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## Algorithm for automatic angles measurement and screening for Developmental Dysplasia of the Hip (DDH).

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**Abstract:** Developmental Dysplasia of the Hip (DDH) is a medical term represent the hip joint instability that appear mainly in infants. The examination for this condition can be done by ultrasound for children under 6 months old and by X-ray for children over 6 months old. Physician's assessment is based on certain angles derived from those images, namely the Acetabular Angle, and the Center Edge Angle. In this paper, we are presenting a novel, fully automatic algorithm for measuring the diagnostic angles of DDH from the X-ray images. Our algorithm consists of Automatic segmentation and extraction of anatomical landmarks from X-ray images. Both of Acetabular angle and Center edge angle are automatically calculated. The analysis included X-ray images for 16 children recruited for the purposed of this study. The automatically acquired angles accuracy for Acetabular Angle was around 85%, and an absolute deviation of 3.4??3.3? compared to the physician's manually calculated angle. The results of this method are very promising for the future development of an automatic method for screening X-ray images DDH that complement and aid the physicians' manual methods.