

Hand Therapist Profile

Introduction

Hand therapy is the art and science of rehabilitation of the upper quadrant of the human body. It has become a specialisation for occupational therapists and physiotherapists in theory and practice, combining comprehensive knowledge, anatomy and function of the upper quadrant.

The specialty of hand therapy has emerged from the professions of occupational therapy (OT) and physiotherapy (PT) as a response to advances in surgical techniques that enable greater functional restoration of injured and diseased upper extremities (Chai, 1987).

Hand therapists are occupational therapists or physiotherapists, who through advanced continuing education, clinical experience and independent study have become proficient in the treatment of pathological upper quadrant (hand, wrist, elbow, shoulder girdle, cervical area and multiple joints) conditions resulting from trauma, disease, or congenital or acquired deformity.

The Hand

The hand is a sensitive organ with a specialised mechanical system compromised in a compact area. This amazing tool is capable to perform a strong grasp and a most delicate touch; its rich and complex sensory innervation allows fine judgement of texture, volume and temperature. The value of a strong and well coordinated hand in activities such as writing, painting and manipulating tools is obvious. Less obvious perhaps, is the extent to which the hand is a reflection of personality and a vital organ of expression. All types of conditions affect the hand, such as infections, arthritis, neoplasm's and degeneration, and unfortunately, the hand is also subject to severe injury. Successful treatment of the hand affected by injury or disease is determined by an appropriate assessment with skilful medical treatment and therapy. A hand therapist has these skills and works with patients who may have been affected by an accident or disease, leaving them with scars, burns, injured tendons or nerves, stiffness, fractures, or even amputation of the finger, hands, or arms.

The Dutch society of Hand Therapy

In 1990 a number of Dutch occupational therapists and physiotherapists formed The Dutch Society of Hand Therapy (Nederlands Gezelschap voor Handtherapie /NGHT). This group had a high level of experience and interest in treating patients with hand and/or arm dysfunctions. Purpose of the NGHT:

- Stimulating interest in hand therapy
- Stimulating research and development within the field of hand therapy
- Spreading information about hand therapy
- Promoting standards of treatment.

The NGHT organises two national scientific meetings a year and produces a journal twice a year. The NGHT is a member of the European hand therapy society (EFSHT) and International society (IFSHT). The members of the NGHT voted on May 23 (2003) for the terms occupational therapist/hand therapist and physiotherapist/hand therapist. Using this terminology the original basic training remains indicated supplementary to the specialisation.

Position of Hand Therapy

Hand therapists have a variety of skills from background knowledge to methodological assessment and application. These skills are required for appropriate treatment after loss of function in the hand following surgery, injury or other disorders, which may result from a wide variety of factors (Salter and Cheshire, 2000). Thus, detailed knowledge including anatomy, biomechanics, pain, the healing process and the function of the hand, contribute to making hand therapy a specialist area. In addition, hand therapists apply methodological assessment and use problem solving skills in order to scientifically assess and diagnose the problem before deciding which treatment methods are appropriate and how to apply them for the optimal recovery of the patient.

At present all registered OT's and PT's can treat patients with hand problems. There are currently plans in progress for a certification system to be in place in the near future in the Netherlands.

Competence and continuing education

A certified hand therapist will be able to distinguish him/herself from a basic registered PT/OT by demonstrating a high level of competence.¹ The therapist will have shown an advanced level of professional knowledge of the anatomy and physiology of the upper quadrant, plus advanced clinical skills and knowledge about upper quadrant rehabilitation by passing a qualification exam (J Hand Ther, july-sept. 2002). He/she will have a minimum of 5 years of clinical experience, including 1500 hours or more in direct practice in hand therapy. The certification will be valid for 5 years (meeting NGHT, November 2001). Therapists can then recertify. In reality, however, it is not practical that only certified hand therapists treat patients with hand problems.

Clinical settings

A hand therapist may work in almost all areas of the general Dutch health care. Most hand therapists work in general hospitals, university hospitals, private practices, rehabilitation centres or nursing homes. The hand therapist/OT and hand therapist/PT often work together in a team with a plastic surgeon, rehabilitation physician, orthopaedic surgeon, general surgeon and sometimes with a social worker and/or a psychologist. Within several organisations there are specific *hand teams (groups of specialized professionals)*, often organised around conditions such as neurological or rheumatological hand disorders. In private practice co-operation systems have been set up and so sometimes the hand therapist only works with a family doctor.

Referral system/finance:

An occupational therapist and physiotherapist nearly always treat patients from a doctors referral. The Therapist is solely responsible for the therapy treatment and reports his/her findings, progression and results back to the referring. In January 2005 the physiotherapist referral system rules of regulation changed. Patients are now entitled to self-refer to a physiotherapist who has had the appropriate training to make a diagnosis. In the Netherlands, depending on the patient's choice of health insurance, the treatment is paid for either by the health insurance company or by the patients themselves.

'The provision of care by healthcare professionals in the Netherlands, focusing on the quality of professional practice and patient protection, is regulated by the Individual Health Care Professions Act, known through the Dutch acronym as the "BIG Act" ' (Ministry of Health, Welfare and Sport, 2004).

After completing the basic training as an Occupational therapist or Physiotherapist, an individual is qualified to use the title 'Physiotherapist' (PT) or 'Occupational therapist' (OT). Under the Dutch rules of law (BIG-Act) these titles are protected, and it is the intention that the titles 'Hand therapist/PT' and 'Hand therapist/OT' will also be protected in the future.

¹ Currently in the Netherlands, a 'hand' therapist can choose, but is not obliged to take a range of hand therapy courses. These courses vary from 2-3 days to a 12-day course. The subjects differ from basic hand therapy training to more advanced training on specific topics, for example 'Splinting', 'The rheumatic hand', 'The neurological hand', 'The wrist', 'Complex Regional Pain Syndrome'. Day symposiums are also arranged throughout the year by different institutions.

Basic Assumptions in Hand Therapy

1. A Hand Therapist is a specialised occupational therapist or physiotherapist.

A hand therapist is an occupational or physiotherapist who, through advanced continuing education, clinical experience and independent study has become specialised in the treatment of pathological upper-quadrant conditions which have resulted from trauma, disease, congenital or acquired deformity (ASHT).

2. Hand therapy distinguishes the levels of Body Functions and Structures, Activities and Participation according to the International Classification of Functioning of the WHO.

Hand Therapy includes the treatment of the hand and upper quadrant (wrist, elbow, shoulder girdle, cervical area or multiple joints) of the human body. Hand therapy is focused on the following:

- ◆ Body functions (motion, sensation, strength, fatigue, proprioception co-ordination, etc) and structures (ligaments, tendons, muscles, skin, etc) of the hand and upper quarter of the human body
- ◆ Functional ability of the upper extremity (activity level). In our society people value the use of their hands and any loss of function through injury or accident may have a devastating effect on their lives. It is important therefore to question if it is possible for the patient to position and use their upper extremity as needed/wanted during activities of their daily life, hobbies and/or work.
- ◆ Social consequences (participation level). Rehabilitation treatment ultimately aims at restoring a person's participation in society despite persistent consequences of a disease, such as disabilities or handicaps [Cardol, 2001]

3. The interests of the patient, his or her partner and/or parent(s) / guardian(s) and / or legal representative(s) play a central role in hand therapy.

Hand therapy promotes a client-centred multidisciplinary treatment approach. In a client-centred approach clients and therapists work together to define the nature of the occupational performance problem, the focus and need for treatment and the preferred outcomes of therapy. Therefore attention must be paid, not only to impairments, but also to participation and activities carried out by the patient. Patients with hand and upper quadrant disease or injury are often seen by various specialists (for example, surgeons, rehabilitation doctors, neurologists, psychiatrists, social workers etc.). It is therefore of great importance that treatment is well co-ordinated within the professions.

4. A hand therapist works with the patient in different situations to provide a continuum of care.

This often starts within days of the injury or surgery, right through to the patient's return to work and/or a productive lifestyle (website ASHT).

Objectives and Purpose of Hand Therapy

Hand and upper quadrant patients

A hand therapist assesses and treats individuals with diagnoses related to the upper quadrant. These may include, but are not always limited to:

- Amputations
- Central nervous system disorders as they relate to the upper quadrant
- Congenital differences/anomalies
- Cumulative trauma disorders/repetitive stress injuries
- Dupuytren's contracture
- Flexor/extensor tendon injuries
- Fractures/dislocations/joint instabilities
- Infections
- Inflammatory and degenerative arthritis
- Multiple system trauma
- Nail bed injuries
- Pain-related syndromes

- Peripheral nerve compression and disease
- Peripheral nerve injuries
- Post-mastectomy/post-radiation lymph oedema
- Psychogenesis disorders involving the upper quarter
- Soft tissue injuries
- Thermal injuries
- Tumours and cysts
- Vascular disorders.

Patients may be referred to a hand therapist following a variety of medical or surgical treatments including:

- Amputation revision
- Arthroplasty
- Arthrodesis
- Fasciectomy/fasciotomy
- Fracture fixation/bone graft
- Ganglionectomy's
- Injections
- Joint reconstruction
- Joint release
- Joint synovectomy
- Ligament repair
- Nail bed repair
- Nerve blocks/sympathectomies
- Nerve decompressions
- Nerve grafts/nerve repairs
- Neurolysis
- Replantation/re-vascularization
- Scar revisions
- Skin grafts/flaps
- Soft tissue releases
- Tendon grafts/tendon repairs
- Tendon transfers
- Tenolysis
- Tenosynovectomy
- Tissue transfers
- Use of pharmaceutical agents.

(Definition of Hand Therapy and Scope of Practice of Certified Hand Therapists, Hand Therapy Certification Commission, 2002).

Purpose

The purpose of a hand therapist is to promote the goals of restoration of function and prevention of dysfunction for individuals with upper limb diseases or injury.

Specifically, the hand therapist is to:

- Evaluate relevant patient characteristics of the upper quadrant
- Develop treatment techniques
- Develop and implement treatment and discharge plans
- Organise and manage population-based services
- Promote professional practice.

Treatment techniques and tools of Hand Therapy

The practise of hand therapy is integral to all treatment of the hand and upper quadrant. Hand therapy as a specialization is now recognised worldwide (Salter and Cheshire, 2000). The key principles of hand therapy are the following:

- Early intervention
- Regular and timely, sometimes highly intensive interventions
- a Holistic, client centred approach in an empathetic environment
- Sound interdisciplinary teamwork

- Effective management and professional education. (Salter and Cheshire, 2000)

An appropriate and detailed assessment of the patient is crucial for the planning of treatment for each patient. An assessment is composed of:

- Skilled interviewing of the patient
- Observing the hand and its movements
- Taking and recording measurements.

An important part of assessment includes the assessment of pain. Pain may be part of an injury or disease. Hand therapists have the skill to advise the patient about the most appropriate balance, for example: between rest (to promote healing) and mobilisation (to maintain function).

Skilled therapy is essential for acceptable outcomes. It is often preferable that hand therapists are involved in both the pre- and post-operative management of the hand. The essential elements for successful hand therapy are:

- Skilled assessment
- Knowledge peculiar to the hand
- Education
- Patient motivation
- Support for the patient.

Without the guidance and direction of a hand therapist, it is likely that patient may not understand the extent to which he/she should exercise or rest their injured hand (Salter and Cheshire, 2000). Occupational therapists and physiotherapists are able to apply their knowledge and skills using a problem solving approach for treatment of a wide range of specific conditions and injuries.

The role of the occupational therapist and physiotherapist varies between clinics. The patient often receives both occupational and physiotherapy and thus highly specialized treatment

The therapists work as a sub team of the multi-disciplinary team (MDT), giving each other academic and managerial support. Hand therapy conforms to a problem solving approach, and problem-orientated medical recording is a useful framework to detail the progress in treatment as well as for assessment. A treatment plan with aims for each problem provides a base for the initial problem list (Salter and Cheshire, 2000). When written clearly without ambiguity, this method of reporting demonstrates a high level of quality and professionalism by the hand therapist.

Evaluation of upper quadrant and relevant patient characteristics

The hand therapist is required to obtain and review medical, psychosocial, and vocational history of the patient; Interview patient; then plan for and select assessment tools; Assess and document skeletal, muscular, nervous, vascular, skin and connective tissue status, functional and/or ergonomic status and psychosocial factors; Reassess and document patient status at appropriate intervals.

Development of treatment and discharge plans

The hand therapist is capable of integrating a theoretical knowledge base and patient goals into treatment; Establish short term and long-term goals of treatment; Establish frequency of treatment in collaboration with patient and referring doctor; Determine rehabilitation potential; Select appropriate treatment techniques; Identify appropriate resources to which patients can be referred; Consult with and refer to other health care professionals; Document the treatment plan; Assess readiness and determine discharge needs including return to work; Formulate and document discharge plan.

Implementation of treatment plans

The hand therapist is skilled to implement and modify treatment/interventions to address oedema/vascular, pain, scars, range of motion /flexibility, wounds, strength, dexterity, sensation, function, endurance and posture/movement.

A variety of techniques and tools may be used in therapeutic intervention for patients with hand and upper quadrant disorders, including but not limited to:

- Activity
- Adaptive/assistive devices

- Training in activities of daily living (ADLs)
- Behaviour management
- Compressive therapy
- Desensitisation
- Electrical modalities
- Ergonomic modification
- Exercise
- Manual therapy
- Patient and family education
- Prosthetics
- Sensory re-education
- splinting
- Standardised and non-standardised assessment tools
- strengthening
- Thermal modalities
- Work hardening/retraining
- Wound care/dressings.

Provision of population-based services

The hand therapist determines the needs of the target population (e.g., industrial, athletic, and performing artistic groups); Makes intervention recommendations (e.g., education programs, prevention strategies, ergonomic modifications and screening) based on available resources; Assists in the implementation of interventions; Monitors effectiveness of interventions; Serves as a resource person/consultant.

Organisation and management of services

The hand therapist complies with regulations that ensure environmental safety; Advocates for patients; Ensures compliance with organisational policies and procedures; Participates in case management; Assesses patient satisfaction.

Promotion of professional practice

The hand therapist maintains ethical and legal standards; Participates in evidence-based (i.e., scientifically based, outcome-based) practice; Interprets and applies clinical research and outcome studies.

Scientific basis of Hand Therapy

The intricate anatomy of the arm and hand frequently requires very delicate surgery often with microscopic techniques. The technical complexity of these kinds of surgeries necessitates a high level of competence by therapists with advanced skills in upper quadrant rehabilitation during the postoperative recovery phase. In order to become a qualified hand therapist, therapists must be knowledgeable about advanced surgical techniques and post-operative treatment programs. Hand therapists must also remain current with changes in hand therapy practice (website certified hand therapist).

The therapist's high degree of specialisation requires continuing education and most often advanced qualification. Such knowledge and skill enables the hand therapist to work with patients hastening their return to a productive lifestyle (website ASHT).

The foundation of hand therapy is composed of a comprehensive understanding of:

- Surface anatomy
- Anatomy and physiology of the skin/connective, muscular, skeletal, nervous, and vascular/lymphatic systems
- Physical properties (e.g., heat, water, light, electricity, and sound)
- wound healing
- Behavioural science and psychological reactions to impairment
- Research design and statistics
- Kinesiology and biomechanics
- Posture and pathomechanics
- aetiology and pathology of medical conditions

- Surgical and medical treatment of conditions
- Standardised and non-standardised assessment tools
- Treatment rationale, indications and contraindications
- Treatment methods, techniques, and tools
- Expected functional outcomes of treatment
- Expected physiological and psychological effects of treatment procedures
- Regulatory and legal guidelines
- Resource management
- Professional codes of ethics
- Safe and appropriate use and maintenance of equipment and assistive devices
- Safety techniques and procedures (e.g., infection control, emergency procedures, practitioner safety, environment).

In addition to the Netherlands many European countries offer membership to a society that promotes quality standards of treatment within hand therapy. These organisations are members of the European Federation of Societies for Hand Therapy (EFSHT) and the worldwide society for hand therapy, the International Federation of Societies for Hand Therapy (IFSHT).

International high quality scientific journals such as the 'Journal of Hand Therapy' (American) and the 'British Journal of Hand Therapy' provide a strong platform for continuous education, professional practice plus stimulation of research and development within the hand therapy field.