

Total Knee Replacements

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Contemporary total knee arthroplasty, which is currently one of the most frequently performed orthopedic procedures, has developed over the past 30 years. Although the goal of TKA is simple, the means of accomplishment are complex as surgeons and engineers strive to design a prosthetic joint that will function like the human knee. Presently the results of total knee replacements "TKA's" are very successful achieving pain relief scores of 95 to 98 percent successful good and excellent results. Through the years there have been many modifications done including changes to the metal and plastic to develop a more anatomic knee replacement.

Most commonly the TKA's are cemented onto the femur, tibia, and patella using a bone cement called "polymethylmethacrylate". This is epoxy glue that is used to bond the metallic implants to the bone. Then there is a molded plastic which will articulate with both the movable metallic components and a plastic button inserted behind the kneecap.

There are "TKA" designs that allow knees to be inserted without bone cement. These non-cemented implants can be used for younger patients, but limited partial weight bearing is needed for approximately six weeks. Approximately 95 to 98 percent of TKA's in the United States are cemented and the remaining are non-cemented.

There are several different models of knee replacements that have evolved over the years, some being thicker plastic parts with a deep dish out surface, some being shallower, and some having deep grooves in which the metal condyles move and track within the plastic. Nowadays, the knee components are modular in which the plastic spacer can snap into a metal tray and different sizes can be selected to custom fit to patient's knees. Currently there are approximately 400,000 to 500,000 total knee replacements performed each year in the United States with a success rate of approximately 92 to 95 percent at 12 to 15 years postoperatively.