affect hundreds of millions of patients throughout the world, and are the leading cause of pain and disability, having a huge impact on individuals, families, societies and economies.
- Bone and joint diseases account for half of all chronic conditions in people over 50 years of age in developed countries, a figure which is set to sharply increase due to the predicted increase in the number of people in the world over 50 years of age by 2020.
- 20% of all visits to outpatient facilities around the world are for musculoskeletal conditions.

- The costs to both developed and developing countries are enormous, and will continue to rise.
- There are many types of musculoskeletal disability, but joint diseases (rheumatoid arthritis and osteoarthritis), osteoporosis and childhood musculoskeletal conditions are some of the most insidious causes of long-term pain and disability.
- Two of the main principles behind the Bone and Joint Decade initiative are reflected in the recently released Clinical Guidelines: Multidisciplinary teamwork and Collaboration between patients and health-care professionals.

Preliminary Activity

Prior to working through the Learning Guides, think of two patients you have seen in the last 12 months with musculoskeletal conditions, about whom you have felt concerned. Keep them in mind as you work through the materials.

Juvenile Idiopathic Arthritis: Clinical Guideline for Diagnosis and Management

This program is the first in a four part series on musculoskeletal conditions; it draws on the evidence based guideline concerned with Juvenile Idiopathic Arthritis, and discusses the recommendations and practice points in relation to early accurate diagnosis and multidisciplinary management of this condition.

Program Presenters:



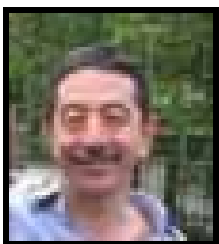
Chair: Dr Geraldine Moses - Consultant Clinical Pharmacist, Brisbane QLD

Dr Geraldine Moses is a doctor of clinical pharmacy who specialises in drug information. Based at the Mater Hospital in Brisbane, Geraldine manages the Adverse Medicine Events Line, a national consumer service for adverse drug reaction reporting. Geraldine is very involved in pharmacy education and provides lectures for undergraduate and postgraduate pharmacy, podiatry, optometry, dental and medical students at the University of Queensland and the Queensland University of Technology. She is also an accredited pharmacist and provides stage one training for pharmacists who wish to become accredited to perform Home Medicine Reviews. Dr Moses is a state branch councillor for the Pharmaceutical Society in Queensland and in 2002 she was named Australian Pharmacist of the Year.



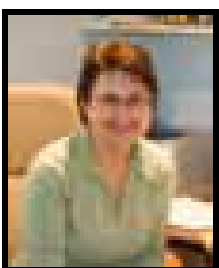
Ms Penelope Barram - Occupational Therapist, MontroseAccess, Brisbane, QLD

Penny is an Occupational Therapist who has been working in Paediatrics for nearly 30 years. She currently works with both the Queensland Education Department and MontroseAccess as part of the outreach team to the Darling Downs Region in South Western Queensland. She works with special needs children including those with JIA.



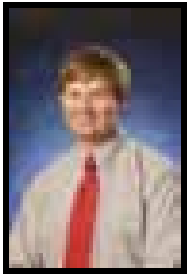
Dr Jeffrey Chaitow - Paediatric Rheumatologist, The Childrens Hospital, Westmead, NSW

Dr Chaitow is a Paediatric Rheumatologist and Head of the Department of Rheumatology at The Children's Hospital Westmead in New South Wales. He practises both through the hospital and private practice on Sydney's North Shore, as well as recently commencing a Paediatric Rheumatology clinic at the John Hunter Hospital Newcastle. He was also a member of the RACGP Juvenile Idiopathic Arthritis Working Group for the development of the clinical guideline.



Ms Karen Filocamo - CEO, Arthritis NSW

Karen is the Chief Executive of Arthritis NSW. Karen has nearly 20 years experience working in senior management within the health system in areas including health promotion, community participation and palliative care. Her expertise is in strategic planning, change management and service planning. Arthritis NSW also runs a range of programs and services for young people with JIA, including Camp Footloose.



Dr Morton Rawlin - General Practitioner, Lower Templestowe, VIC

Dr Rawlin is Vice President of the RACGP and Chair of the Victorian Faculty. His most recent position was as National Director of Educational Services for the RACGP. He spent 11 years in rural General Practice and has extensive experience in medical education. He was a member of the RACGP Juvenile Idiopathic Arthritis Working Group for the development of the clinical guideline.



Ms Kerry West - Physiotherapist, The Children's Hospital, Westmead, NSW

Kerry is currently the Deputy Head Physiotherapist at The Children's Hospital at Westmead. She has extensive experience working clinically as a paediatric physiotherapist. Her role includes provision of therapy, community and school liaison as well as expert consultation to therapists throughout NSW.

Chapter 1

Chapter 1: Introduction

- The guideline defines Juvenile Idiopathic Arthritis (JIA) as a chronic inflammatory joint disease. Specifically it is a 'persistent arthritis of unknown aetiology that begins before the age of 16 years and persists for at least 6 weeks' (p. 3)
- The guideline also notes that the cause of JIA is unknown. It is suspected that environmental factors such as viral infections may trigger the condition in genetically susceptible children (p. 3)
- Diagnosis and treatment can often be delayed because the condition can be confused with non-specific joint pains, or recurrent musculoskeletal 'sprains'
- There is currently no cure for JIA. However recent research has led to changes in treatment and management of children with the condition. The aim of treatment as outlined in the guideline is 'the induction of remission and control of the disease to minimise pain and function loss, and maximize quality of life'
- Dr Chaitow notes in the program that somewhere between about 1 and 4 per 1000 children are affected by the condition
- It used to be thought that most children would outgrow the disease, but it is now known that more than half will still have active arthritis 10 years after diagnosis unless treated appropriately
- The guideline underlines the importance of a multidisciplinary team in working with children diagnosed with JIA and their families.

Activity 1

Activity 1

Dr Moses notes in her introduction that because of the relatively low prevalence of JIA in the general population, GPs often have limited experience with diagnosis of the condition. It would follow that allied health professionals are similarly limited in their experience of intervention with these children and their families.

- (a) How many children have you seen with the condition?
- (b) Was there uncertainty about the diagnosis, and if so, what were the implications for the patient and his/her family?
- (c) How good are your systems of practice for identifying those with the condition?
- (d) In light of the above data on prevalence, discuss the implications for your local community.

Main Points from the Discussion

- There is a higher prevalence of JIA amongst Indigenous Australians
- There are different types of JIA and a range of severity in the condition
- Because arthritis is usually associated with an older population, it can make the diagnosis difficult for families to understand and accept
- There is an important distinction between JIA and Rheumatoid Arthritis – only a small percentage of children, mostly adolescent girls, have positive rheumatoid factor, and thus an adult-type disease.

Activity 2

Activity 2

Review the seven sub-types of JIA outlined in the guideline (p. 3). Choose one and outline how you would present the implications of the condition to the parents of a patient.

Activity 3 Case Study 1

Activity 3

Case Study 1: Talking about JIA

- (a) The guideline continually highlights the significance of early diagnosis of the condition. Discuss the impact of the delay in diagnosis on Peter and his family.
- (b) What are the different impacts on children and families of being diagnosed with this condition at age 18 months and at 10 years?
- (c) The guideline also notes in several places the importance of multidisciplinary management of JIA. Discuss the different range of medical and allied health needs of Priscilla and Peter. What resources and services does your community have available to meet these needs?
- (d) What access do you have to services that are not readily available in your community?

Chapter 2

Activity 4 Case Study 2

Chapter 2: Diagnosis

Activity 4

Case Study 2: Jack

Jack is a 15 month old infant whose mother has brought him to see her GP in a country town. She says that he has not been himself for some weeks and now thinks that he may be suffering from a virus because he has fever, is not eating well and has lost weight. He has skin rashes, is not walking like he used to, and appears to be in pain.

- (a) Dr Rawlin notes in the discussion that if you don't think about the possibility of JIA in a situation like this, you won't find it. How easily would the possibility of JIA occur to you?
- (b) What other possible diagnoses would you be thinking about?
- (c) If you were considering JIA, what would you be looking for in the history?
- (d) What would you cover in the initial examination?
- (e) What further investigations would you initiate?
- (f) What are the implications for Jack of a failure to diagnose JIA?
- (g) Once Jack is diagnosed with JIA, what would be your initial management? What medications would you prescribe?
- (h) What supports would you offer Jack's family at the stage of initial diagnosis and what other professionals would you involve?

Activity 5

Activity 5

- (a) Review the algorithm for diagnosis and early management of JIA presented in the guideline (p. 8), together with the history and clinical examination checklist (pp. 13-14 and p. 36).
- (b) Look at the graphic below that was used on the program. Would you recognise this as a systemic JIA rash?
- (c) Does the rash suggest any other diagnoses?



- (d) Review the differential diagnoses suggested in the guideline when considering the possibility of JIA (p. 37).

Main Points from Program Discussion

- Dr Rawlin emphasises the importance of taking a good history, examination of the child, consultation with those who know the child, and use of appropriate tests to make a diagnosis
- Early consultation with a paediatric rheumatologist can save a lot of unnecessary investigations
- The most common form of JIA is oligoarthritis, typically affecting young girls of 2 or 3 years old, and presenting with a swollen knee, morning stiffness, and limping
- Early diagnosis is important not only for the child, but also for the family
- Early multidisciplinary intervention is also important in order to help develop programs that foster physical activity and as much normal development as possible.

Chapter 3

Chapter 3: Ongoing Management

Activity 6

Activity 6

Review the algorithm for Management of JIA in the guideline (p. 9).

Activity 7 Case Study 3

Activity 7

Case Study 3 – Imogen

Imogen is a five year old girl. She was diagnosed with Oligoarticular JIA when she was three. Her joint disease was well controlled with local steroid injections to her left knee and right ankle on two separate occasions. She has however had troublesome uveitis detected on recent ophthalmological review.

- (a) What would the presence of uveitis in this situation indicate to you?
- (b) What other co-morbidities would you be thinking of with this patient?
- (c) The guideline states that the goals of treatment are to control inflammation, relieve pain, prevent or control joint damage, maximise functional abilities and manage complications (p. 9). In light of this, and of her current situation, develop a management plan for this patient.
- (d) What ongoing monitoring would you institute for her, and what other professionals would you involve in this?
- (e) How would you involve Imogen's parents in this process?

Activity 8

Activity 8

- (a) Review the discussion of pharmacological intervention in the guideline (pp. 17-19). The guideline specifically indicates that it does not give detailed guidance on pharmacological therapy in JIA (p. 6), and suggests that any such intervention be developed in consultation with a paediatric rheumatologist.
- (b) Dr Chaitow notes in the program that Imogen would initially have been treated with a non-steroidal anti-inflammatory drug (NSAID) to try and control the inflammation. The guideline recommends NSAIDs as the first line drug for reducing inflammation and associated pain in children with JIA. What advice would you give parents in relation to the use of NSAIDs and their potential side-effects?
- (c) The guideline recommends that advanced therapy – use of cortico-steroids, of disease modifying anti-rheumatic drugs (DMARDs), or biological modifying agents (bDMARDs) – be the responsibility of the paediatric rheumatologist. However GPs have an important role in monitoring any side-effects. What are the common side-effects of a drug such as methotrexate?
- (d) What supplementary treatment might you suggest for patients taking cortico-steroids and why?
- (e) The guideline also notes that GPs need to monitor adherence to DMARDs – what are the factors that affect adherence in young children, and what information, advice and/or support do parents need in this regard?

Activity 9

Activity 9

One of the poll questions in the program concerned ease of access to a paediatric rheumatologist. 70% of respondents reported that they did not have easy access. This is obviously an issue in rural and remote parts of the country, and significant in light of the guideline's recommendation that certain pharmacological interventions be instituted under the guidance of a paediatric rheumatologist.

- (a) What is your access to a paediatric rheumatologist and what is the impact on your practice?
- (b) Look up the website of the Arthritis Association in your state and find what resources are available to you. Check the website of the Australian Rheumatology Association (www.rheumatology.org.au) to find a paediatric rheumatologist.

Main Points from the Program Discussion

- NSAIDs are now available over the counter, so it is important to guide the patient (or patient's family) with regard to their use, and to monitor for potential side-effects
- Compliance is an important issue with children and teenagers

- Dr Chaitow recommends that any child newly diagnosed with JIA should be referred to an ophthalmologist to check for inflammatory eye disease
- There are a number of co-morbidities that need to be checked for, such as eye disease, joint contractures, muscle wasting
- Bone density monitoring is important for children on steroids.

Activity 10

Activity 10

- (a) Review the section on non-pharmacological interventions in the guideline (pp. 21-23).
- (b) What nutritional advice would you give Imogen's parents?

Activity 11 Case Study 4

Activity 11

Case Study 4 (filmed) - Camp Footloose

Camp Footloose is an annual camp run by Arthritis NSW for children between 8 and 18 years with all forms of arthritis. This case study highlights many of the Guideline Recommendations in terms of support, education and physical activity.

- (a) Outline the psychological, social and educational impacts of JIA on children with the condition.
- (b) What contribution can an occupational therapist make to a child with JIA, and how easily would you be able to find one?
- (c) How could you educate schools about JIA and its impact on a child socially and educationally?
- (d) What do you think are the benefits of regular exercise in managing JIA? What would your recommendations regarding exercise be for Imogen?
- (e) Would you anticipate that she might need orthotics management?
- (f) What do you think is the impact on carers of children with JIA, and what support systems would you consider introducing?
- (g) What advice would you give parents inquiring about complementary therapies such as acupuncture?

Main Points from Discussion

- It is important to tailor a sport or exercise program to the needs and capacities of a particular child
- Children benefit from understanding fatigue and the impact it has on their functioning

- Working with schools and teachers can have a very helpful effect on a child's participation in educational activities
- There is no evidence that complementary therapies actually modify the disease process.

Activity 12 Case Study 5

Activity 12

Case Study 5 - Long term Management and Support

Amy is a 17 year old girl living on a rural property 30kms out of town with her parents, two brothers and a sister. She was diagnosed with the polyarticular (RhF positive) form of JIA at the age of 11. Her movements and physical ability are very restricted. She attends school but spends a lot of time avoiding physical activity and school excursions. Amy needs assistance with most activities and is due to have a knee replacement.

- (a) What concerns would you have about Amy's ongoing physical and psychological health?
- (b) What impact does her rural location have on her treatment and on her coping with her condition?
- (c) What other health care professionals would you consider involving at this point?
- (d) What advice and support would you offer her parents and siblings?

Take-Home Messages

Ms Karen Filocamo: Early diagnosis is the most important thing but don't forget that parents will be worried and anxious so refer them on to someone like us who can calm them down.

Ms Penelope Barram: Always aim for independence. Keep them as independent as possible and help them believe that they can be independent too.

Dr Jeffrey Chaitow: Kids get arthritis too. Don't attribute the swollen joints to some minor trauma that no-one saw or some miniscule tear which doesn't really occur in 2 or 3 year olds. Think of inflammatory disease when the joints are stiff and swollen.

Dr Morton Rawlin: Make sure that you remember that JIA does exist and it does present in general practice and, if you can pick it up, you can markedly change the outcome of the disease.

Ms Kerry West: Keeping physically active and being able to participate in physical activity is my main goal- no role for bed rest!

Activity 15

Activity 15

Review the following Learning Outcomes for this program.

After viewing this program, participants will be able to:

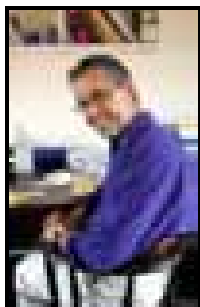
- *Utilise the Guideline easily and effectively*
- *Identify the criteria for early and accurate diagnosis of JLA*
- *Develop management plans and referral pathways for JLA*
- *Demonstrate awareness of the recommended treatments for JLA*

How well do you think the program achieved these objectives? What further information would be helpful? Where would you locate this? Does the guideline enable you to make more targeted interventions?

Early Rheumatoid Arthritis: Clinical Guideline for Diagnosis and Management

This program is the second in a four part series on musculoskeletal conditions; it draws on the recently released Clinical Guideline, and discusses the recommendations and practice points in relation to early accurate diagnosis and multidisciplinary management of early Rheumatoid Arthritis.

Program Presenters:

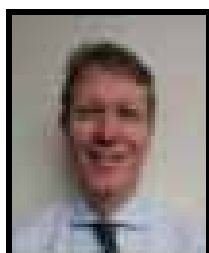


Dr Norman Swan (Panel Chair)

Dr Norman Swan regularly presents Rural Health Education Foundation satellite broadcasts.

He is best-known for his wide broadcasting experience, including the award-winning *Health Report*, which he produces and presents for ABC Radio National, as well as his other ABC Radio and Television program hosting.

Dr Swan trained in Medicine in Scotland and in Paediatrics in London and Sydney. A broadcaster and journalist with the ABC's Science Unit since 1982, he has been Australian Producer of the Year and was awarded a Gold Citation in the United Nations Media Peace Prizes.



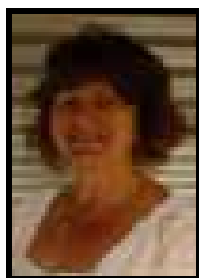
Dr John Bennett - General Practitioner, University Health Service, University of Queensland, (RACGP Rheumatoid Arthritis Working Group)

John Bennett is a General Practitioner at the University Health Service, University of Queensland. John was a member of the RACGP Working Group for this Guideline.



Professor Lyn March - Rheumatologist, Royal North Shore Hospital, Sydney (RACGP Rheumatoid Arthritis Working Group)

Lyn March is a Senior Staff Specialist in Rheumatology and Clinical Epidemiology at Royal North Shore Hospital and Professor in the Faculty of Medicine and Dept of Public Health, University of Sydney. Lyn was also a member of the Working Group.



Ms Christine Retallack - Rheumatology Community Health Nurse, Great Southern Aboriginal and Community Health, Albany, WA

Christine Retallack is a Community Health Nurse in Rheumatology. She works at the Albany Rheumatology Clinic in Western Australia for Great Southern Aboriginal and Community Health. Christine is a member of the Rheumatology Health Professionals Association.



Associate Professor Louise Sharpe - Director of Clinical Research, School of Psychology, University of Sydney NSW

Louise Sharpe is a clinical psychologist. She is currently an Associate Professor and the Director of Clinical Research in the School of Psychology, University of Sydney. She is widely published in the area of the psychosocial impact of rheumatoid arthritis and its psychological management.

Chapter 1

Chapter 1: Introduction

Points from the Guideline

- The guideline defines Rheumatoid Arthritis (RA) as a chronic inflammatory joint disease of unknown cause affecting approximately 2.5% of the Australian population (p. 4). Over time bone erosion and irreversible joint damage can occur
- Multiple organs can be affected and the disease can result in shortened life expectancy
- It is associated with substantial disability and economic loss
- There is some evidence that the inheritability of RA is high, but no single gene is identifiable as the cause. Environmental factors play an important but uncertain role
- Presentation and disease course are distinct for each patient, making diagnosis and management a more complex process.
- Patients often experience periods of remission, which can last for short periods of time or for several years
- Early diagnosis creates the opportunity to provide treatment that effectively limits structural damage and improves health outcomes. Such treatment involves:
 - (a) early introduction of disease modifying drug therapy
 - (b) education to assist individuals in the day-to-day management of their condition
 - (c) rehabilitation to restore function
 - (d) comprehensive multidisciplinary approach to the provision of care
 - (e) support to manage the physical, social, emotional and occupational impact of the disease

Activity 1 Case Study 1

Activity 1

Case Study 1 - Experiences of Early Rheumatoid Arthritis

This is a filmed case study, focusing on four women who talk of their experiences of early rheumatoid arthritis.

- (a) The panel focuses quite quickly on the psychological impact of early RA. Why do you think this is such a significant aspect of the illness? How might it affect your intervention with patients?
- (b) The guideline notes that GPs often have minimal experience with diagnosis or management of RA (p. 2). How good are your systems of practice for identifying those suspected of having the condition?
- (c) In light of the above data on prevalence, discuss the implications for your local community.
- (d) What would be your definition of 'remission' in cases of RA?

Main Points from the Discussion

- Most GPs will have a patient in their practice with RA
- Lyn March emphasizes the significance of early intervention for improving health outcomes and quality of life. The guideline recommends referral to a rheumatologist if there is persistent swelling beyond 6 weeks, even if RA is not confirmed
- Early RA is less common amongst Indigenous Australians
- Smoking increases risk, as does morbid obesity
- The symptoms of RA usually abate during pregnancy, suggesting that pregnancy-related hormones have an anti-inflammatory effect
- The aim of treatment is to put the disease into remission (defined as no further damage to the joints).

Chapter 2

Chapter 2: Diagnosis and Initial Interventions

Activity 2

Activity 2

- (a) Review the algorithm for diagnosis of early RA in the guideline (p. 11). List the classic features of RA.
- (b) What additional investigations would you consider to rule out other possible causes of presenting symptoms?
- (c) How easily can you make a referral to a rheumatologist?
- (d) What impact does a rural or remote location have on diagnosis and treatment of early RA?

Main Points from the Discussion

- Classic principles of diagnosis include taking a history, clinical examination, and appropriate blood tests (looking for raised ESR and/or CRP, and positive results for rheumatoid factor and anti-cyclic citrullinated peptide)
- The anti-CCP test is relatively new, and, in combination with a positive RhF, is a strong prognostic marker of erosive disease
- Lyn March again notes the importance of early referral even if those tests are negative, as joints should not persist in being swollen for more than 6-8 weeks
- The panel notes the difficulty, particularly for those in rural and remote Australia, of getting access to rheumatology services
- The Australian Rheumatology Association has a website that can help with referral, and the guideline recommends a telephone consultation if direct access is not possible (<http://www.rheumatology.org.au/>)
- GPs play a very important role in helping the patient through the diagnostic process, and coordinating subsequent care with the various health professionals who will be involved.

Activity 3

Activity 3

Louise Sharpe notes the importance of early involvement of a psychologist with patients because of the difficulty in adjusting to the illness and its consequences. The guideline supports this, recommending that GPs should ensure access to appropriate psychosocial support for patients with RA, including support in managing relationship and sexuality issues (p. 20).

- (a) What do you think might be the impact of RA on relationship and sexuality issues? How would you talk to a patient about these issues? At what point would you consider referral to a psychologist or social worker?
- (b) Do you agree with the panel that patients often have difficulty accepting the need for medication? If so, why do you think that is? Can a psychologist help?

Activity 4 Case study 2

Activity 4

Case Study 2 - Lily

Lily, a 32 year old woman, presents at the clinic with stiffness of her hand, wrist, and shoulder joints. They are slightly swollen, tender and painful. The tenderness has developed over a few months. She describes having stiffness in her joints for a couple of hours in the morning. Lily is a smoker. She is married and has a baby and a toddler. Lily complains of fatigue, especially in the early afternoon. She initially tests negative to RhF and has slightly raised levels of CRP.

- (a) What are the indications that Lily might have early RA?
- (b) At the point of presentation, what other possible diagnoses would occur to you?
- (c) What would be your initial treatment recommendations while you waited for the test results?

Activity 5

Activity 5

- (a) Review the pharmacological interventions for RA in the guideline (pp. 22-27). Also consult the Australian Rheumatology Association website for detailed information on the latest pharmacological treatments (<http://www.rheumatology.org.au/>).
- (b) Once Lily is diagnosed with early RA, what would be her immediate treatment options?
- (c) Patients are often reluctant to take methotrexate. How would you deal with their concerns?
- (d) What ongoing monitoring would you institute for Lily?

Activity 6

Activity 6

- (a) What are the implications of Lily's diagnosis for her, given that she has two young children? What lifestyle changes would you recommend?
- (b) What impact do you think the diagnosis might have on her relationship with her children and her husband? What signs of difficulty would you look for?
- (c) In view of the guideline's emphasis on multidisciplinary support, what other professionals would you consider involving in Lily's care? Select one allied health professional – such as a physiotherapist, occupational therapist, or social worker – and consider what role that professional might have with a patient in Lily's situation.

Main Points from the Discussion

- Lyn March notes that it would be easy to dismiss Lily's symptoms as related to having to care for a toddler and a new baby, but the 'alarm bells' are the joint swellings
- The guideline recommends that DMARDs should be introduced early to suppress the inflammatory disease process. Methotrexate is the 'gold standard' because of its early onset of action, and good efficacy
- The guideline notes that alcohol intake should be limited if the patient is taking methotrexate, and signs and symptoms of toxicity must be monitored on a regular basis
- It is important to encourage smokers to quit
- There is increasing evidence that for more aggressive disease, combination therapy is more effective than monotherapy (see Guideline p. 26)
- Maintaining a normal CRP is also very important for long-term cardiovascular risk
- The guideline also recommends the use of short-term low dose oral corticosteroid treatment when other interventions have failed to achieve symptomatic relief

- It also suggests the use of intra-articular corticosteroid injections for rapid symptomatic relief of inflammation, but no more than 3 injections per year for a specific joint
- Long-term use of corticosteroids has adverse effects, being associated with the development of atherosclerosis and coronary heart disease.

Chapter 3

Chapter 3: Treatment and Management

Activity 7 Case Study 3

Activity 7

Case Study 3 - Jean

Jean is a 65 year old woman presenting with complaints of recurrent painful attacks in both knee joints. The pain then subsides for a few weeks. She has a BMI of 30, and a waist circumference of 90cms. Jean suffers from fatigue, has trouble sleeping at night, and has been feeling depressed for over two months. Jean has an aunt with RA.

- (a) Norman Swan suggests that someone like Jean might often be diagnosed with osteoarthritis of the knee. Why do you think RA could easily be missed in a situation like this? What factors would suggest to you the possibility of RA in Jean's case? What questions would you ask to explore that possibility further?
- (b) In light of the new guideline, what would be an appropriate management plan for Jean once she was diagnosed with RA?
- (c) The guideline notes that sleep disturbance is a common feature of RA (p. 21). What suggestions would you make to Jean regarding this aspect of her illness?
- (d) What lifestyle changes would you recommend to Jean?
- (e) Review the guideline recommendations on non-pharmacological interventions for RA (pp. 28-31). What interventions would you recommend for Jean? What other health professionals might you involve in her care?
- (f) What advice would you give her about complementary medicines?

Main Points from the Program Discussion

- Lyn March suggests that Jean might benefit from having the fluid drained from her knee, and from having a corticosteroid injection. However she emphasizes that this really requires referral to a rheumatologist
- The guideline recommends omega-3 supplementation as an adjunct for management of pain and stiffness in patients with RA. It also recommends gamma-linolenic acid for potential relief of pain, morning stiffness, and joint tenderness
- GPs should talk to patients about complementary medicines because it is important to know what medications patients are taking. The guideline states that there is insufficient evidence of the effectiveness of any complementary medicine in treating RA

- In particular, GPs should not recommend *Tripterygium wilfordii* which is a Chinese herb. The guideline notes that while it may have beneficial effects on symptoms, it also has serious adverse effects (p. 27).

Chapter 4

Chapter 4: Self Management and Education

Activity 8 Case Study 4

Activity 8

Case Study 4 - Arthritis WA Self-Management and Education Group

This filmed case study centres on a self-management program run by Arthritis WA in Perth. The course is a 6-week program and covers a range of topics of interest to people with inflammatory rheumatoid arthritis, their partners and support people.

- (a) The Guideline supports the importance of providing ‘ongoing tailored information to support patient understanding of their disease, treatment options, possible outcomes and their role in self-management’. However, in the discussion Norman Swan raises some concerns about such program. The guideline acknowledges that studies have shown no significant long-term benefit of patient education, but rather short-term impact on disability, joint counts, patient global assessment and psychological status (p. 20). What do you see as the benefits of a program like this?
- (b) The guideline sees such programs as an opportunity to provide lifestyle advice to encourage smoking cessation, dietary modification, weight control and exercise. What other information would you consider including in a generic education/information program for patients with RA?
- (c) Outline an education program specifically tailored for Lily or Jean. What resources do you have for conducting such a program?
- (d) Jean McQuade, who is Manager of Education Services, comments that ‘people have got to learn to manage their disease – otherwise it will manage them’. How important do you think self-management of a chronic disease like RA is to treatment outcome?

Activity 9

Activity 9

- (a) Results of a poll question in the program indicated that 20% of viewers had no access to a rheumatologist. What impact would this have on your management of a patient with RA?
- (b) Christine Retallack describes in the program the operation of the Albany Rheumatology Clinic in WA. If you were setting up a rheumatology clinic to service your local area, what professional services would you want to include?
- (c) Although the incidence of RA appears to be lower in the Indigenous population, what issues would you need to be thinking about if you had an Indigenous patient with RA in your practice?

Take-Home Messages

Associate Professor Louise Sharpe: It's important just to remember that patients do need to really understand about their illness. Try to help them get that balance between rest and exercise and try to develop that healthy respect for the illness whereby they take it sufficiently seriously but not to the degree to which they are frightened of it or worried about the long term.

Ms Christine Retallack: Early diagnosis is really important. We need people referred in quickly.

Professor Lyn March: Getting onto disease modifying agents early is important and so is linking in with your rheumatologist as early as possible.

Dr John Bennett: RA is uncommon but it's important to pick it up as early as one can.

Activity 10

Activity 10 - Review the Learning Outcomes for this program

After viewing this program, participants will be able to:

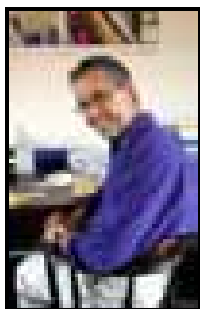
- *Utilise the Clinical Guideline easily and effectively*
- *Identify the criteria for early and accurate diagnosis of rheumatoid arthritis*
- *Develop multidisciplinary care plans for early rheumatoid arthritis*
- *Demonstrate awareness of the recommended interventions for early rheumatoid arthritis*

How well do you think the program achieved these objectives? What further information would be helpful? Where would you locate this? Does the guideline enable you to make more targeted interventions?

Hip and Knee Osteoarthritis: Clinical Guideline for Non-surgical Management

This program is the third in a four part series on musculoskeletal conditions; it draws on the evidence based guideline for the non-surgical management of Hip and Knee Osteoarthritis. The guideline notes that it is intended for use in the primary care setting by both GPs and other health care professionals so that those working with patients with OA will be aware of the evidence regarding effective management.

Program Presenters:



Dr Norman Swan (Panel Chair)

Dr Norman Swan regularly presents Rural Health Education Foundation satellite broadcasts.

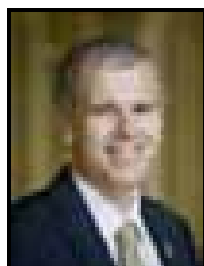
He is best-known for his wide broadcasting experience, including the award-winning *Health Report*, which he produces and presents for ABC Radio National, as well as his other ABC Radio and Television program hosting.

Dr Swan trained in Medicine in Scotland and in Paediatrics in London and Sydney. A broadcaster and journalist with the ABC's Science Unit since 1982, he has been Australian Producer of the Year and was awarded a Gold Citation in the United Nations Media Peace Prizes.



Dr Rana Hinman - Physiotherapist, Senior Lecturer, Melbourne School of Health Sciences

Dr Hinman is a physiotherapist and senior lecturer at the Melbourne School of Health Sciences. She has particular expertise in evaluating conservative treatments for osteoarthritis. Rana was also a member of the Working Group.



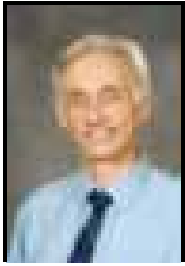
Professor Geoff McColl - Rheumatologist, Professor of Medical Education and Training, University of Melbourne

Professor McColl is a rheumatologist and Professor of Medical Education and Training at Melbourne University. He is the current President of the Australian Rheumatology Association. Geoff was on the Working Group for developing this Guideline.



Mr David Ng - Pharmacist, Director SA/NT Branch Pharmaceutical Society of Australia, Adelaide.

David is a pharmacist and the Director of the South Australian and Northern Territory Branch of the Pharmaceutical Society of Australia. He is a current reviewer for the *Annals of Pharmacotherapy* and the *Australian Pharmacist*.



Dr Michael Yelland - General Practitioner, Assoc Prof. Primary Health Care, Griffith University, Brisbane.

Dr Yelland is a General Practitioner and Associate Professor of Primary Health Care at Griffith University. His teaching and research interests focus on evidence-based diagnosis and treatment of musculoskeletal pain.

Chapter 1

Chapter 1: Introduction

Points from the Guideline

- The guideline states that Osteoarthritis (OA) is characterised by joint pain and mobility impairment associated with the gradual wearing away of cartilage
- Osteoarthritis is the most common form of chronic arthritis, with radiological evidence of OA in more than 50% of people over 65 years of age. Approximately 10% of men and 18% of women suffer symptomatic OA
- In Australia OA is self-reported by more than 1.4 million people (7.3% of the population), and is the tenth most commonly managed problem in general practice
- With an ageing population, the number is set to rise
- The guideline also notes that OA exerts a significant burden on the individual and the community through reduction in quality of life, diminished employment capacity, and an increase in health care costs
- There is currently no cure. Treatment is aimed at symptomatic relief, improving joint mobility and function, and optimising quality of life
- Treatment of OA of the hip and knee includes both pharmacological and non-pharmacological intervention. Joint replacement surgery is recommended for people with severe OA who are unresponsive to other therapies
- The guideline provides recommendations for effective non-surgical management of patients diagnosed with OA of the hip and/or knee within the primary care setting.

Main Points from the Discussion

- The pathological process itself is not reversible; but the degree of pain and function loss is. It is important to convey this to patients because joint replacement is by no means inevitable
- There are modifiable and non-modifiable risk factors for OA
 - Ageing is a non-modifiable factor; there may also be a genetic factor
 - Probably the biggest risk factor is obesity – it places an enormous load on the weight-bearing joints of the lower limbs
 - Studies have shown that weight loss of about 5% has significant benefits in terms of pain reduction and improved physical function

- OA is not necessarily easy to diagnose. It can sometimes be confused with radiating pain from the back; hip osteoarthritis can often be felt in the knee
- History is often the key, and a good examination. An X-ray can help confirm the diagnosis; blood tests are not necessarily helpful at all
- In terms of intervention, the guideline advocates the use of non-pharmacological strategies prior to pharmacological strategies, and ultimately a combination of the two.

Activity 1

Activity 1

- (a) Norman Swan raises the issue of myths associated with OA. What misunderstandings do you commonly hear from your patients or their families, and how do you correct them?
- (b) Dr Yelland cautions against sending the wrong messages to patients about OA. What message do you think is most helpful to a patient newly diagnosed with this condition?
- (c) How would you distinguish between inflammatory arthritis and OA?
- (d) Review the hip/knee diagnosis and assessment algorithm in the guideline (p. 13). Do you agree with Geoff McColl's point about unnecessary CT scans and MRIs?

Chapter 2

Chapter 2: Knee Osteoarthritis: Diagnosis and Treatment

Activity 2 Case Study 1

Activity 2

Case Study 1: Ruby – Diagnosis of Knee Osteoarthritis

Ruby, 71, presents at the GP surgery.

Her symptoms include:

- Pain and stiffness in the right knee particularly with activity, and aching at night.
- Occasional similar but milder symptoms in the left knee
- Married, 2 children, smoker, 2 standard drinks per week
- She is finding it harder to do the house work
- She has reduced her social outings because of her pain

- (a) What indications are there that Ruby might have OA?
- (b) What tests would you order?
- (c) What other tests might be needed for differential diagnosis? What do you need to exclude?
- (d) Look at the X-ray of Ruby's knee shown in the program. How would you explain to Ruby the implications of what you see there?



Main Points from the Discussion

- A weight-bearing X-ray is far more helpful than one done while the patient is lying down
- An MRI is not necessary in this situation; in fact it can add uncertainty, and predispose towards surgical intervention
- There is no evidence that arthroscopic lavage is helpful.

Activity 3

Activity 3

- (a) Review the section on Pharmacological Interventions in the guideline (pp. 34-41)
- (b) What medications would you prescribe for Ruby initially?
- (c) Would you consider an anti-inflammatory drug for Ruby? Are there any contra-indications?
- (d) There is a lot of discussion on the panel about glucosamine. In the light of the guideline, what would you advise if Ruby reported self-medication with glucosamine? Fish oil?
- (e) Given that many of these drugs are available over-the-counter, draw up an information leaflet for patients with OA on how to manage their medication.
- (f) What role do you see for pharmacists in referring patients who are potential OA sufferers, and in advising them about use of over-the-counter medications?

Main Points from the Discussion

- Paracetamol is the recommended first-line management (see Guideline p. 34)
- Some studies have suggested there may be benefit from adding a non-steroidal anti-inflammatory drug, preferably a shorter-acting one
- It's important to be aware of the contra-indications: if there is a history of peptic ulceration, hypertension or heart failure, or renal impairment

- Opioids can be prescribed if the patient is not responding sufficiently to either the non-pharmacological intervention program or paracetamol/NSAIDs. However the side-effects of these drugs usually far outweigh their benefits, especially given the increased risk of falls in patients who are affected by immobility.

Activity 4

Activity 4

The guideline states (p. 23) that non-pharmacological interventions, involving the clinical input of a multidisciplinary health care team, are “the mainstay management strategies for knee and hip OA”. Such interventions include: patient education, aerobic and resistive exercises; lifestyle changes and weight loss; and various physical therapies. The guideline makes the point that all interventions should be tailored to the particular needs and health status of the individual patient.

- (a) Review the section on non-pharmacological interventions in the guideline (pp. 23- 33).
- (b) The first recommendation in the guideline is that “health care professionals should have appropriate knowledge and skills to support assessment and management of exercise and nutrition lifestyle behaviour change”. How would you assess your own level of knowledge and skill in this regard? What health care professional in your local community is best-placed to provide this assessment and management?
- (c) The guideline also recommends that health care professionals should perform a comprehensive assessment to confirm diagnosis, assess health and medication risks, and to inform management (p. 21). If you were making a comprehensive assessment of Ruby’s condition, what other assessments would you include?
- (d) What other health care professionals might you include to assist with these assessments?
- (e) Once Ruby’s diagnosis was confirmed, what non-pharmacological recommendations would you make?
- (f) The guideline emphasises the importance of self-management for patients with OA. How would you go about encouraging self-management of Ruby’s condition?
- (g) What might be the psycho-social implications of a diagnosis of OA for Ruby? What impact do you think these could have on her self-management?

Main Points from the Discussion

- There is no evidence to suggest one form of exercise is better than another – aerobic exercise and resistance training are both important
- Exercise can both reduce pain levels and improve function
- Weakness of the quadriceps muscles contributes to functional disability, especially in OA of the knee. So, as the guideline suggests, appropriate exercise can help reduce signs and symptoms of OA
- Aquatic exercise programs also provide benefits, but with reduced stress to the joints

- The guideline states that there is some evidence that Tai Chi can also be helpful to patients with OA

Chapter 3

Chapter 3: Hip Osteoarthritis: Diagnosis and Treatment

Activity 5 Case Study 2

Activity 5 Case Study 2 - Harry

Harry, 56, is married with twin sons aged 10. He presents with right sided groin and lateral thigh pain radiating to anterior thigh. He has tenderness on palpation over the greater trochanter of the right hip and reduced hip movement on abduction, internal rotation and extension. Harry, who works as a builder, is concerned he might have a hernia.

- What are the appropriate diagnostic investigations and tests for Harry?
- Look at the X-ray of Harry's hip used in the program. How would you explain to Harry the implications of what you see here?



- What would make you think that hip surgery was indicated for this patient?

Activity 6

Activity 6

- Rana Hinman outlines a number of exercises for patients with hip OA. She notes the importance of finding a line between an exercise program that is beneficial but does not aggravate. How responsive do you find patients are to involvement in such an exercise program? How would you go about explaining the benefits?
- What resources are there in your area for group exercise for patients with OA?
- The guideline recommends education programs for the OA patient (p. 27). What information would you include in an education program for someone like Harry?
- What are the psycho-social implications of the diagnosis and prognosis for someone like Harry?

- (e) Geoff McColl suggests that Harry is the kind of patient who could ‘disappear’. What do you think informs this assessment? Do you agree, and if so, how would you try to circumvent that possibility?

Main Points from the Discussion

- There is much less research on non-pharmacological interventions when it comes to OA of the hip. One study of the use of hydrotherapy showed little effect, but muscle strengthening programs do demonstrate some improvement
- It seems likely that the hip abductors and extensors are the most useful muscles to strengthen
- There is a difference between physical activity and a specific exercise program, and it’s important to make this clear to patients
- Research suggests that supervised exercise is more beneficial than home-based exercise
- Group exercise is particularly effective because it increases motivation
- One option for rural or remote patients is a video or booklet that can help improve adherence with an exercise program
- There is a role for intra-articular injection of the hip (see guideline p. 20), especially in patients who have an acute flare. They should be limited to 3 per year. The guideline emphasises that GPs performing such injections should be appropriately trained and use imaging assistance.

Chapter 4

Chapter 4: Multidisciplinary Management

Activity 7 Case Study 3

Activity 7

Case Study 3 – Bendigo Health Osteoarthritis Hip and Knee Service

This filmed case study follows the story of Alex who is being assessed by Theo, the co-ordinator of the Osteoarthritis Hip and Knee Service, and having follow up conservative management with a multidisciplinary team.

- (a) Develop a multidisciplinary plan for Harry, outlining a clear set of goals for him.
- (b) The Bendigo service demonstrates the value of the physiotherapist to patients with hip or knee OA. What other allied health professionals would you include in Harry’s multidisciplinary team, and why?
- (b) If you do not have easy access to a multidisciplinary team like the one at Bendigo, what resources exist in your area for a more ‘ad hoc’ team that could attend to the needs of people like Ruby or Harry?

Take-Home Messages

Prof Geoff McColl: Osteoarthritis is a symptomatic presentation. It can be the beginning of a wider health discussion with your patient.

Mr David Ng: There's really no cure for osteoarthritis, or disease modifying agents for the management of osteoarthritis, and the pharmacological option is really to supplement or complement the non-pharmacological options. Community pharmacists are well placed to provide advice and there is a good network of community pharmacies in rural and remote Australia and they can certainly reassure people like Harry and Ruby about the pharmacological options and their management of osteoarthritis.

Dr Michael Yelland: My key message about management I think would hark back to the diagnosis and reassuring your patient that things can be done. So be careful about those fire-cracker words about degeneration, things are falling apart, and you're heading for a hip replacement etc. Focus more on the positives, and be careful with your X-rays and how you explain them to patients.

Dr Rana Hinman: My key message would be that exercise is pivotal for all patients and there is a form or a type of exercise that suits any patient, no matter how mild or severe their condition, and that the key to long term success is coming up with a strategy that maximises adherence. Osteoarthritis is a symptomatic presentation. It can be the beginning of a wider health discussion with your patient and it can help lock them into some other discussions that are necessary.

Activity 8

Activity 8

Review the following Learning Outcomes for this program.

After viewing the program participants will be able to:

- *Utilise the Clinical Guideline easily and effectively*
- *Demonstrate awareness of the recommended pharmacological therapies for hip and knee osteoarthritis*
- *Demonstrate awareness of the recommended non-pharmacological therapies*
- *Develop a goal setting multidisciplinary care plan for a person with hip and knee osteoarthritis*

How well do you think the program achieved these objectives? What further information would be helpful? Where would you locate this? Does the guideline enable you to make more targeted interventions?

Clinical guideline for the prevention and treatment of osteoporosis in postmenopausal women and older men

This program is the last in a four part series on musculoskeletal conditions; it draws on the evidence based guideline for the prevention and treatment of osteoporosis in postmenopausal women and older men. The guideline notes that it is intended for use in the primary care setting and is designed to provide clear, evidence based recommendations to assist GPs in managing patients with OP.

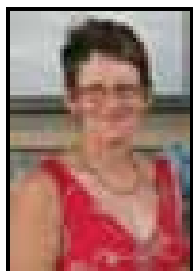
Program Presenters:



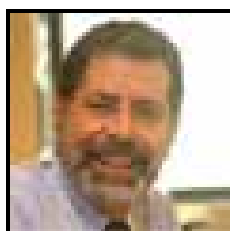
Chair: Dr Geraldine Moses - Consultant Clinical Pharmacist, Brisbane QLD
Dr Geraldine Moses is a doctor of clinical pharmacy who specialises in drug information. Based at the Mater Hospital in Brisbane, Geraldine manages the Adverse Medicine Events Line, a national consumer service for adverse drug reaction reporting. Geraldine is very involved in pharmacy education and provides lectures for undergraduate and postgraduate pharmacy, podiatry, optometry, dental and medical students at the University of Queensland and the Queensland University of Technology. She is also an accredited pharmacist and provides stage one training for pharmacists who wish to become accredited to perform Home Medicine Reviews. Dr Moses is a state branch councillor for the Pharmaceutical Society in Queensland and in 2002 she was named Australian Pharmacist of the Year.



Ms Cecily Barrack - Physiotherapist, North Coast Area Health Service, NSW
Cecily Barrack is a physiotherapist. She is Respiratory Coordinator for North Coast Area Health Service and in 2006 she was seconded part time to the Northern Rivers University of Rural Health as a research clinician to look at local osteoporosis management.



Ms Judith Burrows - Pharmacist, School of Pharmacy, Uni of Queensland
Judy Burrows is a pharmacist and has a background in hospital pharmacy. She also lectures in the postgraduate clinical pharmacy program at the University of Queensland, and is the Queensland Health and University of Queensland Pharmacy Training Coordinator.



Professor John Eisman - Director, Bone Research Program, Garvan Institute of Medical Research, NSW
Professor Eisman is a Professor of Medicine (Conjoint) of the University of New South Wales, a Staff Endocrinologist at St. Vincent's Hospital in Sydney and Director of the Osteoporosis & Bone Biology at the Garvan Institute of Medical Research. John was the Chair of the Working Group for developing this Guideline.



Dr Dan Ewald - General Practitioner, Northern Rivers General Practice Network, NSW. Dr Ewald is a General Practitioner who works in rural general practice and with the Northern Rivers General Practice Network. Dan was also on the Guideline Working Group.

Chapter 1

Chapter 1: Introduction

Points from the Guideline

- The guideline defines Osteoporosis (OP) as a disease characterised by low bone mass and micro-architectural deterioration of bone tissue, leading to enhanced bone fragility and a consequent increase in fracture risk (p. 1)
- It is diagnosed by a bone density test that usually measures the density at the hip and spine. The result is called a ‘T-score,’ and will be in the range of normal, osteopenia, or OP
- OP is a significant cause of morbidity and mortality
- Adults who sustain a fracture are at substantially greater risk (2–4 fold) of sustaining another fracture of a different type
- The incidence of minimal trauma fractures in Australia is higher among women than men and increases with age in both genders
- The peak incidence of minimal trauma fractures is in the 60-75 years group
- Fractures of the hip, vertebral body and distal forearm have long been regarded as ‘typical’ osteoporotic fractures. However, the effect on the skeleton is systemic
- The guideline supports the use of pharmacological interventions to prevent further bone loss and reduce subsequent fracture risk
- However, less than 30% of Australian women and even fewer Australian men with OP take specific OP targeted pharmaceuticals and/or use appropriate vitamin/mineral supplements
- Research shows that OP is under-diagnosed and under-treated. Only 7-20% of patients who have had an OP-related fracture receive treatment to prevent further fractures
- The guideline suggests that many primary care physicians fail to recognise the patient’s first fracture as osteoporotic.

Activity 1

Activity 1

- (a) The guideline notes (p. 11) that OP is known as a ‘silent disease’ – why is this so, and what are the implications?
- (b) What would you identify as barriers to diagnosis? What systems could be put in place in your practice to increase awareness and capacity in diagnosing OP?

- (c) How familiar are you with the risk factors for OP?
- (d) List some medical conditions that contribute to the risk of a patient developing OP.
- (e) Review the risk factors identified in the guideline (pp. 13-15)

Main Points from the Discussion

- There is a gap between what the evidence suggests is good practice and what we are actually doing with patients
- One in two women over the age of 60 will have an osteoporotic fracture during her lifetime. The risk for men is only a bit lower, maybe 1 in 3
- With an ageing population, these statistics will only increase
- The estimated cost, looking at both direct and indirect costs, is about 7 billion dollars per year in Australia
- There are some non-modifiable causes, such as genetic background and the ageing process; modifiable risk factors include lifestyle factors such as lack of exercise, smoking, poor nutrition etc
- Some medical conditions and some medications contribute to the risk
- Low bone mineral density is an important risk factor; the event that counts, however, is the fracture
- Rates of bone mineral density testing are much lower in rural areas of the country.

Chapter 2

Chapter 2: Diagnosis and Management

Activity 1 Case Study 1

Activity 1

Case Study 1 – Cheryl

Cheryl, 66, presents at the Doctor's surgery with an acute episode of back pain. She has experienced episodic back pain over years. She has thoracic kyphosis. She has been taking panadol for the pain. Cheryl had anorexia nervosa when she was in her twenties. On investigation, she has a bone density (measured at the hip) of -2.7 (T score).

- (a) What indicates that Cheryl might have osteoporosis?
- (b) What is the significance of her past anorexia nervosa?
- (c) What differential diagnoses would you consider? What tests might be needed?
- (d) What investigations would you proceed with?
- (e) In the program, Prof. Eisman refers to the fracture risk calculator developed by the Garvan Institute. Have a look at the calculator on the Garvan Institute website: <http://www.garvan.org.au/bone-fracture-risk/>
- (f) What advice would you give a patient like Cheryl about how to increase Vitamin D levels?

Main points from the discussion

- It's important to measure Vitamin D levels
- Blood tests can help identify the most common causes of secondary OP
- Clinical judgement is needed in relation to which, out of the battery of tests, is going to be useful
- The Dubbo study, which has been going now for over 20 years, has found the central factors that predict a fracture are age, gender, history of falls, prior fractures, and bone density levels
- The greatest challenge for GPs in diagnosing OP is simply to be aware of the possibility, to be thinking about it
- OP is something that practice nurses, pharmacists, and other allied health workers also need to keep in mind.

Activity 2 Case Study 2

Activity 2

Case Study 2 - Charles

Charles, 68, slips and falls whilst playing with the grandchildren in the back yard. He has considerable wrist pain. In the emergency department an X-ray reveals a wrist fracture. After treatment at the hospital, he visits his GP with the discharge referral but no X-ray. Charles has a history of smoking and of asthma.

- (a) What indicates that Charles might have OP?
- (b) How commonly would you consider the possibility of OP in men?
- (c) List some of the secondary causes of OP.
- (d) Would you order the same diagnostic investigations and tests for Charles as you did for Cheryl?
- (e) Assuming Charles is diagnosed with OP, what would be an appropriate management plan for him?
- (f) What lifestyle changes would you recommend?

Main Points from the Discussion

- If Charles has a fracture as a result of falling over, it indicates that he has fragile bones
- Rates of bone densitometry are much lower for men than for women
- A man who suffers a fracture has a higher risk of having another fracture than a woman has in a similar situation
- Bone densitometry is available and funded by Medicare for both men and women over 70; however the uptake is less than 10% of the eligible population

- While the reasons are still unclear, there is an increased risk of premature mortality for OP sufferers, and it's worse in men than in women
- Important factors to consider with Charles would be adequate calcium intake and Vitamin D levels, and an exercise program tailored to his particular capacities
- He should also be encouraged to give up smoking and to limit his alcohol intake.

Chapter 3

Chapter 3: Prevention of Osteoporosis

Activity 3 Case Study 3

Activity 3

Case Study 3 – Belinda

Belinda, the daughter of Charles and Cheryl, accompanies her father in to the Doctor's surgery on Charles' follow up visit. She is in her early forties and has become aware of her family history of osteoporosis. She wants to know what she can do to help prevent osteoporosis and future fractures

- (a) What advice would you give Belinda on the prevention of OP?
- (b) What sort of exercise would you recommend for her?

Main Points from the Discussion

- A bone densitometry is probably the most useful indication of future difficulties
- Advice regarding diet and exercise would be important
- Postmenopausal women need 4 serves of dietary calcium per day (1200 mg)
- Some studies indicate that around 80% of women don't get adequate calcium intake, so that would be a time to think about supplementation
- Dietary intake of Vitamin D is minimal; supplementation is often required
- High impact exercises are the most useful for someone like Belinda.

Chapter 4

Chapter 4: Treatment of Osteoporosis

Activity 4

Activity 4

- (a) Review the Prevention and Treatment Algorithm in the guideline (p. 5.)
- (b) The guideline recommends that all individuals with multiple risk factors for OP should undergo a diagnostic assessment. How accustomed would you be to exploring risk factors with a patient in your practice in the absence of any particular symptom?
- (c) How easily can your patients access bone densitometry testing, and how does this affect your diagnosis and management?
- (d) What other tests would you consider using when DXA is not easily accessible?

Points from the Guideline

- The guideline indicates that bone densitometry is the ‘gold standard’ for diagnosis of OP (p. 16)
- Both CT scans and Quantitative ultrasound can provide information on fracture risk when DXA is not accessible – however neither is precise enough to monitor response to OP treatment
- If X-ray investigation shows one or more vertebral fractures typical of OP, DXA may not be essential before starting medical therapy (p. 18)
- Laboratory tests play a role in excluding the most important forms of secondary OP and other potential bone disorders (p. 18).

Activity 5

Activity 5

- (a) The guideline recommends that GPs provide patients at risk of, or diagnosed with OP, access to education and psychosocial support, according to their particular needs (p.21). Draw up an information leaflet identifying risk factors and recommended lifestyle changes that could be useful in your practice.
- (b) What medications might you recommend for patients at risk of OP?
- (c) What information would you give women patients if you were prescribing hormone therapy for their OP?
- (d) The guideline recommends fall reduction programs to reduce risk of falling in older adults, even though there is no evidence that such interventions reduce the risk of fracture (p. 21). Draw up an information leaflet on reducing the risk of falls for your older patients.
- (e) Who in your local area is in the best position to do a home assessment to help reduce the risk of falls in your older patients
- (f) Identify other health professionals and organisations/resources that are available in your local area that offer support and education for OP sufferers

Points from the Guideline

- There is evidence that bisphosphonates may reduce the risk of vertebral fractures and increase BMD in patients at risk of, and diagnosed with OP (pp. 27 and 35)
- Hormone therapy also reduces the risk of fractures in post-menopausal women. Long term use, however, is not recommended
- The guideline states that teriparatide is effective in reducing fracture risk and improving BMD in women with OP. However it is expensive
- SERMs can be considered for postmenopausal women with OP in whom vertebral fractures are the main risk and when other medications are not well-tolerated (p. 41)
- Strontium ranelate can be used with post-menopausal women with a high incidence of fracture.

Activity 6

Activity 6

- (a) List the side effects of the various medications recommended in the guideline.
- (b) List the medications which increase the risk of fragility fractures.
- (c) What ongoing monitoring would you recommend to patients on any of the above medications?
- (d) Judith Burrows says on the program that compliance rates with recommended medications are around 50%. Why is it so low, and what mechanisms do you have in place for educating patients about this and monitoring compliance?
- (e) What supplements would you recommend to an older male patient who is taking 5 mg of prednisolone per day?

Activity 7 Case Study 4

Activity 7 – Preventing Future Fractures

Case Study 4 - An Integrated Approach

This is a filmed case study looking at a rural model of care. The program – called Preventing Future Fractures - looks at a model that ensures that patients who are seen at the local hospital for a minimal trauma fracture are given an osteoporosis risk assessment by a nurse. This assessment and any X-rays or results are then reviewed by a medical team, and a referral letter is sent to the patient's GP.

- (a) How much do you think a model like this would affect the low rates of diagnosis and treatment referred to in the guideline?
- (b) What possibilities exist in your local area for a more integrated approach to the diagnosis and management of patients with OP?

Take-Home Messages

Ms Judith Burrows: I'd like to direct the pharmacists out there to be proactive about thinking about bone health and to really help in assessing compliance with anti-osteoporotic medication to get the most out of the medicines. They only work if people take them and take them correctly.

Dr Dan Ewald: There's an 'evidence base-practice' gap which we can pretty easily fix. And there's a great new guideline that just steps you through it.

Ms Cecily Barrack: Everyday there are a large number of people with minimal trauma fractures who need to be hospitalised to manage their fracture. At a local level orthopaedic centres need to set up a local system and have designated people whose job it is to pick up on osteoporosis, the risk of fractures, and to make sure that patients get linked to the appropriate ongoing care back in the community.

Professor John Eisman: I think it's all been said. This is a hugely common problem in the community - one in two older women, one in three older men - and it's a nasty condition. We should look at it as a malignant condition as people go on to fracture and die prematurely. We have treatments that work, we know the uptake is abominably poor but there are things that can be done.

If we can get people looking at this guideline and doing something about it rather than ignoring the problem, there will be very substantial health benefits in the community - maybe a reduction in premature mortality. Even if you only worry about the dollars, just consider that it has cost us a million dollars while we're talking tonight.

Activity 8

Activity 8 - Review the Learning Outcomes for this program

After viewing the program participants will be able to:

- Utilise the Osteoporosis Clinical Guideline easily and effectively
- Describe the risk factors for osteoporosis
- Outline the recommended preventive strategies for osteoporosis
- Demonstrate awareness of the diagnostic tests and best practice treatment of osteoporosis

How well do you think the program achieved these objectives? What further information would be helpful? Where would you locate this? Does the guideline enable you to make more targeted interventions?

Concluding Activity

Concluding Activity

- (a) At the beginning of the Learning Guide, you were asked to keep in mind two patients you have seen in the last 12 months with musculoskeletal conditions, about whom you have felt concerned. On the basis of the programs, and a more detailed acquaintance with the evidence base provided in the Guidelines, what would you now do differently with these patients?
- (b) What systems would you now put in place for better musculoskeletal care of your patients?
- (c) How would you increase your team's uptake of the guidelines for better multidisciplinary management of patients with these conditions?

DVD Resources

DVD Resources

The DVD set for the Musculoskeletal Guideline Series contains a number of printed resources, which, when the DVD is played in a computer, can be opened on the desktop and printed in hard copy. Those resources include:

- This Learning Guide for the MSK Guideline Series
- The full text of all four Guidelines
- A range of RACGP resource material
 - Diagnostic, treatment and management algorithms for the musculoskeletal conditions
 - The "Best practice management of musculoskeletal conditions in general practice - A small group learning activity for practice teams" booklet
 - The "Developing practice processes to improve the diagnosis of osteoporosis - Clinical audit" booklet
- An osteoporosis "How to Treat" article recently published in the Australian Rural Doctor

These resources, in addition to the programs and the Learning Guide, provide a comprehensive resource base for professional development and use in other education and training.

