



## PHYSIOTHERAPY AND CLINICAL APPROACHES – AN OVERVIEW

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### **Abstract:**

Physiotherapy (also Physical Therapy as referred to by the World Confederation of Physical Therapy) is a health care profession concerned with human function and movement and maximizing potential. It is concerned with identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation. It uses physical approaches to promote, maintain and restore physical, psychological and social well-being, taking account of variations in health status. It is science-based, committed to extending, applying, evaluating and reviewing the evidence that underpins and informs its practice and delivery. The exercise of clinical judgment and informed interpretation is at its core.

**Keywords:** physiotherapy methodologies, rehabilitation, clinical approaches

### **Introduction**

Worldwide the physiotherapy community is separated by name, with three different primary titles used:

- physiotherapy,
- physical therapy and
- kinesiotherapy and for *physio* there are language derivations such as *fisio*, *fiscos*, *fysio* and *fiso*. Finding a single word to describe the community is always, going to be a difficult task. Even the definition are in some cases different from the one universally accepted, existing a consensus regarding that '*movement*' is the core expertise/business of physiotherapy.

*“Physical therapy is concerned with identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation.”*

World Confederation of Physical Therapists

[http://www.wcpt.org/policy/ps-descriptionPT#appendix\\_1](http://www.wcpt.org/policy/ps-descriptionPT#appendix_1)

*“Physiotherapy...involves the holistic approach to the prevention, diagnosis and therapeutic management of pain, disorders of movement or optimization of function to enhance the health and welfare of the community from an individual or population perspective.”*

Australian Physiotherapy Council

<http://www.physiocouncil.com.au/standards>

*“The heart of the physiotherapy profession is understanding how and why movement and function take place. Physiotherapy is anchored in movement sciences and aims to enhance or restore function of multiple body systems.”*

Canadian Physiotherapy Association

[http://www.physiotherapy.ca/getmedia/e3f53048-d8e0-416b-9c9d-38277c0e6643/DoPEN\(final\).pdf.aspx](http://www.physiotherapy.ca/getmedia/e3f53048-d8e0-416b-9c9d-38277c0e6643/DoPEN(final).pdf.aspx)

*“Physiotherapy helps restore movement and function when someone is affected by injury, illness or disability.”*

Chartered Society of Physiotherapy

<http://www.csp.org.uk/your-health/what-physiotherapy>

*“Physiotherapists are experts in developing and maintaining peoples’ ability to move and function throughout their lives.”*

European Region – World Confederation of Physical Therapists

<http://www.physio-europe.org/index.php?action=136>

*“Physiotherapists are experts in movement and function who work in partnership with their patients, assisting them to overcome movement disorders...”*

Australian Physiotherapy Association

[http://www.physiotherapy.asn.au/APAWCM/Physio\\_and\\_You/physio/APAWCM/Physio\\_and\\_You/physio.aspx?hkey=25ad06f0-e004-47e5-b894-e0ede69e0fff](http://www.physiotherapy.asn.au/APAWCM/Physio_and_You/physio/APAWCM/Physio_and_You/physio.aspx?hkey=25ad06f0-e004-47e5-b894-e0ede69e0fff)

## Main methodologies

Physiotherapists or Physical Therapists (PTs) work in a wide variety of health settings to improve a broad range of physical problems associated with different 'systems' of the body. In particular they treat neuromuscular (brain and nervous system), musculoskeletal (soft tissues, joints and bones), cardiovascular and respiratory systems (heart and lungs and associated physiology).

Physiotherapists work autonomously, often as a member of a team with other health or social care professionals. Physiotherapy practice is characterized by reflective behavior and systematic clinical reasoning, both contributing to and underpinning a problem-solving approach to patient-centered care.

People are often referred for physiotherapy by doctors or other health and social care professionals. Increasingly, because of changes in health care, people are referring themselves directly to physiotherapists without previously seeing any other health care professional.

## History

Physicians like Hippocrates and later Galenus are believed to have been the first practitioners of physiotherapy, advocating massage, manual therapy techniques and hydrotherapy to treat people in 460 B.C.. After the development of orthopedics in the eighteenth century, machines like the *Gymnasticon* were developed to treat gout and similar diseases by systematic exercise of the joints, similar to later developments in physiotherapy.

The earliest documented origins of actual physiotherapy as a professional group date back to Per Henrik Ling "*Father of Swedish Gymnastics*" who founded the Royal Central Institute of Gymnastics (RCIG) in 1813 for massage, manipulation, and exercise. In 1887, PTs were given official registration by Sweden's National Board of Health and Welfare.

Other countries soon followed. In 1894, four nurses in Great Britain formed the Chartered Society of Physiotherapy. The School of Physiotherapy at the University of Otago in New Zealand in 1913, and the United States' 1914 Reed College in Portland, Oregon, which graduated "*reconstruction aides*."

Research catalyzed the physiotherapy movement. The first physiotherapy research was published in the United States in March 1921 in *The PT Review*. In the same year, Mary McMillan organized the Physical Therapy Association (now called the American Physical Therapy Association (APTA)).

Treatment through the 1940s primarily consisted of exercise, massage, and traction. Manipulative procedures to the spine and extremity joints began to be practiced, especially in the British Commonwealth countries, in the early 1950s. Later that decade, PTs started to move beyond hospital based practice, to outpatient orthopedic clinics, public schools, college/universities, geriatric settings, rehabilitation centers, hospitals, and medical centers.

Specialization for physical therapy in the U.S. occurred in 1974, with the Orthopedic Section of the APTA being formed for those physical therapists specializing in orthopedics. In the same year, the International Federation of Orthopedic Manipulative Therapy was formed, which has played an important role in advancing manual therapy worldwide since.

## **Clinical Approaches**

Because the body of knowledge of physiotherapy is quite large, PTs tend to specialize in specific clinical areas. These include:

### **1. Musculoskeletal Physiotherapy (MSK) / Ortho**

Musculoskeletal Physiotherapy is the term used to describe the field of physiotherapy, which relates to disorders of the musculoskeletal system. The term musculoskeletal refers to muscles, bones, joints, nerves, tendons, ligaments, cartilage, and spinal discs. Musculoskeletal Physiotherapy utilizes the basic sciences of anatomy, physiology and biomechanics as background theory in the assessment and management of patients. Approaches to management in the field of musculoskeletal physiotherapy involve not only '*manipulation*', but also manual assessment and treatment techniques, specific therapeutic exercise, electrotherapy and advice on posture and movement disorders. In the USA, this field of physiotherapy is referred to as Orthopedics.

### **2. Cardiopulmonary Physical Therapy**

Cardiopulmonary Physical Therapy is physical therapy focused on the physical function of the cardiopulmonary to prevent cardiopulmonary disease and help those with cardiopulmonary disease function better.

The following are diagnoses that can be treated with cardiopulmonary physical therapy:

- Pulmonary Fibrosis
- Heart valve replacement
- Post Coronary bypass Surgery

- **Coronary Stent Placement**

Cardiopulmonary physical therapy is very important to people recovering from a heart attack or any type of heart surgery. It can also bring benefits to persons in good health condition by improving their heart rate recovery times after exercise and reducing their likelihood of suffering from deadly heart attacks.

### **3. Neurological physiotherapy**

Neurological physiotherapy is the treatment of patients who have a neurological disorder. Neurological disorders are those affecting the brain, spinal cord and nerves; such as stroke, MS and Parkinson's disease. Treatment in neurological conditions is typically based upon exercises to restore motor function through attempting to overcome motor deficits and improve motor patterns. To achieve this aim various theoretical frameworks have been promoted, each based upon inferences drawn from basic and clinical science research. Whilst some of these have remained static, others are designed to take into account new developments, perhaps the most notable example being the "*movement science*" framework.

### **5. Pediatric physiotherapy**

Pediatric physiotherapists support children to achieve their ideal physical development. They have specialist understanding in the movement, development and conditions that are likely to affect the baby and growing child and treat from new born babies to adolescents. Treatment may comprise soft tissue massage, mobilization, stretching, specific therapeutic exercises and posture education. Because children are not small adults these therapists encourage children to move to the best of their abilities through play and age appropriate fun and instruction.

### **6. Sports Medicine**

Sports physiotherapy helps sportsmen and sportswomen reach peak performance and advice on injury prevention and recovery from injuries. It is aimed at the professional and recreational athlete and is specialized in the diagnosis, treatment, rehabilitation and prevention of sports injury.

Typical sports injuries are:

- Ligament and joint sprains and strains
- Muscle strains and tears
- Stress fractures
- Pre-operative and post-operative rehabilitation such as ACL reconstruction, rotator cuff repair

- Biomechanical running injuries such as plantar fasciitis, Achilles tendonopathy
- Spinal injuries, etc...

## 7. Rheumatic Disease Physiotherapy

The physiotherapist's contribution in the treatment of patients with Rheumatic disease is to work in collaboration with the patient to allow them to achieve and maintain optimal function and independence. For many patients this will involve taking an active role in family, work and social lives.

Physiotherapists in Rheumatology will carry out detailed patient assessments to:

- identify how a patient's condition affects them physically and to what degree an individual's function is affected including mobility, posture etc.
- examine the musculoskeletal system to get a baseline of a patient's current status
- consider other body systems i.e. neurology, cardiovascular
- any special equipment requirements such as walking aids, modified footwear, splint requirements
- the patient's current self-management and coping strategies
- the need for physiotherapeutic interventions

The physiotherapist discusses assessment findings with the patient and, in conjunction with them, devises a goal orientated treatment plan. This may include pain management with the use of ice, heat, electrotherapy and hydrotherapy. The patient can then progress on to other treatment approaches including: range of movement and muscle strengthening exercises, improving mobility, and posture re-education.

The physiotherapist may provide education on their condition for the patient and guides them on self-management of their condition long term. This then enables the patient to modify their exercise programme according to their disease activity. Education of family and careers is also an important part of the PTs role.

## 8. Geriatric Physiotherapy

Geriatric physiotherapy covers a wide area of issues concerning people as they go through normal adult aging but is usually focused on the older adult. There are many conditions that affect many people as they grow older and include but are not limited to the following: arthritis, osteoporosis, cancer, Alzheimer's disease, hip and joint replacement, balance disorders, incontinence, etc. Geriatric physical therapists specialize in providing therapy for such conditions in older adults.

The fundamental principles on which physiotherapy with older people is based are:

- Disability is generally regarded as being due to a pathological process, or injury, not *prima facie* 'old age'.
- The effects of biological ageing reduce the efficiency of the body's systems, but throughout life, optimum function is maintained in each individual by continuing to use these systems to their maximum capacity.
- Physiotherapists have a key role in enabling older people to use a number of the body's systems fully to enhance mobility and independence.
- When neither improvement nor even maintenance of functional mobility is a reasonable goal, physiotherapists can contribute to helping older people to remain comfortable and pain free.
- Prevention of the development of problems in later life through health promotion.

## **9. Women's Health**

Women's Health Physiotherapy was founded from the clinical area of obstetrics and gynecology and is the care of women in relation to childbirth, both antenatal and postnatal, including the teaching of antenatal classes, in the treatment of incontinence, and in the care of women undergoing gynecological surgery. The scope of practice has now increased to include all health concerns of women: incontinence, pelvic/ vaginal pain, prenatal and postpartum musculoskeletal pain and osteoporosis, rehabilitation following breast surgery, lymphedema, education prevention, wellness and exercise. All females across the life span, from the young athlete, the childbearing woman, the menopausal and elderly woman receive benefit from physical therapy.

## **10. Oncology**

Physiotherapy in the field of oncology and palliative care is a continuously evolving and developing specialty, both in malignant and non-malignant disease. Rehabilitation for both groups of patients is now recognized as an essential part of the clinical pathway, as earlier diagnosis and new treatments are enabling patients to live longer. It is generally accepted that patients should have access to an appropriate level of rehabilitation, so that they can function at a minimum level of dependency and optimize their quality of life, regardless of their life expectancy. By working as part of a multi-disciplinary team, the physiotherapist's core skills - especially their ability to set realistic goals and their patient-centered, problem solving approach - can help people adapt to their changing condition. The physiotherapist's role is to anticipate and

prepare for potential disease progression and to facilitate and support independence and successful discharge from the acute sector for the patient and their careers.

### **The physical therapist curriculum**

The physical therapist professional curriculum is rigorous and includes content and learning experiences in the clinical sciences (e.g., content about the cardiovascular, pulmonary, endocrine, metabolic, gastrointestinal, genitourinary, integumentary, musculoskeletal, and neuromuscular systems and the medical and surgical conditions frequently seen by physical therapists).

Curricula for the Physical Therapist professional degree include:

- Screening to determine when patients/clients need further examination or consultation by a physical therapist or referral to another health care professional.
- Examination:
  - Examine patients/clients by obtaining a history from them and from other sources.
  - Examine patients/clients by performing systems reviews.
  - Examine patients/clients by selecting and administering culturally appropriate and age related tests and measures. Tests and measures include, but are not limited to, those that assess:
    - a. Aerobic Capacity/Endurance,
    - b. Anthropometric Characteristics,
    - c. Arousal, Attention, and Cognition,
    - d. Assistive and Adaptive Devices,
    - e. Circulation (Arterial, Venous, Lymphatic),
    - f. Cranial and Peripheral Nerve Integrity,
    - g. Environmental, Home, and Work (Job/School/Play) Barriers,
    - h. Ergonomics and Body Mechanics,
    - i. Gait, Locomotion, and Balance,
    - j. Integumentary Integrity,
    - k. Joint Integrity and Mobility,
    - l. Motor Function (Motor Control and Motor Learning),
    - m. Muscle Performance (including Strength, Power, and Endurance),
    - n. Neuromotor Development and Sensory Integration,
    - o. Orthotic, Protective, and Supportive Devices,
    - p. Pain,
    - q. Posture,



- r. Prosthetic Requirements,
  - s. Range of Motion (including Muscle Length),
  - t. Reflex Integrity,
  - u. Self-Care and Home Management (including activities of daily living [ADL] and instrumental activities of daily living [IADL]),
  - v. Sensory Integrity, w. Ventilation and Respiration/Gas Exchange,
  - x. Work (Job/School/Play), Community, and Leisure Integration or Reintegration (including IADL)
- Evaluation: Evaluate data from the examination (history, systems review, and tests and measures) to make clinical judgments regarding patients/clients.
- Diagnosis: Determine a diagnosis that guides future patient/client management.
- Prognosis: Determine patient/client prognoses.
- Plan of Care: Collaborate with patients/clients, family members, payers, other professionals, and other individuals to determine a plan of care that is acceptable, realistic, culturally competent, and patient-centered.
- Intervention: Provide physical therapy interventions to achieve patient/client goals and outcomes. Interventions include:
- a. Therapeutic Exercise,
  - b. Functional Training in Self-Care and Home Management,
  - c. Functional Training in Work (Job/School/Play), Community, and Leisure Integration or Reintegration,
  - d. Manual Therapy Techniques (including Mobilization/Manipulation Thrust and Nonthrust Techniques),
  - e. Prescription, Application, and, as Appropriate, Fabrication of Devices and Equipment,
  - f. Airway Clearance Techniques,
  - g. Integumentary Repair and Protection Techniques,
  - h. Electrotherapeutic Modalities,
- Provide effective culturally competent instruction to patients/clients and others to achieve goals and outcomes.
- Prevention, Health Promotion, Fitness, and Wellness: Provide culturally competent physical therapy services for prevention, health promotion, fitness, and wellness to individuals, groups, and communities. Apply principles of prevention to defined population groups.
- Students completing a Doctor of Physical Therapy program are also required to successfully complete clinical internships prior to graduation.

Physiotherapy is a science-based profession and takes a 'whole person' approach to health and wellbeing, which includes the patient's general lifestyle. At the core is the patient's involvement in their own care, through education, awareness, empowerment and participation in their treatment. Physiotherapy provides integrated, multidisciplinary care aimed at recovery of the whole person by addressing the individual's physical, emotional, medical, vocational, and social needs

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