

Osteoarthritis Nurse Clinics

A RESOURCE FOR PRIMARY HEALTH CARE NURSES



Grampians Medicare Local Project Team

Ms Jessica Danko – Lead Author, Project Manager

Ms Deidre Rennick – Executive Manager, Primary Care

Ms Lyndel Roberts – Resource Production

Ms Angela Aldred - Editing

Content and Advisory Partners

Ms Franca Marine, Arthritis Australia

Ms Lynne Walker, Australian Primary Health Care Nurses Association

Grampians Medicare Local

105 Webster St, Ballarat, VIC 3350

Australian Primary Health Care Nurses Association

Level 2, 159 Dorcas Street, South Melbourne VIC 3205

Arthritis Australia

Level 2, 255 Broadway, Glebe, NSW 2037

Design, layout and photography: Nashish Marketing & Design

Printed: Sovereign Press

Disclaimer

The intended audience for this educational resource is primary health care nurses; accordingly its content has been developed to aid and assist nurses to include osteoarthritis in their chronic disease management clinics alongside their GP colleagues. This is not an extensive book on the subject of osteoarthritis, please refer to further reading for more detail. This publication has not been designed for use as a resource by the general public.

Reasonable efforts have been made to ensure the information is current and in accordance with best practice at the time of publication. Grampians Medicare Local accepts no responsibility should there be a change to best practice.

Reasonable efforts have been made to ensure the accuracy of the material; however it should be noted that the material may include content based on information provided by third parties. Grampians Medicare Local accepts no responsibility for the accuracy of any information or opinions contained herein. Users of this information should satisfy themselves in relation to any matters relating to the contents of this publication.

Grampians Medicare Local disclaims to the extent permitted by law, all liability including negligence for claims of losses, expenses, damages and costs that the user may incur (or suffer) from acting on, or refraining from action as a result of relying upon information in this publication.

Date of publication May 2015

Foreword

I am delighted that this resource has been developed as I know that it will assist the staff of primary care clinics all over our country.

As this document explains, many Australians suffer from the symptoms of osteoarthritis, so by providing a management strategy that can be implemented in the primary care setting, it will help to improve their well-being.

This is particularly pertinent in rural and regional settings where access to allied health and specialist care is more difficult.

I congratulate all who have been involved in its development and look forward to measuring its impact on patient outcomes and satisfaction.

Dr Andrea Bendrups

MBBS, FRACP, Rheumatologist

Deputy Director of Medical Education, RMH Clinical School

The University of Melbourne | Faculty of Medicine, Dentistry and Health Sciences



I was very satisfied with my nurse and feel more confident of coping.



- Osteoarthritis patient involved with osteoarthritis nurse clinic project

Acknowledgements

Project Advisory Group

Ms Kay Timmins, Osteoarthritis Consumer
Ms Tracy Murphy, Primary Health Care Nurse
Dr Colin Crook, General Practitioner
Dr Pushpa Ravindranayagam, Royal Australian College of General Practitioners
Ms Cheryl Campbell, Australian Primary Health Care Nurses Association
Anne Lloyd, Arthritis and Osteoporosis Victoria
Ms Susan Cosgrave, Arthritis and Osteoporosis Victoria
Ms Georgie Kemp, Physiotherapist, Ballarat Health Services
Dr Malcolm Hogg, Pain Specialist, Pain Australia

Primary Health Care Nurses – Osteoarthritis Nurse Clinics Project

Ms Debbie Bruce, Community Health Nurse, Ballan and District Health Care, Ballan
Ms Jan Sherritt, Practice Nurse, Ballarat Medical Centre, Ballarat
Ms Tamara Warland, Practice Nurse Manager, UFS Medical Centre, Ballarat

Osteoarthritis Nurse Education Day Speakers

Ms Jessica Danko – Primary Health Care Nurse, Grampians Medicare Local
Mr Luke Evans – Exercise Physiologist, Ballarat Health Services
Ms Zoe Harper – Physiotherapist, Ballarat Health Services
Ms Anne Lloyd – Rheumatology Nurse, Arthritis and Osteoporosis Victoria
Ms Anna McIntyre – Pharmacist, Ballarat Health Services
Ms Kay Timmins – Osteoarthritis Consumer

Other Acknowledgements

Dr Andrea Bendrups, University of Melbourne
Ms Lesley Brydon, Pain Australia
Dr Attila Danko, St John of God Hospital
Mr Simon Ellis, Ballarat Group Practice
Dr Bernie Fensling, Grampians Medicare Local
Ms Linda Govan, Grampians Medicare Local
Ms Jenni Johnson, NSW Australian Agency for Clinical Innovation
Ms Michelle MacGillivray, Grampians Medicare Local
Ms Kylie Porter, Grampians Medicare Local
Ms Jackie Syp, Arthritis Tasmania
Ms Karen Smith, Arthritis South Australia
The Victorian State Government Musculoskeletal Clinical Leadership Group

An important acknowledgement is made to the one hundred patients who participated in the 'Grampians Medicare Local osteoarthritis nurse clinics in primary care project'.

HREC Ref No: LNR/14/BHSSJOG/32

Contents

Foreword	3
Acknowledgements	4
Acronyms	6
Background	7
Section 1:	
About osteoarthritis	9
Introduction	9
Understanding osteoarthritis	11
Understanding pain and osteoarthritis	14
Section 2:	
Management of osteoarthritis in general practice	17
A summary of the medical management of osteoarthritis	17
Osteoarthritis nurse clinics	20
Team care coordination in general practice	24
Section 3:	
The primary health care nurse role in osteoarthritis chronic disease management	27
Primary health care nursing assessment of osteoarthritis	28
Primary health care nursing chronic disease management in osteoarthritis	30
Section 4:	
The osteoarthritis general practice management plan	31
Osteoarthritis knowledge and self-management	31
Pain and medication management	32
Exercise with osteoarthritis	38
Diet and osteoarthritis	43
Fatigue and pacing	47
Wellbeing and relaxation	48
Activities of daily living and mobility	52
Preventative health in osteoarthritis	54
Conclusion	57
Appendices	59
Appendix 1 Common medications in osteoarthritis	59
Appendix 2 Diagnosis and management of hip and knee osteoarthritis	62
Appendix 3 Plan, Do, Study, Act	64
Appendix 4 SMART Goals	65
Appendix 5 Example general practice management plan and team care arrangements template	67
Appendix 6 Brief Pain Inventory	70
Appendix 7 EULAR recommendations for non-pharmacological management of hip and knee OA	72
Appendix 8 Arthritis Australia – List of patient information resources	73
Appendix 9 Arthritis support services	74
Appendix 10 Mediterranean diet: reducing cardiovascular risk	75
References	79

Acronyms

ACN	Australian College of Nursing
ADL	Activities of daily living
APNA	Australian Primary Health Care Nurses Association
AHPRA	Australian Health Practitioners Regulation Authority
AMLA	Australian Medicare Local Alliance
ANMF	Australian Nursing & Midwifery Federation
BPI	Brief Pain Inventory
CDM	Chronic Disease Management
EULAR	European League Against Rheumatism
GP	General Practitioner
GPMP	General Practitioner Management Plan
GPN	General Practice Nurse
MBS	Medicare Benefits Schedule
MSK	Musculoskeletal
NHMRC	National Health & Medical Research Council
NSAIDs	Non-Steroidal Anti-Inflammatory Drugs
OA	Osteoarthritis
OARSI	Osteoarthritis Research Society International
OTC	Over the counter
PDSA	Plan, Do, Study, Act
penCAT	Clinical Audit Tool
PNIP	Practice Nurse Incentive Payment
RACGP	The Royal Australian College of General Practitioners
ROM	Range of motion
SMART	Specific, Measurable, Attainable, Relevant, Time-bound
TCA	Team care arrangement
TENS	Transcutaneous electrical nerve stimulation
WHO	World Health Organisation

Background

In 2013 the Commonwealth Department of Health sought expressions of interest from Medicare Locals to take part in the Advancing Nurse Clinics in Primary Care Project. The objectives of the project were to build primary care nursing workforce capacity and capability and support primary health care nurses to develop effective, efficient and accessible service delivery models to meet locally identified needs.

Grampians Medicare Local's successful application aimed to improve the management of osteoarthritis by primary health care nurses in general practice through two key strategies:

- create an innovative, collaborative, evidence based and sustainable primary health care nurse clinic role; and
- develop an education resource for primary health care nurses developed and tested by primary health care nurses

This education resource '*Osteoarthritis nurse clinics: A resource for primary health care nurses*' was developed based on the feedback provided by 35 primary health care nurses who attended the inaugural '*Osteoarthritis Nurse Education Day*' in Ballarat in August 2014. The content has been further refined through the input of the project advisory group, content partners, including Arthritis Australia which provided OA management content from its information resources and *MyJointPain.org.au* website, and the primary health care nurses who have used this resource to develop their clinics as part of the project.



I really enjoyed being a part of the osteoarthritis nurse clinics project. I have seen lots of patients with osteoarthritis in chronic disease clinics before, but have never really focussed on providing tailored information for the condition. I feel really valued with this enhanced role, and the GPs I work with are happy they can confidently refer OA patients to me.



- Debbie, OA Project Nurse



I have nothing but praise for my nurse. She has given me exemplary care and encouragement. I have never been hurried or overlooked in any area of my concerns. Thank you for this vital provision of care for patients like myself.



- Osteoarthritis patient involved with osteoarthritis nurse clinic project



Section 1: **About Osteoarthritis**

Introduction

One in three Australians have a musculoskeletal (MSK) condition¹. MSK conditions are among the most prevalent and costly chronic diseases affecting Australians.^{1,3}

Osteoarthritis (OA) is the most common form of arthritis, affecting 1.9 million, or 1 in 12 Australians.¹ Approximately half of all adults above the age of 50 may have radiological changes showing OA, although not all will be symptomatic.⁴ Osteoarthritis is one of the leading causes of chronic pain, disability and lost productivity in Australia.¹

Annually OA costs the Australian health system \$3.75 billion and the Australian economy around \$22 billion.¹ The personal and community impact of OA is expected to increase with an aging population and the increasing incidence of obesity. By 2032 it is expected that 3 million Australians will be living with OA¹ making the role of the primary care team in early management of OA vital.

A survey of Australian General Practitioners (GPs) found that despite OA being one of the most commonly treated conditions, they believed that about half of their patients would be unsatisfied with their care⁵. They put this down to external factors such as lack of access to care options, lifestyle support, and lack of general practice nurse (GPN) interventions. Only a minority of them currently utilise their GPNs in the management of OA.⁵

In the 2012 General Practice Nurse National Survey Report,⁶ only 28.6% of nurses said they were doing regular arthritis chronic disease care, compared to 75.8% for cardiovascular or 59% for diabetes care.

Research from the UK suggests that MSK nurse clinics have proved cost-effective with positive clinical outcomes.⁷ The business model provided further in this resource (on page 22) shows that OA nurse and GP care would cost the Medicare Benefits Schedule (MBS) approximately \$1,000 per patient annually. This suggests a very cost-effective management model.⁸

Many current researchers,⁹ and peak health organisations^{1,3,10} in Australia believe that enhancing the role of primary health care nurses to support patients with osteoarthritis requires urgent implementation. They recognise the important role nurses play in conservative chronic disease management (CDM), health education, self-management advice and care coordination to the multidisciplinary team (especially allied health).^{10,11}

During stakeholder consultations to develop this resource, there has been 'across the board' and unanimous support for increasing educational opportunities for primary health care nurses and an enhanced role in osteoarthritis management within general practice in Australia. These consultations as well as a review of current relevant literature³ developed the summary of recommendations in this resource.



Recent nursing journals¹¹⁻¹⁷ and texts⁴ mostly have a focus on osteoarthritis care within international tertiary hospitals or rheumatology outpatient clinics where the scope of nursing practice differs. At present in Australia there is an Australian College of Nursing (ACN) *Graduate Certificate in Musculoskeletal and Rheumatology Nursing* however this is currently not tailored specifically to primary health care nurses.

The available information and resources most applicable to the primary care context, include the Royal Australian College of General Practitioners (RACGP)^{10,18,19} resources, the European League Against Rheumatism (EULAR) recommendations,²⁰ the Osteoarthritis Research Society International (OARSI) guidelines,²¹ the Stanford Model for self-management²² and extensive reports and education content developed by Arthritis Australia (including the MyJointPain.org.au website), Arthritis and Osteoporosis Victoria, Pain Australia and others.^{1,3}

This resource is for primary health care nurses interested in learning about osteoarthritis with some practical and achievable nursing interventions. As such it is brief and easy to understand for the busy practitioner. Many of the principles and interventions described here have relevance to other MSK conditions. Beyond this resource, it is envisioned that nurses will enhance their knowledge with further reading on OA and MSK conditions. Some suggestions for further reading are included at the end of this resource.

OA pain can have significant psychological impact on patients

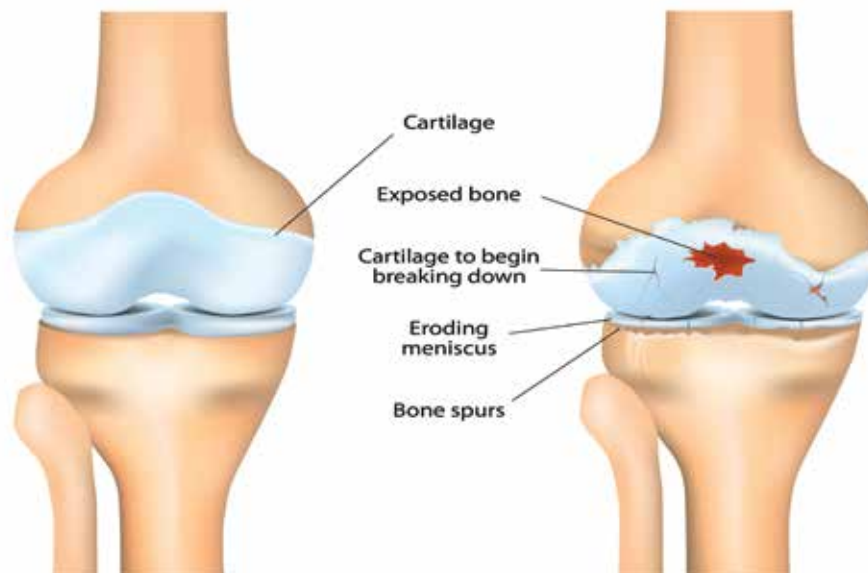


Understanding Osteoarthritis

What is osteoarthritis (OA)?⁴

- Osteoarthritis is the most common form of arthritis
- It is commonly described as 'wear and tear' or degenerative arthritis
- Many see it as a normal part of aging, but this approach may lead to a delay in seeking care
- It is a synovial joint disorder that involves the whole joint, including cartilage, bone, synovial membrane - that impacts surrounding muscles and ligaments
- Damaged cartilage leads to inflammation leading to further joint damage
- It can affect any small or large joint
- Most common joints affected are weight bearing joints and those that are used most often (see image on following page)
- The onset of the disease is slow
- Usually affects those over 40 years of age
- Its effects are limited to the joints unlike other forms of arthritis that may affect other body systems such as rheumatoid arthritis (RA)

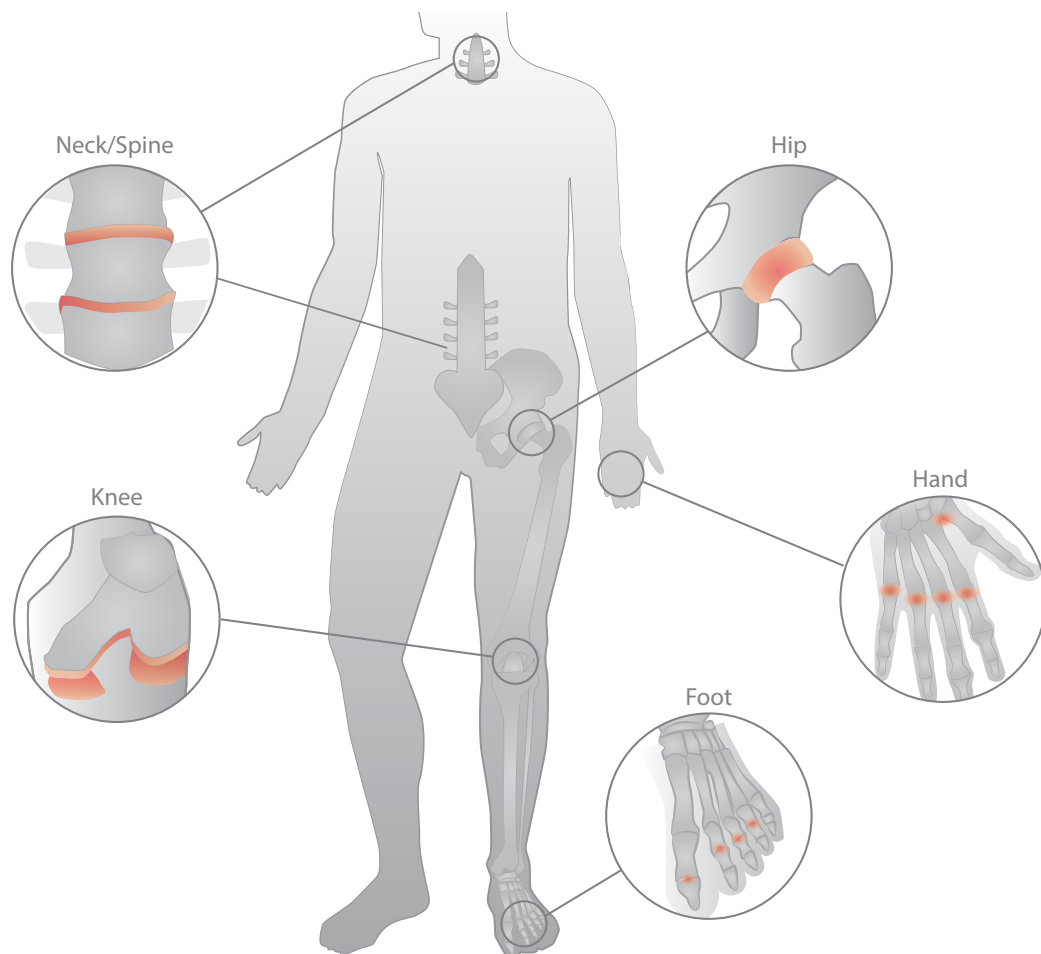
Damaged cartilage leads to inflammation leading to further joint damage



What are the causes and risk factors of Osteoarthritis?⁴

Causes of OA ⁴		Risk factors for OA ^{4,1}
Primary OA	the cause is unknown	- advancing age >40 - female gender - obesity - injury - repetitive strain - genetic - comorbidities - socioeconomic
Secondary OA	- includes local mechanical causes - post trauma or injury - metabolic or systemic - predisposition (familial OA) - related to pre-existing joint disease (RA or gout) - hypermobility - haemochromatosis	

Common sites of osteoarthritis in the body



What are the signs and symptoms of Osteoarthritis?⁴

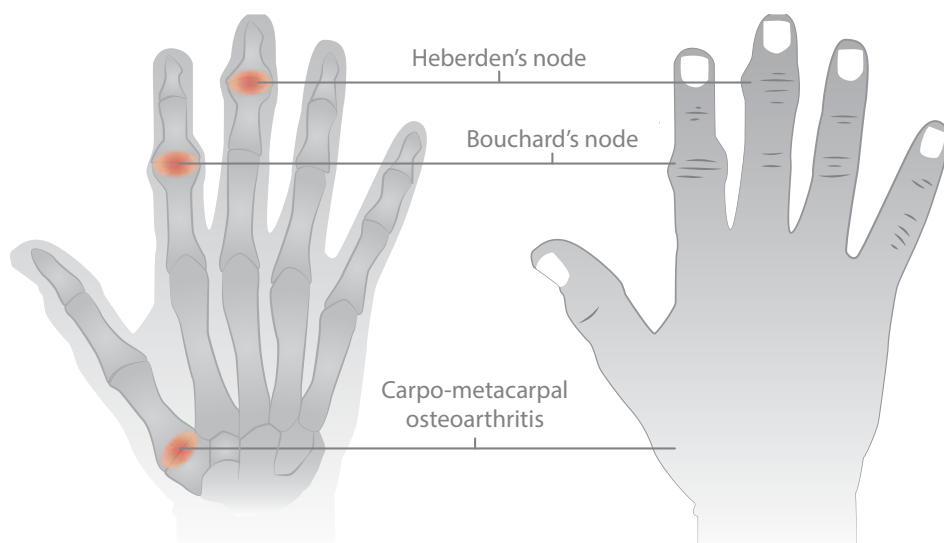
What are the signs of OA?⁴

- Mild effusions (swellings) that are non-inflammatory
- Restricted, painful range of motion (ROM) of affected joints
- Crepitus (or 'grating sound') on movement
- Stiffness of joint on movement and 'gelling' (the stiffness experienced in joints after prolonged rest)
- Tenderness and / or bony changes around joint margins

What are OA Symptoms? – joint pain⁴

- Pain with activity that is relieved by rest
- Lower limb pain with weight bearing
- Pain with stiffness lasting less than 30 mins, after prolonged rest or inactivity gelling can occur
- May complain of crepitus on movement
- Changes in functional ability, reduced ROM and / or joint stability

Hand osteoarthritis



Key point: Hand OA symptoms include pain, swelling (*refer to image*), stiffness and difficulty gripping objects. This may affect a patient's ability to manage daily tasks such as opening medication bottles, activities at home and caring for themselves.

Understanding pain and osteoarthritis

What is pain?

"An unpleasant sensory and emotional experience associated with actual or potential tissue damage."²³

What is chronic pain?

"Chronic pain has a distinct pathology, causing changes throughout the nervous system that often worsen over time. It has significant psychological and cognitive correlates and can constitute a serious, separate disease entity."²⁴

Types of pain in Osteoarthritis²⁵

Acute pain is pain that lasts for a short time and occurs following surgery (such as joint replacement surgery), trauma or another condition. It acts as a warning to the body to seek help. Effective timely treatment is essential to prevent transition into chronic pain.

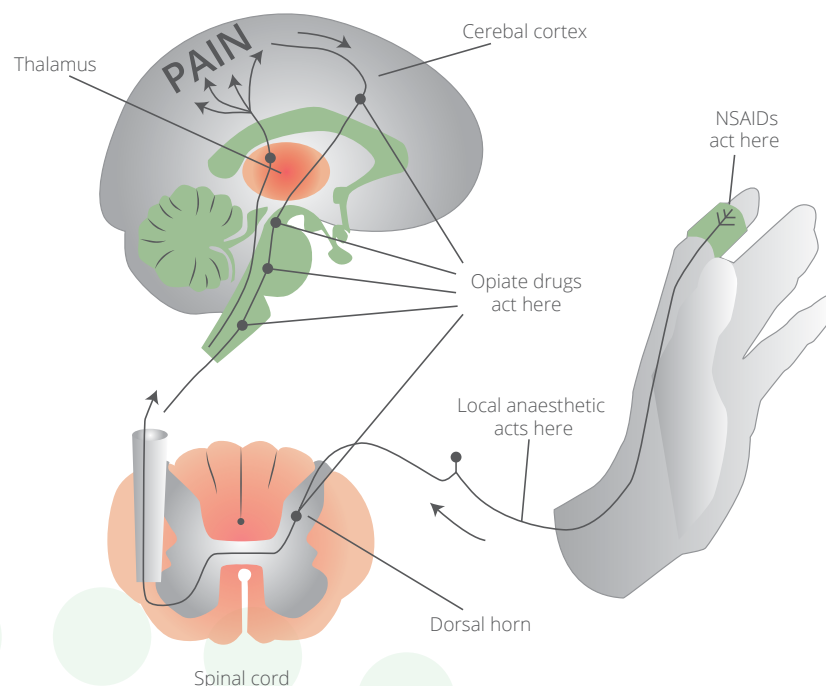
Chronic pain is pain that lasts into the long term (> 3-6 months), sometimes beyond the time expected for healing following surgery or trauma or other condition. It can also exist without a clear reason.

Neuropathic pain is chronic pain resulting from injury to the nervous system. The injury can be to the central nervous system (brain and spinal cord) or the peripheral nervous system (nerves outside the brain and spinal cord).

How pain works²⁶

Pain is experienced by a patient through four processes: transduction, transmission, perception and modulation. Transduction occurs at the level of the nerve endings in the skin, joints, or organs. Transmission occurs along nerve fibres utilising neurotransmitters and receptors. The perception of pain occurs in the brain and is influenced by such things as emotions, thoughts and motivation. Finally, modulation has to do with changing or inhibiting the transmission of pain (by certain bodily hormones or analgesic medications for example).

Nervous system sites of pain modulation by medications²⁷



Pathophysiology of chronic pain²⁶

The exact mechanisms involved in the pathophysiology of chronic pain are complex and remain unclear. It is believed that following injury, rapid and long-term changes occur in parts of the central nervous system that are involved in the transmission and modulation of pain.

A central mechanism in the spinal cord, called 'wind-up', also referred to as hyper-excitability or hypersensitivity may occur. This wind-up occurs when repeated, prolonged, noxious stimulation causes the dorsal horn neurones to transmit a progressively increasing amount of pain impulses.

In some cases, the patient can feel intense pain in response to a stimulus that is not usually associated with pain, for example, touch. This phenomena is called allodynia. Abnormal processing of pain within the peripheral and central nervous system may become independent of the original painful event (such as in phantom limb pain).



Key point: Chronic pain needs to be managed from various angles and approaches due to the complexity of pain physiology. It is important to look at the psychological aspects of pain perception and also the modulation of pain signals through relaxation, exercise and medication. Treating pain with a few different types of pain medications at once may be more effective than just one as they treat the pain at varying levels of the nervous system.

Osteoarthritis causes chronic pain^{4,17}

That is:

- Related to localised inflammatory processes in the joint
- Felt as dull or aching, with flare up of intense episodes
- Experienced with load bearing, or at rest, 'gelling'
- Unpredictable
- Most common reason to see GP or seek joint replacement
- Enmeshed with the experience of stiffness and loss of function
- Puts patient at risk of falls
- Affects mood, sleep, fatigue and motivation – psychological



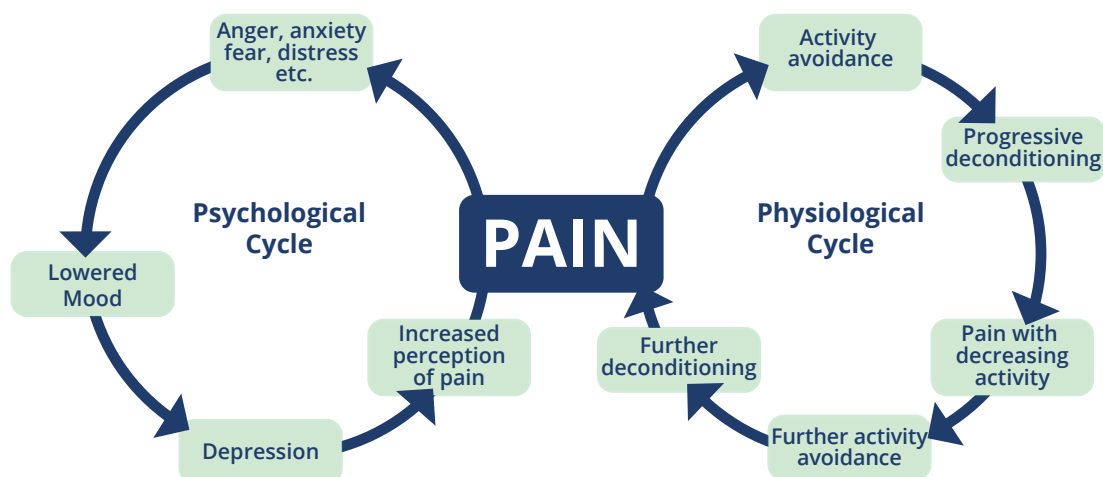
Key point: Physiological effects of chronic OA pain are linked to the psychology of OA pain

The psychology of osteoarthritis pain^{4,17}

OA pain can have significant psychological impact on patients.
It may contribute to:

- Fatigue – experienced during exercise, work, relationships
- Sleep disturbance – related to pain and fatigue cycle
- Mood disturbances – irritable, catastrophisation
- Depression – experienced in 20% of OA patients
- Anxiety – experienced in 31-41% of OA patients
- Changed roles due to the pain – needing social support, no longer the 'breadwinner' or able to care for others as before
- Lowered self-esteem and self-efficacy
- Sexual difficulties due to pain and loss of mobility

Pain Cycle (Adapted from Cooper, Booker and Spanswick, 2003²⁸)



Key point: What is catastrophisation when in pain?

Put simply, catastrophisation is an emotional state of fear that the pain will never be controlled, will get worse, and will never end. This leads to over focusing on the pain, rather than finding positive ways to manage the pain. Catastrophisation has been associated with higher pain scores and more disability.¹⁷

Section 2: **Management of osteoarthritis in general practice**

A summary of the medical management of osteoarthritis²⁹

A GP or specialist doctor will make an OA diagnosis based on taking a patient's history, physical joint examination, radiology such as x-ray, blood tests to rule out inflammatory forms of arthritis, and occasionally joint fluid analysis of a swollen joint.

It is important to remember that X-ray images and results do not usually correlate to the pain level a patient experiences. Some patients have minimal x-ray changes and a lot of pain, whereas others may experience almost no pain with severe x-ray changes.

The GP will usually prescribe analgesic medications to treat pain symptoms, the most common being regular paracetamol, NSAIDs, or anti-depressant medications which have an analgesic affect.^{30,31} Occasionally patients will require stronger opiate medications (see Appendix 1).

Some patients may receive benefit from OA joint injections, sometimes performed under radiological guidance. These are most commonly corticosteroid or hyaluronic acid injections (the latter usually in knee OA).³²

For severe OA, joint surgery is sometimes required. This may include key-hole surgery or partial or entire joint replacement surgery. Joint replacement surgery is highly effective and can improve quality of life markedly. The aim of surgery is to relieve pain, prevent or correct deformity, and improve or maintain function.⁴

GP and Primary Health Care Nurse collaborate on an OA management plan



In general practice conservative management is also very important. This includes patient education and realistic goal setting regarding exercise, diet, lifestyle and referral to a multidisciplinary team.¹⁰ This is where primary health care nurses can play a vital role!

In 2009-2010 the RACGP created general practice guidelines for osteoarthritis management, including a resource for GPNs.¹⁰ The 2009 algorithm '*Diagnosis and management of hip and knee osteoarthritis*' clearly summarises the role of the GP and the role of allied health. Nurses can use this algorithm to see where their CDM role fits in and might be focussed. In the algorithm evidence based non-pharmacological interventions fall under the headings: Optimise weight; Education and self-management support and Allied Health Interventions. For more detailed information, please refer to this resource in Appendix 2.



For more information: The RACGP have up to date osteoarthritis non-drug treatment resources for primary health care on various topics: Taping for knee osteoarthritis; Exercise for knee osteoarthritis; Exercise for falls prevention; Splints for the reduction of pain from hand osteoarthritis and Joint protection strategies for hand osteoarthritis <http://www.racgp.org.au/your-practice/guidelines/handi/>

In General Practice realistic goal setting regarding exercise for OA is important



Case study 1: Osteoarthritis of the knees

Anthony Brown is a 48 year old man who was diagnosed by his GP with severe bilateral knee OA in early 2013. Since October 2012 he has not been able to work in his chosen trade of brick-laying due to pain and decreased mobility related to his knees.

Mr. Brown is married with three children, and has found the experience of OA to be challenging and frustrating, especially the effect of the pain on his employment, family relationships, recreational activities, mood and self-esteem.

Mr. Brown's knee OA was formally diagnosed by history, physical examination by his GP and a bi-lateral knee x-ray. His GP has referred him through the public health system for knee replacement surgery, as well as to the local multi-disciplinary pain management clinic. Unfortunately in the regional town where he lives, he faces a two and a half year wait to enter the pain management program, and a four year wait for his knee replacements.

He is currently taking Panadeine Forte® (500mg / 30mg; two tablets, four times daily) for his pain. He has tried Panadol Osteo® (665 mg; two tablets, three times a day) previously, but felt that it did not work. He also takes low dose Aspirin (100mg, one daily) and Irbesartan® (300mg, one daily) for his co-morbidity of mild hypertension (average blood pressure reading over past 6 months- 150/90). In addition to the OA and hypertension Mr. Brown is in the obese weight range, weighing 115 kilograms, 190 centimetres tall with a body mass index score of 32.

His GP has referred Mr. Brown to the clinic's general practice nurse, Mia, for a General Practitioner Management Plan (GPMP). Unfortunately Mia does not feel very confident assisting Anthony with his OA. She focusses her interventions on coordinating his team care arrangements (TCA). Mr. Brown attends four visits with a private physiotherapist that provides him some manual treatment (massage), as well as providing him with a home exercise program. In addition he has one visit with a dietician. Mr. Brown really struggles to stay motivated with his diet and to do his exercises regularly, and finds it hard due to the pain.



Reflective exercise:

1. What are the system difficulties facing the patient, GP and primary health care nurse?
2. Using the RACGP algorithm (in Appendix 2) where could Mia's interventions be focussed?
3. What discussion could Mia have with Mr Brown re: OA and pain management?
4. Utilising the OA medication chart (in Appendix 1) what other medications could Mr Brown have tried? How could Mia discuss these options with her GP colleague?

Osteoarthritis nurse clinics

Planning an Osteoarthritis nurse clinic in a multidisciplinary team

The management of OA is best achieved with a holistic approach that includes a multidisciplinary team, where the patient is at the centre of the decision making process.¹⁰ Effective communication and team management should occur between patient, general practitioner, primary health care nurse, medical specialists, allied health and community services.

The reality of busy private general practice and time poor GPs, leads to an opportunity for primary health care nurses to spend more time with patients. The role of the GPN has been described as: patient carer; educator; quality controller; agent of connectivity; organiser; and problem solver.³³ Using these roles the nurse can set about planning and implementing an OA chronic disease clinic.

Primary health care nurses need to consider their own professional practice and scope when managing patients with musculoskeletal conditions such as OA.³⁴ This may be through self-reflection of own learning needs and developing an education plan that may include formal and informal learning, continual professional development (CPD) opportunities, mentoring support or involvement in formal study or research. Support for this career development is offered to primary health care nurses through Primary Health Networks, professional associations such as APNA, AHPRA, ANMF, ACN or academic institutions. The primary health care nurse role described in this resource is dependent on experience, expertise, scope of practice and practice support.



For more information on enhancing your practice in primary care you are encouraged to do further reading of the detailed resource:

Expanding your practice: A learning module for nurses in general practice, Australian Medicare Local Alliance, Manuka, ACT.³⁴

This resource and many more can be accessed on the APNA website:
<http://www.apna.asn.au/scripts/cgiip.exe/WService=APNA/ccms.r?PageId=12580>

When planning for an OA nurse clinic, the primary health care nurse may plan a quality improvement activity for MSK conditions based on diagnosis (in this case OA).³⁵ This role takes leadership and business skills and a supportive practice environment.¹⁰ The use of a PDSA tool may help plan an OA clinic.



Key point: Challenges in setting up a clinic may be in staffing, systems or support for the clinic. Having a clear idea of what you want to do, and also preparing a business case can be useful to get the practice on board.

What is PDSA?

PDSA is a mnemonic used commonly in continuous quality improvement processes. PDSA stands for Plan, Do, Study, Act. A PDSA is usually run as a time-based cycle – each step is evaluated before the next cycle. The below diagram shows an example for an OA clinic. (For more information on PDSA please refer to Appendix 3).

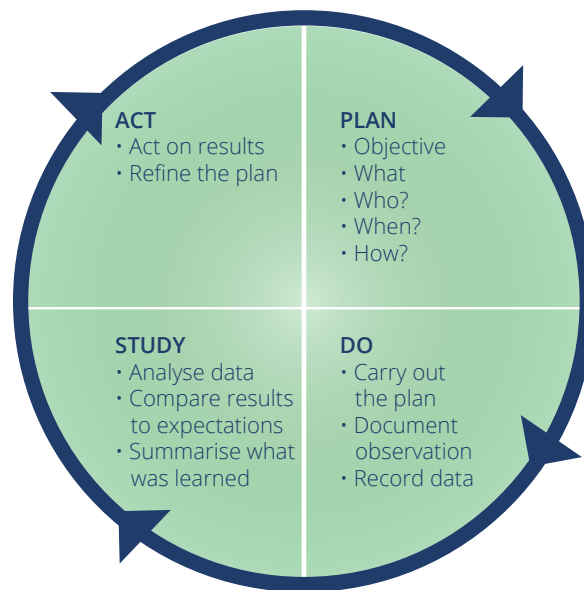
Plan - What, who, when, where, predictions and data to be collected

Do - Was the plan executed? Document any unexpected events or problems

Study - Record, analyse and reflect on the results

Act - What will you take forward from this cycle? (What is your next step/PDSA cycle?)

PDSA cycle for OA clinic ¹⁰



Reflective exercise:

1. Utilising the PDSA cycle how would you plan for an OA nurse clinic?
2. Using the clinical audit tool (penCAT) or your practice software, estimate how many OA patients you have on your patient database.
3. Based on this information, what methods could you use to recall OA patients to a nurse clinic?



For more information on setting up a nurse clinic for CDM or preventative health see the detailed resource:

Nurse Clinics in Australian general practice: Planning, Implementation and evaluation. Australian Medicare Local Alliance, Canberra, Australia.³⁵

This resource and many more can be accessed on the APNA website:

<http://www.apna.asn.au/scripts/cgiip.exe/WService=APNA/ccms.r?PageId=12580>

Business case for osteoarthritis nurse clinics

In addition to initiating a new clinic for quality improvement reasons, the business case for setting it up may also be considered. Approaching a new chronic disease in general practice can potentially increase MBS revenue for the practice. This may provide a further incentive to the business manager.

The following business case table summarises the potential MBS billing item numbers for 30 OA patients over a 12 month period. The variation in the funding amount is due to the availability and eligibility of the Practice Nurse Incentive Payment (PNIP) used.

Summary of potential MBS billing items for 30 patients over one year

Funding item	Done by	Calculation	Item no.	Income
PNIP flexible funding	GPN	3.1 – 6. 2hrs per week	N/A	\$ 6,250.00- \$ 12,500
GPMP	GP & GPN	30 x \$144.25	721	\$ 4,327.50
TCA	GP & GPN	30 x \$114.30	723	\$ 3,429.00
Review GPMP/TCA	GP & GPN	30 x \$72.05 x 2	732	\$ 4,323.00
CDM support by GPN	GPN	30 x \$12.00 x 5	10997	\$ 1,800.00
Health Assessment*	GP & GPN	30 x \$137.90	703 (standard 30-45 mins)	\$ 4,137.00
Home medicines review*	GP & Pharmacist	30 x \$154.80	900	\$ 4,644.00
*If eligible			TOTAL	\$22,660.50- \$35,160.50

Summary of potential GPN interventions and how to fund them

Primary health care nurse role	Primary health care nurse interventions	Potential funding sources
GPN administrative	Planning using clinical meetings, penCAT, recalls, resource development, referral pathways	PNIP flexible funding
GPN patient intervention 1	Initial meeting and assessment, health education, coaching / realistic goal setting, coordination of care	Health Assessment / GPMP / TCA
GPN intervention 2	Same as above if needed plus CDM self-management / health coaching	GPMP / TCA / CDM 10997
GPN intervention 3	Health coaching	CDM 10997 / PNIP
GPN intervention 4	Health coaching	CDM 10997 / PNIP
GPN intervention 5	Health coaching	CDM 10997 / PNIP
GPN intervention 6	Health coaching	CDM 10997 / PNIP
GPN intervention 7	Review of GPN interventions, care plan, TCAs	PNIP / GPMP &/or TCA reviews

The general practice nurse may negotiate with the practice team (GP, practice manager and administrative staff) to improve the care of practice patients with OA by accessing practice software and developing a recall based on diagnosis or medication usage such as NSAIDs. These patients could be offered CDM planning with the GP and primary health care nurse via a recall letter or follow up phone call. A goal for the practice might be to have 25% of all OA patients in the practice on a management plan within two years. However this system may prove difficult with OA, as up to 50% of patients above 50 may have OA x-ray changes,⁴ resulting in thousands of patients to recall.

A more realistic approach may be to set up referrals to the GPN for CDM planning via the GP colleague directly. This may be through talking to GPs personally or through clinical meetings.



I attended a couple of clinical meetings to let the GPs in my practice know about the OA clinic I was setting up. We decided to focus on patients that had OA as their main cause of concern and were struggling either with pain or disability.



- Debbie, OA Project Nurse

Within general practice this collegiate role between primary health care nurses and GPs opens up dialogue between the management of patients and the way that these roles can complement one another. The GP role for OA consists of diagnosis, referral to imaging, medication prescription, pain management advice, medical specialist referral (e.g. rheumatology, orthopaedics, pain specialist, ophthalmology, and psychology), mental health care planning, allied health referral and lifestyle advice. In addition, GPs provide assistance with claiming disability benefits, work absentee certification, work assessment reports and so forth.

The primary health care nurse role includes CDM planning and TCA care coordination as well as the prevention of other MSK conditions (in particular falls and osteoporosis). Further information about this important role continues on page 27.

Evaluation of an OA nurse clinic occurs during the PDSA cycle study phase, where data is analysed and learnings are summarised. Data for evaluation may come from an increase in referrals or MBS item numbers for CDM clinics; from clinical assessment tools (such as the BPI on page 29); or through quality improvement surveys.

A useful evaluation tool used in the OA nurse clinic project was the Patient Enablement and Satisfaction Survey (PESS). The PESS aims to gather information from patients about how satisfied they are with the nursing care they receive in general practice, whether that care helps them to understand more about their health and wellbeing, and whether it has made them better able to look after their health.



For more information about the PESS tool and how to implement it into general practice, including copies of the survey, please access:

<http://www.apna.asn.au/scripts/cgiip.exe/WService=APNA/ccms.r?PagelD=12580>

Team care coordination in general practice

Good communication with the team is essential and may require phone calls to health providers to assess a patient's suitability for a clinic or service. GPs will discuss with their patients the most appropriate referral to allied health. Many nurses will tailor these allied health referrals, and then make appointments with the patient present during the consultations. This may require discussion around carer assistance, associated costs or transport. The management plan and TCAs are agreed on by the patient and GP, and signed. Documentation is shared with the team following consent of the patient.

MBS legislative requirements require the allied health provider to provide feedback to the GP regarding the care that they have received. This is usually in written form. The management plan and TCAs are then reviewed formally 3-6 monthly by the patient, GP and primary health care nurse, or more frequently during regular GP consultations.

Referral to physiotherapy for an individualised exercise program



In addition, the primary health care nurse or GP may refer patients to exercise programs such as hydrotherapy, land based exercise classes, community social or activity groups, or arthritis support groups. Quite often, nurses in general practice are seen as a resource for patients wanting to access complementary therapies, such as acupuncture, massage/ myotherapy, chiropractic, or osteopathy. Nurses in this case can offer evidence based information on the suitability or effectiveness of these therapies. (Further reading on complementary therapies is on page 36).

Referral to allied health providers for patients with OA, may include:

- Physiotherapy – for manual treatment, gait training and gait aids, home exercise program, hydrotherapy, land based group exercise
- Exercise physiology – for a graded exercise program
- Occupational therapy - for aids and equipment to assist with mobilisation and activities of daily living (ADL) - pick up stick, hand splints, shower chair, toilet chair, kettle aid, sock aid etc.
- Podiatry –biomechanical assessment, footwear, orthotics
- Dietician – nutrition education, low energy diet for weight loss
- Social worker - for social or financial hardship assistance
- Psychology - for depression, anxiety, cognitive behavioural therapy, chronic pain strategies
- Optometry - for eye wear to prevent falls
- Pharmacist – for home medicines review, advice re: medications
- Complementary – myotherapy, osteopathy or chiropractic

The Primary Health Care Nurse may refer patients to exercise programs such as hydrotherapy



There are challenges with organising effective team care coordination for OA. These include:

- Availability of services. Services may be non-existent and / or public services may take months or years to access.
- Enhanced Primary Care patients are only able to access a small number of funded visits (5 per year) which might not be sufficient for some people.
- Private allied health services can be costly to patients.
- Keeping abreast with what services are available can be time consuming.
- Patients may not know who the specialist physiotherapist is for hand OA or which pool runs hydrotherapy sessions with a physiotherapist.
- There may be issues with patient motivation, health literacy, transport difficulties or other barriers.
- Some patients decide not to access a service.

Nurses are in a great position to discuss what the patient likes to do and determine appropriate goals with them based on their preferences.

To summarise, the primary care team in general practice works collaboratively with a greater multidisciplinary team within the private and public sectors. At the heart of this team is the patient. The nurse's role within the individual nurse's scope is to lead change for patients with MSK conditions in the practice, to assist with CDM planning, coordinating care and continual learning in the area of MSK nursing care. Primary health care nurses play an especially unique role in the multidisciplinary team in regards to referral coordination to allied health and social and community support services.



Section 3: **The primary health care nurse role in osteoarthritis chronic disease management**

In addition to coordinating the team care for patients, nurses can utilise CDM consultations to provide evidence based nursing care for patients. Primary health care nurses can build on their existing skills in CDM. Many nurses would already be using skills in health promotion and education, self-management and lifestyle coaching, realistic goal setting (SMART goals) and preventative health.¹¹ These same skills can be utilised with OA with the addition of an understanding of the condition, evidence based information and OA patient needs.

Summary of evidence based non-pharmacological interventions in osteoarthritis¹⁹⁻²¹

- Goal setting– realistic, SMART, long term and short term, follow-up
- Health education – About OA, medication use side-effects, adherence, options, complementary therapies, arthritis support groups, resources
- Pain education – pharmacological and non-pharmacological strategies
- Non-pharmacological strategies – thermotherapy, topical creams, pacing through regular rests, footwear, aids and equipment, mind-body therapies, relaxation, hobbies
- Exercise and physical therapy–graded exercise program, land or aquatic, individual or group
- Diet and weight loss - regular monitoring, triggers to eating, limit portion size, evidence based Mediterranean diet

A Primary Health Care Nurse in an OA clinic



What is a SMART goal?

SMART is a mnemonic recommended for use when developing a goal. There are some slight variations in words used in the SMART mnemonic, but Specific, Measurable, Attainable, Relevant, and Time-bound is the most common.

Specific	set a specific goal rather than a more general one
Measurable	concrete criteria for measuring progress toward the attainment of the goal
Attainable	goals need to be realistic and attainable
Relevant	it is important to choose goals that matter to the patient
Time-bound	it is important that goals have a time-frame, giving them a target date

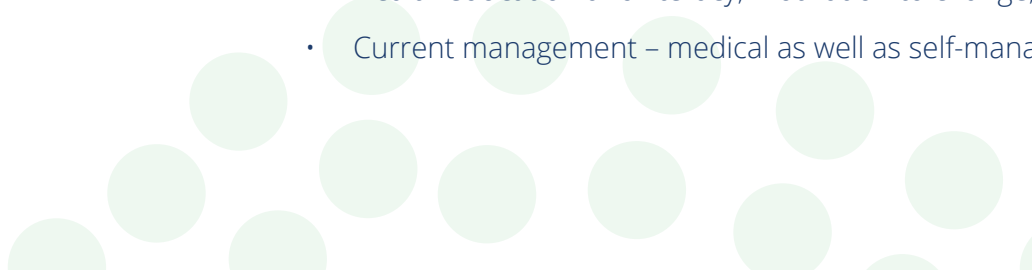
(Refer to Appendix 4 for further information on SMART goals)

Primary health care nursing assessment of osteoarthritis

The following part of this resource looks in more detail at the specific role of primary health care nurses in CDM care planning for OA. The information includes assessment and management of OA and builds the knowledge base for nurses in their CDM consultations. The management section will expand on the fields that should be included in a thorough OA based care plan. Please refer to Appendix 5 for an example general practice management plan (GPMP) and team care arrangements template.

Assessment in OA can occur before a patient enters the consultation room. The patient may be ambulating with difficulty down the hallway, grimacing in pain with every step, or using walking aids incorrectly. The following is a summary of the assessment a primary health care nurse can do with an OA patient.

The following is a summary of evidence based nursing assessment in OA management within primary care.^{4,12, 20}

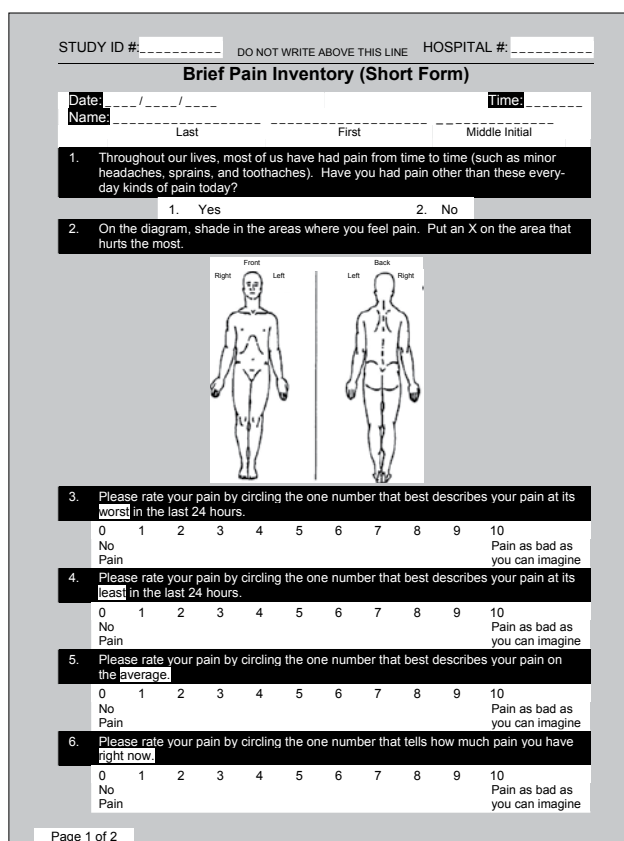
- Consider using an evidence based assessment tool such as the Brief Pain Inventory (BPI)
 - Assess physical status (pain, fatigue, sleep, lower limb joint status, mobility, obesity, co-morbidities)
 - Ability to carry out ADL, self-care
 - Current participation in roles and level of support (family, work, education, sexuality, social, leisure)
 - Current mood (chronic pain, depression, anxiety, low self-esteem)
 - Health education and literacy, motivation to change, health beliefs about OA
 - Current management – medical as well as self-management
- 

About the Brief Pain Inventory

The BPI³⁶ is a reliable and validated pain and disability assessment tool (see Appendix 6 for full tool). It is easy to use, and takes a few minutes to complete which makes it suitable for general practice. The patient shades a body diagram to indicate where they are experiencing pain and draws an X where the pain hurts the most. They are then asked to rate their pain (from 0-10) currently, during the last 24 hours and on average. These questions are averaged to determine a pain severity score.

The BPI also includes questions about treatments and medications, along with a set of questions regarding the pain and how it interferes with their life (the pain interference score). The patients are asked to rate (0 - 10) how much the pain interferes with their general activity, mood, walking ability, normal work, relations with other people, sleep and enjoyment of life.

The BPI can be used at the initial consultation and then again at review. It can be used to monitor any improvement in the patient's pain and or functioning.³⁶ It is also a useful tool for GPs to use with their medical management of OA. Additionally the BPI can be used as a pain diary (for example, multiple copies stapled together) over several days or weeks. This can help the patient to notice trends in their pain, such as an exacerbation of pain every Wednesday after babysitting the grandchildren on Tuesdays.

The image shows a 'Brief Pain Inventory (Short Form)' form. At the top, there are fields for 'STUDY ID #' and 'HOSPITAL #', with a note 'DO NOT WRITE ABOVE THIS LINE'. Below this is the title 'Brief Pain Inventory (Short Form)'. The form includes fields for 'Date' and 'Time', and a 'Name' field with sub-fields for 'Last', 'First', and 'Middle Initial'. There are two main sections of questions. The first section has two questions: '1. Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?' with options '1. Yes' and '2. No'; and '2. On the diagram, shade in the areas where you feel pain. Put an X on the area that hurts the most.' Below this is a body diagram with 'Front' and 'Back' views, labeled 'Right' and 'Left'. The second section has four questions, each with a rating scale from 0 to 10: '3. Please rate your pain by circling the one number that best describes your pain at its worst in the last 24 hours.', '4. Please rate your pain by circling the one number that best describes your pain at its least in the last 24 hours.', '5. Please rate your pain by circling the one number that best describes your pain on the average.', and '6. Please rate your pain by circling the one number that tells how much pain you have right now.' Each question has a '0 No Pain' and '10 Pain as bad as you can imagine' label. At the bottom left, it says 'Page 1 of 2'.

The Brief Pain Inventory can be used as an effective assessment tool in osteoarthritis (Source: Cleeland, C 2009)



The patients said they felt valued that I was taking time to ask them about their pain (with the BPI). It also made them think about how their pain was affecting their life. Depending on what they rated highly on, I could then focus my discussions with them based on that (for example sleep strategies)



-Tamara, OA Project Nurse

Primary health care nursing chronic disease management in osteoarthritis

Once the OA assessment has been completed, management strategies can be tailored to the patient's individual needs. An OA GPMP template can provide a useful framework. A completed example is provided in Appendix 5. This template can be used as an academic starting point to format into the preferred practice template.

Management of OA should always be based on available evidence. A summary of evidence for hip and knee OA management can be found in Appendix 7. You are encouraged to read and become familiar with these detailed evidence based interventions. A shorter summary is below, and relates well to the primary health care nurse role.

Evidence based osteoarthritis nursing management^{4,10, 20,21}

- Include patient in planning, discussion / collaboration with GP
- Individualise to patient condition, perceptions, education level
- Information and education on OA – including self-management
- Address maintenance and pacing of activity
- Address weight loss if overweight or obese
- Encourage a realistic exercise program – tailored to the individual
- Reduce adverse mechanical factors – e.g. Footwear, walking aids, assistive devices
- Assist patients with psychosocial aspects
- Referral to team care – allied health, community services and support groups



For more information: The MyJointPain.org.au website developed by Arthritis Australia under the guidance of an expert clinical advisory panel, provides a screening tool, up to date evidence based information about treatment options, and tools to assist people with osteoarthritis to manage and track their condition over time. Nurses may like to use this website to assist them in evidence based care planning with their patients.

The website can be accessed at www.myjointpain.org.au



Key point: An OA GPMP and TCA should include:

- OA knowledge and self-management
- Pain and medication management
- Exercise, diet, and if required, weight loss
- Fatigue and pacing
- Wellbeing and relaxation
- ADL and mobility
- Preventative health

Section 4: **The osteoarthritis general practice management plan**⁵⁸



Osteoarthritis knowledge and self-management

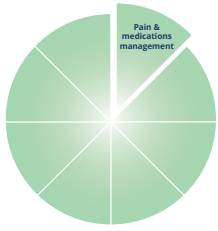
Once a patient is diagnosed with OA, it is common for them to feel anxious about what is happening in their body. They may also be uncertain about what they can do to help manage the disease and what the future holds.

The first step to managing OA symptoms, particularly any chronic pain or stiffness, is for patients to learn as much as they are able or willing about what to expect. Research²¹ has shown that the more patients have knowledge about OA, the better they can manage the disease. This will lead to less pain, greater ability to do the things that are important to them and a better quality of life.



Arthritis Australia and the state based arthritis organisations provide contact to local arthritis support groups (see Appendix 9)

Primary health care nurses play a vital role in sharing information about OA with their patients. This may be through face to face education, printed literature or providing a list of websites. Arthritis Australia and the state based arthritis groups offer information resources (Appendix 8), self-management courses, exercise classes and contact with support groups (Appendix 9) to patients with OA.

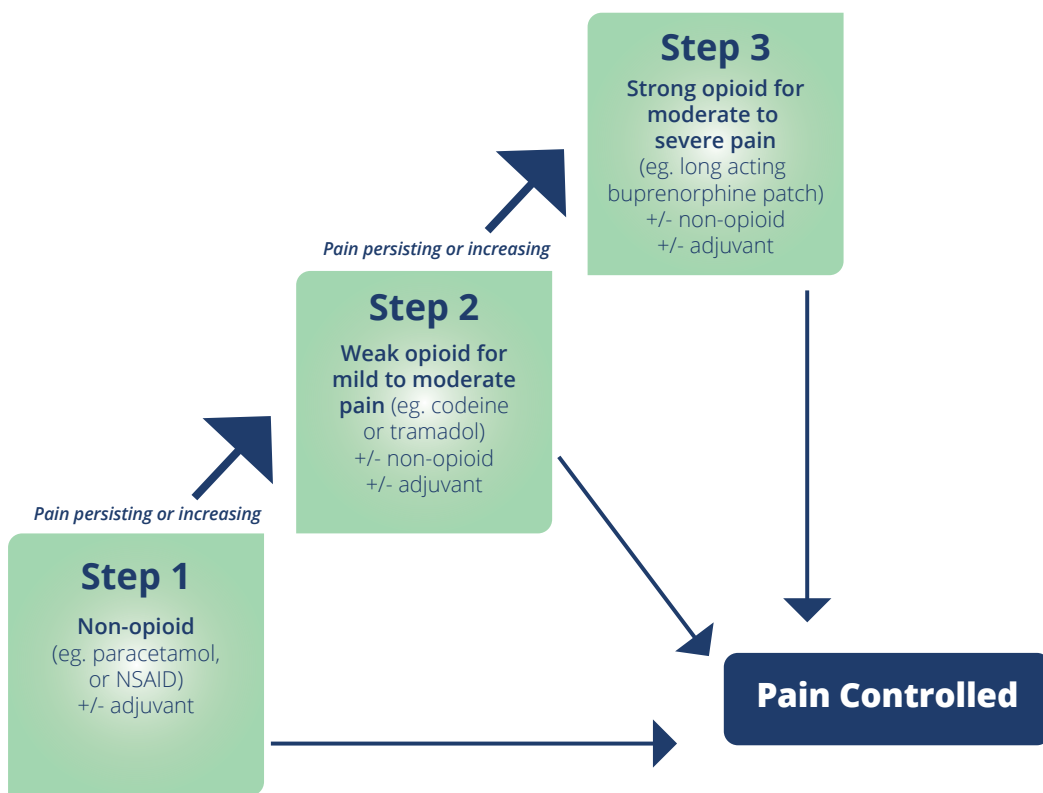


Pain and medication management

As discussed before, the physical and psychological aspects of pain are interconnected, so pain management in general practice should take a biopsychosocial approach. This is usually best achieved through a multidisciplinary approach, making the team care coordination discussed previously very important.^{37,38} Patients in pain will need the love and support that they can get through family, friends and the health care team. It should be remembered that close family members can play an important role in supporting effective pain management.

Medication management

Treatment with medication is an important part of the management of most people with the chronic pain of OA. Relieving pain allows the person with OA to increase their activity levels thus improving their overall wellbeing.



Adapted from WHO Pain Ladder for cancer pain³⁹

The most widely used framework for the use of medications in chronic pain is the WHO Pain Ladder,³⁹ originally developed for cancer pain, but successfully applied to other forms of chronic pain.

The principles of use of the pain ladder are to start treatment early with non-opioid analgesics with minimal side effects and to only move up the ladder once maximum tolerated doses are achieved, and to continue on these medications while other ones are added in. The mainstay analgesic at the first and foundation level of the ladder is early and regular maximum doses of paracetamol. "Early" treatment includes anticipatory pain relief, that is, regular doses of medication before times of expected pain or before activities that cause pain. It is important that daily maximum doses of paracetamol (e.g. 1 gram 4 times a day every day) are given before stronger analgesics are contemplated. The regular use

of this can potentiate the effectiveness of other medications such as weak opioids and allow lower doses of these to be effective.

NSAIDs are the second medication on the first step of the ladder. They can be useful for short periods of time, however side effects such as gastritis and potential kidney injury especially in combination with other medications limits their use.

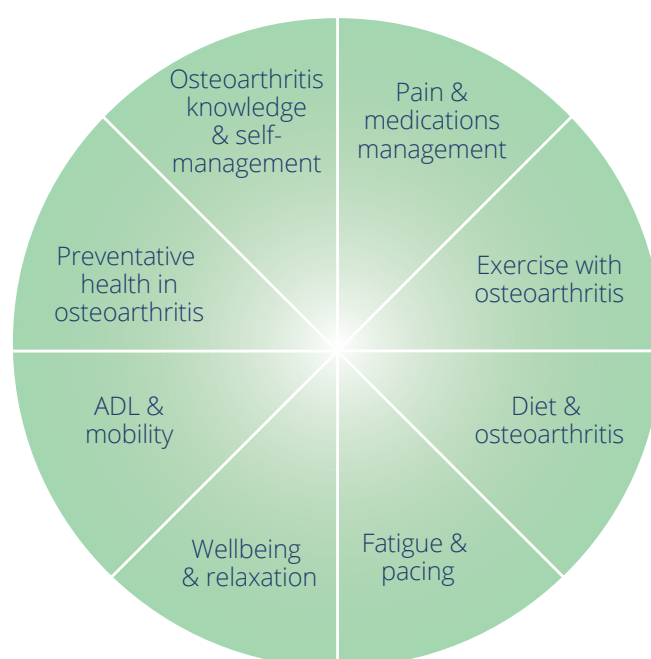
Medications used on the next step of the ladder are weak opioids such as codeine and tramadol. In severe cases or for very short term use, strong opioids are occasionally used. For more information on common medications used in OA, refer to Appendix 1.

Nurses play an important role in finding out if over the counter (OTC) medications are being used which may cause toxicity in combination with prescribed medications. They can also assist in making sure a Home Medicines Review is undertaken by the GP and Pharmacist.

Pain management is 'not a piece of cake'

A suggestion for helping patients understand the biopsychosocial aspects of pain management is to talk about cake. Yes really! The saying 'a piece of cake' does not fit with the complexity of pain management. Rather, patients may better relate to the statement that 'managing pain takes not just a piece but a whole cake'.

This 'cake pain tool' diagram concept was initially designed by Jess Danko in her pilot MSK clinic in 2009,^{35, 40} and was used effectively as a pain management tool by the three project nurses in this project. The nurses would draw a cake diagram and ask patients to fill out different ways they can manage their OA pain. An example is given to the right.



Cake Pain Tool (Danko, J 2009)



Key point: Everyone's 'cake pain tool' will be different. It is essential that it is tailored to the patient, working with them closely to find out what they enjoy or think is achievable at any given time. This may include forms of exercise they enjoy, multidisciplinary team appointments, and exploring what hobbies may add pleasure back into their life.

Managing pain with a biopsychosocial approach^{38,41,42}

- Use a non-judgemental approach to pain
- Approach it from many angles – to tackle the mind body connection with pain
- Include education about pain and pain pathways
- Tackle things early
- Utilise pain medications effectively – regular, anticipatory pain relief with regular reviews
- Include education about management of pain flares, fatigue and pacing
- With thoughts and emotions – consider referral to psychology for cognitive behavioural therapy
- Encourage the patient to partake in enjoyable activities – it takes their mind off the pain
- Exercise for pain management – Land / Aquatic, Tai Chi, Pilates, Yoga
- Complementary therapies – Thermotherapy, massage, transcutaneous electrical nerve stimulation (TENS) (see evidence on page 36)
- Relaxation – breathing techniques, sleep tips, meditation



*The patients really understood the 'cake pain tool'.
It made them look less at the medication as being the only
way to manage their pain, to seeing what other things would
help too. One patient realised that knitting was her way of
coping effectively with pain.*



- Jan, OA Project Nurse



Common non-pharmacological pain management techniques

Several simple and inexpensive techniques can be used successfully to help reduce the pain, stiffness and other symptoms of OA.

- **Heat treatments**²¹ have been shown to relieve pain and improve mobility. Heat increases circulation and relaxes muscles around affected joints. There are many different forms of heat treatment available. Some involve the application of moist heat, such as hot baths, showers, pools or mineral spas. Others involve dry heat, such as hot towels, water bottles, paraffin wax and heating pads.
- **Cold treatments**²¹ may help some people. Cold treatments may reduce swelling and improve joint function. They can be applied with ice packs, crushed ice in a plastic bag, or a bag of frozen vegetables wrapped in a towel, and placed on the sore area. Some people find cool packs stored in the fridge preferable to those from the freezer.
- **TENS**²¹ treatment may relieve some arthritis pain. TENS uses low-voltage electrical current to produce pain relief. A small, battery-powered machine transmits low-voltage electric pulses to nerve endings that lie beneath the skin in a painful area. These pulses may interrupt the nerves beneath the skin that carry pain messages to the brain, reducing the pain that is felt. TENS are available to buy or hire through some pharmacies and physiotherapists. A physiotherapist can show the patient how to use the device safely.



Key point: With heat or cold treatments, patients should check their skin after 5 minutes and keep it on no longer than 15 minutes. If patients have poor circulation or a contraindicated medical condition, use hot or cold packs with caution.

Hydrotherapy or warm water therapy can decrease pain and stiffness



About complementary therapies

Many people will try a range of complementary and alternative therapies. Some therapies may have good evidence to support their use, but others may not.⁴³ It is important to ask patients about their use of other therapies – especially any therapies that may interact or interfere with prescribed medications. Many patients may be reluctant to disclose alternate therapy use. For patients wanting to try a complementary or alternative therapy, the use of a symptom diary may help to identify any symptom change related to the commencement of the therapy.



Key point: Many oral arthritis supplements are obtained from shellfish and therefore should not be used in people with seafood allergy.

Some oral complementary therapies and the level of evidence of their efficacy⁴⁴

Moderate evidence*

- Avocado-soybean unsaponifiables (ASU)
- Ginger
- Green-lipped mussel
- Indian frankincense (*Boswellia serrata*)
- Phytodolor (ash bark extract/aspen leaf)
- Pine bark extracts
- Rosehip
- S-adenosyl methionine (SAME)

Limited evidence#

- Chinese herbal patches containing FNZG or SJG
- Chondroitin
- Devil's claw
- Fish oil
- Glucosamine sulphate
- Krill oil
- SJG
- SKI 306X
- Turmeric
- Vitamins A, C, E
- Vitamin B Complex
- Willow bark extract

* Promising results from multiple studies but still some doubts about effectiveness

Positive result from a single study but there are important doubts about whether it works

Common alternate therapies and their efficacy¹⁸

Therapy	Level of Evidence	OA Site
Acupuncture	Some Evidence	Knee
Acupuncture	Weak Evidence	Hip
TENS	Some Evidence	Knee
Massage	Weak Evidence	Knee or hip
Magnetic bracelets	Weak Evidence	Knee or hip
Laser therapy	Weak Evidence	Knee – short term



Key point: Many supplements and therapies are expensive. Affordability and efficacy versus placebo effect should be considered.

Getting support from loved ones will be important in managing OA pain



The Arthritis Research UK website is a good reference site for a wide range of complementary and alternative therapies, including current research that describes the level of evidence.

There is also a consumer section where patients can describe their experience with a particular therapy.

See www.arthritisresearchuk.org

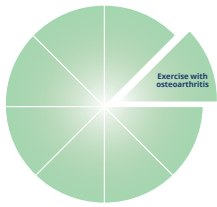


I found the patient booklet titled the 'Pain toolkit' by Pete Moore and Dr Frances Cole really useful in managing my pain.



– Kay, OA consumer representative

The Pain tool kit booklet for patients can be accessed at www.paintoolkit.org



Exercise with osteoarthritis

Research studies^{20,21} have shown that exercise can be very beneficial with patients with OA. This includes people of all ages, even if they have very advanced disease, have severe pain, are on a waiting list for joint replacement surgery, are overweight, or have very limited function.

Not only does exercise reduce the risk of developing cardiovascular comorbidities and obesity, it also has specific benefit to the OA disease process. Strengthening of muscle groups around the affected joint can compensate for the deterioration of the joint, reducing pain and improving function.

There is strong evidence from research^{21,45-47} to support the benefits of exercise for OA and all guidelines recommend exercise as one of the most important treatments for people with OA.

Exercise can affect patient wellbeing by:⁴⁸

- promoting general health
- increasing cardiovascular fitness
- providing an increase in energy and reduction in fatigue
- assisting sleep
- helping with weight loss and maintenance
- improving self-esteem
- relieving depression
- decreasing anxiety

There are many types of exercise that can be suitable for people with arthritis, including muscle strengthening / resistance training, stretching / ROM, cardiovascular / aerobic conditioning, neuromuscular exercise (weight bearing and functional), balance training, yoga, Pilates, aquatic exercise and Tai Chi. Both land and water exercise is of benefit. Aquatic exercise or hydrotherapy which takes place in warm water (typically between 32-36 degrees Celsius) gives the additional benefit of buoyancy and decreased joint impact.

If patients have done little exercise or muscle strengthening in the past, or need motivation or confidence, it is recommended that they see a physiotherapist or exercise physiologist. They can help design a program tailored to their specific needs as well as to keep them motivated. A health insurance fund or Medicare may cover some of these visits.



I have found exercise to help me. I usually exercise before I rise from my bed. I normally find it difficult to walk first thing in the morning, so this helps me a lot.



- Osteoarthritis patient involved with osteoarthritis nurse clinic project



Recommended Physical Activity for Adults with Osteoarthritis⁴⁷

Aerobic Exercise Program Components

Frequency: 3-5 days per week

Duration: 20-60 minutes per session (at least 150 minutes/week)

Intensity: Moderate (*breathing harder than normal but still able to speak in sentences*) to vigorous (*out of breath and can only speak one word at a time*)

Type: Low impact such as walking (see next section for more information)

Muscle Strengthening Exercise Program Components

Frequency: 2-3 days per week

Duration: 8-12 repetitions; all major muscle groups

Intensity: Moderate to vigorous (the exercise needs to feel 'hard' or 'very hard' while doing it)

Type: See next section for more information

Bike riding is a good activity for weight control in OA



What type of exercise is best?

The best type of exercise program for someone with OA depends on their overall health, what activities they like to do, which joints are affected, and how badly affected these joints are. Research^{20,21} has shown that strengthening exercise seems to be just as effective as aerobic exercise, such as walking.

Strengthening exercises are best combined with aerobic, ROM and stretching, and functional balance exercises to form a complete exercise program.

It is especially important for people with OA that exercise is not high impact, such as running, as high impact exercises are likely to cause increased joint pain.

Many health clubs, swimming pools and community centres offer exercise programs for people with physical limitations including OA.

Starting an exercise program

Starting a new exercise program can be overwhelming, but patients can be reminded to start gradually and to make it as enjoyable as possible. For people with OA, there are a few additional things to remember:-

Check with your GP colleague the suitability of an exercise program

A physiotherapist, exercise physiologist or personal trainer can help set up and progress an exercise program, teach a patient how to exercise safely within their limits, teach them how to avoid pain and injury and advise what sort of exercise is best for their joints.

Begin slowly and progress gradually

Aim for a gradual progression in exercise intensity, complexity and duration. Here are a few suggestions when starting a new program:

- Stretch and warm up with ROM or gentle stretching exercises.
- Start strengthening exercises slowly with small weights (a 1-2 kg weight can make a big difference) and build up resistance gradually over time.
- Gradually increase the time and intensity of aerobic exercises.

Make sure the exercise is appropriate

Avoid placing undue stress on the joints affected by OA. High impact activities such as running or jumping may worsen OA, especially in the knees and hips. Instead, a patient may like to try low-impact exercise such as water exercise or cycling. Avoid those activities that involve rapid repetitions of a movement. Seek advice from a physiotherapist or exercise physiologist if there are any questions about the right types of exercise to do.

Ease off if joints become too painful

Some people may think that if they feel pain during exercise that this is damaging the joint and making the OA worse – this is not the case and it can be normal to feel some pain or discomfort during exercise. However, if the pain feels excessive during exercise or is prolonged for more than a few hours after the exercise, advise patients to check with their GP or exercise health professional.

Pain and exercise

Moving the joints during exercise can cause pain and this may turn some people off exercise. Some people may have pain before they exercise, and the thought of making the pain worse may discourage them from exercise. However, if they do feel pain during or after exercise, they should be encouraged not to use this as an excuse not to exercise at all.

Without exercise, joints can become even more stiff and painful. Muscles may become weaker and may not be able to support and protect the affected joints. If they're in pain, they may feel depressed and this may make them even less like moving or exercising - but if they don't exercise, they may feel even more pain and more depression.

A better approach may be to talk to their GP or physiotherapist to develop an exercise program that is less likely to cause joint pain. Also they may like to find specific methods of pain relief which will work best for them before or after exercise.



Patient tips for pain relief prior to, or after exercise:

- **Moist heat**, such as hot packs, a bath, sauna or a shower can help relieve pain.
- **Icing the knee** may help control knee pain or swelling. Use either a commercially available ice pack or make an ice pack, but it is important to have a pack large enough to cover the knee joint swelling. To make an ice pack:
 - *Wet a towel and wring out the excess water*
 - *Place crushed or chipped ice or ice cubes on the wet towel and fold the towel over to make a pack. Make the pack on a flat area for a smooth pack. Alternatively 2 large packs of frozen peas can be used (side by side).*
 - *Place the ice pack on your knee and mould it in place. Check after every 5 minutes for excessive redness, unusual skin reaction or if you feel generally unwell. If none present, continue the application for another 15 minutes.*
- **Hydrotherapy**, or water therapy, can decrease pain and stiffness.
- **Relaxation therapy** or meditation can help to deal with pain and reduce muscle tension.
- **If taking pain medication**, do the exercise shortly after taking medication. Talk to the GP about how best to time exercise with medication.

How much exercise is too much?

A patient's exercise program may need to be reduced if they notice pain that lasts more than two hours after exercising, increased night pain, increased joint swelling, abnormal or continuing fatigue, increased weakness or decreased joint function.

Become more active in everyday life

In addition to doing specific exercises, it is beneficial for patients' OA and general health to increase overall levels of physical activity during everyday life.

There are lots of ways they can make changes to how they do certain routine tasks that will add up to important increases in daily activity. Some examples include parking at a far end of a shopping centre parking lot, walking around during TV ad breaks, and going up and down every supermarket aisle. Small increases in daily physical activity levels can add up and make a big difference



Nordic Walking may be enjoyed by OA patients as it takes the strain off joints

Evidence based facts on osteoarthritis exercise²⁰

- Exercise should be individually tailored to the patient
- It should be graded to the patient's disease, capacity and ability
- Small amounts often (such as in pacing activity)
- Linked to other activities so it becomes routine (i.e. Before a shower)
- Should include: strength training, aerobic exercise or activity and movement / stretching exercises

To help with weight loss, aerobic exercise that gets the heart and lungs working is the best type of exercise. This can include exercise such as walking, water exercise and cycling.

Good activities for weight control for a person with OA include:

- Water exercise
- Strengthening exercises
- Aerobic exercises, such as bike riding, walking and swimming
- Any moderately intense physical hobbies and activities, such as playing sport, gardening and dancing.

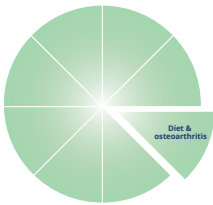


Key point: About exercise activity pacing

Exercise doesn't need to be done in a single session. A 30 minute walk for example can be split into three 10 minute walks. Altogether, a patient should aim for 30 minutes of moderate intensity lifestyle activities throughout the day on most days of the week.



There are many types of exercise that can be suitable for people with arthritis



Diet and osteoarthritis

An important factor in the management of osteoarthritis is weight control.⁴⁹ Being overweight or obese puts extra burden on weight-bearing joints, such as the back, hips, knees, ankles and feet. The increased stress on these joints can worsen the symptoms caused by OA.

Even small amounts of weight loss such as a few kilograms can be beneficial for patients with OA.

The most important dietary advice for someone with OA is to:⁵²

- Eat a wide range of different foods
- Eat plenty of wholegrain products, vegetables and fruits
- Decrease fat intake, particularly trans fats and saturated fat
- Moderate sugar intake
- Include appropriate amounts of omega-3 fatty acids, vitamin D, K and calcium
- Balance the food eaten with physical activity to maintain or improve weight



More information on the 2013 National Health and Medical Research Council (NHMRC) Australian Dietary Guidelines and patient resources can be found at <https://www.nhmrc.gov.au/guidelines-publications/n55>



Key point: ^{21,50,51}

- Most people will notice a 30% improvement in joint pain and function after losing 5% of their body weight.
- Most people will notice a 50% improvement in joint pain and function after losing 10% of their body weight.
- Quality of life, need for joint replacement and mortality are also improved after weight loss.
- People who are overweight are at greater risk of more OA.
- For every kilogram of weight lost there is a four-fold reduction in knee joint load.

Fish oil supplements

Certain kinds of oils in the diet may actually help some people with OA symptoms. These oils are called omega-3 fatty acids and can reduce inflammation from some forms of arthritis. This may help to relieve joint pain and stiffness in a similar way to NSAIDs. Although promising, the benefit of fish oils for OA has not yet been thoroughly proven by research.

Omega-3 fatty acids are found naturally in oily fish, such as mackerel, sardines, pilchards and salmon, so it is a good idea to eat oily fish three or four times a week. They can also be found in lesser amounts in flaxseeds and flaxseed oil, walnuts and canola oil.

The typical Western diet is low in omega-3 and it can be difficult to eat fish this frequently, so fish oil supplements may be useful. Most chemists and health food shops sell fish oil capsules and liquids that contain high concentrations of omega-3 fatty acids.

Fish liver oil (cod or halibut) also contains omega-3 fatty acids as well as vitamin D, which helps the body to absorb calcium. However, as they contain high levels of vitamin A, which can cause serious side effects, it is safer for patients to take pure fish oils, not fish liver oils.

Vitamin D

Vitamin D is formed in the skin under the action of sunlight (UV light) and is needed for bone and joint health. A deficiency of vitamin D can contribute to osteoporosis (brittle bones) and also increases a patient's risk of developing OA.

For Australians, the main source of Vitamin D is from exposure to sunlight. There are also some foods that contain small quantities of vitamin D, such as milk that is fortified with vitamin D, fatty fish, liver and eggs.

Many Australians are deficient in vitamin D, particularly:

- older people
- people who have limited sunlight exposure or who wear traditional/religious dress that covers most of their head and body
- people with gastrointestinal disease
- people taking certain medications
- people with dark skin

Vitamin D supplements are available over the counter. A normal dose is 1000 IU, but it is best to have a blood test and grade dose accordingly.



Vitamin K

Vitamin K is needed for normal bone and cartilage metabolism. Low blood levels of vitamin K may increase the risk of knee and hand OA.

The recommended vitamin K requirements are:

- for males: 120 µg/ day
- for females: 90 µg/day

Foods rich in vitamin K include kale, soybeans, spinach, and blueberries. (N.B. It is important to remember that dietary intake of Vitamin K should remain stable if on Warfarin.)

Calcium

A lack of calcium in the diet may contribute to osteoporosis (brittle bones). Post-menopausal women are particularly susceptible to osteoporosis, which can lead to fractures (broken bones).

The best sources of calcium are milk and other dairy products such as cheese and yoghurt. Small amounts of calcium are also found in nuts, breads, cereals, fruits and vegetables. Three servings of dairy products each day will generally provide you with the recommended daily calcium intake for most adults around 1000 mg/day.

The recommended calcium intake is:

Women	RDI
19 - 50yrs	1000mg / day
51+ yrs	1300mg / day

Men	RDI
19 - 70yrs	1000mg / day
71+ yrs	1300mg / day



Key point: Remember research has shown that OA patients who lose just 5 kg can markedly improve their pain and improve physical function. Conservative management of OA through diet and lifestyle can prevent the progression of OA.

Benefits of the Mediterranean diet

The RACGP recently created recommendations and guidelines for the use of the Mediterranean diet in clinical practice. This diet has NHMRC Level 1 evidence, shown to prevent cardiovascular events in high risk patients, and may also be indicated in the prevention of diabetes, cancer and in weight management (despite its relatively high fat content). The healthy fats in this diet sourced from fish, nuts, and extra virgin olive oil may have an anti-inflammatory effect which may benefit joint health. In addition green vegetables rich in vitamin K have been shown to reduce inflammatory markers in the blood. These include broccoli, spinach, lettuce, kale and cabbage.

Mediterranean food is readily available in the Australian context, is tasty and leads to more compliance with patients than traditional low fat diets. It is recommended that a patient sees a dietician to implement this diet - they can provide tailored advice and follow up.



About the Mediterranean diet⁵³

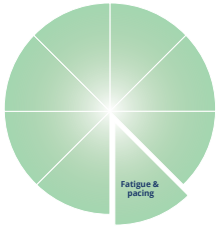
- Compared with low fat diet 30% reduction in cardiovascular events
- Moderate intake of fish – Omega 3 – 2-3 serves per week
- Moderate intake of white meat and low fat dairy
- High in extra virgin olive oil (monounsaturated) compared to saturated fat
- High intake of legumes
- High intake of vegetables and fruit
- Low to moderate consumption of red wine
- Low intake of red meat, processed meat, eggs
- Low intake of sweets, sweet desserts, sweet drinks



For detailed information on utilising the evidence based Mediterranean diet in general practice refer to Appendix 10 or go to the RACGP website:

<http://www.racgp.org.au/your-practice/guidelines/handi/interventions/nutrition/the-mediterranean-diet-for-reducing-cardiovascular-disease-risk>

There is also a PREDIMED 14-item Questionnaire that can be used for monitoring changes during clinical consultations available from their website.



Fatigue and pacing

What is fatigue?

Fatigue is a feeling of both physical and mental tiredness. It is often described as exhaustion or a lack of energy, and can make everyday tasks seem impossible. Many people with OA experience fatigue, no matter what they have been doing or how much sleep they get.

There are many possible causes of fatigue, including the disease activity, pain (which can also affect sleep), certain medicines, muscle weakness/wasting, and depression.

Managing fatigue

- Review medications with the GP: A discussion of medications can be useful if a patient's fatigue does not improve. Sometimes small changes in treatment can make major differences to how a patient feels.
- Graded exercise: Exercise can be useful to combat fatigue. Exercise that helps strengthen muscles and increase fitness can improve energy levels. The key to a successful exercise program whilst fatigue is an issue, is to begin gradually and to build slowly.
- Improved sleep: A review of medications may be warranted to see if pain is influencing sleep. In addition consider reducing caffeine intake particularly after 2 pm, sleeping in a cool darkened room away from distractions such as TV and technology, and doing relaxation exercises before bed can be useful.
- Discussion about mood: Sometimes fatigue is related to feelings of anxiety or depression. In this case discussion with the GP and/or referral to a psychologist may be appropriate.

Pacing in osteoarthritis

Pacing activity is very important for conserving energy and protecting joints⁵⁴. Patients with chronic pain can often overdo activity on 'good days' resulting in subsequent 'bad days'. Educating patients about the importance of holding back on good days can be an invaluable tip to learn. Careful planning of activities can assist with this.

Pacing tips for patients

Encourage patients to:

- Plan their day alternating periods of activity and rest.
- Break large tasks such as preparing a meal or cleaning a room into smaller tasks, each followed with a rest break.
- Prioritise jobs reserving the hardest for when they are feeling their best.
- It is important not to overdo it as this could result in pain and fatigue the following days.
- Simplify tasks. For example, buy pre-cut vegetables and meat to make cooking simpler. Find out about appliances that can make tasks easier (see page 52).
- Be ready to change plans and to not force themselves through pain.
- Ask for help when needed.
- Learn about equipment that can make daily tasks easier.



Wellbeing and relaxation

Enjoyable activities

A simple yet powerful way of managing OA pain is to participate in enjoyable activities. When patients engage in something they truly enjoy this can distract them temporarily or for the duration of the activity.

This form of distraction builds self-efficacy, self-esteem and social connections. Once stiffness and pain sets in, it can be tempting for a patient to withdraw or stop doing the things they enjoy, leading to frustration, lowered self-esteem, or depression. Sometimes it can be about changing expectations. For example, if you can no longer play a sport such as tennis you can still be a spectator or volunteer with a tennis club.



Finding an enjoyable activity can take the mind off the pain



I needed to find activities that the patient would enjoy. For someone it might have been tinkering in the shed, art, or crosswords. It didn't really matter as long as it was enjoyable to them.



- Tamara, OA Project Nurse



Key point: Practise relaxation techniques in a private, quiet place where you are alone and will not be disturbed. Types of relaxation techniques include: Mindfulness; Deep breathing (diaphragmatic); Progressive muscle relaxation; Guided imagery and Distraction.

Relaxation

There are different techniques available to help with relaxation. Some techniques are more physical in their approach and deal with improving breathing and reducing muscle tension. Others use the mind to help with relaxation. These techniques must be practised to be beneficial and patients may need to try several methods before they find one that works for them.



There are many relaxation / meditation recordings to download, books and CDs that may help patients. The Smiling Mind website and App were developed by expert psychologists and can be used by people of all ages.

It can be downloaded free at www.smilingmind.com.au

Managing sleep

For managing sleep see managing fatigue on page 47.

Sex and arthritis

The emotional and physical effects of OA can impact on a patient's appetite for, and enjoyment of sex. Planning ahead by using pharmacological and non-pharmacological pain relief strategies before sex can help, as can using more cushions, exploring different positions and being creative with different forms of touch and intimacy.



For more information Arthritis Australia has a patient leaflet titled 'Sex and Arthritis' available to download from their website

<http://www.arthritisvic.org.au/Useful-Information/Information-to-Download/PDFs/Sexandarthritis.aspx>

Thoughts and emotions

When diagnosed with a chronic condition such as osteoarthritis, patients may have thoughts such as 'why me?', 'why can't I beat this?', 'what does the future hold for me?' and 'how will I cope?' These may lead to negative and unhelpful emotions such as fear, anger and worry. They can feel sadness at not being able to do the simple tasks or hobbies they once could. They may resent their loss of independence and feel frustrated and worthless when asking others for help.

It is quite normal for someone to have these negative thoughts and feelings when dealing with OA. For many people with OA, these thoughts and feelings don't last. However, for some people these negative thoughts and feelings can linger and affect the way they manage their OA, increasing their pain and disability.

Depression and anxiety and osteoarthritis

About one person in five in the community has experienced depression and this figure rises to one in three in people who have OA.¹ People who have had depression in the past are more likely to experience depression again when they get a condition such as OA that causes chronic pain.

Depression is described as a 'persistent unpleasant feeling of despair and sadness'. It can range from a feeling of being downhearted, to a state where the person loses all confidence, has no self-worth and has thoughts of wanting to end life.

What are the signs and symptoms?

If a patient's mood has been low and/or they have lost interest and pleasure in things combined with four of the following symptoms on most days, over the past two weeks you may need to flag this with their GP.

- Feeling tired and without energy, without drive to do the things they normally enjoy
- Being unable to sleep at night, waking earlier than normal, or sleeping during the day
- Irritability (short-tempered with friends and family)
- Reduced concentration, difficulty making decisions
- Loss or increase of appetite or weight
- Feelings of excessive guilt or worthlessness
- Thoughts of suicide or self-harm or other morbid thoughts

If left untreated, depression can increase the amount of pain and discomfort people feel as a result of OA. This in turn can reduce motivation, affect the way they manage the condition, reduce fitness and increase their sensitivity to pain, increasing the amount of pain and discomfort felt. To break this cycle, it is important to recognise and treat depression early on.



Further reading suggestion: Beyond Blue has an information leaflet 'Arthritis, anxiety and depression' available to download from their website:

<https://www.bspg.com.au/dam/bsg/product?client=BEYONDBLUE&prodid=BL/0691&type=file>



Cognitive Behaviour Therapy

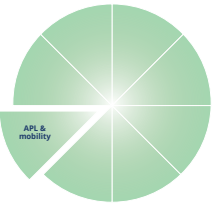
This can be effective in managing OA pain and depression and anxiety. It is a therapy offered by some psychologists that helps change the way people think, by becoming aware of negative thoughts and thought processes and changing these into more positive thoughts. This can help them approach situations differently.

Relaxation and meditation can help manage OA pain



Mindfulness Based Stress Reduction

Mindfulness Based Stress Reduction is a structured program developed at the University of Massachusetts Medical School in 1979. It aims to develop awareness of mental and physical states using mindfulness meditation training to cultivate more stability, kindness and peace - even in the face of pain and uncertainty. The process helps patients become aware of thoughts and emotional reactions that may be unhelpful - and then how to respond to them in such a way that they can feel empowered rather than overwhelmed. It opens up the possibility of working more wisely with difficulties and to act in ways that reduce suffering.



Activities of daily living and mobility

There are many appliances that can make daily activities for OA patient's simpler and less tiring.⁵⁵ These appliances aim to protect joints during movement or functional tasks. Referral to an aids or equipment program, aids shop, pharmacy, Independent Living Centre (see Appendix 9) or an occupational therapist may be warranted.

Equipment around the home that may be useful:

- ergonomic knives to make cutting and slicing easier
- adapted cutlery and cooking utensils to allow easy gripping
- equipment to help with opening jars or bottles, and turning on taps
- equipment to make dressing and showering easier (such as a pick-up stick, long-handled sponge or shoe horns for reaching feet)
- trolleys (for taking out the washing basket, or used in shopping to reduce weight on hands)

Mobility aids

Mobility aids and equipment assist with ambulation and independence, but also play a significant role in reducing pain and maintaining function of the joint and surrounding muscles.²⁰



A walker or frame can reduce the stress on sore knees or hips

Walking stick or walker

- Perhaps the simplest way to reduce stress on a sore knee or hip is the use of a walking stick. The stick is held in the hand on the opposite side to the affected hip or knee. The stick transmits some of the weight of the body to the ground and reduces the load on the affected hip or knee, lessening the pain. Sticks are not used as often as they should be, because some people fear they may make them seem older than they are, but they can greatly increase independence, confidence and mobility, while reducing pain when walking.

- People with OA in both legs (not just one) may find they get similar relief by using a walker / frame.

Footwear, braces and patella (knee cap) taping

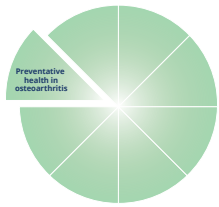
- Shoes should be supportive and have a low heel. Even a heel 3.5 cm high can cause greater strain on the knee joint. A podiatrist can provide advice about footwear.
- Knee brace: Another approach is to use a leg brace which tends to reduce the load on the knee joint. Studies²¹ show that such a brace may reduce pain (to about half the levels experienced without the brace) and improve function. Newer brace designs make them easier to wear. A physiotherapist or orthotist can assist patients with braces and provide instruction.
- Patella taping: Another technique, useful for OA of the knee, is to tape the patella (knee cap). Physiotherapists tape the patella as a short term treatment for knee pain. A trial⁵⁶ found that therapeutic taping of the knee helps reduce pain and disability in patients with OA.
- Hand brace: Another approach, for OA of the hand, is to use a thumb splint. Some studies⁵⁷ have shown thumb splints improve hand function, and grip and pinch strength and reduce pain. The splint restricts movements at the base of the thumb, which is the most common site for arthritis in the hands. The splint reduces pain caused by movements of this joint, and allows the joint to rest and heal. The splint can either be worn during a period when the thumb is painful (or just overnight), or only worn during activities involving the thumb that produce the pain. The splint can be bought prefabricated or custom made, and can be bought over the counter from a pharmacist or an occupational therapist. Splints are also available for the wrist.



Key point: Knee and hip OA symptoms include pain in or around the joint, stiffness and / or a sensation of the joint being unstable or giving way. This can make it difficult for patients to get out of bed in the morning, attend to many daily tasks such as dressing or showering, and also in walking without assistance.



For further reading patients may wish to refer to Arthritis Australia's booklet titled 'At home with arthritis: Simple steps for managing at home' This is available at their website at <http://www.arthritisvic.org.au/Useful-Information/Information-to-Download/PDFs/At-home-with-Arthritis-Booklet.aspx>



Preventative health in osteoarthritis

To finish off any care plan on OA it is important to remember the preventative activities that can occur in CDM consultations. Both smoking and excessive alcohol use are associated with a reduction in bone density¹⁰. This can place a patient at risk of osteoporosis. DEXA scan for osteoporosis is available to some patients on Medicare according to fairly stringent criteria. Alternatively patients can opt to self-fund this scan.

Patients with OA can have a reduction in joint strength and stability leading to compromised mobility and balance. This places the patient at an increased risk of falls. Organising a falls risk assessment in the home via an occupational therapist could be essential for patient safety and wellbeing.



For more information about falls prevention and falls risk assessment tools see:

http://www.health.vic.gov.au/agedcare/maintaining/falls_dev/

Sometimes preventative needs can get lost in the complexity of the presenting complaint. For a reminder of preventative activities in general practice please refer to:

<http://www.racgp.org.au/your-practice/guidelines/redbook/>

Other preventative activities in primary health care that are not directly related to OA but are still important, include such activities as PapScreen, Mammography, Bowel or Prostate Screening. OA that affects a patient's mobility and joint ROM can make it difficult for screening activities to occur without some adjustments. The types of adjustments needed may include the use of an adjustable bed for pap screening or mammography performed in wheelchairs.



Disability can be a barrier to pap screening and nurses can find which services provide equipment such as an adjustable bed and hoist at:

<http://www.papscreen.org.au/forwomen/whoshouldhavepaptests/womenwithdisabilities>.



Key point: Managing Flare-ups - Patients will need to understand that their pain will vary from day to day, and sometimes there will be an exacerbation or 'flare' of symptoms. It may be helpful to include in the GPMP a section on 'How to manage an OA flare'. This plan may include: seeking help, a change in medications, or using more pieces in their individual 'cake pain tool'.

Case study 2 – Osteoarthritis in multiple joints

Maria is a 59 year old female with OA in her neck, elbows, lower back, both hands and both knees. She is the primary carer for her adult daughter aged in her 40s who has a severe physical and mental disability. Maria is supported by her husband who attended the appointment with her as English is her second language and fluency is limited. They have recently begun to access support services to enable them to continue to care for their daughter who attends the local disability services day centre twice a week. This short break while she is there gives Maria and her husband some free time during the day to attend appointments.

Maria's caring role has put her body under a lot of strain. She has endured years of repetition of pulling, rolling, lifting and repositioning her disabled adult daughter, and Maria feels this is starting to take a toll.

She has been diagnosed on magnetic resonance imaging with disc bulges at C 2-3 and C 4-5, and complains of constant ache in her neck and tingling /pain down her arms, worse in her right arm. She has been referred to a neurologist for a nerve conduction study.

On the BPI chart she also describes constant pain in joints – but it is observed by the nurse that there is no swelling, heat or erythema especially in knees, elbows and low back. Her average pain score for the past 24 hours is 8 out of 10, and her pain is especially high for her ability to work and sleep (also 8 out of 10 respectively).

Maria's heritage is from the Mediterranean Islands and Australia is her adoptive home. She considers it her responsibility to provide all the physical, emotional and financial care for her only daughter. It has only been in the last few years that the family have been accessing support services. Since the day of her daughter's birth Maria has been with her constantly, she has never had a holiday away and cannot contemplate relinquishing care even for respite breaks.

Maria's experience of OA is beginning to impact on her and the whole family unit, however she is trying to find innovative ways to manage the pain. She follows a Mediterranean diet and is using turmeric in cooking which she "had heard is good for arthritis". She has also reduced her portion sizes. Her current body mass index: 33.78. She also uses Voltaren® (NSAID) gel rubs and Deep Heat as required. She stopped taking Panadol Osteo® when her GP prescribed Lyrica® – due to the fear of having too many drugs in her system.

She rated her level of relief from current pain medication as giving 20 % relief at initial assessment date. She was taking Panadol Osteo® x 2 at 1500hrs and Lyrica® 75 mg x 1 mane and x 2 nocte.

Maria's primary health care nurse Janice was able to discuss her current pain management. She explained how using more than one medication and strategy is often more effective than just one. She discussed pacing activities and the utilisation of aids and equipment.

Maria uses kitchen aids along with her husband's help to open tight jars, and is able to take care of light household duties and meal preparation.

Referrals were discussed with Maria, and she allocated 3 visits to podiatry as low back pain to attend to her own feet was a challenge for her, and 2 x visits to physiotherapy to see if any exercises will assist in strengthening her upper body.

Some relaxation techniques were given during the consultation and discussion about caring for herself so that she can continue to provide care to her daughter.

Janice is gradually working with Maria feeling more comfortable with the thought of outside assistance and carers with the ultimate goal for Maria and her husband to get away for an overnight weekend escape to the coast (this is her husband's wish).

"This was the first care plan appointment that Maria had ever been offered and she was so grateful that someone was prepared to give her time to listen to her concerns, discuss options and validate her life and great parenting role. She is just now starting to access healthcare for herself as the wear and tear on her body is starting to impact on all areas of her life" Janice, Primary health care nurse.



Reflective exercise:

1. What are the possible causes or risk factors for Maria developing OA?
2. How might the BPI scores inform the discussions and nursing interventions?
3. If Maria was willing what other aids, equipment and services could she benefit from?
4. How would you have responded to Maria's desire to take turmeric for pain?
5. Considering sociocultural and literacy issues, how would you tailor your OA information?

Conclusion

Osteoarthritis is the most common form of arthritis. It is a leading cause of chronic pain, disability and lost productivity in Australia. Primary health care nurses can build on their existing chronic disease management skills to improve the quality of lives of these patients. This may be through planning a new OA nurse clinic with their GP colleagues, or through CDM nursing management based on evidence based non-pharmacological interventions. Patients can be encouraged to fill out their own 'cake pain tool' to manage their pain using a biopsychosocial approach. In addition nurses are well placed to assist patients to keep moving, active and healthy through the development of realistic goals. For further information regarding osteoarthritis and MSK conditions, please see the following reading recommendations and Appendices.

Suggestions for further reading:

Australian Medicare Local Alliance 2013 *Nurse clinics in Australian general practice: Planning, Implementation & Evaluation*, Australian Medicare Local Alliance, Manuka, ACT.

Oliver, S.M. (ed) 2009 *Oxford handbook of musculoskeletal nursing*. Oxford University Press, Oxford.

The Royal Australian College of General Practitioners 2010 *Prevention in the management of musculoskeletal conditions: A guide for practice nurses*. RACGP, Australia.

Suggested websites:

Arthritis Australia website
www.arthritisaustralia.com.au

My joint pain website
www.myjointpain.org.au

National Prescribing Service
www.nps.org.au

NSW Agency for Clinical Innovation Pain Management Network
www.aci.health.nsw.gov.au/chronic-pain

Pain Australia website
www.painaustralia.org.au

RACGP HANDI guides
www.racgp.org.au/your-practice/guidelines/handi/

Notes

Appendices

Appendix 1 - Common medications in osteoarthritis

Drug Classification: Non-opioid Analgesic

Generic Name(s): paracetamol

Mechanism of action: Analgesic and antipyretic. Mechanism of action not fully determined. May include prostaglandin synthesis inhibition. Negligible anti-inflammatory effects. Onset of pain relief approximately 30 minutes after oral administration. Rectal absorption can be erratic and delayed.

Adverse reactions: Liver toxicity – especially where dose exceeds 4g daily for 4 or more days or overdose. Hypersensitivity reactions are rare.

Brand Names: Panadol®, Panamax®

Oral controlled release paracetamol (665mg per tablet)– brand name Panadol Osteo®

Practice Notes: Paracetamol overdose can occur as product is readily available OTC. Acetaminophen is the term for paracetamol used in the US.

Drug Classification: Non-Steroidal Anti Inflammatory Drugs (NSAIDs)

Generic Name(s):

Selective COX-2 inhibitors – celecoxib, meloxicam

Nonselective COX inhibitors – diclofenac, ibuprofen, indomethacin, ketoprofen, naproxen, piroxicam, sulindac

Mechanism of action: NSAIDs have analgesic, antipyretic and anti-inflammatory actions.

NSAIDs inhibit synthesis of prostaglandins (which are involved with pain and inflammation at the site of arthritis or injury) by inhibiting cyclo-oxygenase (COX) present as COX-1 and COX-2:

-inhibition of COX-1 results in results in impaired gastric cytoprotection and antiplatelet effects

-inhibition of COX-2 results in anti-inflammatory and analgesic action

Adverse reactions: All NSAIDs have the following potential adverse reactions, and increased risks:

- Allergy –bronchospasm, rash, dyspnoea
- Gastrointestinal-dyspepsia, peptic ulcer, perforation, bleeding. Selective NSAIDs generally associated with lower risk of GI upset
- Cardiovascular –hypertension, blood thinning, MI, stroke, arrhythmia
- Renal-reduced renal function
- Hepatic –impairment, raised LFTs, toxicity
- Precautions need to be taken in vulnerable populations with pre-existing conditions, elderly, women and pregnancy.

Risk of cardiovascular events appears to be highest with diclofenac of the nonselective NSAIDs

Risk of cardiovascular events with celecoxib is dose-related; do not use >200mg daily

long term

Diclofenac and ibuprofen appear to have lowest GI upset side effects of the nonselective NSAIDs

Naproxen – risk of cardiovascular events appears lowest

Piroxicam – severe skin reactions may be more common

Brand Names:

Celecoxib: Celebrex®

Diclofenac: Voltaren®, Voltaren Rapid®, Fenac®, Clonac®, Imflac®, Viclofen®, Voltfast®, Voltaren® emulgel, Dencorub® anti-inflammatory gel, Chemists' Own® anti-inflammatory pain relief gel, Voltaren® Osteo Gel

Arthrotec® - fixed combination of diclofenac and misoprostol (prostaglandin analogue to reduce risk of gastric side effects)

Ibuprofen: Nurofen®, Nurofen® gel, Advil®, Bugesic®, ProVen®, Rafen®, Chemists' Own® ibuprofen, Brufen®

Maxigesic® - fixed dose combination of ibuprofen and paracetamol

Indomethacin: Arthrexin®, Indocid®

Ketoprofen: Orudis®, Oruvail SR®

Meloxicam: : Meloxiauro®, Meloxibell®, Mobic®, Movalis®, Moxicam®, Melox®

Naproxen: Inza®, Naprosyn®, Proxen®, Anaprox®, Crysanal®, Naprofen®, Naprogesic®, Eazydayz®

Vimovo® - fixed dose combination of naproxen and esomeprazole (proton pump inhibitor to reduce risk of gastric side effects)

Piroxican: Feldene®, Mobilis®,

Sulindac: Clinoril®

Practice Notes: About 60% of patients will respond to NSAIDs. Maximal effect may take up to 3 weeks after commencement. Patients can be on low dose aspirin at the same time as NSAIDs. Topical NSAIDs can be effective in OA where oral NSAIDs are not tolerated. Concurrent use of paracetamol can reduce the dose of NSAIDs.

Drug Classification: Opioid Analgesic

Generic Name(s): buprenorphine, codeine, dextropropoxyphene, fentanyl, hydromorphone, methadone, morphine, oxycodone, pethidine, tramadol

Mechanism of action: Opioid analgesics mimic endogenous opioids by activating opioid receptors in the central and peripheral nervous systems. They reduce pain impulse transmission.

Adverse reactions: Common side effects include nausea and vomiting, drowsiness, dizziness, dyspepsia, orthostatic hypotension, headache, itch, dry mouth, miosis, urinary retention and constipation. Higher doses produce sedation and respiratory depression.

Brand Names:

Buprenorphine: Chronic severe disabling pain unresponsive to non-opioid analgesics - transdermal patch used for OA pain - Norspan®

Codeine: Panadeine Forte®, Panamax Co®, Codalgin®, Codalgin Forte®, Codapane Forte®, Comfarol Forte®, Prodeine Forte® - fixed dose combination of paracetamol and

codeine

Aspalgin® - fixed dose combination of aspirin and codeine

Nurofen Plus®, Panafen Plus®, Rafen Plus®, ProVen Plus® - fixed dose combination of ibuprofen and codeine

Dextropropoxyphene/Propoxyphene: Doloxene®

Di-Gesic® - fixed dose combination of paracetamol and dextropropoxyphene

Fentanyl: Transdermal patch used for OA pain - Denpax®, Durogesic®, Dutran®, Fenpatch®

Hydromorphone: Dilaudid®, Jurnista® (controlled release)

Methadone: Generally only used where inadequate pain relief or intolerable side effects from other opioids. Physeptone®, Biodone Forte®

Morphine: Generally controlled release only used for OA pain. MS Contin®, MomexSR®, Kapanol®, MS Mono®

Oxycodone: Generally controlled release only used for OA pain. OxyContin®

Targin® - fixed dose combination of oxycodone and naloxone (naloxone is used to reduce opioid-induced GI side effects especially constipation where regular laxative use has failed)

Tramadol: Generally controlled release only used for OA pain. Tramal SR®, Lodam SR®, Tramedo SR®, Zydol SR®

Zaldair® - fixed dose combination of tramadol and paracetamol

Practice Notes: Beware of potential for misuse leading to dependence and over-use of OTC codeine fixed dose combinations. Paracetamol and codeine fixed dose combinations have resulted in toxicity from paracetamol overdose. Discuss laxative use as constipation is very common. Physical dependence is common and withdrawal symptoms will occur if chronic treatment is stopped suddenly. Drowsiness and increased effects of alcohol may occur. Orthostatic hypotension may result in dizziness – instruct patient not to stand up too quickly. If using transdermal opioid patches - heat increases the release of medication – advise caution with hot baths/showers/electric blankets and watch for increased side effects with fever. Controlled release products must always be swallowed whole. Oxycontin® tablets can swell and become highly viscous in water and may cause choking, gagging, regurgitation and difficulty swallowing.

Source: **Australian Medicines Handbook 2015**
Pharmaceutical Society of Australia, RACGP and ASCEPT
Australian Medicines Handbook Pty Ltd, Adelaide.

Please note that some of the medications listed in the above table may have restricted use in the management of OA.

Appendix 2

Diagnosis and management of hip and knee osteoarthritis

Reproduced with permission from Guideline for the non-surgical management of hip and knee osteoarthritis. Melbourne: The Royal Australian College of General Practitioners, 2009.



The Royal Australian
College of General
Practitioners

Diagnosis and management of hip and knee osteoarthritis

This algorithm applies to adults aged more than 18 years presenting with suspected hip or knee osteoarthritis. Refer to RACGP Clinical guidelines for musculoskeletal diseases for more information on recommendations and grading of evidence www.racgp.org.au/guidelines/musculoskeletaldiseases

PROBABLE OA

Common presentations

Management mild-moderate persistent symptoms

- Simple analgesia (A)
- Regular paracetamol (maximum 4 g/day)

And/or

- Trial short term
 - topical NSAIDs (C)
 - topical capsaicin (D)

If symptoms persist:

- trial short term oral NSAID (B)
- monitor blood pressure, renal function

Consider impact of comorbidities

Nutritional assessment (BMI, girth)
Falls risk assessment, function, impairment

Consider other impacts

Psychosocial assessment (emotional disability eg. depression, anxiety), sleep, mobility, activities of daily living

NSAID risk

Age, hypertension, upper GIT events, cardiovascular, renal or liver disease

Medication risk

Polypharmacy, aspirin allergy, diuretics, ACEIs, anticoagulants

Patient's knowledge, expectations and goals

EXCLUDE

OA may present in other ways. Investigations to rule out alternative diagnoses (if needed based on clinical judgment): laboratory tests (eg. ESR, RhF, synovial fluid analysis); and radiographs (particularly weight bearing X-rays, however findings are often nonspecific)

CONSIDER

Trauma, soft tissue conditions, referred pain syndromes, inflammatory arthritis (eg. rheumatoid, psoriatic), septic/crystal arthritis, haemarthrosis

Moderate-severe persistent symptoms in those whom mild-moderate strategies have not been successful

Check use of strategies for mild-moderate.

Then consider:

- Continued oral NSAID (with caution)
- Viscosupplementation for the knee* (eg. hyaluronate 5–13 weeks for OA knee) (C)
- Opioid therapy (A) for severe symptoms where surgery is contraindicated or not yet available

Management of an acute flare of symptoms

Manage as for mild-moderate, stepping up/adding therapy as needed
And/or
Intra-articular corticosteroid injection (B)

Short term pharmacological therapy

- Simple analgesia (paracetamol) (A)
- Oral NSAIDs/COX-2 inhibitors (with caution) (B)
- Intra-articular corticosteroid (B)
- Topical NSAIDs (C)

Long term pharmacological therapy

- Simple analgesia (paracetamol) (A)
- Weak and strong opioids (with caution) (A)
- Viscosupplementation* (eg. hyaluronate 5–13 weeks for OA knee) (C)

Assess nonpharmacological interventions for all patients according to individual need at all stages of OA

OPTIMISE WEIGHT (B)

- Optimal weight BMI 18.5–25
- Combination of two or more interventions: nutrition education, cognitive behavioural therapy, low energy diet, exercise regimen, dietician referral

ALLIED HEALTH INTERVENTIONS

- Land based exercise program (B)
- Aquatic therapy (C)
- Multimodal physical therapy (C)
- Tai chi (especially if at risk/fear of fall) (C)
- Thermotherapy (C)
- TENS (C)
- Acupuncture (C)
- Patellar taping (D)
- Massage therapy (D)
- Low level laser therapy (D)

EDUCATION AND SELF MANAGEMENT SUPPORT

Self management and education programs (C)
Telephone support (D)

Review

- Complementary therapies
- Activities of daily living
- Sleep, mood
- Medication and self care adherence
- Consider referral to pharmacist for home medication review

Consider referral

Eg. severe OA and fails to respond to conservative therapy

Complete joint replacement surgery referral for orthopaedic assessment

Patient completes hip and knee questionnaire (MAPT):
www.racgp.org.au/Content/NavigationMenu/ClinicalResources/RACGPGuidelines/Arthritis/Referral_for_Joint_Replacement_2008.pdf

*Procedure of administering synthetic hyaluronic acid products into the joint via intra-articular injection

Diagnosis and management of hip and knee osteoarthritis

SELECTED PRACTICE TIPS (SEE THE FULL GUIDELINE FOR MORE TIPS AND FURTHER DETAILS)

www.racgp.org.au/guidelines/osteoarthritis

Intervention	Recommendation
Pharmacological management	
Oral NSAIDs	Good evidence for NSAIDs or COX-2 inhibitors for reducing pain in the short term for hip or knee OA (Recommendation 21 B) Caution: In those at risk (eg. elderly) the use of other medications, especially ACEIs, ARBs and diuretics. Monitor BP and renal function. For patients with high NSAID risk for GIT problems where NSAIDs are considered necessary, prescribe a traditional NSAID plus a PPI or COX-2 inhibitor There is a higher risk of adverse events for patients with concomitant use of diuretics, ACEIs, angiotensin 2 receptor blockers, cyclosporin, warfarin, oral corticosteroids or aspirin
Topical NSAIDs	Some evidence to support short term treatment of knee OA with topical NSAIDs (Recommendation 24 C)
Intra-articular corticosteroid injection	Good evidence to support intra-articular corticosteroid injections for short term treatment of knee and hip OA (Recommendation 23 B)
Glucosamine	Conflicting evidence of benefit for glucosamine sulphate and glucosamine hydrochloride in the treatment of the symptoms of knee OA (Recommendation 27 C). There is insufficient evidence to support benefit for preventing progression of OA knee cartilage loss. In all reported studies, glucosamine was safe compared to placebo
Opioids	Opioids have a modest effect in managing moderate to severe OA pain in patients for whom paracetamol is ineffective, and who do not respond to, or have contraindications for, NSAIDs. However, most of the research on opioid use has been in short term trials and long term efficacy has not been shown
Nonpharmacological interventions	
Land based exercise	Land based exercise is recommended for obese people with OA of the hip and knee (Recommendation 6 B)
Aquatic exercise	Aquatic exercise programs, performed in either group or individual settings, provide the same general benefits as land based exercise programs but with reduced stress to the joints due to buoyancy (Recommendation 7 C)
Multimodal physical therapy	Some evidence to support GPs recommending multimodal physical therapy (up to 3 months) (Recommendation 8 C)
Magnetic bracelets	Weak evidence only to support GPs recommending the wearing of magnetic bracelets (Recommendation 17 D)
Weight loss	Weight loss recommended for obese people with OA of the knee (Recommendation 5 B)
Walking aids	Walking aids (eg. walking sticks and frames) may assist with mobility*
Interventions not supported by current evidence	
Braces and orthoses	Good evidence that knee braces, neoprene sleeves or lateral wedged insoles are of little or no benefit (Recommendation 28 B)
Electromagnetic fields	Good evidence that electromagnetic field or electric stimulation are of no benefit (Recommendation 29 B)
Chondroitin sulphate	Some evidence to suggest that chondroitin sulphate is of no benefit (Recommendation 31 C)
Therapeutic ultrasound	Some evidence to suggest that therapeutic ultrasound is of no benefit (Recommendation 33 C)
Topical capsaicin	There is weak evidence to support GPs recommending topical capsaicin for short term treatment of OA of the hip and knee (Recommendation 25 D)

FOR DETAILED PRESCRIBING INFORMATION

National Prescribing Service www.nps.org.au

Therapeutic Guidelines www.tg.com.au

Australian Medicines Handbook www.amh.net.au

PATIENT SERVICES

Arthritis Australia www.arthritisaustralia.com.au

Australian Rheumatology Association www.rheumatology.org.au

NHMRC grades of recommendations

A Body of evidence can be trusted to guide practice

B Body of evidence can be trusted to guide practice in most situations

C Body of evidence provides some support for recommendation(s) but care should be taken in its application

D Body of evidence is weak and recommendation must be applied with caution

Note: A recommendation cannot be graded A or B unless the volume and consistency of evidence components are both graded either A or B

This project is supported by the Australian Government Department of Health and Ageing through the Better Arthritis and Osteoporosis Care initiative

Expiry date of recommendations: July 2014

Disclaimer

The information set out is of a general nature only and may or may not be relevant to particular patients or circumstances. It is not to be regarded as clinical advice and, in particular, is no substitute for a full examination and consideration of medical history in reaching a diagnosis and treatment based on accepted clinical practices. Accordingly The Royal Australian College of General Practitioners and its employees and agents shall have no liability (including without limitation liability by reason of negligence) to any users of the information contained in this publication for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on the information contained and whether caused by reason of any error, negligent act, omission or misrepresentation in the information.

© The Royal Australian College of General Practitioners. All rights reserved

* Zhang W, et al. OARS recommendations for the management of hip and knee osteoarthritis. Osteoarthritis and Cartilage 2008;16:137–62

Appendix 3 - Plan, Do, Study, Act

What is PDSA?

Reproduced with permission from Guideline for the non-surgical management of hip and knee osteoarthritis. Melbourne: The Royal Australian College of General Practitioners, 2009.

PDSA is a mnemonic used commonly in continuous quality improvement processes. PDSA stands for Plan Do Study Act. A PDSA is usually run as a time-based cycle – each step is evaluated before the next cycle.

Before starting a PDSA ask yourself:

What are we trying to accomplish?

By answering this question you will develop your GOAL for improvement

The next question to ask is:

How will we know that a change is an improvement?

By answering this question you will develop MEASURES to track the achievement of your goal

The next question to ask is:

What changes can we make that will result in improvement?

By answering this question you will develop IDEAS for change

Plan - What, who, when, where, predictions and data to be collected

Do - Was the plan executed? Document any unexpected events or problems

Study - Record, analyse and reflect on the results

Act - What will you take forward from this cycle? (What is your next step/PDSA cycle?)

Some PDSA hints and tips: Plan multiple cycles to test ideas and test on a really small scale - for example, start with one patient or one clinician at an afternoon clinic and increase the numbers as you refine the ideas. Test the proposed change with people who believe in the improvement

- don't try to convert people into accepting the change at this stage. Only implement the idea when you're confident you have considered and tested all the possible ways of achieving the change.

Source: Grampians Medicare Local Quality Improvement COPD Collaborative 2014 Power Point Presentation.

Content developed by the Grampians Medicare Local, Improvement Foundation and Australian Medicare Local Alliance.

Delivered May 2014.

See also the Improvement Foundation website: <http://improve.org.au/>



Appendix 4 - SMART Goals

SMART is a mnemonic recommended for use when developing a goal. There are some slight variations in words used in the **SMART** mnemonic, but **S**pecific **M**easurable **A**ttainable **R**elevant **T**ime-bound is the most common.

Specific – set a specific goal rather than a more general one. A specific goal will usually answer the five 'W' questions:

What: What do I want to accomplish?

Why: Specific reasons, purpose or benefits of accomplishing the goal.

Who: Who is involved?

Where: Identify a location.

Which: Identify requirements and constraints.

Example: I want to work with GPs in our practice to increase the number of patients on GPMPs

Measurable - concrete criteria for measuring progress toward the attainment of the goal. The thought behind this is that if a goal is not measurable it is not possible to know if there is progress toward successful completion. Measuring progress helps you stay on track and reach target dates. A measurable goal will usually answer questions such as:

How much?

How many?

How will I know when it is accomplished?

Indicators should be quantifiable

Example: I want to increase the number of patients with a current GPMP by 20%

Attainable - goals need to be realistic and attainable. Whilst an attainable goal may be a stretch it should not be out of reach. An achievable goal will usually answer the question how?

How can the goal be accomplished?

How realistic is the goal based on other constraints?

Example: I will need to meet with the GPs to find out why they are not doing GPMPs and what I can do to help them increase their use. I will need to educate the GPs on why GPMPs are important. I will ask my practice manager to allow me some extra time to go through patient data to identify patients suitable for GPMPs

Relevant – it is important to choose goals that matter. Many times you will need support to accomplish a goal: resources, a champion voice, someone to knock down obstacles. Goals that are relevant to practice and patients will increase your chance to receive that needed support. A relevant goal can answer yes to these questions:

Does this seem worthwhile?

Is this the right time?

Does this match our other efforts/needs?

Are you the right person?

Is it applicable in the current environment?

Example: I know that getting more of our patients with a chronic disease onto a GPMP will improve our quality of care. It also provides more income to the GP to be able to spend more time with the patient with chronic disease. The GPMP makes more efficient use of my time in my chronic disease clinic. We have the right software to set up a GPMP quickly and easily.

Time-bound – it is important that goals have a time-frame, giving them a target date. A commitment to a deadline helps a team focus their efforts on completion of the goal on or before the due date. This part of the SMART goal criteria is intended to prevent goals from being overtaken by the day-to-day crises that invariably arise in an organisation. A time-bound goal is intended to establish a sense of urgency.

A time-bound goal will usually answer the question

When?

What can I do six months from now?

What can I do six weeks from now?

What can I do today?

Example: I want to increase the number of patients with a current GPMP by 20% by the end of the year. I will do monthly reports to check my progress and share these with the GPs and Practice Manager.

Some authors have also expanded SMART to SMARTER:

Evaluated – Reflect upon the outcome.

Example: Did patient care improve when they were put on a GPMP? Are GPs more likely to put a patient on a GPMP as a result of this project?

Reviewed – Review the process.

Example: Would I use this same approach for another goal? What worked well? What didn't work well? What barriers or enablers were there?

Source: Meyer, Paul J (2003). "What would you do if you knew you couldn't fail? Creating S.M.A.R.T. Goals". *Attitude Is Everything: If You Want to Succeed Above and Beyond*. Meyer Resource Group.



Reflective exercise:

1. What would a SMART goal for OA sound like?
2. Next time you work at goal setting with a patient, try assisting your patient with a SMART goal

Appendix 5 - Example general practice management plan and team care arrangements template

(Please note: This is just an example 'academic' template. Please tailor according to patient and practice needs)

OSTEOARTHRITIS MANAGEMENT PLAN & TEAM CARE ARRANGEMENTS (MBS ITEM No. 721 and 723)

Patient's Name:

Date of Birth:

Contact Details:

Medicare or Private Health Insurance Details:

Details of Patient's Usual GP:

Details of Patient's Carer (if applicable):

Date of last Care Plan/GP Management Plan (if done):

Other notes or comments relevant to the patient's management plan:

PAST MEDICAL HISTORY

FAMILY HISTORY

MEDICATIONS

ALLERGIES

I have explained the steps and any costs involved, and the patient has agreed to proceed with the plan.

GP's Signature: _____

Patient's signature _____

Date: _____

OSTEOARTHRITIS (OA) MANAGEMENT PLAN

Patient needs	Goals –to be achieved by patient and the health team	Patient action to reach goal	Other required treatments or services	Health team
1. Osteoarthritis knowledge and self-management	Patient has received health education regarding osteoarthritis. Patient has received information about evidence based self-management strategies – as per care plan below.	I will make contact with Arthritis Australia to find out more information about osteoarthritis at Arthritis Australia National helpline 1800 011 041	Discussion with health team regarding OA diagnosis and management.	GP GPN Physio Orthopaedic surgeon Rheumatologist
2. Pain and medication management	Patient has knowledge about medications –why they are used and how to use them most effectively. Pain education has been given to the patient, including 'cake pain tool'. BPI scores - Pain severity: - Pain interference:	I have discussed the medications and complementary medications I am taking. I will use my 'cake pain tool' and handy tips to manage my pain, such as: *Medication *Ice/heat packs *Exercise / stretching *Relaxation *Hobbies *Socialisation I will use my osteoarthritis flare up plan below when my pain gets bad.	Discussion with health team on medication usage, adherence and potential side-effects. Pain is assessed by GP or PN using BPI assessment tool at GPMP and reviews Referral to pain management clinic as required.	GP GPN Pharmacist Orthopaedic surgeon Pain specialist Rheumatologist
3. Exercise and diet	Patient understands the importance of a healthy diet and exercise to managing OA. Patient has created realistic diet and exercise	Each day I will walk to the letterbox and back. I will participate in an exercise	Referral as required to dietician, physio, exercise physiologist,	GP GPN Physio

	goals. Assessments • Weight • Height • Waste circumference • BMI • Food diary	program individualised to me where possible –home, land, aquatic, group, Tai Chi, Yoga, Pilates, Community Health Groups. I will understand the benefit of nutrition and OA, including portion control, fresh vegetables, fruits, lean meats, dairy, whole grains.	community exercise programs. RACGP Mediterranean diet factsheets if required Supplementation with Vit D, Calcium if required.	Exercise physiologist Dietician
4. Fatigue and pacing	Patient feels that they can manage their fatigue well. Patient feels they can pace themselves with everyday activities. Patient has found ways to manage stress and sleep with OA.	I will break up larger tasks around the house into smaller tasks. I will rest when fatigued – taking more breaks on days when I am fatigued. I will use relaxation strategies before bed –breathing techniques, mindfulness meditation, music, darkened room, no TV / computer in room, avoidance of coffee and alcohol. 'Smiling mind' website for mindfulness meditation can be accessed www.smilingmind.com.au	GP assessment of other causes of fatigue or poor sleep. Referral as required to OT or psychologist.	GP GPN Psychologist OT
5. Wellbeing and relaxation	Patient has found an enjoyable activity that can be done despite the OA and pain, to take the mind off the pain. Patient feels they have ways to manage mood changes.	I will engage in my quilt making as a way to manage my pain and enjoy life despite the pain. Each day I will do my exercises to help with managing my mood. I will aim to visit my friends each Wednesday to play 'Bridge' If my mood becomes a concern I will let my GP know. Further information on mood can be found at www.beyondblue.org.au	Community or social groups referral OT, Psychologist as required	GP PN Psychologist OT
6. ADLs and mobility	Patient has learnt ways to make daily activities easier to do. Patient has access to and uses appropriate footwear. Patient has access to aids and equipment to assist with mobility and function.	I will wear my runners each day as they help me with my knee and hip pain. When I am dressing I will use my pick up stick and sock aid so I don't have to bend so far. I have an understanding where I can access aids and equipment at the local Aids and Equipment shop.	Referral to OT, physio, public aids and equipment programs as required. Home help Disability Car Pass	GP GPN OT Physio Optometry
7. Preventative health	Patient has been assessed for falls risk and has made efforts to reduce falls risks throughout the home. Patient understands the risks of smoking and	I will reduce the risk of falls at home by –using my aids, replacing mats and cords that may be in the way.	Referral to OT or home nursing service as required. Referral to Quit line as	GP GPN OT Home

	heavy alcohol use to bone health. Patient has made realistic goals to reduce smoking and/or alcohol use.	Using my glasses if required. I will aim to drink 2 or less alcoholic standard drinks per day.	required. Referral to psychologist as required.	nursing Psychologist
--	---	---	--	--------------------------------

HOW TO MANAGE AN OSTEOARTHRITIS FLARE-UP

Patient needs	Goals – realistic changes to be achieved by patient and the health team	Patient action to reach goal	Other required treatments or services	Health team
Osteoarthritis flare-up – increase in pain or stiffness	Patient knows what to do if they feel their osteoarthritis gets bad (or flares up).	I will: -Use my 'cake pain tool'. -Try to rest, local ice packs or heat pads, anti-inflammatory creams. -Alter exercise plan if needed. -Increase pain relief medications (as recommended by GP).	Arrange to see GP Arrange to see physiotherapist as required. Arrange more assistance with home, work, or family as required.	GP GNP Physio

TEAM CARE APPOINTMENTS

Provider Name	Treatment / Service / Goals	Address and phone number	Number of visits	Appointment time
1.Steven Willis	Physiotherapy Individualised exercise program, assessment for gait aids Decrease in knee pain, improvement in function	35 Felix Pl Ballarat, 3350 9000 3333	3	10am 19 th June 2016
2.Mary Jones	Podiatry Biomechanical assessment, appropriate footwear advice Decrease in foot pain	98 Winston St Ballarat, 3350 9555 7777	2	11.30 am 18 th May 2016
3.Mina Rovaniemi	Psychology Individual counselling, CBT, chronic pain management strategies Decrease in anxiety re: pain	1011 Amy Rd Ballarat, 3350 6777 9999	6	11.30am 12 th June 2016

Copy of GP Management Plan and Team Care Arrangement offered to patient?

Copy / relevant parts of the GP Management Plan and Team Care Arrangement supplied to other providers?

GP Management Plan added to the patient's records?

Date service was completed:

Proposed Review Date:

Please note: All names and addresses are fictitious

Template produced by J Danko, Grampians Medicare Local, May 2015

References:

RACGP 2010 *Prevention in the management of musculoskeletal conditions: A guide for practice nurses*. RACGP, Australia.

Fernandes, L, Hagen, K.B., Bijlsma, J.W.J., Andreassen, O., Christensen, P, Conaghan, P, Doherty, M, Geenen, R, Hammond, A, Kjekken, I, Lohmander, S, Lund, H, Mallen, C.D., Nava, T, Oliver, S, Pavelka, K, Pitsillidou, I, da Silva, A.J, de la Torre, J, Zanoli, G and Vliet Vlieland, T.P.M. 2013 EULAR recommendations for the non-pharmacological core management of hip and knee osteoarthritis, *Ann Rheum Dis* 2013; 0:1-11.

Appendix 6 - Brief Pain Inventory

Reproduced with permission from Cleeland, C. 2009 The University of Texas M.D. Anderson Cancer Center, Texas.

STUDY ID #: _____ DO NOT WRITE ABOVE THIS LINE HOSPITAL #: _____

Brief Pain Inventory (Short Form)

Date: ____ / ____ / ____

Time: _____

Name: _____

Last

First

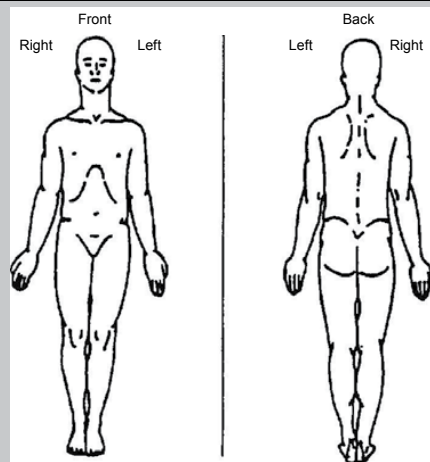
Middle Initial

1. Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?

1. Yes

2. No

2. On the diagram, shade in the areas where you feel pain. Put an X on the area that hurts the most.



3. Please rate your pain by circling the one number that best describes your pain at its worst in the last 24 hours.

0 1 2 3 4 5 6 7 8 9 10
No Pain Pain as bad as you can imagine

4. Please rate your pain by circling the one number that best describes your pain at its least in the last 24 hours.

0 1 2 3 4 5 6 7 8 9 10
No Pain Pain as bad as you can imagine

5. Please rate your pain by circling the one number that best describes your pain on the average.

0 1 2 3 4 5 6 7 8 9 10
No Pain Pain as bad as you can imagine

6. Please rate your pain by circling the one number that tells how much pain you have right now.

0 1 2 3 4 5 6 7 8 9 10
No Pain Pain as bad as you can imagine

STUDY ID #: _____

DO NOT WRITE ABOVE THIS LINE

HOSPITAL #: _____

Date: ____/____/____

Time: _____

Name: _____
Last First Middle Initial

7. What treatments or medications are you receiving for your pain?

8. In the last 24 hours, how much relief have pain treatments or medications provided? Please circle the one percentage that most shows how much relief you have received.

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
No										Complete
Relief										Relief

9. Circle the one number that describes how, during the past 24 hours, pain has interfered with your:

A. General Activity

0	1	2	3	4	5	6	7	8	9	10
Does not										Completely
Interfere										Interferes

B. Mood

0	1	2	3	4	5	6	7	8	9	10
Does not										Completely
Interfere										Interferes

C. Walking Ability

0	1	2	3	4	5	6	7	8	9	10
Does not										Completely
Interfere										Interferes

D. Normal Work (includes both work outside the home and housework)

0	1	2	3	4	5	6	7	8	9	10
Does not										Completely
Interfere										Interferes

E. Relations with other people

0	1	2	3	4	5	6	7	8	9	10
Does not										Completely
Interfere										Interferes

F. Sleep

0	1	2	3	4	5	6	7	8	9	10
Does not										Completely
Interfere										Interferes

G. Enjoyment of life

0	1	2	3	4	5	6	7	8	9	10
Does not										Completely
Interfere										Interferes

Copyright 1991 Charles S. Cleeland, PhD
Pain Research Group
All rights reserved

Appendix 7 - EULAR recommendations for the non-pharmacological management of hip and knee OA, with levels of evidence and level of agreement

Table 2 EULAR recommendations for the non-pharmacological core management of hip and knee OA, with levels of evidence (LOE) and level of agreement (LOA). The propositions are ordered by topic

No.	Recommendation	LOE I–IV	LOA (95% CI)
1	In people with hip or knee OA, initial assessments should use a biopsychosocial approach including: a physical status (including pain; fatigue; sleep quality; lower limb joint status (foot, knee, hip); mobility; strength; joint alignment; proprioception and posture; comorbidities; weight) b activities of daily living c participation (work/education, leisure, social roles) d mood e health education needs, health beliefs and motivation to self-manage	Ib, mixed	8.6 (7.9 to 9.2)
2	Treatment of hip and/or knee OA should be individualised according to the wishes and expectations of the individual, localisation of OA, risk factors (such as age, sex, comorbidity, obesity and adverse mechanical factors), presence of inflammation, severity of structural change, level of pain and restriction of daily activities, societal participation and quality of life	Ib, mixed Ib, knee	8.7 (8.2 to 9.2)
3	All people with knee/hip OA should receive an individualised management plan (a package of care) that includes the core non-pharmacological approaches, specifically: a information and education regarding OA b addressing maintenance and pacing of activity c addressing a regular individualised exercise regimen d addressing weight loss if overweight or obese e* reduction of adverse mechanical factors (eg, appropriate footwear) f* consideration of walking aids and assistive technology	Ib, hip Ib, knee	8.7 (8.2 to 9.3)
4	When lifestyle changes are recommended, people with hip or knee OA should receive an individually tailored programme, including long-term and short-term goals, intervention or action plans, and regular evaluation and follow-up with possibilities for adjustment of the programme	Ib, mixed Ib, knee	8.0 (7.1 to 9.0)
5	To be effective, information and education for the person with hip or knee OA should: a* be individualised according to the person's illness perceptions and educational capability b* be included in every aspect of management c† specifically address the nature of OA (a repair process triggered by a range of insults), its causes (especially those pertaining to the individual), its consequences and prognosis d† be reinforced and developed at subsequent clinical encounters; e† be supported by written and/or other types of information (eg, DVD, website, group meeting) selected by the individual f† include partners or carers of the individual, if appropriate	Ia, mixed	8.4 (7.7 to 9.1)
6	The mode of delivery of exercise education (eg, individual 1 : 1 sessions, group classes, etc) and use of pools or other facilities should be selected according both to the preference of the person with hip or knee OA and local availability. Important principles of all exercise include: a† 'small amounts often' (pacing, as with other activities) b† linking exercise regimens to other daily activities (eg, just before morning shower or meals) so they become part of lifestyle rather than additional events c* starting with levels of exercise that are within the individual's capability, but building up the 'dose' sensibly over several months	Ia, knee, delivery mode Ia, mixed, water-based exercise	8.9 (8.5 to 9.3)
7	People with hip and/or knee OA should be taught a regular individualised (daily) exercise regimen that includes: a strengthening (sustained isometric) exercise for both legs, including the quadriceps and proximal hip girdle muscles (irrespective of site or number of large joints affected) b aerobic activity and exercise c adjunctive range of movement/stretching exercises * Although initial instruction is required, the aim is for people with hip or knee OA to learn to undertake these regularly on their own in their own environment	Ia, hip, overall exercise Ia, knee, overall exercise Ia, knee, strength Ia, knee, aerobic Ia, mixed, mixed programmes	8.5 (7.7 to 9.3)
8	Education on weight loss should incorporate individualised strategies that are recognised to effect successful weight loss and maintenance*—for example: a† regular self-monitoring, recording monthly weight b† regular support meetings to review/discuss progress c† increase physical activity d† follow a structured meal plan that starts with breakfast e† reduce fat (especially saturated) intake; reduce sugar; limit salt; increase intake of fruit and vegetables (at least '5 portions' a day) f† limit portion size; g† addressing eating behaviours and triggers to eating (eg, stress) h† nutrition education i† relapse prediction and management (eg, with alternative coping strategies)	III, hip Ia, knee	9.1 (8.6 to 9.5)
9	a† The use of appropriate and comfortable shoes is recommended. b Recommendation rejected: a lateral-wedged insole could reduce symptoms in medial knee pain.	Ib, knee. Ib, knee	8.7 (8.2 to 9.2) 8.0 (7.0 to 9.1)
10	Walking aids, assistive technology and adaptations at home and/or at work should be considered, to reduce pain and increase participation—for example: a† a walking stick used on the contralateral side, walking frames and wheeled 'walkers' b* increasing the height of chairs, beds and toilet seats c* hand-rails for stairs d* replacement of a bath with a walk-in shower e* change to car with high seat level, easy access and automatic gear change	III, hip III, knee	8.9 (8.5 to 9.3)

Table 1 Categories of levels of evidence

Category	Level of evidence
Ia	Meta-analysis of randomised controlled trials
Ib	At least one randomised controlled trial
IIa	At least one controlled trial without randomisation
IIb	At least one type of quasi-experimental study
III	Descriptive studies, such as comparative studies, correlation studies or case-control studies
IV	Expert committee reports or opinions and/or clinical experience of respected authorities

Reproduced from Annals of the Rheumatic Diseases, EULAR recommendations for the non-pharmacological core management of hip and knee osteoarthritis, Fernandes, L., Hagen, K.B. et al, 72(7), 2013 with permission from BMJ Publishing Group Ltd.

Appendix 8 - Arthritis Australia – List of patient information resources



OSTEOARTHRITIS RESOURCES

Arthritis Helpline: 1800 011 041

www.arthritisaustralia.com.au

Provides links to information resources on osteoarthritis and other forms of arthritis, as well as links to local arthritis organisations which offer self-management courses, community programs, seminars, support groups, exercise classes and other support services.

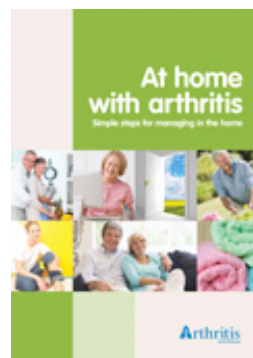
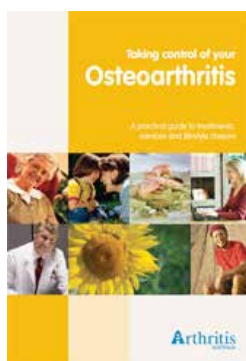
www.myjointpain.org.au

An evidence based website which provides tailored information, treatment options and an action plan to help people with osteoarthritis to manage their condition.

Printed resources

For hard copies of the resources listed, contact the Arthritis Helpline on 1800 011 041 or email info@arthritisaustralia.com.au

Information booklets (Available online or in hardcopy)



Information Sheets (Available online)

Areas of the body

- Back pain
- Feet and arthritis
- Hands and arthritis
- Neck pain
- Shoulder pain
- Tips for osteoarthritis of the hip/knee

Complementary therapies/ supplements

- Complementary therapies
- Fish oils
- Glucosamine and chondroitin

Condition specific

- What is arthritis?
- Osteoarthritis

General management

- Arthritis and emotions
- Dealing with pain
- Healthy eating and arthritis
- Massage and arthritis
- Physical activity
- Saving energy

- Sex and Arthritis
- Tai Chi
- Water Exercise

Medical management

- Medicines and arthritis
- Surgery for arthritis
- Working with your healthcare team

Medicines

- Hyaluronic acid
- NSAIDs
- Paracetamol

Some information sheets are also available in a ranges of languages including Arabic, Chinese, Croatian, Greek, Italian, Korean, Macedonian, Persian, Spanish and Vietnamese.

Appendix 9 - Arthritis support services

NATIONAL ARTHRITIS HELPLINE: 1800 011 041

The helpline is staffed by health professionals and specially trained volunteers who are able to answer most questions about living with arthritis.

Arthritis Australia	
Address:	Level 2/255 Broadway, GLEBE NSW 2037 1800 111 101 (02) 9518 4441 info@arthritisaustralia.com.au www.arthritisaustralia.com.au
ACT	Arthritis ACT
Address:	Level 2A Grant Cameron Community Centre 27 Mulley Street HOLDER ACT 2611 (02) 6288 4244 info@arthritisact.org.au www.arthritisact.org.au
New South Wales	Arthritis & Osteoporosis NSW
Address:	Suite 1,15/32 Delhi Road NORTH RYDE NSW 2113 (02) 9857 3300 info@arthritisnsw.org.au www.arthritisnsw.org.au
Northern Territory	Arthritis & Osteoporosis NT
Address:	Shop 18, Rapid Creek Business Village 48 Trower Road MILLNER NT 0810 (08) 8948 5232 info@aont.org.au www.aont.org.au
Queensland	Arthritis & Osteoporosis QLD
Address:	1 Cartwright Street (Corner Lutwyche Road) WINDSOR QLD 4030 (07) 3857 4200 info@arthritis.org.au www.arthritis.org.au
South Australia	Arthritis SA
Address:	118 Richmond Road MARLESTON SA 5033 (08) 8379 5711 info@arthritissa.org.au www.arthritissa.org.au
Tasmania	Arthritis & Osteoporosis TAS
Address:	19A Main Road MOONAH TAS 7009 (03) 6228 4824 info@arthritistas.org.au www.arthritistas.org.au
Victoria	Arthritis & Osteoporosis VIC
Address:	263 Kooyong Road ELSTERNWICK VIC 3185 General inquiries: afv@arthritistic.org.au (03) 8531 8000 Musculoskeletal help line: msk@arthritistic.org.au 1800 263 265 (Toll Free) www.arthritistic.org.au
Western Australia	Arthritis & Osteoporosis WA
Address:	Wyllie Arthritis Centre 17 Lemnos Street SHENTON PARK WA 6008 (08) 9388 2199 general@arthritiswa.org.au www.arthritiswa.org.au
Independent Living Centres Australia	
For Information about products and services to help people remain independent and improve their quality of life. http://ilcaustralia.org.au/	
Independent Living Centres Advisory Service 1300 885 886	

Appendix 10 - Mediterranean diet: reducing cardiovascular disease risk

Reproduced with permission from HANDI – Mediterranean diet: Reducing cardiovascular disease risk. Melbourne: The Royal Australian College of General Practitioners, 2014.

HANDI Making non-drug interventions easier to find and use



Mediterranean diet: reducing cardiovascular disease risk

Intervention

A change in overall dietary pattern to increase intake of fresh fruits, vegetables, grains, nuts and fish and decrease intake of meat and dairy, known as the Mediterranean diet.

Total energy intake is adapted to meet individual needs. There is no specific fat restriction, as long as fat is mostly derived from fatty fish and plant sources (particularly olive oils or nuts). Patients view the Mediterranean diet as tastier and more filling than low-fat diets, which leads to increased long-term compliance.

Indication

In 2010, UNESCO officially recognised the Mediterranean diet pattern to be part of the cultural heritage of Italy, Greece, Spain and Morocco.

Prevention of subsequent cardiovascular events in patients who have had myocardial infarction.

Prevention of cardiovascular events in patients who are at high risk of cardiovascular disease. According to the large PREDIMED randomised trial, patients at high risk had either type 2 diabetes or three or more of the following:

- smoker
- hypertension
- high LDL
- low HDL
- high BMI
- family history of cardiovascular disease.

Compared with a low-fat diet, patients randomised to a Mediterranean diet had a 30% reduced risk of a cardiovascular event at 5 years.

The Mediterranean diet may also be indicated to:

- lower the risk or mitigate the severity of type 2 diabetes
- reduce the risk of colorectal, breast and other cancers
- manage weight (despite high fat content).

Availability

Mediterranean diet foods and recipes are readily available in Australia.

While some traditional ingredients and recipes used in the Mediterranean diet are not commonly used in Australia (eg rabbit, offal, cuttlefish, octopus), the general principles are readily adaptable in any cuisine.

Refer to [Consumer resources](#) for a reconstructed traditional Greek-style Mediterranean diet in Australia.

www.racgp.org.au/handi



First published: May 2014. Reprinted with permission from The Royal Australian College of General Practitioners, May 2014.



Description

The Mediterranean diet comprises:

- high monounsaturated (eg olive oil) to saturated (eg fatty red meat) ratio – at least 2:1
- high intake of legumes
- high intake of fruits and vegetables
- high intake of grains and cereals
- moderate quantities of fish, white meat and low-fat dairy
- low to moderate consumption of red wine
- low intake of red meat, processed meat and eggs
- low intake of sweets, sweet desserts and sweet drinks.

Refer to the [Consumer resources](#) for food group portion guide.

Simple guidelines for implementing the MedDiet in clinical practice

- Assess adherence to a Mediterranean diet using the [PREDIMED 14-item Questionnaire](#). This tool can also be used for monitoring changes at future clinical consultations.
- Introduce simple changes to the patient's diet, such as:
 - using olive oil instead of other oils/ fats for cooking and dressing salads and cooked vegetables
 - consuming vegetables with every meal (including leafy greens and tomatoes)
 - consuming 2–3 serves of fresh fruit per day
 - consuming legumes (cooked dried beans) 3 times per week (in salads, soups, casseroles, veggie burgers, falafel)
 - having 2–3 serves of fish or seafood per week (at least one oily fish such as salmon or sardines)
 - eating at least 3 serves of nuts per week (include walnuts and almonds)
 - choosing white meat (poultry without skin or rabbit) instead of fatty processed meats (sausages, burgers) and keep red meat portions small and lean
 - choosing natural (unsweetened) yoghurt as snack on most days
 - cooking regularly (at least twice a week) with tomato, garlic and onion, and aromatic/culinary herbs as a base for pasta sauces, casseroles and baked dishes.
- Discourage consumption of:
 - cream, butter, margarine
 - processed meats (sausages, salami), fatty meats and poultry skin, deep-fried battered foods
 - carbonated and/or sugared beverages
 - pastries, cakes, sweet biscuits and lollies
 - processed savoury snacks (potato chips, savoury biscuits).
- Provide patient with a [suggested meal plan](#) to get them started.
- Suggest resources for recipe ideas (Mediterranean cookbooks, websites).
- Empower the patient to try new recipes and enjoy meals with family and friends.
- Encourage incidental activity such as gardening, walking to local shops for fresh ingredients and preparing meals at home.



Tips and challenges

An important feature of the PREDIMED dietary intervention was the intensive sessions with dietitians at regular intervals (3-monthly) who provided tailored advice.

Referral to a dietitian is recommended for tailored advice and ongoing follow-up. Refer to Dietitians Association of Australia. www.daa.asn.au/for-the-public/find-an-apd/

Despite the high percentage of fat in this diet, it is bulky and has low energy density. It is filling: followers are less likely to snack between meals, so this diet does not lead to weight gain.

Grading

NHMRC Level 1 evidence

References

de Lorgeril M, Renaud S, Mamelle N, et al. Mediterranean alpha-linolenic acid-rich diet in secondary prevention of coronary heart disease. *Lancet*, 1994;343: 1454–9.

Estruch R, Ros E, Salas-Salvado J, et al; PREDIMED Study Investigators. Primary prevention of cardiovascular disease with a Mediterranean diet. *N Engl J Med*, 2013;368: 1279–90.

Nordmann AJ, Suter-Zimmermann K, Bucher HC, et al. Meta-analysis comparing Mediterranean to low-fat diets for modification of cardiovascular risk factors. *Am J Med*, 2011;124: 841–51.e2.

Itsopoulos C, Brazionis L, Kaimakamis M, et al. Can the Mediterranean diet lower HbA1c in type 2 diabetes? Results from a randomized cross-over study. *Nutr Metab Cardiovasc Dis*, 2011 Sep;21(9): 740–7. DOI: 10.1016/j.numecd.2010.03.005. Epub 2010 Jul 31.

Consumer resources

Australian Guide to Healthy Eating recommended portions

Food group	Women	Men
Vegetables, legumes and beans	5 serves (2½ cups or 375 g)	6 serves (3 cups or 450 g)
Fruit	2 medium pieces or 300 g	2 medium pieces or 300 g
Grain (cereal foods) – wholegrain	4 slices bread and 1 cup cooked rice or pasta	4 slices bread and 1 cup cooked rice or pasta
Meat, poultry, fish, eggs, or vegetarian alternatives (tofu, beans)	1 small steak or small breast of chicken or fillet of fish (200 g) or 2 eggs and 1 cup cooked beans	1 medium steak or breast of chicken or fillet of fish (250 g) or 2 eggs plus 1 cup cooked beans
Milk/yoghurt, cheese or alternatives	1 glass milk (250 mL) 1 tub yoghurt (200 g) 1–2 slices cheese (20–40 g)	1 glass milk (250 mL) 1 tub yoghurt (200 g) 1–2 slices cheese (20–40 g)

Adapted from: Eat for Health
www.eatforhealth.gov.au/food-essentials/five-food-groups
 Greek-style Med diet in Australia



Consumer resources

Mediterranean diet: suggested meal plan

Breakfast	Sourdough bread, toasted, with chopped tomato, red onion and drizzled with olive oil and herbs OR Sourdough toast with slice of avocado, poached egg, and drizzled with olive oil and seasoned with cracked pepper Herbal tea or short black coffee
Snack	Whole orange and handful of almonds
Lunch	Thick bean and vegetable soup OR Mixed salad with beans and tuna or salmon Small bunch grapes
Snack	Small bowl Greek-style natural yoghurt topped with crushed walnuts and drizzled with honey
Dinner	Baked fish (whole snapper or fillets) with baked potato (dressed with olive oil, grated fresh tomato, crushed garlic and fresh herbs) Leafy green salad dressed with lemon juice and olive oil Glass wine (optional)

Other resources

Patient.co (UK), Mediterranean diet – summary and chart
www.patient.co.uk/health/Mediterranean-Diet-Summary-and-Chart.htm

Patient.co (UK), Mediterranean diet video (5.32)
www.patient.co.uk/video/Mediterranean-Diet.htm

Patient.co (UK), Health benefits of the Mediterranean diet
www.patient.co.uk/health/health-benefits-of-the-mediterranean-diet

Itsiopoulos C, The Mediterranean diet. Includes background research overview, weekly menus and 80 traditional recipes.
www.panmacmillan.com.au/display_title.asp?ISBN=9781742610825&Author=Catherine%20Itsiopoulos,%20Dr

Acknowledgements

The RACGP gratefully acknowledge the contribution of Associate Professor Catherine Itsiopoulos in the development of this intervention.

References

1. Arthritis and Osteoporosis Victoria 2013 A problem worth solving: the rising cost of musculoskeletal conditions in Australia, Arthritis and Osteoporosis Victoria, Melbourne.
2. Australian Institute of Health and Welfare 2014 Arthritis and other musculoskeletal conditions across the life stages: Arthritis series no. 18, PHE 173, AIHW, Canberra.
3. Arthritis Australia 2014 Time to Move: Osteoarthritis: A national strategy to reduce costly burden, Arthritis Australia, NSW.
4. Oliver, S.M. (ed) 2009 Oxford handbook of musculoskeletal nursing. Oxford University Press, Oxford.
5. Arthritis Australia 2012 Whose problem is it anyway: The voice of GPs on Arthritis, Arthritis Australia, NSW.
6. Australian Medicare Local Alliance 2013 2012 General practice nurse national survey report, Australian Medicare Local Alliance, Manuka, ACT.
7. Ryan, S., Packham, J.C., Dawes T.P., Jordan, K.P. 2012 The impact of a nurse-led chronic musculoskeletal pain clinic on healthcare utilisation, Musculoskeletal care 2012 Dec; 10(4): 196-201 PMID: 22696423 (PubMed-indexed for MEDLINE).
8. King, J, Watts, I., and Brewerton, R. 2011 Developing a business case for an enhanced practice nurse role under the practice nurse incentive program (PNIP), Australian Practice Nurse Association, Melbourne.
9. Brand, C, Ackerman, I., and Tropea, J. 2014 Chronic disease management: Improving care for people with osteoarthritis, Best Practice & Research Clinical Rheumatology 28, 2014, 119-142.
10. The Royal Australian College of General Practitioners 2010 Prevention in the management of musculoskeletal conditions: A guide for practice nurses. RACGP, Australia.
11. Halcomb, E., Salamonson, Y., Davidson, P. et al. 2014 The evolution of nursing in Australian general practice: A comparative analysis of workforce surveys ten years on. BMC Family Practice 2014, 15:52.
12. Antonelli, M. and Starz, T. 2012 Assessing for risk and progression of osteoarthritis: The nurse's role: Understanding pathophysiology, epidemiology, and risk will aid nurses who are seeking to expand their role in management. Orthopaedic Nursing 31, 2, 98-102.
13. Brady, T. 2012 Strategies to support self-management in osteoarthritis: Five categories of interventions including education. Orthopaedic Nursing 31, 2, 124-130.
14. Fouladbakhsh, J. 2012 Complementary and alternative modalities to relieve osteoarthritis symptoms: A review of the evidence on several therapies often used for osteoarthritis management. Orthopaedic Nursing 31, 2, 115-121.
15. Iversen, M.D. 2012 Rehabilitation interventions for pain and disability in osteoarthritis: A review of interventions including exercise, manual techniques, and assistive devices. Orthopaedic Nursing 31, 2, 103-108.
16. Swift, A. 2012 Osteoarthritis 1: Physiology, risk factors and causes of pain. Nursing Times 108, 7, 12-15.
17. Swift, A. 2012 Osteoarthritis 3: Impact on patients. Nursing Times 108, 8, 1-3.
18. The Royal Australian College of General Practitioners 2009 Diagnosis and management of hip and knee osteoarthritis. RACGP, Australia.
19. The Royal Australian College of General Practitioners 2009 Guideline for the non-surgical management of hip and knee osteoarthritis. RACGP, Australia.
20. Fernandes, L, Hagen, K.B., Bijlsma, J.W.J. et al. 2013 EULAR recommendations for the non-pharmacological core management of hip and knee osteoarthritis, Ann Rheum Dis 2013; 0:1-11.
21. Zhang W, Moskowitz R, Nuki G et al. 2008 OARSI recommendations for the management of hip and knee osteoarthritis, Part II: OARSI evidence-based, expert consensus guidelines, Osteoarthritis & Cartilage 2008;16:137-162.
22. Lorig, K, and Fries, J.F. 2006 The arthritis help book: A tested self-management program for coping with arthritis and fibromyalgia. 6th edn. Da Capo Press, Cambridge, USA.
23. The International Association for the Study of Pain 2015 IASP Taxonomy Available URL: <http://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1698> <Accessed 2015, April 6>
24. Institute of Medicine of the National Academies 2011 Relieving pain in America: A blueprint for transforming prevention, care, education and research Available URL: http://books.nap.edu/openbook.php?record_id=13172 <Accessed 2015, April 6>
25. Pain Australia 2015 What is pain? Available URL: <http://www.painaustralia.org.au/consumers/what-is-pain.html> <Accessed 2015, April 6>
26. Wood, S. 2008 Anatomy and physiology of pain. Nursing Times.net Available URL: <http://www.nursingtimes.net/nursing-practice/specialisms/pain-management/anatomy-and-physiology-of-pain/1860931.article> <Accessed, 2015, March 19>
27. Medscape 2015 Perioperative pain management http://www.medscape.org/viewarticle/536924_5 <Accessed, 2015, March 19>
28. Cooper, R, Booker, C, Spanswick, C 2003 What is pain management, and what is its relevance to the rheumatologist? Rheumatology 40, 10: 1133-1137.

29. McKenzie, S, and Torkington, A. 2010 Osteoarthritis: Management options in general practice. *Australian Family Physician* 39, 9: 622-625.
30. Arthritis Australia 2014 Simple pain relief medicines, Arthritis Australia, NSW.
31. Arthritis Australia 2014 Non-steroidal anti-inflammatory medicines, Arthritis Australia, NSW.
32. Arthritis Australia 2014 Injections, Arthritis Australia, NSW.
33. Australian Medicare Local Alliance 2014 Role of the general practice nurse. AMLA, Canberra, Australia.
34. Australian Medicare Local Alliance 2013 Expanding your practice: A learning module for nurses in general practice, Australian Medicare Local Alliance, Manuka, ACT.
35. Australian Medicare Local Alliance 2013 Nurse clinics in Australian general practice: Planning, Implementation & Evaluation, Australian Medicare Local Alliance, Manuka, ACT.
36. Cleeland, C. 2009 The Brief Pain Inventory: User Guide. The University of Texas M.D. Anderson Cancer Center, Texas.
37. Pain Australia 2014 Clinical assessment of pain: Fact sheet 3 Available URL: <http://www.painaustralia.org.au/healthcare-professionals/fact-sheets.html> <Accessed, 2014, July 10>
38. Pain Australia 2014 Multidisciplinary pain management: Fact sheet 4 Available URL: <http://www.painaustralia.org.au/healthcare-professionals/fact-sheets.html> <Accessed, 2014, July 10>
39. WHO 2015 WHO's cancer pain ladder for adults Available URL: <http://www.who.int/cancer/palliative/painladder/en/> <Accessed, 2014, July 10>
40. Danko, J. 2012 An innovative approach to musculoskeletal health in Rotterdam, Holland. *Primary Times*, 12, 1 p 11.
41. Hassed, C. 2013 Mind-body therapies: Use in chronic pain management. *Australian Family Physician* 42,1-2, 112-116.
42. Arthritis Australia 2014 Awareness of thoughts and emotions, Arthritis Australia, NSW.
43. Arthritis Australia 2014 Complementary treatments, Arthritis Australia, NSW.
44. Arthritis Australia 2014 Complementary medicines, Arthritis Australia, NSW.
45. Williams N.H, Amoakwa E., Burton K. et al. 2010 The Hip and Knee Book: developing an active management booklet for hip and knee osteoarthritis, *Br J Gen Pract* 2010;60:64-82.
46. Fransen M, and McConnell S. 2009 Land-based exercise for osteoarthritis of the knee: a metaanalysis of randomized controlled trials. *J Rheumatol*. 2009 Jun; 36(6):1109-17. doi: 10.3899/jrheum.090058. Epub 2009 May 15.
47. Physical Activity Guidelines Advisory Committee 2008 The Physical Activity Guidelines Advisory Committee Scientific Report, 2008. Washington, DC: U.S. Department of health and Human Services.<http://www.health.gov/PAGuidelines/Report/pdf/CommitteeReport.pdf> <Accessed, 2015, April 14>
48. Arthritis Australia 2014 Exercise, Arthritis Australia, NSW.
49. Arthritis Australia 2014 Weight control or weight loss, Arthritis Australia, NSW.
50. Messier SP, Gutekunst DJ, Davis C et al. 2005 Weight loss reduces knee-joint loads in overweight and obese older adults with knee osteoarthritis. *Arthritis & Rheumatism* 52:2026-2032.
51. Messier SP, Loeser RF, Miller GD et al. 2004 Exercise and dietary weight loss in overweight and obese older adults with knee osteoarthritis: the Arthritis, Diet, and Activity Promotion Trial. *Arthritis & Rheumatism* 50(5):1501-10.
52. Arthritis Australia 2014 Nutrition, Arthritis Australia, NSW.
53. The Royal Australian College of General Practitioners 2014 Mediterranean diet: Reducing cardiovascular disease risk. RACGP, Australia.
54. Arthritis Australia 2014 At home with arthritis: Simple steps for managing at home, Arthritis Australia, NSW.
55. Arthritis Australia 2014 Devices and other therapies, Arthritis Australia, NSW.
56. Hinman RS, Crossley KM, McConnell J, et al. 2003 Efficacy of knee tape in the management of osteoarthritis of the knee: blinded randomised controlled trial. *BMJ* 2003;327:135-8.
57. Bani M.A., Arazpour M., Kashani R.V. et al. 2013 The effect of custom-made splints in patients with the first carpometacarpal joint osteoarthritis, *Prosthet Orthot Int*. 2013 Apr;37(2):139-44. doi: 10.1177/0309364612454047. Epub 2012 Aug 22.
58. Arthritis Australia 2013 MyJointPain.org.au, Arthritis Australia, NSW. https://www.myjointpain.org.au/?gclid=CILf4c_t-8QCFY8kvQodc7sAog <Accessed 2015, April 6>

Notes

