Bone Grafts and Bone Substitutes: Basic Science and Clinical Applications

Provides the latest updates on the major challenges of bridging large bone defects, where options range from autografts, “tissue engineered bone”, biomaterials (hydroxyapatite, polycaprolactone and third generation biomaterials) to prostheses.

Emphasis has been made on bone tissue engineering, the current state-of-the-art in this field, problems encountered with cell culture technology, scaffolds and bone growth factors (including genomics) and the use of gene therapy for the application of bone growth factors. Attention has also been given to the use of bone autografts. The text also covers the use of biomaterials and prostheses as other options for reconstruction. Clinical applications, in addition to the basic science, are also included throughout the discussions.