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DESIGN FEATURES THAT REDUCE THE GENERATION OF PARTICULATE DEBRIS FOR CEMENTLESS THA

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Purpose:

To reduce the generation of foreign particulate debris.

Conclusion:

Specific design parameters can reduce or eliminate the generation of particulate debris.

Significance:

The reduction of particulate debris volume can reduce the chances of osteolysis.

Summary of Methods and Results:

There is major concern over osteolysis and its effect on survivalship of total hip implants. Past research has shown a direct relationship between foreign particulate debris and its association with osteolysis and implant loosening.

This paper will review design features that reduce the chances of generating particulate debris. The following areas will be highlighted in this paper:

- Wear Related to Polyethylene
- Wear Related to Acetabular Implants
- Wear Related to Femoral Head Size
- Wear Related to Femoral Head Material
- Wear Related to Modular Parts
- Wear Related to Implant Bone Abrasion
- Wear Related to Third-Body Abrasion

Particular debris and osteolysis are of major concern, and every attempt to reduce the generation of debris should be done. This paper clearly demonstrates specific design features that can have a positive effect in that area.