

# 22

QUESTION

## DO YOU REHAB YOUR PATELLAR TENDON AUTOGRAFT AND ALLOGRAFT PATIENTS DIFFERENTLY?

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No, the rehabilitation is the same regardless of whether I use patellar tendon autograft or allograft. Many of my patients report less pain initially with allograft reconstruction, but this usually resolves within the first few weeks and after that there is no appreciable difference between the 2 graft sources. This has been validated by several authors who have reported no significant difference in long-term outcomes between anterior cruciate ligament (ACL) reconstructions with patellar tendon autografts and allografts using similar accelerated rehabilitation protocols.<sup>1,2</sup>

The current sterilization techniques for bone-patellar tendon-bone (BTB) allograft tissue are aseptic harvesting, cryopreservation, and gamma radiation with low-dose radiation of less than 3.0 Mrad.<sup>3</sup> These techniques have been shown to be the most effective methods of producing a sterile ACL graft and maximizing structural integrity while minimizing disease transmission and are significant improvements over previous methods of sterilization, which often compromised the structural integrity of the allografts.<sup>4</sup>

The initial graft tensile strength of BTB autograft is 2977 N (Newtons) with a stiffness of 620 N/mm.<sup>5</sup> The strength and stiffness are similar for BTB autografts and allografts that have been sterilized using the previously mentioned techniques.<sup>6</sup> We use interference screws for both the femoral and tibial fixation in a similar fashion for both graft choices. This fixation provides bone-to-bone healing in approximately 6 weeks for autografts. Longer bone-to-bone healing rates of greater than 6 months have been reported due to slower incorporation in allografts.<sup>6,7</sup> There is no evidence that this delay in bone-to-bone healing has any detrimental effect on the strength of the allograft reconstruction.

Both autograft and allograft tissues (Figures 22-1 and 22-2) undergo a process of ligamentization, and both initially decrease in strength and then subsequently undergo gradual increases in strength. This entire revascularization process typically occurs over a 5-month period. By 6 months, both grafts resemble normally oriented connective tissue,

