The Principles of Casting

Aims: The cast should Look Good, Feel Good, and hold a proper Immobilization.
Obtain reduction, Maintain fixation and Retain function.

World Class: Thin but Strong, no Depressions, Snug but not Tight

Enemies: Too much Padding. The cast is Too Long or too Short, Tensor Bandages

Complications:
~Nerve or Circulatory Compromise due to post reduction, or Post-Op SWELLING! ie Compartment Syndrome
~Casts that Slide Off!!
~Ulceration and Pressure Areas (caused by ridges, edges, finger points, rubbing inside, loose cast or clonus)
~Fracture Blisters
~Other post-op issues, such as infection.

Teaching: Utmost importance, Written and Verbal!!
Keep the cast clean and Dry—NO Water, Keep it elevated—Higher Than The Heart!!
Exercise the toes or fingers A LOT!!
Observe for problems in the digits!! Severe Pain, Numbness, tingling or burning, Swelling, Ice cold, Blue, purple or white nail beds (should be pink—no nail polish on either side so a comparison can be made. No rings.
Do not stick anything under the cast for scratching—can be very dangerous!
Use a blow dryer on COOL setting only for relief or drying of a damp cast (ie sweat)
Types of Casts and Splints

Materials: Plaster of Paris—in rolls or slabs
Synthetic fiberglass or similar or Slabs of this Material
Synthetic Softcast, semi-rigid

Slabs, half casts or splints are all the same thing, usually used in Emergency or Post op. Usually plaster is used. If the splint is to be made removable then fiberglass is best.

Styles of Circular Casts: Short Arm, Long Arm, Thumb Spica (Scaphoid), Ulnar Gutter, Below the Knee, Long Leg, Patellar Tendon Bearing, Cylinder, Hinged, Hip Spica, Shoulder Spica, Bodycast, DDH

Styles of Slabs—Volar or Dorsal Short Arm, Long Arm, Short Leg, Long Leg, Ulnar Gutter, Thumb Spica, and Humeral are the most common. There are variations.

A Few Factors

A cast or splint is a case to support and Immobilize an injured body part—no tension upon application.

Plaster of Paris is better too thick than too thin—it will break.

Usual treatment is to immobilize the joint above and the one below the injured part—often not adhered to---if in doubt go longer!! Leave MCPs free and proximally 1 inch or so from antecubital and from tibial tuberosity in BKs

The temperature of the water and length of time the material is immersed are the factors that contribute to the setting time.

Leave time to mold the cast—to fit perfectly!!

P.O.P. hardens quickly but takes 24-48 hours to dry. Synthetics also harden quickly but are fully dry in 20 minutes. The materials are exothermic.

It is easier to prevent a pressure sore than to heal one!!