

Essential Action to Minimise Disability in Leprosy Patients



Jean M. Watson OBE, Grad DP, FCSP

Essential Action to Minimise Disability in Leprosy Patients

by Jean M Watson obe, Grad DP, FCSP Illustrations by Judith Cole

© The Leprosy Mission International 80 Windmill Road, Brentford, Middlesex TW8 0QH, England 1986

Reprinted 1988 Reprinted 1991 Second edition 1994 Tamilep

ISBN 0 902731 25 4

Printed by Stanley L. Hunt (Printers) Ltd Midland Road, Rushden, Northamptonshire

CONTENTS

	Page
CAUSES AND LEVELS OF DISABILITY	1
Nerve Damage in Leprosy Patients	1
Levels of impairment that can occur	2
Plan of action to prevent disability in an individual patient	3
Disability records	4
How to test for and fill in the disability record	6
Take needed action	11
CARE OF EYES WITH POOR BLINK OR CLOSURE	12
CARE OF HANDS WITH LOSS OF FEELING	16
CARE OF FEET WITH LOSS OF FEELING	23
PROTECTIVE FOOTWEAR	30
FOLLOW-UP DISABILITY RECORDS NEEDED FOR FEEDBACK	32
TEACHING THAT ENCOURAGES CARING	35

CAUSES AND LEVELS OF DISABILITY

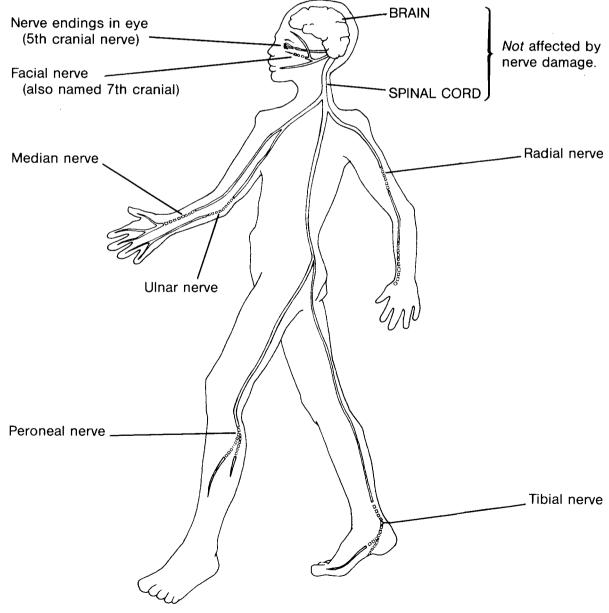
This booklet summarises the main "action" sections from the manual *Preventing Disability in Leprosy Patients*, available from The Leprosy Mission, 80 Windmill Road, Brentford, Middlesex TW8 0QH, England. Readers are welcome to copy sections of the material provided that credit is given to The Leprosy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

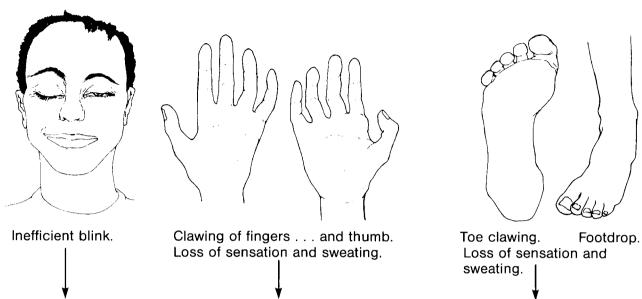
 Much leprosy disability follows damage to the main nerves pictured below, at the sites indicated.



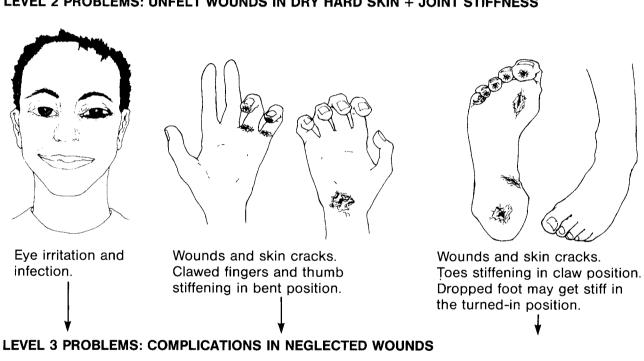
2. Nerve fibres may be damaged in the skin itself.

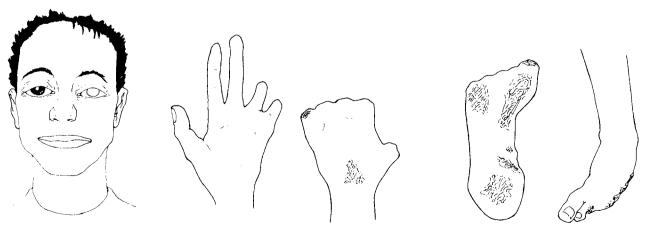
LEVELS OF IMPAIRMENT THAT CAN OCCUR

LEVEL 1 PROBLEMS: DIRECT EFFECTS OF NERVE DAMAGE



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





Loss of vision.

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

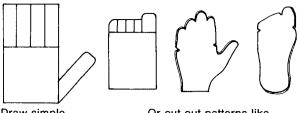
PLAN OF ACTION TO PREVENT DISABILITY IN AN INDIVIDUAL PATIENT

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 Or cut out patterns like outlines like these. 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.

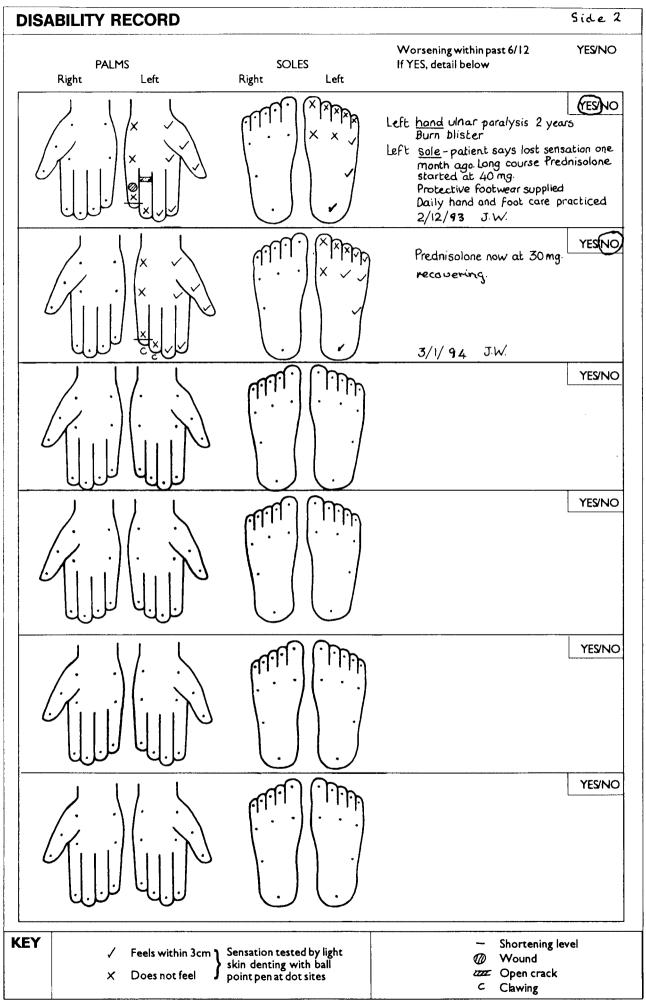
4. Obtain constant feedback

Qu	estion	How to obtain feedback
	Does the patient really understand what to do, how and why?	Ask the patient to demonstrate and discuss what he has learnt of self-care: - 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.
	Is the patient acting on teaching given?	Observe: - 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?
		If you see evidence of insufficient care, ask the patient what care-problems he is encountering. Listen well.
	Are activities achieving the expected results?	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.

DISABILITY RECORDS

Your disability record should include the information shown below and should be on or with the IPF (Individual Patient Form). This sample has been completed for the left side.

RIGHT SIDE			STRENGTH	LEFT SIDE								
						DATE	1/12/93	3/1/94				
mm	mm	mm	mm	mm	mm	Light closure lid gap in mm	O mm	O mm	mm	mm	mm	mm
Yes /	Yes No	Yes No	Yes No	Yes No	Yes No	Blink Normal	(es) No	Yes/ No	Yes No	Yes No	Yes No	Yes N
						Little Finger in	Р	Р				
						Thumb up (palm upwards)	M	R				
	-					Wrist up	S	S				
						Footup	S	S				
						ASSESSOR	JW	JW				•
DAT	E					S : R : M : P :	= Stro = Res = Mov = Para	istance rement alysed ocial	oroble	ems	V = V	
	E 2 93	New	ly d	iagne	osed i	S : R : M : P : notes on any functional patient : Slight Left	= Stro = Res = Mov = Para and s	istance vement alysed ocial	oroble	ems		
		New	ly d	iagne	osed i	S : R : M : P :	= Stro = Res = Mov = Para and s	istance vement alysed ocial	oroble	ems		
		New	ly d	iagne	osed i	S : R : M : P : notes on any functional patient : Slight Left	= Stro = Res = Mov = Para and s	istance vement alysed ocial	oroble	ems		
		New	ly d	iagne	osed i	S : R : M : P : notes on any functional patient : Slight Left	= Stro = Res = Mov = Para and s	istance vement alysed ocial	oroble	ems		
		New	ly d	iagne	osed i	S : R : M : P : notes on any functional patient : Slight Left	= Stro = Res = Mov = Para and s	istance vement alysed ocial	oroble	ems		
		New	ly d	iagne	osed i	S : R : M : P : notes on any functional patient : Slight Left	= Stro = Res = Mov = Para and s	istance vement alysed ocial	oroble	ems		
		New	ly d	iagne	osed i	S : R : M : P : notes on any functional patient : Slight Left	= Stro = Res = Mov = Para and s	istance vement alysed ocial	oroble	ems		



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

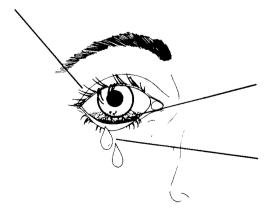
Step 1. Record whether or not blink and eye closure are normal

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:

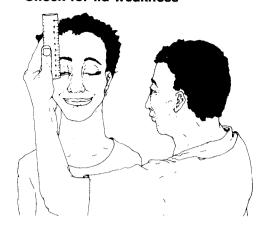
1. Lashes turned in and touching the eye.



- 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).
- 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.

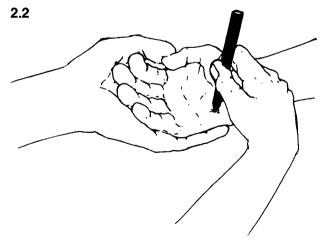
Record "0mm" if closure is complete.

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



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".



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.

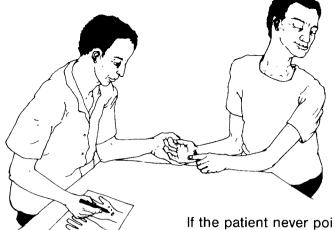
Firstly do this while the patient is watching and ask him to point with one finger:

- 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.





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 \(\sigma \) 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.

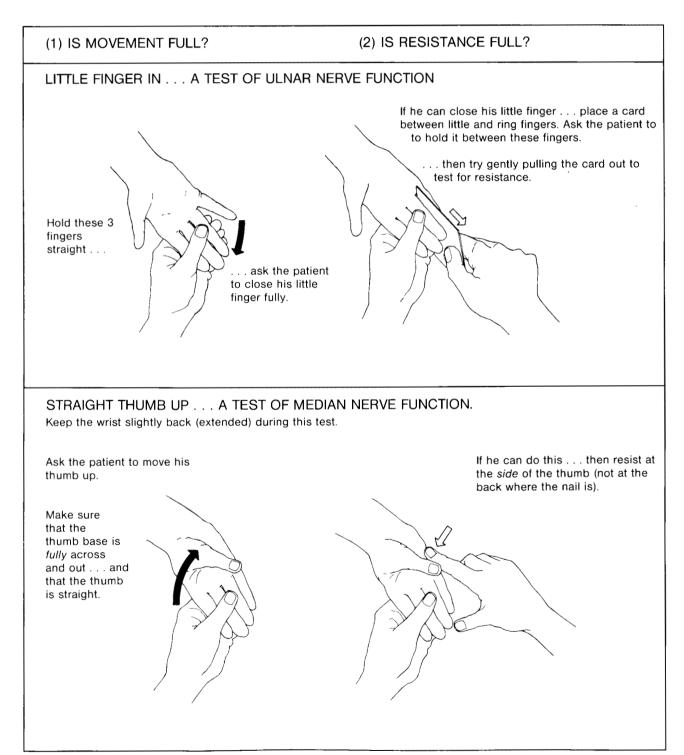
Most patients can point to their soles more easily if they cross the foot being tested over their other knee.

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.

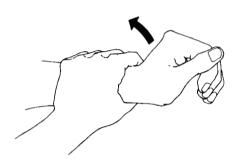


(2) IS RESISTANCE FULL?

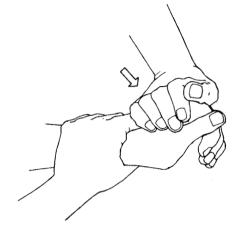
WRIST BACK . . . A TEST OF RADIAL NERVE FUNCTION.

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.

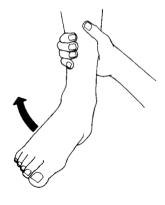


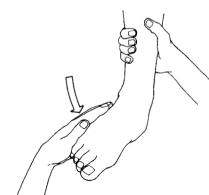
Ask the patient to pull his foot up fully



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.

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 reproducability 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' 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)

CARE OF EYES WITH POOR BLINK OR CLOSURE - ADVICE FOR PATIENTS

NOTE: This section outlines the teaching that staff need to give to patients with poor blink.

INTRODUCTION

Because you have problems with your eye closure and blinking . . . there is a danger that your eye becomes dry, irritated and injured. These problems could in turn cause *some loss of vision*.

It is therefore important that you learn to care for your eyes and avoid these problems as far as possible.

Try hard to build up a habit of regular eye care:

- 1. avoiding the eye dryness that can lead to vision loss, and keeping dust and dirt out of your eyes.
- 2. checking daily for signs of irritation and injury so that you can look after these problems early, and seek help where needed.

Building up a habit of eyecare may be hard work! . . . but the *more regularly* you remember to care at first, the more *easily* will this care become a *habit*. This is your aim because your blink problems are lifelong problems.

1. AVOID EYE DRYNESS AND INJURY

1.1 Think-blink

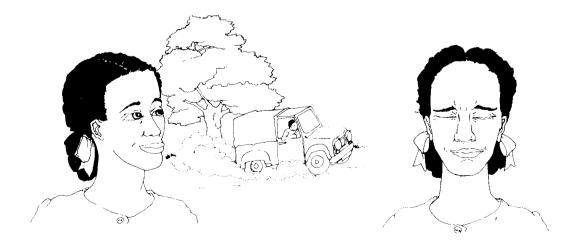
People normally avoid eye dryness and injury by blinking often during the day, and by closing their eyes when they sleep.

Blinking also helps to wash away dust, dirt and small insects from the eyes . . . so that these do not irritate and injure them.

Because you do not blink well automatically (without thinking about it), it is important that you learn the habit of thinking about blinking:

- remembering to blink often, and
- to close with effort.

THINK......and BLINK, closing with EFFORT.



1. Blink often.

The more often you close your eyes throughout the day the better. Try to imagine the dryness of your eyes when you do not blink . . . or injury that dust blowing into your eyes can do to them.

Then choose reminders to help you to remember to close.

- Reminders that your eyes are at special risk are:
 - an eye redness or injury noticed on eye inspection,
 - wind or dust blowing into your face, hot sun that is drying.
 - sleeping, because your eyes may be open. Always close ten or more times before and after sleeping.
- However don't wait for these special risk-times. The more often that you close the better. For example:
 - blink when out walking each time you pass a tree or house,
 - blink when eating each time you take food or drink to your mouth.
 - blink when with others and seeing them blink.

2. Blink with effort

Close tightly when you "think-blink". Even if your lids don't close your eyeball will roll up and be wiped by your upper lid.

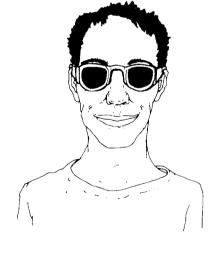
1.2 Protect your eyes against dryness and dust

Use your headcloth to shield your eyes from sun, wind and dust.

Wear sunglasses with large lenses . . . and if possible sidepieces.

Wear a hat with a brim.

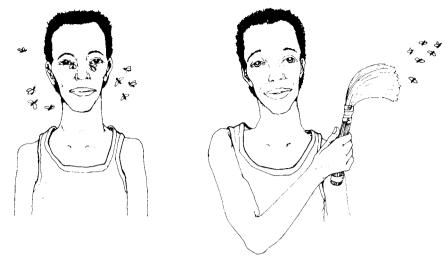




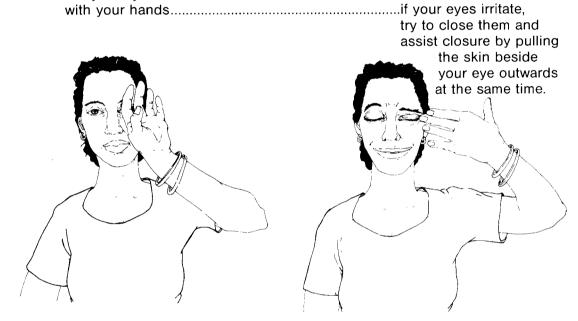


1.3 Keep your eyes clean:

keep flies away from your eyes



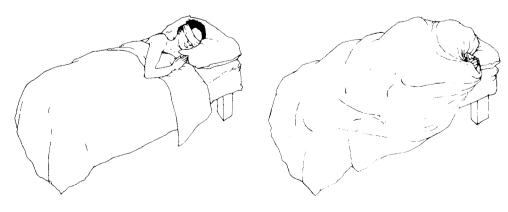
don't rub your eyes
 with your hand



1.4 Cover your eyes at night, especially if they seem sore or red in the mornings:

Binding pads of wet cloth over the eyes at night helps to stop eye dryness.

A bedsheet gives some protection against dust from the roof.



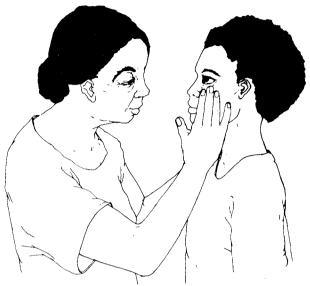
2. ONCE OR TWICE EACH DAY — INSPECT FOR EYE PROBLEMS, AND — CARE FOR ANY THAT YOU FIND

2.1 Inspect for dirt and redness, making sure that your hands are clean first.

Use a mirror . . .

. . . or ask your relative to inspect for you, and to let you know if ever your eye appears red.





REPORT ALL PROBLEMS TO YOUR HEALTH WORKER . . . including any change in vision.

2.2 Remove any specs of dirt using a piece of cloth, as you look into a mirror.



2.3 Clean your eye

Wash the skin *around* your eye carefully . . . without getting soap in your eye. Use "think blinks" to clean the *surface* of your eye.

2.4 Apply any eye drops or eye ointment that the doctor has given to you.

Take great care not to injure your eye with the eye ointment *tube*.



Look into a mirror

Use one hand to pull the lower lid away from your eye . . . and squeeze a layer of ointment along the inside of your lower lid.

ONLY use drops or ointment approved by the doctor. Wrong eye medicines can *harm* vision.

CARE OF HANDS WITH LOSS OF FEELING - ADVICE FOR PATIENTS

NOTE: This section outlines the teaching that staff need to give to patients having insensitive hands.

INTRODUCTION

Because leprosy has damaged nerves to your arms, your hand now has some loss of feeling, of sweating and of strength. These will be lifelong problems . . . continuing after the disease is cured. It is important, therefore, that you now take care of your hands in order to avoid wounds, skin cracks and stiffness that could follow. In order to do this you need to adopt regular habits of self-care:

- 1. A habit of all-day avoidance of hand injury.
- 2. A daily routine of hand inspection, skin care and exercise.
- 3. A habit of early and correct wound care.

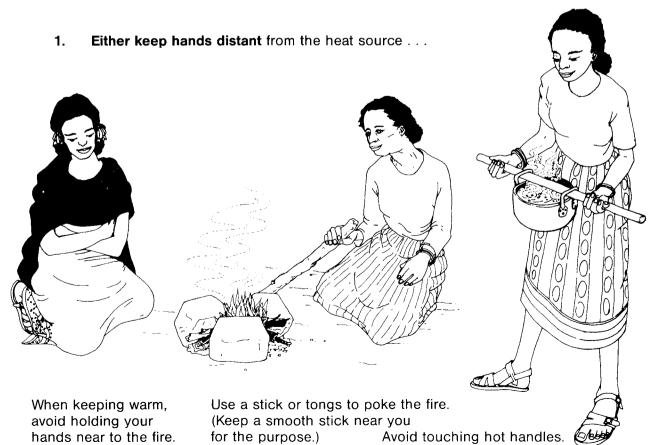
1. ALL-DAY AVOIDANCE OF HAND INJURY

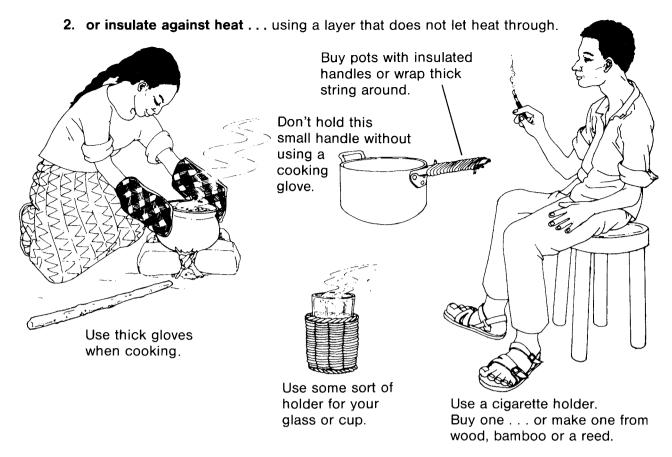
1.1 Learn which parts of your hands have lost feeling

WATCH these areas as you work . . . and protect them from injury. Whenever possible use areas which *have* feeling when touching objects that might hurt you.

1.2 WATCH for anything that might be hot and PROTECT your hands from heat

Don't take any risks. Non-feeling skin can be burnt *more* easily than normal skin. You therefore need to protect your hands *more* than you did when you had feeling.

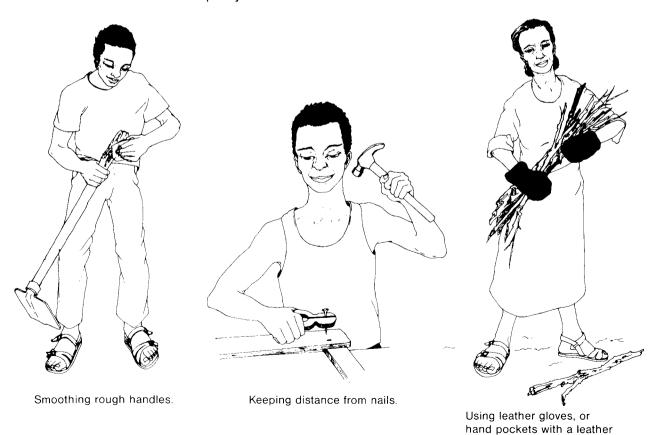




3. Avoid washing in hot water. Cold water is safest. If you have to use warm water, check the temperature using a skin area that has normal feeling.

1.3 Watch for and avoid rough or sharp objects

Either smooth off the roughness, or protect your hands with a tough layer or keep some distance from the sharp object.



patch over the palm surface.

Beware of long periods of one type of hand activity that might give you hand blisters . . . such as hoeing or sawing wood or pounding corn.

Try to *change* jobs from time to time during the day, and to stop and give your hands rests from time to time. A change of job will mean change of the hand area being pressed on. This will lessen changes of blisters.

As you do heavy work, stop sometimes and check your hands for signs of injury. Feel for any *warm spots* in your hands . . . these warn that your hand is being injured and needs *rest*. If you feel or see signs of injury:

- rest your hand . . . stop work if you can until the warmth goes,
- pad your hands or tool handles better when you go back to work.
- 1.5 Get to know the usual causes of hand wounds in your region . . . and how others avoid them. Talk with others having lack of feeling in their hands, and with the staff. Share your good ideas.
 - BE ON THE WATCH ALL DAY FOR OBJECTS OR ACTIVITIES THAT COULD HARM YOUR HANDS . . . AND AVOID THEM!
 - BE ON THE WATCH FOR WARMTH OR SMALL WOUNDS AND LOOK AFTER THEM IMMEDIATELY.





PREVENTION IS BETTER THAN CURE . . . AND MUCH EASIER!

2. DAILY ROUTINE OF INSPECTION, SKIN CARE AND EXERCISE



Set aside a definite time or times each day for this hand care routine:

Steps 1. Inspect

2. Soak in water

3. Oil

Reverse this order

4. Rub off hard skin

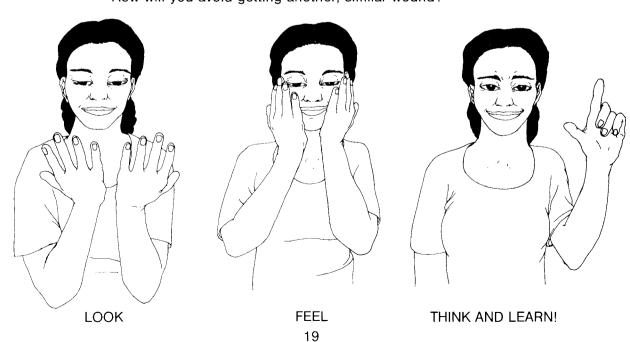
if you prefer

5. Exercise

If you find any wounds or open cracks, care for them also at this time as described under heading 3.

Step 1. Inspect your hands well:

- LOOK for early wound signs such as redness, swelling, blisters and for wounds;
 - for dry, hard and cracking skin.
 Decide which hard skin areas need thinning.
- FEEL Feel for warm spots. Feel with your other hand, or hold your hand against your cheek so that your cheek skin tells you of any warmth.
 - Press to find sore spots which warn of building-up of pressures during heavy work.
- LEARN from these signs:
 - What have you been doing that has injured your hand?
 - How will you rest warm, sore and wounded areas?
 - How will you avoid getting another, similar wound?



Step 2. Soak your hands in water until any dry or hard skin has become soft. This will take only a few minutes if you care daily . . . longer if your skin has become too thick and needs thinning.

The purpose of the water is to replace absent sweat and keep your skin elastic and strong so that it resists cracking and injury.

Step 3. Rub in oil immediately after soaking. The oil layer is needed to stop the water from drying off, and keep it in the skin. Any type of clean oil will do . . . as long as it does not attract insects or rats that could give you a dangerous bite. Most people use vaseline or some sort of cooking oil. Discuss the type with staff.

It is mainly the water that softens the skin rather than the oil. Both are needed . . . but don't waste your oil by rubbing it in without soaking in water first or after the water has dried off.

Step 4. Scrape off hard skin at crack edges and old wound sites

1. Crack edges:

- Support your cracked finger or thumb against your thigh to keep the crack closed as you rub its edge.
- Rub along the crack edge, not across the crack or you might make it worse.
- Never cut or pull hard skin off. Instead scrape it off . . . when it is really soft after soaking. If it becomes hard, soak again.
- Scrape using some sort of edge. Your finger-nail is good if not itself damaged . . . others suggest for examples, a teaspoon, the edge of a coin or key or rough piece of pottery. A stone is usually too round and large for this area.
- 2. Old wound sites. Where a lump of hard skin has built up, scrape it off layer by layer. Never pull or lift the whole lump or you may re-open the wound. Watch the area better in future and don't let hard skin build up again.

Step 5. Exercise while your hands are still oily. Exercise prevents clawed fingers and thumbs becoming *more* bent and *more* stiff than they are at present.

Fingers and thumbs like this . . .

... could become more bent and more stiff without exercise.

A few minutes exercise each day should, if well done, be enough to stop further stiffening.

Stop exercising if you have hand wounds or open cracks. The skin should be really strong before you stretch it.

Do these two finger exercises if you cannot straighten your fingers

Concentrate:

- on the first if your fingers are stiff, and
- on the second if your finger joints are loose.
- 1. Rest the back of your hand on your thigh or on a table padded by cloth.



Use your other hand to rub the fingers gently as straight as they will go . . . but taking care not to crack any weak finger skin.

2.



Cup your knuckle joints in your other palm. Keep them firmly bent.

Then straighten the end two joints of your fingers as strongly as you can.

Do these two thumb exercises if you cannot straighten your thumb

1.





Use your other hand to pull the end thumb joint as straight as it will go . . . but taking care not to crack the skin in front. Pull gently but firmly as though trying to lengthen the thumb . . . but don't bend it backwards.

2. Rest the little-finger-side of your hand on your thigh.

your other hand to supp

Use your other hand to support the back of your thumb firmly. You should then only be able to see the end bone.

Then straighten the end joint of your thumb as strongly as you can.

3. EARLY AND CORRECT WOUND CARE

Read the notes about wound care in the foot-care section that follows. The same rules apply for wound care in hands, though ways of resting them are of course different. These rules can be summarised as follows:

3.1 Be prepared to care for your own wounds

Learn and practise wound care before you get a wound. Keep some clean cloth plus soap or salt ready in a clean place.

3.2 Find danger signs early

- warm spots in your hand that warn you of wound build-up,
- dry and thickening skin that warns of future cracks.

With care at this stage you may avoid an open wound or crack.

3.3 Care early and well

 Remove the wound cause . . . both immediately, and in future to avoid wound recurrence.

This may mean for example:

- removing a thorn that is in your hand now, but also making simple gloves to protect your hands next time you collect sticks;
- stopping hoeing now, but also padding your hoe handle and having regular rest-stops when resuming hoeing later.
- Clean open wounds well by washing and soaking in soapy or salted water.
- Cover wounds if this will keep them cleaner and better protected against knocks. Take care not to bandage too tightly.
- REST the wound: Stop using the hand or at least the injured area . . . imagine that it is painful. Keep it up . . . perhaps support it in a sling of cloth or a scarf. Ask your health worker if your crack should be splinted.



Make sure that the wound is improving day by day. If not, or if it is smelly, hot or swollen, report the problem to your health worker.



CARE OF FEET WITH LOSS OF FEELING - ADVICE TO BE GIVEN TO PATIFITS

1. ALL-DAY AVOIDANCE OF INJURY

1.1 Always wear your protective footwear when you walk and stand:



- Keep this in good and safe repair.
- Have it replaced promptly when worn out. The soft insole is important in cushioning your foot against injury and should be replaced before worn through.

If you have a dropfoot always wear your dropfoot support, even though you may not like its appearance. It will protect your foot from turning in and being damaged further.

1.2 Remember that walking too much is the most common cause of sole wounds in the foot without sole feeling.



Avoid long walks as much as possible:

- ride when you can on a bicycle or bus or cart,
- see if someone can go in your place,
- if you must go:
 - stop often and sit down for a rest,
 - rest your feet well the next day and until any soreness when you press goes away (see 2.1),
- avoid long strides as these increase chances of wounds, and watch where you put your feet on rough ground.

1.3 Learn from any earlier wounds to your feet.



Don't make the same mistake twice.

Learn how much YOU can walk without getting a sole wound.

Learn the warning signs of injury (2.1) . . . when you notice these, rest your feet.

LEARN HOW STRONG YOUR FEET ARE!

1.4 Beware of heat . . . Protect your feet from heat. Non-feeling skin can be burnt more easily than skin that feels.



Beware of fire:

- wrap cloth or blanket round your legs as you sit near a fire to keep warm,
- keep your footwear on.

Take care with hot water:

- don't wash your feet and legs in hot water,
- don't spill any on your legs,

1.5 Beware of injuring your ankles as you sit on the ground

Wrap cloth around to pad them or sit on a chair or stool.

2. DAILY ROUTINE OF FOOT INSPECTION, SKIN CARE AND EXERCISE

Set aside a definite time or times each day for this foot-care routine:

Steps: 1. Inspect.

- 2. Soak in water.
- 3. Rub in oil. Reverse this order
- 4. Rub off hard skin. if you prefer
- 5. Take additional care if you have a dropped foot.

Step 1. Inspect non-feeling areas of your feet and legs well:

- LOOK for signs of injury or swelling,
 - for dry, hard skin or cracks.
 Decide which hard skin areas need thinning.
- FEEL Feel for warm spots which warn of injury.
 - Feel for lumps of hard skin.
 - Press the parts of your sole that take pressure as you walk.
 Soreness on pressure is an important sign of early injury inside your foot.



Press to find sore spots . . . at walking pressure sites.

- LEARN from these signs. THINK about them.
 - How have you injured your foot? Have you walked too far? Are your sandals worn out? Did you spill hot water on your foot?
 - How will you rest wounded areas (see 3)?
 - How will you avoid getting another, similar wound?

Step 2. Soak dry skin in water until any dry or hard skin becomes soft. Water replaces the absent sweat . . . feel how supple the skin is after soaking.

Soak dry leg skin:

- either in a bucket of water.
- or through using your hands to lift water from a bowl over your legs,
- or by wetting towels or cloth and wrapping these around your legs.

Where fungus infection of the skin is worsening cracks or stopping them healing, it is helpful to use potassium permanganate or clorox in the soaking water.

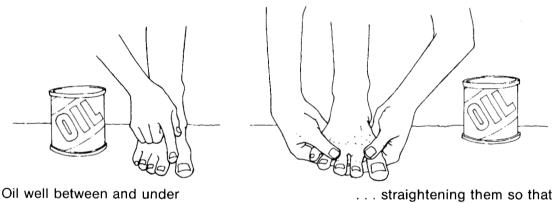
Step 3. Rub in oil

Do this as soon as you lift your feet from the water . . . because the main purpose of the oil is to form a layer which prevents the water from drying off.

Avoid using any type of oil that attracts insects or rats that could bite you. Most patients use vaseline or suitable cooking oil.

- If you are using liquid oil, try putting some drops onto the water in your soaking bowl before you lift your feet out.
- If your skin is extra dry, try using vaseline and wearing socks.

Really rub the oil in well, especially where skin is extra-dry or cracking.



Oil well between and under the toes

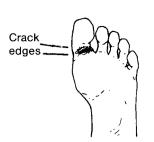
. . straightening them so tha they do not get stiff.

Step 4. Rub off hard skin while the skin is really soft after soaking. If the skin gets dry, resoak to soften it again.

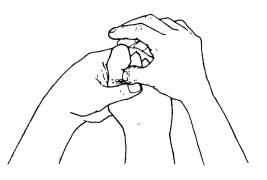
Scrape the hard skin off using a tool that is rough but not sharp.

Here are some examples:

- your finger-nail (if not damaged);
- the edge of a rough piece of pottery,
- the edge of a coin, key or spoon,
- the edge of a blunt knifeblade (used to scrape with, not to cut), or
- a local stone of a type used for skin-rubbing. Such stones are useful for rubbing off thick heel skin, but usually too large to use for small areas, such as crack edges.
- Pay special attention to rubbing off hard skin:
 - in lumps at old wound sites under the sole. Lumps of sole callous at walking-pressure sites act like small stones in a shoe, irritating the sole and causing the wound to reopen, and
 - at crack edges where it is likely to encourage cracks to re-open or to stay open.







When scraping hard skin from crack edges:

1. support to hold the crack closed,

rub along the edges not across the crack or you may open it more.

Always watch as you rub off hard skin. If you cannot see your sole well try using a mirror
to help you see, or ask a relative to help. Beware of rubbing and injuring thin, weak leg
skin.

KEEP YOUR SKIN SUPPLE

Step 5. Extra care for dropped feet

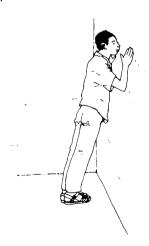
- Exercises.
 - Hold the outer border of the foot and pull up

 this will turn the foot out (and help prevent stiffening in the turned-in position).





2. Stand facing a wall and with your toes half a metre from it. Keep your feet facing straight forward, your heels down and your knees straight . . . and lean forward against the wall. Feel this stretching your calf muscles.



NOTE: Omit exercise 2. when having sole wounds. Instead sit on your bed with your leg up, loop a scarf under your foot and pull on it to pull your foot up.

- Dropfoot support. Always use your dropfoot support. If using a strap, check that it is tight
 enough, and that your foot has not turned in.
- Surgery. Ask your doctor if surgery might help your foot.

3. CARE EARLY FOR YOUR WOUNDS AND CRACKS

3.1 Care for your own wounds at home as soon as you see them

Find them early, look after them well and *most should heal with home care*. The body heals its own wounds if allowed to and if they are not complicated.

Try to find build-up pressure wounds from walking or working *before* they form blisters and open wounds. Rest them at this time and you can avoid their becoming open wounds.



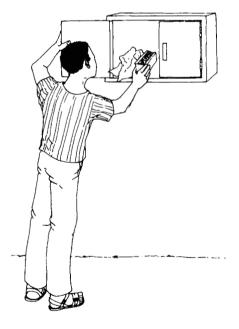
Prepare wound-care materials at home . . . so that they are ready if you do get an open wound.



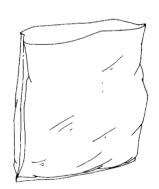
Keep some clean cloth in a clean bag. Use torn worn-out clothes and wash or boil them.



Add a piece of soap or some salt.



Keep them ready.



3.2 Five steps for wound care at home

Step 1. Remove the wound cause



There is little point in working to heal a wound today if you are going to allow it to recur tomorrow. Discuss wound recurrence with your health worker.

Step 2. Clean the wound well if it is open



We often clean wounds in hospital with soapy or salted water (saline). You can do the same at home . . . these are good "medicines".

Wash the wound area first.

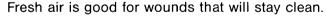
Then soak the wound in clean water for 20 or 30 minutes.

If available add one of the following:

- soap . . . shake it to make a lather,
- a spoonful of salt, or
- a spoonful of potassium permanganate if this is sold locally.

Don't burst any closed blisters . . . but if they burst themselves, push *all* fluid out.

Step 3. Cover an open wound if this will keep it cleaner or better protected from knocks.





Put a clean square of cloth next to the wound . . . to be thrown away after use.

Have two bandages. Wear a clean one each day . . . and wash and boil the other one.

Learn how to bandage:

- not too tight or blood supply will be cut off,
- not too loose or it will come off.

Adhesive tape

On a very clean and shallow wound you can use adhesive tape without cloth under it. Treat this like a second skin to keep dirt out. However the wound MUST be clean and not hot or smelly. If dirt is taped in this can cause deep wound problems. Don't pull this tape off unless stained by wound fluid . . . then take it off immediately. Otherwise wash, soak and oil with it on. Replace it if it falls off.

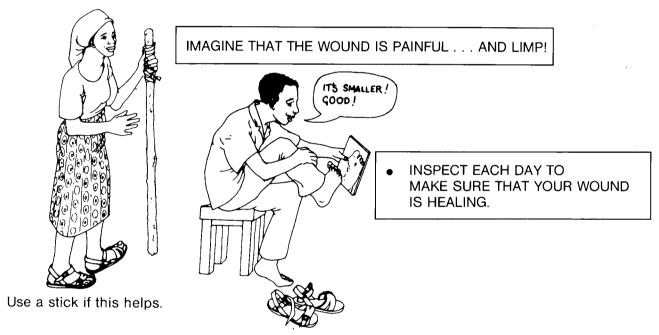
Step 4. REST the wound



Your body can heal most clean wounds if they are rested enough! (Pain normally warns people how much to rest their wounds. . . .) The more serious the wound, the larger the leg area that needs rest.

 Complete leg rest is very safe. Whenever possible sit down and put your foot up higher than your hip. This will help healing.

 If and when you feel that you must walk and work, limp to avoid pressure on the wound area as you would if you could feel.



If your wound is not healing, or if it is hot, swollen or smelly:



- rest it completely, and
- send a message to your health worker asking him to visit. Avoid walking to the health centre — this could make the wound worse.





If your wounds recur buy some crutches to use at home.

PROTECTIVE FOOTWEAR

Suitable footwear plays an important part in protecting insensitive feet against injury. Even where this is not available, patients should learn to avoid harmful footwear which can itself injure the foot.

It is not possible in this booklet to write about specially moulded footwear for deformed feet or to describe how footwear is made.

The purposes of this section are to outline important qualities looked for in basic, protective footwear, and possible sources of protective footwear.

1. IMPORTANT QUALITIES OF BASIC, PROTECTIVE FOOTWEAR FOR INSENSITIVE FEET

1.1 A soft insole to cushion against walking pressures

This cushioning needs to be about 1 cm thick. Its softness is known in some rubber or plastic factories as "15 shore".

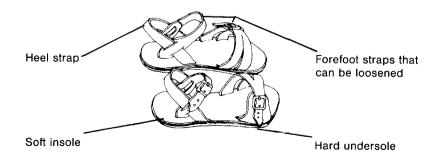
Insole material may be obtainable through your leprosy control programme office. If choosing insole material from a shop or factory, take your shoes off and try jumping or hopping on samples! Your feet should sink into it but you should not feel the ground through it. Buy just a few sheets at first, make some sandals and test these for wear and tear and check that it does not wear through too easily.

1.2 A hard undersole that cannot be pierced by thorns and stones or other sharp objects likely to be on the ground in your area. Car tyre is often used for this purpose and lasts very well.

1.3 An upper that:

- fits well, having plenty of room for clawed toes,
- has straps or laces over the forefoot that can be loosened to make room for a bandage or for foot swelling, and
- includes a heel-strap or filled in heel. This is necessary so that the patient does not claw his toes up more in order to keep the footwear on his foot. If your patients insist in *not* using the heel-strap, then make the uppers reach high up (near to the ankle) over the forefoot.

A common type of protective footwear used in hot countries



1.4 Footwear suitable for local conditions, for example:

- enclosed footwear where skin cracking is a serious problem (patients with open footwear should try to use socks),
- footwear with a cap or straps over the toes in stony areas where toes are likely to be injured,
- strongly-attached, wide straps or an enclosed upper in muddy conditions,
- and footwear that can safely be repaired locally and replaced promptly.

1.5 Footwear that the patient is willing, and if possible happy, to wear

Acceptability is important. Do try really hard to help the patient find protective footwear that he really likes and can afford to replace year after year.

Protective footwear that is not worn will not protect the foot!

Try to offer a choice of styles and colours where possible and helpful. Try using trimmings if the patient likes these and they are available locally — horizontal trimmings help to make the extra thickness of the sole less obvious.

These individual touches and styles are extra important in younger patients and where acceptance is a problem because the footwear has become known locally as "leprosy footwear".

If a patient is still not really happy with the footwear, despite your best efforts, try to help him understand:

- the usefulness of the footwear in protecting against wounds, and
- the importance of avoiding the first or next wound, because each extra wound makes it more difficult to avoid a following wound.

2. POSSIBLE SOURCES OF PROTECTIVE FOOTWEAR INCLUDE THE FOLLOWING:

a) Sports footwear that incorporates good insole cushioning



 d) Heel strap added to house slippers



 b) Modified shop sandals Straps lengthened and soft insole added

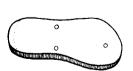


 Footwear can be deepened by 1 cm and a soft insole added by: local shoe makers, factories, hospital-workshop



Note. Soft slipper sole, with straps removed and the holes plugged with the same material, can be used as insoling material.





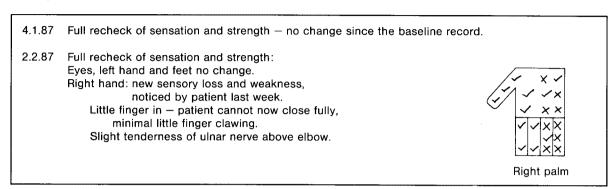
Use of protective, cushioned footwear by the majority needing it is the priority. Patients should be encouraged to buy their own unless destitute, using suitable local shop footwear. Where this is not available it may be necessary to organise distribution of footwear for sale to patients, through district leprosy supervisors. Where special shoe workshops exist, their staff can focus attention on modifying footwear for patients whose wounds recur with the simpler footwear.

FOLLOW-UP DISABILITY RECORDS NEEDED FOR FEEDBACK

1. RECORDING CHANGES IN NERVE FUNCTION

Repeat the sensation and strength tests used for the baseline disability record if you think that these may have changed. Test sensation at extra sites if there is partial sensation loss, and not only at dot sites. Record the test date, and any changes noticed on the Individual Patient Form (IPF).

Example:



2. RECORDING CHANGES IN WOUNDS, OPEN CRACKS AND BONE SHORTENING

2.1 IPF record

1. Draw in all new or recurred wounds, open cracks or shortening on a new hand or foot map.

(Do not draw a later second map to show change in the *same* wound.)

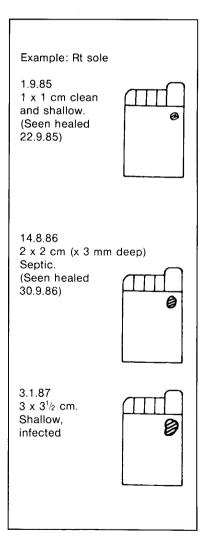
It is a good idea to draw all such maps on the righthand side of the page so that they can easily be compared with one another.

- 2. Add brief wound comments regarding:
 - wound cause,
 - size and condition,
 - history: date of the first wound at the site and length of time for which it recently stayed healed
 - treatment, including removal of any dead bone,
 - healing date.

2.2 Wound notebook or page

Avoid filling up the IPF with detail that has only short-term importance.

Record this sort of information in a notebook or page that can be thrown away . . . after important information on it has been summarised on the IPF, and when healing is complete.



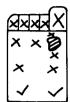
A wound notebook is especially useful for recording fortnightly changes in wound size and condition in patients in hospital with slow-to-heal wounds. Refer to it during ward rounds when discussing healing progress and plans with patient and co-workers.

Sample page of a wound notebook

PATIENT: John Eket.

No. 1243.

Work: farmer.



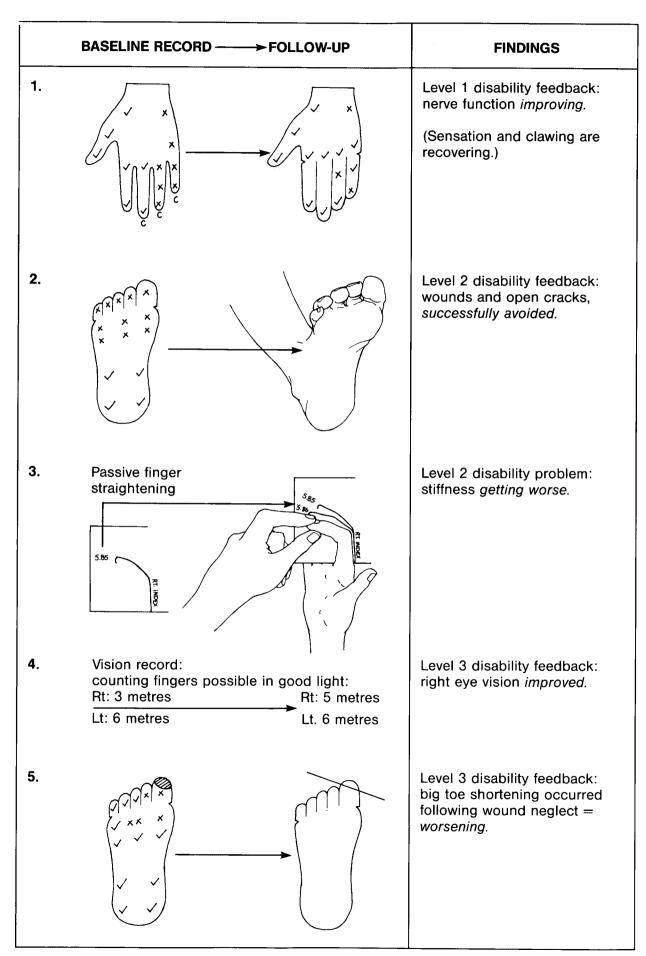
Wound history: first wound same site 4 years and last stayed healed only 3/12.

Cause: walking pressures, sandal worn out.

Plan: new sandals self-care of wound plan to avoid recurrence.

DATE 1987	SIZE i Front/back	n mm Side/side	COMMENTS	ASSESSOR
Jan. 3	30	35	Shallow but infected.	JMW
Jan. 8	30	35	Much cleaner after soap soaks. Uses stick well. Has new, protective sandals.	JMW
Jan. 16	20	23	Doing well.	JMW
Jan. 23	20	25	Getting careless and fed-up walking too much — went to see football match nearby.	JMW
Jan. 30	10	15	Patient saw that healing stopped when walked more more careful now. Doing well again.	JMW
Feb. 6	-	_	Healed but tender on pressure. To keep stick for home use whenever is tender.	JMW
		i		

FIVE EXAMPLES OF FEEDBACK USING DISABILITY RECORDS



TEACHING THAT ENCOURAGES CARING

"HOW something is taught is just as important as WHAT is taught. And the most important part of HOW something is taught is the CARING, RESPECT AND SHARED CONCERN that go into it."

Health teaching cannot be swallowed like tablets so that we and others "do what we are told to do for our own good". As adults we decide whether or not to act on advice that we are given. Our response depends a great deal on factors such as how we feel, what we think of the person giving the advice, whether or not we really understand and believe what we are told and whether or not suggestions made are practical.

It is important that as staff we recognise that the way in which we offer teaching has a great effect on whether or not patients act on what we advise. It is important also that we remember that patients can teach us as much as we can teach them!

BE WELCOMING . . . AND TAKE TIME TO LISTEN

It feels good to be welcomed, listened to, cared for and respected. These attitudes in staff are likely to encourage listening and caring in patients and co-workers.



Take extra time to listen quietly to patients who seem "stubborn" or who always challenge or joke about your teaching.

Such patients are often worried people with longterm problems:

- perhaps feeling despairing because their wounds never seem to stay healed,
- perhaps fearing lest you embarrass them in front of other patients when you see that their wound has re-opened.

As you listen to a patient you will probably come to understand him better.

Beware of giving easy-sounding answers for difficult problems . . . of saying for example "you have not been careful" when a patient's wound recurs. Maybe the patient's tissues have been so damaged that the wound now recurs even though he *has* been careful. Maybe the patient *cannot* give the wound the rest that it needs and at the same time work to feed his family.

¹ Reference. Helping Health Workers Learn, David Werner and B. Bower, 1982, USA, Hesperian Foundation.

SHOW A REAL CONCERN FOR SMALL AND EARLY PROBLEMS

If you set an example of regular and careful inspection of insensitive areas, and if you show real concern over early problems such as neglected skin and warm spots that warn of build-up injury . . . then you will encourage patients to do likewise.

If on the other hand you fail to inspect and fail to notice early problems, or if you notice these problems but pay little attention to them . . . then you will encourage similar neglect in patients.

Neglected small problems turn into big problems. Neglected, dry skin for example may develop an open crack.

The neglected, small wound may become infected and cause severe tissue damage.



Teach concern by showing concern

SHOW CONFIDENCE IN THE SELF-CARE THAT YOU TEACH

1. Avoid unnecessary intervention

Don't, for example, do skin and wound care for a patient who could do it just as well himself. . . even if more slowly. Instead teach him, show him that you have confidence that he can do it and encourage him to persevere. The patient who, under caring instruction, gets his own wound healed through self-care . . . has learnt confidence in self-care and will be encouraged to care for his next wound early at home.

2. Practise what you teach

Because you teach patients always to soak and oil dry skin daily:

- when you are doing wound dressings, make sure that your patients oil their skin after soaking,
- make sure that patients attending an exercise class soak before they oil their hands, even
 if only for a few minutes.

3. Make provision for hospital patients to carry out the daily routine of care that you teach.

Check that needed bowls, water, oil, soap and mirrors are available . . . and that patients who cook extra food for themselves have needed protection so that they can cook safely.

See that the patient admitted for a wound on one foot also cares for his hands and his other foot if insensitive. See that the patient admitted for reaction *also* cares daily for his eye which does not close fully.

LET PATIENTS LEARN SELF-CARE BY PRACTISING IT

This is important. Studies have shown that people remember what they do better than what they only hear about or observe. As patients practise:

- help them to care correctly, for example to rub off the hard skin areas carefully,
- discuss with them how they will manage at home, for example what oil they will use, and
- discuss with them why the self-care is needed. It is important that patients have a clear idea of what to expect as a result of self-care.

Only to talk about self-care is NOT ENOUGH



Prepared to help out-patients practise needed self-care