
Graduate Certificate in Hand Therapy (United Kingdom)

Hand Therapy Theory And Practice

Hand therapy is a specialised field of physiotherapy and occupational therapy that focuses on the rehabilitation of the upper limb, with particular emphasis on the hand and wrist. Practitioners require a deep understanding of anatomy, pathology, assessment techniques, treatment modalities, and outcome measurement. The following key terms and vocabulary form the foundation of the Graduate Certificate in Hand Therapy (United Kingdom) and are essential for competent clinical practice.

Anatomical terminology

The hand is composed of a complex arrangement of bones, joints, muscles, tendons, nerves, and vascular structures. Mastery of the precise names and relationships is critical for accurate assessment and communication.

Carpal bones – The eight small bones of the wrist are grouped into two rows: The proximal row (scaphoid, lunate, triquetrum, pisiform) and the distal row (trapezium, trapezoid, capitate, hamate). Their articulation creates the radiocarpal and midcarpal joints, which permit flexion-extension, radial-ulnar deviation, and limited rotation. Knowledge of the scaphoid's blood supply is vital when evaluating fractures that may jeopardise vascularity.

Metacarpal – Five long bones numbered one through five from thumb to little finger. The metacarpal heads form the carpometacarpal (CMC) joints, while the bases articulate with the carpal bones. The first CMC joint is a saddle joint allowing opposition, a movement essential for functional prehension.

Phalanx – The finger and thumb each contain three phalanges (proximal, middle, distal) except the thumb, which has two. The interphalangeal (IP) joints are hinge joints, whereas the proximal interphalangeal (PIP) joint of the thumb is a hinge that works in concert with the CMC joint to produce the thumb's wide range of motion.

Extensor tendons – These run dorsally from the forearm muscles through the extensor retinaculum and into the fingers. They are organised into six compartments (I-VI) that protect the tendons and guide their motion. The extensor indicis and extensor digiti minimi are separate tendons that provide independent extension of the index and little fingers.

Flexor tendons – The flexor digitorum superficialis (FDS) and flexor digitorum profundus (FDP) travel volarly, enclosed within a synovial sheath that is reinforced by a series of annular (A1-A5) and cruciform (C1-C3) pulleys. The pulleys maintain tendon proximity to bone, allowing efficient force transmission. Disruption of pulleys, especially the A2 and A4, can lead to bowstringing and loss of grip strength.

Thenar and hypothenar muscles – The thenar eminence contains the abductor pollicis brevis, flexor pollicis

brevis, and opponens pollicis, which together facilitate thumb opposition, flexion, and abduction. The hypothenar group (abductor digiti minimi, flexor digiti minimi brevis, opponens digiti minimi) provides similar actions for the little finger. Weakness in these groups is a hallmark of ulnar nerve impairment.

Median nerve – Originating from the brachial plexus (C5-T1), the median nerve supplies sensation to the palmar aspects of the thumb, index, middle, and radial half of the ring finger, as well as motor innervation to the thenar muscles and the first and second lumbricals. Entrapment at the carpal tunnel is a common cause of sensory loss and motor dysfunction.

Ulnar nerve – Provides sensory innervation to the ulnar side of the hand (little finger and medial half of the ring finger) and motor supply to the intrinsic hand muscles, including the interossei and the hypothenar group. Compression at the cubital tunnel or Guyon's canal can produce "claw hand" deformities and reduced grip strength.

Radial nerve – Supplies the dorsal aspect of the thumb, index, and middle fingers (proximal phalanges) and motor function to the extensors of the wrist and fingers. Radial nerve palsy often results in "wrist drop," limiting wrist extension and affecting hand positioning.

Joint terminology

Precise descriptors of joint motion and position are necessary for documentation and communication.

Range of motion (ROM) – The measured extent of movement at a joint, expressed in degrees for angular motions (flexion, extension, abduction, adduction) and in centimeters for linear motions (thumb opposition). ROM assessments may be active (patient-initiated) or passive (clinician-initiated). Limitations can be due to joint stiffness, tendon adhesion, or pain.

Flexion – Bending that decreases the angle between two bones. In the hand, finger flexion involves the FDS and FDP, while wrist flexion is produced by the flexor carpi radialis and ulnaris.

Extension – Straightening that increases the inter-bone angle. Extensor digitorum and extensor carpi radialis are primary extensors of the fingers and wrist, respectively.

Radial deviation – Movement of the wrist towards the thumb side. Excessive radial deviation may indicate ligamentous laxity or compensatory patterns after ulnar nerve injury.

Ulnar deviation – Movement of the wrist towards the little finger side. This motion is essential for activities such as typing and playing musical instruments.

Pronation – Rotation of the forearm so the palm faces downwards; produced by the pronator teres and quadratus. Pronation is required for many functional tasks, such as turning a doorknob.

Supination – Rotation of the forearm so the palm faces upwards; produced by the supinator and biceps brachii. Supination is vital for reaching and lifting objects.

Opposition – A complex movement involving flexion, abduction, and rotation of the thumb to bring it across the palm. Opposition enables precision grip and is a key functional outcome in hand therapy.

Biomechanical concepts

Understanding the forces and mechanical properties of tissues guides treatment planning.

Stress – Force per unit area applied to a tissue. Excessive stress on tendons can cause micro-tears and inflammation.

Strain – Deformation of tissue relative to its original length. Tendon strain during rehabilitation must be controlled to avoid overload while promoting collagen alignment.

Viscoelasticity – The property of tissues that exhibit both elastic (immediate) and viscous (time-dependent) responses. Tendons and ligaments display viscoelastic behaviour, meaning they lengthen slowly under sustained load and recover gradually when the load is removed.

Load-capacity curve – Graphical representation of the relationship between applied load and tissue response. The therapeutic goal is to stay within the “optimal loading” zone that encourages tissue remodeling without causing damage.

Neurophysiological terms

Hand therapy often addresses sensory and motor deficits resulting from nerve injury.

Sensibility – The ability to perceive tactile stimuli. Clinical tests include the Semmes-Weinstein monofilament test, which measures threshold pressure detection, and the two-point discrimination test, which assesses spatial resolution.

Proprioception – Awareness of joint position and movement. Proprioceptive deficits may be evaluated by joint position sense tests, where the therapist moves a finger and the patient must replicate the position with the opposite hand.

Neuropathic pain – Pain arising from nerve injury rather than tissue damage. It is characterised by burning, tingling, or electric-shock sensations and may be managed with desensitisation techniques and graded exposure.

Complex Regional Pain Syndrome (CRPS) – A chronic pain condition featuring hyperalgesia, edema, vasomotor changes, and motor dysfunction. Early identification and multidisciplinary management are crucial to prevent long-term disability.

Pathology terminology

Hand therapists must recognise a broad spectrum of conditions.

Dupuytren’s contracture – A fibroproliferative disorder of the palmar fascia leading to progressive flexion

contractures of the fingers, most commonly the ring and little fingers. Treatment may involve fascial fasciectomy, needle aponeurotomy, or collagenase injection, followed by splinting and exercise.

Trigger finger (stenosing tenosynovitis) – Inflammation and narrowing of the flexor tendon sheath, causing catching or locking of the finger during flexion. Management includes activity modification, splinting in extension, corticosteroid injection, and, if refractory, surgical release.

Carpal tunnel syndrome (CTS) – Compression of the median nerve within the carpal tunnel, resulting in numbness, tingling, and thenar weakness. Electrophysiological testing confirms diagnosis. Conservative therapy includes wrist splinting, tendon gliding exercises, and ergonomic education.

De Quervain's tenosynovitis – Inflammation of the first dorsal compartment (abductor pollicis longus and extensor pollicis brevis). Symptoms are exacerbated by thumb-centric activities. Treatment includes thumb spica splinting, activity modification, and ultrasound.

Fracture – A break in bone; hand fractures often involve the metacarpals, phalanges, or carpal bones. Management can be non-operative (casting, splinting) or operative (open reduction internal fixation). Post-operative therapy focuses on protecting fixation while restoring ROM and strength.

Ligamentous injury – Sprains or tears of ligaments such as the scapholunate or lunotriquetral ligaments. Instability may lead to degenerative arthritis. Rehabilitation includes joint mobilisations, proprioceptive training, and protective orthoses.

Arthritis – Degenerative (osteoarthritis) or inflammatory (rheumatoid) processes affecting hand joints. Clinical signs include pain, swelling, and reduced motion. Therapy aims to reduce inflammation, maintain joint alignment, and preserve function.

Scar tissue – Fibrous tissue that forms after surgery or trauma. Excessive scar can restrict motion and cause pain. Management involves scar massage, silicone gel, pressure garments, and functional stretching.

Edema – Accumulation of fluid in interstitial spaces. In the hand, edema can limit ROM and compromise skin integrity. Interventions include elevation, compression, manual lymphatic drainage, and therapeutic exercises.

Assessment terminology

A systematic assessment forms the basis of an effective treatment plan.

History taking – Gathering information about the onset, mechanism, and progression of the condition, as well as occupational and recreational demands. A thorough history identifies red-flags (e.g., Infection, malignancy) and guides prioritisation of goals.

Inspection – Visual examination of skin colour, swelling, deformity, and muscle bulk. Observation of hand posture during functional tasks provides insight into compensatory strategies.

Palpation – Tactile assessment of tenderness, temperature, and tissue texture. Palpating tendon sheaths, joints, and bony prominences helps localise pathology.

Goniometry – Use of a goniometer to quantify joint angles. Standardised positions for measuring finger flexion, extension, and opposition ensure reliable data.

Grip strength testing – Measured with a dynamometer, typically the Jamar dynamometer, to assess overall hand function. Normalised values are compared to population norms adjusted for age and gender.

Pinch strength testing – Assessed using a pinch gauge for tip, key, and three-jaw pinch. Pinch strength is crucial for tasks requiring fine manipulation.

Functional outcome measures – Standardised questionnaires that capture patient-reported disability and quality of life. Common instruments include:

DASH (Disabilities of the Arm, Shoulder and Hand) – A 30-item questionnaire yielding a score from 0 (no disability) to 100 (most severe). It is sensitive to change following hand therapy interventions.

PRWE (Patient-Rated Wrist Evaluation) – Focuses on wrist pain and function, providing separate pain and disability sub-scores.

MHQ (Michigan Hand Outcomes Questionnaire) – Addresses hand function, activities of daily living, work, pain, aesthetics, and satisfaction.

Boston Carpal Tunnel Questionnaire (BCTQ) – Specific to CTS, comprising symptom severity and functional status scales.

Fugl-Meyer Assessment – Used primarily for post-stroke patients to evaluate upper limb motor recovery, including hand components.

Clinical examination tools – Instruments that aid in the precise evaluation of tissue integrity.

Monofilament – Calibrated nylon filament used to assess cutaneous pressure perception. The Semmes-Weinstein series ranges from 0.02 G to 300 g.

Two-point discriminator – Device with adjustable tip spacing to test spatial resolution. Normal discrimination in the fingertip is ≤ 2 mm.

Adson's test – A clinical manoeuvre to assess thoracic outlet syndrome, which can affect ulnar nerve function in the hand.

Therapeutic modalities – Physical agents used to modify tissue properties and promote healing.

Therapeutic ultrasound – Delivers high-frequency sound waves (1–3 MHz) to produce thermal and

non-thermal effects. Indications include tendonitis, scar management, and deep tissue heating.

Low-level laser therapy (LLLT) – Uses coherent light to stimulate cellular metabolism, reduce inflammation, and accelerate tissue repair. Evidence supports its use in early tendon healing.

Electrical stimulation – Includes modalities such as TENS (transcutaneous electrical nerve stimulation) for analgesia and NMES (neuromuscular electrical stimulation) to facilitate muscle contraction in cases of weakness or re-education.

Cold therapy – Cryotherapy (ice packs, cold compression) reduces pain and edema. Contraindications include Raynaud's phenomenon and open wounds.

Heat therapy – Moist heat packs or paraffin baths increase tissue extensibility, useful before stretching or mobilisation.

Paraffin immersion – Provides deep, uniform heat to the hand, enhancing flexibility and reducing joint stiffness.

Mobilisation and manipulation – Manual techniques applied to joints to restore normal arthrokinematics.

Joint mobilisation – Low-velocity, graded oscillatory movements performed within the patient's tolerance. Grade III–V mobilisations are commonly employed to improve capsular stretch and joint glide.

Joint manipulation – High-velocity, low-amplitude thrusts applied at the end of range. Indicated for acute joint restrictions where contraindications (e.G., Fracture) are absent.

Soft tissue techniques – Include myofascial release, trigger point therapy, and deep tissue massage. These aim to reduce muscle tension, improve circulation, and enhance tissue extensibility.

Splinting and orthotics – Custom or prefabricated devices that control position, protect healing structures, and facilitate functional use.

Static splint – Maintains a joint in a fixed position, commonly used after tendon repair to protect the repair site.

Dynamic splint – Allows controlled movement through a range, applying low-load tension to promote tissue elongation while preventing contracture.

Thermoplastic orthosis – Fabricated from heated thermoplastic sheets that conform to the patient's anatomy. Adjustments can be made to accommodate swelling changes.

Functional orthosis – Designed to enable participation in specific tasks (e.G., A thumb spica orthosis for writing). The orthosis must balance protection with activity tolerance.

Exercise prescription – A core component of hand therapy, encompassing strengthening, endurance, coordination, and functional training.

Isometric exercise – Muscle contraction without joint movement. Useful early post-injury when loading the repaired tissue is contraindicated.

Isotonic exercise – Concentric and eccentric muscle actions through a range of motion. Progression from low-load to high-load is guided by tissue healing stage.

Closed-chain exercise – Involves movements where the hand is in contact with a stable surface, promoting co-contraction of intrinsic and extrinsic muscles. Examples include wall push-ups and pegboard tasks.

Open-chain exercise – Performed with the hand free in space, allowing isolated muscle activation. Used for targeted strengthening of specific muscle groups.

Functional task training – Simulated or actual activities that mimic daily living tasks (e.G., Buttoning, writing, typing). This approach supports motor relearning and neuroplastic adaptation.

Motor relearning – A theory that emphasises the acquisition of new movement patterns through repetitive, task-specific practice. The principles of task specificity, feedback, and progressive challenge are central to effective rehabilitation.

Neuroplasticity – The capacity of the nervous system to reorganise itself in response to experience and training. Hand therapists harness neuroplastic mechanisms by providing graded sensory input and motor challenges.

Activity analysis – The systematic breakdown of a task into its component movements, forces, and equipment requirements. This analysis informs the selection of therapeutic activities and orthotic design.

Outcome measurement – The process of quantifying changes in impairment, activity limitation, and participation restriction.

Impairment level – Direct measures such as ROM, strength, and sensibility. These data are essential for tracking tissue healing.

Activity level – Measures how the patient performs specific tasks, often using timed functional tests (e.G., Nine-Hole Peg Test).

Participation level – Captures the impact on the patient's roles and social involvement, typically via patient-reported outcome measures like the DASH.

Documentation – Accurate recording of assessment findings, treatment interventions, and patient response. Legal and professional standards require clear, concise, and objective notes.

Informed consent – A process whereby the therapist explains the nature, benefits, risks, and alternatives of proposed interventions, ensuring the patient's autonomy and understanding.

Multidisciplinary team (MDT) – Collaboration among surgeons, physiotherapists, occupational therapists, orthotists, psychologists, and other specialists. Effective communication and shared goal setting enhance patient outcomes.

Professional boundaries – Defined scope of practice for hand therapists, distinguishing between physiotherapy and occupational therapy competencies. In the UK, the HCPC (Health and Care Professions Council) regulates registration and practice standards.

Continuing professional development (CPD) – Ongoing education required to maintain competency. CPD activities may include attending conferences, undertaking research, or completing specialised courses such as the Graduate Certificate in Hand Therapy.

Challenges in hand therapy practice

The following issues frequently arise and require strategic problem-solving.

Patient adherence – Non-compliance with home exercise programmes can limit progress. Strategies to improve adherence include providing written instructions with visual aids, setting realistic goals, and employing motivational interviewing techniques.

Complexity of presentation – Many patients present with multiple co-existing conditions (e.g., CTS combined with arthritis). A comprehensive assessment that prioritises impairments and aligns treatment with the most disabling factors is essential.

Pain management – Chronic pain can hinder participation in therapy. Integrating pain neuroscience education, graded exposure, and desensitisation techniques helps patients develop coping strategies.

Edema control – Persistent swelling may impede ROM and increase tissue tension. Combining manual lymphatic drainage with compression garments and activity modification often yields the best results.

Scar management – Excessive scar formation can limit mobility and cause hypersensitivity. Early mobilisation, scar massage, and silicone therapy are key components of a proactive scar protocol.

Resource limitations – Time constraints and limited access to specialised equipment may restrict intervention options. Creative use of low-cost tools (e.g., Therapy putty, resistance bands) and telehealth platforms can mitigate these barriers.

Psychosocial factors – Anxiety, depression, and fear-avoidance behaviours can negatively affect recovery. Incorporating the biopsychosocial model, providing education, and collaborating with mental health professionals improve holistic care.

Technology integration – Emerging tools such as wearable sensors, virtual reality, and telerehabilitation platforms offer opportunities for enhanced monitoring and engagement. However, clinicians must evaluate the validity, reliability, and cost-effectiveness of these technologies before implementation.

Legal and ethical considerations – Maintaining patient confidentiality, obtaining appropriate consent for data collection, and adhering to professional standards are non-negotiable aspects of practice.

Research and evidence-based practice – Hand therapists must critically appraise the literature to inform clinical decisions. Systematic reviews, randomized controlled trials, and cohort studies provide the evidence base for interventions such as tendon gliding exercises, low-level laser therapy, and orthotic design.

Key terms in research methodology

Randomised controlled trial (RCT) – Considered the gold standard for evaluating intervention efficacy. In hand therapy research, RCTs compare outcomes such as grip strength or DASH scores between an experimental group receiving a novel therapy and a control group receiving standard care.

Systematic review – A comprehensive synthesis of multiple studies, often providing meta-analysis results. Hand therapists rely on systematic reviews to determine best-practice guidelines for conditions like CTS or Dupuytren's contracture.

Case-control study – Observational design comparing individuals with a particular condition (cases) to those without (controls). Useful for identifying risk factors for hand injuries in occupational settings.

Validity – The degree to which a measurement tool assesses what it purports to measure. For example, the DASH questionnaire demonstrates high construct validity for upper-limb disability.

Reliability – Consistency of a measurement across time or observers. Inter-rater reliability of goniometric measurements is essential for reproducible ROM data.

Minimal clinically important difference (MCID) – The smallest change in an outcome measure that patients perceive as beneficial. Recognising the MCID for the DASH (approximately 10 points) assists clinicians in evaluating treatment effectiveness.

Clinical practice guidelines (CPGs) – Evidence-based recommendations that standardise care. The British Society for Surgery of the Hand (BSSH) provides CPGs for conditions such as flexor tendon repair and carpal tunnel release.

Continuing professional development terms

Reflective practice – The process of analysing one's clinical experiences to identify strengths, weaknesses, and areas for improvement. Structured reflection, such as the Gibbs model, promotes lifelong learning.

Portfolio – A collection of evidence documenting CPD activities, case studies, and reflective entries. Required

for HCPC re-registration.

Mentorship – A professional relationship in which an experienced practitioner guides a less-experienced therapist. Mentorship enhances clinical reasoning and facilitates skill acquisition.

Simulation – Use of manikins, virtual reality, or task-specific models to practice clinical skills in a safe environment. Simulation is increasingly employed for training in tendon repair techniques and orthotic fabrication.

Telehealth terminology

Synchronous teleconsultation – Real-time video interaction between therapist and patient, allowing assessment of ROM, strength, and functional tasks.

Asynchronous telemonitoring – Use of wearable devices to collect data (e.g., Grip strength, activity levels) that the therapist reviews later.

e-Health platform – Digital interface that integrates patient records, outcome measures, and communication tools. Enables coordinated care across the MDT.

Professional terminology – Scope of practice

Physiotherapy scope – Emphasises movement analysis, manual therapy, exercise prescription, and physical modalities. In hand therapy, physiotherapists often focus on joint mobilisation, therapeutic exercise, and electrotherapy.

Occupational therapy scope – Concentrates on functional performance, activity analysis, and adaptive equipment. Occupational therapists commonly lead splint fabrication, sensory re-education, and activity-based training.

Hand therapist – A practitioner with specialised postgraduate training in hand and upper-limb rehabilitation, capable of integrating both physiotherapy and occupational therapy competencies.

Legal terminology

Professional indemnity – Insurance coverage protecting clinicians against claims of negligence or malpractice. Required for HCPC registration.

Clinical negligence – Failure to meet the standard of care, resulting in patient harm. Documentation, informed consent, and adherence to evidence-based guidelines reduce liability risk.

Standard of care – The level of care that a reasonably competent practitioner would provide under similar circumstances. In hand therapy, this includes performing a thorough assessment, applying appropriate interventions, and monitoring progress.

Key terms in orthotic fabrication

Thermoplastic – A material that becomes pliable when heated and hardens upon cooling. Commonly used for custom orthoses due to its durability and ability to be trimmed and adjusted.

Negative mould – A plaster or silicone cast taken of the hand in a functional position. The negative mould serves as a template for shaping thermoplastic material.

Positive mould – The replica of the hand created from the negative mould, often used for fine-tuning orthotic contours.

Strapping – Application of elastic or non-elastic bandages to control swelling, provide proprioceptive input, or maintain joint alignment. Proper technique prevents circulatory compromise.

Compression garments – Sleeves that apply graduated pressure to reduce edema and improve venous return. They are frequently prescribed after hand surgery or for chronic lymphedema.

Functional positioning – Alignment of the hand that facilitates participation in daily activities while protecting healing structures. For example, positioning the wrist in slight extension (10–15°) during splinting after distal radius fracture promotes optimal tendon gliding.

Key terms in therapeutic exercise

Progressive overload – Gradual increase in exercise intensity (e.g., Resistance, repetitions) to stimulate adaptation. In hand therapy, this may involve moving from a therapy putty of 0.5 Kg to 1 kg over several weeks.

Specificity – Training adaptations are specific to the type of activity performed. To improve pinch strength for a musician, exercises should mimic the precise grip patterns required for playing an instrument.

Frequency – Number of exercise sessions per day or week. Evidence suggests that daily practice of tendon gliding exercises yields better outcomes than less frequent regimens.

Repetition – Number of times a movement is performed within a session. High-repetition protocols (e.g., 50–100 Repetitions) are often employed for endurance training of intrinsic muscles.

Motor control – The ability to coordinate muscle activation for precise, efficient movement. Hand therapy incorporates motor-control drills such as bead threading or fine-motor tasks to re-establish neural pathways.

Key terms in scar management

Silicone gel sheeting – A transparent, flexible sheet applied over a scar to maintain hydration and reduce hypertrophic formation. Typically worn for 12–24 hours daily.

Pressure therapy – Use of compression garments or custom-made pressure masks to flatten scar tissue. Effective for burn-related hand scarring.

Massage techniques – Include effleurage, petrissage, and cross-fiber friction. These methods improve collagen alignment, increase pliability, and enhance circulation.

Laser scar therapy – Low-level lasers may accelerate scar maturation by stimulating fibroblast activity and modulating inflammation.

Key terms in edema control

Manual lymphatic drainage (MLD) – A gentle, rhythmic massage technique that encourages lymph flow and reduces swelling. Typically performed in a distal-to-proximal direction.

Compression bandaging – Layered application of elastic bandages that provide graduated pressure. Proper technique requires a snug yet comfortable fit to avoid arterial compromise.

Active motion – Patient-initiated movement that promotes venous return and lymphatic drainage. Early active range of motion is encouraged after most hand surgeries.

Hydrotherapy – Immersion of the hand in warm water to facilitate tissue extensibility and reduce edema. Hand-specific hydrotherapy pools allow controlled resistance exercises.

Key terms in sensory re-education

Desensitisation – Gradual exposure to varied tactile stimuli (e.G., Textures, temperatures) to reduce hypersensitivity. The process often begins with light touch and progresses to more complex textures.

Sensory discrimination training – Tasks that improve the ability to differentiate shapes, sizes, and textures. Examples include sorting objects of varying diameters or identifying objects hidden in a bag.

Proprioceptive neuromuscular facilitation (PNF) – A technique that combines stretching and contraction to enhance proprioceptive input and improve motor control.

Key terms in rehabilitation outcome

Functional independence – The capacity to perform activities of daily living without assistance. Measured through tools such as the Functional Independence Measure (FIM) or the Barthel Index.

Return-to-work (RTW) – A critical goal for many hand therapy patients. Successful RTW requires assessment of job demands, ergonomic modifications, and graduated exposure to work-related tasks.

Patient-reported outcome measures (PROMs) – Instruments that capture the patient's perspective on pain, function, and quality of life. PROMs are essential for evaluating the impact of therapy from the patient's

viewpoint.

Key terms in ergonomics

Neutral posture – Alignment of the hand and wrist that minimises stress on tendons and nerves. For example, typing with the wrist in slight extension and the forearm pronated reduces median nerve compression.

Force-time integral – A measure of cumulative load applied over time. High force-time integrals are associated with overuse injuries, informing ergonomic interventions.

Tool-specific ergonomics – Customising hand tools (e.G., Surgical instruments, keyboards) to fit the user's hand dimensions reduces strain and improves efficiency.

Key terms in multidisciplinary collaboration

Referral pathway – The documented process by which a patient is directed from one professional to another (e.G., From a general practitioner to a hand surgeon, then to a hand therapist). Clear pathways facilitate timely intervention.

Case conference – A structured meeting where members of the MDT discuss a patient's progress, modify goals, and coordinate treatment plans. Documentation of decisions ensures continuity of care.

Shared decision-making – An approach where the therapist and patient jointly decide on treatment options, considering clinical evidence and patient preferences. This enhances adherence and satisfaction.

Key terms in legal and ethical practice

Confidentiality – The duty to protect patient information. In the UK, the Data Protection Act 2018 governs how personal data must be stored and shared.

Competence – The ability to perform clinical tasks safely and effectively. Hand therapists must regularly assess their competence through CPD and reflective practice.

Conflict of interest – Situations where personal or financial interests may compromise professional judgement. Transparency and disclosure mitigate ethical concerns.

Key terms in research application

Translational research – The process of applying findings from basic science to clinical practice. For hand therapy, translational research might involve converting laboratory data on tendon healing into evidence-based mobilisation protocols.

Implementation science – The study of methods to promote the integration of research findings into

routine practice. Hand therapists use implementation frameworks to adopt new techniques such as virtual reality-based motor relearning.

Quality improvement (QI) – Systematic efforts to enhance service delivery. QI projects in hand therapy may focus on reducing waiting times for splint fabrication or increasing the proportion of patients who achieve MCID on the DASH.

Key terms in patient education

Health literacy – The patient's ability to obtain, process, and understand health information. Hand therapists must tailor educational materials to the patient's literacy level, using plain language and visual aids.

Self-management – Empowering patients to take an active role in their rehabilitation through home exercises, symptom monitoring, and lifestyle modifications.

Motivational interviewing – A counselling technique that explores ambivalence and strengthens intrinsic motivation for change. Useful for addressing barriers to adherence in chronic hand conditions.

Key terms in technology-enhanced therapy

Wearable sensor – A device that captures movement data (e.G., Flexion angles, grip force) and transmits it to a clinician for remote monitoring. Sensors can provide real-time feedback to improve exercise technique.

Virtual reality (VR) – Immersive computer-generated environments that simulate real-world tasks. VR can be employed for motor-relearning exercises, offering graded challenges and objective performance metrics.

Tele-rehabilitation – Delivery of therapy services via digital platforms, enabling remote assessment, exercise instruction, and progress tracking. Particularly valuable for patients in rural areas or with limited mobility.

Key terms in professional development

Scope expansion – The process of acquiring additional skills (e.G., Advanced orthotic design, microsurgical knowledge) to broaden practice capabilities. Requires formal training and certification.

Peer-reviewed journal – A scholarly publication where articles undergo critical evaluation by experts before acceptance. Hand therapists rely on peer-reviewed evidence to inform practice.

Clinical audit – Systematic review of practice against established standards. Audits may assess compliance with splinting protocols or the effectiveness of a particular exercise regimen.

Key terms in outcome evaluation

Effect size – A quantitative measure of the magnitude of change produced by an intervention. In hand therapy research, effect sizes help determine the clinical relevance of treatment outcomes.

Responder analysis – Classification of patients based on whether they achieve a predefined threshold of improvement (e.G., MCID). This analysis aids in identifying which sub-groups benefit most from a particular therapy.

Cost-effectiveness – Evaluation of the economic value of an intervention relative to its health benefits. Hand therapy services are often examined for cost-utility using quality-adjusted life years (QALYs).

Key terms in clinical reasoning

Hypothesis-driven assessment – Formulating clinical hypotheses based on history and examination, then testing them through targeted investigations (e.G., Specific ROM tests).

Pattern recognition – The ability to quickly identify common presentations (e.G., “Trigger finger” pattern) based on experience and knowledge.