

# Physiotherapy in Leprosy

## Physiotherapy helps:

- Restores normal tone & preserving physiological properties of paralysed muscles
- Prevents muscle atrophy & over stretching of paralysed muscles
- Prevents contractures & keeps joints mobile
- Improves range of movement
- Maintains & improves blood circulation
- Makes skin soft and supple
- Helps to relieve nerve pain

# Techniques Of Physiotherapy As Applied To Leprosy Affected Persons:

- Assessment
- Exercises
- Wax therapy
- Oil massage
- Splinting
- Electrotherapy
  - TENS
  - Electrical Stimulation
  - Short wave diathermy
  - Ultrasound
  - Infra red radiation

## Massage :

- Stimulates muscles
- Increases local circulation
- Makes skin soft and supple
- Helps in reducing stiffness
- Prevents contractures.

Massage: Done for few minutes before exercise or applying splint.

## **Wax bath/ Hydrotherapy :**

- Increases circulation by application of heat
- Softens skin
- Loosens and relaxes soft tissue
- Reduces contractures

**C.I:** Allergic to wax / heat

Dermatitis, blisters, wounds or ulcers

Hands dipped in molten wax kept at 120 F (49 C) for 3 min

Wax coved hands are wrapped grease proof paper and then woollen blanket for 20 minutes

# Wax bath



# Electrical stimulation/ Ultrasonic therapy :

- Prevents muscle atrophy.



# Splints :

## Indications:

- Flexion contracture of proximal interphalangeal joint of fingers & thumb
- Web contracture of thumb
- Paralysis of short muscles of thumb
- Open wound at finger flexion creases
- Foot ulcers/ foot drop
- Wrist drop



## Type of splints: Static splints

- No active / passive movement of joint
- Helps immobilize a joint: Rest to nerve
- Stimulate nerve healing during reaction.
- Used at night: Prevents contractures or  
Reduces contrc. gradually

Precautions :      Not to stretch too much to avoid  
Over stretching of muscles &  
Splitting of contracted skin

## **Types of splints: Dynamic splints**

- Allows active & passive movement of the joints.
- Use:           Active exercise of weak muscle to regain strength.
- Has elasticity
- Works on the principle of recoil and
- needs correct fitting to avoid friction injuries



**Splinting for facial palsy**



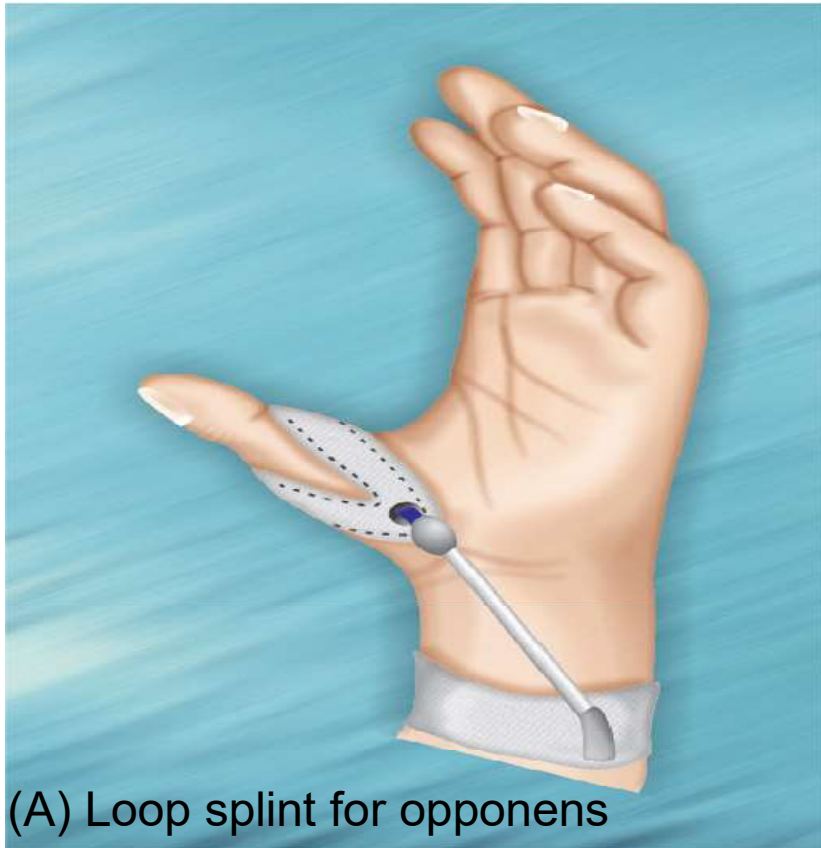
(A) Wrist drop splint



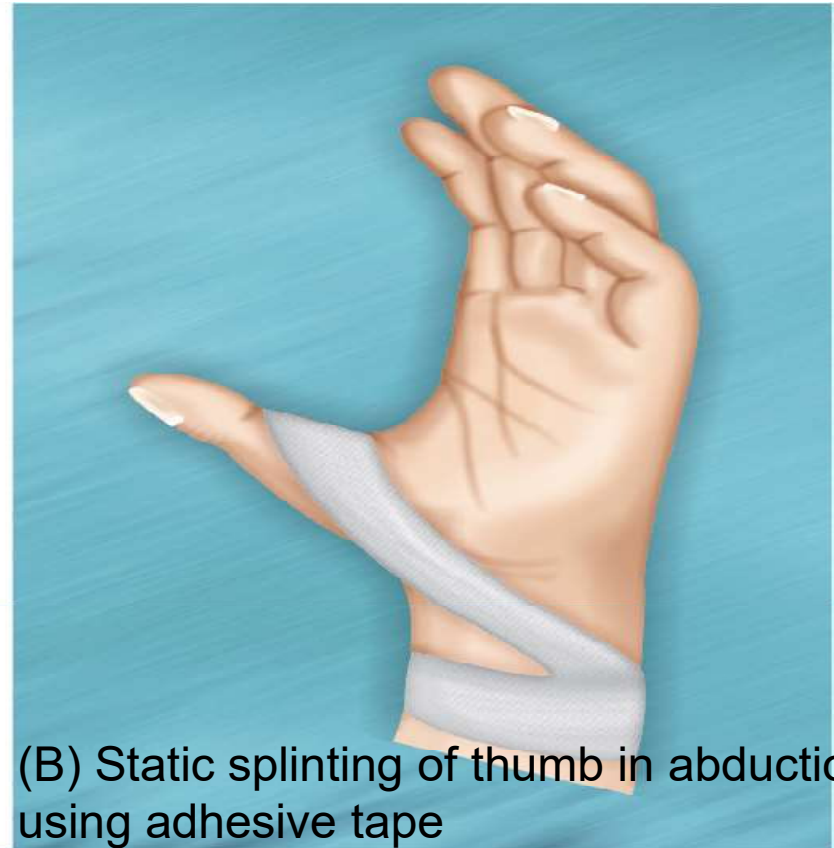
(B) Knuckle duster splint



(C) Spiral splint



(A) Loop splint for opponens

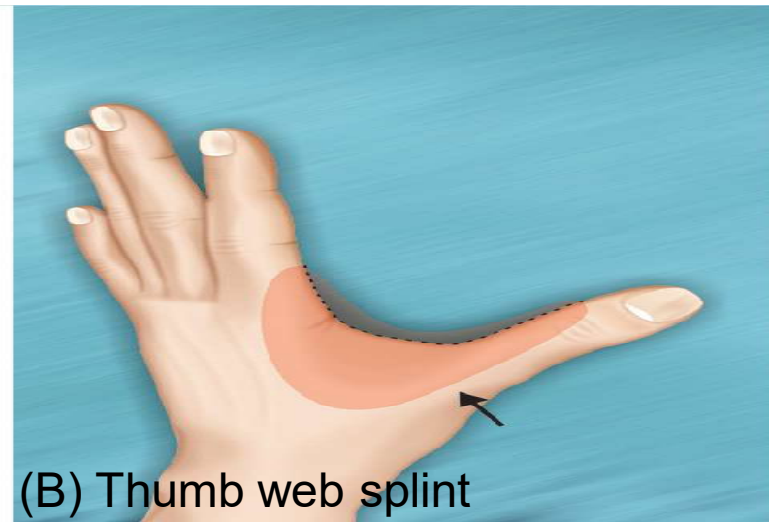


(B) Static splinting of thumb in abduction using adhesive tape

## Splints for the thumb



(A) Cylindrical splint



(B) Thumb web splint

## Commonly used plaster of Paris splints



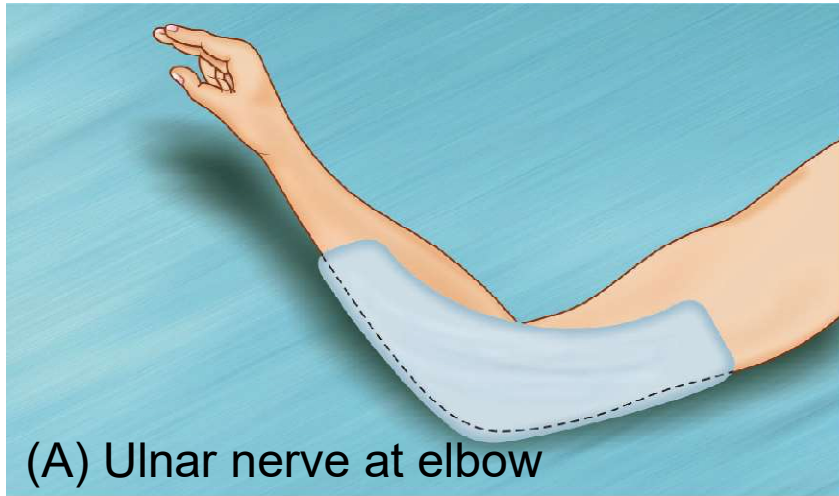
(A) Y' strap with spring



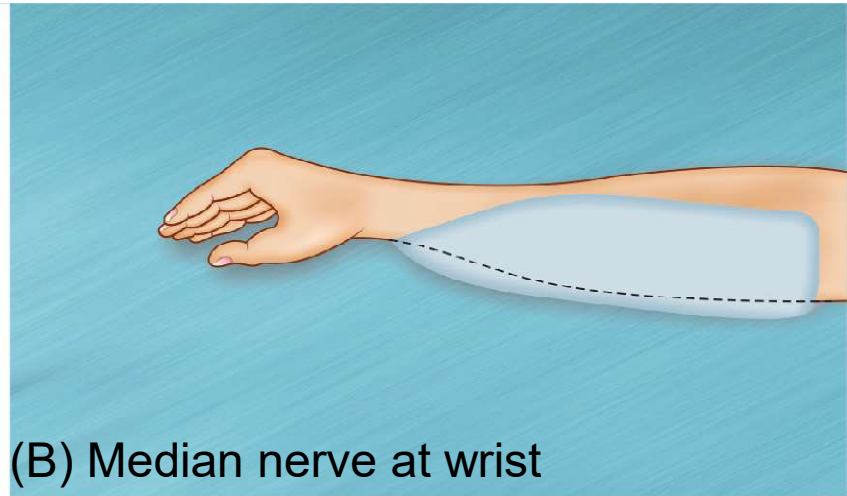
(B) Single elastic strap

## Drop foot splints





(A) Ulnar nerve at elbow



(B) Median nerve at wrist



(C) Common peroneal nerve at knee



(D) Posterior tibial nerve at ankle

**Limb position for splinting for nerve pain**

## Exercise:

- Prevent contractures/stiffness of joints
- Reduce existing contracture/stiffness of jts.
- Strengthen weak muscles.

**Precautions:** Avoid/ Stop exercise

If hand has wounds or cracks.

Weak skin gives way to stretch during exercise



# Exercise

## 1.Active Exercise:

Patient uses his weak muscles to do the exercise.

- prevent contracture and
- Strengthen the weak muscle.

## 2. Assisted Active Exercise :

Movement produced by himself with some assistance

- prevent contracture and
- Strengthen the weak muscle

## 3.Passive Movement:

Patient is helped to move the paralyzed part passively, with some external force.

- Prevent contracture but **Cannot** strengthen the weak muscle.
- To maintain joint mobility

# Paralysis

Aims to

Prevent setting in of contracture

Decrease existing contracture

Strengthen weak muscle

Hands  
&  
Feet

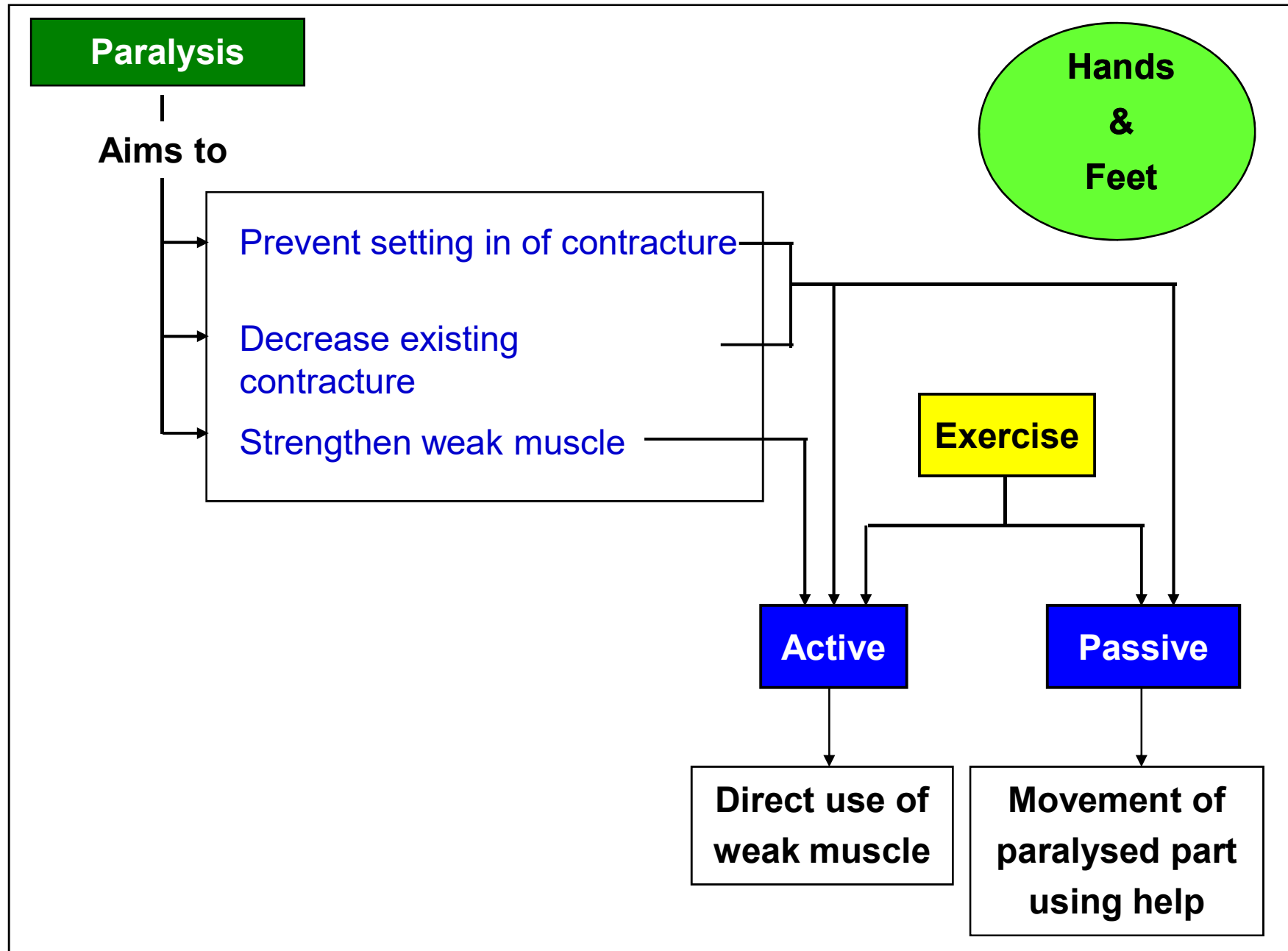
Exercise

Active

Passive

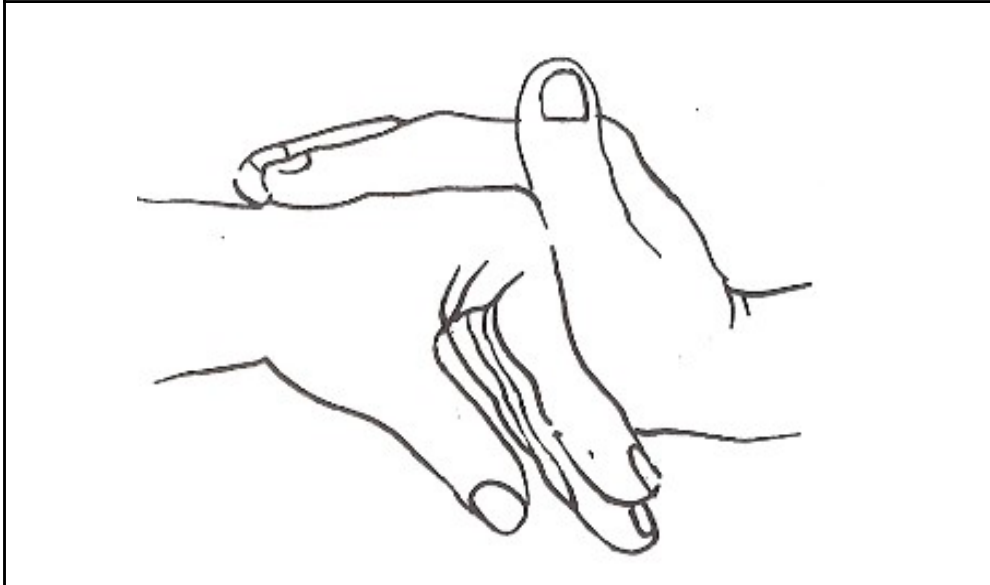
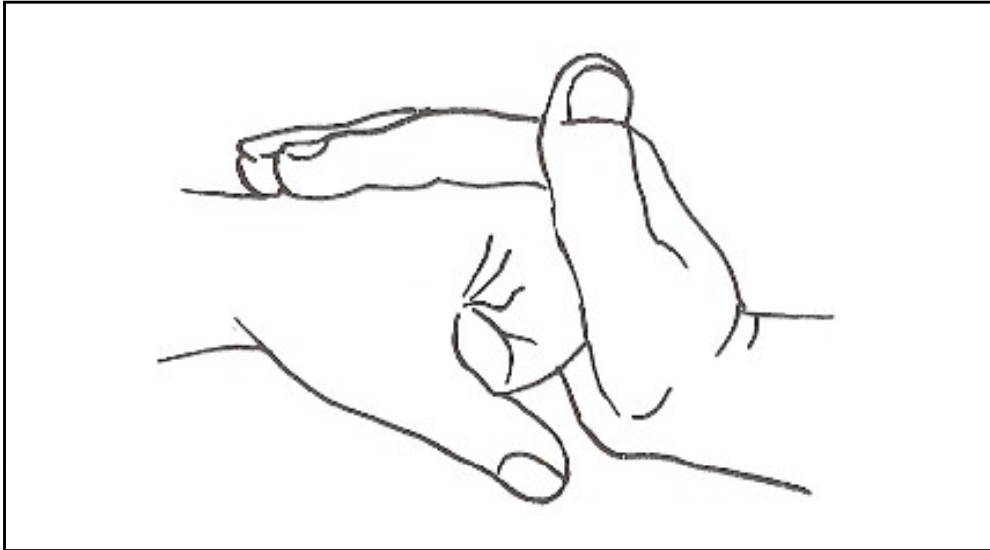
Direct use of  
weak muscle

Movement of  
paralysed part  
using help



# Exercises for Paralysis / Weakness in Hands & Feet

## Active Exercises for Ulnar nerve



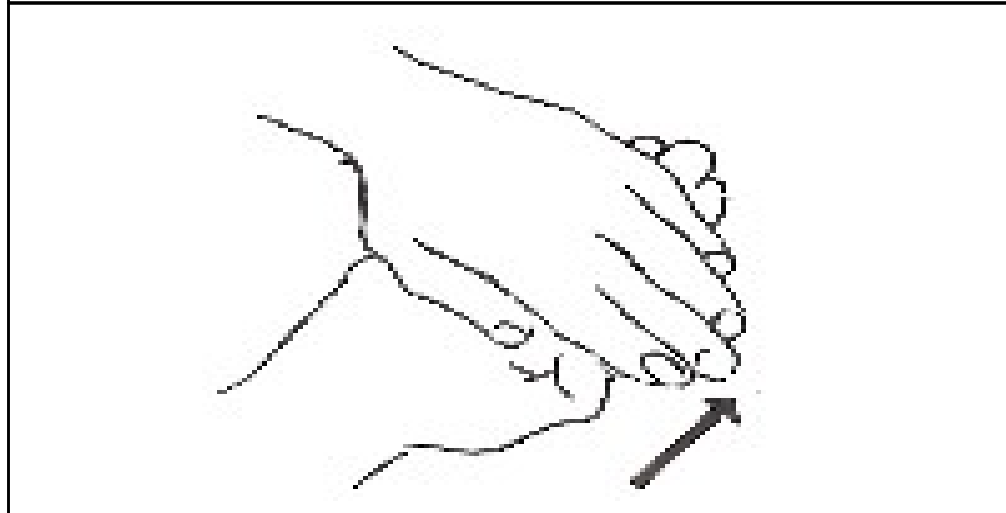
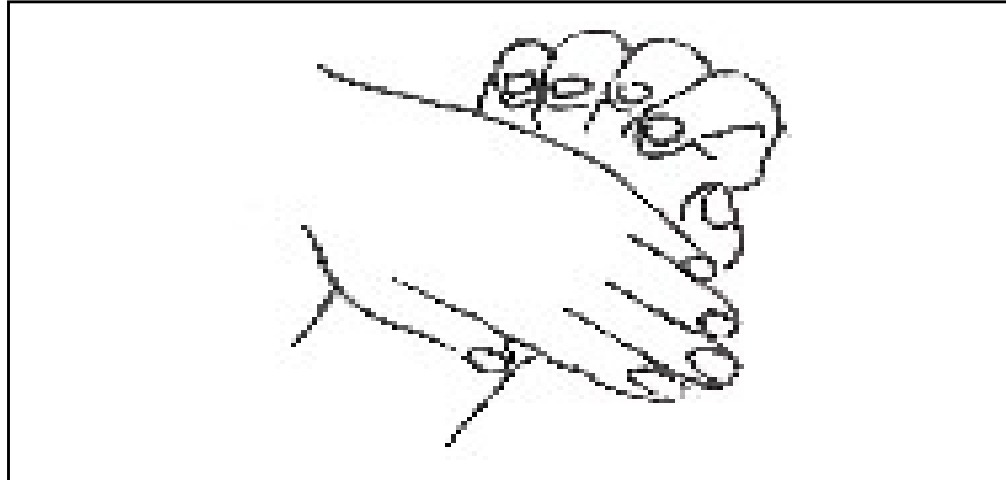
### Active :

**Straighten fingers in the weak hand repeatedly .**

**Keeping the wrist straight, move the joint between the hand and fingers repeatedly .**



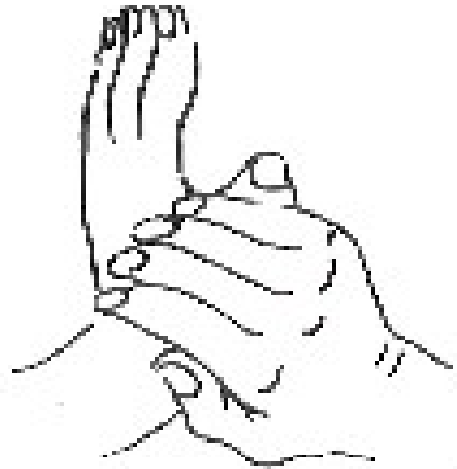
## Passive movement for Ulnar claw hand



**Passive :** Straighten the clawed fingers with the other hand repeatedly .



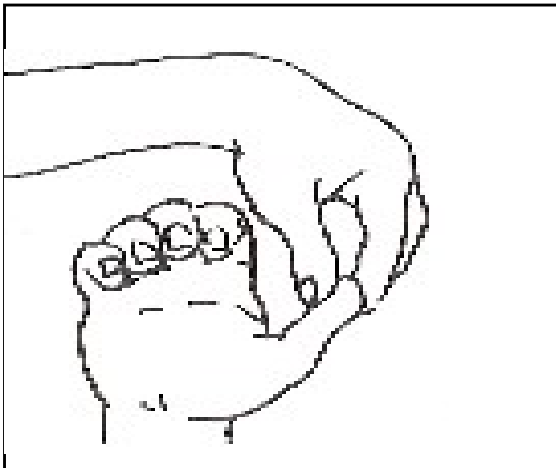
## Active Exercise for Median nerve



**Active :** Straighten the weak thumb , and hold it straight for a few seconds , using the other hand to hold it straight .



## Passive movement for Median nerve



**Passive :**

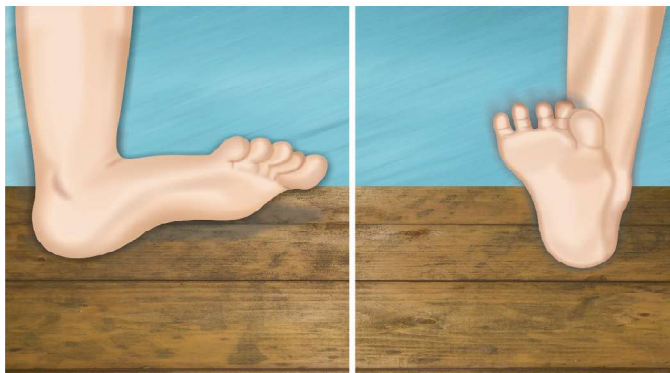
**Straighten the  
weak thumb**

**using the other  
hand , for a few  
seconds .**



## Exercise for Foot Drop (Lateral Popliteal nerve )

**Active :** Bend the foot upwards , and hold it steady for a few seconds.



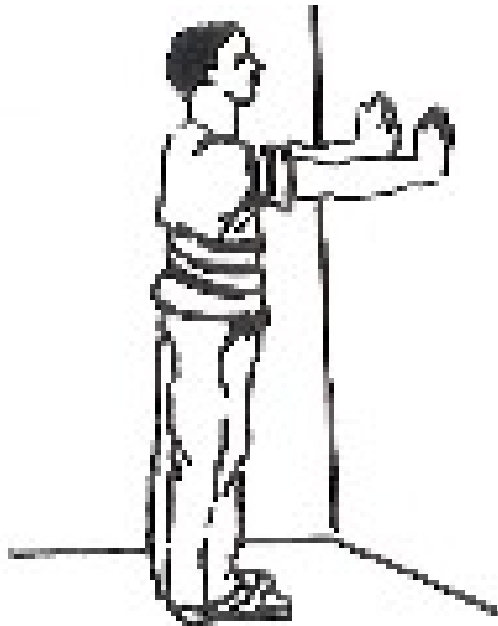






**Passive :** ( given below ) Stand near a wall , with the arms stretched out , and hands resting on the wall.

**Then bend the elbows and leans forward for a few seconds.**



THANK YOU