

Figure 35-1. Resting hand splint.



Figure 35-2. Serial static splint.



Figure 35-3. Serial static splint.

to apply force at the new end-range position to achieve greater ROM. Remolding of the splint is not required. An example of static progressive splinting to increase ROM is shown in Figure 35-4.

- Dynamic splints provide one or more of the following: increase passive range of motion (PROM), assist with active range of motion (AROM), or substitute for lost motion. A dynamic splint usually has a static base upon which a moveable component has been added. The moveable component may consist of elastic, rubber bands, or springs. An example of a dynamic splint is shown in Figure 35-5.

PRINCIPLES OF SPLINTING

Hand Function

Hand function is dependent upon the interplay between bony structures, muscles and ligaments, blood supply, nerve supply, and mobility of the skin. The hand and wrist complex contains 27 bones. The hand complex consists of 19 joints and 19 bones distal to the carpals. The hand consists of 5 digits: 4 fingers and 1 thumb. Each digit has a carpometacarpal (CMC) joint and a metacarpophalangeal (MCP) joint. The fingers also have 2 interphalangeal joints,

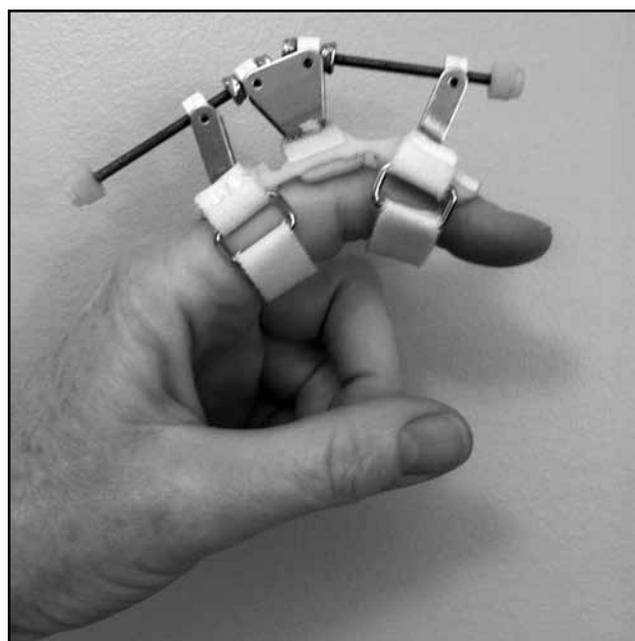


Figure 35-4. Static progressive splint.

while the thumb has one. The function of the CMC joints of the fingers is to allow cupping of the palm. The palmar arches allow the hand to conform to the shape of the object being held. The MCP joints, carpal joints, and associated muscles and ligaments form the palmar arches. They can be visualized across the width of the palm and down the length of the palm (Figure 35-6). The palmar arches also allow the fingers to be positioned for prehension activities (Levangie & Norkin, 2001).

Prehension involves the grasping or holding of an object between any 2 surfaces of the hand. There are infinite grip combinations, but research has identified classifications for various grips. A simple way to conceptualize grips is to consider either a power grip or precision handling. Power