bone grafts

treatment of non-union or filling large bone defects
ideal properties

• osteogenic
  – inherent capacity to form bone
• osteo-inductive
  – stimulate osteo-progenitor invasion
• osteo-conductive
  – a dead scaffold for bone to form
• biocompatible
  – no immune reaction / rejection
comparison of products

**Osteo-inductive**
- autograft
- allograft
  - fresh
  - frozen
  - freeze dried
- collagen mineral composite (bovine)
  - add bone marrow aspirate
- demineralised bone matrix
- bone morphogenic proteins

**Osteo-conductive**
- corraline hydroxyapatite
  - carrier for bmp
  - CaCO3 from sea coral
- calcium sulphate
  - quick to resorb
- ceramics
  - slow to resorb (highly crystalline)
- calcium sulphate cement
  - vertebroplasty
J. F. Keating, M. M. Mcqueen
Substitutes for autologous bone graft in Orthopaedic trauma, JBJS (Br) 2001, 83-B (1); 3-8