Does Greater Knee Flexion Increase Patient Function and Satisfaction after TKA?

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Introduction
Studies of patients following knee replacement have consistently shown that normal knee function is rarely restored by TKA, even though patients want to perform activities that require increased knee flexion. The purpose of this study was to determine whether patient satisfaction and function is affected by the range-of-motion of the knee following TKA, and, if so, whether a minimum threshold is present for satisfactory function from the patient’s perspective.

Materials and Methods
At a minimum of 1 year after primary TKA, 122 patients (M=29, F=93, average age 69yrs), were enrolled in the study with IRB approval. All procedures were performed by the same surgeon using prostheses of a standard design (not high-flexion). Each patient completed a self-administered, validated Knee Function Questionnaire consisting of 55 scaled multiple choice questions examining each patient’s participation in a broad range of activities involving the knee, their level of satisfaction, their functional limitations, and the extent to which TKA had fulfilled their expectations. Patients’ post-operative degree of knee flexion was measured and recorded (average degree of flexion 120°; range 85° to 143°). Patients were then grouped into one of three groups: low flexion (≤110°; n=21), mid flexion (111° to 130°; n=81), or high flexion (>130°; n=20).

Results
There was no correlation between maximum knee flexion and the Knee Society Score.

Greatest satisfaction rates were observed in patients with flexion >130°. However, the overall correlation between knee flexion and satisfaction was not statistically significant (high flexion: 93% satisfied, mid: 73%, low: 74%; p=0.24)

Increased knee flexion was positively associated with meeting patient expectations (high: 94%, mid: 68%, low: 50%; p=0.02), elimination of functional limitations (high: 93%, mid: 50%, low: 52%; p=0.008), and restoration of a knee that “felt normal” (high: 87%, mid: 70%, low: 43%; p=0.01)

Discussion
While the degree of post-operative knee flexion did not affect the overall level of patient satisfaction, it did influence fulfillment of patients’ expectations, their functional ability, and their perception of their knee. This suggests that increased knee flexion, particularly to >130° may lead to improved outcomes after TKA.