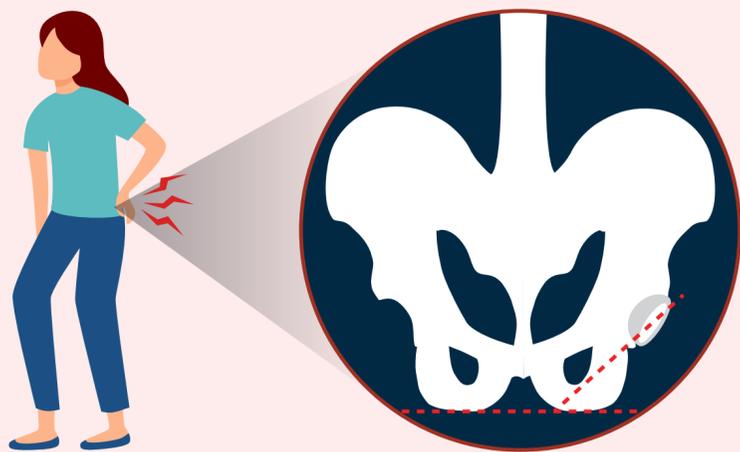


# Role of Acetabular Safe Zone in Hip Stability after Total Hip Arthroplasty

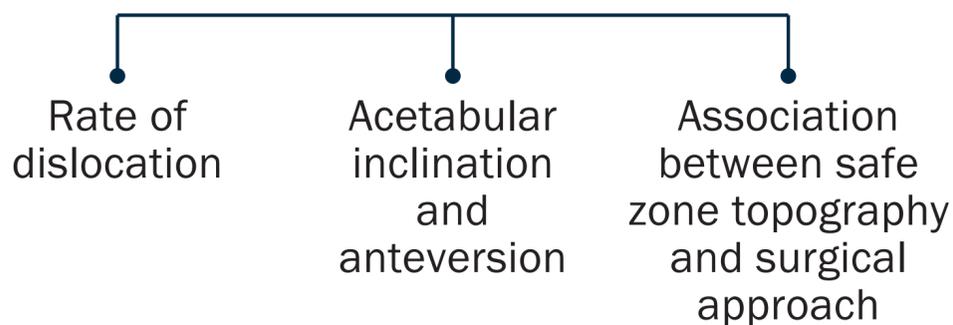
The acetabular safe zone was proposed >40 years ago to prevent hip dislocations after total hip arthroplasty (THA)



This study aimed to find the optimal acetabular cup position and topography of the safe zone according to modern standards

 9,907 THAs (8,081 patients)

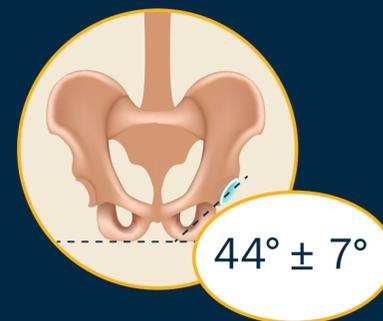
Key outcomes studied:



## Rate of dislocation

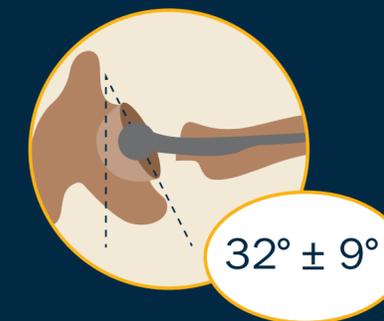


## Mean acetabular inclination



(Historical ideal inclination:  $40^\circ \pm 10^\circ$ )

## Mean acetabular anteversion



(Historical ideal anteversion:  $15^\circ \pm 10^\circ$ )

## Lowest dislocation hazards were observed at...



...for acetabular inclination  
(Modern safe zone: 27° - 47°)



...for acetabular anteversion  
(Modern safe zone: 18 - 38°)



Safe zone topography varied significantly based on:

- Surgical approach (p = 0.03)
- Sex (p = 0.02)



**Optimal acetabular positioning varies significantly from the historically proposed safe zone values, with increased anteversion providing a decreased dislocation risk**

Redefining the 3D Topography of the Acetabular Safe Zone:  
A Multivariable Study Evaluating Prosthetic Hip Stability

Hevesi et al. (2022) | DOI: 10.2106/JBJS.21.00406

www.jbjs.org |  theJBJS |  @JBJS

