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*“DIFFIR: Geriatric Distal Femur: Fixation versus Replacement - A Randomized Controlled Trial of Acute Open Reduction Internal Fixation (ORIF) versus Distal Femur Replacement (DFR)”*

Distal femur fractures (broken bone at the end of the thigh bone, just above the knee joint) are common in elderly patients and may be associated with high rates of complications and death. The way doctors currently decide how to treat these fractures is based on their own experience and technical skills, the complexity of the break, and patient preference. The most common method involves putting the bones back in the correct position and holding them in place with a plate and screws or a metallic rod and allowing the bone to heal. The downsides of this method include a high rate of the bone not healing, healing in a crooked position, developing an infection and the need for repeat surgery. Most patients are not allowed to put weight on the leg for at least 6-12 weeks. This can result in complications such as lung and bladder infections, confusion, and even death. A second option in older patients involves removing the broken pieces of bone and replacing them with an artificial knee joint. While both treatments have been shown to successfully treat these fractures in elderly patients, there has been no study performed to directly compare the two options which one is better patients. Our study seeks to answer this question by performing a large trial comparing knee replacement (group A) with surgical fixation (group B) in elderly patients (65 years of age and older) with this fracture type (distal femur fracture).