

Understanding Osteoarthritis

What It Is, What It Isn't, and What Actually Helps

Osteoarthritis (OA) is the most common joint condition in the world. The old idea of joints "wearing out" has been replaced by a far more encouraging picture: OA is an active, complex process involving cartilage, bone, synovium, and surrounding muscles — and your choices make a meaningful difference. OA is not just wear and tear — it is a whole-joint condition your body is actively trying to manage.

1 What Is Osteoarthritis?

OA is now understood as an active disease of the whole joint — not a simple surface problem. Research in Arthritis & Rheumatism described it as a "disease of the joint as an organ". Age is one factor, but far from the whole story: some people in their 80s have no OA, some in their 40s develop it.

STRUCTURE	WHAT CHANGES	RESULT
Cartilage	Enzymes (MMPs) break down collagen faster than repair; surface roughens and thins.	Loss of smooth gliding surface; reduced joint space.
Subchondral Bone / Osteophytes	Bone thickens (sclerosis); extra bone forms at joint margins.	Bone spurs (osteophytes) — often painless; body's stabilising response.
Synovium	Produces excess fluid; releases inflammatory cytokines (IL-1, TNF).	Ongoing low-grade inflammation drives further cartilage degradation.

2 Common Sites in the Lower Limb

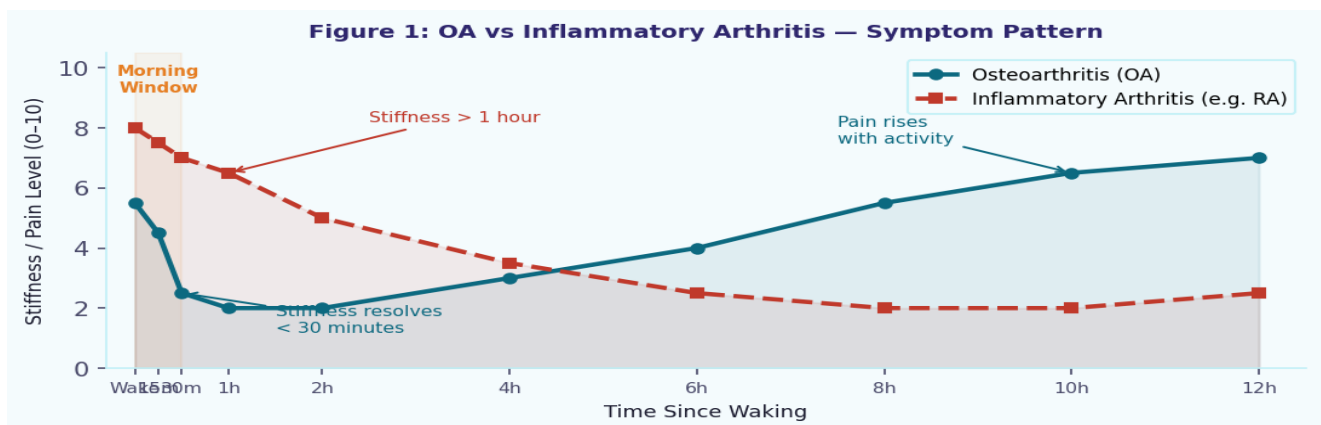
SITE	KEY FEATURES	TYPICAL PRESENTATION
First MTP Joint (Big Toe / Hallux Rigidus)	Most common foot OA site; ~7.8% of adults 50+. Dorsal bone spur common.	Pain/stiffness with push-off; reduced dorsiflexion; altered gait.
Ankle (Tibiotalar)	Less common (~1% globally); predominantly post-traumatic.	Stiffness, swelling, difficulty on stairs; reduced walking tolerance.
Subtalar Joint (Below Ankle)	Often post-traumatic; linked to ankle and midfoot mechanics.	Limits side-to-side foot motion; poor adaptability on uneven ground.
Knee (Tibiofemoral)	Affects 7.6–16.4% of adults 50+; alters gait and increases foot/ankle load.	Altered step length; treatment decisions interact between knee and foot.

3 Why OA Develops

RISK FACTOR	WHY IT MATTERS
Age	Older tissues repair less efficiently — but many older adults never develop OA.
Previous Joint Injury	Post-traumatic OA is a major risk, especially ankle fractures and ligament injuries.
Excess Body Weight	10 lbs overweight = 30–60 lbs extra knee force per step; excess fat also drives joint inflammation.
Genetics	Meaningful role in hand, hip, and knee OA — predisposition does not mean inevitable disease.
Biomechanics	Muscle weakness, misalignment, altered gait, poor footwear — all create uneven joint stress.

4 Symptoms and Management

SYMPTOM	WHAT IT MEANS
Pain with activity	Hallmark of OA — aching, localised, worse with use and end-of-day; improves with rest in early stages.
Morning stiffness < 30 min	The "gel phenomenon" — resolves quickly; key distinction from inflammatory arthritis (stiffness >1 hour).
Swelling / Crepitus	Swelling = excess synovial fluid after activity (cool to touch). Crepitus (grinding) alone is not necessarily harmful.
Reduced range of motion	Osteophytes, thickened tissue, and pain-related guarding restrict movement — e.g. big toe dorsiflexion.



OA pain rises with sustained activity; morning stiffness resolves within 30 minutes. Inflammatory arthritis shows prolonged stiffness subsiding during the day.

Evidence-Based Management

APPROACH	WHAT IT INVOLVES	EVIDENCE LEVEL
Exercise & Movement (First-Line)	Strengthening (calf, quads, intrinsic foot), aerobic exercise (walking, cycling, swimming), balance/neuromuscular training. Cartilage receives nutrients only through movement.	Strong — 2024 Cochrane review (139 studies, 12,468 participants): consistent pain, function, and QoL improvement; comparable to NSAIDs without side effects.
Weight Management & Footwear/Orthotics	10% weight loss produces clinically meaningful pain reduction. Custom/prefabricated orthotics, rocker-sole footwear, and carbon fibre plates reduce joint load.	Strong — OARSI 2019 & ACR 2020 guidelines; dose-response relationship for weight loss.
Medications & Surgery (Adjunct / Last Resort)	Topical NSAIDs (short-term); supervised physio; aquatic therapy. Oral NSAIDs, injections, and surgery only for severe cases after conservative care is exhausted.	Moderate — corticosteroid injections give short-term relief (<6 weeks); paracetamol not effective for foot OA. Rest and inactivity worsen OA.

5 Realistic Expectations and Key Takeaways

OA Can Be Managed Well. There is no cure, but many people with severe structural changes on imaging function excellently. Pain and disability are determined by far more than X-ray findings — a concerning scan is not a sentence. Focus on function, symptoms, and self-management.

KEY TAKEAWAY 1

OA is a whole-joint condition — not a worn-out joint. It is a complex, whole-joint process involving cartilage, bone, synovium, and surrounding muscles. Your body is actively trying to adapt and repair. The goal is to support the joint system, not to protect it by resting it.

KEY TAKEAWAY 2

Movement is medicine — exercise is your most effective treatment. The 2019 OARSI Guidelines and a large body of RCTs confirm: structured exercise reduces pain, improves function, and produces benefits comparable to medication — without the side effects. Exercise does not damage arthritic joints. Some discomfort during exercise is normal and safe.

KEY TAKEAWAY 3

Your scan is not your destiny — focus on function, not structure. What your X-ray or MRI shows does not determine your pain, disability, or future. Strengthen the muscles supporting your joints, manage weight where relevant, and build confidence in your body. You have more control over this condition than you may think.