A U"knee"Que Solution

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Total knee replacements slip out of alignment over time and need to be realigned using surgical techniques. More than 54,000 revisions are performed each year in the USA alone. The revision surgery has many complications associated with it. To get rid of these unnecessary risks and save time and money, a total knee replacement was developed with the ability to be adjusted remotely and noninvasively. To test the accuracy of the total knee replacement, a prototype was adjusted according to a predetermined number of degrees and its real rotation was measured using a smartphone. The prototype was working with 100% accuracy in all 10 trials. The data demonstrates the new total knee replacement is a practical solution for patients that have to deal with the problems associated with revision surgery. Some further tests include testing the accuracy and the durability of the total knee replacement in a patient.

Awards Won: