



Accra, 10-14 December 2007

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From Global Strategy to National Action:  
Workshop for Health Service Managers in Charge of  
Leprosy Control Programmes

Session 5 Part 1  
**Impairments and nerve damage**

Topic: Impairment



# Session 5: Educational objectives

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At the end of this session, participants should be able to

1. Perceive the consequences of impairments
1. Define the patients at increased risk of nerve damage
2. Describe 5 common physical problems associated with long-term effects of nerve damage in leprosy.



# Disability

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**Disability: a broad term covering any impairment, activity limitation or participation restriction affecting a person.**

**Most disabilities in leprosy are direct or indirect results of function loss of peripheral nerves supplying the eyes, hands and feet**



# Nerve function loss

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- **Eyes: - muscle weakness**
  - risks associated with ineffective closure of eyelids
- **Hands: - loss of sensation**
  - associated with dryness injuries, wounds and ulcers
  - muscle weakness
- **Feet: - loss of sensation**
  - associated with dryness, injuries, ulcers and complications
  - muscle weakness



# Disability grading

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**Disability = any impairment, activity limitation, or participation restriction affecting a person.**

**EVERY NEW case must be assigned a Disability grade, which shows the condition at the time of diagnosis.**

**The grade is either 0, 1 or 2 for each eye , hand and foot. Each person has six grades; the highest grade is given as the disability grading of that person.**



# Disability grade 0 and 1

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**Grade 0: No disability found**

**Grade 1:**

**Loss of sensation of the hand or foot.**

**Eyes are only graded as 0 or 2**

**Loss of sensation in the hands or feet is that due to nerve trunk damage not loss of sensation in skin patches.**

**Examination for loss of sensation in feet is essential for prevention of damage to feet in people affected by leprosy.**

# Disability grade 2

**Grade 2: Visible damage or disability.**

**Eyes: inability to close**

**Obvious redness**

**Visual impairment**

**Blindness**

**Hands and feet;  
wounds (ulcers)**

**deformity due to muscle  
weakness**

**loss of tissue**





# Nerve damage in leprosy

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**Can occur in any patient**

**Can occur before, during and after completion of a full course of MDT**

**Patients with higher risk of nerve damage include:**

- a. All MB Patients**
- b. PB and MB patients with impaired nerve function at the time of diagnosis**  
**(higher risk of further damage)**



# **Physical effects associated with long term effects of nerve damage**

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**General:**

***Recent nerve damage can be reversed.***

***Discussion refers to those that cannot be reversed through medical treatment as 'long term effects.'***



## **(i) Weakness of eye closure**

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**Ulceration of the  
cornea**

**Scarring of the cornea  
blindness**



## (ii) Loss of sensation in the hand

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**Loss of sweating**

**Injury**

**Cracking**

**Ulceration**

**Infection**

**Stiffness**

**Loss of tissue**



## (iii) Weakness and deformity of the hand

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**Contractures**

**Fixed deformities**



## (iv) Loss of sensation of the foot

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**Dryness**

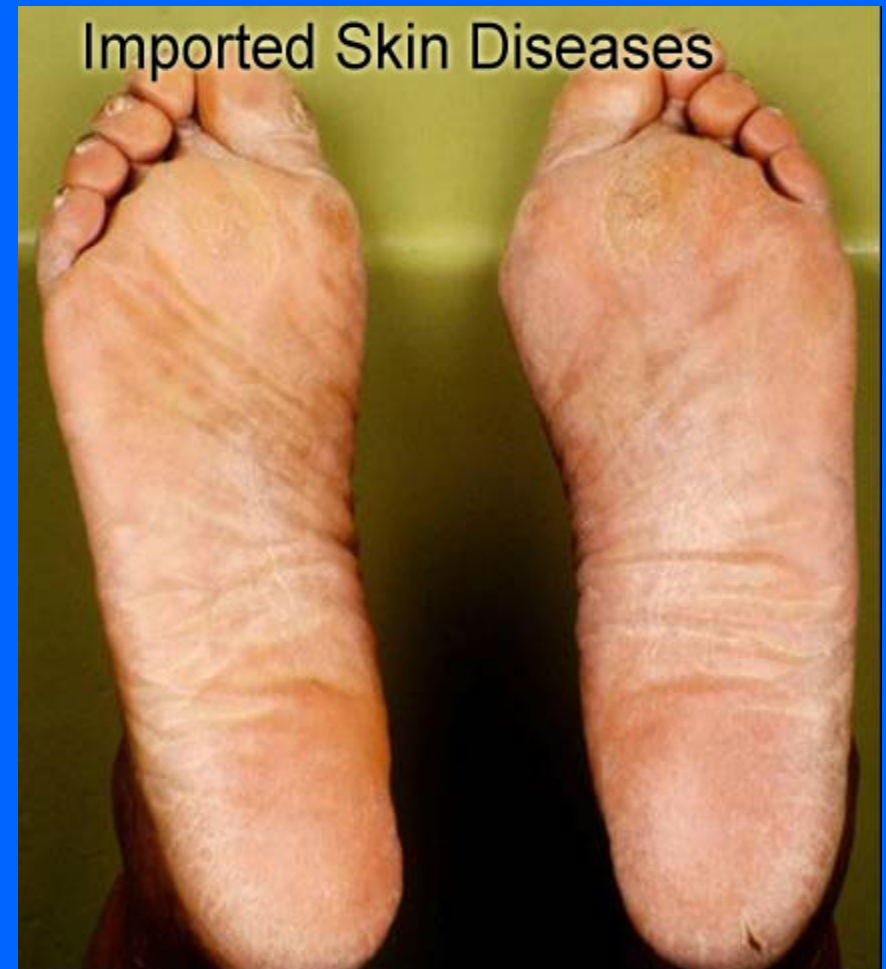
**Injury**

**Cracking**

**Ulceration**

**Chronic infection  
(with Osteomyelitis)**

**Loss of tissue**



# Loss of sensation of the foot

Imported Skin Diseases





## (v) Weakness and deformity of the foot

### Foot drop



### Problems associated with walking with foot drop





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Session 5 part 2  
**Impairments and nerve damage**

Topic: Prevention of Disability



# **Prevention of Disability: Educational objectives**

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**At the end of this session participants should be able to:**

- Describe POD activities that can be carried out by patients at home and staff at peripheral and referral level**
- List possible methods for encouraging self care in patients' own settings**



# PoD

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Prevention of disabilities (PoD) includes all activities aimed at ensuring that patients no disability apart from that which was irreversible at the time of detection (diagnosis).

Major components of PoD include:

Early case detection and effective treatment

Preservation of nerve function

Preservation of vision

Training of patients in self care

Provision of protective foot-wear.



# **Management of people with long standing disability**

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**At home**

**In nearby (peripheral) health facility**

**At referral level**



# Management at home

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## **Eyes: (to preserve sight)**

- **Inspect eyes: for redness and foreign bodies**
- **blinking exercises**
- **protection with: hat, sunglasses, sheet at night.**

## **Hands:- inspect for signs of injury**

- soaking , rubbing, oiling**
- **cover open wounds**
- **exercises to prevent contractures**



# Management at home contd.

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## Feet:-inspect for signs of injury

- soaking, rubbing, oiling
- restrict walking (less frequent, short steps)
- if with ulcers: rest
- cover open wounds with clean cloth
- stretching exercises for foot drop to prevent contracture of Achilles tendon.



# How to encourage self care at home.

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- Advice from:**
- Health workers**
  - Family members**
  - Through self care groups**
  - Other people affected by leprosy**



# **Management in nearby (peripheral) health facility**

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**General:**

**Health workers:**

- **have to be instructed in management of cases occurring in their unit.**
- **Should be able to support patients to do home care as described above.**



# Management in peripheral unit 2

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## Care for Eyes:

- provide *Artificial tear drops*
- treat conjunctivitis with antibiotics
- refer more serious cases to eye clinic



# Management in peripheral unit 3

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**Hands:- Review in the light of measures described for home care and advise.**

- refer to next level if not satisfactory.

**Feet: - Review and guide regarding activities for home care.**

- arrange for protective foot-wear
- refer to next level if not satisfactory



# Management at referral level

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**Eyes:** -refer to eye clinic

- corrective surgery for lagophthalmos may be considered.
- treatment of other problems not necessarily due to leprosy e.g. cataract

**Hands:** -adaptation of tools to avoid injury

- soaking, “trimming “ of callus
- prevention of contracture e.g. splinting
- treatment of infection (incl. surgery)
- reconstructive surgery e.g. for mobile claw hand



# Management at referral level 2

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- Feet:**
- soaking and trimming
  - surgical management of chronic ulcers
  - assistive device for foot-drop
  - management of infection (including surgery)
  - reconstructive surgery e.g. foot-drop correction



# Provision of foot-wear 1

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Rationale:

**To prevent injuries and foot ulcers in people with insensitive feet.**

Choices:

**Shoes from open market (as is or modified)**

**Manufactured in orthopedic workshops**



# Provision of foot-wear 2

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Important features:

- Soft insole**
- hard sole**
- heel straps for sandals**
- Well fitting**
- appropriate fastening**
- socially acceptable**



## **Review of educational objectives**

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**It is now the end of the session; you should be able to:**

**Perceive the consequences of impairments**

**Define the patients at increased risk of nerve damage**

**Describe 5 common physical problems associated with long-term effects of nerve damage in leprosy**

**Describe POD activities that can be carried out by patients at home and staff at peripheral and referral level**

**List possible methods for encouraging self care in patients' own settings**