



Essential Action to Minimise Disability in Leprosy Patients



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CAUSES AND LEVELS OF DISABILITY

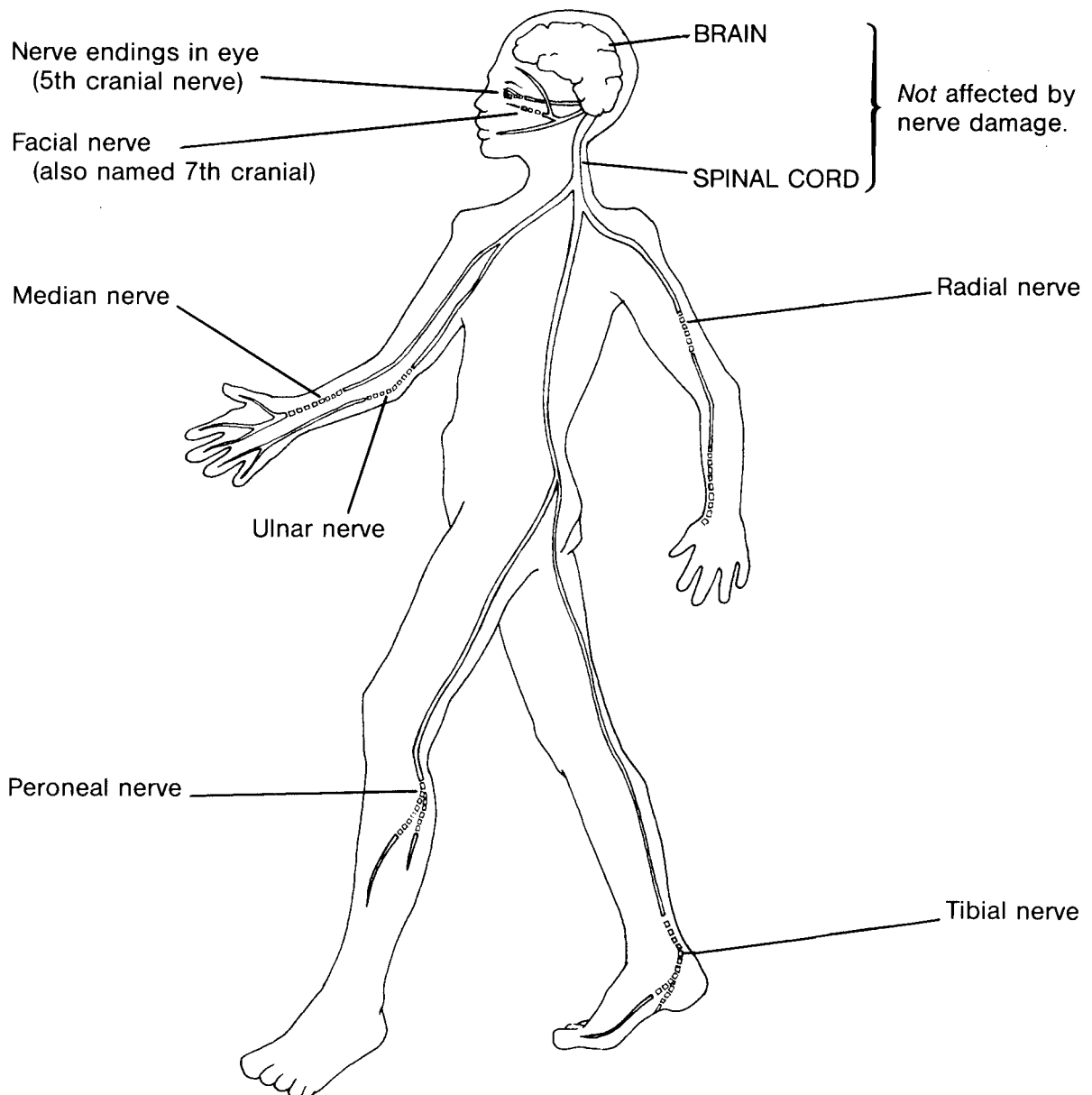
This booklet summarises the main "action" sections from the manual *Preventing Disability in Leprosy Patients*, available from The Leprosy Mission, 80 Windmill Road, Brentford, Middlesex TW8 0QH, England. Readers are welcome to copy sections of the material provided that credit is given to The Leprosy Mission. Please send a copy of any translation made.

NERVE DAMAGE IN LEPROSY PATIENTS

MOST LEPROSY DISABILITY FOLLOWS DAMAGE TO NERVES, AND IT IS PREVENTION OF THIS DISABILITY THAT IS THE SUBJECT OF THIS MANUAL.

SITES OF NERVE DAMAGE

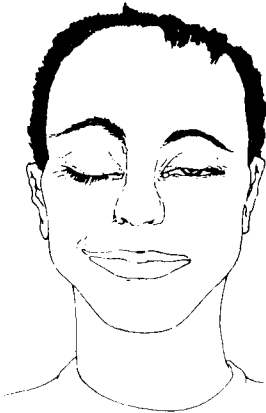
1. **Much leprosy disability follows damage to the main nerves pictured below, at the sites indicated.**



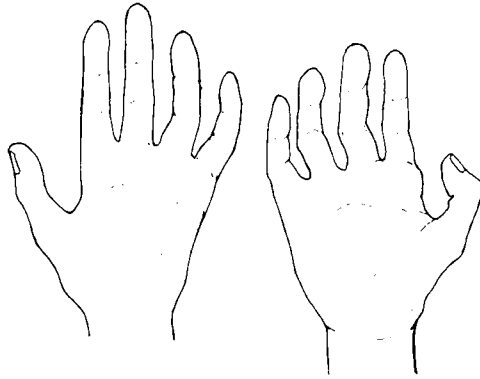
2. **Nerve fibres may be damaged in the skin itself.**

LEVELS OF IMPAIRMENT THAT CAN OCCUR

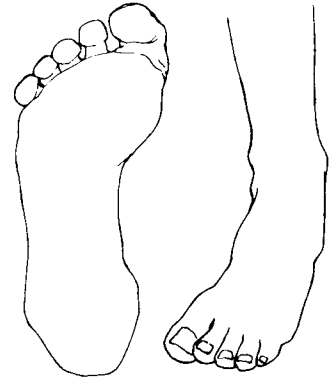
LEVEL 1 PROBLEMS: DIRECT EFFECTS OF NERVE DAMAGE



Inefficient blink.

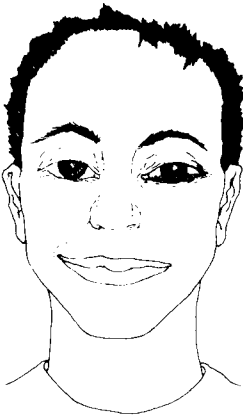


Clawing of fingers . . . and thumb.
Loss of sensation and sweating.

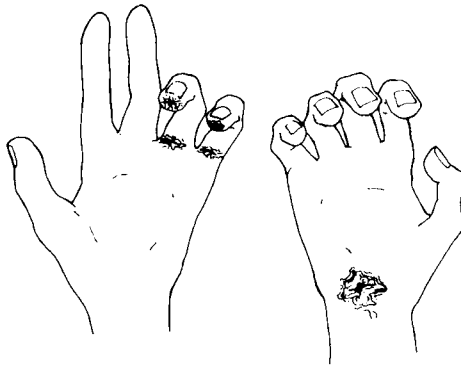


Toe clawing. Footdrop.
Loss of sensation and sweating.

LEVEL 2 PROBLEMS: UNFELT WOUNDS IN DRY HARD SKIN + JOINT STIFFNESS



Eye irritation and infection.



Wounds and skin cracks.
Clawed fingers and thumb
stiffening in bent position.

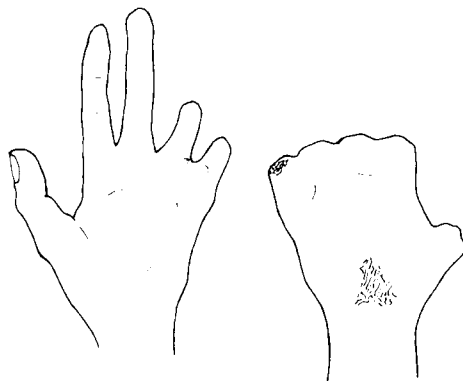


Wounds and skin cracks.
Toes stiffening in claw position.
Dropped foot may get stiff in
the turned-in position.

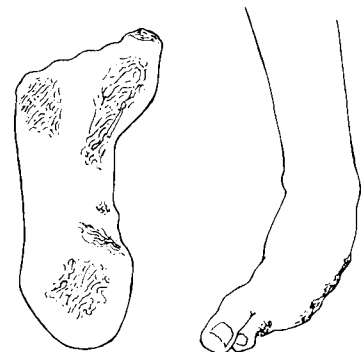
LEVEL 3 PROBLEMS: COMPLICATIONS IN NEGLECTED WOUNDS



Loss of vision.



Loss of bones, plus much scarring and loss of soft tissue due to wound neglect.



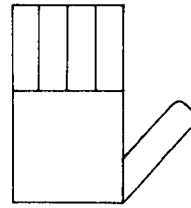
PLAN OF ACTION TO PREVENT DISABILITY IN AN INDIVIDUAL PATIENT

1. Make a disability record similar to that shown on the two pages following.

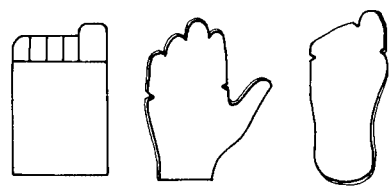
Map areas of sensory loss, wounds, open cracks (those showing flesh at their base) and shortening on pictures. Draw hands and feet if not on the patient card, or have rubber stamps made.

Record which movements you tested when making strength records.

Always write a key to tests and signs used.



Draw simple outlines like these.



Or cut out patterns like these from X-ray film, and draw round them.

2. Use the initial record to identify the action-objectives that apply to your patient from the following list of possibles (marked ●):

Level 1 The overall objective is to save nerve function where at risk.

- Refer patients in immediate need of possible treatment to save nerve function.
- Identify, and continue to observe, patients at risk of future nerve damage.

Level 2 The overall objective is that patients adopt a lifetime habit of avoiding wounds, cracks and stiffness in areas affected by nerve damage.

- Keep eyes with abnormal blink free from injury and vision loss.
- Keep insensitive hands free from wounds.
- Keep insensitive feet free from wounds.
- Keep non-sweating skin areas supple and free from cracks.
- Maintain or improve joint mobility where there is muscle paralysis in hands or feet.

Level 3 The overall objective is to avoid wound complications.

- Get wounds and cracks healed quickly and without complications.
- Help patients plan how to avoid wound recurrence.

3. Take needed action . . . referring, teaching self-care and obtaining protective aids as indicated, and as outlined in this booklet.

4. Obtain constant feedback

Question	How to obtain feedback
<p>1. Does the patient really understand what to do, how and why?</p> <p>2. Is the patient acting on teaching given?</p> <p>3. Are activities achieving the expected results?</p>	<p>Ask the patient to demonstrate and discuss what he has learnt of self-care:</p> <ul style="list-style-type: none"> – how he avoids wound-risks throughout the day, – his daily routine of inspection, skin care and exercise, – how he will care for any future wounds at home. <p>Observe:</p> <ul style="list-style-type: none"> – the condition of the affected eyes, – skin suppleness in hands and feet, – the patient's care habits. For example is he think-blinking, using his special footwear and caring for wounds as he has been taught? <p>If you see evidence of insufficient care, ask the patient what care-problems he is encountering. Listen well.</p> <p>Compare the present condition of eyes, hands and feet with that shown on the earlier disability records (see examples on page 30). Record any changes by means of follow-up records.</p>

DISABILITY RECORD

Side 2

PALMS		SOLES		Worsening within past 6/12 If YES, detail below	YES/NO
Right	Left	Right	Left		
				<p>Left <u>hand</u> ulnar paralysis 2 years Burn blister</p> <p>Left <u>sole</u> - patient says lost sensation one month ago. Long course Prednisolone started at 40 mg. Protective footwear supplied. Daily hand and foot care practiced 2/12/93 J.W.</p>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
				<p>Prednisolone now at 30 mg. recovering.</p> <p>3/1/94 J.W.</p>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
					<input type="checkbox"/> YES <input type="checkbox"/> NO
					<input type="checkbox"/> YES <input type="checkbox"/> NO
					<input type="checkbox"/> YES <input type="checkbox"/> NO
					<input type="checkbox"/> YES <input type="checkbox"/> NO

KEY	✓ Feels within 3cm	} Sensation tested by light skin denting with ball point pen at dot sites	- Shortening level
	✗ Does not feel		⊙ Wound
			▨ Open crack
			c Clawing

5. Use your feedback findings (see page 4) to guide ongoing action.

If results are good, CONGRATULATE your patient and continue as now.

If activities are NOT achieving expected results, explore together with the patient any options open to improve care. Listen well as he describes any difficulties he has faced in implementing the care he has been taught. Support him as he tries to work out what options are open to him to improve care, if any. For example:

- One farmer may say: "I cannot ask my wife or neighbour to help me when a *small* wound is failing to heal. They will think I am lazy and will refuse to help unless my wound appears serious and infected". Another may say: "My pride will not allow me to ask for help".

In either case the objective is that the wife or neighbour agrees to help when a small wound is not healing, and understands that whereas help for only a few days will enable quick healing, help may be needed for months if the wound becomes serious and infected.

The patient may welcome the assistance of the staff member in explaining this situation to the helpers, and in helping patient and helpers "negotiate" a plan of action. For example the helper may say: "I am happy to help as long as you give the foot complete rest". The patient in return may say: "Are there any sitting jobs that I could do for you?" The staff member may monitor wound healing and inform both when rest is sufficient for healing to occur.

- Consider, how footwear with better insole cushioning or moulding could be obtained, in the hope that it would further relieve pressure at a sole wound site thus encouraging healing.
- Be realistic. In some situations it may be impossible for a farmer to rest during the harvest season. The only options open to him may be to rest after work, to keep his protective footwear on whenever possible, and to get the wound healed fast after the harvest.
- Pay as much attention to the avoidance of recurrence as to wound healing. Where sole wounds have recurred over many years the important question to ask is:
 - IF, for example through rest in hospital, surgery and/or the application of a plaster cast, this wound heals,
 - is it FEASIBLE to improve footwear protectiveness and/or for the patient to habitually lessen walking ENOUGH, to allow the wound to REMAIN healed?

HOW TO TEST FOR AND FILL IN THE DISABILITY RECORD

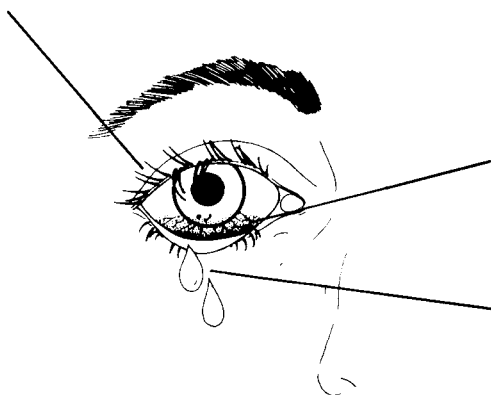
Step 1. Record whether or not blink and eye closure are normal

1.1 First check blink

Observe the patient's blink as you talk with him while he is **not** thinking about his eyes. If he knows that you are examining his eyes he may stop blinking!

Watch for these problems:

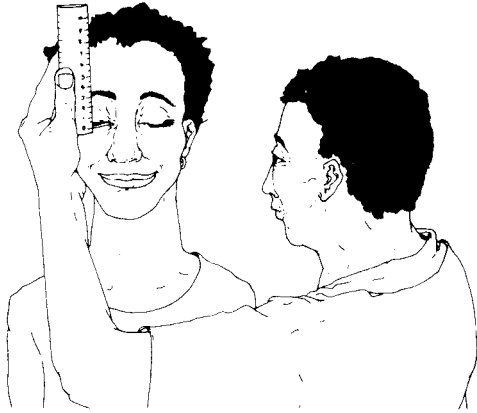
1. Lashes turned in and touching the eye.



2. Patient never or rarely blinking in one or both eyes.
3. Incomplete closure during blink (observe from the side and see if upper and lower lashes meet).
4. Redness and injury affecting the lower part of the eye not covered during blink.
5. Lower lid hanging away from the eye. Overflowing tears.

Record whether or not blink is normal. Make a note about any problems that you see, and report these to your supervisor.

1.2 Check for lid weakness



1. Ask the patient to close his eyes lightly, as in sleep. Observe whether or not closure is complete.
2. **Record** any lid gap in millimetres, measuring as shown.

Record "0mm" if closure is complete.

Step 2. Complete hand and foot maps showing sensation, cracks, wounds and shortening. See the example records shown.

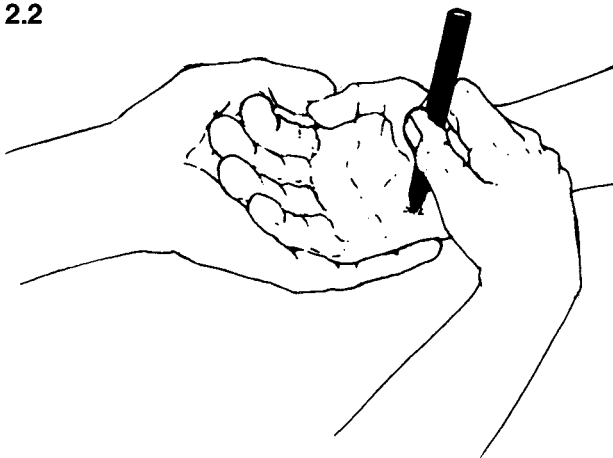
2.1



Mark on the hand maps:

- Levels of finger and thumb shortening (by lines),
- wounds and open cracks drawn to scale and marked by striped lines;
- clawings of fingers or thumbs marked by "C".

2.2



Support the back of the patient's fingers and thumb carefully . . . especially behind the nails. This is so that you do not move his *joints* as you dent his skin.

Then touch the skin very, very gently, denting it as little as possible, about 1mm. (Practice testing sensation on normal hands and soles so that you learn how gentle a dent is felt on normal skin.) The dots on the printed maps show you where to touch.

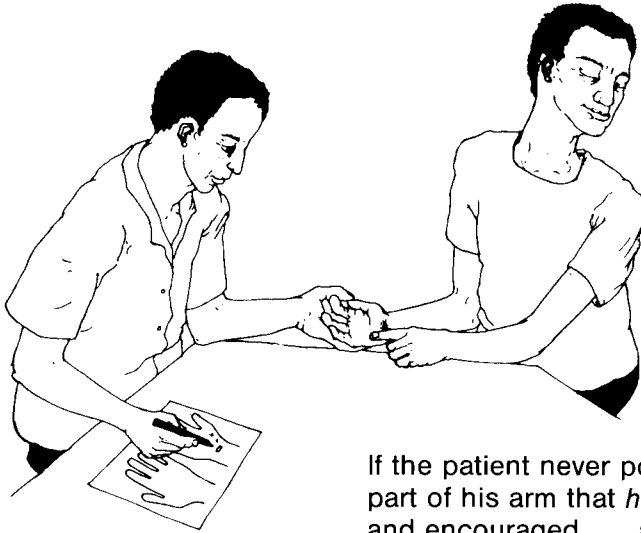
Firstly do this while the patient is watching and ask him to point with one finger:

- *whenever* he feels a touch,
- to the *exact* place touched.

Tell him not to worry if he does not *always* feel.

When the patient understands the test well and is pointing clearly, proceed to **2.3**.

2.3



Ask someone to cover the patient's eyes . . . or ask the patient to close his eyes and turn away.

Be irregular:

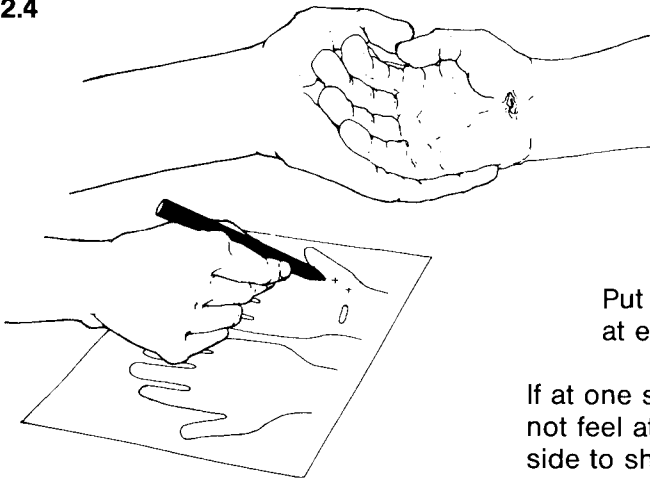
- both in *timing* your skin dents,
- and in the *placing* of dents.

This is so that the patient cannot *guess* when or where you will touch next.

If the patient never points and seems not to feel, try denting a part of his arm that *has* sensation. This will keep him interested and encouraged . . . and will let you know that he has not given up trying.

Be patient with a patient who tries to look or who guesses . . . and reassure him.

2.4



Each time that you dent the skin, **record** on the hand map:

- ✓ at the place if the patient feels and points within 3 cm,
- X at the place if he doesn't feel or points somewhere else.

Put your ✓s and Xs on top of the printed dots. Test at extra sites if sensation loss is partial.

If at one spot the patient feels at some times and does not feel at other times, put a small ✓ and a small X side by side to show this.

Don't take too long over the test . . . or the patient will become tired and careless. If this happens, stop for a rest or continue another day.

2.5 Fill in the foot maps.



Test for and record bone shortening, wounds and open cracks . . . and then sole sensation . . . in ways similar to those described above for the hands.

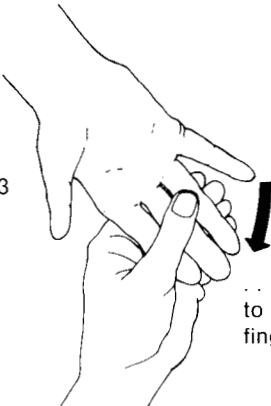
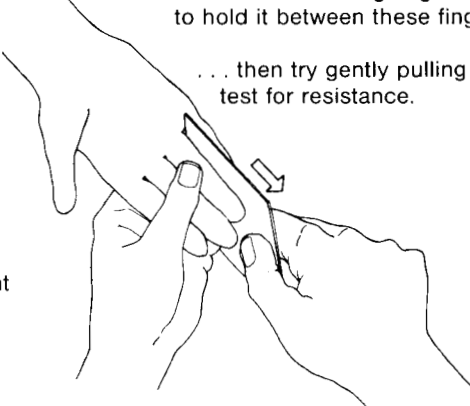
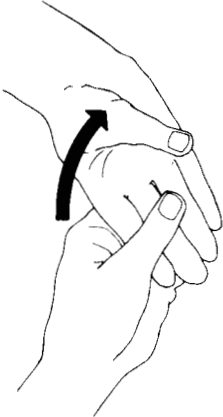
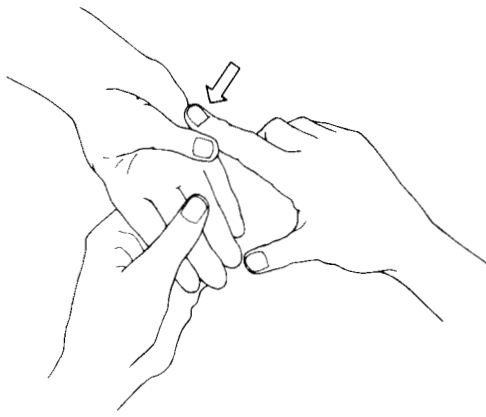
Most patients can point to their soles more easily if they cross the foot being tested over their other knee.

Don't worry if the sole skin is thickened. As long as you press hard enough to *move* the skin and *dent* it, the patient with normal sensation should feel.

Step 3. Complete the Strength Record for hands and feet

3.1 The tests

1. First test movement as shown by the black arrows in the illustrations that follow. See if the patient can perform the movement fully and without assistance. (If stiffness limits the movement, make a note of this.)
2. Then test for resistance as shown by the white arrows in the illustrations that follow. Only do this if the movement is full, or almost so. Apply resistance gradually, not suddenly. Don't force a change in position . . . just test to see if the strength of the patient's resistance is normal, reduced or nil.
3. Always compare the patient's right hand or foot with his left.

(1) IS MOVEMENT FULL?	(2) IS RESISTANCE FULL?
LITTLE FINGER IN . . . A TEST OF ULNAR NERVE FUNCTION	
<p>Hold these 3 fingers straight . . .</p>  <p>. . . ask the patient to close his little finger fully.</p>	<p>If he can close his little finger . . . place a card between little and ring fingers. Ask the patient to hold it between these fingers.</p>  <p>. . . then try gently pulling the card out to test for resistance.</p>
STRAIGHT THUMB UP . . . A TEST OF MEDIAN NERVE FUNCTION.	
<p>Keep the wrist slightly back (extended) during this test.</p>	
<p>Ask the patient to move his thumb up.</p> <p>Make sure that the thumb base is <i>fully</i> across and out . . . and that the thumb is straight.</p> 	<p>If he can do this . . . then resist at the <i>side</i> of the thumb (not at the back where the nail is).</p> 

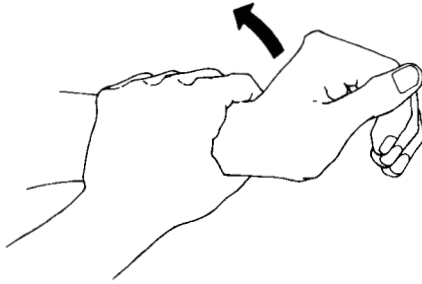
(1) IS MOVEMENT FULL?

(2) IS RESISTANCE FULL?

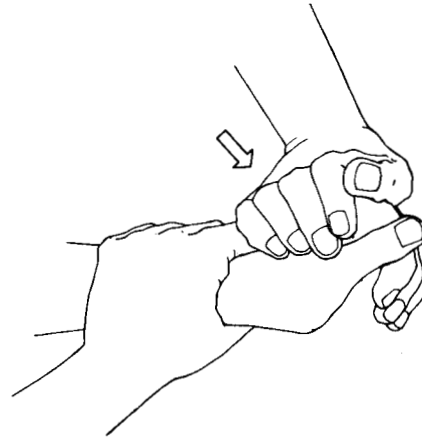
WRIST BACK . . . A TEST OF RADIAL NERVE FUNCTION.

This test is sometimes omitted from simple record forms, as damage is rare. Where damage and wristdrop do occur, they usually follow median nerve damage.

Support the patient's wrist.



Ask the patient to pull his wrist back fully



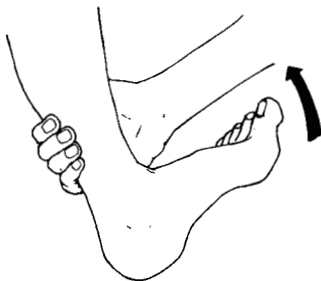
Press gently but firmly at the back of the hand to test for resistance.

TESTS OF PERONEAL NERVE FUNCTION.

This nerve has two main branches and either branch may be damaged, hence there are two tests – one for each branch. However, the second test is sometimes omitted from simple record forms.

FOOT UP

Support behind the patient's ankle.



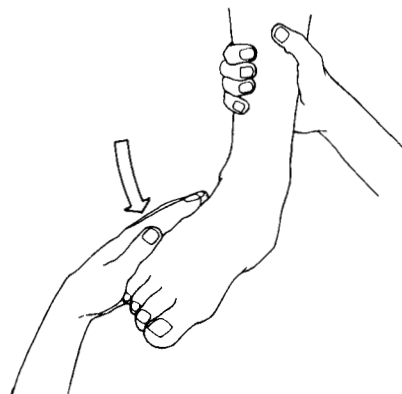
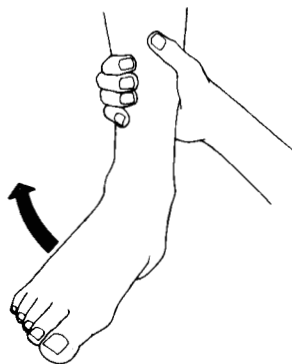
Ask the patient to pull his foot up fully



Press at the top of the foot to test for resistance.

FOOT OUT

Ask the patient to turn his foot out.



Press at the outside of the foot to test for resistance.

- 3.2** Having tested both movement and resistance, record findings on your disability record form using the strength key used in your programme. If using the SRMP key (see page 4) record "S" if both movement and resistance are normal; "R" if resistance is reduced but active movement is full; "M" if the muscle is not paralysed but is so weak that active movement range is incomplete; "P" if the muscle is paralysed.

Step 4. Identify and refer or treat any patient needing neuritis treatment*

- 4.1** Learn your local indicators for neuritis treatment as laid down by programme managers. Definite loss of sensation or strength that have occurred within the past 6 months, even where there is NO pain or tenderness, is a vital indicator. Note: The level of change to be identified should be defined by the managers, having been selected bearing in mind the skill levels of staff and the reproducibility of sensation and strength findings. For example:
- a loss of sensation at 2 or more sites or
 - a decrease in strength either from "S" to "M" or from "S", "R" or "M" to "P".
- Other indicators may, for example, include a raised red skin patch near to the eye or signs of acute reaction such as severe nerve pain not eased by other treatment.
- 4.2** Check for change in sensation and strength every 1-3 months in patients on treatment or released in the past year. Pay special attention to any who have had recent signs of reaction, to pregnant ladies and to new patients in their first year of treatment (especially any having borderline-type leprosy).
- 4.3** Wherever reduced sensation or strength have occurred during the past 6 months, record when and in which limbs it is present. Compare sensation and strength with any earlier records. Also ask the patient to think of occasions such as festivals/birth of a child that may help him remember when he noticed change. If a clear history cannot be given, record this. Record "Yes" or "No" as appropriate (see page 5).
- 4.4** Check for the other indicators laid down in programme guidelines. Record by comment.

Step 5. Ask the patient if he/she is encountering functional or social problems. Record these.

TAKE NEEDED ACTION

Level 1: Treat or refer patients needing neuritis treatment. If referring, send copies of your sensation and strength records with a note of the duration of any recent changes.

Treatment is usually by a Prednisolone course:

- A short course may suffice where the objective is pain relief not achieved by other medicines.
- For patients in whom loss of sensation or strength are recent or considered an imminent risk, or where there are other indications of severe reaction, ILEP recommend a basic, 12 week (PB cases) or 22 week (MB cases), tapering course of Prednisolone. Starting dose of 40mg/day. Dosage is sometimes increased in hospitalised patients where indicated.

Level 2: Help patients with nerve lesions affecting eyes, hands and/or feet to learn the needed self-care described in the sections following. Help them to obtain protective sunglasses, gloves and/or footwear as indicated.

Mark E for (eyes), H (hands) and/or F (feet) in the attendance register and on the patient's attendance card for patients with nerve damage affecting these areas, obtain regular feedback as to action progress and effect. These letters will remind you to check the affected areas each time that you see the patient. Plan to review cured but disabled patients from time to time.

Level 3: Help the patient overcome any social and functional problems as far as feasible.

For example: Pad or adapt tool handles where this makes function easier.

Reassure any relatives or neighbours who are rejecting the patient through fear of the disease.

*(Ref. to ILEP Guidelines)