Goal of Fracture Treatment: To achieve bone healing and restore the function of the injured limb in the shortest possible time without compromising safety.

Ideal environment for fracture healing: Low strain, No shear.

Fracture patterns amenable for Lag screws /Miniplates: Simple or Wedge.

Benefits of Locking Plate:
- Increased rigidity in Osteoporotic bone.
- Fixation of short epiphyseal fragments with limited length/points for stable fixation.
- Biological Fixation (Bridging – MIPO).
- Longer time before failure of fixation = Longer fatigue life.

LAG SCREWS

Goal of a Lag screw:
- Achieve stability by Compression across fracture site (Neutralization plate).
- Improve stability by Approximation (Bridging plate).

Decide on Healing response to be achieved:
- Primary/Direct vs. Secondary/Indirect healing.
- Primary: Anatomic reduction, Absolute stability, Neutralization plate (lag screw).

Epiphyseal: Primary.
Diaphyseal/Metaphyseal: Secondary.

Simple Fracture - Bridge Plating
- Pitfall: Do NOT change (i.e. NOT shorten) the plate length.

Do you need a Locking plate when you have Lag screw(s) in simple fx pattern?
- NO if ORIF (Anatomic reduction).
– **YES** if you are using the locking plate because of severe osteoporosis or small fragment or CR/MIPO (nonanatomic reduction)

**MINIPLATES**

☐ Goal when you use miniplates?
  – Aid of Reduction (length, rotation, angulation) Putting the puzzle together
  – Provisional fixation

☐ Miniplates: Leave it or Remove it?
  – LEAVE it on
    – If reduction may get compromised with removal
    – If provides additional stability
  – REMOVE
    – Mechanically problematic (cannot compress across)

☐ Location
  – under the definitive plate
  – 90 degrees, opposite

☐ Size: Thickness & length
  – 2.3 mm miniplate with 4.5/5.0 mm plate
  – 2.7 mm plate with 3.5 mm plate

References:
