



Title

HIGH CYCLE WEAR OF HIGHLY CROSSLINKED UHMWPE TIBIAL ARTICULAR SURFACES EVALUATED IN A KNEE WEAR SIMULATOR

Authors

Laurent MP, Yao JQ, Bhambri S, Gilbertson LN, Swarts D, Crowninshield RD, Blanchard CR

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Purpose/Premise

This article reviews testing that was performed to evaluate the wear characteristics of electron-beam crosslinked polyethylene tibial articular surfaces compared to conventional polyethylene.

Material and Methods

Twelve highly crosslinked articular surfaces and six conventional articular surfaces were wear tested to five million cycles. Eight of the highly crosslinked components and four of the conventional components were further tested to 20 million cycles.

Outcomes

The highly crosslinked components exhibited significantly less wear than the conventional components. None of the highly crosslinked components experienced delamination, but one of the conventional components showed extensive delamination.

Conclusion/Recommendation

The highly crosslinked components address both surface wear and the subsurface fatigue that leads to delamination.

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