

Hand Therapy

*Evidenced Based Evaluation and
Splinting* 询证评估及支具使用

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Objectives 目标

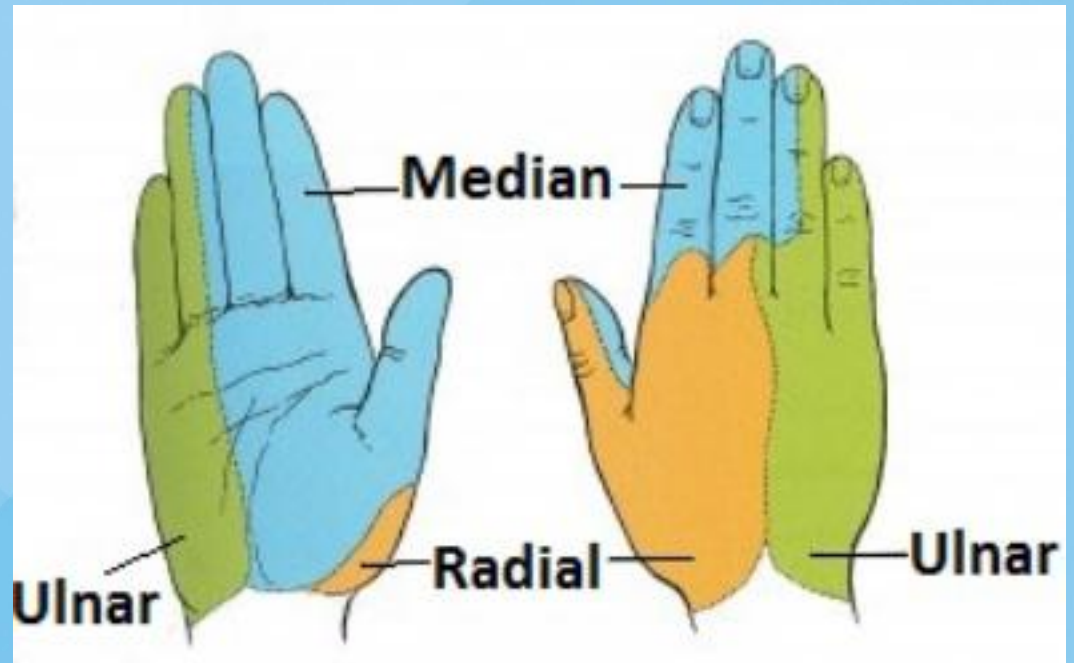
- Understand and identify common hand therapy evaluation techniques
• 理解和辨别常见手功能治疗的评估技术
- Identify types of splints for wrist, thumb, hand, fingers, and tendon injuries.
• 辨识对于手腕、拇指、手、手指以及肌腱损伤所设计的不同类型的支具
- Understand wearing schedule for splints for wrist, thumb, hand, fingers, and tendon injuries.
• 理解对于手腕、拇指、手、手指以及肌腱损伤所设计的不同类型的支具使用周期
- Understand materials needed for splints.
• 理解支具所需要的材料
- Understand assessment of patient for splints.
• 理解使用支具前的评估手段及方法

Hand Therapy Evaluation 手功能评估

- Range of motion 关节活动度
- Strength 力量
- Coordination 协调
- Sensation 感觉

Hand Therapy Evaluation 手功能治疗评估

- Hand Innervation 手上的神经分布
 - Median 正中神经
 - Radial 桡神经
 - Ulnar 尺神经



<https://pcpaedia.wikispaces.com/Hand+Examination>

Hand Therapy Evaluation 手治疗评估

- Range of motion
 - Goniometric measurements
 - Active/passive movement
- Coordination
 - Opposition
 - Speed
 - Bilateral integration
- Strength
 - Manual Muscle testing
 - Grip strength
- Sensation
 - Stereognosis
 - Monofilament testing
- 活动范围
 - 角度测量
 - 主动/被动活动
- 协调
 - 对比
 - 速度
 - 双边一体化
- 强度
 - 徒手肌肉评定
 - 握力
- 感觉
 - 实体辨别
 - 单丝测试

Types of Splinting 夹板的种类

- Splints Acting on the Wrist
- Thumb Immobilization Splints
- Hand Immobilizations Splints
- Splinting for the Fingers
- Splinting for Tendon Injuries
- 手腕上的夹板
- 拇指固定夹板
- 手固定夹板
- 手指夹板
- 肌腱损伤夹板

Splinting Materials 夹板材料

- Thermoplastic Splinting Materials • 热塑性夹板材料
- Splint Patterns • 夹板模式
- Utility Knife • 工具刀
- Electric Fry Pan • 电煎锅
- Scissors • 剪刀
- Heat Gun • 热枪
- Strapping and Velcro • 捆带和魔术贴
- Padding • 衬垫

Evaluate the Patient 对病人的评估

- Pain
- Skin – wound
- Range of Motion
- Strength
- Sensation
- Function
- Hand Dominance
- 疼痛
- 皮肤-伤口
- 关节活动度
- 肌力
- 感觉
- 功能
- 优势手

Documentation 记录

- Order from Doctor 医嘱
- Diagnosis 诊断
- Type of splint 夹板类型
- Position of splint 夹板位置
- Timing for splint wear 夹板穿戴时间

Documentation 记录

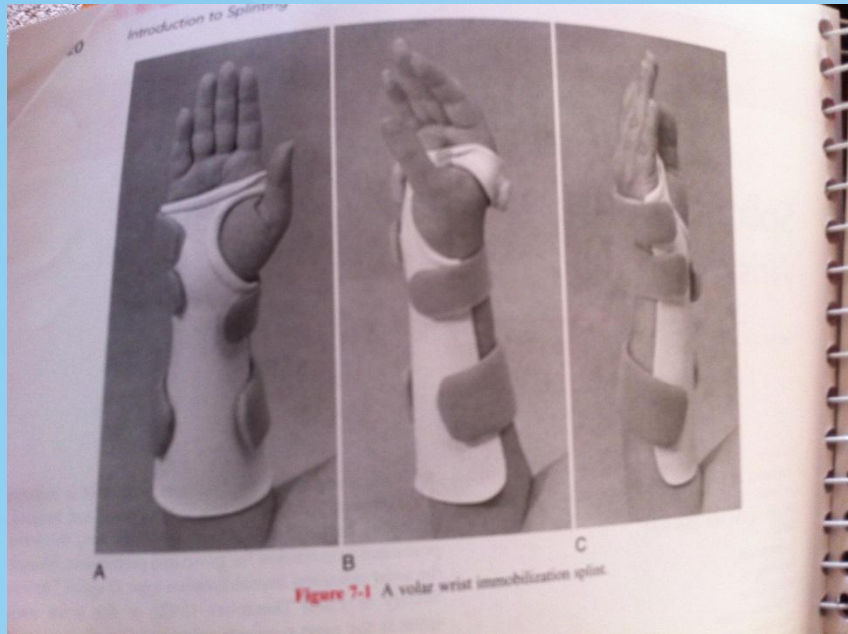
Splint Wearing Schedule 夹板穿戴计划

- Day, night or both 白天、夜晚或 **24**小时
- Purpose of the splint 夹板使用目的
- Patient need to do exercise 患者需要锻炼
- Does the patient need help applying the splint 患者穿戴夹板时，是否需要帮助？

Splints Acting on the Wrist 作用于腕部的夹板

- Volar Wrist

Immobilization Splint
腕部掌侧制动夹板



- Dorsal Wrist

Immobilization Splint
腕部掌侧制动夹板



Splints Acting on the Wrist 作用于腕部的夹板

- Ulnar Wrist Immobilization Splint
腕部尺侧制动夹板



- Circumferential Immobilization Splint
环绕型制动夹板



Splints Acting on the Wrist

Condition	Wearing Schedule	Splint
Carpal Tunnel Syndrome	Day/Night/Continuous 4-6 weeks	Volar, dorsal, or ulnar Wrist in neutral
Carpal Tunnel Surgery	Varies Continuous 1 week and then decrease	Volar Wrist in neutral or slightly extended position
Radial Nerve Palsy	Wrist immobilization in functional position	Volar or dorsal, 15 to 30 degrees of wrist extension
Tendinitis	Splint continuously followed with removal for ROM exercises	Volar or dorsal, 20 to 30 degrees of wrist extension
Arthritis	Splint continuously with removal for ROM exercises	Volar in extension up to 30 degrees
Wrist Fracture	Splint after removal of cast and remove splint for functional movement	Dorsal, volar, or circumferential with extension up to 30 degrees

佩戴腕关节支具

诊断	佩戴时长	支具
腕管综合征	昼/夜/连续 4-6周	手掌，手背或尺侧腕关节保护支具 腕部中立位
腕管综合征	依具体情况而变化 持续佩戴一周然后 减少佩戴时间	手掌侧腕关节保护支具 手腕保持中立位或轻微外展位
桡神经麻痹	手腕保持中立位	手掌，手背腕关节保护支具 腕关节外展15-30度
肌腱炎	在进行关节活动度锻炼时取下支具	手掌，手背腕关节保护支具 腕关节外展20-30度
关节炎	在进行关节活动度锻炼时取下支具	手掌腕关节保护支具 腕关节外展最大30度
腕部骨折	在脱模后和功能训练时取下支具	手掌，手背腕关节保护支具 或圆周夹板 腕关节外展最大30度

Thumb Immobilization Splints

- Long Forearm-based Splint
- 前臂型支具



- Hand-based Splint
- 手掌型支具



Thumb Immobilization Splints

Condition	Wearing Schedule	Splint
de Quervain's tenosynovitis	Continuous	Long forearm-based Wrist 15 degrees extension, CMC joint palmarly abducted 40-45 degrees, thumb MCP 5- 10 degrees flexion
Arthritis	Continuous during pain and inflammation	Long forearm-based Wrist 20-30 degrees extension, CMC joint palmarly abducted 45 degrees thumb MCP 5 degrees flexion
Traumatic Injury	Continuous for 4-5 weeks	Hand-based Thumb MCP immobilized and the CMC palmarly abducted 30-40 degrees

拇指固定支具

诊断	佩戴时长	支具
狭窄性腱鞘炎	持续佩戴	前臂支撑型支具 腕关节外展15度, 腕掌关节屈曲40-45度 拇指掌指关节屈曲5-10度
关节炎	在疼痛期间持续佩戴	前臂支撑型支具 腕关节外展20-30度 腕掌关节屈曲45度 拇指掌指关节屈曲5度
外伤	持续佩戴4-5周	手掌型支具 固定拇指掌指关节 拇指腕掌关节屈曲40度

Hand Immobilization Splints 手固定支具

- 手掌休息位支具
- Volar Resting Hand Splint



Hand Immobilization Splints

Condition	Wearing Schedule	Splint
Arthritis	Continuous during flare up	Wrist neutral or 20-30 degrees extension, MCPs 15-20 degrees flexion, Ulnar deviation 5-10 degrees
Burns	Worn at all times except for during OT	Wrist 0 degrees for dorsal burn – 30-40 degrees extension for volar burn, MCPs 70-90 degrees flexion, PIP and DIPs full extension, thumb palmer abduction and extension
Dupuytren's Disease	Continuous after surgery then worn at night	Wrist neutral, MCP, PIP and DIPs full extension
Trauma	Continuous after surgery then worn at night	Wrist 0-30 degrees extension, MCPs 60-80 degrees flexion, PIP and DIPs full extension

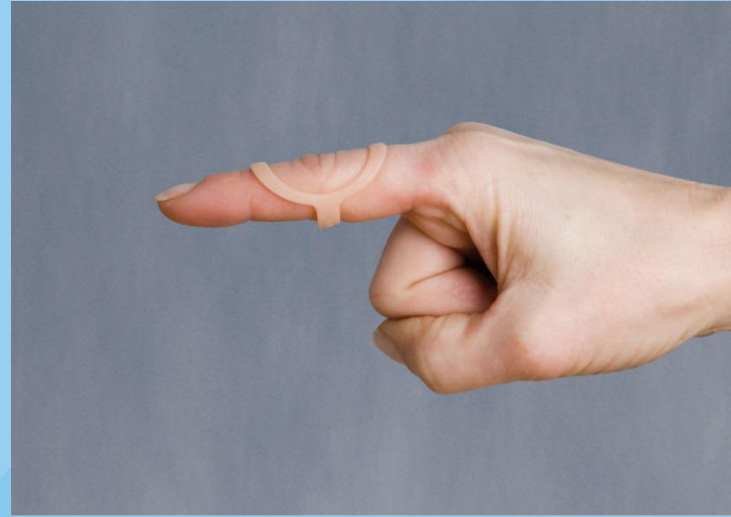
手固定夹板

条件	穿戴计划	夹板
关节炎	持续穿戴	手腕正中或20-30度伸展，掌指关节15-20度屈曲，尺侧偏移5-10度。
烧伤	除在OT期间外，任何时候都要穿戴	背侧灼伤手腕0度 - 掌侧灼伤30-40度延伸，掌指关节70-90度屈曲，近端指间关节和远端指间关节完全伸展，拇指掌侧外展和伸展。
Dupuytren病	手术后持续穿戴，在晚上穿	手腕正中，掌指关节，近端指间关节和远端指间关节完全伸展。
创伤	手术后持续穿戴，在晚上穿	腕部0-30度延伸，掌指关节60-80度屈曲，近端指间关节和远端指间关节完全伸展。

Splinting for the Fingers.

- Finger Extension Splint 手指扩展夹板

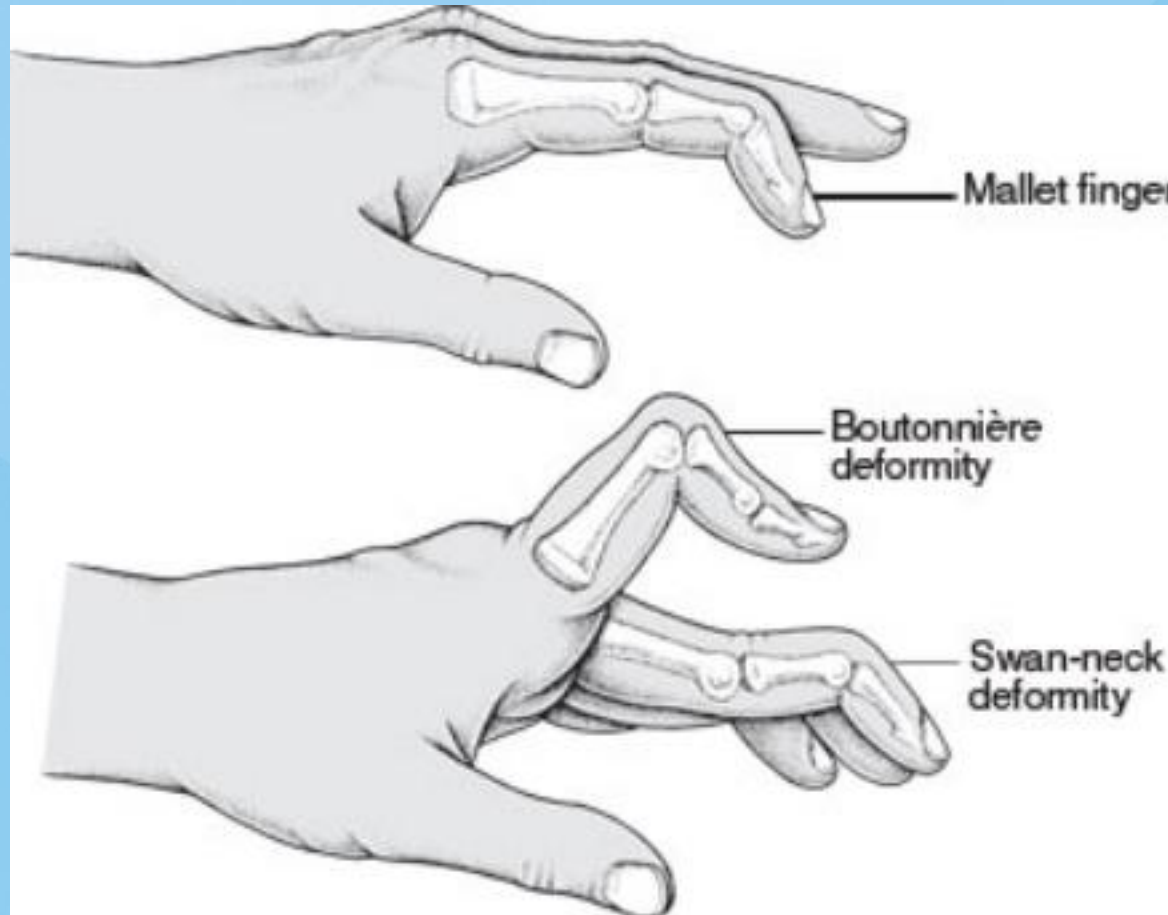
- PIP Hyperextension block
- 近端指间关节过伸



Gutter Splint



Finger Deformities 手指畸形



槌状指

钮孔状畸形

鹅颈畸形

Splinting for the Fingers

Condition	Wearing Schedule	Splint
Mallet Finger	Continuous 6 weeks	Gutter splint DIP neutral
Boutonniere Deformity	Continuous 6-8 weeks	Finger extension splint PIP neutral
Swan Neck Deformity	Continuous	PIP hyperextension block PIP slight flexion
Finger Sprain	Continuous 2-4 weeks	Immobilize joint in full extension Buddy taping

手指夹板

条件	穿戴计划	夹板
槌状指	持续6周	Gutter 夹板 远端指间关节正中
钮孔状畸形	持续6-8周	手指伸展夹板 近端指间关节正中
鹅颈畸形	持续	近端指间关节过伸 近端指间关节轻微屈曲
手指扭伤	持续2-4周	完全伸直固定关节 Buddy taping

Splinting for Tendon Injuries

用于肌腱损伤的夹板

Flexor Tendon

- Dorsal splint
- Wrist flexion 30-45 degrees
- MCPs flexion 50-70 degrees
- IPs flexion 10-20 degrees

屈肌腱

- 背侧板
- 腕关节屈曲30-45度
- 掌指关节屈曲50-70度
- 指间关节屈曲10-20度

Splinting for Tendon Injuries

用于肌腱损伤的夹板

Extensor Tendon

- Volar splint
- Wrist extension 20 degrees
- MCPs 10-15 degrees flexion
- IPs neutral

伸肌腱

- 掌侧夹板
- 腕关节伸展20度
- 掌指关节屈曲10-15度
- 指间关节中立位

Splinting for Tendon Injuries

- Flexor Tendon 屈肌腱



- Extensor Tendon 伸肌腱



References

- Coppard, B.M., & Lohman, H. (2015) *Splinting A Clinical Reasoning & Problem-Solving Approach*. St. Louis: Mosby, Inc.
- Vining Radomski, M. & Trombly Latham, C. A. (2008). *Occupational Therapy for Physical Dysfunction* (6th ed). Baltimore, MD: Lippincott Williams & Wilkins.