BEYOND CORTICOSTEROIDS:
THE GROWING ROLE OF HYALURONIC ACID IN PLAYER JOINT HEALTH

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Hyaluronic acid (HA) has been trusted for decades to support joint comfort and mobility, with clinicians using it to help ease osteoarthritis (OA) symptoms and keep people moving (Huerta-Angeles and Mixcoha 2024). Within Football – both at Elite and Grassroots levels – it has been increasingly used to help reduce the pain and stiffness within a joint (mainly knees associated with OA) both whilst playing or after retirement from the game. In my experience, it has been used safely to support players who are experiencing the early stages of OA that comes from a career of playing and repeated degenerative changes or minor meniscal damage. This may be within a season but also managing the ongoing problems that players encounter when they stop playing and throughout their later life.

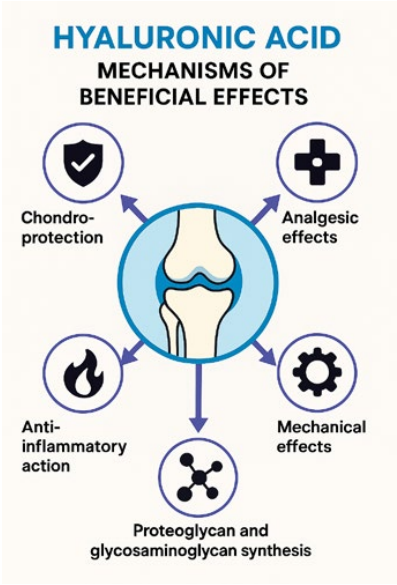
What happens when a joint becomes inflamed?

Symptomatic knee OA occurs in 15% of adults >55 years old, with a radiographic incidence of >80% in those over 75 years old. The figures are higher for sports people (Tran et al., 2016). Previously, it was believed that OA occurred as part of a general *'wear and tear'* process of repeated microtrauma to the structures within a joint. Current research has shown that the pathogenesis of OA involves a degradation of cartilage and remodelling of bone due to an active response of chondrocytes in the articular cartilage and the inflammatory cells in the surrounding tissues (Sengprasert et al., 2023). The release of enzymes from these cells breaks down collagen and proteoglycans, destroying the articular cartilage. The exposure of the underlying subchondral bone results in sclerosis, followed by reactive remodelling changes that lead to the formation of osteophytes and subchondral bone cysts. The joint space is progressively lost over time. The inflamed joint can swell and become painful which reduces the function and performance.

What is HA?

HA is a naturally occurring substance that exists within every synovial joint in the body. In a healthy knee joint the molecular weight of HA is 5000-7000kDa (Nicholls et al. 2018). In the presence of OA, HA is broken down faster and the clearances rate from the joints is higher than normal. This not only reduces the concentration and molecular weight of HA but also reduces the elastic viscosity of synovial fluid (Zhang et al., 2022). The properties of HA can help to reduce swelling within a joint (Altman et al., 2015).

How does HA work?



Injecting a joint with HA, increases the number of HA molecules within the joint and these are slowly released over time with movement. The properties of HA support good joint health and are important contributory factors in reducing pain and inflammation.

Differences between steroid and HA

Historically, corticosteroid injections (CSI) have been used to manage joint inflammation, these are relatively cheap and available to access via an appropriate medical professional. CSI are a prescription only medication (POM) and this means that they can only be prescribed by a Medic or Independent Prescriber. There are several significant side effects of CSI that need to be considered for any player at any level of the game and can increase the potential of requiring a total knee replacement (Wijn et al., 2020). Whilst they can offer a quick and effective means of reducing the inflammation and pain in an inflamed joint, they can reduce the collagen and osteoblast activity for a few weeks which can make the degenerative changes worse over time (Zeng et al., 2019). There is also

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an increased infection risk due to its immunosuppressant effect. This becomes significant if the player ends up requiring a surgical procedure for their joint condition. The CSI tends to work well in the short term but can be shorter acting.

HA is classified as a Medical Device and so doesn't require a prescription. Clinical studies show that intra articular hyaluronic acid for osteoarthritis is generally safe, with side effects being mild, transient, and primarily limited to temporary local reactions (Miller et al. 2021). The beneficial effects of HA last for a longer period of time compared to CSI (Leighton et al., 2014). CSI require a Therapeutic Use Exemption (TUE) form to be completed prior to use due to the potential of doping concerns, whereas HA does not require a TUE and can be used throughout the season. Also, following a CSI the recommendation is a week of relative rest to allow the effects to occur and reduce the potential of negative side effects. HA can be administered without the need for a TUE, so the player can modify their training and potentially be available to play within a few days. It can easily integrate into a rehabilitation plan.

What's different about DUROLANE®?

There are several brands of HA available, so what makes DUROLANE different? DUROLANE has a structure that means that the molecules are larger than most HAs available.

DUROLANE uses non-animal, stabilised hyaluronic acid which has naturally entangled HA chains, this gives DUROLANE a three-dimensional gel like structure with a very high molecular weight.[14*] DUROLANE is CE marked and EU MDR certified, which means it meets rigorous requirements for evidence, quality assurance, clinical safety, and risk management. Furthermore, DUROLANE has a robust body of evidence for its safety and effectiveness having been used in over 20 clinical studies.[11] DUROLANE has a low adverse event rate (0.02-0.04% over 5 years)[12] and over 2 million syringes have been used globally[13] which demonstrates that DUROLANE is trusted by patients and physicians around the world.

To conclude, high molecular weight hyaluronic acids like DUROLANE are a safe alternative to CSI for joint OA and offers the potential for greater clinical effect over a longer period of time.

Scan QR code or visit **DUROLANE.com** for more information on how DUROLANE can potentially help footballers with OA joint pain.

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Summary of Indications for Use

DUROLANE (3 mL): Symptomatic treatment of mild to moderate knee or hip osteoarthritis. In addition, DUROLANE has been approved for the symptomatic treatment associated with mild to moderate osteoarthritis pain in the ankle, shoulder, elbow, wrist, fingers, and toes. DUROLANE is also indicated for pain following joint arthroscopy in the presence of osteoarthritis within 3 months of the procedure.

Summary of Risks: DUROLANE should not be used in patients who have infections or skin disease at the injection site. DUROLANE has not been tested in children or pregnant or lactating women. Risks can include transient pain, swelling and/or stiffness at the injection site. Full prescribing information can be found in product labeling, or at DUROLANE.com

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*Very high MW defined as >6000kDa