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Acknowledgements 

- GLA:D® founders – Prof. Ewa M. Roos / Prof. Søren T. Skou
University of Southern Denmark
- Not-for-profit research initiative and the trademark is internationally registered by University of Southern Denmark
- GLA:D® International Network
www.gladinternational.org



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The GLA:D® program 

What?
GLA:D® = Good Life with osteoArthritis from Denmark



Who?
Researchers, certified clinicians and all of you are part of GLA:D®

Why?
To ensure delivery of guideline recommended care in clinical practice

How?
2-3 patient education sessions
12 exercise sessions in 6 weeks = smallest recommended dose

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Objectives


Better understanding of osteoarthritis:

- Risk factors (why people get osteoarthritis)
- Symptoms and pain mechanisms
- Treatment options
- Self-management tips


This will empower you to improve your quality of life!

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Content




<p>First session</p> <ul style="list-style-type: none"> • What is osteoarthritis? • Risk factors and diagnosis • Treatment (overview) 	<p>Second session</p> <ul style="list-style-type: none"> • Exercise therapy as treatment • Help to self-manage your osteoarthritis
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How common is osteoarthritis?



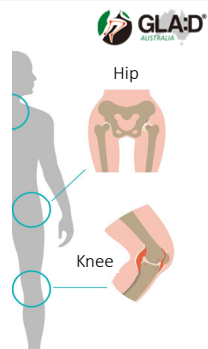
<p>WORLDWIDE</p> <ul style="list-style-type: none"> • Most common lifestyle disease in people over 65 years of age (more common than high blood pressure and diabetes) • Knee and hip pain is common: 30% aged 45 or more • 50% of people with a serious knee injury develop osteoarthritis 10-15 years later 	<p>IN AUSTRALIA</p> <ul style="list-style-type: none"> • 1 in 11 Australians (in 2014-15) – 2.1 million • 3% of all GP visits (1.5 million per year) • More common than high blood pressure or diabetes
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What is osteoarthritis?

- A disease that affects the whole joint (not only the cartilage)
- Most common reason for not being physically active as people age
- Painful condition caused and influenced by many joint and person-specific factors




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How is osteoarthritis diagnosed?

Clinical diagnosis
(recommended)



Radiographic diagnosis




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Risk factors

Modifiable risk factors
(things you can influence)

- Joint injury (future)
- Joint overload (future)
- Body fat and nutrition
- Physical inactivity
- Muscle weakness



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Risk factors

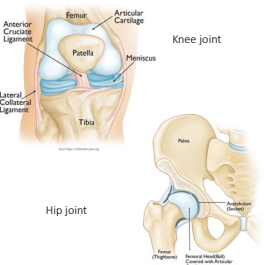
Non-modifiable risk factors
(things you can't change)

- Age
- Sex
- Genetics




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Joint Structure




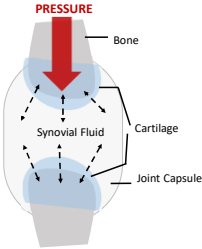
- Bones with cartilage on ends
- Articular capsule with synovial (articular) fluid
- Ligaments
- Muscles and tendons

- Only for knee: menisci
- Only for hip: labrum



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Cartilage needs appropriate load so it can be healthy

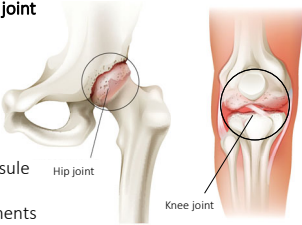


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Possible features of an osteoarthritic joint

Osteoarthritis affects the whole joint (not only the cartilage)

- Symptoms can be present without visible changes in the joint
- Cartilage changes or loss
- Osteophytes or bone changes
- Swollen and inflamed articular capsule
- Bakers cyst
- Painful muscles, tendons and ligaments
- Can have these changes without pain

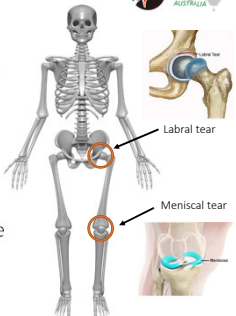


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Meniscal and labral tears

- Degenerative tears are often found on imaging in people with and without knee or hip pain ... even without joint trauma!
- Tears are part of osteoarthritis
- Guidelines recommend against arthroscopy for meniscus tears and are uncertain for labral tears

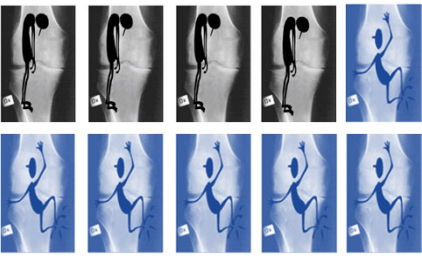


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Poor link between imaging and symptoms

Same x-ray but different symptoms and experience



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1,211 – age 20-70
Disk bulging = 87%
Nakashima et al. (2015) Spine

Systematic review: 3,110
Disk degeneration = 37% (20 y/o) to 96% (80 y/o)
Binjiki et al. (2015) Am J Neuroradiol

51 men – age 40-70
Partial R.C. tear = 22%
Bursal thickening = 78%
Overall abnormalities = 96%
Corbett et al. (2011) Am J Roentgenol

Systematic reviews 5,397 knees
(>40yrs / <40yrs)
Osteoarthritis = 19-43% / 4-14%
Cartilage defect = 43% / 11%
Meniscal tears = 19% / 4%
Culvenor et al. (2018) BISM

Systematic review – 2,114 asymptomatic hips
CAM deformity = 37%
Pinac deformity = 67%
Labral injury = 68%
Frank et al. (2015) Arthroscopy

48 – mean age 47
Morton's neuroma = 54%
Symeonidis et al. (2012) Foot Ankle Int

320 MRIs – Median age 51
Anterior talofibular ligament injury = 37%
O'Neil et al. (2017) Foot Ankle Int

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Asymptomatic people also have findings on imaging

Not only in hips and knees!

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Symptoms of osteoarthritis

Symptoms develop slowly over years but can have a sudden or insidious onset

- Pain on weight bearing and joint noises
- Stiffness and reduced range of motion
- Feeling of instability (lack of trust)
- Pain at rest and joint swelling

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Symptoms of osteoarthritis

- Knee osteoarthritis
 - Under or above the knee, inner or outer part of the knee, behind the kneecap or down the lower leg
- Hip osteoarthritis
 - Outer part of the hip, deep inside the groin, deep in the buttock, inner or outer part of the thigh or knee pain

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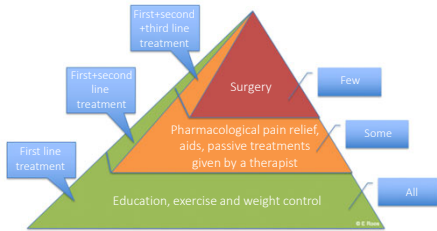
Common activities affected by hip and knee osteoarthritis



- Leisure activities and sports
 - Physically demanding job
 - Playing with children or grandchildren
 - Change of direction
 - Putting on socks and shoes
 - Standing or walking for a long time
 - Going up or down stairs
- What problems do you experience?

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Osteoarthritis Treatment Pyramid



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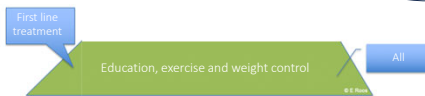
All people should be offered first line treatment




Many people do not adequately use first line treatment for osteoarthritis. Why might that be?

Most people are prescribed medication before anything else


Someone with hip or knee osteoarthritis is 5-6 times more likely to be referred for imaging than for physiotherapy



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Second line treatment should not replace first line treatment




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Non-pharmacological second line treatment

- Shoe inserts/orthotics
- Taping and braces
- Dry needling/ Acupuncture
- Manual therapy
- Walking aids
- TENS (electrical stimulation)
- Hot / cold packs





Ask your GLA:D® clinician

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Pain medication

Paracetamol
e.g. Panadol, Panamax 

- Weak pain relief 
- No better pain relief than placebo
- No long-term effect for most people


Non-steroidal anti-inflammatories (NSAIDs)
e.g. Ibuprofen, Voltaren

- Moderate pain relief
- More effective than paracetamol
- **Potentially serious side effects (stomach, kidney, cardiovascular)**
- **Not recommended in people with high risk due to other chronic diseases**

• **Non-steroidal anti-inflammatories** also (NSAIDs) come as **creams/gels** ('topical') 

Physiotherapists and Exercise Physiologists cannot prescribe or recommend medication - see your GP or pharmacist to discuss or change your medication


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Pain medication


Opioids
e.g. morphine, codeine

- Pain relief no better than NSAIDs
- **Unwanted side effects and serious adverse events associated with long term use (e.g. dependence, worsen chronic pain mechanism, risk of overdose)**
- Recommended against for osteoarthritis by international guidelines



Physiotherapists and Exercise Physiologists cannot prescribe or recommend medication - see your GP or pharmacist to discuss or change your medication

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Injections

Cortisone (corticosteroid) injections

- Short term pain relief (weeks)
- No long term benefit
- **Adverse events (<1% most often joint infection)**
- Cartilage loss over 2 years (avoid repeated injections)

Guidelines say may be appropriate for some people but harms must be considered




These are NOT recommended by guidelines

Other injections:

- Platelet-Rich Plasma
- Stem Cell Therapy
- Dextrose Prolotherapy
- Hyaluronic Acid

Physiotherapists and Exercise Physiologists cannot prescribe or recommend medication - see your GP or pharmacist to discuss or change your medication


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Dietary supplements

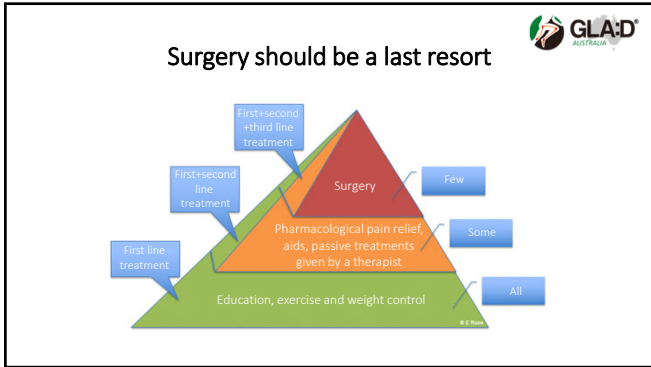
Glucosamine, Curcumin, Fish Oil and other dietary supplements

- No greater effect than placebo, but risks/side effects may be fewer compared with pain medications
- Always discuss with your GP before commencing any supplements (can interact with health conditions or medications)



Physiotherapists and Exercise Physiologists cannot prescribe or recommend medication - see your GP or pharmacist to discuss or change your medication

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Surgery - Arthroscopy

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- ‘Arthroscopic surgery’ is often used to mean ‘joint clean-up’ or ‘wash-out’
- No greater pain relief compared to placebo in knee osteoarthritis (about 30%)
- Side effects are rare, but do exist
 - Blood clots, infections, death
- Osteoarthritis treatment guidelines from around the world recommend AGAINST arthroscopy



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Surgery - Joint Replacement

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- Artificial articular surfaces made from metal and plastic
- For severe stages of osteoarthritis, when first line treatment and second line treatments have not been sufficient


Total Hip Replacement

- Around 95% report positive outcomes
- Recovery tends to take about 3 months




Total Knee Replacement

- Around 80% report positive outcomes
- Recovery tends to take 6-12 months



People who complete a program like GLA:D® may delay and perhaps prevent surgery

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Deciding about surgery

Lots of things to consider, including:


- Long periods of first- and second- line treatments (months) first
- Symptoms that are severe and affecting every facet of daily life
- X-ray suggesting end stage change

What else might you need to consider personally?

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Exercise therapy prior to surgery




Even if you end up having a joint replacement, your exercise therapy is not a waste.

- Exercise therapy prior to surgery may help you improve faster after the surgery
- Being in better health (like being fitter – through exercise) helps reduce the risks associated with surgery

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Summary

- Osteoarthritis is a painful condition that affects the whole joint and is influenced by many factors
- There is a poor link between imaging and symptoms
- Education, supervised exercise therapy and weight loss are first line treatment
- Exercise therapy can be at least as effective as medicine – with many positive side-effects!



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