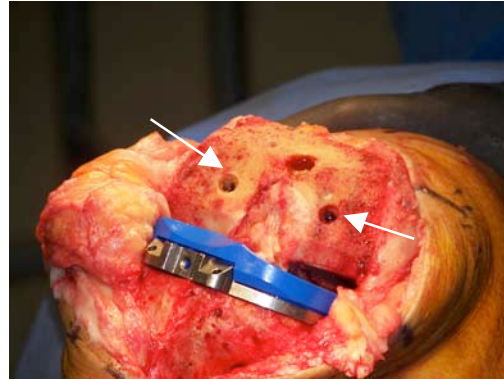


## Surgical Concepts

The following design characteristics of implants are beneficial for bone integration:

- Broad track
- Maximized bone coverages
- Bone-friendly porous-coated baseplates
- Under-drilling pegs/fins (see figure 12)
- No screws



**Figure 12.** Shallow under-drilled peg holes increase tight impaction fit.

Dr. Rosenberg and team have achieved 99% success in bone integration by carefully implementing the following principles:

- Varus/valgus neutral alignment (see Figures 13 & 14)
- Ligaments stable in extension and in flexion
- Optimal ligament tensioning medial to lateral (side to side)
- Proprioceptive function preserved (including PCL)
- Immediate weight bearing
- Maximized bone preservation

Bone integration also requires a good biological response from the patient's own bone. Bone nutrition and supplementation, anti-inflammatory nutrition and the use of the biological (hydroxyapatite) coating on each implant encourage the recipient's bone response. Bone formation drugs such as Fosamax are not recommended and NSAID's like ibuprofen and Celebrex are discouraged because they may inhibit bone formation. Smoking is perhaps the greatest inhibitor of bone formation and therefore most regular smokers are not candidates for bone integration implants.



**Figure 13.** Magnetic alignment guide (TDR design) facilitates precise tibial alignment.



**Figure 14.** Patient post-op at 6 weeks revealing neutral varus/valgus alignment during single-leg stance.