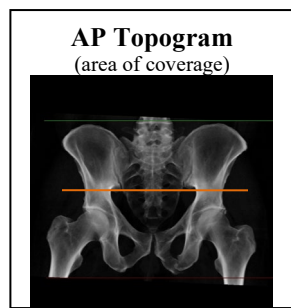


## Bony Pelvis for FAI (Hip Impingement) with 3D

Application Examples: cam or pincer FAI	
Scan Protocol (See for Technical Factors)	<b>Bony Pelvis</b>

### Femoroacetabular Impingement or FAI:

FAI is a condition of *too much friction* in the hip joint. Basically, the femoral head and acetabulum rub abnormally creating damage to the hip joint. FAI generally occurs as two forms: Cam and Pincer. Cam describes the femoral head and neck relationship as aspherical or not perfectly round. This loss of roundness contributes to abnormal contact between the head and acetabulum. Pincer describes the situation where the acetabulum has too much coverage of the ball or femoral head. This over-coverage typically exists along the front-top rim of the acetabulum and results in the labral cartilage being “pinched” between the rim of the socket and the anterior femoral head-neck junction. Also, Cam and Pincer forms can exist together; this is referred to as mixed impingement.



**Patient Position:** Patient supine, feet first with legs flat on the table (no cushions or wedges).

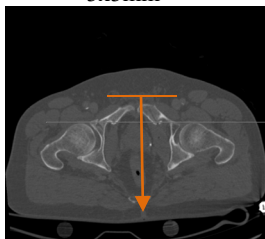
**Scan Range:** Above acetabulum through lesser trochanters.

**Recons:** Axial images displayed in bone and soft tissue kernel and window.

**2D Reformations:** First, align all viewport lines to be orthogonal to bony pelvis. Next, make coronal and sagittal MPRs. If patient is not in ideal position, create an axial MPR image data set. Also, create oblique axial image data sets (right and left) through femoral neck on AP viewport—angle blue line to the long axis of femoral neck through femoral head.

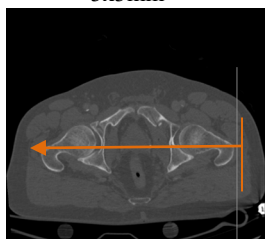
**Coronal MPR**

3x3mm



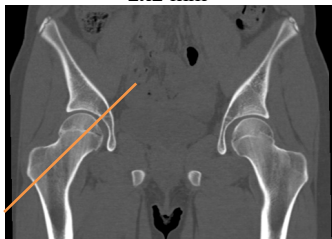
**Sagittal MPR**

3x3mm



**Oblique Axial MPR**

2x2 mm



**Single Image Oblique for Angle Measurement:** Capture one image through center of femoral neck for angle measurement—bottom left (blue) viewport. Follow steps below.

1. In 3D card, create oblique angle.
2. Draw a circle around femoral head.
3. Draw radius horizontally across the circle.
4. Draw a vertical line through the thinnest portion of femoral neck.
5. Move all numerical measurement off screen.
6. Save as **RIGHT HIP FOR MEASUREMENT**.
7. Repeat process for **LEFT HIP FOR MEASUREMENT**.

**3D VR:** 360 degree spin of entire volume using the “Fracture” template in TeraRecon.

