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Does Markerless Motion Analysis Predict Movement Quality after Intra-articular Orthobiologic Injections?

An investigation into whether serial markerless motion assessment can detect functional change after orthobiologic treatment and whether baseline movement features may identify subsequent improvement.

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THEMES	Knee osteoarthritis · Orthobiologics · Serial monitoring · Treatment response

Scientific focus

The work addresses a measurement problem in knee osteoarthritis: patient-reported outcomes and intermittent imaging may not capture early or subtle changes in movement quality. Patients receiving intra-articular orthobiologic injections were assessed with MAI Motion before treatment and at serial follow-up points, generating kinematic profiles of features such as loading symmetry and movement smoothness.

Why it matters

The central hypothesis is that functional change may become measurable before structural change is visible. The study also asks whether baseline movement characteristics can identify patients who subsequently improve. If validated, this approach could complement symptoms and imaging with an objective functional signal when monitoring joint-preservation treatment.