



Title

**PITTING/DELAMINATION RESISTANCE OF MELT-ANNEALED
HIGHLY CROSSLINKED UHMWPE**

Authors

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Publication

27th Annual Meeting Transactions, Society for Biomaterials. 2001:482

Purpose/Premise

This article reports on a study that was conducted to evaluate the subsurface fatigue wear resistance of electron-beam irradiated and melt-annealed highly crosslinked polyethylene compared to conventional gamma-irradiated polyethylene.

Material and Methods

Samples of both materials were subjected to accelerated aging. The samples were then placed in an articulation with a cobalt-chromium counterface.

Outcomes

The conventional samples showed evidence of delamination after 0.9 million cycles, while the electron-beam irradiated samples did not show evidence of delamination after 1.8 million cycles.

Conclusion/Recommendation

The investigators concluded that the electron-beam irradiated and melt-annealed highly crosslinked polyethylene showed superior resistance to subsurface fatigue wear. Furthermore, they suggested that this results from the material's excellent oxidation resistance.

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