Effect of Femoral Head Size in Total Hip Arthroplasty Outcomes

Femoral head size, the choice of which can be affected by acetabular component diameter, plays a major role in the outcomes of total hip arthroplasty (THA).

Ideal femoral head size, however, remains debated.

Australian Orthopaedic Association National Joint Replacement Registry data

188,591 patients who underwent primary THA using a range of acetabular component and femoral head size

Cumulative percent revision compared

Femoral head sizes used

- 28 mm
- 32 mm
- 36 mm

Acetabular component sizes used

- 51–53 mm
- 54–55 mm
- 56–66 mm

Cumulative percent revision (CPR)

Due to aseptic causes

For acetabular cups <51 mm in size

- 28-mm heads
- 32- and 36-mm heads

CPR

For acetabular cups of other sizes

- 28-mm heads

CPR

No difference

For acetabular cups <51 mm in size

- 28-mm heads

CPR

For acetabular cups of other sizes

- 32-mm heads

CPR

- 36-mm heads

Cumulative percent revision (CPR) for different femoral head sizes

No single femoral head size is advantageous (except in acetabular components <51 mm in size), so surgeons should consider the complication risk profile when selecting a femoral head size.