ACL reconstruction revision with staged bone grafting
Tunnel Positions

- Positioning of the femoral tunnel is the primary factor in maintaining graft isometry.
- Positioning of the tibial tunnel is the primary factor in preventing impingement of the graft against the roof of the intercondylar notch.

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Tunnel Size

• Although no significant correlation between tunnel enlargement and clinical outcomes has currently been reported, tunnel widening may have serious implications for patients requiring ACL revision surgery.

1. Expected immediate post-operative ACL tunnel diameter should be around 10 mm regardless of graft selection.
2. Tunnel widening is generally cavitary, frequently maximal in the mid-zone of the tibial tunnel.
3. One of the main factors associated with tunnel enlargement is malposition of the tibial tunnel, which likely leads to graft micromotion.
4. A two-stage revision involves an initial bone grafting procedure to fill the tunnels, followed at least 3 months later with revision surgery.
5. A tunnel diameter greater than 15 mm will require two-stage surgery when the original tunnels are in anatomic position, while revision with a tunnel diameter of less than 10 mm can be accomplished in a single surgery. Revision of tunnels 10–15 mm differs depending upon tunnel shape, position and the treating surgeon’s preference.
Post tibial tunnel bone grafting
Post ACL reconstruction revision