A Systematic Review of Contemporary Methods in Patellofemoral Joint Radiography and Grading of Patellofemoral Osteoarthritis

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BACKGROUND

- The patellofemoral joint (PFJ) is the most commonly affected compartment in knee osteoarthritis (OA)[1]
- Radiographs are the most widely used imaging modality in OA evaluation[2]
- Radiographs are the only modality accepted by the FDA for assessment of OA structural change[3]
- Lack of standardized PFJ radiograph acquisition techniques result in variances in patient positioning, weight-bearing status, flexion angle, and beam direction[4]
- No current consensus exists for optimal methods of radiographic grading of patellofemoral osteoarthritis (PFOA) or optimal radiographic measures and thresholds for PFJ alignment[5]

STUDY AIMS

To conduct a systematic review of the literature published since January 2000 to:

- provide an overview of contemporary methods of acquiring radiographs of the PFJ
- describe current methods of radiographic grading of PFOA and their measurement properties
- summarize PFJ alignment and bony morphology measures as identified on radiography

METHODS

- 4 primary radiographic projections (coronal, sagittal, axial, and lower-limb alignment) are used to acquire radiographs of the PFJ
- many variations exist in acquiring these views, including weightbearing status and knee flexion angle
- these variations potentially impact the outcomes of OA grading systems
- a number of different radiographic grading systems are used to assess the severity of PFOA

CONCLUSIONS

- These findings illustrate the need for clear guidelines to be developed for consistency in the way that PFJ radiographs are acquired and graded