Artificial Limbs Manufacturing Corporation of India

G. T. ROAD, KANPUR-208016

MANUAL FOR ORTHOPAEDIC SURGEONS IN EVALUATING PERMANENT PHYSICAL IMPAIRMENT

Courtesy

American Academy of Orthopaedic Surgeons
430 NORTH MICHIGAN AVENUE * CHICAGO, ILLINOIS 60611
U S A

MANUAL FOR ORTHOPAEDIC SURGEONS IN EVALUATING PERMANENT PHYSICAL IMPAIRMENT

Dear Doctor,

For a long time now the orthopaedic profession has felt the necessity of having a proper basic document to guide evaluating of physical impairment.

The American Academy of Orthopaedic Surgeons had set up a committee on Disability Evaluation as far back as 1956. The Committee after great and laborious consultation and discussions arrived at a consensus and compiled the crucial ratings and general information particularly useful to the orthopaedic surgeons.

Although there will be variation in the Workmen's compensation laws, certain fundamental aspects of this manual in evaluating the extent of disability will be very useful to us also.

It is to be clearly understood that the principles contained here can only serve as a guide and will always be subject to individual interpretation depending upon the physical condition of the patient.

Yours sincerely,

Lt Col A K TEWARI (Retd)
Managing Director
Artificial Limbs ...

REGISTRATION NO.

Manual for Orthopaedic Surgeons in Evaluating Permanent Physical Impairment

The information in this Manual is offered as an answer to request for orthopaedic surgeons that guidelines be developed for the evaluation of permanent physical impairments which have resulted in compensable disability.

The Committee on Disability Evaluation was originated in 1959 under the administration of Doctor Relton McCarrol. Continuity of the committee from year to year has made it possible to evaluate the reaction of the Academic membership to the contents of the Manual. A questionnaire was sent to each member of the Academy in 1960. Most members were in favour of an arbridged compilation of crucial ratings and general information that would be particularly useful to the orthopaedic surgeon.

It is realized that since there are vide variations in the Workmen's compensation laws in the various jurisdictions, there will be need for adjustment to local situations. Prior to acceptance of the manual, a typed form was sent to each member of each Regional Committee of the Academy for review. The Committee on Disability Evaluation thoroughly weighed all suggestions and criticism and incorporated them as it deemed advisable.

This booklet is distributed as a guide with the clear understanding that the principles therein are subject to individual interpretation and future revision.

For the Executive Committee
Charles V. Heck, M. D.
Secretary

Committee on Disability Evaluation :

Alexander P. Aitken, M. D., Chalmers R. Carr, M. D., Henry H. Kessler, M. D., Daniel T. Riordan, M. D., William J. Schnute, M.D., Harry R. Walker, M.D., Earl D. McBride, M.D., Chairman.

SUGGESTIONS OF EVALUATION OF PERMANENT PHYSICAL IMPAIRMENT BY THE COMMITTEE OF THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS

Topic I. *The purpose of the Disability Evaluation Committe of the Academy are :*

1. To study the present problems and inconsistencies confronting orthopaedic surgeons in formulating medical opinions on the extent of physical impairment.
2. To outline some of the basic responsibilities and perogatives of the orthopaedic surgeon in relation to the workmen's compensation and personal injury litigation.
3. To prepare an abbreviated schedule of permanent physical impairments to serve as an aid in formulating medical opinion.

Topic II. *Distinction Between Evaluation of Permanent Disability and Permanent Physical Impairment.*

The Disability Committee of the American Medical Association has pointed out that the evalution of permanent disability is two fold :[1]

1. The medical evaluation of the permanent physical impairment.
2. The rating of the disability according to administrative bodies.

The A. M. A. Guide further explains that there should be a distinction between the terms permanent disability and physical impairment, defined as follows :

---

[1] A. M. A. Guide : A guide to the evaluation of Permanent Impairment of the Extremities and Back, Journal of the American Medical Association, Feb. 15, 1958.

1. "Permanent Disability is not a purely medical condition. A patient is 'permanently disabled' if 'under a permanent disability' when his actual or persumed ability to engage in gainful activity is reduced or absent because of 'impairment' and no fundamental or marked change in the future can be expected.
2. Physical impairment is a purely medical condition. Permanent physical impairment is any anatomical or functional abnormality or loss after maximum medical rehabilitation has been achieved and which abnormality or loss the physician considers stable or non-progressive at the time the evaluation is made.
3. The evaluation rating of 'permanent disabiliiy' is an administrative, not a medical responsibility and function.

Topic III. Definition of Disability.

According to Webster's Dictionary, disabilty is defined as :

1. State of being disabled; absence of competent physical, intellectual, or moral power, fitness, or the like; also, an instance or such lack.
2. Legal incapacity, incompetency, or disqualification.

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

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

Under the statutes of Workmen's Compensation disability may be divided into three periods — which for the orthopaedic surgeons are :

1. Temporary total disability is that period in which the injured person is totally unable to work.

During this time he receives orthopaedic[2] 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.

Topic IV. Medical Provisions of the Workmen's Compensation Statutes.

Since the orthopaedic surgeon must project his medical knowledge and personal opinions before the court so that what he says is made a matter of public record, it is recommended that he acquaints himself with the rules of the court and the medical provisions of the Workmen's Compensation statutes in his particular locality.

Some of the provisions that follow a more or less uniform pattern in various jurisdictions are :

1. The Workmen's Compensation Statutes are written to provide a form of insurance for injured workmen.
2. In the majority of Workmen's Compensation Acts there is a provision requiring the employer to pay compensation to the injured worker.
3. Maximum period of temporary total disability in most areas is evaluated in week units.
4. In most areas treatment is provided until the injury, through medical opinion, is declared as healed or has reached its maximum improvement. In some areas

[2] Definition of orthopaedics : "Orthopaedics is the medical speciality that includes the investigation, preservation, restoration and development of the form and function of the extremities, spine and associated structures by medical, surgical, and physical method."

medical treatment is limited to a certain number of weeks or to a specific amount of money. However, the administrating body may extend these limits where it is shown through medical opinion that further medical or surgical treatment is important and necessary for healing of the injury.

5. Permanent partial and total disabilities are stipulated in the Compensation Law as specific awards. Usually permanent total disability is defined as loss of sight of both eyes, amputation of both legs or both arms. For permanent partial disability compensation for a specified number of weeks is awarded as a lump sum for amputation of the extremities, fingers, or toes at certain levels.

Topic V. The Rating of Disability as Established by Law.

The specific awards for amputation as provided by law are far from uniform in the various localities. For legal purposes they serve to expedite lump sum settlement. Speaking practically, it is a form of pension. The grading of amputation values is relative, in that the arm is more than the leg, the hand more than the foot, and the thumb more than the fingers. These values are of arbitrary legislative design, for grading monetary awards, and are not proportioned on scientific importance to the body.

Topic VI. Percentage Rating of Permanent Physical Impairment annd Loss of Physical Function.

Even though the doctor is given a great degree of freedom and courtesy as a medical expert witness in an industrial court, he must recognize that it is necessary for him to conform to restrictions of the law and abide by the authority and rules of the court. In most instances the adjudicating body must have a percentage rating of the permanent physical impairment, and the loss of permanent physical function, in order to determine the depreciation of earning capacity and the amount of the award.

It will be of great help if the words commonly used to describe the degree of severity in medical situations are converted into corresponding ratings in percentage.

The final rating of the disability should be the examining doctor's own personal opinion entirely. He may have consulted a rating guide of relative percentage of disability; he may have applied more than one rating formula: but in the end the rating should be the doctor's own personal opinion based on his own knowledge and experience and decided after weighing in his mind over and over, the nature and the importance of the anatomical damage and the clinical findings, together with the man's personality reactions.

Topic VII. Obligation of the Doctor of Testify in Court.

The orthopaedic surgeons may be called upon or subpoenaed to testify as an expert witness in the common court of justice or to appear before the administrating body which adjudicates the Workmen's Compensation claims. The subpoena is a legal instrument of the court with which any citizen may be served as legal notice to appear in court as a witness at a specified time. Failure to appear subjects the witness to forcible appearance through escort of the sheriff and a fine or jail sentence for contempt of court. Usually the counsel who has need for the expert witness arranges a pre-trial consultation with the doctor and agrees to arrange a suitable time for him to appear on the witness stand without subpoena. The expert witness is legally bound to declare his knowledge of the ease and express his opinions according to the rules of the court. In common court a judge precides, and a jury renders the decision as to the extent of liability and personal damages. In the compensation Court the administrators of the Workmen's Compensation law determine the amount of compensation awarded to the injured workman.

Topic VIII. The Role of Medical Opinion in Court.

In personal injury litigation there may be great stress

on the elements of pain and suffering, mental anguish, past, present, and futu :, personality damage, and the uncertainty of what might happen to the socio-economic effects on the life of the individual. Testimony before the industrial commission, or board, is less, formal and is more a matter of establishing the loss of earning capacity of the claimant as a result of the injury.

In either court the orthopaedic surgeon is called upon to testify solely to enlighten the court on what he knows and believes as a medical expert witness. The technique and strategy of legal counsel in examining the witness is to bring out all the evidence, so that the jury or administrators of the law may render justice. It is important to realize that in either situation the pathological and clinical findings are the same and the extent of permanent physical impairment and its resulting loss of physical function is the same. The difference is that the recovery of damages for personal injury is whatever a jury of twelve citizens, according to the rule of the court, might decide is due to the victim. In contrast a Workmen's Compensation claim is limited by specific statutory provisions based, fundamentally, on loss of earning capacity.

Your academy Committee on Disability Evaluation concurs with the Committee of the American Medical Association that medical opinion should be limited strictly to decisions on the extent of permanent physical impairment and its resulting loss of permanent physical function.

Topic IX. Examination—History—The clinical Findings.

A. Examination

The following information is often requested of the orthopaedic surgeon. Answer to these questions should be considered as the examination proceeds.

1. Does an injury to the body exist ?
2. Of what does the injury consist ?
3. Is the individual temporarily totally unable to work ?
4. Is the individual in need of more active treatment, or should he have more rehabilitation treatment ?

5. How long will it be before he is able to resume work ?
6. Has the injury reached its maximum improvement ? Is the condition stationary ?
7. What is the extent of permanent physical impairment upon which the per cent of permanent partial disability may be rated ?

Thorough examination is imperative once the orthopaedic surgeon has accepted the responsibility of rendering an opinion on the extent of permanent physical impairment. The doctor who hurries through, or treats lightly, the liability or compensation case may find himself embarrassed by pertinent cross examination in court. Thorough examination may require hospitalization, observation, and consultation with specialists in other fields.

B. History

The history of an injury in which there is a claim for compensation or liability requires a much more detailed investigation than usual. The past history must include inquiry into previously existing injuries, disabilities, systematic disease, or anomalies. The questioning on the mechanism of the injury should be repeated from various approaches to gain an accurate picture of exactly what occured.

C. The Clinical Findings

The clinical findings should be co-ordinated with the history in order to test subjective complaints such as pain, stiffness, and weakness with the nature and extent of the injury. Accurate measurements of the injured part should be compared with those of opposite uninjured parts to determine atrophy, shortening, and joint motion. The guide "Joint Motion—Method of Measuring and Recording" published by the American Academy of Orthopaedic Surgeons should be followed. Scars and contractures should be measured for size and described in detail relative to involvement of all the underlying structures. Reflexes and patterns of neurological findings should be co-ordinated with neuromotor consequences.

pic X. Grading of pain as a Subjective Symptom.

Grade I — Mild: When there is a firm conviction established through thorough observation and clinical tests that pain actually exists even though there may be no organic manifestations. Pain of this degree does not contribute to physical impairment.

Grade II — Moderate: When the examination reveals definite evidence of a pathological state of the involved structures that would reasonably produce the degree of pain indicated to be present. This degree of pain might require treatment and could be expected to contribute in a minor degree to permanent physical impairment.

Grade III — Severe: When the pathological change and clinical findings indicate that permanent physical function is limited by pain requiring treatment for relief and contributing extensively to permanent physical impairment.

Grade IV — Very severe: When the pathological changes and clinical signs indicate limitation of physical function by pain to such a degree that physical impairment is nearly complete.

Topie XI. Behavior Patterns.

A. Behavior patterns should be carefully distinguished from organic manifestations, if possible. Rate as permanent physical impairment only when there is definite and permanent hindrance to accomplishing work function. True conversion should be rated in a category of the mind rather than physical impairment of the body.

B. Behavior patterns in relation to the evaluation of pain. There is no standard for measurement of pain. Pain contributes to rating of physical impairment only if it is expected to be permanent. It is necessary to differentiate closely between pain that can be justified by clinical findings and that which cannot be explained.

1. To establish clinical tests whether or not true organic pain exists and evaluate its intensity- prognosis, and functional inhibitions.
2. To evaluate the effect of pain, its breadth of tolerance and permanency as it relates to what is often termed in court "mental anguish" and "suffering".
3. Suffering from pain is a psychophysiologic phenomenon. The extent of anatomical injury or deformity does not necessarily define the suffering due to pain. For example, an ankylosed hip may cause an intensive limp, but no pain. A throbbing headache may be severe though no anatomic changes exist. Consequently, the functions of accomplishing work may be completely inhibited because of suffering with pain without anatomic change; or on the contrary, the function of work may be aceomplished with almost normal ability even though there is severe deformity and no pain.

APPROXIMATE RATINGS OF PERMANENT PHYSICAL IMPAIRMENT AND THEIR PHYSICAL LOSS OF FUNCTION

The following specific permanent physical impairments and their percentage ratings are to be used only as guiding examples of *about what the rating should be in a corresdonding individual case.* These ratings are adjusted to approximate relative values of other parts of the body. They encompass pain, weakness, neuromuscular *and other reaction naturally expected to exist.*

LOWER EXTREMITIES	Per cent Permanent Physical Impairment and Loss of Physical Function to Lower Extremity
Shortening	
½ inch	5
1 inch	10
1½ inches	15
2 inches	20
2. Hip (Rating value to whole body 50%)	
A. Non union without reconstruction	75
B. Arthplasty, use of prosthesis able to walk and stand at work, motion free to 25% to 50% of normal	40
C. Osteotomy reconstruction, moderate motion, 1 inch shortening, no contracture	35
D. Ankylosis and limited motion	
(a) Total ankylosis, optimum position 15° flexion	50

	Per cent Permanent Physical Impairment and Loss of Physical Function to Lower Extremity
Hip (Cont'd.)	
(b) Limitation of motion	
(1) Mild. A. P. motion from 0° 120° flexion, rotation and lateral motion, abduction, adduction free to 50% of normal	15
(2) Moderate. A. P. motion from 15° flexion deformity to 110° further flexion, rotation, lateral motion, abduction, and adduction free to 25% normal	30
(3) Severe. A. P. motion from 30° flexion deformity to 90° further flexion	50
4. Knee	
A. Surgical removal internal or external semilunar cartilage, no complications	5
B. Surgical removal both cartilages, cruciate intact	20
C. Ruptured cruciate ligament, repaired, moderate laxity	20
Not repaired, marked laxity	30
D. Excision of patella	20
E. Plateau fracture, depressed bone elevated semilunar excised	20
F. Ankylosis and limited motion, total ankylosis optimum posion, 15° flexion	50
G. Limitation of motion	
(a) Mild 0° to 110° flexion	5

Ankle and Foot (Cont'd)	Per cent Permanent Physical Impairment and Loss of Physical Function to Lower Extremity
(b) Moderate. 0° to 80° flexion	15
(c) Severe. 0° to 60° flexion	35
(d) Severe. Limited from 15° flexion deformity with further flexion to 90°	40

5. Ankle and Foot	Per cent Permanent Physical Impairment and Loss of Physical Function to Foot (80% of leg)
A. Eversion deformity 25° as in fracture lower end of fibula with evulsion medial ligaments, 20° eversion	20
B. Inversion deformity 20°	15
C. Total Ankylosis ankle and foot (pantalar arthrodesis)	
(a) 10° plantar flexion	
(b) Mal-position 30° plantar flexion	50
D. Ankylosis of foot, subtalar or triple arthrodesis tarsal bones, ankle, free motion	60
E. Ankylosis of tibia and talus, subtalar joints free, optimum position 15° plantar flexion	25

Ankle and Foot (Cont'd.)	Per cent Permanent Physical Impairment and Loss of Physical Function to Foot (80% of leg)
F. Limitation of motion in the ankle	
(a) Mild. Motion limited from position of 90° right ankle to 20° plantar flexion	10
(b) Moderate. Motion limited from position of 10° plantar flexion to 20° plantar flexion	25
(c) Severe. Motion limited from position of 20° plantar flexion to 30° plantar flexion	50

6. Foot	Per cent Permanent Physical Impairment and Loss of Physical Function to Foot
A. Ankylosis of tarsal metatarsal or mid tarsal joints	
Mild	10
Severe	20
B. Limited Motion in the foot	
(a) Mild. Limited Motion with mild pain	10
(b) Moderate. Limitation of motion with pain	20
(c) Severe. Limitation of motion with pain	35

	Per cent Permanent Physical Impairment and Loss of Physical Function to Toe
7. Toes	
A. Complete ankylosis of metatarsophalangeal joint, any toe	50
B. Complete ankylosis any toe, interphalangeal joint, favourable position semi-flexion	10

UPPER EXTREMITIES	Per cent Permanent Physical Impairment and Loss of Physical Function to Whole Arm
8 Shoulder	
A. Total ankylosis in optimum position, abduction 60°, flexion 10°, rotation, neutral position	50
B. Total ankylosis in mal-position	Grade upward
C. Limitation of motion	
(a) Mild. No abduction beyond 90°, rotation only 40° with full flexion and extension	5
(b) Moderate. No abduction beyond 60°, rotation only 20°, with flexion and extension limited to 30°	20
(c) Severe. No abduction beyond 25°, rotation only 10°, flexion and extension limited to 20°	50
D. Recurrent dislocation as frequently as every 4 to 6 months	35
E. Resection distal end of clavicle (rate motion independently)	5

	Per cent Permanent Physical Impairment and Loss of Physical Function to Whole Arm
9. Elbow	
Flexion and extension of forearm considered as 85% of arm, rotation of forearm considered as 15% of arm	
A. Total ankylosis in optimum position approximating mid-way between 90° flexion and 180° extension (45° angle)	50
B. Total ankylosis in mal-position	Grade upward
C. Limitation of motion	
(a) Mild. Motion limited from 10° flexion to 100° further flexion	10
(b) Moderate. Motion limited from 30° flexion to 75° further flexion	20
(c) Severe. Motion limted from 45° flexion to 90° further flexion	35
D. Flail elbow, pseudarthrosis above joint line, wide motion but very unstable	65
E. Resection head of radius	15

	Per cent Permanent Physical Impairment and Loss of Physical Function to Hand
10. Wrist	
Excision distal end of ulna, flexion and extension credited with 75% of hand, and rotation 25% of hand	10

Wrist (Cont'd)	Per cent Permanent Physical Impairment and Loss of Physical Function to Hand
A. Total ankylosis in optimum position	35
B. Total ankylosis in mal-position of extreme flexion or extension	Grade upward
C. Limitation of motion	
(a) Mild. Rotation normal, 15° palmar flexion to 20° dorsi-flexion	10
(b) Moderate. Rotation limited to 30° in semi-pronation, palmar flexion 10°, dorsiflexion 10°	20
(c) Severe. Rotation limited to 10° in position of full pronation, palmar flexion 5°, dorsiflexion 5°	25

See Fig. 1 (Relative value of digits to whole hand)	Per cent Permanent Physical Impairment and Loss of Physical Function to Individual Finger
Note : Compare injured digit to uninjured digits.	
11. Fingers—Ankylosis of joints (See Fig. 1 and 2)	
A. Any digit (excluding the thumb)	
(a) Total ankylosis of distal joint	
1. Optimum position	25
2. Mal-position (flexed 35° or more)	35
(b) Total ankylosis of proximal interphalangeal joint	
1. Optimum position (flexed 35°)	50

Fingers (Cont'd.)	Per cent Permanent Physical Impairment and Loss of Physical Function to Individual Finger
2. Mal-position (approximately full extension or full flexion)	75
(c) Total ankylosis of both distal and proximal interphalangeal joints	
1. Optimum position	75
2. Mal-position	100
(d) Total ankylosis metacarpophalangeal joints	
1. Optimum position (45° flexion)	45
2. Mal-position (approximately full extension or full flexion)	75
(e) Total ankylosis both interphalangeal joints and metacarpophalangeal joints	100
B. Thumb (See Fig. 3)	
(a) Total ankylosis interphalangeal joint	
1. Optimum position (0° to 15°)	40
2. Mal-position (flexion greater than 15°)	65
(b) Total ankylosis metacarpophalangeal joint	
1. Optimum position (up to 25° flexion)	50
2. Mal-position (flexion greater than 25°)	65
(c) Total ankylosis both interphalangeal and metacarpophalangeal joints	
1. Optimum position	75
2. Mal-position	85

Fig. 3 ANKYLOSIS THUMB

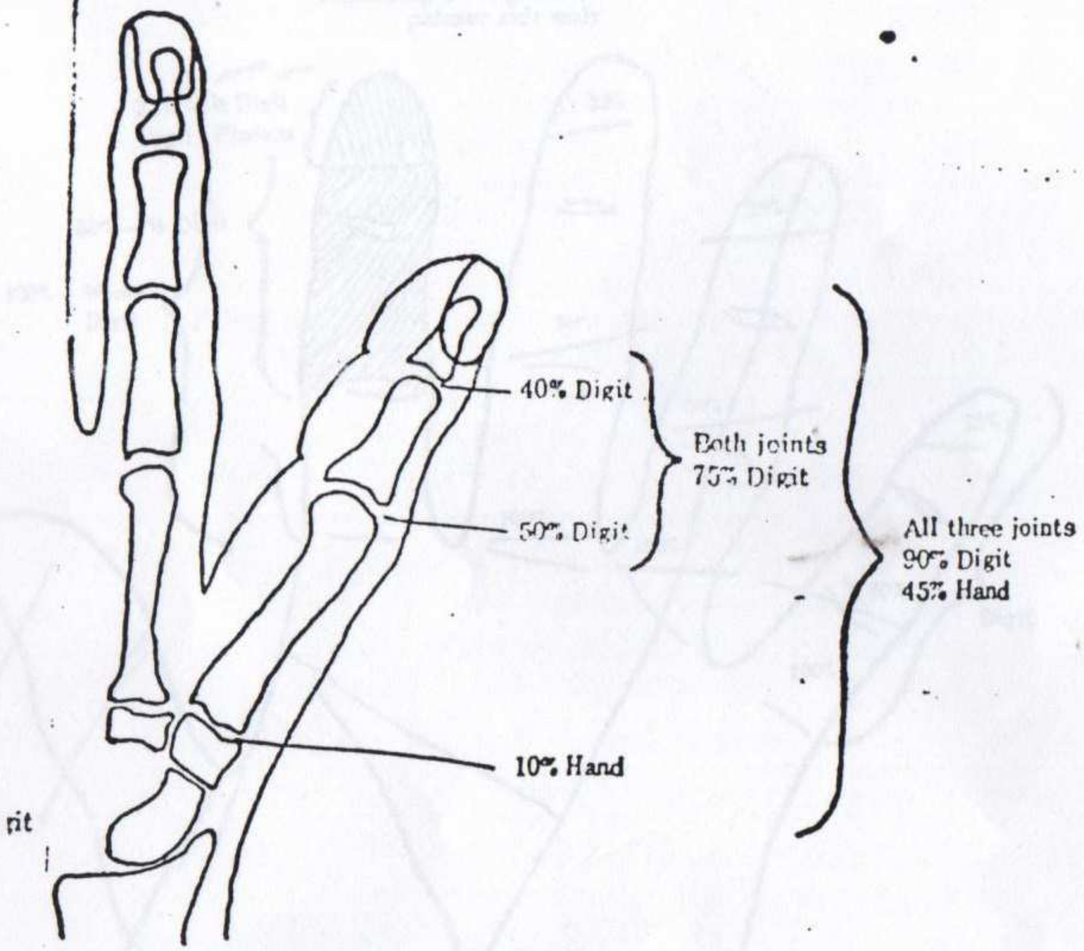


Fig. 4 AMPUTATIONS

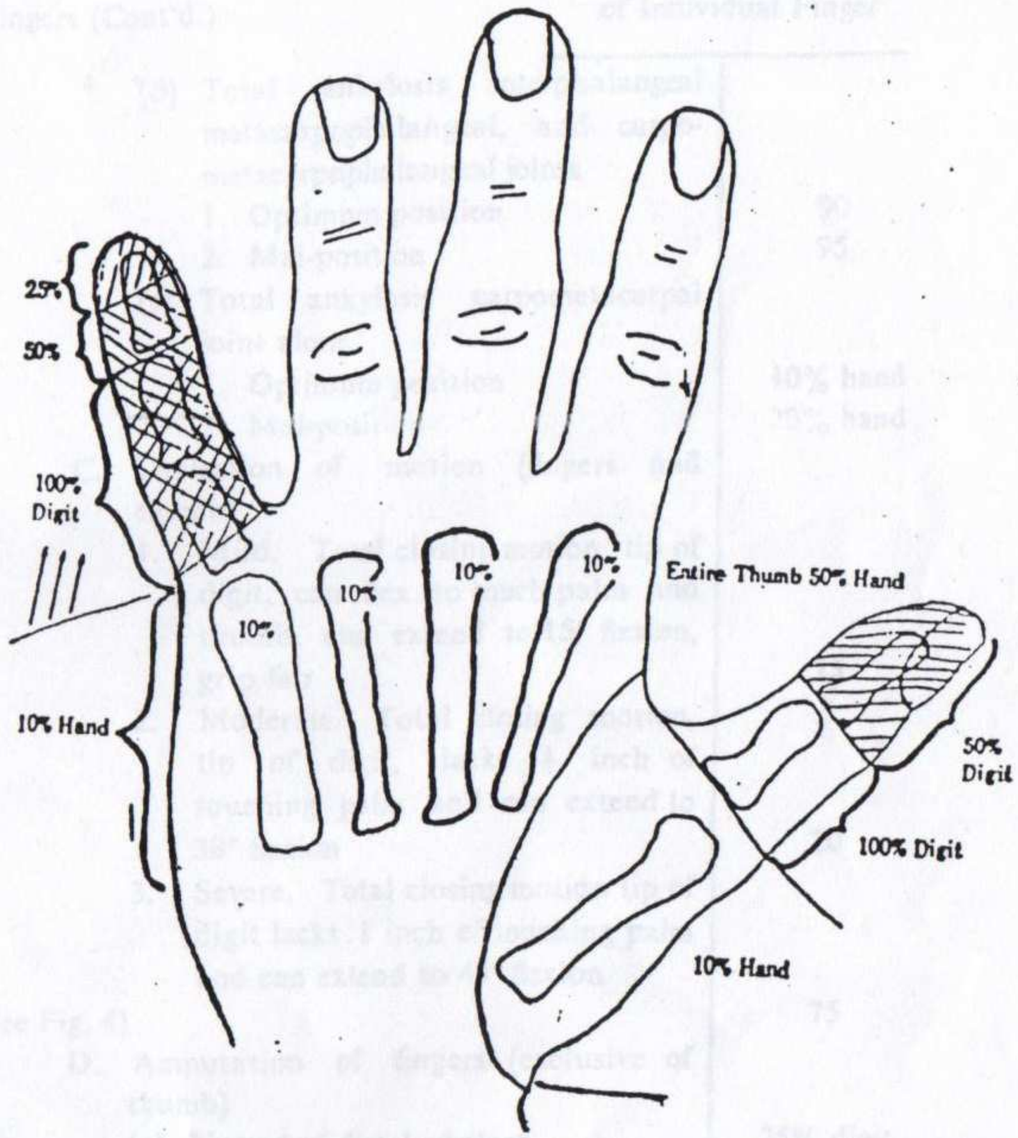
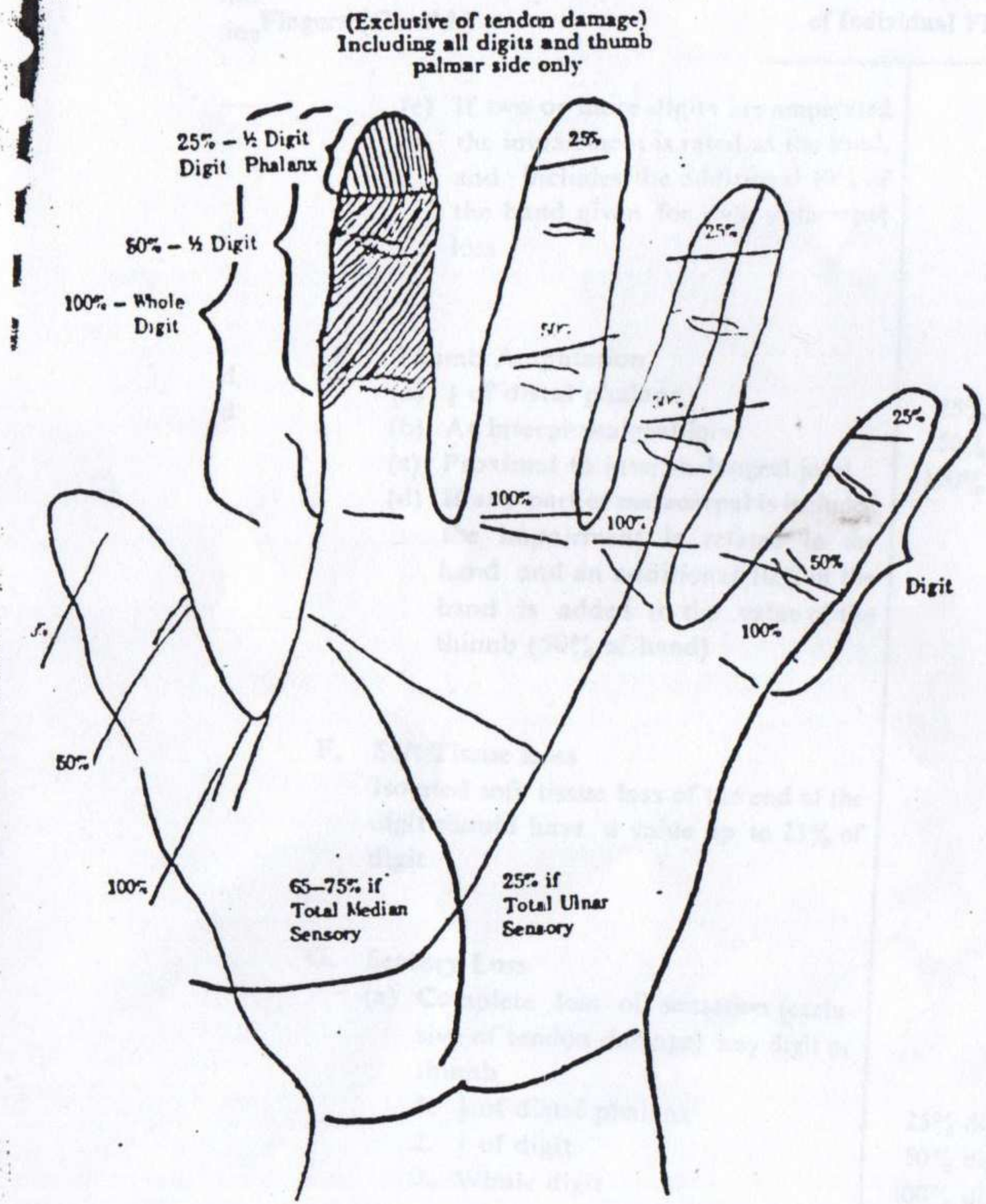


Fig. 5 SENSORY LOSS.



Fingers (Cont'd.)	Per cent Permanent Physical Impairment and Loss of Physical Function of Individual Finger
(d) Total ankylosis interphalangeal metacarpophalangeal, and carpo-metacarpophalangeal joints	
1. Optimum position	90
2. Mal-position	95
(e) Total ankylosis carpometacarpal joint alone	
1. Optimum position	10% hand
2. Mal-position	20% hand
C. Limitation of motion (fingers and thumb)	
1. Mild. Total closing motion tip of digit, can flex to touch palm and thumb, and extend to 15° flexion, grip fair	15
2. Moderate. Total closing motion, tip of digit, lacks ½ inch of touching palm and can extend to 30° flexion	20
3. Severe. Total closing motion tip of digit lacks 1 inch of touching palm and can extend to 45° flexion	75
(See Fig. 4)	
D. Amputation of fingers (exclusive of thumb)	
(a) Upto ½ of distal phalanx	25% digit
(b) From ½ to all of distal phalanx	50% digit
(c) Any of finger proximal to distal interphalangeal joint	100% digit
(d) If any part of metacarpal is included in the amputation, the impairment is rated to the hand, and an additional 10% is added to digit value	10% had to digit value

Fingers (Cont'd.)	Per cent Permanent Physical Impairment and Loss of Physical Function of Individual Finger
(e) If two or more digits are amputated the impairment is rated as the hand, and includes the additional 10% of the hand given for each metacarpal loss	1
E. Thumb Amputation	
(a) ½ of distal phalanx	25% digit
(b) At interphanalgeal joint	50% digit
(c) Proximal to interphalangeal joint	100% digit
(d) If any part of metacarpal is included the impairment is related to the hand and an additional 10% of the hand is added to the value of the thumb (50% of hand)	
F. Soft Tissue Loss	
Isolated soft tissue loss of the end of the digit should have a value up to 25% of digit	
G. Sensory Loss	
(a) Complete loss of sensation (exclusive of tendon damage) any digit or thumb	
1. ½ of distal phalanx	25% digit
2. ½ of digit	50% digit
3. Whole digit	100% digit

Fingers (Cont'd.)	Per cent Permanent Physical Impairment and Loss of Physical Function of Individual Finger
(b) Partial loss of sensation	
1. Digits (exclusive of thumb)	
a. Radial half of digit	60% of values in G. (a) 1, 2, or 3
b. Ulnar half of digit	40% of values in G. (a) 1, 2, or 3
2. Thumb	
a. Ulnar half of digit	60% of values in G. (a) 1, 2, or 3
b. Radial half of digit	40% of values in G. (a) 1, 2, or 3

(See Fig, 5)

DISABILITIES OF THE BACK

The following ratings for permanent impairment to the body in back injuries are suggested as reasonable and representative orthopaedic evaluations readily reconciled to the average specific award ratings specified by Compensation Statutes of various localities.

The permanent physical impairment cannot be evaluated solely on limited motion. It must be judged on ability to carry out such functions as lifting, stooping, reaching, twisting and jumping. Pain is a major factor of such limitations and should be evaluated in respect to its reality and its likelihood of permanency.

CERVICAL SPINE

	Per cent Whole Body Permanent Physical Impairment and Loss of Physical Function
1. Healed sprain, contusion	
A. No involuntary muscle spasm, subjective symptoms of pain not substantiated by demonstrable structural pathology	0
B. Persistent muscle spasm, rigidity and pain substantiated by loss of anterior curve revealed by x-ray, although no demonstrable structural pathology, moderate referred shoulder-arm pain	10
C. Same as (B) with gross degenerative changes consisting of narrowing of intervertebral spaces and osteo arthritic lipping of vertebral margins	20

	Per cent Whole Body Permanent Physical Impairment and Loss of Physical Function to Whole Body
2. Fracture	
A. Vertebral compression 25%, one or two vertebral adjacent bodies, no fragmentation no involvement 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 wild motor and sensory manifestations	25
(c) With fusion, healed, no permanent motor of 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 redicular 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 neurologic residual	10
2. Same as (1) with neurological manifestations, persistent pain, numbness, weakness in fingers	20

	Per cent Whole Body Permenent Physical Impairment and Loss of Physical Function to Whole body
THORACIC AND DORSOLUMBAR SPINE	
1. Severe costovertebral construction or strain casually related to trauma with persistent pain moderate degenerative changes with osteoarthritic lipping, no x-ray evidence of structural trauma	10
2. Fracture	
A. Compression 25%, involving one or two vertical bodies, mild, no fragmentation, healed, no neurological manifestations	10
B. Compression 50%, with involvement posterior elements, healed, no neurologic manifestations, persistent pain, fusion indicated	20
C. Same as (B) with fusion, pain only on heavy use of Back	20
D. Total paraplegia	100
E. Posterior elements, partial paralysis with or without fusion, should be rated for loss of use of extremities and sphincters	
LOW LUMBAR	
1. Healed sprain, contusion	
A. No involuntary muscle spasm, subjective symptoms of pain not substantiated by demonstrable structural pathology	0
B. Persistent muscle spasm, rigidity and pain substantiated by demonstrable degnerative changes, moderate osteoarthritic lipping revealed by x-ray, combined trauma and pre-existing factors	10

LOW LUMBAR (Cont'd.)	Per cent Whole Body Permanent Physical Impairment and Loss of Physical Function to Whole Body
C. Same as (B) with more extensive osteoarthritic lipping	15
D. Same as (B) with spondylolysis or spondylolisthesis Grade I or II, demonstrable by x-ray, without surgery, combined trauma and pre-existing anomaly	20
E. Same as (D) with Grade III or IV spondylolisthesis, persistent pain, without fusion, aggravated by trauma	35
F. Same as (B) or (C) with fusion laminectomy pain moderate	25
2. Fracture	
A. Vertebral compression 25%, one or two adjacent vertebral bodies, little or fragmentation, no definite pattern or neurologic changes	15
B. Compression with fragmentation posterior elements, persistent pain, weakness and stiffness, healed, no fusion, no lifting over 25 pounds	40
C. Same as (B), healed with fusion, mild pain	25
D. Same as (B), nerve root involvement to lower extremities, determine additional rating for loss of Industrial function to extremities	
E. Same as (C), with fragmentation of posterior Elements, with persistent pain after fusion, no neurologic findings	35
F. Same as (C), with nerve root involvement to lower extremities, rate with functional loss to extremities	
G. Total paraplegia	100

LOW LUMBAR (Cont'd.)	Per cent Whole Body Permanent Physical Impairment and Loss of Physical Function to Whole Body
H. Posterior elements, partial paralysis with or without fusion, should be rated for loss of use of extremities and sphincters	
3. Neurogenic Low Back Pain—Disk Injury	
A. Periodic acute episodes with acute pain and persistent body list, tests for sciatic pain positive, temporary recovery 5 to 8 weeks	5
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