

The background of the slide features a light blue gradient with a faint, vertical image of classical columns on the left side. The main title is centered in a yellow rectangular box.

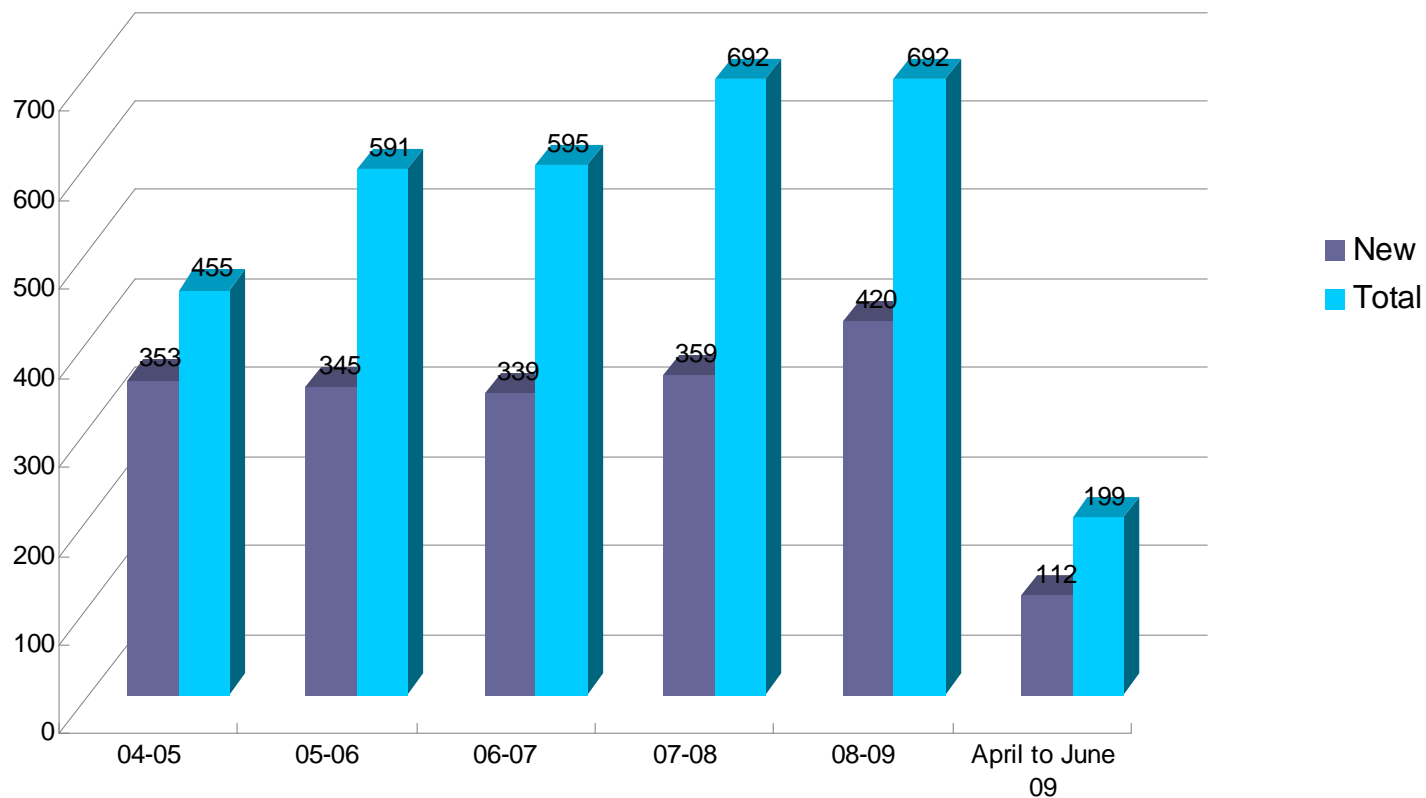
# **Occupational Therapy Support to A & E Service**

*August, 2009*

**Department of Occupational Therapy  
Queen Elizabeth Hospital**

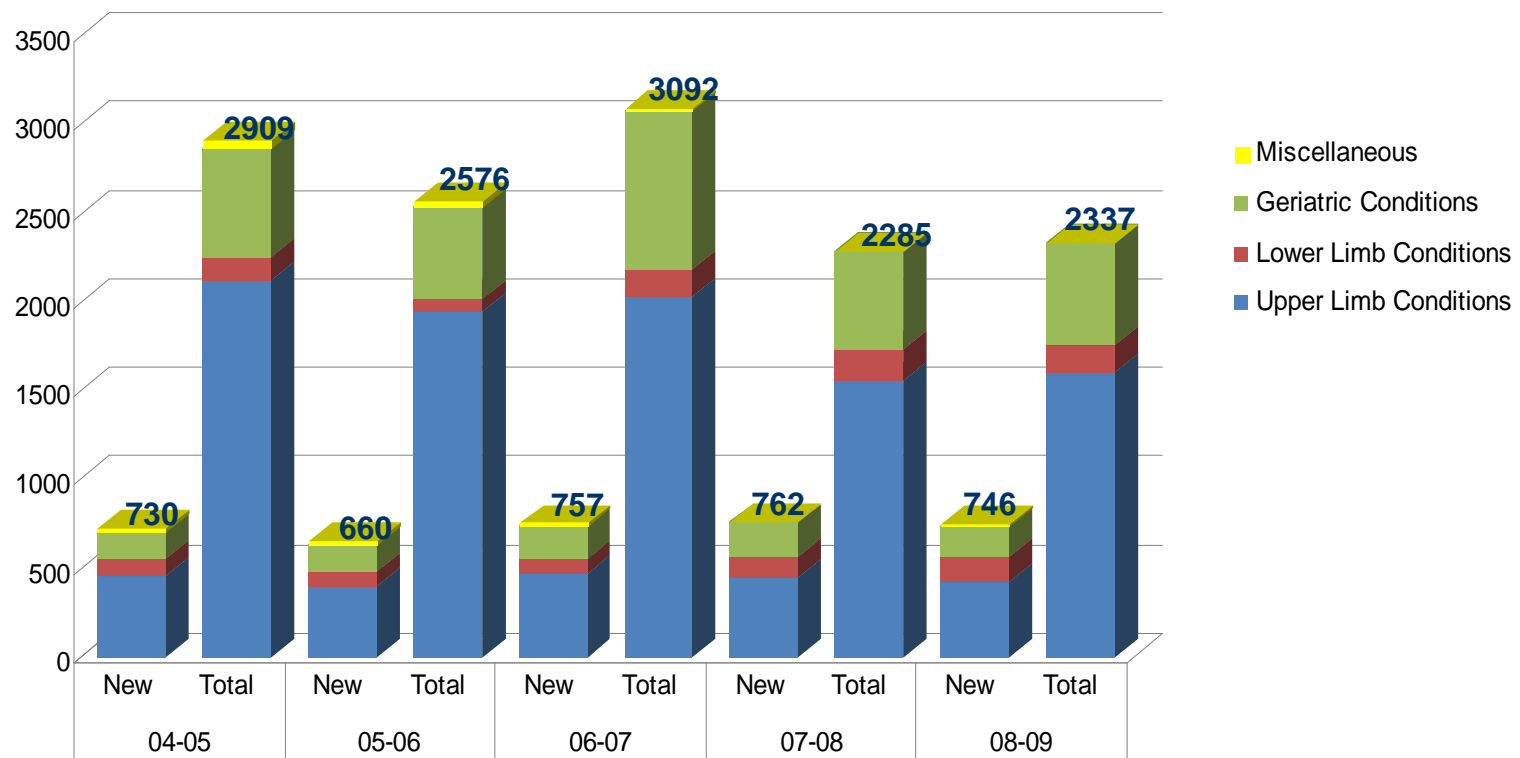
# Service Profile – QEH

A&E In-patient Statistics (2004 - 2009)



# Service Profile – QEH

A&E Out-patient Statistics (2004 - 2009)



## Geriatric

- Upper limb injuries due to fall (in or outdoor)
- mostly, #greater tuberosity, # neck of humerus, shoulder dislocation, # distal radius, hand #,etc

## Upper limb condition

- IOD, Domestic injury, Sport injury
- #, sprained, dislocation

## Lower limb condition

- Mainly, Domestic injury
- Sprained ankle, # metatarsal, # toe



# Focus

## Acute Management

- Fracture condition
- Soft tissue condition

## Supportive early intervention & Discharge for Elderly

## Rehabilitation service

## In-patient

### Observation Ward

- Provision of Splintage
- Screening for Home Safety

## Out-patient

- Follow-up on Splintage Program
- Mobilization Program
- Strengthening Program
- Work Hardening Program

The background of the slide features a faded image of classical architectural columns on the left side. The main content area is a light blue rectangle with a white border, containing three colored boxes with text.

**Acute Management**

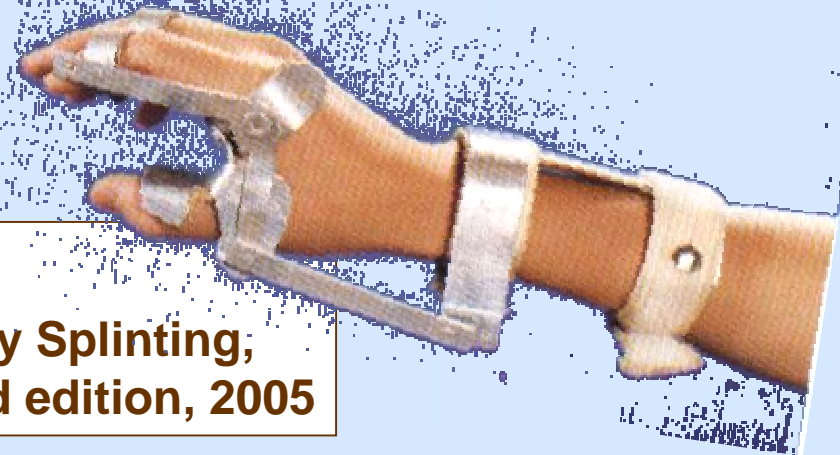
**Rehabilitation service**

**Supportive early  
intervention & Discharge  
for Elderly**

**Splint, brace, and orthosis are often used interchangeably, and support is a synonym for all three terms.**

**Elaine Ewing Fess**

**Hand and Upper Extremity Splinting,  
Principles & methods, 3rd edition, 2005**



**Splint** as “rigid or flexible material (as wood, metal, plaster, fabric, or adhesive tape) used to protect, immobilize, or restrict motion in a part”

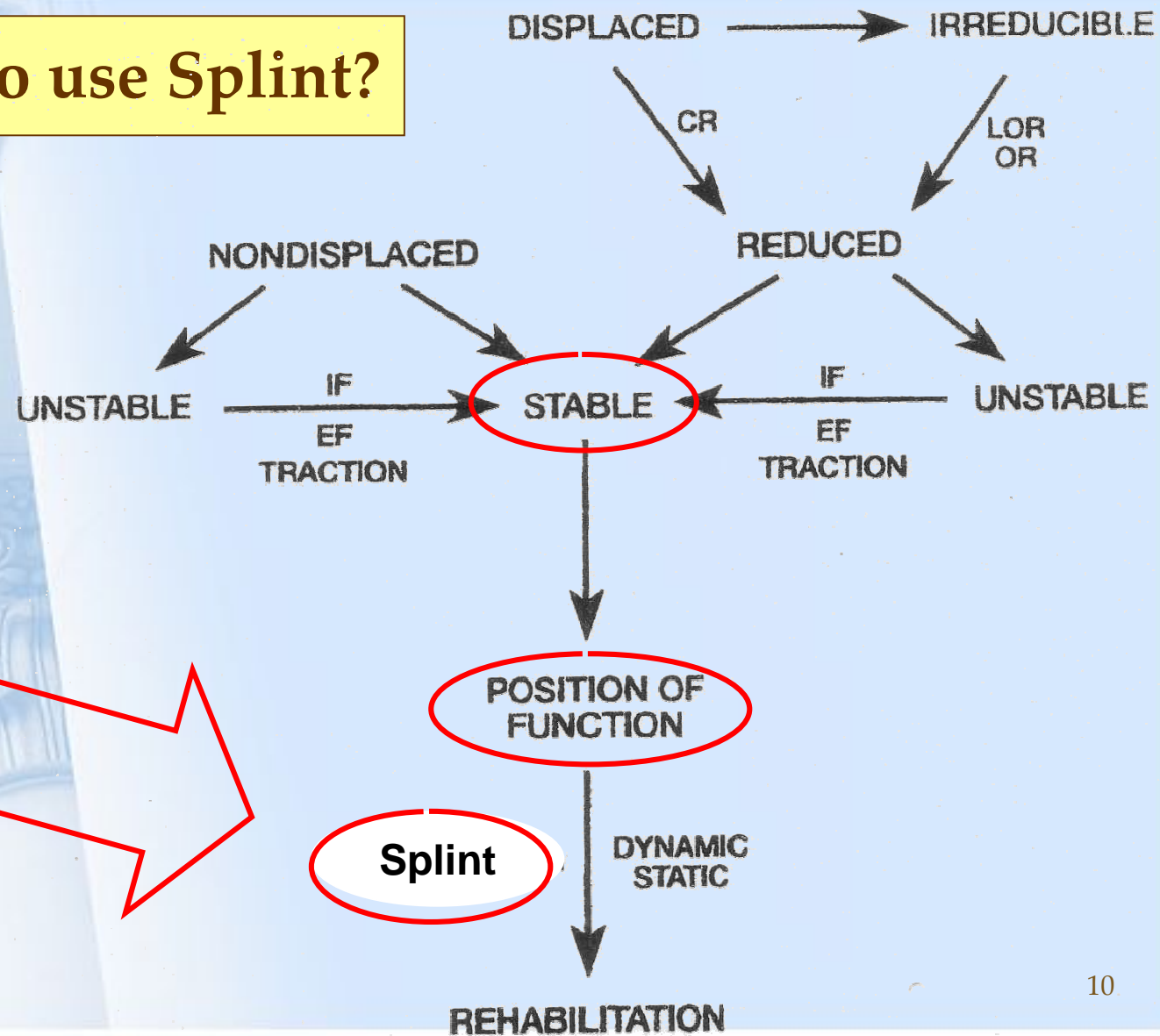
To splint is “to immobilize (as broken bone) with a splint; to support or brace with or as if with a splint; to protect against pain by reducing motion.

**Webster’s Third International Dictionary**

# Fracture management principle

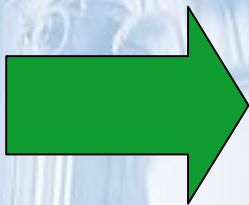
- Well-alignment
- Bone healing
- Soft tissues gliding (no adhesion)
- Good function

## When to use Splint?



## Working Principle for Splinting

- # should be stable
- Immobilize the involved part only
- One joint above & One joint below



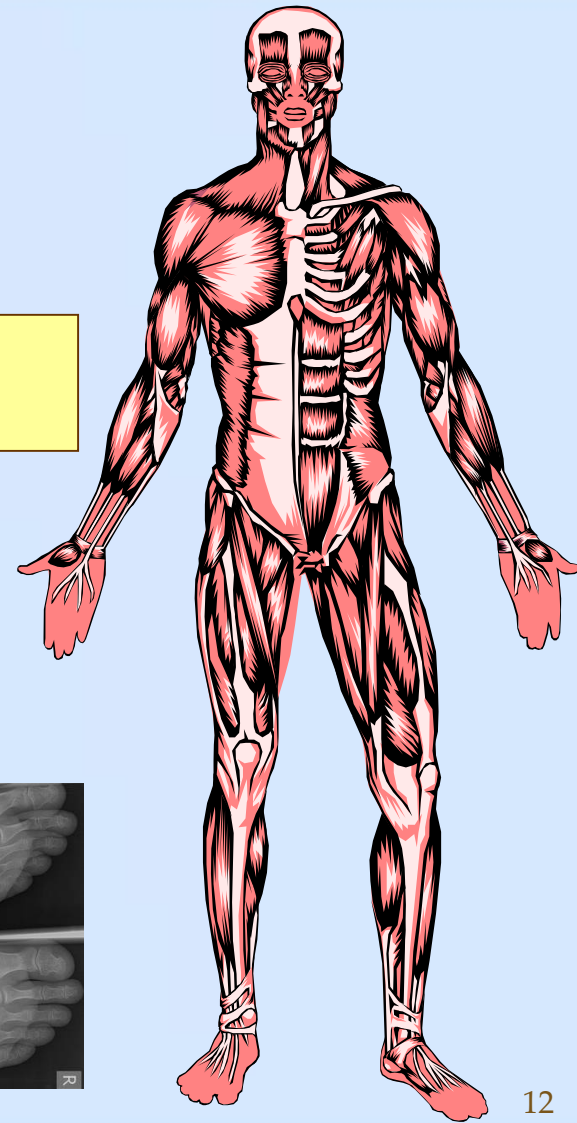
1. Check X- ray
2. Details history taking
3. Checking on the involved part, watch out for swelling and bruising





## Upper Limb fracture

## Lower Limb fracture





## Upper Arm region

- Clavicle
- Hummers
- Elbow



Collar & Cuff



Arm Sling

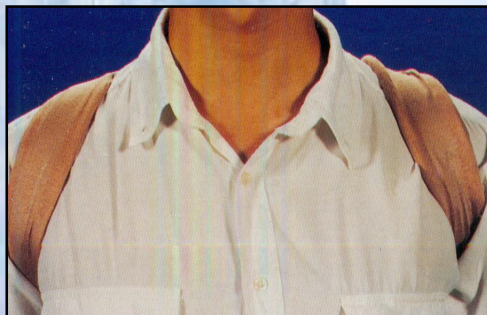


Figure of Eight



Shoulder Immobilizer

## Forearm region

- Radius
- Ulna
- Mid shaft
- More complicated
- Splint will be used only on simple and stable case



**Elbow splint  
with forearm immobilized**

## Wrist region

- Radius
- Ulna
- Carpal bone
- Simple and Stable  
➔ Splint



Scaphoid Brace

Wrist Brace



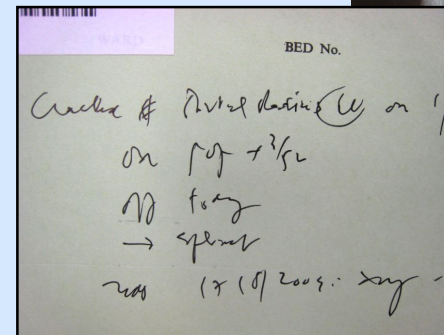
Cock-up Splint





## Wrist region

- Radius
- Ulna
  - More unstable
  - Splint after POP off



Wrist Brace



Wrist Brace for  
Colle's #

## Hand region

- Metacarpal bone
- Phalanges



**Short metacarpal Brace**



**Long metacarpal Brace**

# Proximal Phalanges



**Free IP jt**



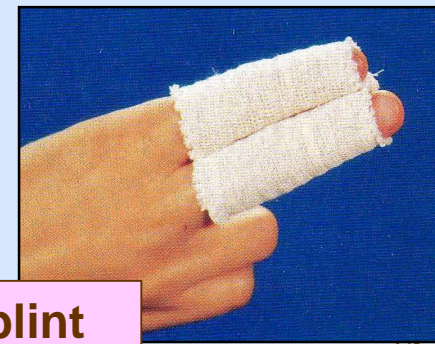
**Hand resting  
Splint**



**Palmar-base finger Splint**



**Buddy Splint**

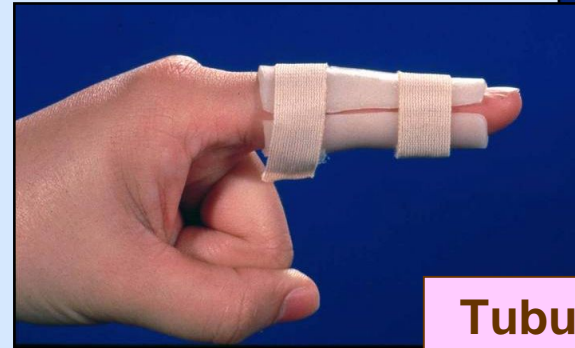




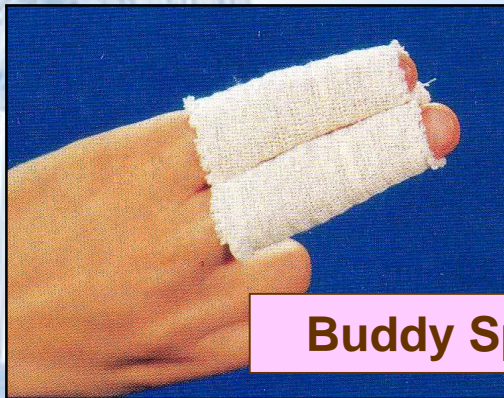
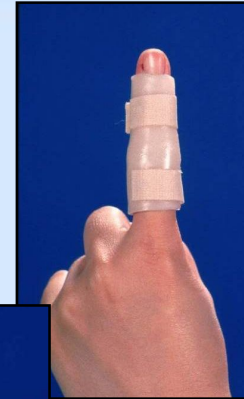
# Middle & Distal Phalanges



**Buddy Strap**



**Tubular Finger Splint**



**Buddy Splint**



**Finger Splint**

# Lower Limb Fracture

- Patella
- Metatarsal
- Phalanges



Soft Knee brace



Tarsal-based Toe Splint



Toe Splint



Ankle Splint

Toe's Buddy





The background of the slide features a faint, blue-tinted image of classical architectural columns, likely from a Greek or Roman temple, positioned on the left side. The rest of the background is a solid light blue color.

## **Soft Tissue Injury**

- **Simple Tendon Rupture**
- **Sprained Condition**
- **Dislocation and Subluxation Condition**
- **CTD Condition**

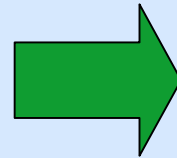
# Simple Tendon Rupture

## Mallet finger injury

- Closed type
- Opened type

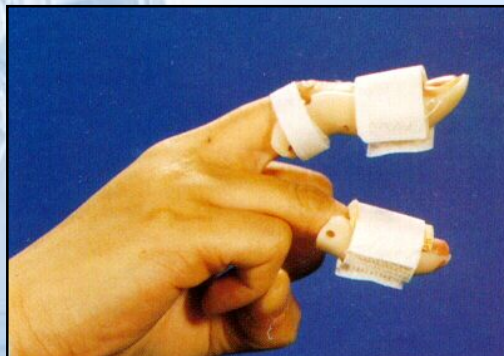
## Central Slip injury

- Closed type
- Opened type



## Tendon Rehabilitation Program

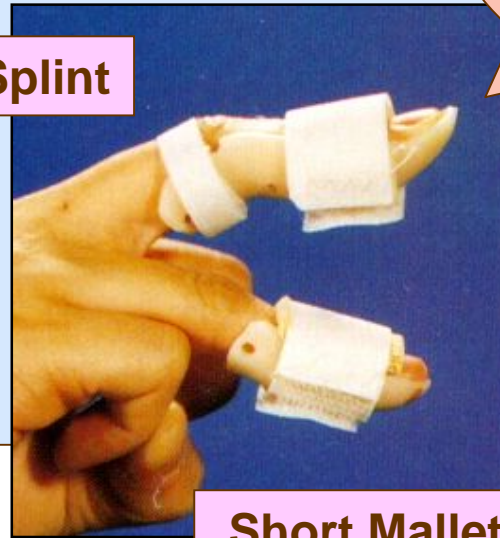
**Specific program**



# Extensor Tendon Program – Zone I & II Rehabilitation

## Long Mallet Finger Splint

PIP jt. + DIP jt.



Don't mix up  
with finger  
splint

## Close Injury

### Mallet finger splint

- hyperextension of DIP joint
- Total 6 wk for 24 hr. splintage
- Then 2 wk more for night splint

## Short Mallet Finger Splint

DIP jt. only

## **Extensor Tendon Program – Zone III Rehabilitation**

### **D0 - D42**

- **Capener splint**
- **Allow active flexion, passive ext. by coil**
  - **D15 - D28: 30°**
  - **D29 - D42: 60° to 90°**
- **Night time: Static finger splint**



**Capener Splint**

## Sprained Condition

- Neck
- Back
- Finger
- Thumb
- Wrist
- Ankle



**Soft Neck Collar**



**Jaw Support**



**Corset**



# Dislocation & Subluxation

- Shoulder jt
- Finger jt
- Thumb, MCP jt.



**Finger Stall**



**Buddy Splint**



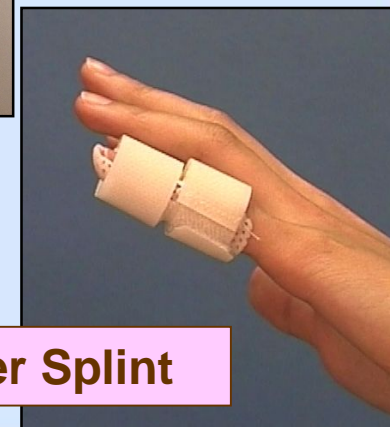
**Triple Finger Stall**



**Soft Thumb Splint**



**Thumb Spica**



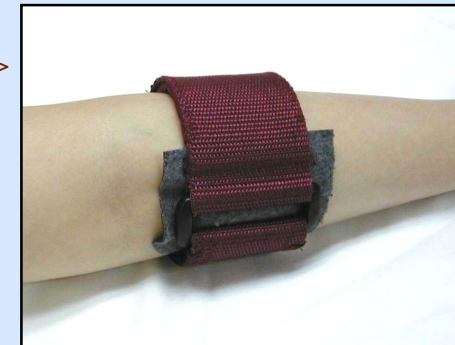
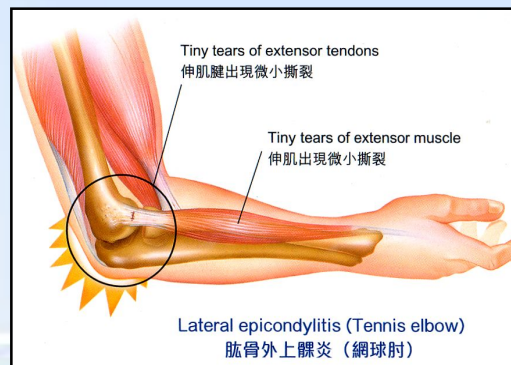
**Finger Splint**

# Cumulative Trauma Disorder

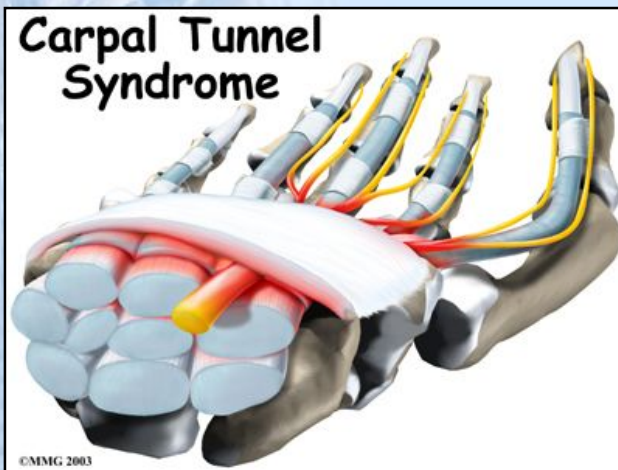
- Tennis Elbow/Golfer elbow
- Carpal Tunnel Syndrome
- De Quervain's Disease



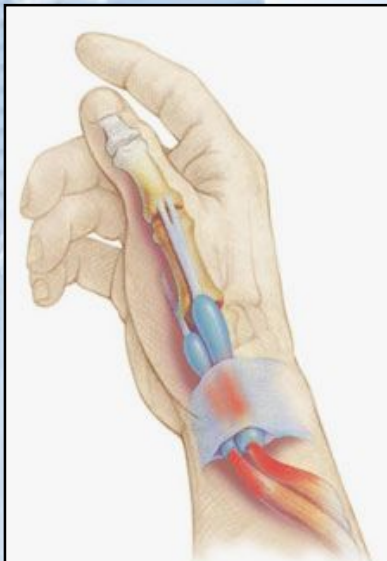
Day protection splint



T E Band



**Night resting splint**



**De Quervain's Disease**

**Night resting splint**



**Day Working splint**





# Splintage Regime

## 1. Wearing Regime

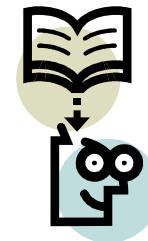
- 24 hr. / resting/ night / working

## 2. Hygiene

- Skin care – esp. with wound, severe swelling
- Splint care
- ADL tips

## 3. Home program

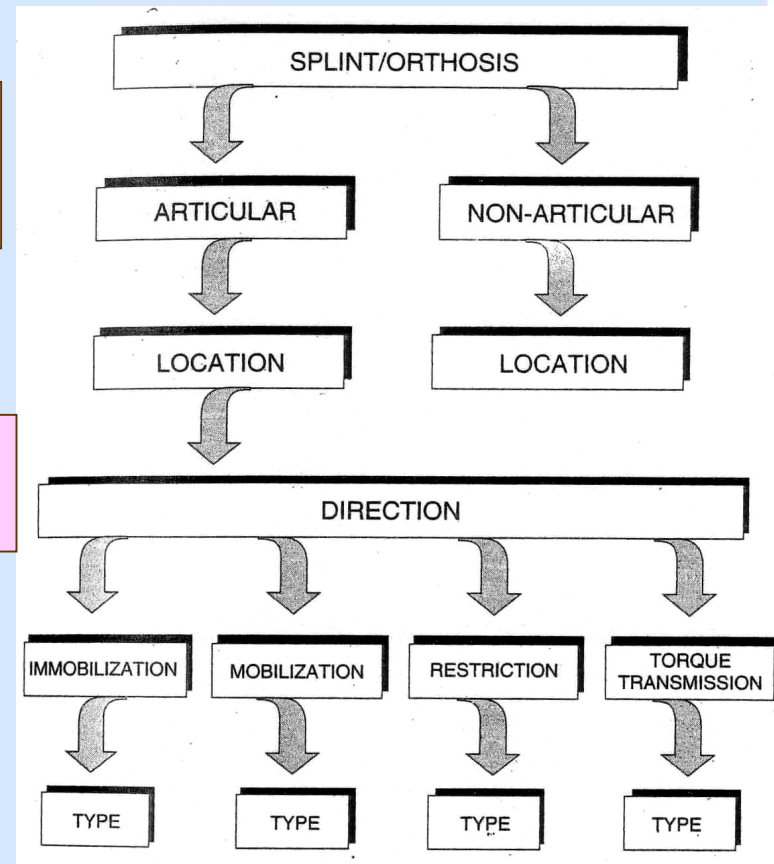
- Positioning – for resting/sleeping
- Mobilization for **non- involved** parts



## How to name a splint?

Thumb IP extension  
immobilization splint, type 0 (1)

## Classification of Splint



**ASHT Splint Classification System (SCS)**  
American society of Hand Therapist

## How to name a splint?

- By its function
- Name its involved parts

**Finger Splint**

**Toe Splint**

**Palmar-base finger Splint**

**Tarsal-based Toe Splint**

**Soft Neck Collar**

**Soft Thumb Splint**

**Long Mallet Finger  
Splint**

## Others

- Varicose Vein
- Scar management

### Pressure stocking



### Pressure Garment

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Acute Management

**Rehabilitation service**

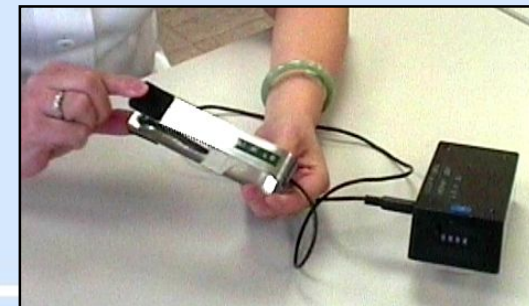
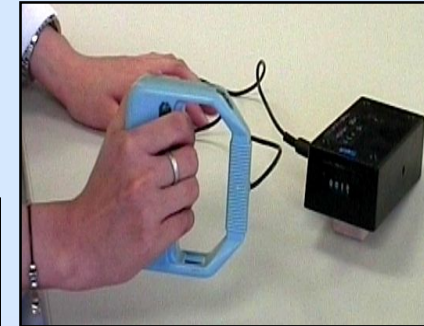
Supportive early  
intervention & Discharge  
for Elderly

# Rehabilitation program

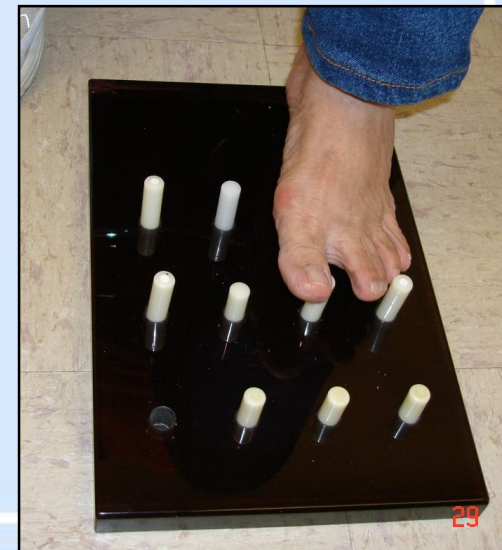
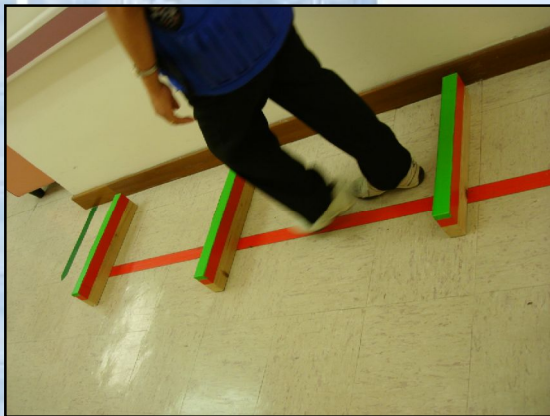
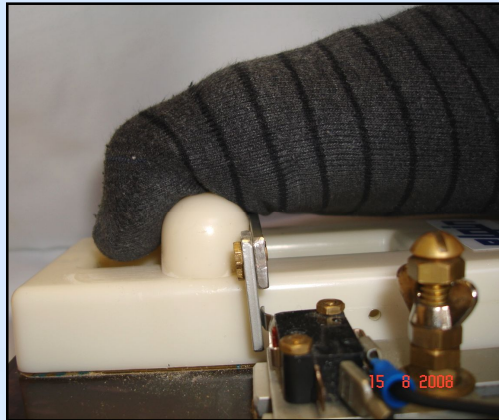




# Remedial Activities for Upper Limb Conditions



# Remedial Activities for Lower Limb Conditions





# Work Assessment and Rehabilitation

## Preparation for resume work



## Simulated Work Task

The background of the slide features a faded image of classical architectural columns, likely from a government building, in shades of blue and white. The text is overlaid on this background in three distinct colored boxes.

Acute Management

Rehabilitation service

**Supportive early intervention  
& Discharge for Elderly**

## Supportive Early intervention & Discharge for Elderly

### Screening

- Cognitive Functions
- Risks of Fall
- Self-care & Functional Abilities
- Home Safety (habit + behavioral)
- Social Support
- Environmental Factors



Discharge Home



Admit Hospital

# Early Intervention & Supported Discharge Program - PMH experience

Since November 2008

## Objectives

- Early assessment & minimize delay in discharge
- Reduce acute presentations to AED
- Minimize unnecessary admissions

## Target

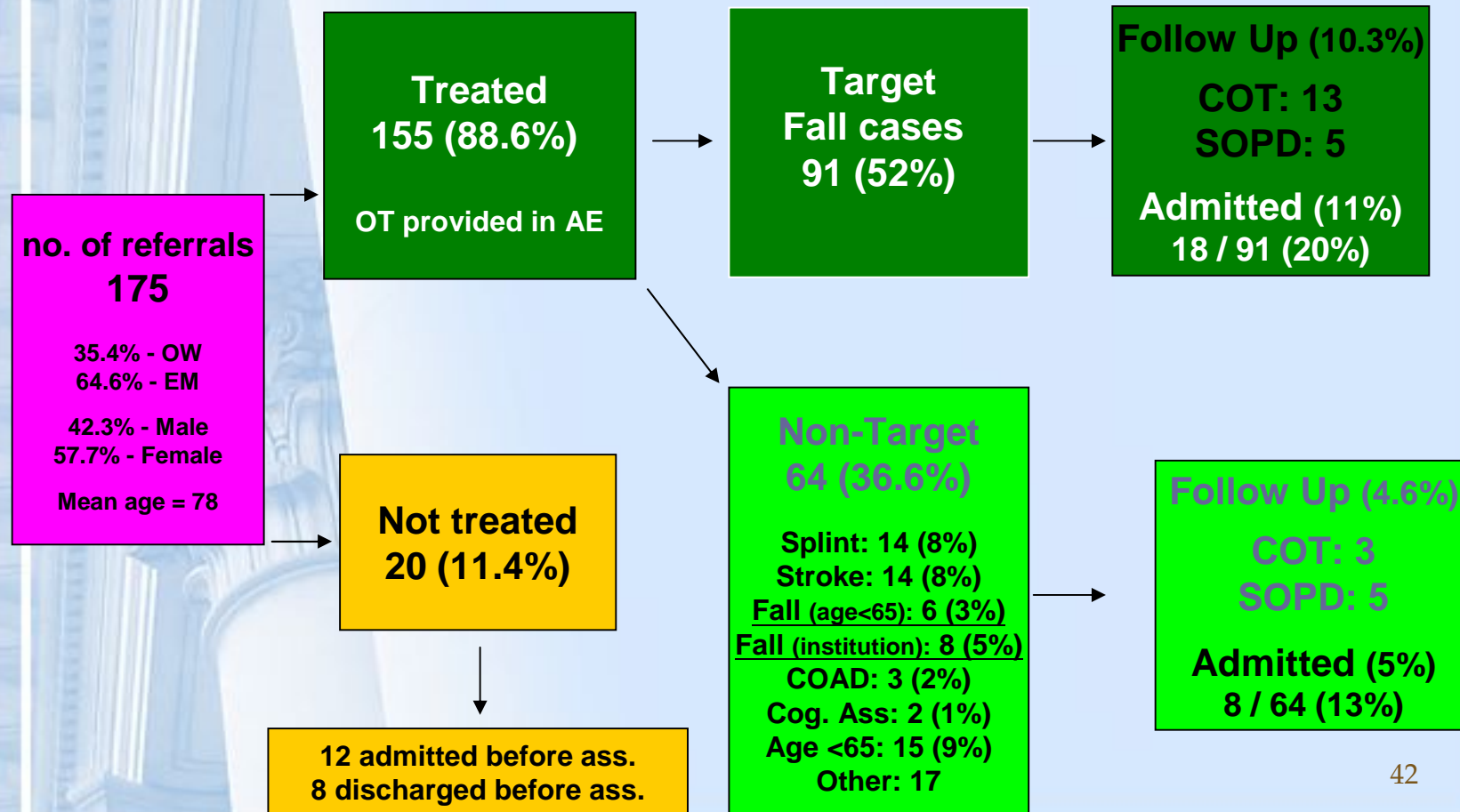
- Live at home
- Aged  $\geq 65$
- Present with fall at AED

## Treatment for Target Fall case

- Fall Prevention education
- Functional & ADL training
- Carer education & training
- Provision of splintage if indicated
- Advise on assistive device if indicated
- Make recommendation on Functional Fitness for discharge
- Suggest OT/SOPD follow up for further monitoring or training if indicated
- Provide follow up Community OT visit upon discharge
- Referral to NGOs for continuous support if indicated



# Service Review (Nov 08 to now)



## Patient's Profiles

Co-morbidity (N=91)	no. of cases	Incidence (%)
<b>Falls</b>	<b>40</b>	<b>44%</b>
Circulatory diseases	27	29.7%
Stroke	18	19.8%
Diabetes mellitus	15	16.5%
Joint arthritis e.g. OA, gout	15	16.5%
Pulmonary diseases	9	9.9%
Upper limb fractures	8	8.8%
Fracture hip	8	8.8%
Lower limb fractures	5	5.5%
Head injury	4	4.4%
Dementia	4	4.4%
Parkinsonism	3	3.3%

Location of Fall		no. of cases	Incidence
<b>Indoor</b>  (N=62, 68%)	living room	22	35.5%
	toilet / bathroom	15	24.2%
	bedroom	11	17.7%
	kitchen	9	14.5%
	balcony	4	6.5%
	corridor	1	1.1%
<b>Outdoor</b>  (N=29, 32%)	pedestrian	3	10.3%
	stairs / steps	2	6.9%
	road crossing	2	6.9%
	shopping mall	1	3.4%
	slope	1	3.4%
	Other outdoor areas	20	68.9%

## F(x) & Risk Assessments Risks

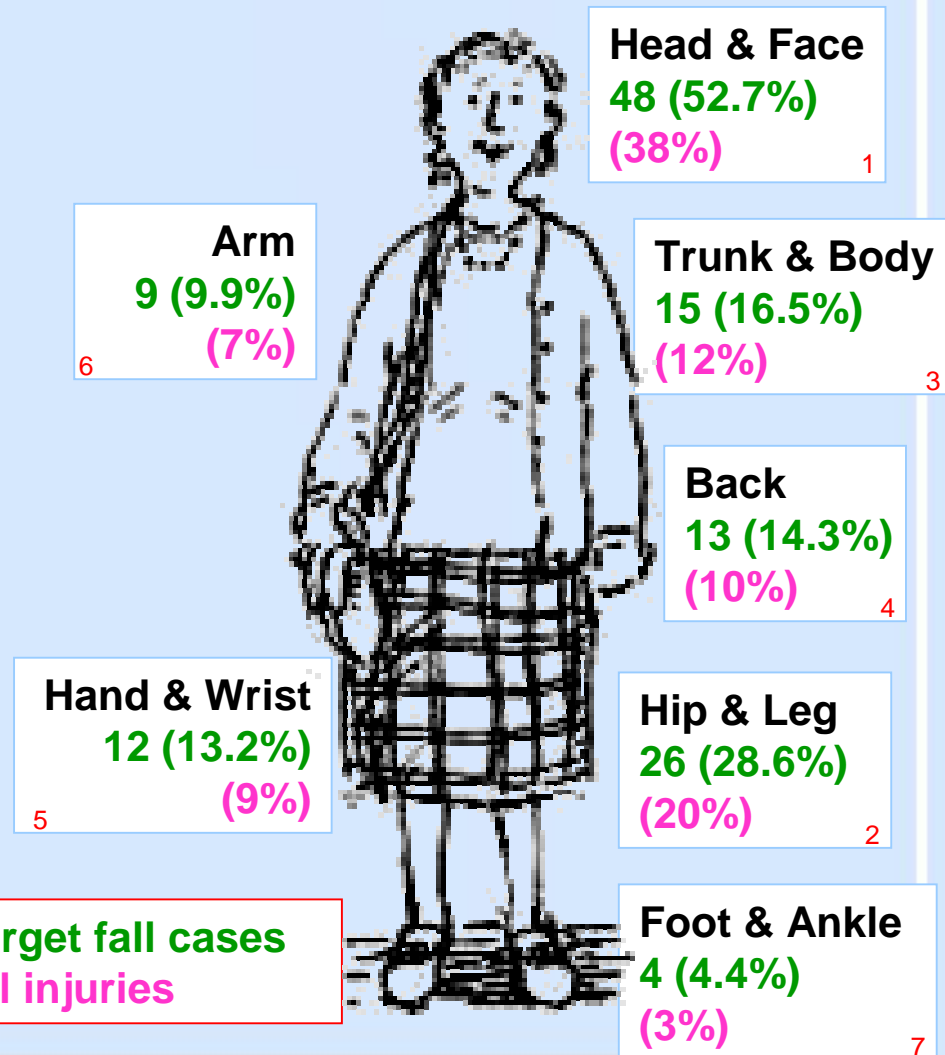
Assessments	Mean	Median	SD
MBI (100)	80.2	84	15.2
Lawton IADL (18)	9.3	9	5.1
CMMSE (30)	19.9	21	5.2
SAFE (Intrinsic – 21)	6.1	6	3.4
SAFE (Extrinsic – 6)	1	1	1.1
SAFE (ADL – 12)	4.6	4	3.2
SAFE (Total – 39)	11.7	11	6.4

**SAFE** : Screening Assessment for Falls Evaluation, developed by  
Peninsula Health Falls Prevention Service, Australia, 2005



Types of Injury	No. of cases	Incidence
none	10	11%
sprain or strain	1	1.1 %
abrasion	13	14.3 %
cut or laceration	12	13.2%
bruise or swelling	30	33 %
haematoma	7	7.7 %
fractures	7	7.7 %
others	27	29.7 %

## Injury Surveillances



% among target fall cases  
% among all injuries

## Cause of Fall

Causes	no. of cases	Incidence
dizziness / vertigo	23	25.8%
muscle weakness	19	21.3%
environmental related	18	20.2%
balance / gait	7	7.9%
hurry / inattention	4	4.5%
risky behaviours	2	2.2%
unknown / cannot recall	13	14.6%
other reasons	3	3.4%

## **Result**

- **9 patients (10%) required transfer to various specialties for onward in-patient management.**
- **82 patients (90%) were discharged back to own home.**
- **6 patients (7%) had repeated AED visits due to falls**

## Conclusion – EISDP (PMH)

- Provides effective screening of patients with risk of falls
- Facilitates medical decision on functional fitness for discharge of patients to minimize delays and LOS
- Provides necessary follow up and support upon discharge for at risk patients
- Reduces the no. visits of fall patients to AED again upon discharge



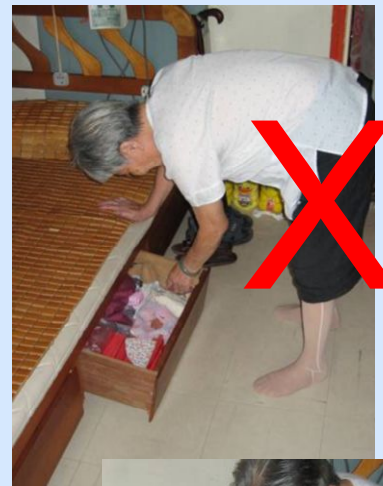


# Community OT

## Follow up home visits upon patient discharge

- On-site ADL assessment and training
- Fall prevention education
- Home environment assessment esp. on identification of hazards of falls
- Home modifications
- Carer education and training
- Advise on assistive devices
- Home program for foundation skills training
- Referral to NGOs for continuous monitoring and follow up

# Identify and Modify Risky Behaviors



# Identify & Reduce Home Hazards





# Home Visit

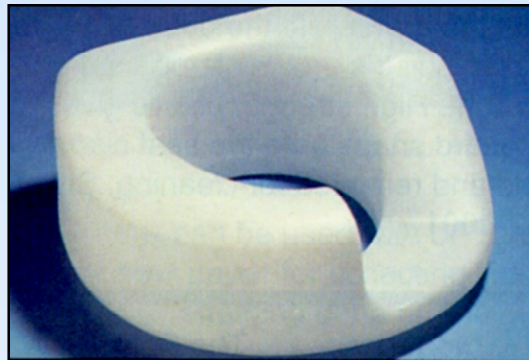
- Tailor-made recommendation
  - Fit into home environment
  - On-site trial by patient
- ↑ compliance





# Prescription of Assistive Devices

**For Safety !**



# Conclusion

## Acute Management

- Fracture condition
- Soft tissue condition

## Supportive early intervention & Discharge for Elderly

## Rehabilitation service

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### Observation Ward

- Provision of Splintage
- Screening for Home Safety

## Out-patient

- Follow-up on Splintage Program
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The background of the slide features a low-angle photograph of several tall, white classical columns with ornate capitals, reaching towards a clear, bright blue sky. The image is slightly faded and serves as a backdrop for the central text.

**~ Thank You ~**