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**Arthroscopic and Histologic Analysis of Human Patellar Tendon Autografts Used for ACL Reconstruction.  
Rougraff B, Shelbourne KD: *Am J Sports Med* 21:277-284, 1993**

To evaluate the fate of patellar tendon autografts in humans, the knees of 23 patients who had undergone anterior cruciate ligament reconstruction were examined 2 weeks to 6.5 years postoperatively. Arthroscopy and biopsy were performed on all patients. The patellar tendon autografts progressed through four stages of ligamentization after reconstruction. The first stage of repopulation occurred during the first 2 months and was evidenced by a viable 3-week specimen with an increasing fibroblast number and active nuclear morphology. Over the next 10 months, the graft went through a stage of rapid remodeling in which the fibroblast count increased markedly, the active nuclear morphology and neovascularity remained increased, and more areas of degeneration were present as the percentage of mature collagen decreased. The third stage or "maturation" stage occurred over the next 2 years and was characterized by a slow decline in the nuclei and the maturation of the collagen matrix. By 3 years, the grafts were ligamentous by all histologic criteria. The authors conclude that human autogenous patellar tendon grafts are viable as early as 3 weeks postoperatively and may not go through a necrotic stage. They then progress through a prolonged process of ligamentization that takes as long as 3 years to complete.