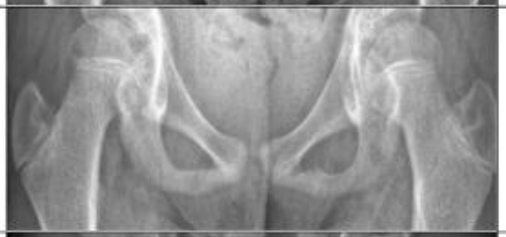
# Traumatic Hip Dislocation – Appendix References (from REDCap)

## Appendix I – Skeletal Maturity

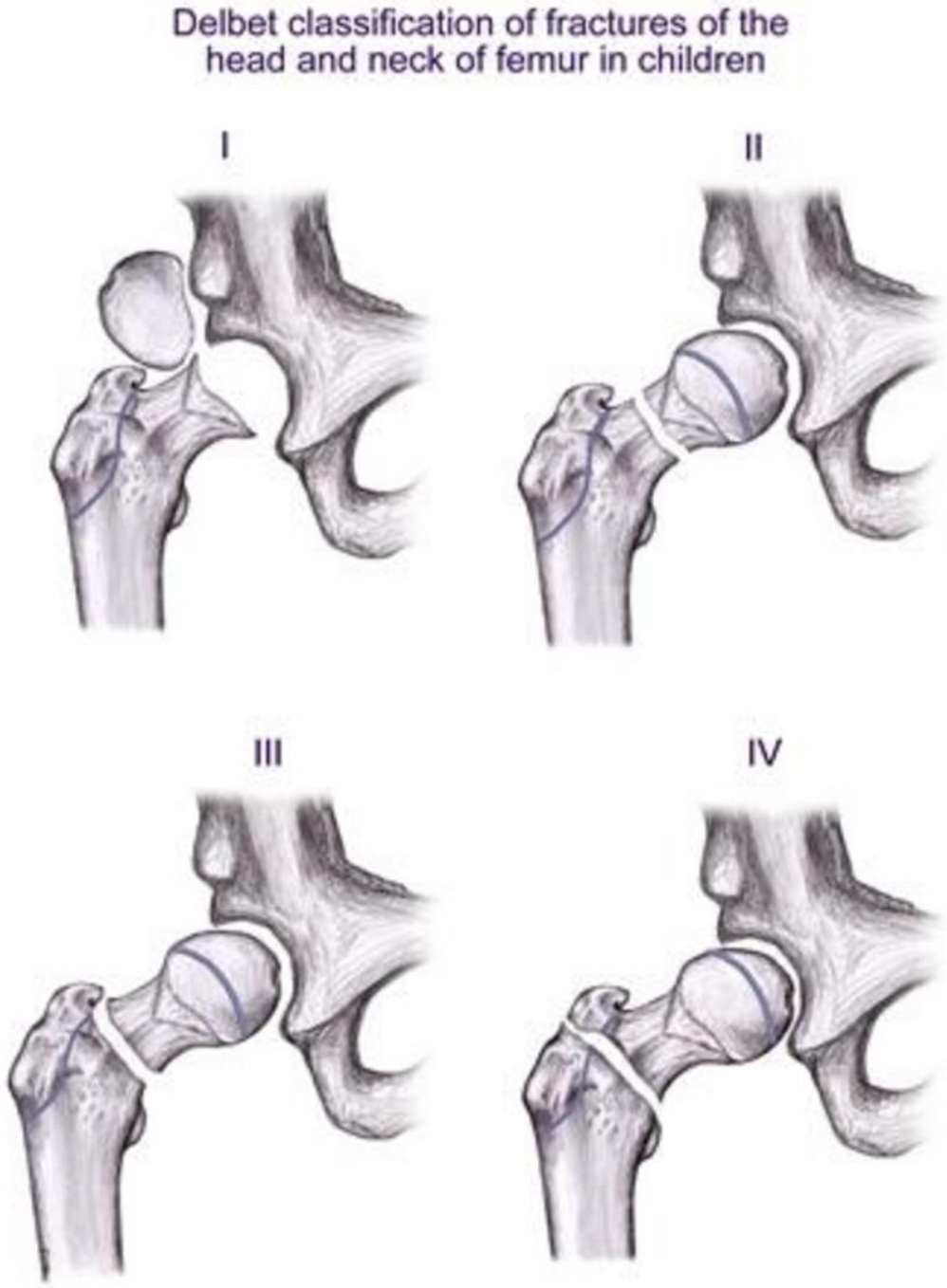
**Proximal Femur Maturity Index**

| Grade | Stage | Femoral head | Greater trochanter | Triradiate cartilage | Example of radiographs | Schematic diagrams |
|---|---|---|---|---|---|---|
| 0 | Pre-adolescent | Epiphysis smaller than metaphysis | Smooth in shape | Open |  |  |
| 1 | Acceleration phase | Epiphysis larger than metaphysis | Tapered in shape | Open |  |  |
| 2 | Pre-peak | Lateral physeal beaking | Triangular-shaped | Open |  |  |
| 3 | Peak growth spurt | • Medial physeal beaking with lateral side already beaking or closed<br>• Oblique/ curved physis | Trochanteric notch visible or Double contour line over piriformis fossa | Open/Closed |  |  |
| 4 | Post-peak | Narrowing of the physeal plate or partial fusion | Fusion of middle of physis | Closed |  |  |
| 5 | Growth deceleration | Closed physis with visible scar | Complete closure | Closed |  |  |
| 6 | Maturity | Complete closure | Complete closure | Closed |  |  |

**Appendix II – Thompson and Epstein Posterior Hip Dislocation Classification**

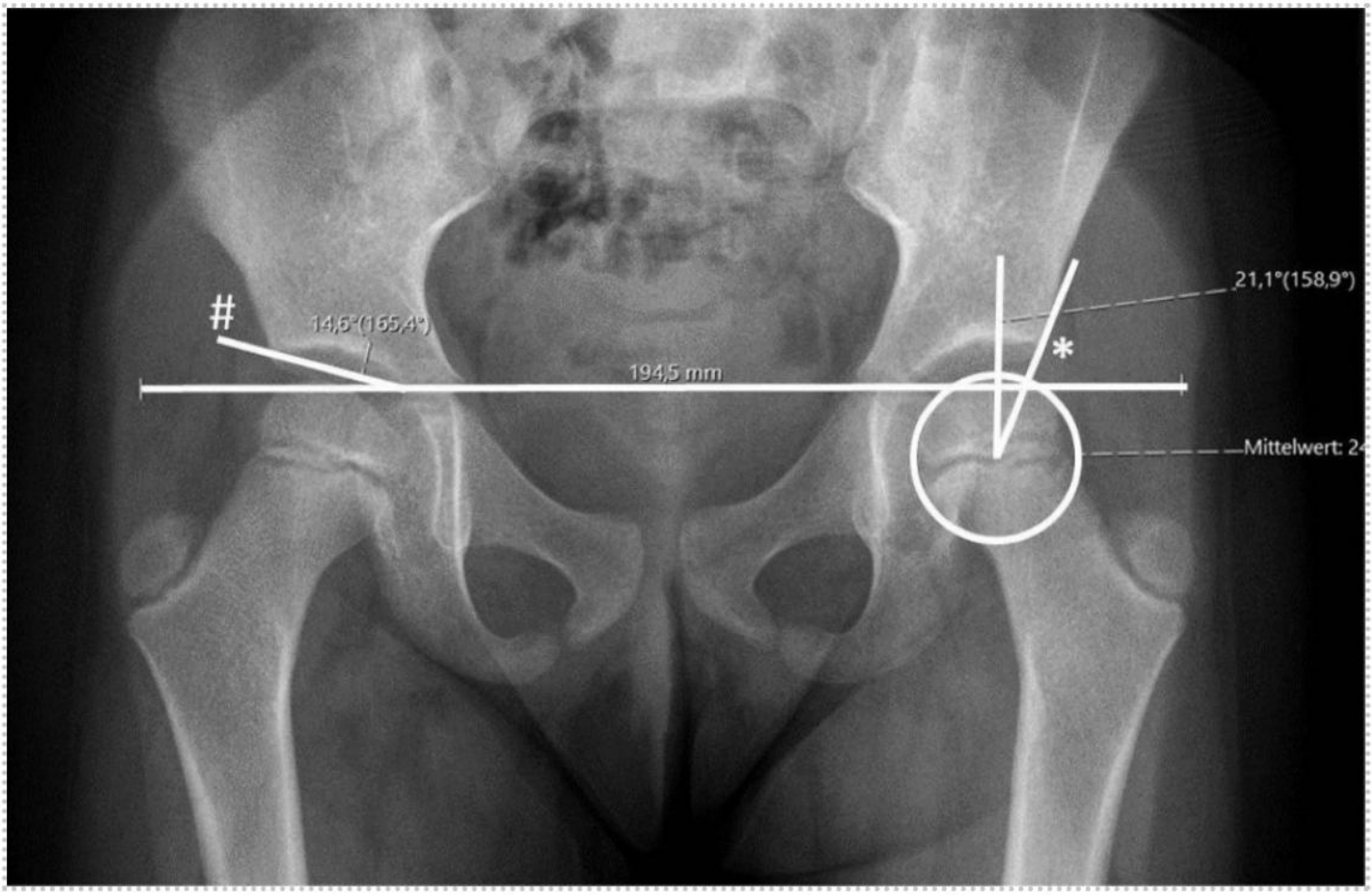
| Thompson and Epstein's Classification of Posterior Hip Dislocations | |
|---|---|
| *Type* | *Description* |
| I | With or without minor fracture of the acetabulum |
| II | With a large, single fracture off the posterior acetabular rim |
| III | With comminuted fractures of the acetabular rim (with or without a major fragment) |
| IV | With fracture of the acetabular rim and floor |
| V | With fracture of the femoral head |

**Appendix III – Delbet Classification**



**Appendix IV: A) Lateral Center-Edge Angle and Acetabular Index**

*Lateral Center-edge angle (*) and Acetabular index (#)*

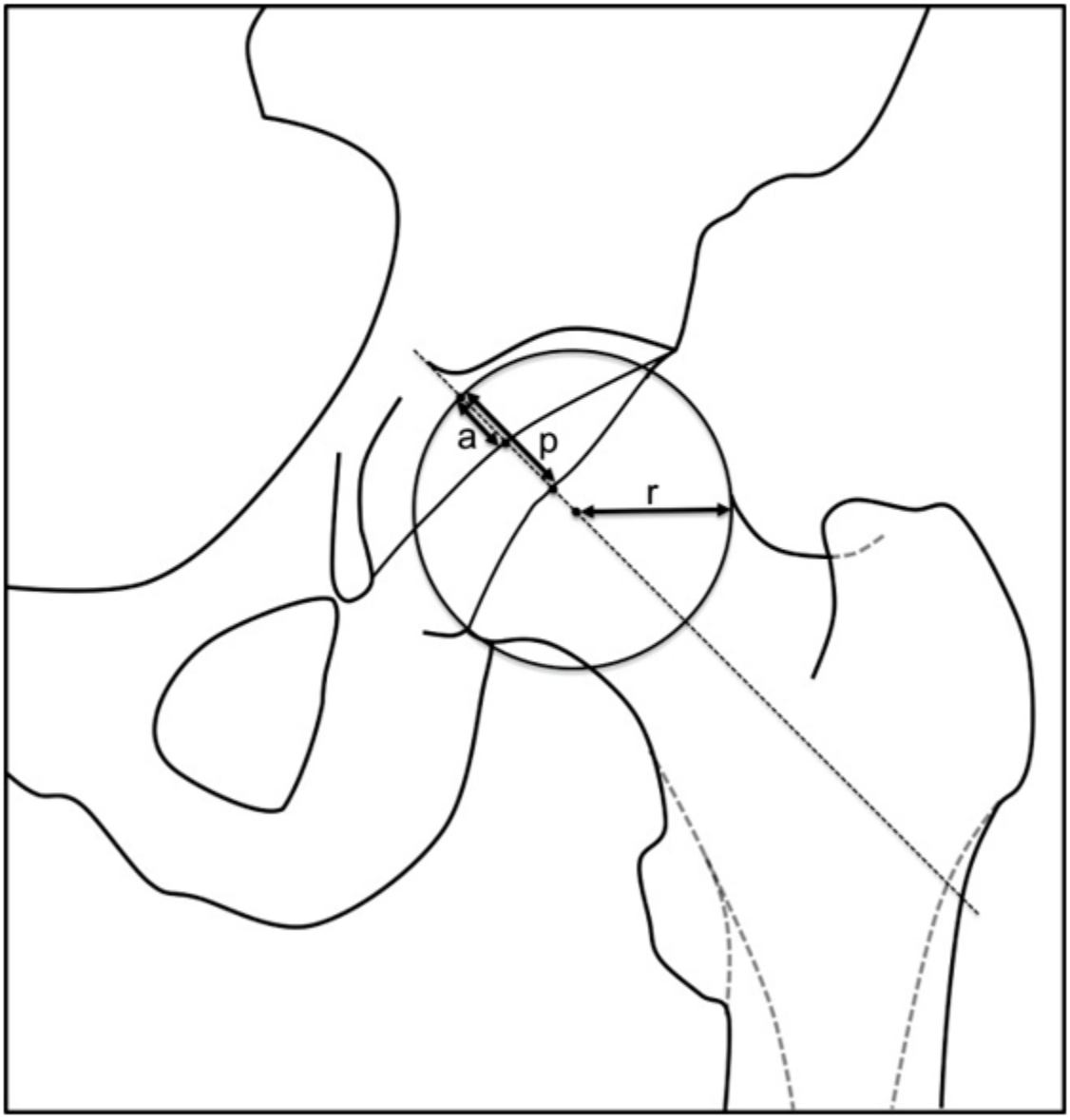



Measurement of acetabular index (#, ACI) and centre-edge angle (*, CEA). The ACI is measured using the Hilgenreiner line and the acetabular roof line. The CEA is defined as the angle from a perpendicular line through the centre of the femoral head and the acetabular edge.

*(Kubo H, Qezel L, Latz D, et al. Treatment of unstable hips with the Tübingen splint in early postnatal period: Radiological mid-term results of 75 hips with mean follow-up of 5.5 years. Journal of Children's Orthopaedics. 2020;14(4):252-258. doi:10.1302/1863-2548.14.200074)*

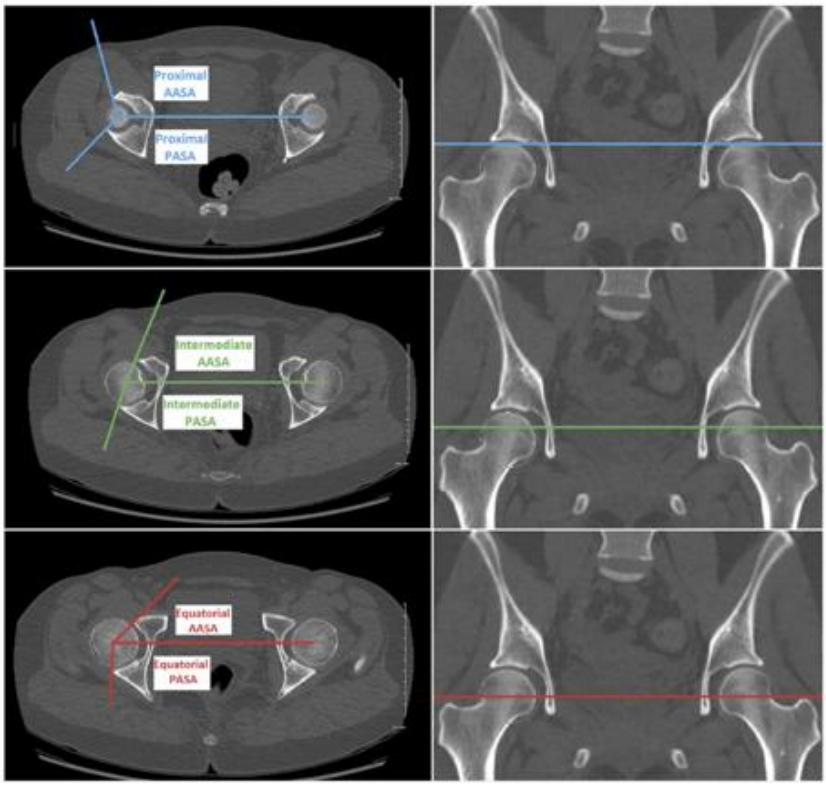
**Appendix IV: B) Pelvis AP Radiograph Based Measurement (PWI)**

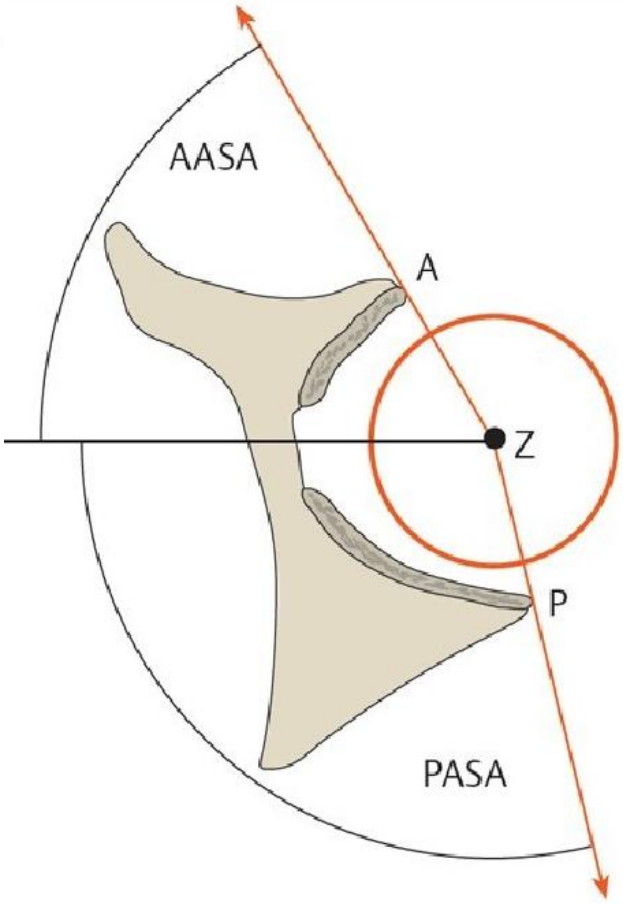
A circle is drawn to approximate the femoral head and the radius of the head (r) is determined. A line from the medial edge of the circle to the anterior (a) and posterior (p) wall is drawn and measured along the femoral neck axis. The AWI and PWI are calculated as a/r and p/r, respectively.



**Appendix IV: C) Axial CT Based Measurement (PASA)**

The AASA was defined as the angle between a line connecting the center of each femoral head and a line from the center of the femoral head to the anterior margin of the osseous acetabulum in the axial plane23,24. The posterior ASA (PASA) was determined by the angle between the same center line and the posterior margin of the osseous acetabulum in the axial plane23,24. The AASA and PASA were measured at 3 axial CT levels. The equatorial axial slice was determined at the level of the femoral head center in the coronal plane. The proximal axial slice was obtained at the superior tip of the femoral head, and the midpoint between equatorial and proximal levels was considered the intermediate slice. A similar technique has been used previously to measure acetabular orientation



**Appendix V: AVN Classification**

Involvement of femoral head According to the MRI classification of osteonecrosis of the proximal femoral epiphysis using the method described by Sugano et al., Type A lesions occupy the medial 1.3 or less of the weightbearing portion, Type B lesions occupy the medial 2.3 or less, and Type C lesions occupy more than 2.3 based on the central coronal section of the proximal femoral epiphyses on T1-weighted images.