ASTUTE

Take control of your Knee Osteoarthritis

ASTUTE PHYSIOTHERAPY & ALLIED CARE

Ph: 4455 4825

Our Knee Osteoarthritis Program

This booklet is designed to inform you of your knee diagnosis and help you take control of your knee pain.

Here at Astute we have developed our very own rehabilitation program for sufferers of knee osteoarthritis. It has been based on the best available research evidence and years of combined experience helping people like yourself.

We know how debilitating this pathology can be and how it can effect your quality of life. We want you to get back to enjoying life to its fullest. Research from similar programs show significant improvements in reported pain and quality of life scores and we want our clients to get the best out of life.

Osteoarthritis is a condition that affects 1 in 11 Australians. Knee osteoarthritis, in particular, is the greatest cause of disability in those aged over 65 living in the community. The good news is that you don't have to suffer in severe pain and you can get back to enjoying life.

This manual will provide you with information on frequently asked questions and your therapist will outline the best management program for you based on your individual goals and assessments.

The most important take home message is that having osteoarthritis does not mean always living with pain. We are here to help show you how to get the most out of your knee.

If you need any assistance along the way, feel free to call our friendly staff on 4455 4825

> **"I have now returned to tennis which I thought was impossible and I feel stronger than ever before"**

Contents

What is Osteoarthritis?

Osteoarthritis (OA) is the most common form of arthritis, affecting more than 1.8 million Australians. It can appear at any age, but tends to occur more commonly in women and in people aged over 40 years or those who have had severe joint injuries.

OA can affect any moveable joint of the body. It is most commonly seen in the knees, hips, hands, and spine.. Historically, osteoarthritis has been described as joint 'wear and tear' however, the current understanding suggests biological changes are responsible for the disease rather than a mechanical wearing out of the joint. It is a condition that starts as a cellular process and affects the whole joint including bone, cartilage, ligaments and muscles.

Osteoarthritis may include:

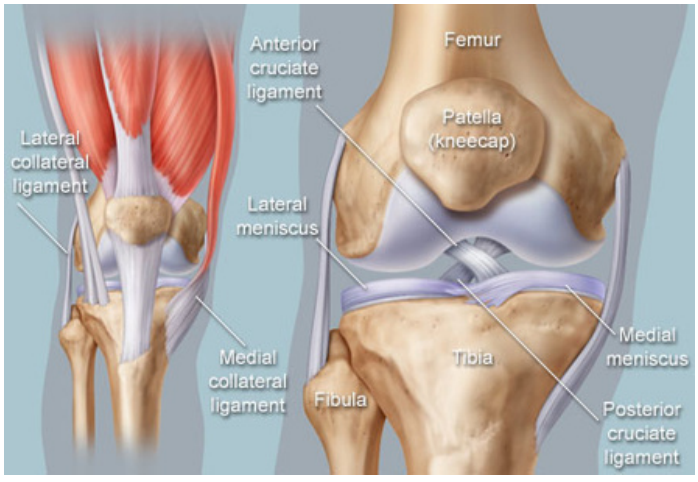
- inflammation of the tissue around a joint
- damage to joint cartilage - this is the protective cushion on the ends of your bones which allows a joint to move smoothly
- bony spurs growing around the edge of a joint
- deterioration of ligaments (the tough bands that hold your joint together) and tendons (cords that attach muscles to bones).

Whatever the cause, the symptoms of OA can vary greatly and can include joint pain, swelling, stiffness and, in some cases, a feeling that the joint might lock or give way. Many people have OA without noticing any pain.

Osteoarthritis is not the same as osteoporosis (a condition where the bones become thin and are more likely to break) although sometimes people can have both conditions.

OA tends to come on slowly, over months or even years. The joint pain or stiffness is usually worst with activity initially but can be more constant in later disease.

You should not worry about wearing your joint out!



What Causes Osteoarthritis?

Research shows there are some things that may put you at more risk of developing osteoarthritis (OA) in certain joints, such as:

- genetic factors,
- other joint disorders (such as rheumatoid arthritis),
- previous injury to the joint from accidents or surgery,
- being overweight,
- doing heavy physical activity in some sports or occupations.

Growing older increases the likelihood of developing osteoarthritis, however, the condition can occur in younger people as well.

Whatever the cause, the main problem with OA is the pain, stiffness and loss of mobility that comes with the disease. This can stop you from doing the things you need to do or want to do.

Osteoarthritis (OA) affects different people in different ways. For many people, OA may not cause significant problems, or can be easily managed with exercise and medication. Your symptoms may not worsen over time, but sometimes the condition will slowly progress, leading to increased pain and reduced function.

If not managed effectively, the symptoms of osteoarthritis can limit your ability to complete normal tasks or to move about, reducing independence and enjoyment of life

A loss of mobility may also lead to depression and/or weight gain, which can then lead to a cycle of worsening pain and function. However, only a relatively small number of people have to give up work or home duties on account of their osteoarthritis.

“While there is no ‘cure’ for osteoarthritis, early and ongoing treatment will help reduce symptoms”

How do I know if I have osteoarthritis?

Your physiotherapist or doctor will diagnose osteoarthritis based on many factors, including:

- Medical history, including family history and past injuries
- Symptoms, including discussing the level of discomfort or pain you are experiencing, especially when engaging in certain types of activities
- Thorough examination of your joints to assess tenderness, ease and range of knee joint motion, presence of swelling, joint sounds such as cracking and grating, joint stability, and leg shape.

Imaging studies, such as x-ray, are not needed to make a diagnosis of OA.

In some cases it can be unhelpful to focus on how the knee looks on a scan rather than how it is affecting you as often people can have OA viewed on an X-Ray but not have any symptoms

Do not be surprised if your physiotherapist or doctor does not order or rely on imaging tests to make a diagnosis of your OA.

If there are any concerns that there may be a different cause of your symptoms your physiotherapist or doctor may discuss using imaging to help with diagnosis.

What can be done to help treat my osteoarthritis?

Treatment for osteoarthritis is constantly evolving as new medical research is completed.

While there is no 'cure' for osteoarthritis, early and ongoing treatment will help reduce symptoms and maintain your ability to use the affected joints. Medical management includes medicines, joint injections, joint replacements and lifestyle advice — these are discussed in detail in the following sections.

The good news is that OA can be effectively managed - and a team approach is the best way to combat it. This involves you and your healthcare professionals together with support from family, friends and community organisations.

There is no one best approach identified to treat knee osteoarthritis, however, some treatments are consistently recommended by major health advisory bodies, such as the:

- Royal Australian College of General Practitioners,
- Australian Rheumatology Association,
- Osteoarthritis Research Society International.

For **all** patients with knee osteoarthritis the following treatments are consistently recommended:

- Land based exercises (e.g resistance exercise, walking, t'ai chi)
- Water based exercises (e.g. swimming, water aerobics)
- Strength training (e.g. exercises to increase leg muscle strength)
- Self-management strategies and education. This may include modifying activity to avoid aggravating your knee.

Treatment

Depending on your individual circumstances you may also be recommended the following treatments:

Aids

Aids may assist to reduce the load on your knee joint until you have regained your strength.

- Knee bracing and or orthotic shoe inserts
- Using a walking stick, cane, or crutches

Medications

Medications may assist in reducing your symptoms to allow you to perform your exercises or manage a flare up. As with any medicine there are risks & benefits. Please discuss these with your GP or pharmasict.

- Ointments
  - Topical capsaicin ointment or patches (e.g.zostrix)
- Anti inflammatory medications
  - Anti inflammatory creams or patches (e.g. voltaren gel)
  - Oral anti inflammatories pain relievers (e.g. Celebrex, Neurofen , Naprosyn)
- Prescription drug duloxetine
- Paracetamol (e.g. panadolosteo)

Injections

Some joint injections may help reduce symptoms and improve movement, particularly in the knee.

An injection of corticosteroid medication into the joint during a 'flare' can provide short-term pain relief (usually two to four weeks) and help you return to an exercise program or normal activity.

This can be organised by your GP.

Treatments that are NOT currently recommended for knee osteoarthritis?

The following treatments are generally not recommended for patients with knee osteoarthritis due to research showing any benefit. In siome instances these may increase your symptoms:

- Arthroscopic surgeries including menisectomy/meniscus repairs/debridements (often referred to as a 'clean out')
- Opioid based pain relief (e.g. codeine/panadeine forte)
- Stem cell injections
- Viscosupplement injections
- Platelet Rich Plasma injections

What about oral supplements?

Most current guidelines do not recommend the use of additional supplements for knee osteoarthritis due to insufficient evidence showing them to be effective treatment.

This includes:

- glucosamine,
- chondroitin,
- fish/krill/Omega 3 oils,
- curcumin,
- boswellia,
- pine bark extract.

Generally, the potential side effects of using supplements are considered low, however, some may impact the other pre existing conditions/medications such as diabetes or those using warfarin (blood thinners).

If you need advice about whether supplements or medications are suitable for you, speak to your GP or pharmacist.

What is the best type of exercise for osteoarthritis?

The best exercise is the one you keep doing. We will work with you to form a plan that takes into account your current ability, your goals, and how you want to approach sustainable exercising.

In accordance with the latest research and our experience Our current recommendation for most clients is a combination of:

- Low impact, aerobic/ cardiovacular exercise (cycling, swimming, walking etc)
- Low impact, lower limb resistance strength training (particularly of the knee muscles)
- Knee stability and control exercises

Exercises can be performed at home, in a gym, or in our clinic in a group setting. Exercise only works if it is done consistently. We strongly recommend group classes if you are at all concerned about maintaining regular exercise. Group classes are a proven way to improve exercise compliance in clients with knee osteoarthritis.

Body weight management

Does my weight impact my knee?

Obesity is a major risk factor for the onset and progression of symptomatic and radiographic OA, particularly at the the knee.

If you are overweight or obese then it is highly likely that your increased body weight is contributing to your symptomatic knee osteoarthritis.

Weight management is considered best practice for knee osteoarthritis. Individual with a Body Mass Index > 25kg/m2 are recommended to target a minimum weight reduction of 5-7.5% of their body weight. It is beneficial to achieve a greater amount of weight loss given that a relationship exists between the amount of weight loss and symptomatic benefits.

Current evidence suggests that weight loss should be combined with exercise for greater effects. Here at Astute we will help you to provide appropriate exercise management. Increasing muscle mass (through strengthening) and aerobic exercise (such as walking) are both effective ways to help reduce body weight.

Exercise alone, however, should not be relied about for weight loss. Diet is the most critical part to managing weight.

If you are overweight please talk to us about weight loss. Losing weight may be the most effective thing you could do to manage your knee pain.

Are certain foods bad for my osteoarthritis or make the inflammation worse?

There is very little evidence that certain foods are good or bad for people with osteoarthritis or inflammation. There is no diet proven to 'cure' OA. Eating a balanced diet that is low in saturated fat, sugar and salt, but high in omega-3 (from fish and other oils), fruit, vegetables and cereals is good for most people.

Surgical Management

Do I need surgery for knee osteoarthritis?

In most cases knee surgery is not required for knee osteoarthritis. A decision on whether to have surgery or not is based on several factors including: the severity of your pain and it's impact on your daily life, knee range of motion, findings on medical imaging, your risk of surgical complications, social support available, and the impact of the rehabilitation process on your life.

There are several surgical treatments options for patients with osteoarthritis. These include:

1. **Arthroscopic meniscectomy/ debridement (often referred to as a 'clean out' or 'a scope')** involves the repair and remove tissue within the knee. The majority of the health advisory bodies no longer recommend arthroscopic meniscal and cartilage surgery in patients with OA changes as they are not shown to be more effective than non surgical management. It is common to find tears in the knee cartilage that do not cause a person pain. Occasionally, patient's with a knee that locks or gets stuck as a result of a cartilage tear may wish to consider arthroscopic surgery to remove the blockage.

2. Unilateral Replacement
Involves replacing onecompartment of the knee rather than the whole knee. This is generally only used in younger clients who have osteoarthritis in order to preserve as much bone as possible in case further surgery is needed to replace the entire joint as they get older.

Surgical Management

3. Total knee replacement involve the removal of the both joint surfaces in the osteoarthritic knee and replacement with prosthetic surfaces. It is the most common type of surgery performed for patient's with painful knee osteoarthritis. Modern knee replacements can be expected to last beyond 15 years in most cases. The average age of patients undergoing knee replacement in Australia is approximately 75.

We have not yet determined exactly which clients or when clients should and shouldn't have a knee replacement.

The decision is usually made based on the severity of symptoms and findings on Xray. Xray findings alone are not an indication for a total knee replacement, regardless of if they appear 'bone on bone' or not. In the right client a total knee replacement can be an excellent surgery for pain relief. However, it is an invasive surgery with multiple operative risks and a long and often painful recovery.

Surgical Management

As with any surgery there are complications and risk that may arise following surgery. These are minimal but we think it is important that you are informed of these:

Keep in mind some of these minor complications would be expected to improve with a greater period of rehabilitation.

Major Complications	14%
Mortality	0.2%
All cause reoperation	3%
Arthroplasty - related readmission	6%
Deep vein thrombosis	2%
Pulmonary embolism	1%
Cardiovascular incident	2%
Surgical site infection requiring antibiotics	4%

Minor Complications	47%
Joint Stiffness	18%
Patinet Unexpected Pain	16%
Swelling	16%
Numbness	16%
Nerve injury	1%
Leg Length discrepancy	2%
Wound Seperation	1%

*Complications within 6 months post knee replacement: (Australian clinical outcomes registry 2013-2018)

Knee replacement surgery is a very invasive, painful and traumatic surgery. Most patients will be prescribed opioid based pain relief in the immediate post operative phase to manage the pain.

The recovery afterwards is a lengthy process and requires commitment to extensive rehabilitation to get the most out of your new knee. It is not uncommon for clients to still be taking pain relief medication for 3 months or more post surgery.

Here at Astute we find most people have unrealistic short term expectations following knee replacement surgery and underestimate the recovery timeframe.

Nearly 20% of clients will report an unexpected amount of knee joint stiffness at 6 months post knee replacement.

It is important that you are well informed prior to having surgery. We advise clients that it is a 12 month recovery although you may still report improvements in function up to 2 years post operatively.

Regaining knee strength in particular is a long process, as the deterioration of muscle mass and strength has often been occurring for several years prior to surgery. Regaining normal strength is an important building block to being able to function with normal movement.

Frequently Asked Questions

Should I take supplements to fix my knee?
No. There is no good quality evidence to support the use of supplements.

My knee grinds and is bone on bone on Xray. I need surgery!
This is not necessarily the case. You should not be concerned about the sound or feeling of grinding if your knee is otherwise performing well. Age related degenerative changes will be seen many older knees. Even if the changes are severe this does not mean you will have symptoms or require surgery. Xrays do not take into account your level of strength, flexibility and control around your knee. It does not tell us how irritated other soft tissues around the knee may be.

Exercise hurts my knee. It can't be good for me.
Some pain with osteoarthritis is normal when exercising. If you are getting severe pain or pain lasting more than a couple of hours, then it is best to cease that type of exercise and try an alternative. We are here to help you with managing exercise. Please let us know if exercises prescribed are not being well tolerated.

I should have knee surgery as soon as possible.
Usually there is no reason to rush into having knee surgery. Patient's that wait 6 month to have surgery on average do not show significant signs of deterioration over that time. You should feel confident that you have time to try non invasive methods to treat your knee. Improving knee strength prior to surgery may also aid you in recovery if you do decide to have a replacement.

Should I use ice or heat on my knee?
Either of these can help with managing your symptoms.

Do you have Ultrasound or TENs Machines to fix my knee?
No, there is no evidence that supports the use of these devices in improving your long term outcomes. You may like to use a TENs machine at home to reduce your pain. We can organise one for purchase if you would like to try this.

Astute Recommended Treatment Pathway

Recommended Program

- ☑ Home or Gym based Exercise Program Prescription
- ☑ Access to physiapp app for exercise videos

Week 1: Initial Consultation

Week 1: Subsequent Consultation - Baseline Measures

Week 2: Subsequent Consultation - Exercise Prescription

Week 3: Subsequent Consultation - Exercise Prescription

Week 4: Subsequent Consultation -

Week 6: Subsequent Consultation -

Week 10: Subsequent Consultation -

Additional Services

- ☑ **Supervised 1 hour Gym Class**
- ☑ **Reformer Pilates Class's**
- ☑ **Additional Manual Therapy Sessions**

*Subject to class availability

Week 14
Re-Examination Consultation

Astute Treatment Pathways

Initial Consultation

In the initial assessment we will go through a thorough history of your condition and how it is affecting you on a day to day basis. We will then perform a physical assessment of your knee and provide you with a diagnosis or confirm your pre existing diagnosis of knee osteoarthritis. Your physiotherapist may recommend imaging if they feel it is necessary to clarify the diagnosis, however, most often this is not necessary and will not change the initial treatment process.

Following a diagnosis of osteoarthritis we will discuss what your goals for treatment are and what treatment options you have available to you. We will also ask you to fill in a questionnaire about how your knee is currently affecting you day to day living. At the end of this process we will aim to provide you with a structured plan for your recovery process and make the necessary bookings to deliver this plan.

Subsequent Consultation 1
Baseline Measures:

In the second session we take physical measures of your performance and strength. This includes the use of our premium AXiT testing equipment to accurately measure your leg strength. We will also take measures of your walking capacity and other relevant measures specific to your goals

Subsequent Consultations 2 & 3
Exercise Prescription

In the third and forth sessions you will be taken through your exercises. These will be tailored to your individual requirements and chosen treatment pathway. We will ensure that you are confident performing and self progressing the exercises independently. Your exercises should be difficult, but the aim is to keep your pain to a manageable amount.

Astute Treatment Pathways

Gym Classes

These classes are supervises with a small group of partipants. Participants are able to utilize out equpment which allows better isolation of specific muscle groups. One of our therapist's will be on hand to ensure you are performing your exercises with the correct technique and answer any questions you may have.

Reassessment

This is where we will reassess your measures from before you started the program to see your progress & reestablish your goals

Massage & Other Therapies

Hands on therapies, such as massage, will also be available to you. Exercise is the mainstay of the treatment program, however, if you feel that you would like hands on therapy to help manage pain and stiffness, then further sessions and time can be set aside to accommodate this. Follow up before the post plan reassessment can also be booked in if for any reason you are having trouble with the management of your knee.

Useful Links & Resources

Astute Physiotherapy:
For more information about us here at the clinic!
www.astutephysio.com.au

Arthritis Australia:
For an overview of osteoarthritis supported by the Royal Australian College of General Practitioners and the Australian Rheumatology Association.
https://arthritisaustralia.com.au/types-of-arthritis/osteoarthritis/

Australian Institute of Health and Welfare:
For an overview of osteoarthritis and how it impacts Australians
https://www.aihw.gov.au/reports/phe/232/osteoarthritis/contents/treatment-management

Eat for Health
For Australian Dietary Guidelines
https://www.eatforhealth.gov.au/

Dieticians Australia
To find a registered dietician near you
https://dietitiansaustralia.org.au/

Health Direct
For reliable online information about osteoarthritis in Australia
https://www.healthdirect.gov.au/osteoarthritis

Osteoarthritis Research Society International
For a reliable international overview of osteoarthritis
https://oarsi.org/what-osteoarthritis

Youtube:
For a simplified animation of what occurs in a total knee replacement
https://www.youtube.com/watch?v=cye3RCN7AnY

Glossary

	Glossary of common terms
Analgesia	A medicine that acts to relieve pain, such as paracetamol
Cartilage	Soft tissue that lines the joint. It provides a surface for smooth movement within a joint
Corticosteroid	A type of anti inflammatory medicine that is used to reduce symptoms in the joints, such as cortisone
COX-2 inhibitor	A group of medicines which reduce pain and inflammation, and may be suitable for some people as an alternative to regular NSAIDs, such as celebrex
Dietitian	A health professional who can recommend what foods you should and shouldn't eat and guide you on weight loss strategies
Exercise physiologist	A health professional who can suggest an exercise program tailored to your health and ability.
Fibrocartilage	A strong soft tissue that is part fibrous and part cartilage substance
Inflammation	A complex biological response from the body to harmful stimuli. It often presents as hot, red, painful, or swollen tissues.
Meniscus	Two wedge shaped pieces of fibrocartilage that act as a shock absorber between the tibia and femur of the knee
NSAID	A group of medicines known as non-steroidal anti-inflammatory drugs. These can reduce inflammation, swelling and joint stiffness.
Opioids	A type of medicine used for severe pain
Osteoarthritis	A degenerative joint disease characterised by joint pain and stiffness.
Osteoporosis	A condition where the bones become thinner or weaker, which may cause them to break more easily.
Physiotherapist	A health professional who uses non invasive treatments to keep your joints mobile, and can suggest exercises and devices for you to use at home
Rheumatologist	A doctor who is a specialist in treating problems of the joints such as osteoarthritis.