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## Longer Term Follow Up of Compress TKR Fixation

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**Background:** Better, more durable prosthetic fixation is needed. Compliant, compression technology is a novel approach that is being used more frequently with high success rates. This study reports the longest prosthetic follow up to date.

**Methods:** We retrospectively reviewed the Compress® knee replacement prosthesis in 82 consecutive patients 2000-2008. Twenty-five patients were followed for more than 10 years.

**Results:** The implants retained fixation in 74 and lost fixation in 8. Kaplan-Meier analysis of the fixation showed five-year survivorship of 85% and 10-year survivorship over 80%. Fixation was lost early in four patients during chemotherapy and had poor bone ingrowth, with lack of bone ingrowth at the interface, crumbling fractures adjacent to the implant and prosthetic failure in 5 patients (Type I). Significant osteonecrosis was found in most patient at the time of autopsy. Fractures developed remote to the implant in three cases (Type IIA), and a unique intercalary fracture (Type IIB) occurred in two patients when there was partial integration of bone into prosthesis. The prostheses were retained in both cases of Type II bone failures. Intramedullary bone formation straddles the spindle mechanism in over half of the cases

**Conclusion:** Compress fixation has the best survivorship of uncemented distal femoral prostheses, and has unique failure mechanisms.

- Compress fixation is versatile and durable
- 10 year survivorship is 80%
- Novel failure mechanisms were found in these patients
- The significance of Intramedullary bone formation is unknown