

# General Introduction of Physical Medicine and Rehabilitation

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## Definition of Rehabilitation

- habil(Latin):  
able
- rehabilitation:  
making able again
- Synonym:  
reconstruction, reconditioning, reeducation, convalescent care

## Definition of Physical Medicine

- A branch of medicine using physical agents, such as light, heat, water, electricity and mechanical agents in the management of diseases

## Definition of Rehabilitation Medicine (I)

- S. Licht: Rehabilitation Medicine is the medical management of physical disability
- F.H. Krusen: Rehabilitation involves treatment and training of the patient to the end that he may attain his maximal potential for normal living physically, psychologically, socially and vocationally.

## Definition of Rehabilitation Medicine (II)

- J.F. Lehmann: A continuing effect to restore function and reintegrate the patient into his family and community.
- H.J. Yesner: A treatment process designed to help physically handicapped individuals make maximal use of residual capacities and to enable them to obtain optimal satisfaction and usefulness in terms of themselves, their families and community.

## Definition of Rehabilitation Medicine

- Rehabilitation is defined as the development of a person to the fullest physical, psychological, social, vocational and educational potentials consistent with his or her physiological or anatomical impairment and environmental limitations.

## Goal of Rehabilitation

- The realistic goal is to obtain optimal function despite pathological process that cannot be reversed even with the best of modern medical

treatment.

- 1.Return to previous work
- 2.Shelter work
- 3.part-time work at home
- 4.independent in self-care at home
- 5.independent in self-care in nursing home
- 6.partially independent

### Concept of Rehabilitation Medicine

- Rehabilitation is a concept that should permeate the entire health care system. It should be comprehensive and should include prevention, early recognition, outpatient, inpatient and extended care programs.

### 什麼是復健？

- 對殘障的人,藉由 醫療, 功能代償及環境改造,使其剩餘功能作最充分的發揮,以達到在生理心理家庭社會環境及職業上獨立不依賴他人,或儘量不依賴他人,即稱為復健.

### ■ 殘障的層次及其復健對策

*殘障的 三個層次	問題屬性	基本 治療對策	復健對策
■ 1.生理機能的障礙 impairment	生物性 biological	醫療矯治 therapeutic approach	各種醫療及訓練
■ 2.生活能力的障礙 disability	功能性 functional	功能代償 compensatory approach	加強殘存功能訓練, ADL訓練,輔具(如義肢 裝具輪椅等 )之使用
■ 3.社會適應的障礙 handicap	社會性 social	環境改造 environment correction	居家及公共設施的改造, 對殘障者觀念的改變 , 輔導受教育就業(庇護 工廠)及參與社會性活動

### 復健團隊(Rehabilitation Team)

- 復健醫師 (M.D. Psychiatrist)
- 物理治療師 (PT Physical Therapist)

- 職能治療師 (OT Occupational Therapist)
- 語言治療師 (ST Speech Therapist)
- 義肢裝具師 (Prosthetist & Orthotist)
- 復健心理師 (Rehabilitation Psychologist)
- 復健護理師 (Rehabilitation Nurse)
- 社工人員 (Social Worker)
- 職業諮詢人員 (Vocational Consultant)
- 藝術治療師 (Art Therapist)

### **Physical Therapy(PT)**

- Using physical agents such as light, heat, water, electricity and mechanical agents in the management of diseases

### **職能(作業)治療**

利用各種活動來測檢病人，以協助診斷和訓練病人，使之達到機能之自立，以適應家庭和社會，從心理和生理兩方面輔導病人，使他們能過更積極之自立自足之生活，稱為職能治療，由職能治療師 (Occupational therapist) 來執行治療工作。

### **語言治療**

包括各類中樞性或末梢性神經障礙引起的語言困難及發音器官失常引起的語言障礙  
語言機能失常的檢查與治療包括講寫聽念

### **義肢裝具製造**

義肢, 支架, 拐杖, 輪椅以及其它各類輔助器具

### **Fields in PM&R**

#### **Physical Medicine And Rehabilitation**

- Orthopedic Rehabilitation
- Rheumatological Rehabilitation
- Neurological Rehabilitation
- Cardiac Rehabilitation
- Pulmonary Rehabilitation
- Pediatric Rehabilitation
- Geriatric Rehabilitation
- Orthosis and Prostheses
- Physical Agents

## Physical Therapy(PT)

- Using physical agents such as light, heat, water, electricity and mechanical agents in the management of diseases

## Physical Therapy(PT)

- **1. Light:** Infrared, LASER

- **2. Heat:**

### superficial

- \* hot pack(hydrocollator)
- \*electric heating pad
- \*paraffin
- \*infrared
- \*hot air bath
- \*moist air bath
- \*hot water (bath)
- \*cold

### deep(diathermy)

- \*SWD  
short wave
- \*MWD  
microwave
- \*USD  
ultrasound

## Physical Therapy(PT)

- **3. Water (Hydrotherapy)**

- \*Whirlpool
- \*Hubbard tank
- \*Pool

- **4. Electrotherapy:**

- \*Electrical Stimulation
- \*TENS(transcutaneous electrical nerve stimulation)
- \*Intrference Current Therapy
- \*EMG Biofeedback

## Physical Therapy (PT)

- **5. Mechanical Agents**

- \*Traction
- \*Massage
- \*Therapeutic Exercise
- \*Manipulation

## General Introduction of Heat and Cold Therapy

### **Physical Reactions of Heat Therapy**

- Analgesic
- Sedation
- Antispasm
- Increase Circulation
- Vasodilatation
- Increase Metabolism

### **Contraindications of Heat Therapy**

- Fever
- Local Circulation Deficiency
- Local Anesthesia
- Tumor
- Acute Inflammation
- Edema
- Infant and Emaciated Old Patients

### **Physical Reactions of Cold Therapy**

- Analgesia
- Anti-inflammation
- Antispasm
- Vasospasm and Stop Bleeding
- Reduce Swelling
- Decrease NCV
- Increase Body Fluid Viscosity
- Prolong contraction period, relaxation period and refractory period of muscle

### **Complications of Cold Therapy**

- Delay wound healing
- Frostbite
- Cold Hypersensitivity
- Hemolysis
- Proteinuria

### **Effects of Hydrotherapy**

- Heat or Cold Effect

- Massage
- Softening the soft tissue
- Assisting therapeutic exercise

### **Contraindications of Hydrotherapy**

- infectious diseases
- incontinence of urine or stool
- open wound with infection
- general deconditioning with impaired cardiopulmonary function

### **Effects of Massage**

- Analgesia
- Sedation
- Increase Circulation
- Decrease Edema
- Dehesion

### **Contraindications of Massage**

- Acute inflammation
- Infectious skin diseases
- Neoplasm

### **Effects of Therapeutic Exercise**

- maintain or increase the ROM's of joints
- increase strength and endurance of muscle
- increase the speed
- improve coordination and balance
- improve muscle relaxation
- improve physical fitness
- improve general function

### **Contraindications of Therapeutic Exercise**

- Acute Arthritis
- Acute strain or sprain
- Non-healing of Bony Fracture
- Unstable stage of acute illness

### **ES of the denervated muscle**

- to retard the progression of muscular atrophy

- to deminish intrafascicular and interfascicular agglutination
- to improve the circulation

**ES of the Innervated muscle**

- to reduce spasticity in spastic paralytic muscle
- to prevent muscular atrophy
- to stimulate the paralysed muscle such as abdominal wall and diaphragm as an aid to respiration and etc. (FES)