

# **MANUAL FOR DOCTORS TO EVALUATE PERMANENT PHYSICAL IMPAIRMENT**

**Based on  
Expert Group Meeting on Disability Evaluation  
&  
National Seminar on disability Evaluation and Dissemination  
D.G.H.S. – W.H.O. – A.I.I.M.S  
New Delhi – 1981**

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**Guidelines for evaluation of permanent Physical impairment in lower limbs.**

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**(a) Burns of head & neck, trunk and genitalia**

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### Preface

“Expert Group Meeting on Disability Evaluation” was held in September, 1981 in New Delhi with the objective to develop simple norms for evaluation of permanent physical impairment in Indian patients. Guidelines developed at the meeting were given due trial at various centres in the country. It was then followed by “National Seminar on Disability Evaluation & Dissemination” held in December, 1981. This manual has been developed as an outcome of these seminars to evaluate permanent physical impairment of

- (i) Upper limbs
- (ii) Lower limbs
- (iii) Trunk (spine)
- (iv) Amputations
- (v) Neurological conditions
- (vi) Facial injuries, burns of head, neck, trunk & genitalia
- (vii) Cardio-pulmonary diseases

It will help the medical practitioners to evaluate the degrees of permanent physical impairment easily. It will further standardize the evaluation system uniformly in the country. It will facilitate the handicapped persons in the rural areas also to get the benefits existing under various provisions. While developing the present criteria of evaluation of physical impairment, due consideration has been given to terms like “impairment”, “functional limitation”, “disability” and “normal”.

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March '82

S.K. Varma

### Acknowledgements

Organisers are grateful to W.H.O. for providing funds under Medical Rehab programme

IND-ADR-001 for the Expert Group Meeting on Disability Evaluation and the National Seminar on Disability Evaluation and Dissemination.

Genuine concern of the participants and their full participation and co-operation has helped in developing the guidelines of evaluation.

“Disability – Determination and Evaluation” by Dr. Henry H. Kessler, West Orange, New Jersey, has been a valuable guide in developing the disability norms in this manual. The basic components of evaluation have been based on the same principles. We duly acknowledge Dr. Kessler’s Work.

The organisers sincerely appreciate the hard work of Dr. Anil Chawla (Chief Rapporteur), Dr. R.K. Srivastav, Dr. Upinderpal Singh and Mr. R.K. Sharma who helped in compiling the guidelines.

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March '82

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## **Introduction**

India is a vast country with variable social, cultural, geographical and economic background. Polio, communicable and congenital diseases are still major problems adding to the number of disabled. In addition rapid industrialization, mechanization of farming and increase in vehicular traffic has increased the number of accidents. The changing demographic picture with increase in life expectancy, labour force and active working population in industries, urban or rural, has brought in its wake a number of disability problems in all age groups and more so in the productive group which require measures for disability evaluation and rehabilitation.

Evaluation of disability so far being followed in the country is based on parameters of certain development countries. Even these parameters are not adequate. With different social milieu, economic factors, extended family system, low literacy rate, habits/A.D.L. and lack of statutory provisions for social security India has to develop its own parameters to evaluate the disabilities. These parameters have to be need based.

At present disability evaluation in India is needed to award compensation, stipends, employment, conveyance allowance, travel concessions, tax-deduction benefits, admission to various courses etc. to the disabled. From time to time statutory provisions have been made to award compensation due to disability.

These statutory provisions are:

- (a) Workman's Compensation Act.
- (b) E.S.I. Act.
- (c) M.V.I. Act.
- (d) Railways Act.
- (e) Civil Aviation Act.
- (f) Quantum Damage Act.

Some of these are outdated and need revision.

### **Lacunae in the Present Methods of Disability Evaluation**

1. Disability is not purely a medical condition. It involves Physical, Social, Psychological & Vocational impairments. At present evaluation of disability is done by the medical doctor who is specialized to evaluate only the medical aspect of disability i.e. physical impairment.
2. Social, Psychological and Vocational activities/potential are never considered while giving the disability assessment certificates. Hence the present system of issuing disability evaluation certificate is defective.
3. A paraplegic person may be totally permanently physically impaired, but if he has potential to earn his living, his disability can't be labelled as total. But with present system of evaluation no such demarcation has been made between disability and physical impairment. This is one of the greatest lacunae in the present system of disability evaluation.

### **Definitions**

Physical impairment leads to functional limitation and functional limitation leads to disability. Hence physical impairment, functional limitation and disability have been defined by W.H.O. as :

- (i) *Impairment*: An impairment is a permanent or transitory psychological, or anatomical loss and /or abnormality. For example a missing or defective part, tissue organ, or "mechanism" of the body, such as an amputated limb, paralysis after polio, myocardial infarction, cerebrovascular thrombosis, restricted pulmonary capacity, diabetes, myopia, disfigurement, mental retardation,

hypertension, perceptual disturbance.

- (ii) *Functional limitation:* Impairment may cause functional limitations which are the partial or total inability to perform those activities necessary for motor, sensory, or mental functions within the range and manner of which a human being is normally capable such as walking, lifting loads, seeing, speaking, bearing, reading, writing, counting, taking interest in and making contact with surroundings, A functional limitation may last for a short time, a long time be permanent or reversible. It should be quantifiable whenever possible. Limitations may be described as “progressive” or “regressive”.
- (iii) *Disability:* Disability in which functional limitation and or impairment is a causative factor, is defined as an existing difficulty in performing one or more activities which, in accordance with the subject’s age, sex and normative social role, are generally accepted as essential, basic components of daily generally accepted as essential, basic components of daily living, such as self-care, social relations and economic activity. Depending in part on the duration of the functional limitation, disability may be short-term, long-term or permanent. In this context we will only deal with long-term and permanent disability.

Medically, disability is physical impairment and inability to perform physical functions normally.

Legally, disability is a permanent injury to body for which the person should or should not be compensated.

Under the statutes or Workman’s Compensation, disability may be divided into three periods which are:

1. *Temporary total disability* is that period in which the injured person is totally unable to work. During this time he received orthopaedic or other medical treatment.
2. *Temporary partial disability* is that period when recovery has reached the stage of improvement so that the person may begin some kind of gainful occupation.
3. *Permanent disability* applies to permanent damage or to loss of use of some part of the body after the stage of maximum improvement, from orthopaedic or other medical treatment, has been reached and the condition is stationary.

### **The Doctor and the Evaluation**

The doctor may be called upon to testify as an expert witness in the court of justice. The expert witness is legally bound to declare his knowledge of the case and express his opinions.

Effects of disability are physical, social, psychological and vocational, Since the total disability is not purely a medical condition, medical man should evaluate the Permanent Physical Impairment rather than total disability. Physical impairment evaluation certificate is to be issued only by Medical Doctors who are registered under “The 1<sup>st</sup> schedule of M.C.I. Act, 1956”. Aggregate of permanent physical impairment should not exceed more than 100%.

### **Guidelines for Evaluation of Permanent Physical Impairment in Upper Limbs**

1. The estimation of permanent impairment depends upon the measurement of functional impairment, and is not expression of a personal opinion.
2. The estimation and measurement must be made when the clinical condition is fixed and unchangeable.
3. The upper extremity is divided into two component parts the arm component and the hand component.
4. Measurement of the loss of function of arm component consists in measuring the loss of motion, muscle strength and co-ordinated activities.
5. Measurement of the loss of function of hand component consists in determining the Prehension, Sensation & Strength. For estimation of Prehension : Opposition, lateral pinch, Cylindrical grasp, spherical grasp and hook grasp have to be assessed as shown in the column of "prehension component in the proforma.
6. The impairment of the entire extremity depends on the combination of the functional impairment of both components.

### **ARM COMPONENT**

Total value of arm component is 90%.

Principles of Evaluation of range of motion of joints

1. The value for maximum R.O.M. in the arm component is 90%.
2. Each of the three joints of the arm is weighted equally (30%).

Example

A. fracture of the right shoulder joint may affect range of motion so that active adduction is 90°. The left shoulder exhibits a range of active abduction of 180°. Hence there is loss of 50% of abduction movement of the right shoulder. The percentage loss of arm component in the shoulder is  $50 \times 0.30$  or 15% loss of motion for the arm component.

If more than one joint is involved, same method is applied, and the losses in each of the affected joints are added.

Say,

Loss of abduction of the shoulder = 60%

Loss of extension of the wrist = 40%

Then, loss of range of motion for the

arm =  $(60 \times 0.30) + (40 \times 0.30) = 30\%$

### **Principles of Evaluation of strength of muscles**

1. Strength of muscles can be tested by manual testing like 0-5 grading.
2. Manual muscle gradings can be given percentages like
3. – 100%
4. – 80%
5. – 60%

6. – 40%
7. – 20%
8. – 0%
9. The mean percentage of muscle strength loss is multiplied by 0.30.
10. If there has been a loss of muscle strength of more than one joint, the values are added as has been described for loss of range of motion.

#### Principles of Evaluation of co-ordinated activities

1. The total value for co-ordinated activities is 90%.
2. Ten different co-ordinated activities are to be tested as given in the Proforma.
3. Each activity has a value of 9%.

#### Combining values for the Arm Component

1. The value of loss of function of arm component is obtained by combining the values of range of movement, muscle strength & co-ordinated activities, using the combining formula

$$A + b(90-a)/90$$

Where a = higher value

& b = lower value

#### *Example*

Let us assume that an individual with a fracture of the right shoulder joint has in addition to 16.5% loss of motion of his arm, 8.3% loss of strength of muscles, and 5% loss of co-ordination. We combine these values as :

Range of motion : 16.5%                       $16.5 + 8.3(90-16.5)/90 = 23.3 \%$

Strength of Muscles : 8.3%

Co-ordination : 5%                               $23.3 + 5(90-23.3)/90 = 27.0\%$

So total value of arm component = 27.0%

#### **HAND COMPONENT**

Total value of hand component is 90%.

The functional impairment of hand is expressed as loss of prehension, loss of sensation, loss of strength.

#### **Principles of Evaluation of Prehension**

Total value of Prehension is 30%. It includes :

(A) Opposition (8%). Tested against

Index finger (2%). Middle finger (2%)

Ring finger (2%) & Little finger (2%)

(B) Lateral Pinch (5%). Tested by asking the patient to hold a key.

(C) Cylindrical Grasp (6%). Tested for

(D) Large object of 4 inch size (3%)

(E) Small object of 1 inch size (3%)

(F) Spherical Grasp (6%). Tested for

(G) Large object 4 inch size (3%)

(H) Small object 1 inch size (3%)

(I) Hook Grasp (5%). Tested by asking the patient to lift a bag.

### **Principles of Evaluation of Sensations**

Total value of sensation is 30%. It includes :

1. Grip Strength (20%)
2. Pinch Strength (10%)
3. Strength will be tested with hand dynamo-meter or by clinical method (Grip Method).

10% additional weightage to be given to the following factors :

1. Infection
2. Deformity
3. Malalignment
4. Contractures
5. Cosmetic appearance
6. Abnormal Mobility
7. Dominant Extremity (4%)

### **Combining values of the hand component**

The final value of loss of function of hand component is obtained by summing up values of loss of prehension, sensation and strength.

Combining Values for the Extremity

Values of impairment of arm component and impairment of hand component are combined by using the combining formula.

Example

Impairment of the arm = 27.0%       $64 + 27(90-64)/90$

Impairment of the hand = 64%  
= 71.8%



## **Guidelines for Evaluation of Permanent Physical Impairment in Lower Limbs**

The lower extremity is divided into two components: Mobility component and Stability component.

### **MOBILITY COMPONENT**

Total value of mobility component is 90%. It includes range of movement and muscle strength.

#### Principles of Evaluation of Range of Movement

1. The value of maximum range of movement in the mobility component is 90%.
2. Each of the three joints i.e. hip, knee, foot-ankle component, is weighted equally – 0.30.

Example

A Fracture of the right hip joint may affect range of motion so that active abduction is 27°. The left hip exhibits a range of active abduction of 54°. Hence, there is loss of 50% of abduction movement of the right hip. The percentage loss of mobility component in the hip is 50 x 0.30 or 15% loss of motion for the mobility component.

If more than one joint is involved, same method is applied and the losses in each of the affected joints are added.

For Example :

Loss of abduction of the hip = 60%

Loss of extension of the knee = 40%

Loss of range of motion for the mobility component =  $(60 \times 0.30) + (40 \times 0.03) = 30\%$

### Principles of Evaluation of Muscle Strength

1. The value for maximum muscle strength in the leg is 90%.
2. Strength of muscles can be tested by manual testing like 0-5 grading.
3. Manual muscle gradings can be given percentages like

Grade 0 = 100%

Grade 1 = 80%

Grade 2 = 60%

Grade 3 = 40%

Grade 4 = 20%

Grade 5 = 0%

4. Mean percentage of muscle strength loss is multiplied by 0.30.
5. If there has been a loss of muscle strength of more than one joint, the values are added as has been described for loss of range of motion.

### Combining Values for the Mobility Component

Let us assume that the individual with a fracture of the right hip joint has in addition to 16% loss of motion 8% loss of strength of muscles.

Combining Values

Motion 16%                       $16 + 8(90-16)/90 = 22.6\%$

Strength 8%

Where a = higher value b = lower value

## STABILITY COMPONENT

1. Total value of stability component is 90%
2. It is tested by 2 methods
3. Based on scale method.
4. Based on clinical method

Three different readings (in kilograms) are taken measuring the total body weight (W), scale 'A' reading and scale 'B' reading. The final value is obtained by the formula :

$$\frac{\text{Difference in body weight}}{\text{Total body weight}} \times 90$$

In the clinical method of evaluation nine different activities are to be tested as given in the proforma. Each activity has a value of ten percent (10%).

### Extra Points :

Extra points have been given for pain, deformities, contractures, loss of sensations and shortening. Maximum points to be added are 10% (excluding shortening). Details are as following :

(i) Deformity	In functional position	3%
	In non-functional position	6%
(ii) Pain	Severe (grossly interfering with function)	9%
	Moderate (moderately interfering with function)	6%
	Mild (mildly interfering with function)	3%
(iii) Loss of sensation	Complete Loss	9%
	Partial loss	6%
(iv) Shortening	First ½"	Nil
	Every ½"	4%
(v) Complications	Superficial complications	3%
	Deep complications	6%

## Guidelines for Evaluation of Permanent Physical Impairment of Trunk (Spine)

The local effects of lesions of spine can be divided into traumatic and non-traumatic lesions.

### **TRAUMATIC LESIONS**

#### **Cervical Spine Fracture**

Percent Whole body Permanent Physical Impairment and Loss of Physical Function to Whole Body

- A. Vertebral compression 25%, one or two vertebral adjacent bodies, no fragmentation, no involvement of posterior elements, no nerve root involvement, moderate neck rigidity and persistent soreness. 20
- B. Posterior elements with X-ray evidence of moderate partial dislocation
  - (a) No nerve root involvement, healed 15
  - (b) With persistent pain, with mild motor and sensory Manifestations 25
  - (c) With fusion, healed no permanent motor or sensory changes. 20
- C. Severe dislocation, fair to good reduction with surgical fusion
  - (a) No residual motor or sensory changes 25
  - (b) Poor reduction with fusion, persistent radicular pain, motor involvement, only slight weakness and numbness. 35
  - (c) Same as (b) with partial paralysis, determine additional rating for loss of use of extremities and sphincters.

#### **Cervical Intervertebral Disc**

- 1. Operative, successful removal of disc, with relief of acute pain, no fusion, no neurological residual 10
- 2. Same as (1) with neurological manifestations, persistent pain, numbness, weakness in fingers. 20

#### **Thoracic and Dorsolumbar Spine Fracture**

Percent Whole body Permanent Physical Impairment and Loss of Physical Function to Whole Body

- A. Compression 25%, involving one or two vertebral bodies, mild, no fragmentation, healed no neurological manifestations. 10
- B. Compression 50%, with involvement posterior elements, healed, no neurological manifestations, persistent pain, fusion indicated. 20
- C. Same as (B) with fusion, pain only on heavy use of back 20
- D. Total paraplegia 100

D. Posterior elements, partial paralysis with or without fusion, should be rated for loss of use of extremities and sphincters

Low Lumbar

1. Fracture
2. Vertebral compression 25%, one or two adjacent vertebral bodies, little or fragmentation, no definite pattern or neurological changes. 15
3. Compression with fragmentation posterior elements, persistent pain, weakness and stiffness, healed, no fusion, no lifting over 25 pounds 40
4. Same as (B), healed with fusion, mild pain 20
5. Same as (B), nerve root involvement to lower extremities, determine additional rating for loss of industrial function to extremities
6. Same as ©, with fragmentation of posterior elements, with persistent pain after fusion, no neurologic findings 30
7. Same as ©, with nerve root involvement to lower extremities, rate with functional loss to extremities
8. Total paraplegia 100
9. Posterior elements, partial paralysis with or without fusion, should be rated for loss of use of extremities and sphincters.

@. Neurogenic Low Back Pain – Disc Injury

- A. Periodic acute episodes with acute pain and persistent body list, tests for sciatic pain positive, temporary recovery 5 to 8 weeks 50
- B. Surgical excision of disc, no fusion, good results, no persistent sciatic pain 10
- C. Surgical excision of disc, no fusion, moderate persistent pain and stiffness aggravated by heavy lifting with necessary modification of activities 20
- D. Surgical excision of disc with fusion, activities of lifting moderately modified 15
- E. Surgical excision of disc with fusion, persistent pain and stiffness aggravated by heavy lifting, necessitating modification of all activities requiring heavy lifting 25

**NON-TRAUMATIC LESIONS**

Scoliosis

The whole Spine has been given rating of 100% and region wise the following percentages are given:

- Dorsal Spine - 50%
- Lumbar Spine – 30%
- Cervical Spine – 20%

Kobb's method for measurement of angle of curve in standing position is to be used. The curves have been divided into three sub groups :

	Cervical Spine	Thoracic Spine	Lumber Spine
Less than 30° (Mild)	2%	5%	6%
31°-60° (Moderate)	3%	15%	12%
Above 60° (Severe)	5%	25%	33%

In the curves ranging above 60°, cardio-pulmonary complications are to be graded separately. The junctional curves are to be given that rating depending upon level of apex of curve. For example, if apex of dorso-lumbar curve falls in the dorsal spine the curve can be taken as a dorsal curve. When the scoliosis is adequately compensated, 5% reduction is to be given from final rating (for all assessment primary curves are considered for rating).

### **Kyphosis**

The same total rating (100%) as that suggested for scoliosis is to be given for kyphosis. Region-wise percentages of physical impairment are:

- Dorsal Spine – 50%
- Cervical Spine – 30%
- Lumbar Spine – 20%

For dorsal spine the following further gradings are :

- Less than 20° – 10%
- 21° – 40° – 15%
- 41° – 60° – 20%
- Above 60° – 25%

For kyphosis of lumbar and cervical spine 5% and 7% respectively have been allocated.

### **Paralysis of Flexors & Extensors of Dorsal and Lumbar Spine**

The motor power of these muscles to be grouped as follows :

- Normal -
- Weak 5%
- Paralysed 10%

### **Paralysis of Muscles of Cervical Spine**

For Cervical spine the rating of motor power is as follow

	Normal	Weak	Paralysed
Flexors	0	5%	10%
Extensors	0	5%	10%
Rotators	0	5%	10%
Side bending	0	5%	10%

### **Miscellaneous**

Those conditions of the spine which cause stiffness and part etc., are rated as follows :

% of physical impairment

A. Subjective symptoms of pain, No involuntary muscle spasm, Not substantiated by demonstrable structural pathology. 0

B. Pain, Persistent muscle spasm and stiffness of spine, substantiated by demonstrable and radiological changes. 10%

C. Same as B, with moderate radiological changes 15%

D. Same as B, with severe radiological changes involving any one of the region of spine (cervical, dorsal or lumbar) 20%

E. Same as D, involving whole spine 30%

In Kypho-scoliosis, both curves to be assessed separately and then percentage of disability to be summed.

## **Guidelines for Evaluation of Permanent Physical Impairment in Amputees**

### **Basic Guidelines**

1. In case of multiple amputees, if the total sum of percentage permanent physical impairment is above 100%, it should be taken as 100%.
2. Amputation at any level with uncorrectable inability to wear and use prosthesis, should be given 100% permanent physical impairment.
3. In case of amputation in more than one limb percentage of each limb is counted and

another 10% will be added, but when only toes or fingers are involved only another 5% will be added.

4. Any complication in form of stiffness, neuroma, infection etc. has to be given a total of 10% additional weightage.
5. Dominant upper limb has been given 4% extra percentage.

### Upper Limb Amputation

	Percent Permanent Physical Impairment and loss of physical function of each limb			
1. Fore-quarter amputation	100%			
2. Shoulder Disarticulation	90%			
3. Above Elbow upto upper 1/3 of arm	85%			
4. Above Elbow upto lower 1/3 of arm	80%			
5. Elbow disarticulation	75%			
6. Below Elbow upto upper 1/3 of forearm	70%			
7. Below Elbow upto lower 1/3 of forearm	65%			
8. Wrist disarticulation	60%			
9. Hand through carpal bones	55%			
10. Thumb through C.M. or through 1 <sup>st</sup> MC Joint	30%			
11. Thumb disarticulation through metacarpophalangeal joint or through proximal phalanx	25%			
12. Thumb disarticulation through inter phalangeal joint or through distal phalanx	15%			
	Index Finger (15%)	Middle Finger (5%)	Ring Finger (3%)	Little Finger (2%)
13. Amputation through proximal phalanx or disarticulation through MP joint	15%	5%	3%	2%
14. Amputation through middle Phalanx or disarticulation Through PIP joint	10%	4%	2%	1%
15. Amputation through distal Phalanx or disarticulation Through DIP joint	5%	2%	1%	1%

### Lower Limb Amputations

1. Hind quarter	100%
2. Hip disarticulation	90%
3. Above knee upto upper 1/3 of thigh	85%
4. Above knee upto lower 1/3 of thigh	80%
5. Through knee	75%
6. B.K. upto 8 cm	70%
7. B.K. upto lower 1/3 of leg	60%



8. Through Ankle	55%
9. Syme's	50%
10. Upto mid-foot	40%
11. Upto fore-foot	30%
12. All toes	20%
13. Loss of first toe	10%
14. Loss of second toe	5%
15. Loss of third toe	4%
16. Loss of fourth toe	3%
17. Loss of fifth toe	2%

## Guidelines for Assessment of Physical Impairment in Neurological Conditions

1. Assessment in neurological conditions is not the assessment of disease but it is the assessment of the effects, e.i. clinical manifestations.
2. Any neurological assessment has to be done after six months of onset.
3. These guidelines will only be used for central and upper motor neurone lesions.
4. Porforma A & B will be utilized for assessment of lower motor neurone lesions, muscular disorders and other locomotor conditions.
5. Total percentage of physical impairment in neurological conditions will not exceed 100%.
6. In the mixed cases the highest score will be taken into consideration. The lower score will be added to it and calculation will be done by the formula  $a+b(100-a)/100$
7. Additional rating of 4% will be given for dominant upper extremity.
8. Additional 10% has been given for sensation in each extremity, but the maximum total physical impairment will not exceed 100%.

TABLE-I

Altered Sensorium	Disability Rate
	100%

TABLE-II

Intellectual Disability (to be assessed by clinical psychologist).

	Disability Rate
Mild (I. Q. 80-90)	25%
Moderate (I.Q. 70-80)	50%
Severe (I.Q. 60-70)	75%
Very Severe (I.Q. below 60)	100%

TABLE-III

**Speech Disability**

	Disability Rate
Mild	25%
Moderate	50%
Severe	75%
Very Severe	100%

Tested by a 100 word text. Ability to read (in educated), con prehend when read out, answer question on text clearly on text clearly and ability to write a synopsis (in educated).

TABLE-IV

**Cranial Nerve Disability**

	Disability Rate	
(a) Motor Cranial nerves: total or partial	20% for each nerve	
(b) Sensory: total or partial	10% for each nerve	
(c) Optic or Auditory nerves:	Unilateral	Bilateral
Mild	20%	30%
Moderate	40%	70%
Severe	60%	100%

TABLE-V

**Motor System Disability**

	Disability Rate
Monoparesis	25%
Monoplegia	
Hemiparesis	50%
Paraparesis	75%
Paraplegia	100%
Hemiplegia	
Quadriparesis	75%
Quadriplegia	100%

TABLE-VI

**Sensory System Disability**

	Disability Rate
Anaesthesia	
Hypoaesthesia	Each limb 10%
Paraesthesia	
For involvement of hand/hands	
Foot/feet	25%

TABLE-VII

**Bladder Disability due to Neurogenic Involvement**

	Disability Rate
Mild (Hesitancy/Frequency)	25%
Moderate (Precipitancy)	50%
Severe (Occasional incontinence)	75%
Very severe (Retention/Total incontinence)	100%

**TABLE-VIII**  
**Post Head Injury Fits & Epileptics**

	Disability Rate
Mild (Occurrence of a convulsion)	25%
Moderate (1-5 fits/month on adequate medication)	50%
Severe (6-10 fits/month on adequate medication)	75%
Very severe (10 fits/month on adequate medication)	100%

**TABLE-IX**  
**Ataxia (Sensory or Cerebellar)**

	Disability Rate
Mild (Detected on examination)	25%
Moderate (Symptomatic but no disability)	50%
Severe (partial disability)	75%
Very severe (Total disability)	100%

## **Guidelines for Evaluation of Physical Impairment in**

### **(A) Burns of Head and Neck, Trunk and Genitalia**

### **(B) Facial Injuries**

The head and neck has been divided into eight equatable components. The following scoring system based on anatomical functional and aesthetic factors is to be used.

#### **(A) TEN-POINT FORMULA FOR EVALUATING POST-BURN DISFIGUREMENTS AND DEFORMITIES OF HEAD AND NECK**

##### **Head & Neck**

**As a Unit 100 Points**

**Distribution amongst Equatable Components**

<b>S.No.</b>	<b>Component</b>	<b>Points</b>
1.	Scalp & Vault Including Fore head	10

2.	Eye Brows Rt. & Lt. (5 + 5)	10
3.	Eye Lids – Rt. Upper 6	
	Lower 4	10
	- Lt. Upper 6	
	Lower 4	10
4.	Pinna Right	10
	Left	10
5.	Nose	10
6.	Lips Upper 5	
	Lower 5	10
7.	Cheek & Right 5	
	Lateral Area Left 5	10
	of Face	
8.	Neck	10

**Split up of ten point Formula for each component**

<b>S.No.</b>	<b>Region</b>	<b>Deficit</b>	<b>Points</b>
1.	Scalp & vault including forehead	- Scalp (Disfigurement alone)	2.5
		- Scalp & Bone	10
			Rt
2.	Eye Brows	-Part of one or both	2.5
			Lt
			Rt
		-Total loss of one or both	10
			Lt
			Rt
3.	Eye Lids Upper	-Skin-Disfigurement Alone	1.5
			Lt
			Rt
		-Deformity or Full Thickness loss	6
			Lt
			Rt
	Lower	-Skin-Disfigurement Alone	1
			Lt
			Rt
		-Deformity or full Thickness loss	4
			Lt
			Rt
4.	Pinna	-Anterior or Posterior skin disfigurement alone	2.5
			Lt
			Rt
		-Deformity due to full Thickness involvement of skin and cartilage without obliteration of meatus	7.5
			Lt
			Rt
		-Deformity due to full Thickness involvement of skin & cartilage with obli-	10
			Lt

	treatment of meatus	
5. Nose	-Skin Cover disfigurement alone	2.5
	- Deformity due to full Thickness involvement with Both nares patent	7.5
	- Full Thickness deformity with one nares obliterated (7.5 + 1.25)	8.75
	- Full Thickness deformity with both nares obliterated	10
6. Cheek and Lateral Areas	- Skin disfigurement alone	1.25
		Low
	-Deformity or Full Thickness loss	5
		Up
		Low
7. Lips	-Skin cover disfigurement-one lip alone.	1.25
		Up
		Low
	Deformity or Full Thickness loss of one lip alone	5
		Up
		Low
	-Deformity due to involvement of both lips leading to contracture of the oral opening	10
8. Neck	-Skin cover disfigurement alone	2.5
	-Deformity due to involvement of skin, muscles or deeper tissues.	10

**Trunk and Genitalia**

Total Points 100

S.No.	Region	Ponts	
		Female	Male
1.	Front of the trunk & abdomen excluding breasts	10	5
2.	Breast	40 (Rt. 20, Lt. 20)	10 (Rt. 5, Lt. 5)
3.	Total Back	5	10
4.	Groins	Rt. 5) Lt. 5)	10
5.	Buttocks	Rt. 2.5) Lt. 2.5)	5
6.	Genitalia	30	60

**Split up of Trunk and Genitalia**

S.No.	Region	Deficit	Ponts
-------	--------	---------	-------

		Female	Male
1. Breast	- Only skin cover disfigurement	Rt. 5	Rt. 1.25
	-Deformity resulting in Loss of function due to involvement of	Lt.	Lt.
	(i) Skin, Areola & Nipple	Rt. 15	Rt. 5
	(ii) Skin, Areola, Nipple & Parenchyma	Lt. 20	Lt. 5
		Rt. Lt.	Rt. Lt.
2. Genitalia	-Skin loss resulting in mild deformity	7.5	15
	-Severe contracture of orifices or sloughing of urethra or severe deformity of penis.	30	60

**(B) FACIAL INSURIES**

For evaluation of disability in facial injuries the following scoring system is to be used.

<b>Head and Neck as a Unit</b>		100 points
S. No.	Component	Points
1.	Scaple and Vault including forehead	10
2.	Eye Brows Rt. & Lt. (5 +5)	10
2.	Eye Lids –Rt. Upper 6	
	Lower 4	10
	Lt. Upper 6	
	Lower 4	10
4.	Pinna Right	10
	Left	10
5.	Nose	10
6.	Middle and lower third of face (excluding nose & pinna)	30

**Split up of ten Point Formula for each Component**

S.No.	Region	Deficit	Points
1.	Scalp & vault including forehead	- Scalp (Disfigurement alone)	2.5
		- Scalp & Bone	10
2.	Eye Brows	-Part of one or both	2.5
			Rt
			Lt
			Rt
3.	Eye Lids Upper	-Total loss of one or both	10
			Lt
			Rt
		-Skin-Disfigurement Alone	1.5

			Lt
			Rt
		-Deformity or Full Thick- ness loss	6
			Lt
			Rt
	Lower	-Skin-Disfigurement Alone	1
			Lt
			Rt
		-Deformity or full Thickness loss	4
4.	Pinna	-Anterior or Posterior skin -disfigurement alone	2.5
			Lt
			Rt
		-Deformity due to full -Thickness involvement of skin and cartilage without obliteration of meatus	7.5
			Lt
		-Deformity due to full -Thickness involvement of skin & cartilage with obli- -treatment of meatus	10
			Rt
			Lt
5.	Nose	-Skin Cover disfigurement alone	2.5
		- Deformity due to full Thickness involvement with Both nares patent	7.5
		- Full Thickness deformity with one nares obliterated (7.5, 1.25)	8.75
		- Full Thickness deformity with both nares obliterated	10
6.	Middle and lowerthird of face	- Only Aesthetic loss due to soft tissue/skeletal damage	7.5
		-Functional loss (Mal-occlusion and mastication)	22.5
		Both Aesthetic & functional losses.	30

# Guidelines for Evaluation of Physical Impairment due to Cardio Pulmonary Diseases

## Basic Guidelines

1. Modified New York Heart Association subjective classification should be utilized to assess the functional disability.
2. The physician should be alert to the fact that patients who come for disability claims are likely to exaggerate their symptom. In case of any doubt patients should be referred for detail physiological evaluation.
3. Disability evaluation of cardiopulmonary patients should be done after full medical, surgical and rehabilitative treatment available, because most of these diseases are potentially treat able.
4. Assessment of cardiopulmonary impairment should also be done in diseases which might have associated cardiopulmonary problems, e.g. amputees, myopathies etc.

The proposed modified classification is as follows :

Group 0 : A patient with cardiopulmonary disease who is asymptomatic (i.e. has no symptoms of breath-lessness, palpitation, fatigue or chest pain).

Group 1 : A patient with cardio-pulmonary disease who becomes symptomatic during his ordinary physical activity but has mild restriction (25%) of his ordinary physical activities.

Group 2 : A patient with cardiopulmonary disease who becomes symptomatic during his ordinary physical activity and has 25-50% restriction of his ordinary physical activity.

Group 3 : A patient with cardiopulmonary disease who becomes symptomatic during less





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APPENDIX

# Examples for Assessing Percentage of Permanent Physical Impairment in Some Common Conditions.

## A. Poliomyelitis

Example 1 : Foot Drop

Say, there is paralysis of dorsiflexors and invertors. The Proforma B, for assessment of lower extremity is used.

(a) Mobility component

(b) Calculation of loss of range of motion at ankle :-

Movement	Active ROM	% age loss	Mean % loss
Dorsiflexion	0	100%	
Planterflexion	full	0%	
Inversion	0	100%	200/4 =50%
Eversion	full	0%	

Value for loss of ROM component = 50 x 0.30 = 15%

(ii) Calculation for loss of muscle strength at ankle :-

Muscle group	Power	% loss	Mean % Loss
Pl. flexors	5	0%	
Dorsiflexors	0	100%	
Invertors	0	100%	200/4 = 50%
Envertors	5	0%	

Value for loss of muscle strength component = 50 x 0.30 = 15%

Combining value for mobility component by formula

$$\begin{aligned} &= a+b(90-2a)/90 \\ &= 15 + 15(90-15)/90 \\ &= 27.5\% \end{aligned}$$

(b) Stability component

Clinical system of evaluation may be used.

In this case, there will be no loss of stability.

So percentage of permanent physical impairment in relation to the lower limb = 27.5%

*Example 2.* Foot drop with can be gross equinus contracture.

In the above case there can be in addition a fixed equinus contracture of say – 40°.

(a) *Mobility component*

(i) Calculation of loss of ROM at ankle :-

Movement	Active ROM	% age loss	Mean % loss
Dorsiflexion	0	100%	300/4 = 75%
Plantarflexion	full	0%	
Inversion	0	100%	
Eversion	full	0%	

Value for loss of ROM component =  $75 \times 0.30 = 25\%$

(ii) Calculation for loss of muscle power

It will be same as in example 1 above = 15%

Combining value for mobility component =  $25 + 15(90 - 25) / 90 = 35.8\%$

(b) *Stability component*

Activity affected	% age loss
Standing on the affected leg	5%
Squatting on the floor	5%
<b>Total</b>	<b>10%</b>

Combining value of mobility and stability component =  $35.8 + 10(90 - 35.8) / 90 = 41.8\%$

So total percentage of permanent physical impairment in relation to lower limb = 41.8%

*Example 3.* Total paralysis of one lower limb requiring one full caliper

(a) *Mobility Component*

(b) Calculation of loss of ROM

It will be fully affected = 90 %

(ii) Calculation of loss of muscle strength

It will be fully affected = 90 %

Combining value

(b) *Stability component*

It will also be fully affected = 90 %

Combining value of stability and mobility component

So total percentage of permanent physical impairment in relation to lower limb = 90 %

Example 4. Total paralysis of both lower limbs with flexion contractures hips and knees.

Calculation for each limb will be same as in example 3 = 90%

Extra Points to be added for each limb for contractures = 6%

So total percentage of permanent physical impairment in relation to both lower limbs =  $90 + 6 = 96\%$

Example 5. Paralysis of one upper limb flail from shoulder down wards.

(a) Arm Component

(i) Loss of ROM = 90%

(ii) Loss of muscle strength = 90%

(iii) Loss of coordinated  
Activities = 90%

Combining value for above = 90%

(b) Hand component

(i) Loss of prehension = 30%

(ii) Loss of sensation = 00%

(iii) Loss of strength = 30%

Total = 60%

$= 90 + \frac{(90 - 60)}{90} = 93\%$

Combining value of arm and hand component

So total percentage of permanent physical impairment in relation to upper limb will to 93%.

## B. LEPROSY

Example 6 Foot drop with sensory loss.

Percentage for foot drop will be same as in Example 1.

Extra Points for loss of sensation

(If complete sensory loss is there) = 9%

So total percentage of permanent physical impairment in relation to lower limb will be =  $27.5 + 9 = 36.5\%$

Example 7, Total Claw hand with sensory loss.

Hand component

(i) Prehension	
Activity	% loss
Opposition	8%
Lat. Pinch	5%
Cylindrical grasp (small object)	3%

	Spherical grasp (small object)		3%
		Total	= 19%
(ii)	Sensation		
		Total loss	= 30%
(iii)	Strength		
	Grip strength (25% loss)		= 5%
	Pinch strength (50% loss)		= 5%
		Total	= 10%

So total percentage of permanent physical impairment in relation for hand component = 19 + 30 + 10 = 59%.

As there is no loss of arm component. The same will be the value in relation to upper limb.

Example 8. Partial claw hand with minimal sensory loss.

Hand component

(i)	Prehension		
	Activity		% loss
	Opposition (50% loss)		4%
	Lat. Pinch (fully affected)		5%
	Cylindrical grasp		3%
	Spherical grasp		3%
		Total	= 15%
(iv)	Sensation		
	(say 1/3 <sup>rd</sup> loss)		= 10%
(v)	Strength		
	Pinch strength (50% loss)		= 5%
	Total value for hand component		= 15 + 10 + 5 = 30%

So total percentage of permanent physical impairment in relation to upper limb = 30%.

## ARTHRITIS

Example 9. Ankylosed hip jt. Following arthritis.

(a) Mobility component



(i) Loss of ROM at hip will be 100%  
% age loss of ROM for L. Limb =  $100 \times 0.03 = 30\%$

(ii) Loss of muscle strength = 0%

(b) Stability component

Activity	% loss
Climbing stairs	10%
Standing on affected leg	10%
Squatting on floor	10%
Sitting cross leg	10%
Total	=40%

$$= 40 + \frac{30(90 - 40)}{90} = 56.6\%$$

Combining values

So total percentage of permanent physical impairment in relation to lower limb = 56.6%