

# Frog-leg Lateral Pelvic Radiographs are Reliable for the Measurement of Acetabular Index in Developmental Dysplasia of the Hip

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## INTRODUCTION:

The acetabular index (AI) is the most commonly utilized radiographic measure for developmental dysplasia of the hip (DDH). However, there is variability in measurement of acetabular index (AI) which makes it less reproducible. We have observed that frog-leg lateral (FL) positioning allows more consistent visualization of the acetabular sourcil compared with AP. The purpose of this study is to determine if there is any difference in AI measurements on AP versus FL radiographs in DDH and if there is less measurement variability on FL than AP radiographs.

## METHODS:

An IRB approved, retrospective study was performed on 274 hips that underwent screening AP and FL radiography for DDH. Radiographs were reviewed using a standard measurement technique. Interobserver measurement differences and the differences between measurements made on AP and FL radiographs were calculated.

## RESULTS:

233(85%) were normal, and 41(15%) had DDH. The average AI on AP vs FL was not significantly different with a measurement of 24.13 and 23.66 degrees respectively ( $P=0.147$ ). There was a significant difference in measurement in variability for the interobserver difference for AI on AP with 0.48 ( $P=0.001$ ). However there was not a significant difference for AI on the FL with 0.18 ( $P=0.114$ ).

## DISCUSSION AND CONCLUSION:

AI had less variability on the FL view than the AP view. The increased reliability on FL positioning is likely due to a more orthogonal projection of the sourcil creating a single sclerotic line with which to perform measurements. Using the FL view to measure AI can improve ease and reproducibility of this measurement. We recommend using the FL radiograph as a supplement to the AP radiograph for measuring AI for following up patients diagnosed with DDH.

