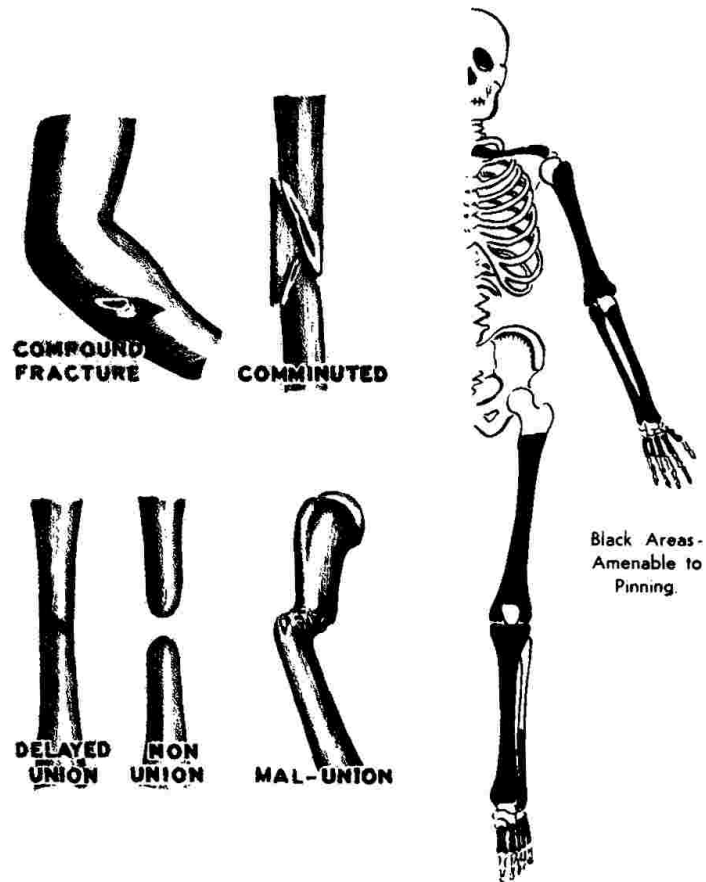


## 2 INDICATIONS FOR PINNING



**The Fractured** extremity presents its own intrinsic forces of muscle pull to produce overlap and angulation. These forces are continuous. The surgeon by instituting intelligent engineering principles can resist these forces in all long bones, even at or near joints to secure stable fixation and early function.

Pinning is less formidable for the patient and the surgeon than marrow nailing. The greater the experience of the surgeon in pinning technics, the broader becomes its field of application.

### GENERAL INDICATIONS

**Children:** On occasions when the deformity warrants surgical interference.

**Aged Patients:** Almost routinely because most fractures can be pinned by closed or semi-open procedures with minimum trauma and shock.

**Fresh Compound Fractures:** Almost routinely as an immediate procedure. Immobilization of the bone lessens the spread of infection. The pin is well tolerated in the presence of infection. Pinning is delayed only in the simplest compound wounds or when the condition of the patient will not permit surgical interference.

**Comminuted, Long Oblique, and Spiral Fractures:** When combined with circular wires. Such fixation is usually stable.

**Delayed Union:** Healing is encouraged by correction of existing angulation and by the force of the muscle pull because the bone can telescope freely upon the pin to cause compression of the bone ends.

**Non-Union:** Stable fixation is usually obtained for graft at the same time permitting active function.

**Mal-Union:** Even near joints.

## Lower Extremity Fractures

1. **Shaft of femur:** One fourth inch curved pin via the greater trochanter or external condyle.

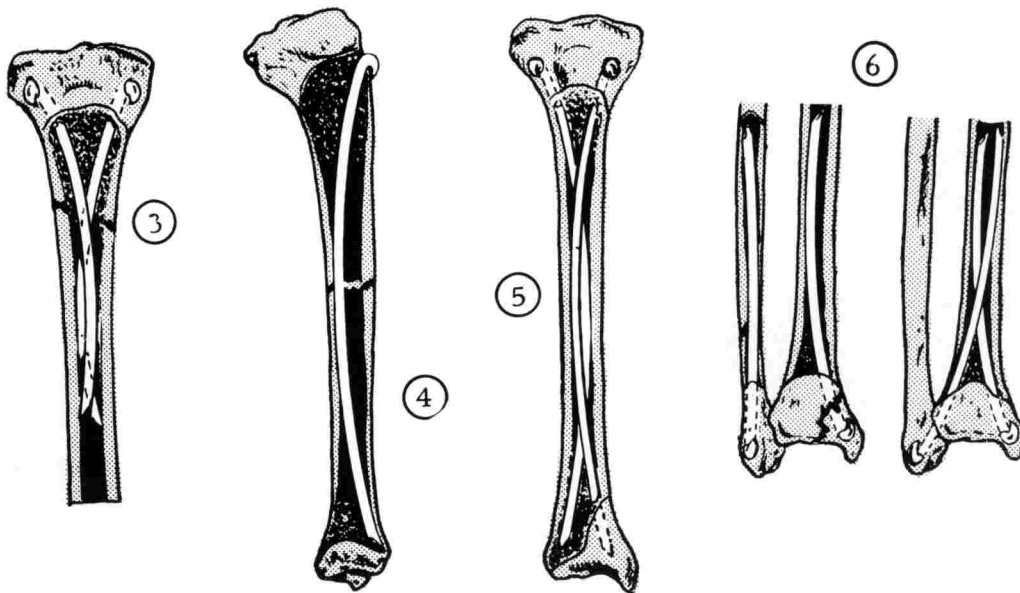
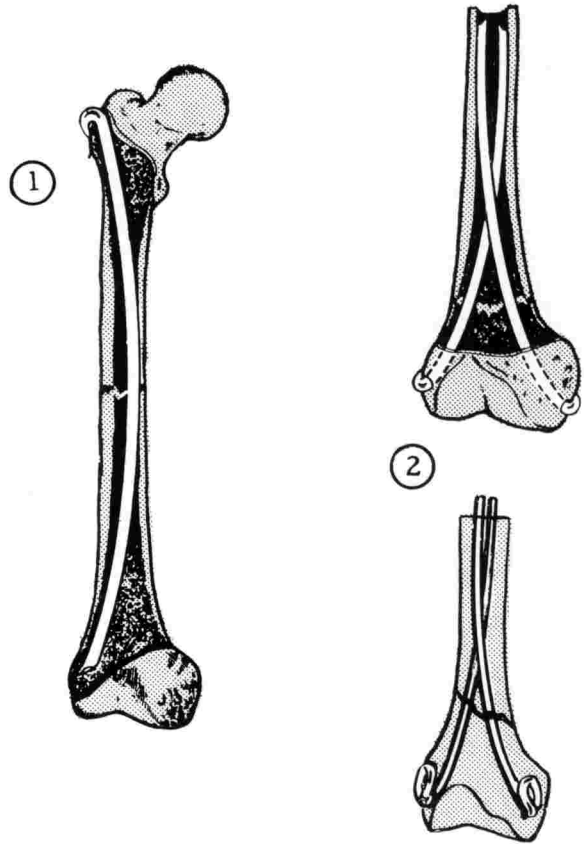
2. **Supracondylar area:** Pins three sixteenths inch diameter via the medial and lateral condyles, respectively. Condyle pins on the elderly.

3. **Upper tibia:** Two pins three sixteenths inch diameter via the condyles.

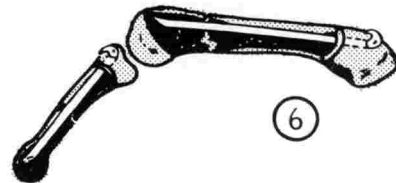
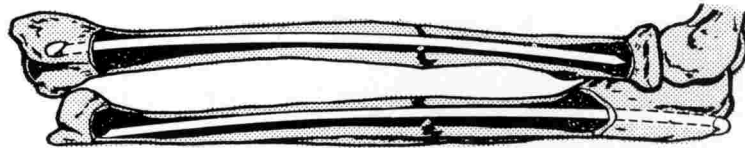
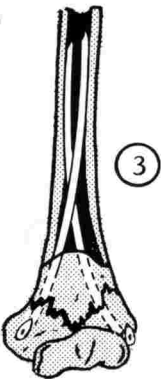
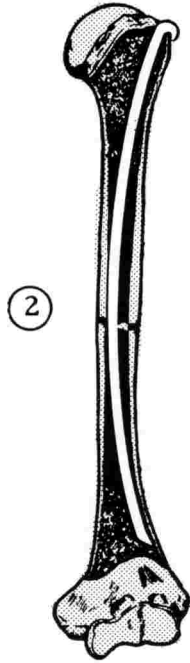
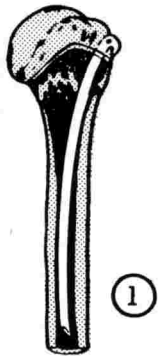
4. **Tibia shaft:** Curved one fourth inch pin.

5. **Tibia shaft (comminuted):** Double pinning, pins three sixteenths inch diameter.

6. **Ankle:** Pins one eighth inch diameter.



## Upper Extremity Fractures



**1. Neck of humerus:** Three sixteenths inch pin via the greater tuberosity.

**2. Humerus shaft:** Curved one fourth inch pin via great tuberosity. Most adults will accommodate a pin of this diameter.

**3. Condyles humerus:** Pins one-eighth inch diameter.

**4. Radius and ulna shafts:** Pins one-eighth inch diameter.

**5. Colles fracture:** One eighth inch pin introduced through tip of styloid process. Can be surprisingly effective.

**6. Metacarpals:** Curved pin three-thirtyseconds inch diameter via proximal end. Fingers best fixed by Kirschner wire.