

# Cigna Medical Coverage Policy- Therapy Services Occupational Therapy

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## INSTRUCTIONS FOR USE

*Cigna / ASH Medical Coverage Policies are intended to provide guidance in interpreting certain standard benefit plans administered by Cigna Companies. Please note, the terms of a customer's particular benefit plan document may differ significantly from the standard benefit plans upon which these Cigna / ASH Medical Coverage Policies are based. In the event of a conflict, a customer's benefit plan document always supersedes the information in the Cigna / ASH Medical Coverage Policy. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Determinations in each specific instance may require consideration of:*

- 1) the terms of the applicable benefit plan document in effect on the date of service*
- 2) any applicable laws/regulations*
- 3) any relevant collateral source materials including Cigna-ASH Medical Coverage Policies and*
- 4) the specific facts of the particular situation*

*Where coverage for care or services does not depend on specific circumstances, reimbursement will only be provided if a requested service(s) is submitted in accordance with the relevant guidelines and criteria outlined in this policy, including covered diagnosis and/or procedure code(s) outlined in the Coding Information section of this policy. Reimbursement is not allowed for services when billed for conditions or diagnoses that are not covered under this policy. When billing, providers must use the most appropriate codes as of the effective date of the submission. Claims submitted for services that are not accompanied by covered code(s) under this policy will be denied as not covered.*

*Cigna / ASH Medical Coverage Policies relate exclusively to the administration of health benefit plans.*

*Cigna / ASH Medical Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines.*

*Some information in these Coverage Policies may not apply to all benefit plans administered by Cigna. Certain Cigna Companies and/or lines of business only provide utilization review services to clients and do not make benefit determinations. References to standard benefit plan language and benefit determinations do not apply to those clients.*

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**Under many benefit plans, coverage for outpatient occupational therapy programs and occupational therapy provided in the home is subject to the terms, conditions and limitations of the applicable benefit plan's Short-Term Rehabilitative Therapy benefit and schedule of copayments. Under many plans, coverage of inpatient occupational therapy is subject to the terms, conditions and limitations of the Other Participating Health Care Facility/Other Health Care Facility benefit as described in the applicable plan's schedule of copayments.**

**Outpatient occupational therapy is the most medically appropriate setting for these services unless the individual independently meets coverage criteria for a different level of care. An outpatient occupational therapy treatment visit is limited to a maximum of 4 timed codes (equivalent to one hour) for each date of service.**

Coverage for occupational therapy varies across plans. Refer to the customer's benefit plan document for coverage details.

If coverage is available for occupational therapy, the following conditions of coverage apply.

## **GUIDELINES**

### **Rehabilitative Occupational Therapy Services**

#### **Medically Necessary**

- I. **An occupational therapy evaluation is considered medically necessary for the assessment of a physical and/or functional impairment as demonstrated by the inability to perform basic activities of daily living (ADLs) or instrumental activities of daily living (IADLs), or usual daily activities.**
- II. **Occupational therapy services are considered medically necessary to improve, adapt or restore functions which have been impaired or permanently lost and/or to reduce pain as a result of illness, injury, loss of a body part, or congenital abnormality when ALL the following criteria are met:**
  - The individual demonstrates a physical and/or functional impairment as demonstrated by the inability to perform basic activities of daily living (ADLs) or instrumental activities of daily living (IADLs), or usual daily activities.
  - The individual demonstrates signs and symptoms of physical and/or functional impairment in one or more of the following areas:
    - Sensory and/or motor
    - Cognitive/psychological
    - Cardiopulmonary status and circulation
    - Skin
  - The individual's condition has the potential to improve or is improving in response to therapy, maximum improvement is yet to be attained; and there is an expectation that the anticipated improvement is attainable in a reasonable and generally predictable period of time.
  - The program is individualized, and there is documentation outlining quantifiable, attainable treatment goals.
  - Improvement is evidenced by successive objective measurements.
  - The services are delivered by a qualified provider of occupational therapy services (i.e. appropriately trained and licensed by the state to perform occupational therapy services).
  - Occupational therapy occurs when the judgment, knowledge, and skills of a qualified provider of occupational therapy services (as defined by the scope of practice for therapists in each state) are necessary to safely and effectively furnish a recognized therapy service due to the complexity and sophistication of the plan of care and the medical condition of the individual, with the goal of improvement of an impairment or functional limitation.

#### **Not Medically Necessary**

- I. **OT services are considered not medically necessary if any of the following is determined:**
  - The individual's condition does not have the potential to improve or is not improving in response to therapy; or would be insignificant relative to the extent and duration of therapy required; and there is an expectation that further improvement is NOT attainable.
  - Improvement or restoration of function could reasonably be expected as the individual gradually resumes normal activities without the provision of skilled therapy services. For example:
    - An individual suffers a transient and easily reversible loss or reduction in function which could reasonably be expected to improve spontaneously as the patient gradually resumes normal activities;
    - A fully functional individual who develops temporary weakness from a brief period of

- bed rest following abdominal surgery.
- Therapy services that do not require the skills of a qualified provider of OT services. Examples include but not limited to:
  - Activities for the general good and welfare of patients
    - General exercises (basic aerobic, strength, flexibility or aquatic programs) to promote overall fitness/conditioning
    - Services/programs for the primary purpose of enhancing athletic or recreational sports.
    - Massages and whirlpools for relaxation
    - General public education/instruction sessions
  - Repetitive gait or other activities and services that an individual can practice independently and can be self-administered safely and effectively.
    - Activities that require only routine supervision and NOT the skilled services of a occupational therapy provider
    - When a home exercise program is sufficient and can be utilized to continue therapy (examples of exceptions include but would not be limited to the following: if patient has poor exercise technique that requires cueing and feedback, lack of support at home if necessary for exercise program completion, and/or cognitive impairment that doesn't allow the patient to complete the exercise program)
- Feeding therapy for food aversions that are meeting normal growth and developmental milestones
- When a home feeding program can be utilized to continue therapy
- Documentation fails to objectively verify subjective, objective and functional progress over a reasonable and predictable period of time.
- The physical modalities are not preparatory to other skilled treatment procedures.
- Modalities that have been deemed to provide minimal to no clinical value independently or within a comprehensive treatment for any condition and/or not considered the current standard of care within a treatment program
  - Infrared light therapy
  - Vasopneumatic device
- Treatments are not supported in peer-reviewed literature.

**II. The following treatments are considered not medically necessary because they are nonmedical, educational or training in nature or related to academic or work performance. In addition, these treatments/programs are specifically excluded under many benefit plans:**

- driving safety/driver training
- back school
- vocational rehabilitation programs and any programs with the primary goal of returning an individual to work
- work hardening programs
- education and achievement testing, including Intelligence Quotient (IQ) testing
- educational interventions (e.g., classroom environmental manipulation, academic skills training and parental training)
- services provided within the school setting and duplicated in the rehabilitation setting

**III. Duplicative or redundant services expected to achieve the same therapeutic goal are considered not medically necessary. For example:**

- Multiple modalities procedures that have similar or overlapping physiologic effects (e.g., multiple forms of superficial or deep heating modalities)
- Same or similar rehabilitative services provided as part of an authorized therapy program through another therapy discipline.

- When an individual receives physical, occupational, or speech therapy, the therapists should provide different treatments that reflect each therapy discipline's unique perspective on the individual's impairments and functional deficits and not duplicate the same treatment. They must also have separate evaluations, treatment plans, and goals. When an individual receives manual therapy services from a physical therapist and chiropractic or osteopathic manipulation, the services must be documented as separate and distinct, performed on different body parts, and must be justified and non-duplicative.

## **Not Covered or Reimbursable**

### **I. The following occupational therapy service is not covered or reimbursable:**

- The treatment visit extends beyond 4 timed unit services per date of service per provider (equivalent to one hour).

## **Habilitative Occupational Therapy Services**

**Habilitative services may or may not be covered services. When the benefit is available for habilitative services, the following applies:**

## **Medically Necessary**

### **I. Habilitative OT services are considered medically necessary when ALL the following criteria are met:**

- The therapy is intended to keep, learn, or improve skills and functioning for daily living which have not (but normally would have) developed or which are at risk of being lost as a result of illness (including developmental delay), injury, loss of a body part, or congenital abnormality. Examples include therapy for a child who isn't walking or talking at the expected age.
- The occupational therapy services are evidence-based and require the judgment, knowledge, and skills of a qualified provider of occupational therapy services due to the complexity and sophistication of the plan of care and the medical condition of the individual.
- There is an expectation that the therapy will improve function, assist development of function, or keep an acceptable level of functioning.
- An individual would either not be expected to develop the function or would be expected to permanently lose the function (not merely experience fluctuation in the function) without the habilitative service. If the undeveloped or impaired function is not the result of a loss of body part or injury, a physician experienced in the evaluation and management of the undeveloped or impaired has confirmed that the function would not either be expected to develop or would be permanently lost without the habilitative service. This information also concurs with the written treatment plan, which is likely to result in meaningful development of function or prevention of the loss of function.
- There is a written treatment plan documenting the short and long-term goals (including estimated time when goals will be met) of treatment, frequency and duration of treatment, and what quantitative outcome measures will be used to assess function objectively.
- Documentation objectively verifies that, at a minimum, functional status is kept or developed.
- The services are delivered by a qualified provider of occupational therapy services.

## **Not Medically Necessary**

### **I. Habilitative OT services are considered not medically necessary if any of the criteria above are not met.**

**Not Covered or Reimbursable**

- I. The following occupational therapy service is not covered or reimbursable:**
- The treatment visit extends beyond 4 timed unit services per date of service per provider (equivalent to one hour).

**Experimental, Investigational, Unproven**

- I. Use of the following treatments is considered experimental, investigational, and/or unproven:**
- Dry hydrotherapy/aquamassage/hydromassage
  - Dry needling
  - Elastic therapeutic tape/taping (e.g., Kinesio™ tape, KT TAPE/KT TAPE PRO™, Spidertech™ tape)
  - Equestrian therapy (e.g., hippotherapy)
  - H-WAVE®
  - Intensive Model of constraint-induced movement therapy (CIMT)
  - Intensive Model of Therapy (IMOT) programs
  - Low-Frequency, Non-Contact, Non-Thermal Ultrasound
  - MEDEK Therapy
  - Microcurrent Electrical Nerve Stimulation (MENS)
  - Non-invasive Interactive Neurostimulation (e.g., InterX®)
  - The Interactive Metronome Program

**Hand Orthotic**

**A custom fitted (L3807, L3915, L3917, L3923, L3929, L3931) or custom fabricated (L3763-L3766, L3806, L3808, L3891, L3900, L3901, L3905, L3906, L3913, L3919, L3921, L3933, L3935, L3956, L4205) hand orthotic is medically necessary for a patient requiring stabilization or support to the hand and/or wrist and who is expected to have improved function with the use of the device and when the patient's clinical findings are severe and dysfunctional such that an off-the-shelf orthotic is insufficient for the patient's needs when ALL of the following criteria are met:**

- The orthosis is prescribed to support, align, prevent or correct a deformity
- Evidence of a physical examination within the prior six months, for a condition that supports the use of the item prescribed, is documented in the individual's medical record.
- One or more of the following criteria are met:
  - to substitute for weak muscles (e.g., following cervical spine injury, brachial plexus injury, peripheral nerve injury [e.g., median, ulnar or radial nerves], sprain, strain)
  - to support or immobilize a structure (e.g., rheumatoid arthritis, osteoarthritis, overuse syndromes [e.g., lateral epicondylitis, cubital tunnel syndrome, carpal tunnel syndrome, de Quervain tenosynovitis, trigger finger], trauma, following surgical repairs, fractures [e.g., acromioclavicular dislocation, clavicle fracture])
  - prevent contracture or deformity from neurological injury (e.g., brain injury, stroke [i.e., spasticity], spinal cord injury, brachial plexus injury, peripheral nerve injury)
  - correct joint contractures resulting from disease or immobilization (e.g., post fracture, burns)
  - when necessary to carry out ADLs (e.g., spinal cord injured individuals)
- One of more of the following additional criteria are met:
  - post-surgical intervention
  - orthotic requires unique components (e.g., pulleys, rubber bands)
  - neurologic co-morbidities (e.g., sensory deficit, spasticity)
  - swelling/lymphedema comorbidity
  - multiple-joint involvement
  - plan of care for serial splinting
  - orthotic will need frequent modification

- skin impairment co-morbidity
  - The clinical documentation supports the medical necessity of a custom fitted or custom fabricated orthotic beyond what is necessary for an off-the-self orthotic.
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## **DESCRIPTION**

Occupational therapy (OT) services are skilled services which may be delivered by an occupational therapist or other health care professional acting within the scope of a professional license. A service is not considered a skilled therapy service merely because it is furnished by a therapist or by a therapist/therapy assistant under the direct or general supervision, as applicable, of a therapist. If a service can be self-administered or safely and effectively furnished by an unskilled person, without the direct or general supervision, as applicable, of a therapist, the service cannot be regarded as a skilled therapy service even though a therapist actually furnishes the service. Similarly, the unavailability of a competent person to provide a non-skilled service, notwithstanding the importance of the service to the patient, does not make it a skilled service when a therapist furnishes the service. Services that do not require the professional skills of a therapist to perform or supervise are not medically necessary, even if they are performed or supervised by a therapist, physician or NPP. Therefore, if a patient's therapy can proceed safely and effectively through a home exercise program, self-management program, restorative nursing program or caregiver assisted program, occupational therapy services are not indicated or medically necessary.

Rehabilitative OT services are intended to improve, adapt or restore functions which have been impaired or permanently lost as a result of illness, injury, loss of a body part, or congenital abnormality involving goals an individual can reach in a reasonable period of time. If no improvement is documented after two weeks of treatment, an alternative treatment plan should be attempted. If no significant improvement is documented after a total of four weeks, re-evaluation by the referring provider may be indicated. Treatment is no longer medically necessary when the individual stops progressing toward those established goals. Treatment is no longer medically necessary when the individual stops progressing toward established goals.

Habilitative services are defined by the National Association of Insurance Commissioners as "health care services that help a person keep, learn or improve skills and functioning for daily living." Habilitative services are intended to keep, develop or improve skills needed to perform activities of daily living (ADLs) or instrumental activities of daily living (IADLs) which have not (but normally would have) developed or which are at risk of being lost as a result of illness, injury, loss of a body part, or congenital abnormality. Examples include therapy for a child who is not walking at the expected age.

## **GENERAL BACKGROUND**

According to the American Occupational Therapy Association, occupational therapists and occupational therapy assistants help people across their lifespan participate in the things they want and need to do through the therapeutic use of everyday activities (occupations). Occupational therapists provide services to patients who have impairments, functional limitations, disabilities, or changes in physical function and health status resulting from injury, disease, or other causes. OT addresses physical, cognitive, psychosocial, sensory, communication, and other areas of performance in various contexts and environments in everyday life activities that affect health, well-being, and quality of life. The overarching goal of occupational therapy is "to support [people's] health and participation in life through engagement in occupations." Medically necessary occupational therapy services must relate to a written treatment plan of care and be of a level of complexity that requires the judgment, knowledge and skills of an occupational therapist to perform and/or supervise the services. The plan of care for medically necessary occupational therapy services is established by a licensed occupational therapist. The amount, frequency and duration of the occupational therapy services must be reasonable (within regional norms and commonly accepted practice patterns); the services must be considered appropriate and needed for the treatment of the condition and must not be palliative in nature. Thus, once therapeutic benefit has been achieved, or a home exercise program could be used for further gains without the need for skilled occupational therapy, continuing supervised occupational therapy is not considered medically necessary. If measurable improvement is made, then the progress towards identified goals should be clearly documented and the treatment plan updated accordingly. Occupational therapists should document in clinical records the objective findings and subjective complaints that support the necessity for treatment. A treatment plan should be developed with planned procedures/modalities (frequency and duration), measurable and attainable short- and long-term goals, and anticipated duration of care. At a minimum, documentation is required for every treatment day and for each intervention performed. Each daily



record should include: the date of service, the total treatment time for each date of service, and the identity of the person(s) providing the services; and specific interventions used; the name of each modality and/or procedure performed, the parameters for each modality (e.g., amperage/voltage, location of pads/electrodes), area of treatment, and total treatment time spent for each intervention (mandatory for timed services). Failure to properly identify and sufficiently document the parameters for each intervention on a daily progress note may result in an adverse determination (partial approval or denial). There should be a reasonable expectation that the identified goals will be met.

## **Duplicated / Insufficient Information**

(1) Entries in the medical record should be contemporaneous, individualized, appropriately comprehensive, and made in a chronological, systematic, and organized manner. Duplicated/nearly duplicated medical records (a.k.a. cloned records) are not acceptable. It is not clinically reasonable or physiologically feasible that a patient's condition will be identical on multiple encounters. (Should the findings be identical for multiple encounters, it would be expected that treatment would end because the patient is not making progress toward current goals.)

This includes, but not limited to:

- duplication of information from one treatment session to another (for the same or different patient[s]);
- duplication of information from one evaluation to another (for the same or different patient[s]).

Duplicated medical records do not meet professional standards of medical record keeping and may result in an adverse determination (partial approval or denial) of those services.

(2) The use of a system of record keeping that does not provide sufficient information (e.g., checking boxes, circling items from lists, arrows, travel cards with only dates of visit and listings) should not be submitted. These types of medical record keeping may result in an adverse determination (partial approval or denial) of those services.

Effective and appropriate documentation that meets professional standards of medical record keeping that adequately detail a proper assessment of the patient's status, the nature and severity of patient complaint(s) or condition(s), and/or other relevant clinical information (e.g., history, parameters of each therapy performed, objective findings, progress towards treatment goals, response to care, prognosis.) is expected.

## **Occupational Therapy Treatment Sessions**

An occupational therapy intervention is the purposeful interaction of the occupational therapist with the patient and, when appropriate, with other individuals involved in patient care, using various occupational therapy procedures and techniques to produce changes in the condition that are consistent with the diagnosis and prognosis. Occupational therapy interventions consist of coordination, communication, and documentation; patient-related and family/caregiver instruction; and procedural interventions. Occupational therapists aim to alleviate impairment and functional limitation by designing, implementing, and modifying therapeutic interventions. An occupational therapy treatment session in the outpatient setting lasts up to one-hour on any given day and must be supported in the plan of care and based on a patient's medical condition. Consistent with Centers for Medicare & Medicaid Services (CMS) Local Coverage Determinations (LCDs), up to a maximum of 4 timed codes (equivalent to one hour) will be allowed. OT services in excess of 60 minutes per day are generally not demonstrated to have additional medical benefit in an outpatient setting. An occupational therapy session may include:

- Evaluation or reevaluation;
- Therapeutic use of everyday life and other purposeful activities, and other interventions focusing on preparing patients for daily activities performed in life and work;
- Basic and advanced functional training in daily living, self-care and home management including activities of daily living (ADL) and instrumental activities of daily living (IADL);
- Management of feeding, eating and swallowing to improve eating and feeding performance;
- Cognitive, perceptual, safety and judgment evaluation and training;
- Adaptive training in and modification of activities, processes and environments (home, work, school, or community), including ergonomic applications and performance improvement;
- Assessment, design, fabrication, application, fitting, and training in assistive technology, adaptive devices, and orthotic devices;
- Training in the use of prosthetic devices;

- Higher level independent living skill instruction and community/work functional reintegration;
- Functionally oriented upper extremity interventions;
- Training of the patient, caregivers, and family/parents in home exercise and activity programs;
- Skilled reassessment of the individual's problems, plan, and goals as part of the treatment session.

## **Modalities And Procedures**

In some states, occupational therapists are required to hold a specific certification to use modalities in practice. The American Medical Association (AMA) Current Procedural Terminology (CPT) manual defines a modality as "any physical agent applied to produce therapeutic changes to biologic tissue; includes but is not limited to thermal, acoustic, light, mechanical, or electric energy" (AMA, 2018). Modalities may be supervised, which means that the application of the modality doesn't require direct one-on-one patient contact by the practitioner. Or modalities may involve constant attendance, which indicates that the modality requires direct one-on-one patient contact by the practitioner.

Examples of supervised modalities include application of:

- Hot or cold packs
- Mechanical traction
- Unattended electrical stimulation
- Whirlpool
- Paraffin bath
- Diathermy

Examples of modalities that require constant attendance include:

- Contrast baths
- Ultrasound
- Attended electrical stimulation (i.e., NMES)
- Iontophoresis

Passive modalities are most effective during the acute phase of treatment, since they are typically directed at reducing pain, inflammation, and swelling. They may also be utilized during the acute phase of the exacerbation of a chronic condition. Passive modalities are rarely beneficial alone and are most effective when performed as part of a comprehensive treatment approach. Some improvement with the use of passive modalities should be seen within three visits. If passive therapy is not contributing to improvement, passive therapy should be discontinued and other evidence supported interventions implemented. The utilization of more than 2 passive modalities per office visit is typically considered excessive and is not supported as medically necessary. Use of more than 2 modalities on each visit date should be justified in the documentation. After one or two weeks, the clinical effectiveness of passive modalities begins to decline significantly. In some situations, passive modalities may be indicated for up to one or two months as part of comprehensive occupational therapy program. The need for passive modalities beyond two weeks should be objectively documented in the clinical record.

The AMA CPT manual defines therapeutic procedures as "A manner of effecting change through the application of clinical skills and/or services that attempt to improve function" (AMA, 2018). Examples of therapeutic procedures include therapeutic exercise to develop strength and endurance, range of motion and flexibility; neuromuscular re-education of movement, balance, coordination, kinesthetic sense, posture, and/or proprioceptive activities, aquatic therapy, and manual therapy techniques (e.g., mobilization/manipulation, manual lymphatic drainage, manual traction); or therapeutic activities using dynamic activities to improve functional performance (direct one-on-one patient contact by the practitioner).

Transition from passive physiotherapy modalities to active treatment procedures should be timely and evidenced in the medical record, including instructions on self/home care. And in most cases, active treatment should be initiated in addition to modality use at a level that is appropriate for the patient.

Active therapeutic procedures are typically started as swelling, pain, and inflammation are reduced. The need for stabilization and support is replaced by the need for increased range of motion and restoration of function. Active care elements include increasing range of motion, strengthening primary and secondary stabilizers of a given region, and increasing the endurance capability of the muscles. Care focuses on active participation of the patient in their exercise program. Activities of Daily Living (ADLs) training, muscle strengthening, movement retraining,



and progressive resistive exercises are considered active procedures. In general, patients should progress from active procedures to a home exercise program.

Below is a description and medical necessity criteria, as applicable, for different treatment interventions, including specific modalities and therapeutic procedures associated with occupational therapy. This material is for informational purposes only and is not indicative of coverage, nor is it an exhaustive list of services provided.

## **Hydrotherapy/Whirlpool/Hubbard Tank**

These modalities involve supervised use of agitated water in order to relieve muscle spasm, improve circulation, or cleanse wounds e.g., ulcers, skin conditions. More specifically, Hubbard tank involves a full-body immersion tank for treating severely burned, debilitated and/or neurologically impaired individuals. Hydrotherapy is considered medically necessary for pain relief, muscle relaxation and improvement of movement for persons with musculoskeletal conditions. It is also considered medically necessary for wound care (cleansing and debridement). It is not appropriate to utilize more than one hydrotherapy modality on the same day.

## **Fluidotherapy®**

This modality is used specifically for acute and subacute conditions of the extremities. Fluidotherapy® is a dry superficial thermal modality that transfers heat to soft tissues by agitation of heated air and Cellux particles. The indication for this modality are similar to paraffin baths and whirlpool and it is an acceptable alternative to other heat modalities for reducing pain, edema, and muscle spasm from acute or subacute traumatic or non-traumatic musculoskeletal disorders of the extremities, including complex regional pain syndrome (CRPS). A benefit of Fluidotherapy® is that patients can perform active range of motion (AROM) while undergoing treatment.

## **Vasopneumatic Devices**

These special devices apply pressure for swelling/edema reduction, either after an acute injury, following a surgical procedure, due to lymphedema, or due to pathology such as venous insufficiency. Units that provide cold therapy with compression are not examples of vasopneumatic devices. Vasopneumatic devices are considered not medically necessary for any condition given the state of evidence relative to lymphedema. Standard of care for lymphedema is complex lymphedema therapy, which includes skin and nail care, manual drainage techniques, compression bandaging, and therapeutic exercise.

## **Hot/Cold Packs**

Hot packs increase blood flow, relieve pain and increase movement; cold packs decrease blood flow to an area for pain and swelling reduction and are typically used in the acute phase of injury or in the acute phase of an exacerbation. They are considered medically necessary for painful musculoskeletal conditions and acute injury.

## **Paraffin Bath**

This modality uses hot wax for application of heat. It is indicated for use to relieve pain and increase range of motion of extremities (typically wrists and hands) due to chronic joint problems or post-surgical scenarios.

## **Infrared Light Therapy**

Infrared light therapy is a form of superficial heat therapy used to increase circulation to relieve muscle spasm. Other heating modalities are considered superior to infrared lamps and evidence is lacking in peer-reviewed literature to support effectiveness. Utilization of the Infrared light therapy CPT code is not appropriate for low level laser treatment. This also does not refer to Anodyne® Therapy System.

## **Electrical Stimulation**

Electrical stimulation is used in different variations to relieve pain, reduce swelling, heal wounds, and improve muscle function. Functional electric stimulation is considered medically necessary for muscle re-education (to improve muscle contraction) in the earlier phases of rehabilitation.

## **Iontophoresis**

Electric current used to transfer certain chemicals (medications) into body tissues. Use to treat inflammatory conditions, such as plantar fasciitis and lateral epicondylitis.

## **Contrast Baths**

This modality is the application of alternative hot and cold baths and is typically used to treat extremities with subacute swelling or CRPS. Contrast baths assist with hypersensitivity reduction and swelling reduction.

## **Ultrasound**

This modality provides deep heating through high frequency sound wave application. Non-thermal applications are also possible using the pulsed option. Ultrasound is commonly used to treat many soft tissue conditions that require deep heating or micromassage to a localized area to relieve pain and improve healing.

## **Low-Frequency, Non-Contact, Non-Thermal Ultrasound**

This modality is a system that uses continuous low-frequency ultrasonic energy to produce and propel a mist of liquid and deliver continuous low-frequency ultrasound to the wound bed. This modality is often referred to as 'MIST Therapy.'

## **Diathermy (e.g., shortwave)**

This modality utilizes high frequency magnetic and electrical current to provide deep heating to larger joints and soft tissue structures for pain relief, increased healing, and muscle spasm reduction. Microwave diathermy presents a negative benefit: risk ratio and is not recommended.

## **Therapeutic Exercises**

This procedure includes instruction, feedback, and supervision of a person in an exercise program for their condition. The purpose is to increase/maintain range of motion, flexibility and muscle endurance and strength. Therapeutic exercise is performed with a patient either actively, active-assisted, or passively. It is considered medically necessary for loss or restriction of joint motion, strength, functional capacity or mobility which has resulted from disease or injury. Note: Exercising done subsequently by the member without a physician or therapist present and supervising would not be covered.

## **Neuromuscular Reeducation**

This therapeutic procedure is provided to improve balance, coordination, kinesthetic sense, posture, and proprioception to a person who has reduced balance, strength, functional capacity or mobility which has resulted from disease, injury, or surgery. The goal is to develop conscious control of individual muscles and awareness of position of extremities. Body mechanics, including kinetic and isotonic exercise (e.g., body scheme recalibration), are also included. The procedure may be considered medically necessary for impairments which affect the body's neuromuscular system (e.g., poor static or dynamic sitting/standing balance, loss of gross and fine motor coordination) that may result from musculoskeletal or neuromuscular disease or injury such as severe trauma to nervous system, post orthopedic surgery, cerebral vascular accident and systemic neurological disease.

## **Aquatic Therapy**

Pool therapy (aquatic therapy) is provided individually, in a pool, to debilitated or neurologically impaired individuals. (The term is not intended to refer to relatively normal functioning individuals who exercise, swim laps or relax in a hot tub or Jacuzzi.)

## **Soft Tissue Mobilization**

Soft tissue mobilization techniques are more specific in nature and include, but are not limited to, myofascial release techniques, friction massage, and trigger point techniques. Specifically, myofascial release is a soft tissue manual technique that involves manipulation of the muscle, fascia, and skin. Skilled manual techniques (active and/or passive) are applied to soft tissue to effect changes in the soft tissues, articular structures, neural or vascular systems. Examples are facilitation of fluid exchange, restoration of movement in acutely edematous muscles, or stretching of shortened connective tissue. This procedure is considered medically necessary for treatment of restricted motion of soft tissues in involved upper extremities and associated areas.

## **Joint Mobilization**

Joint mobilization is utilized to reduce pain and increase joint mobility. Most often mobilizations are indicated for the upper extremity, especially the hand.

## **Therapeutic Activities**

This procedure involves using functional activities (e.g., bending, lifting, carrying, reaching, pushing, pulling, stooping, catching and overhead activities) to improve functional performance in a progressive manner. The activities are usually directed at a loss or restriction of mobility, strength, balance or coordination. Hemispheric dominance and compensation strategies and perceived motor competence and perceptual motor therapy are included here. They require the professional skills of a practitioner and are designed to address a specific

functional need of the member. This intervention may be appropriate in conjunction with or after a patient has completed exercises focused on strengthening and range of motion but need to be progressed to more function-based activities. These dynamic activities must be part of an active treatment plan and directed at a specific outcome.

## **Activities of Daily Living (ADL) Training**

Training of impaired individuals in essential activities of daily living and self-care activities, including: bathing; feeding; preparing meals; toileting; dressing; walking; making a bed; and transferring from bed to chair, wheelchair or walker. This procedure is considered medically necessary to enable the member to perform essential activities of daily living related to the patient's health and hygiene, within or outside the home, with minimal or no assistance from others, and to assist with efficiencies of daily living activities. Services provided concurrently by physical therapists and occupational therapists may be considered medically necessary if there are separate and distinct functional goals.

## **Cognitive Skills Development**

This procedure is considered medically necessary for persons with acquired cognitive defects resulting from head trauma, or acute neurologic events including cerebrovascular accident or pediatric developmental condition. It is not appropriate for persons without potential for improvement. Occupational therapists and speech language pathologists with specific training typically provide this care. This procedure should be aimed at improving or restoring specific functions which were impaired by an identified illness or injury.

## **Sensory Integration**

Sensory integration involves perceiving, modulating, organizing, and interpreting these sensations to optimize occupational performance and participation. Sensory integration is mainly an intervention for children with developmental and behavioral disorders. The activities included in SI provide vestibular, proprioceptive, auditory, and tactile stimuli, which in turn organize the sensory system.

## **Orthotic Training**

Training and re-education with braces and/or splints (orthotics, arm-hand postures).

## **Hand Orthotic Fabrication**

Orthotic devices are defined as orthopedic appliances used to support, align, prevent or correct deformities. Orthotics may also redirect, eliminate or restrict motion of an impaired body part. In this context, they are not used for participation in sports, to improve athletic performance, and/or to prevent injury in an otherwise uninjured body part. Static orthoses are rigid and are used to support weakened or paralyzed body parts in a particular position. Dynamic orthoses are used to facilitate body motion to allow optimal function. Medical necessity for any orthotic device must be documented in the individual's medical record. Supportive documentation includes a prescription for the specific device, recent physical examination for the condition being treated, (i.e., < six months) with assessment of functional capabilities/limitations and any other comorbidities. Orthoses may be prefabricated or custom fabricated. A prefabricated orthosis is any orthoses that is manufactured in quantity without a specific patient in mind. A prefabricated orthosis can be modified (e.g., trimmed, bent or molded) for use by a specific patient and is then considered a custom-fitted orthosis. An orthosis that is made from prefabricated components is considered a prefabricated orthosis. Any orthosis that does not meet the standard definition of custom-fabricated is considered to be a prefabricated device. A custom-fabricated orthosis is one that is specifically made for an individual patient starting with the most basic materials that may include plastic, metals, leather or various cloths. The construction of these devices requires substantial labor such as cutting, bending, molding and sewing, and may even involve the use of some prefabricated components. A molded-to-patient model orthosis is a type of custom-fabricated device for which an impression of the specific body part is made (e.g., by means of a plaster cast, or computer-aided design/computer-aided manufacturing [CAD-CAM] technology). The impression is then used to make a specific patient model. The actual orthosis is molded from the patient-specific model. CAD-Cam and other technologies, such as those that determine alignment of the device, are considered integral to the fitting and manufacturing of the base device. An unmodified, prefabricated orthosis is generally used in treating a condition prior to a custom-fitted orthosis (prefabricated orthosis that is modified by bending or molding for a specific patient). A custom-fitted orthosis is generally attempted prior to the use of a custom-fabricated orthosis (individually constructed from materials). Custom fabricated devices are considered medically necessary only when the established medical necessity criteria is met for the device and the individual cannot be fitted with a prefabricated (off-the-shelf) device or one is not available. Examples of conditions precluding the use of a

prefabricated device typically include abnormal limb contour (e.g., disproportionate size/shape) or deformity (e.g., valgus, varus deformity) or when there is minimal muscle mass upon which to suspend the orthosis.

## **Prosthetic Training**

Training and re-education with prosthetics devices. Considered medically necessary for persons with a medically necessary prosthetic. Periodic return visits beyond the third month may be necessary.

Certain physical medicine modalities and therapeutic procedures are considered duplicative in nature and it would be inappropriate to perform or bill for these services during the same session, such as:

- Functional activities and ADLs;
- More than one deep heating modality;
- Massage therapy and myofascial release;
- Orthotics training and prosthetic training; and
- Whirlpool and Hubbard tank.

The medical necessity of neuromuscular reeducation, therapeutic exercises, and/or therapeutic activities, performed on the same day, must be documented in the medical record.

Only one heat modality would be considered medically necessary during the same treatment session, with the exception of use of one form of superficial heat and one form of deep heat (i.e., ultrasound or diathermy and hot packs). Use of two forms of deep or superficial heat would not be acceptable.

## **Lymphedema Management**

For more information, Cigna Medical Coverage Policy 157 - Therapy Services Complex Lymphedema Therapy (Complete Decongestive Therapy)

## **DOCUMENTATION GUIDELINES**

### **Initial Examination/Evaluation/Diagnosis/Prognosis**

The occupational therapist performs an initial examination and evaluation to establish a working diagnosis, prognosis, and plan of care prior to intervention. An initial evaluation for a new condition by an Occupational Therapist is defined as the evaluation of a patient:

- For which this is their first encounter with the practitioner or practitioner group;
- Who presents with:
  - A new injury or new condition; or
  - The same or similar complaint after discharge from previous care.
- Choice of code is dependent upon the level of complexity.

Note: Appropriate range of motion (ROM) testing (CPT codes 95851-95852) including digital wireless inclinometers or other such electronic device that measures strength and/or ROM using a handheld device are integral within Evaluation/Reevaluation codes. Computerized isokinetic muscle strength and endurance testing using a machine, such as a Biodex, would be considered a physical performance test or measurement using CPT code 97750 – “Physical performance test or measurement (e.g. musculoskeletal, functional capacity), with written report, each 15 minutes.”

Four components are used to select the appropriate OT evaluation CPT code. These include: 1. Occupational profile and client history (medical and therapy); 2. Assessments of occupational performance; 3. Clinical decision making; 4. Development of plan of care.

Relevant CPT Codes: CPT 97165, 97166, and 97167 – Occupational Therapy evaluation,

The occupational therapist examination:

- Is documented, dated, and appropriately authenticated by the occupational therapist who performed it
- Identifies the occupational therapy needs of the patient
- Incorporates appropriate tests and measures to facilitate outcome measurement
- Produces data that are sufficient to allow evaluation, prognosis, and the establishment of a plan of care

The written plan of care should be sufficient to determine the medical necessity of treatment, including:

- The diagnosis along with the date of onset or exacerbation of the disorder/diagnosis
- A reasonable estimate of when the goals will be reached
- Long-term and short-term goals that are specific, quantitative and objective
- Occupational therapy evaluation
- The frequency and duration of treatment
- Rehabilitation or habilitation prognosis
- The specific treatment techniques and/or exercises to be used in treatment
- Signatures of the patient's occupational therapist

## **Treatment Sessions**

Documentation of treatment sessions must include:

- Date of treatment
- Specific treatment(s) provided that match the procedure codes billed
- Total treatment time
- Response to treatment
- Skilled ongoing reassessment of the individual's progress toward the goals; including objective data that can be compared across time
- Any challenges or changes to the plan of care
- Name and credentials of the treating clinician

## **Progress Reports**

In order to reflect that continued OT services are medically necessary, intermittent progress reports must demonstrate that the individual is making functional progress. Progress reports should include at a minimum:

- Start date of therapy
- Time period covered by the report
- All diagnoses
- Statement of the patient's functional level at the beginning of the progress report period and current status relative to baseline data at evaluation or previous progress report; objective measures related to goals should be included
- Changes in prognosis, plan of care, and goals; and why
- Consultations with or referrals to other professionals or coordination of services, if applicable
- Signature and title of qualified professional responsible for the therapy services

## **Reexamination/Reevaluation**

Re-evaluations are distinct from therapy assessments. There are several routine reassessments that are not considered re-evaluations. These include ongoing reassessments that are part of each skilled treatment session, progress reports, and discharge summaries. Re-evaluation provides additional objective information not included in documentation of ongoing assessments, treatment or progress notes. Assessments are considered a routine aspect of intervention and are not billed separately from the intervention. Continuous assessment of the patient's progress is a component of the ongoing therapy services and is not payable as a re-evaluation.

Re-evaluation services are considered medically necessary when all of the following conditions are met:

- Re-evaluation is not a recurring routine assessment of patient status
- The documentation of the re-evaluation includes all of the following elements:
  - An evaluation of progress toward current goals;
  - Making a professional judgment about continued care;
  - Making a professional judgment about revising goals and/or treatment or terminating services.

AND the following indication is documented:

- An exacerbation or significant change in patient/client status or condition.

A re-evaluation is indicated when there is an exacerbation or significant change in the status or condition of the patient. Re-evaluation is a more comprehensive assessment that includes all of the components of the initial evaluation, such as:

- Data collection with objective measurements taken based on appropriate and relevant assessment tests and tools using comparable and consistent methods;
- Making a judgment as to whether skilled care is still warranted;
- Organizing the composite of current problem areas and deciding a priority/focus of treatment;
- Identifying the appropriate intervention(s) for new or ongoing goal achievement;
- Modification of intervention(s);
- Revision in plan of care if needed;
- Correlation to meaningful change in function; and
- Deciphering effectiveness of intervention(s).

## **Discharge/Discontinuation of Intervention**

The occupational therapist discharges the patient from occupational therapy services when the anticipated goals or expected outcomes for the patient have been achieved. The occupational therapist discontinues intervention when the patient is unable to continue to progress toward goals or when the occupational therapist determines that the patient will no longer benefit from occupational therapy.

The occupational therapy discharge documentation:

- Includes the status of the patient at discharge and the goals and outcomes attained
- Is dated and appropriately authenticated by the occupational therapist who performed the discharge
- Includes, when a patient is discharged prior to attainment of goals and outcomes, the status of the patient and the rationale for discontinuation
- Includes initial, subsequent, and final FOMs scores
- Includes proposed self-care recommendations, if applicable
- Includes referrals to other health care practitioners/referring physicians as appropriate

## **Standardized Tests and Measures/Functional Outcome Measures (FOMs)**

Measuring outcomes is an important component of occupational therapists' practice. Outcome measures are important in direct management of individual patient care and for the opportunity they provide the profession in collectively comparing care and determining effectiveness.

The use of standardized tests and measures early in an episode of care establishes the baseline status of the patient, providing a means to quantify change in the patient's functioning. Outcome measures, along with other standardized tests and measures used throughout the episode of care, as part of periodic reevaluation, provide information about whether predicted outcomes are being realized. As the patient reaches the termination of occupational therapy services and the end of the episode of care, the occupational therapist measures the outcomes of the occupational therapy services. Standardized outcome measures provide a common language with which to evaluate the success of occupational therapy interventions, thereby providing a basis for comparing outcomes related to different intervention approaches. Measuring outcomes of care within the relevant components of function (including body functions and structures), activity, and participation, among patients with the same diagnosis, is the foundation for determining which intervention approaches comprise best clinical practice.

## **LITERATURE REVIEW**

There is a limited amount of evidence regarding individual occupational therapy interventions for specific conditions. There are several Cochrane systematic reviews that have been published regarding occupational therapy for various conditions (Steultjens, et al., 2004; Steultjens et al., 2005; Legg et al., 2006; Dixon et al., 2007; Hoffman et al., 2011; Quinn et al., 2021; Legg et al., 2017; García-Pérez et al., 2021; Fields and Smallfield, 2022; Cunningham et al., 2022; Wood et al., 2022; Kotler et al., 2023; Wheeler and Acord-Vira, 2023; Sheerin et al., 2023). The reviews in general found that that there is improvement seen with occupational therapy however, evidence with respect to specific interventions is limited. Scottish Intercollegiate Guidelines Network (SIGN) and the National Clinical Programme for Stroke, Ireland published a collaborative National Clinical Guideline for stroke for the UK and Ireland in 2023. The guidelines include recommendation for patients- "People with limitations of personal activities of daily living after stroke should:



- be referred to an occupational therapist with knowledge and skills in neurological rehabilitation. Assessment should include consideration of the impact of hidden deficits affecting function including neglect, executive dysfunction and visual impairments;
- be offered treatment for identified problems (e.g. feeding, work) by the occupational therapist, in discussion with other members of the specialist multidisciplinary team.”

The American College of Rheumatology (ACR) published recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee (Hochberg, et al., 2012). The non-pharmacologic recommendations include occupational therapy, stating the following: “The TEP [Technical Expert Panel] conditionally recommends that all patients with hand OA [osteoarthritis] should be evaluated by a health professional, either their primary care provider or an occupational or physical therapist, for their ability to perform activities of daily living and receive assistive devices as necessary, instruction in joint protection techniques, and the use of thermal agents for relief of pain and stiffness.”

### **Occupational Therapy Treatments Considered Experimental, Investigational, Or Unproven** **Constraint-Induced Movement Therapy (CIMT)**

Constraint-induced movement therapy (CIMT) is a multi-faceted intervention that has been proposed for neurological conditions that involve hemiparesis. CIMT is also referred to as constraint-induced therapy or forced use therapy and is primarily provided by physical therapists and occupational therapists. Several variations exist based on method and length of restraint, and type and duration of therapy (e.g. environment and provider). The therapy involves constraining the unaffected arm or hand with a sling, glove or mitt. CIMT typically involves intensive individualized therapy with up to six–eight hours of therapy provided per day. However, other forms of modified CIMT have been developed with less therapy provided, but longer periods of restraint (Wolf, 2007). Veterans Affairs/Dept of Defense (VA/DoD) published guidelines that have also been endorsed by American Heart Association/American Stroke Association (AHA/ASA)—Clinical Practice Guideline for the Management of Adult Stroke Rehabilitation Care (Bates, et al., 2005). The guidelines note that, “Use of constraint-induced therapy should be considered for a select group of patients—that is, patients with 20 degrees of wrist extension and 10 degrees of finger extension, who have no sensory and cognitive deficits.” indicating a recommendation that the intervention may be considered). The Royal College of Physicians/Intercollegiate Stroke Working Party (United Kingdom) and the Ottawa Panel (2006) agree with these recommendations.

CIMT has demonstrated inconsistent effectiveness for treatment of patients post-stroke (Pulman et al., 2013; McIntyre et al., 2012; Corbetta et al., 2010; Sirtori et al., 2009; Abdullahi et al., 2021a; Abdullahi et al., 2021b; Alaca and Ocal, 2022; Zhang et al., 2023; Gao et al., 2024). Future randomized controlled trials need to have accurate characteristics in terms of methodological quality, larger samples, longer follow up, reliable and relevant measure and report of adverse events. Some evidence demonstrates that modified CIMT could reduce the level of disability, improve the ability to use the paretic upper extremity, and enhance spontaneity during movement time, but evidence is still limited about the effectiveness of modified CIMT in kinematic analysis (Pollack et al., 2014; Shi et al., 2011). Research suggests that modified CIMT and intensive CIMT produce similar results (Peurala et al., 2012).

CIMT has also been used for the treatment of children with cerebral palsy (CP). Research is not conclusive with regards to the effectiveness of CIMT for this population; however there appears to be modest evidence to support its use in a modified format (Taub et al., 2004; Sakzewski et al., 2009; Eliasson et al., 2005; Hoare et al., 2007; Chen et al., 2014; Chiu and Ada, 2016; Eliasson et al., 2014; Hoare et al., 2019; Martínez-Costa Montero et al., 2020; Ramey et al., 2021; Walker et al., 2022; Dionisio and Terrill, 2022; Jackman et al., 2022; Baker et al., 2022; Regalado et al., 2023; Palomo-Carrión et al., 2023; Faccioli et al., 2023; Abdul-Rahman et al., 2024; Merino-Andrés et al., 2024). Further research using adequately powered RCTs [randomized controlled trials], rigorous methodology and valid, reliable outcome measures is essential to provide higher level support of the effectiveness of CIMT for children with hemiplegic cerebral palsy.

### **Intensive Model of Therapy (IMOT) programs**

IMOT was developed in Poland for treating children and adults with cerebral palsy and other neurologic disorders. This therapy involves performing exercises over an extended period of time — typically 5 days a week for 4 hours a day. The time in the program may be a 3 week period or longer. There is insufficient evidence to conclude that IMOT demonstrates improved long term and short term outcomes over less intensive/frequent care (Sakzewski et al., 2014; Anderson et al., 2013; Christiansen and Lange 2008; Sakzewski, Ziviani et al., 2014; Almeida et al., 2017). Therapeutic suits such as the Adeli and NeuroSuit are

also used and proposed to assist in re-training the central nervous system by allowing the child to overcome increasingly complex pathological movement and to execute and repeat previously unknown movement patterns. More studies are needed to provide evidence to support use of these suits to improve outcomes.

## **Dry hydrotherapy**

Dry hydrotherapy, also referred to as aquamassage, water massage, or hydromassage, is a treatment that incorporates water with the intent of providing therapeutic massage. The treatment is generally provided in chiropractor or physical therapy offices. There are several dry hydrotherapy devices available that provide this treatment, including the following:

- Aqua Massage® (AMI Inc., Mystic, CT)
- AquaMED® (JTL Enterprises, Inc., Clearwater, FL)
- H2OMassage System™ (H2OMassage Systems, Winnipeg, MB, Canada)
- Hydrotherapy Tables (Sidmar Manufacturing, Inc., Princeton, MN)

Proponents of dry hydrotherapy maintain that it can be used in lieu of certain conventional physical medicine therapeutic modalities and procedures, such as heat packs, wet hydrotherapy, massage, and soft tissue manipulation. The assertions that have been made by manufacturers of this device at their websites have not yet been proven. No published studies or information regarding dry hydrotherapy devices or dry hydrotherapy treatment were identified in the peer-reviewed scientific literature. In the absence of peer-reviewed literature demonstrating the effectiveness of dry hydrotherapy and in the absence of comparison to currently accepted treatment modalities, no definitive conclusions can be drawn regarding the clinical benefits of this treatment.

## **Non-Contact 'Mist' Ultrasound**

Olyaie et al. (2013) conducted a RCT to compare the effectiveness of standard treatment and standard treatment plus either high-frequency ultrasound (HFU) or noncontact low-frequency ultrasound (NLFU) on wound outcomes. Outcomes of both methods of ultrasound therapy were better than standard care alone, and some differences between the two ultrasound therapy groups were observed, but they were not statistically significant. Beheshti et al. (2014) compared high-frequency and MIST ultrasound therapy for the healing of venous leg ulcers. All groups received the standard wound care. In the ultrasound groups, HFU and MIST ultrasound therapy was administered to wounds 3 times per week until the wound healed. Time of complete wound healing was recorded. Wound size, pain, and edema were assessed at baseline and after 2 and 4 months. The authors stated that this study showed the significant effectiveness of ultrasound therapy in wound healing. Differences between the two ultrasound therapy groups were not statistically significant. White et al. (2015) compared non-contact low-frequency ultrasound therapy to the UK standard of care for venous leg ulcers. Both groups reported a reduction in pain score. The authors suggest that outcome measures favored the non-contact low frequency ultrasound therapy over standard of care, but the differences were not statistically significant. A larger sample size with longer follow up would be prudent to confirm results.

In a single-site, evaluator-blinded RCT, Gibbons et al. (2015) completed a prospective, randomized, controlled, multicenter trial comparing percent wound size reduction, proportions healed, pain, and quality-of-life (QOL) outcomes in patients randomized to standard care (SC) alone or SC and 40 kHz noncontact, low-frequency ultrasound (NLFU) treatments 3 times per week for 4 weeks. All participants received protocol-defined SC compression (30-40 mm Hg), dressings to promote a moist wound environment, and sharp debridement at the bedside for a minimum of 1 time per week. After 4 weeks of treatment, average wound size reduction was  $61.6\% \pm 28.9$  in the NLFU+SC compared to  $45\% \pm 32.5$  in the SC group ( $P = 0.02$ ). Reductions in median (65.7% versus 44.4%,  $P = 0.02$ ) and absolute wound area (9.0 cm<sup>2</sup> versus 4.1 cm<sup>2</sup>,  $P = 0.003$ ) as well as pain scores (from 3.0 to 0.6 versus 3.0 to 2.4,  $P = 0.01$ ) were also significant. NLFU therapy with guideline-defined standard care should be considered for healing venous leg ulcers not responding to SC alone. Rastogi et al. (2019) compared the efficacy of noncontact, low-frequency airborne ultrasound (Glybetac) therapy with sham therapy added to standard treatment in patients with neuropathic, clinically infected, or noninfected DFU (wound size >2 cm<sup>2</sup>), Wagner grades 2 and 3. Patients received ultrasound or sham therapy for 28 days dosed daily for first 6 days followed by twice a week for next 3 weeks along with standard of care. The primary outcome was percentage of patients with at least >50% decrease in wound area at 4 week of intervention. Fifty-eight patients completed the study protocol. A >50% reduction in wound area was observed in 97.1% and 73.1% subjects in ultrasound and sham groups, respectively. Wound contraction was faster in the first 2 weeks with ultrasound therapy, 5.3 cm<sup>2</sup>, compared with 3.0 cm<sup>2</sup> with sham treatment. Authors concluded that the airborne low-

frequency ultrasound therapy improves and hastens the healing of chronic neuropathic DFU when combined with standard wound care.

Kotronis and Vas (2021) evaluated the current evidence behind the NCLFU. Several studies, especially those evaluating NCLFU technology, have demonstrated the potential of ultrasound debridement to effectively remove devitalized tissue, control bioburden, alleviate pain, and expedite healing. However, most of the studies are underpowered, involve heterogeneous ulcer types, and demonstrate significant methodological limitations making comparison between studies difficult. Future clinical trials on ultrasound debridement technology must address the design issues prevalent in current studies, and report on clinically relevant endpoints before adoption into best-practice algorithms can be recommended.

Chen et al. (2023) performed a meta-analysis to evaluate the effect of low-frequency ultrasound as an added treatment for chronic wounds. A systematic literature search up to May 2022 was performed with 838 subjects with chronic wounds at the baseline of the studies; 412 of them were using the low-frequency ultrasound (225 low-frequency high-intensity contact ultrasound for diabetic foot wound ulcers, and 187 low-frequency low-intensity non-contact ultrasound for a venous leg wound ulcers), and 426 were using standard care (233 sharp debridement for diabetic foot wound ulcers and 193 sham treatments for venous leg wound ulcers). The low-frequency high-intensity contact ultrasound for diabetic foot wound ulcers had significantly lower non-healed diabetic foot wound ulcers at  $\geq 3$  months and a higher percentage of diabetic foot wound ulcers area reduction compared with sharp debridement for diabetic foot wound ulcers. The low-frequency low-intensity non-contact ultrasound for a venous leg wound ulcers had a significantly lower non-healed venous leg wound ulcers at  $\geq 3$  months and higher percentage venous leg wound ulcers area reduction compared with sham treatments for a venous leg wound ulcers. The analysis of outcomes should be viewed with caution because of the low sample size of all the 17 studies in the meta-analysis and a low number of studies in certain comparisons.

### **Non-invasive Interactive Neurostimulation (e.g. InterX®)**

Non-invasive, Interactive Neurostimulation (NIN) (e.g. InterX®) is used for the treatment of acute and chronic pain using high amplitude, high density stimulation to the cutaneous nerves, activating the natural pain relieving mechanisms of the body (segmental and descending inhibition). There is a lack of evidence to support this form of modality.

### **Microcurrent Electrical Nerve Stimulation (MENS)**

There is insufficient evidence in the published peer-reviewed scientific literature to support the safety and effectiveness of MENS (Rajpurohit et al., 2010; Zuim et al., 2006; Nair et al., 2018; Iijima and Takahashi, 2021).

### **H-WAVE ®**

H-wave stimulation is a form of electrical stimulation that differs from other forms of electrical stimulation, such as transcutaneous electrical nerve stimulation (TENS), in terms of its wave form. There is insufficient evidence in the published peer reviewed scientific literature to support the safety and effectiveness of the H-WAVE® electrical stimulators (Blum et al., 2008; Williamson et al. 2021).

### **Equestrian therapy (e.g. hippotherapy)**

Equestrian therapy, also known as hippotherapy, is proposed to offer a person with a disability a means of physical activity that aids in improving balance, posture, coordination, the development of a positive attitude and a sense of accomplishment. It is proposed for treatment of several conditions including autism spectrum disorders and cerebral palsy. There is insufficient published evidence regarding the effects of this therapy on individuals with impaired physical function resulting from illness, injury, congenital defect or surgery (Bronson et al., 2010; Lee et al., 2014; O'Haire et al., 2014; De Guindos-Sanchez et al., 2020; De Miguel et al., 2018; Kraft et al., 2019; Marquez et al., 2020; White et al., 2020; Santos de Assis et al., 2022; Pantera et al., 2022; Pérez-Gómez et al., 2022; Heussen and Häusler, 2022; Prieto et al., 2022; Peia et al., 2023; Plotas et al., 2024). The authors note that most studies were limited by methodological weaknesses. This review demonstrates that there is a need for further, more rigorous research.

### **MEDEK Therapy**

MEDEK, a form of physiotherapy, refers to Metodo Dinamico de Estimulacion Kinesica or Dynamic Method for Kinetic Stimulation. MEDEK is used for developing gross motor skills in young children with physical disabilities and movement disorders (e.g., cerebral palsy, Down's syndrome, hypotonia, muscular dystrophy, and developmental motor delay). At this time, no evidence exists of its effectiveness in the peer reviewed literature.

Well-designed clinical studies are needed to determine the effectiveness of MEDEK and whether a clinically significant improvement is achieved through the use of MEDEK Therapy, as there appears to be no peer-reviewed, published literature available as noted with a thorough literature search at this time.

## **The Interactive Metronome Program**

Interactive Metronome® (IM) is purported to be an assessment and training tool that measures and improves Neurotiming, or the synchronization of neural impulses within key brain networks for cognitive, communicative, sensory and motor performance. It is designed to improve processing speed, focus, and coordination. Patients wear headphones and match a beat using a hand or foot sensor along with visual and auditory feedback. The IM program has been promoted as a treatment for children with attention-deficit hyperactivity disorder (ADHD) and for other special needs children to increase concentration, focus, and coordination. It has also been promoted to improve athletic performance, to assess and improve academic performance of normal children, and to improve children's performance in the arts (e.g., dance, music, theater, creative arts). Additionally, it has been implemented as part of a therapy program for patients with balance disorders, cerebrovascular accident, limb amputation, multiple sclerosis, Parkinson's disease, and traumatic brain injury. However, based on peer-reviewed literature, evidence is insufficient to support effectiveness of the IM program. Well-designed clinical studies are needed to determine the effectiveness of the IM program and whether a clinically significant improvement is achieved.

## **Taping/Elastic therapeutic tape (e.g., Kinesio™ tape, Spidertech™ tape)**

Elastic therapeutic tape, also known as kinesiology tape, differs from traditional white athletic tape in the sense that it is elastic and can be stretched to 140% of its original length before being applied to the skin.

Elastic tape is available in various lengths or pre-cut. There are several types of elastic therapeutic tape available including:

- Kinesio™ tape (Kinesio Taping, LLC. Albuquerque, NM)
- SpiderTech™ tape (SpiderTech Inc., Toronto, Ontario)
- KT TAPE/KT TAPE PRO™ (LUMOS INC., Lindon, UT)

The effectiveness of elastic therapeutic taping (i.e. Kinesio taping) or rigid therapeutic taping (i.e. McConnell) for all conditions such as lower extremity spasticity, meralgia paresthetica, post-operative subacromial decompression, wrist injury, performance enhancement and prevention of ankle sprains has not been established as the evidence is insufficient in the peer-reviewed literature (Added et al., 2016; Al-Shareef et al., 2016; Csapo et al., 2014; Kalron et al., 2013; Lim et al., 2015; Mostafavifa et al., 2012; Nelson 2016; Parreira et al., 2014; Williams et al., 2012; Luz Júnior et al., 2019; Lin et al., 2020; Li et al., 2020; Martonick et al., 2020; Cupler et al., 2020; Lim and Tay 2015; Montalvo et al. 2014; Hedden et al., 2020; Cupler et al., 2020; Nunes et al., 2021; Pinheiro et al., 2021; Luo and Li, 2021; Jassi et al., 2021; de Oliveira et al., 2021; Araya-Quintanilla et al., 2021; de Sire et al., 2021; Deng et al., 2021; Wang et al., 2022; Tran et al., 2023).

The following uses of therapeutic taping are professionally recognized and safe; however, additional studies are needed before the clinical effectiveness can be established. Use of elastic or rigid taping techniques as part of comprehensive treatment program may be clinically appropriate for the following:

- Elastic therapeutic tape (e.g., Kinesio tape, Spidertech tape) in the treatment or management of lymphedema (Gatt et al., 2016)
- Rigid therapeutic taping of the shoulder in patients with hemiplegia (Grampurohit et al., 2015)

The use of rigid taping or elastic taping for rehabilitation of orthopedic or neurologic conditions is not intended as a sole treatment or as a separately billable procedure, but rather is part of a broad treatment program that includes exercise, manual therapy and/or neuromuscular re-education (NMR) and is inclusive in these procedures. Strapping codes are not allowed for application of therapeutic taping.

## **Dry Needling**

Research suggests that dry needling may improve pain control, reduce muscle tension, normalize biochemical and electrical dysfunction of motor endplates, and may facilitate an accelerated return to active rehabilitation [American Association of Orthopaedic Manual Physical Therapists (AAOMPT) position statement, 2010; APTA Resource Paper, 2012]. However further high quality research is needed to confirm findings for specific conditions and to relate improvements in pain and muscle quality to objective functional measures (Boyles et al.,

2015; Dommerholt et al., 2016; Gerber et al., 2016; Kalichman et al., 2010; Kietrys et al., 2013; Liu et al., 2015; Rodríguez-Mansilla et al., 2016; Tekin et al., 2014; Tough et al., 2009; Gattie et al., 2017; Espí-López et al., 2017; Liu et al., 2017; Sánchez Romero et al., 2020; Navarro-Santana et al., 2020; Pourahmadi et al., 2021; Navarro-Santana et al., 2021; Gattie et al., 2021; Bier et al., 2018; Sánchez-Infante et al., 2021; Jayaseelan et al., 2021; Llurda-Almuzara et al., 2021; Al-Moraissi et al., 2020; Valencia-Chulián et al., 2020; Sousa Filho et al., 2021; Wang et al., 2022; Mousavi-Khatir et al., 2022; Khan et al., 2021; Kamonseki et al., 2022; Giorgi et al., 2022; Nuhmani et al., 2023; Radi et al., 2023; Griswold et al., 2023).

### **Providers of Occupational Therapy Services**

Occupational therapists are health care professionals that are certified, licensed, or otherwise regulated by the State or Federal governments. Most states, the District of Columbia, and Puerto Rico require occupational therapists and occupational therapy assistants to be licensed (a few states have certification or registration by a state agency). Qualification for licensure includes passing the National Board for Certification for Occupational Therapy (NBCOT) Exam. Another important qualification for licensure is graduation from an occupational therapy education program accredited by the AOTA's Accreditation Council for Occupational Therapy Education (ACOTE®). Occupational therapy assistants working under the supervision and direction of an OT are also considered qualified providers of OT services.

## **Coding Information**

### **Notes:**

1. This list of codes may not be all-inclusive since the American Medical Association (AMA) and Centers for Medicare & Medicaid Services (CMS) code updates may occur more frequently than policy updates.
2. Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

**Considered Medically Necessary when criteria in the applicable policy statements listed above are met:**

<b>CPT®*</b> <b>Codes</b>	<b>Description</b>
97010	Application of a modality to 1 or more areas; hot or cold packs
97012	Application of a modality to 1 or more areas; traction, mechanical
97014	Application of a modality to 1 or more areas; electrical stimulation (unattended)
97018	Application of a modality to 1 or more areas; paraffin bath
97022	Application of a modality to 1 or more areas; whirlpool
97024	Application of a modality to 1 or more areas; diathermy (eg. microwave)
97028	Application of a modality to 1 or more areas; ultraviolet
97032	Application of a modality to 1 or more areas; electrical stimulation (manual), each 15 minutes
97033	Application of a modality to 1 or more areas; iontophoresis, each 15 minutes
97034	Application of a modality to 1 or more areas; contrast baths, each 15 minutes
97035	Application of a modality to 1 or more areas; ultrasound, each 15 minutes
97036	Application of a modality to 1 or more areas; Hubbard tank, each 15 minutes
97110	Therapeutic procedure, 1 or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion and flexibility
97112	Therapeutic procedure, 1 or more areas, each 15 minutes; neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities
97113	Therapeutic procedure, 1 or more areas, each 15 minutes; aquatic therapy with therapeutic exercises
97116	Therapeutic procedure, 1 or more areas, each 15 minutes; gait training (includes stair climbing)
97140	Manual therapy techniques (eg, mobilization/ manipulation, manual lymphatic drainage, manual traction), 1 or more regions, each 15 minutes
97150	Therapeutic procedure(s), group (2 or more individuals)
97165	Occupational therapy evaluation, low complexity, requiring these components: An occupational profile and medical and therapy history, which includes a brief history including review of



	medical and/or therapy records relating to the presenting problem; An assessment(s) that identifies 1-3 performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of low complexity, which includes an analysis of the occupational profile, analysis of data from problem-focused assessment(s), and consideration of a limited number of treatment options. Patient presents with no comorbidities that affect occupational performance. Modification of tasks or assistance (eg, physical or verbal) with assessment(s) is not necessary to enable completion of evaluation component. Typically, 30 minutes are spent face-to-face with the patient and/or family.
97166	Occupational therapy evaluation, moderate complexity, requiring these components: An occupational profile and medical and therapy history, which includes an expanded review of medical and/or therapy records and additional review of physical, cognitive, or psychosocial history related to current functional performance; An assessment(s) that identifies 3-5 performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of moderate analytic complexity, which includes an analysis of the occupational profile, analysis of data from detailed assessment(s), and consideration of several treatment options. Patient may present with comorbidities that affect occupational performance. Minimal to moderate modification of tasks or assistance (eg, physical or verbal) with assessment(s) is necessary to enable patient to complete evaluation component. Typically, 45 minutes are spent face-to-face with the patient and/or family.
97167	Occupational therapy evaluation, high complexity, requiring these components: An occupational profile and medical and therapy history, which includes review of medical and/or therapy records and extensive additional review of physical, cognitive, or psychosocial history related to current functional performance; An assessment(s) that identifies 5 or more performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision-making of high analytic complexity, which includes an analysis of the patient profile, analysis of data from comprehensive assessment(s), and consideration of multiple treatment options. Patient presents with comorbidities that affect occupational performance. Significant modification of tasks or assistance (eg, physical or verbal) with assessment(s) is necessary to enable patient to complete evaluation component. Typically, 60 minutes are spent face-to-face with the patient and/or family.
97168	Re-evaluation of occupational therapy established plan of care, requiring these components: An assessment of changes in patient functional or medical status with revised plan of care; An update to the initial occupational profile to reflect changes in condition or environment that affect future interventions and/or goals; and a revised plan of care. A formal reevaluation is performed when there is a documented change in functional status or a significant change to the plan of care is required. Typically, 30 minutes are spent face-to-face with the patient and/or family.
97530	Therapeutic activities, direct (one-on-one) patient contact (use of dynamic activities to improve functional performance), each 15 minutes
97535	Self-care/home management training (eg, activities of daily living (ADL) and compensatory training, meal preparation, safety procedures, and instructions in use of assistive technology devices/adaptive equipment) direct one-on-one contact by provider, each 15 minutes
97755	Assistive technology assessment (eg, to restore, augment or compensate for existing function, optimize functional tasks and/or maximize environmental accessibility), direct one-on-one contact, with written report, each 15 minutes
97760	Orthotic(s) management and training (including assessment and fitting when not otherwise reported), upper extremity(ies), lower extremity(ies) and/or trunk, initial orthotic(s) encounter, each 15 minutes
97761	Prosthetic training, upper and/or lower extremity(ies), initial prosthetic(s) encounter, each 15 minutes
97763	Orthotic(s)/prosthetic(s) management and/or training, upper extremity(ies), lower extremity(ies), and/or trunk, subsequent orthotic(s)/prosthetic(s) encounter, each 15 minutes
<b>HCPSC Codes</b>	<b>Description</b>



G0129	Occupational therapy services requiring the skills of a qualified occupational therapist, furnished as a component of a partial hospitalization treatment program, per session (45 minutes or more)
G0152	Services performed by a qualified occupational therapist in the home health or hospice setting, each 15 minutes
G0158	Services performed by a qualified occupational therapist assistant in the home health or hospice setting, each 15 minutes
G0160	Services performed by a qualified occupational therapist, in the home health setting, in the establishment or delivery of a safe and effective occupational therapy maintenance program, each 15 minutes
S9129	Occupational therapy, in the home, per diem

**Considered Not Medically Necessary:**

<b>CPT®*</b> <b>Codes</b>	<b>Description</b>
97016	Application of a modality to 1 or more areas; vasopneumatic devices
97026	Application of a modality to 1 or more areas; infrared

**Considered Educational or Training in Nature/Not Medically Necessary:**

<b>CPT®*</b> <b>Codes</b>	<b>Description</b>
97169	Athletic training evaluation, low complexity, requiring these components: A history and physical activity profile with no comorbidities that affect physical activity; An examination of affected body area and other symptomatic or related systems addressing 1-2 elements from any of the following: body structures, physical activity, and/or participation deficiencies; and Clinical decision making of low complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 15 minutes are spent face-to-face with the patient and/or family
97170	Athletic training evaluation, moderate complexity, requiring these components: A medical history and physical activity profile with 1-2 comorbidities that affect physical activity. An examination of affected body area and other symptomatic or related systems addressing a total of 3 or more elements from any of the following: body structures, physical activity, and/or participation deficiencies; and Clinical decision making of moderate complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 30 minutes are spent face-to-face with the patient and/or family.
97171	Athletic training evaluation, high complexity, requiring these components: A medical history and physical activity profile, with 3 or more comorbidities that affect physical activity; A comprehensive examination of body systems using standardized tests and measures addressing a total of 4 or more elements from any of the following: body structures, physical activity, and/or participation deficiencies; Clinical presentation with unstable and unpredictable characteristics; and Clinical decision making of high complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 45 minutes are spent face-to-face with the patient and/or family.
97172	Re-evaluation of athletic training established plan of care requiring these components: An assessment of patient's current functional status when there is a documented change, and A revised plan of care using a standardized patient assessment instrument and/or measurable assessment of functional outcome with an update in management options, goals, and interventions. Typically, 20 minutes are spent face-to-face with the patient and/or family.
97537	Community/work reintegration training (eg, shopping, transportation, money management, avocational activities and/or work environment/modification analysis, work task analysis, use of assistive technology device/adaptive equipment), direct one-on-one contact by provider, each 15 minutes
97545	Work hardening/conditioning; initial 2 hours
97546	Work hardening/conditioning; each additional hour (List separately in addition to code for primary procedure)

<b>HCPSC Codes</b>	<b>Description</b>
S8990	Physical or manipulative therapy performed for maintenance rather than restoration
S9117	Back school, per visit

**Considered Experimental, Investigational, Unproven:**

<b>CPT® Codes</b>	<b>Description</b>
20560	Needle insertion(s) without injection(s); 1 or 2 muscle(s)
20561	Needle insertion(s) without injection(s); 3 or more muscles
97610	Low frequency, non-contact, non-thermal ultrasound, including topical application(s), when performed, wound assessment, and instruction(s) for ongoing care, per day

<b>HCPSC Codes</b>	<b>Description</b>
S8940	Equestrian/hippotherapy, per session

**Considered Experimental/Investigational/Unproven when used to report any other treatment listed as Experimental/Investigational/Unproven in the policy statement that does not have an assigned code:**

<b>CPT® Codes</b>	<b>Description</b>
97039	Unlisted modality (specify type and time if constant attendance)
97799	Unlisted physical medicine/rehabilitation service or procedure

**Hand Orthotic**

**Considered Medically Necessary when criteria in the applicable policy statements listed above are met:**

<b>CPT® Codes</b>	<b>Description</b>
L3763	Elbow wrist hand orthosis, rigid, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3764	Elbow wrist hand orthosis, includes one or more non-torsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3765	Elbow wrist hand finger orthosis, rigid, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3766	Elbow wrist hand finger orthosis, includes one or more non-torsion joint(s), elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3806	Wrist hand finger orthosis, includes one or more nontorsion joint(s), turnbuckles, elastic bands/springs, may include soft interface material, straps, custom fabricated, includes fitting and adjustment
L3807	Wrist hand finger orthosis without joint(s), prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3808	Wrist hand finger orthosis rigid without joints, may include soft interface material, straps, custom fabricated, includes fitting and adjustment
L3891	Addition to upper extremity joint, wrist or elbow, concentric adjustable torsion style mechanism for custom fabricated orthotics only, each
L3900	Wrist hand finger orthosis, dynamic flexor hinge, reciprocal wrist extension/flexion, finger flexion/extension, wrist or finger driven, custom fabricated
L3901	Wrist hand finger orthosis, dynamic flexor hinge, reciprocal wrist extension/flexion, finger flexion/extension, cable driven, custom fabricated

L3905	Wrist hand orthosis, includes one or more nontorsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3906	Wrist hand orthosis, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3913	Hand finger orthosis, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3915	Wrist hand orthosis, includes one or more nontorsion joint(s), elastic bands, turnbuckles, may include soft interface, straps, prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3917	Hand orthosis, metacarpal fracture orthosis, prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3919	Hand orthosis, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3921	Hand finger orthosis, includes one or more nontorsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3923	Hand-finger orthosis without joints, may include soft interface, straps, prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3929	Hand finger orthosis, includes one or more nontorsion joint(s), turnbuckles, elastic bands/springs, may include soft interface material, straps, prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3931	Wrist-hand-finger orthosis, includes one or more nontorsion joint(s), turnbuckles, elastic bands/springs, may include soft interface material, straps, prefabricated, includes fitting and adjustment
L3933	Finger orthosis, without joints, may include soft interface, custom fabricated, includes fitting and adjustment
L3935	Finger orthosis, nontorsion joint, may include soft interface, custom fabricated, includes fitting and adjustment
L3956	Addition of joint to upper extremity orthosis, any material; per joint
L4205	Repair of orthotic device, labor component, per 15 minutes

**\*Current Procedural Terminology (CPT®) ©2024 American Medical Association: Chicago, IL.**

## References

1. Abdullahi A, Aliyu NU, Useh U, et al. Comparing two different modes of task practice during lower limb constraint-induced movement therapy in people with stroke: A randomized clinical trial. *Neural Plast.* 2021a;2021:6664058.
2. Abdullahi A, Truijen S, Umar NA, et al. Effects of lower limb constraint induced movement therapy in people with stroke: A systematic review and meta-analysis. *Front Neurol.* 2021b;12:638904
3. Abdul-Rahman RS, Radwan NL, El-Nassag BA, Amin WM, Ali MS. Modified-constraint movement induced therapy versus neuro-developmental therapy on reaching capacity in children with hemiplegic cerebral palsy. *Physiother Res Int.* 2024;29(1):e2069. doi:10.1002/pri.2069
4. Agency for Healthcare Research and Quality. Multidisciplinary Postacute Rehabilitation for Moderate to Severe Traumatic Brain Injury in Adults. Effective Health Care Program. Comparative Effectiveness Review, 2012;72. Retrieved on October 28, 2024 from [https://www.ncbi.nlm.nih.gov/books/NBK98993/pdf/Bookshelf\\_NBK98993.pdf](https://www.ncbi.nlm.nih.gov/books/NBK98993/pdf/Bookshelf_NBK98993.pdf)

5. Alaca N, Öcal NM. Proprioceptive based training or modified constraint-induced movement therapy on upper extremity motor functions in chronic stroke patients: A randomized controlled study. *NeuroRehabilitation*. 2022;51(2):271-282. doi:10.3233/NRE-220009
6. Almeida KM, Fonseca ST, Figueiredo PRP, Aquino AA, Mancini MC. Effects of interventions 39 with therapeutic suits (clothing) on impairments and functional limitations of children with 40 cerebral palsy: a systematic review. *Braz J Phys Ther*. 2017 Sep - Oct;21(5):307-320.
7. Al-Moraissi EA, Alradom J, Aladashi O, Goddard G, Christidis N. Needling therapies in the management of myofascial pain of the masticatory muscles: A network meta-analysis of randomised clinical trials. *J Oral Rehabil*. 2020 Jul;47(7):910-922.
8. American Medical Association (AMA) Current Procedural Terminology (CPT) current year. American Medical Association: Chicago, IL.
9. American Occupational Therapy Association. (2017). Mental health promotion, prevention, and intervention in occupational therapy practice. *American Journal of Occupational Therapy*, 71(Suppl. 2), 7112410035. <https://doi.org/10.5014/ajot.2017.716S03>
10. American Occupational Therapy Association. Retrieved on October 28, 2024 from [www.aota.org](http://www.aota.org)
11. American Occupational Therapy Association. Official Documents. Retrieved on October 28, 2024 from <http://www.aota.org/en/Practice/Manage/Official.aspx>
12. American Occupational Therapy Association, Inc. (AOTA). What is Occupational Therapy. Retrieved on October 28, 2024 from <https://www.aota.org/about/what-is-ot>
13. American Occupational Therapy Association. Occupational Therapy Scope of Practice. *Am J Occup Ther*. 2021;75(Supplement\_3):7513410020. doi:10.5014/ajot.2021.75S3005
14. Andersen JC, Majnemer A, O'Grady K, Gordon AM. Intensive upper extremity training for children with hemiplegia: from science to practice. *Semin Pediatr Neurol*. 2013 Jun;20(2):100-5.
15. Aqua Massage [product description]. AMI Inc. Retrieved on October 28, 2024 from [http://amiaqua.com/PR\\_overview.htm](http://amiaqua.com/PR_overview.htm)
16. AquaMED Dry Hydrotherapy. JTL Enterprises, Inc. Retrieved on October 28, 2024 from <http://www.aquamed.com/>
17. Araya-Quintanilla F, Gutiérrez-Espinoza H, Sepúlveda-Loyola W, Probst V, Ramírez-Vélez R, Álvarez-Bueno C. Effectiveness of kinesiotaping in patients with subacromial impingement syndrome: A systematic review with meta-analysis [published online ahead of print, 2021 Oct 16]. *Scand J Med Sci Sports*. 2021;10.1111/sms.14084.
18. Baker A, Niles N, Kysh L, Sargent B. Effect of Motor Intervention for Infants and Toddlers With Cerebral Palsy: A Systematic Review and Meta-analysis. *Pediatr Phys Ther*. 2022;34(3):297-307. doi:10.1097/PEP.0000000000000914
19. Bates B, Choi JY, Duncan PW, Glasberg JJ, Graham GD, Katz RC, et al.; US Department of Defense; Department of Veterans Affairs. Veterans Affairs/Department of Defense Clinical Practice Guideline for the Management of Adult Stroke Rehabilitation Care: executive summary. *Stroke*. 2005 Sep;36(9):2049-56.
20. Bier JD, Scholten-Peeters WGM, Staal JB, Pool J, van Tulder MW, Beekman E, Knoop J, Meerhoff G, Verhagen AP. Clinical Practice Guideline for Physical Therapy Assessment and Treatment in Patients With Nonspecific Neck Pain. *Phys Ther*. 2018 Mar 1;98(3):162-171.

21. Boyd R, Sakzewski L, Ziviani J, Abbott DF, Badawy R, Gilmore R, et al. INCITE: A randomised trial comparing constraint induced movement therapy and bimanual training in children with congenital hemiplegia. *BMC Neurol.* 2010 Jan 12;10:4.
22. Boyles R, Fowler R, Ramsey D, Burrows E. Effectiveness of trigger point dry needling for multiple body regions: a systematic review. *J Man Manip Ther.* 2015 Dec;23(5):276-93.
23. Brogårdh C, Flansbjer UB, Lexell J. What is the long-term benefit of constraint-induced movement therapy? A four-year follow-up. *Clin Rehabil.* 2009 May;23(5):418-23. Epub 2009 Apr 6.
24. Bronson C, Brewerton K, Ong J, Palanca C, Sullivan SJ. Does hippotherapy improve balance in persons with multiple sclerosis: a systematic review. *Eur J Phys Rehabil Med.* 2010 Sep;46(3):347-53.
25. Centers for Medicare & Medicaid Services. Medical Coverage Database. Physical and Occupational Therapy Local Coverage Determinations. Retrieved on October 28, 2024 from <https://www.cms.gov/medicare-coverage-database/search-results.aspx?keyword=occupational+therapy&keywordType=starts&areald=all&docType=NCA,CAL,NC,CD,MEDCAC,TA,MCD,6,3,5,1,F,P&contractOption=all>
26. Centers for Medicare and Medicaid Services (CMS). Pub. 100-02, Chapter 15, Sections 220 and 230 Therapy Services. Coverage of Outpatient Rehabilitation Therapy Services (Physical Therapy, Occupational Therapy, and Speech-Language Pathology Services) Under Medical Insurance (Rev. 12865; Issued: 10-04-24) Implementation: 01-07-14). Retrieved on October 28, 2024 from <http://www.cms.hhs.gov/manuals/Downloads/bp102c15.pdf>
27. Chen YP, Pope S, Tyler D, Warren GL. Effectiveness of constraint-induced movement therapy on upper-extremity function in children with cerebral palsy: A systematic review and meta-analysis of randomized controlled trials. *Clin Rehabil.* 2014;28(10):939-953.
28. Chen H, Yu Z, Liu N, Huang J, Liang X, Liang X, Liang M, Li M, Ni J. The efficacy of low-frequency ultrasound as an added treatment for chronic wounds: A meta-analysis. *Int Wound J.* 2023 Feb;20(2):448-457.
29. Chiu HC, Ada L. Constraint-induced movement therapy improves upper limb activity and participation in hemiplegic cerebral palsy: A systematic review. *J Physiother.* 2016;62(3):130-137.
30. Chou R, Deyo R, Friedly J, Skelly A, Hashimoto R, Weimer M, Fu R, Dana T, Kraegel P, Griffin J, Grusing S, Brodt E. Noninvasive Treatments for Low Back Pain. Comparative Effectiveness Review No. 169. (Prepared by the Pacific Northwest Evidence-based Practice Center under Contract No. 290-2012-00014-I.) AHRQ Publication No. 16-EHC004-EF. Rockville, MD: Agency for Healthcare Research and Quality; February 2016.
31. Chou R, Huffman LH; American Pain Society; American College of Physicians. Nonpharmacologic therapies for acute and chronic low back pain: a review of the evidence for an American Pain Society/American College of Physicians clinical practice guideline. *Ann Intern Med.* 2007a Oct 2;147(7):492-504.
32. Chou R, Qaseem A, Snow V, Casey D, Cross JT Jr, Shekelle P, Owens DK; Clinical Efficacy Assessment Subcommittee of the American College of Physicians; American College of Physicians; American Pain Society Low Back Pain Guidelines Panel. Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American College of Physicians and the American Pain Society. *Ann Intern Med.* 2007b Oct 2;147(7):478-91.
33. Chou R, Wagner J, Ahmed AY, et al. Treatments for Acute Pain: A Systematic Review. Rockville (MD): Agency for Healthcare Research and Quality (US); December 2020.

34. Christiansen AS, Lange C. Intermittent versus continuous physiotherapy in children with cerebral palsy. *Dev Med Child Neurol*. 2008 Apr;50(4):290-3.
35. Clar C, Tsertsvadze A, Court R, Hundt GL, Clarke A, Sutcliffe P. Clinical effectiveness of manual therapy for the management of musculoskeletal and non-musculoskeletal conditions: systematic review and update of UK evidence report. *Chiropr Man Therap*. 2014;22(1):12.
36. Corbetta D, Sirtori V, Moja L, Gatti R. Constraint-induced movement therapy in stroke patients: systematic review and meta-analysis. *Eur J Phys Rehabil Med*. 2010 Dec;46(4):537-44.
37. Csapo R, Alegre LM. Effects of Kinesio<sup>®</sup> taping on skeletal muscle strength-A meta-analysis of current evidence. *J Sci Med Sport*. 2014 Jun 27.
38. Cupler ZA, Alrwaily M, Polakowski E, Mathers KS, Schneider MJ. Taping for conditions of the musculoskeletal system: an evidence map review. *Chiropr Man Therap*. 2020 Sep 15;28(1):52.
39. Cunningham R, Uyeshiro Simon A, Preissner K. Occupational Therapy Practice Guidelines for Adults With Multiple Sclerosis. *Am J Occup Ther*. 2022;76(5):7605397010. doi:10.5014/ajot.2022.050088
40. de Brito Brandão M, Mancini MC, Vaz DV, Pereira de Melo AP, Fonseca ST. Adapted version of constraint-induced movement therapy promotes functioning in children with cerebral palsy: a randomized controlled trial. *Clin Rehabil*. 2010 Jul;24(7):639-47.
41. De Guindos-Sanchez L, Lucena-Anton D, Moral-Munoz JA, et al. The effectiveness of hippotherapy to recover gross motor function in children with cerebral palsy: A systematic review and meta-analysis. *Children (Basel)*. 2020;7(9):106
42. De Miguel A, De Miguel MD, Lucena-Anton D, Rubio MD. Effects of hypotherapy on the motor function of persons with Down's syndrome: A systematic review. *Rev Neurol*. 2018;67(7):233-241.
43. Deng P, Zhao Z, Zhang S, Xiao T, Li Y. Effect of kinesio taping on hemiplegic shoulder pain: A systematic review and meta-analysis of randomized controlled trials. *Clin Rehabil*. 2021;35(3):317-331.
44. de Oliveira FCL, Pairet de Fontenay B, Bouyer LJ, Desmeules F, Roy JS. Kinesiotaping for the Rehabilitation of Rotator Cuff-Related Shoulder Pain: A Randomized Clinical Trial. *Sports Health*. 2021;13(2):161-172.
45. de Sire A, Curci C, Ferrara M, et al. Efficacy of kinesio taping on hand functioning in patients with mild carpal tunnel syndrome. A double-blind randomized controlled trial [published online ahead of print, 2021 Apr 14]. *J Hand Ther*. 2021;S0894-1130(21)00058-2.
46. Dion S, Wong JJ, Côté P, Yu H, Sutton D, Randhawa K, Southerst D, Varatharajan S, Stern PJ, Nordin M, Chung C, D'Angelo K, Dresser J, Brown C, Menta R, Ammendolia C, Shearer HM, Stupar M, Ameis A, Mior S, Carroll LJ, Jacobs C, Taylor-Vaisey A. Are Passive Physical Modalities Effective for the Management of Common Soft Tissue Injuries of the Elbow?: A Systematic Review by the Ontario Protocol for Traffic Injury Management (OPTiMa) Collaboration. *Clin J Pain*. 2017 Jan;33(1):71-86.
47. Dionisio MC, Terrill AL. Constraint-Induced Movement Therapy for Infants With or at Risk for Cerebral Palsy: A Scoping Review. *Am J Occup Ther*. 2022;76(2):7602205120. doi:10.5014/ajot.2022.047894
48. Dıraçoğlu D, Vural M, Karan A, Aksoy C. Effectiveness of dry needling for the treatment of temporomandibular myofascial pain: a double-blind, randomized, placebo controlled study. *J Back Musculoskelet Rehabil*. 2012;25(4):285-90.
49. Dixon L, Duncan D, Johnson P, Kirkby L, O'Connell H, Taylor H, Deane KH. Occupational therapy for patients with Parkinson's disease. *Cochrane Database Syst Rev*. 2007 Jul 18;(3):CD002813.



50. Dommerholt J, Hooks T, Finnegan M, Grieve R. A critical overview of the current myofascial pain literature - March 2016. *J Bodyw Mov Ther.* 2016 Apr;20(2):397-408.
51. Dong W, Goost H, Lin XB, Burger C, Paul C, Wang ZL, Zhang TY, Jiang ZC, Welle K, Kabir K. Treatments for shoulder impingement syndrome: a PRISMA systematic review and network meta-analysis. *Medicine (Baltimore).* 2015 Mar;94(10):e510.
52. Driehuis F, Hoogeboom TJ, Nijhuis-van der Sanden MWG, de Bie RA, Staal JB. Spinal manual therapy in infants, children and adolescents: A systematic review and meta-analysis on treatment indication, technique and outcomes. *PLoS One.* 2019 Jun 25;14(6):e0218940.
53. Dromerick AW, Lang CE, Birkenmeier RL, Wagner JM, Miller JP, Videen TO, et al. Very Early Constraint-Induced Movement during Stroke Rehabilitation (VECTORS): A single-center RCT. *Neurology.* 2009 Jul 21;73(3):195-201. Epub 2009 May 20.
54. Dromerick AW, Edwards DF, Hahn M. Does the application of constraint-induced movement therapy during acute rehabilitation reduce arm impairment after ischemic stroke? *Stroke.* 2000 Dec;31(12):2984-8.
55. Dry Hydromassage. Princeton, MN: Sidmar Manufacturing, Inc.; 2001-2005. Retrieved on October 24, 2023 from <http://www.sidmar.com/>
56. Espí-López GV, Serra-Añó P, Vicent-Ferrando J, Sánchez-Moreno-Giner M, Arias-Buría JL, Cleland J, Fernández-de-Las-Peñas C. Effectiveness of Inclusion of Dry Needling in a Multimodal Therapy Program for Patellofemoral Pain: A Randomized Parallel-Group Trial. *J Orthop Sports Phys Ther.* 2017 Jun;47(6):392-401.
57. Eliasson AC, Krumlinde-sundholm L, Shaw K, Wang C. Effects of constraint-induced movement therapy in young children with hemiplegic cerebral palsy: an adapted model. *Dev Med Child Neurol.* 2005 Apr;47(4):266-75. 51.
58. Eliasson AC, Krumlinde-Sundholm L, Gordon AM, et al; European network for Health Technology Assessment (EUnetHTA). Guidelines for future research in constraint-induced movement therapy for children with unilateral cerebral palsy: An expert consensus. *Dev Med Child Neurol.* 2014.
59. Faccioli S, Pagliano E, Ferrari A, Maghini C, Siani MF, Sgherri G, Cappetta G, Borelli G, Farella GM, Foscan M, Viganò M, Sghedoni S, Perazza S, Sassi S. Evidence-based management and motor rehabilitation of cerebral palsy children and adolescents: a systematic review. *Front Neurol.* 2023 May 25;14:1171224
60. Fernández-de-Las-Peñas C, Pérez-Bellmunt A, Llurda-Almuzara L, Plaza-Manzano G, De-la-Llave-Rincón AI, Navarro-Santana MJ. Is Dry Needling Effective for the Management of Spasticity, Pain, and Motor Function in Post-Stroke Patients? A Systematic Review and Meta-Analysis. *Pain Med.* 2021 Feb 4;22(1):131-141.
61. Fields B, Smallfield S. Occupational Therapy Practice Guidelines for Adults With Chronic Conditions. *Am J Occup Ther.* 2022;76(2):7602397010. doi:10.5014/ajot.2022/762001
62. Forwell S. Occupational therapy practice guidelines for adults with neurodegenerative diseases. Bethesda (MD): American Occupational Therapy Association (AOTA); 2006.
63. Frontera W, Silver J, Rizzo TD editors. Essentials of physical medicine and rehabilitation. 3rd ed. Philadelphia, PA: Saunders, an imprint of Elsevier Inc.; 2014.
64. Gao C, Li X, Li F, Li J, Zhang J. Non-pharmacological interventions on quality of life in stroke survivors: A systematic review and meta-analysis. *Worldviews Evid Based Nurs.* 2024;21(2):158-182. doi:10.1111/wvn.12714

65. García-Pérez P, Rodríguez-Martínez MDC, Lara JP, Cruz-Cosme C. Early Occupational Therapy Intervention in the Hospital Discharge after Stroke. *Int J Environ Res Public Health*. 2021;18(24):12877. Published 2021 Dec 7. doi:10.3390/ijerph182412877
66. Gattie E, Cleland JA, Snodgrass S. The Effectiveness of Trigger Point Dry Needling for Musculoskeletal Conditions by Physical Therapists: A Systematic Review and Meta-analysis. *J Orthop Sports Phys Ther*. 2017 Mar;47(3):133-149.
67. Gattie E, Cleland JA, Pandya J, Snodgrass S. Dry Needling Adds No Benefit to the Treatment of Neck Pain: A Sham-Controlled Randomized Clinical Trial With 1-Year Follow-up. *J Orthop Sports Phys Ther*. 2021 Jan;51(1):37-45.
68. Gatt M, Willis S, Leuschner S. A meta-analysis of the effectiveness and safety of kinesiology taping in the management of cancer-related lymphoedema. *Eur J Cancer Care (Engl)*. 2016 May 11.
69. Gerber LH, Sikdar S, Aredo JV, Armstrong K, Rosenberger WF, Shao H, Shah JP. Beneficial Effects of Dry Needling for Treatment of Chronic Myofascial Pain Persist for 6 Weeks After Treatment Completion. *PM R*. 2016 Jun 11. pii: S1934-32 1482(16)30180-0.
70. Gibbons GW, Orgill DP, Serena TE, et al. A prospective, randomized, controlled trial comparing the effects of noncontact, low-frequency ultrasound to standard care in healing venous leg ulcers. *Ostomy Wound Manage*. 2015;61(1):16-29.
71. Giorgi E, Smith S, Drescher MJ, Rivera MJ. The Effectiveness of Dry Needling Combined With Therapeutic Exercises in Treating Tendinopathy Conditions: A Systematic Review. *J Sport Rehabil*. 2022;31(7):918-924. Published 2022 May 4. doi:10.1123/jsr.2021-0200
72. Golisz K. Occupational therapy practice guidelines for adults with traumatic brain injury. Bethesda (MD): American Occupational Therapy Association (AOTA); 2009.
73. Grampurohit N, Pradhan S, Kartin D. Efficacy of adhesive taping as an adjunct to physical rehabilitation to influence outcomes post-stroke: a systematic review. *Top Stroke Rehabil*. 2015 Feb; 22(1):72-82.
74. Griswold D, Learman K, Ickert E, Tapp A, Ross O. Dry Needling for Subacromial Pain Syndrome: A Systematic Review with Meta-Analysis [published correction appears in *Pain Med*. 2023 Jul 5;24(7):917-921]. *Pain Med*. 2023;24(3):285-299. doi:10.1093/pm/pnac131
75. Grotta JC, Noser EA, Ro T, Boake C, Levin H, Aronowski J, Schallert T. Constraint-induced movement therapy. *Stroke*. 2004 Nov;35(11 Suppl 1):2699-701.
76. Habilitative/Habilitation services. Retrieved on October 28, 2024 from <https://www.healthcare.gov/glossary/habilitative-habilitation-services/>
77. H2OMassage System. Winnipeg, MB, Canada. Retrieved on October 28, 2024 from <http://www.h2omassage.com/>
78. Heddon S, Saulnier N, Mercado J, Shalmiyev M, Berteau JP. Systematic review shows no strong evidence regarding the use of elastic taping for pain improvement in patients with primary knee osteoarthritis. *Medicine (Baltimore)*. 2021;100(13):e25382.
79. Heussen N, Häusler M. Equine-Assisted Therapies for Children With Cerebral Palsy: A Meta-analysis. *Pediatrics*. 2022;150(1):e2021055229. doi:10.1542/peds.2021-055229
80. Hoare BJ, Imms C, Rawicki HB, Carey L. Modified constraint-induced movement therapy or bimanual occupational therapy following injection of Botulinum toxin-A to improve bimanual performance in

young children with hemiplegic cerebral palsy: a randomised controlled trial methods paper. *BMC Neurol.* 2010 Jul 5;10(1):58.

81. Hoare BJ, Wasiak J, Imms C, Carey L. Constraint-induced movement therapy in the treatment of the upper limb in children with hemiplegic cerebral palsy. *Cochrane Database Syst Rev.* 2007 Apr 18;(2):CD004149.
82. Hoare BJ, Wallen MA, Thorley MN, et al. Constraint-induced movement therapy in children with unilateral cerebral palsy. *Cochrane Database Syst Rev.* 2019;4:CD004149.
83. Hochberg MC, Altman RD, April KT, Benkhalti M, Guyatt G, McGowan J, et al. American College of Rheumatology. American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. *Arthritis Care Res (Hoboken).* 2012 Apr;64(4):465-74.
84. Hoffmann T, Bennett S, Koh C, McKenna K. The Cochrane review of occupational therapy for cognitive impairment in stroke patients. *Eur J Phys Rehabil Med.* 2011;47(3):513-519.
85. Huang HH, Fethers L, Hale J, McBride A. Bound for success: a systematic review of constraint-induced movement therapy in children with cerebral palsy supports improved arm and hand use. *Phys Ther.* 2009 Nov;89(11):1126-41.
86. Huang J, Ji JR, Liang C, et al. Effects of physical therapy-based rehabilitation on recovery of upper limb motor function after stroke in adults: a systematic review and meta-analysis of randomized controlled trials. *Ann Palliat Med.* 2022;11(2):521-531. doi:10.21037/apm-21-3710
87. Iijima H, Takahashi M. Microcurrent Therapy as a Therapeutic Modality for Musculoskeletal Pain: A Systematic Review Accelerating the Translation From Clinical Trials to Patient Care. *Arch Rehabil Res Clin Transl.* 2021;3(3):100145. Published 2021 Jul 21.
88. Jackman M, Sakzewski L, Morgan C, et al. Interventions to improve physical function for children and young people with cerebral palsy: international clinical practice guideline. *Dev Med Child Neurol.* 2022;64(5):536-549. doi:10.1111/dmcn.15055
89. Jayaseelan DJ, T Faller B, H Avery M. The utilization and effects of filiform dry needling in the management of tendinopathy: a systematic review. *Physiother Theory Pract.* 2021 Apr 27:1-13.
90. Jassi FJ, Del Ant6nio TT, Azevedo BO, Moraes R, George SZ, Chaves TC. Star-Shape Kinesio Taping Is Not Better Than a Minimal Intervention or Sham Kinesio Taping for Pain Intensity and Postural Control in Chronic Low Back Pain: A Randomized Controlled Trial. *Arch Phys Med Rehabil.* 2021;102(7):1352-1360.e3.
91. Kalichman, L and Vulfsons, S. Dry needling in the management of musculoskeletal pain. *J Am Board Fam Med.* 2010;23(5): 640-646.
92. Kalron A, Bar-Sela S. A systematic review of the effectiveness of Kinesio Taping--fact or fashion? *Eur J Phys Rehabil Med.* 2013 Oct; 49(5):699-709.
93. Kamonseki DH, Lopes EP, van der Meer HA, Calixtre LB. Effectiveness of manual therapy in patients with tension-type headache. A systematic review and meta-analysis. *Disabil Rehabil.* 2022;44(10):1780-1789. doi:10.1080/09638288.2020.1813817
94. Khan I, Ahmad A, Ahmed A, Sadiq S, Asim HM. Effects of dry needling in lower extremity myofascial trigger points. *J Pak Med Assoc.* 2021;71(11):2596-2603. doi:10.47391/JPMA.01398
95. Kietrys DM, Palombaro KM, Azzaretto E, Hubler R, Schaller B, Schluskel JM, Tucker M. Effectiveness of Dry Needling for Upper Quarter Myofascial Pain: A Systematic Review and Meta-analysis. *J Orthop Sports Phys Ther.* 2013 Jun 11

96. Koomar, J., Burpee, J. D., DeJean, V., Frick, S., Kavar, M. J., & Fischer, D. M. (2001). Theoretical and clinical perspectives on the interactive metronome®: A view from occupational therapy practice. *American Journal of Occupational Therapy*, 55(2), 163–166. <https://doi.org/10.5014/ajot.55.2.163>
97. Kotler JM, Mahoney D, Nilsen DM, Gillen G. Effectiveness of Occupational Therapy Interventions to Improve Performance and Participation in Instrumental Activities of Daily Living (IADL) Among Adult Stroke Survivors (2009-2019). *Am J Occup Ther*. 2023;77(Suppl 1):7710393090. doi:10.5014/ajot.2023.77S10009
98. Kotronis G, Vas PRJ. Ultrasound Devices to Treat Chronic Wounds: The Current Level of Evidence. *Int J Low Extrem Wounds*. 2020 Dec;19(4):341-349. doi: 10.1177/1534734620946660.
99. Kraft KA, Weisberg J, Finch MD, et al. Hippotherapy in rehabilitation care for children with neurological impairments and developmental delays: A Case Series. *Pediatr Phys Ther*. 2019;31(1):E14-E21.
100. Legg L, Drummond A, Leonardi-Bee J, Gladman JR, Corr S, Donkervoort M, et al. Occupational therapy for patients with problems in personal activities of daily living after stroke: systematic review of randomised trials. *BMJ*. 2007 Nov 3;335(7626):922.
101. Legg LA, Drummond AE, Langhorne P. Occupational therapy for patients with problems in activities of daily living after stroke. *Cochrane Database Syst Rev*. 2006 Oct 18;(4):CD003585.
102. Legg LA, Lewis SR, Schofield-Robinson OJ, Drummond A, Langhorne P. Occupational therapy for adults with problems in activities of daily living after stroke. *Cochrane Database of Systematic Reviews* 2017, Issue 7. Art. No.: CD003585. DOI: 10.1002/14651858.CD003585.pub3
103. Lee CW, Kim SG, Yong MS. Effects of hippotherapy on recovery of gait and balance ability in patients with stroke. *J Phys Ther Sci*. 2014 Feb;26(2):309-11.
104. Li Y, Yin Y, Jia G, Chen H, Yu L, Wu D. Effects of kinesiotape on pain and disability in individuals with chronic low back pain: a systematic review and meta-analysis of randomized controlled trials. *Clin Rehabil*. 2019 Apr;33(4):596-606.
105. Lin S, Zhu B, Huang G, Wang C, Zeng Q, Zhang S. Short-Term Effect of Kinesiotaping on Chronic Nonspecific Low Back Pain and Disability: A Meta-Analysis of Randomized Controlled Trials. *Phys Ther*. 2020 Feb 7;100(2):238-254.
106. Lim EC, Tay MG. Kinesio taping in musculoskeletal pain and disability that lasts for more than 4 weeks: is it time to peel off the tape and throw it out with the sweat? A systematic review with meta-analysis focused on pain and also methods of tape application. *Br J Sports Med*. 2015 Dec; 49(24):1558-66.
107. Lindsay P, Bayley M, Hellings C, Hill M, Woodbury E, Phillips S. Stroke rehabilitation and community reintegration. Outpatient and community-based rehabilitation. In: Canadian best practice recommendations for stroke care. *CMAJ* 2008 Dec 2;179(12 Suppl):E58-61.
108. Liu L, Huang QM, Liu QG, Ye G, Bo CZ, Chen MJ, Li P. Effectiveness of dry needling for myofascial trigger points associated with neck and shoulder pain: a systematic review and meta-analysis. *Arch Phys Med Rehabil*. 2015 May;96(5):944-55.
109. Liu L, Huang QM, Liu QG, Thitham N, Li LH, Ma YT, Zhao JM. Evidence for Dry Needling in the Management of Myofascial Trigger Points Associated with Low Back Pain: A Systematic Review and Meta-analysis. *Arch Phys Med Rehabil*. 2017 Jul 6. pii: S0003-9993(17)30452-5.
110. Llurda-Almuzara L, Labata-Lezaun N, Meca-Rivera T, Navarro-Santana MJ, Cleland JA, Fernández-de-Las-Peñas C, Pérez-Bellmunt A. Is Dry Needling Effective for the Management of Plantar Heel

Pain or Plantar Fasciitis? An Updated Systematic Review and Meta-Analysis. *Pain Med.* 2021 Jul 25;22(7):1630-1641.

111. Local Coverage Determination (LCD): Outpatient Physical and Occupational Therapy Services (L33631). National Government Services, Inc. Retrieved on October 28, 2024 from <https://www.cms.gov/medicare-coverage-database/details/lcd-details.aspx?LCDId=33631&ver=51&Date=01%2f01%2f2020&DocID=L33631&bc=ggAAAAIAAAAA&>
112. Lucado AM, Dale RB, Vincent J, Day JM. Do joint mobilizations assist in the recovery of lateral elbow tendinopathy? A systematic review and meta-analysis. *J Hand Ther.* 2019;32(2):262-276.e1.
113. Luo WH, Li Y. Current Evidence Does Support the Use of KT to Treat Chronic Knee Pain in Short Term: A Systematic Review and Meta-Analysis. *Pain Res Manag.* 2021;2021:5516389. Published 2021 Mar 23.
114. Luz Júnior MAD, Almeida MO, Santos RS, Civile VT, Costa LOP. Effectiveness of Kinesio Taping in Patients With Chronic Nonspecific Low Back Pain: A Systematic Review With Meta-analysis. *Spine (Phila Pa 1976).* 2019 Jan 1;44(1):68-78.
115. Martínez-Costa Montero MC, Cabeza AS. Effectiveness of constraint-induced movement therapy in upper extremity rehabilitation in patients with cerebral palsy: A systematic review. *Rehabilitacion (Madr).* 2020 Nov 30 [Online ahead of print].
116. Marquez J, Weerasekara I, Chambers L. Hippotherapy in adults with acquired brain injury: A systematic review. *Physiother Theory Pract.* 2020 Jul;36(7):779-790.
117. McIntyre A, Viana R, Janzen S, Mehta S, Pereira S, Teasell R. Systematic review and meta-analysis of constraint-induced movement therapy in the hemiparetic upper extremity more than six months post stroke. *Top Stroke Rehabil.* 2012 Nov-Dec;19(6):499-513.
118. Merino-Andrés J, López-Muñoz P, Carrión RP, Martín-Casas P, Ruiz-Becerro I, Hidalgo-Robles Á. Is more always better? Effectiveness of constraint-induced movement therapy in children with high-risk or unilateral cerebral palsy (0-6 years): Systematic review and meta-analysis. *Child Care Health Dev.* 2024;50(3):e13262. doi:10.1111/cch.13262
119. Montalvo AM, Cara EL, Myer GD. Effect of kinesiology taping on pain in individuals with musculoskeletal injuries: Systematic review and meta-analysis. *Phys Sportsmed.* 2014 May; 42(2):48-57.
120. Morris ME, Perry A, Bilney B, Curran A, Dodd K, Wittwer JE, Dalton GW. Outcomes of physical therapy, speech pathology, and occupational therapy for people with motor neuron disease: a systematic review. *Neurorehabil Neural Repair.* 2006 Sep;20(3):424-34.
121. Mostafavifar M, Wertz J, Borchers J. A systematic review of the effectiveness of kinesio taping for musculoskeletal injury. *Phys Sportsmed.* 2012 Nov;40(4):33-40.
122. Mousavi-Khatir SR, Fernández-de-Las-Peñas C, Saadat P, Javanshir K, Zohrevand A. The Effect of Adding Dry Needling to Physical Therapy in the Treatment of Cervicogenic Headache: A Randomized Controlled Trial. *Pain Med.* 2022;23(3):579-589. doi:10.1093/pm/pnab312
123. Murillo C, Treleaven J, Cagnie B, Peral J, Falla D, Lluch E. Effects of dry needling of the obliquus capitis inferior on sensorimotor control and cervical mobility in people with neck pain: A double-blind, randomized sham-controlled trial. *Braz J Phys Ther.* 2021;25(6):826-836. doi:10.1016/j.bjpt.2021.07.005
124. Moyers PA. The guide to occupational therapy practice. *Am J Occup Ther.* 1999 May;53(3):247-322.



125. Nair HKR. Microcurrent as an adjunct therapy to accelerate chronic wound healing and reduce patient pain. *J Wound Care*. 2018 May 2;27(5):296-306.
126. Navarro-Santana MJ, Sanchez-Infante J, Gómez-Chiguano GF, Cleland JA, López-de-Uralde-Villanueva I, Fernández-de-Las-Peñas C, Plaza-Manzano G. Effects of trigger point dry needling on lateral epicondylalgia of musculoskeletal origin: a systematic review and meta-analysis. *Clin Rehabil*. 2020 Nov;34(11):1327-1340.
127. Navarro-Santana MJ, Gómez-Chiguano GF, Cleland JA, Arias-Burúa JL, Fernández-de-Las-Peñas C, Plaza-Manzano G. Effects of Trigger Point Dry Needling for Nontraumatic Shoulder Pain of Musculoskeletal Origin: A Systematic Review and Meta-Analysis. *Phys Ther*. 2021 Feb 4;101(2):pzaa216.
128. Navarro-Santana MJ, Sanchez-Infante J, Fernández-de-Las-Peñas C, Cleland JA, Martín-Casas P, Plaza-Manzano G. Effectiveness of Dry Needling for Myofascial Trigger Points Associated with Neck Pain Symptoms: An Updated Systematic Review and Meta-Analysis. *J Clin Med*. 2020 Oct 14;9(10):3300.
129. Nijland R, Kwakkel G, Bakers J, van Wegen E. Constraint-induced movement therapy for the upper paretic limb in acute or sub-acute stroke: a systematic review. *Int J Stroke*. 2011 Oct;6(5):425-33. doi:10.1111/j.1747-4949.2011.00646.
130. Nuhmani S, Khan MH, Ahsan M, Abualait TS, Muaidi Q. Dry needling in the management of tendinopathy: A systematic review of randomized control trials. *J Bodyw Mov Ther*. 2023;33:128-135. doi:10.1016/j.jbmt.2022.09.021
131. Nunes GS, Feldkircher JM, Tessarin BM, Bender PU, da Luz CM, de Noronha M. Kinesio taping does not improve ankle functional or performance in people with or without ankle injuries: Systematic review and meta-analysis. *Clin Rehabil*. 2021;35(2):182-199.
132. O'Haire ME. Animal-assisted intervention for autism spectrum disorder: a systematic literature review. *J Autism Dev Disord*. 2013 Jul;43(7):1606-22.
133. Olyaie M, Rad FS, Elahifar MA, Garkaz A, Mahsa G. High-frequency and noncontact low-frequency ultrasound therapy for venous leg ulcer treatment: a randomized, controlled study. *Ostomy Wound Manage*. 2013 Aug;59(8):14-20.
134. Ottawa Panel. Ottawa Panel evidence-based clinical practice guidelines for therapeutic exercises in the management of rheumatoid arthritis in adults. *Phys Ther*. 2004 Oct;84(10):934-72.
135. Ottawa Panel. Ottawa panel evidence-based clinical practice guidelines for therapeutic exercises and manual therapy in the management of osteoarthritis. *Phys Ther* 2005 Sep;85(9):907-71.
136. Ottawa Panel, Khadilkar A, Phillips K, Jean N, Lamothe C, Milne S, Sarnecka J. Ottawa panel evidence-based clinical practice guidelines for post-stroke rehabilitation. *Top Stroke Rehabil*. 2006 Spring;13(2):1-269.
137. Owen PJ, Miller CT, Mundell NL, Verswijveren SJJM, Tagliaferri SD, Brisby H, Bowe SJ, Belavy DL. Which specific modes of exercise training are most effective for treating low back pain? Network meta-analysis. *Br J Sports Med*. 2020 Nov;54(21):1279-1287.
138. Palomo-Carrión R, Ferri-Morales A, Ando-LaFuente S, et al. Constraint-induced movement therapy versus bimanual intensive therapy in children with hemiplegia showing low/very low bimanual functional performance: A randomized clinical trial. *PM R*. 2023;15(12):1536-1546. doi:10.1002/pmrj.12990



139. Pantera E, Froment P, Vernay D. Does Hippotherapy Improve the Functions in Children with Cerebral Palsy? Systematic Review Based on the International Classification of Functioning. *J Integr Complement Med*. 2022;28(9):705-720. doi:10.1089/jicm.2021.0417
140. Parreira Pdo C, Costa Lda C, Hespanhol Junior LC, Lopes AD, Costa LO. Current evidence does not support the use of Kinesio Taping in clinical practice: a systematic review. *J Physiother*. 2014 Mar; 60(1):31-9.
141. Peia F, Veiga NC, Gomes AP, et al. Effects of Hippotherapy on Postural Control in Children With Cerebral Palsy: A Systematic Review. *Pediatr Phys Ther*. 2023;35(2):202-210. doi:10.1097/PEP.0000000000000999
142. Pérez-Gómez J, Amigo-Gamero H, Collado-Mateo D, et al. Equine-assisted activities and therapies in children with attention-deficit/hyperactivity disorder: A systematic review. *J Psychiatr Ment Health Nurs*. 2021;28(6):1079-1091. doi:10.1111/jpm.12710
143. Peurala SH, Kantanen MP, Sjögren T, Paltamaa J, Karhula M, Heinonen A. Effectiveness of constraint-induced movement therapy on activity and participation after stroke: a systematic review and meta-analysis of randomized controlled trials. *Clin Rehabil*. 2012 Mar;26(3):209-23.
144. Peurala SH, Kantanen MP, Sjögren T, Paltamaa J, Karhula M, Heinonen A. Effectiveness of constraint-induced movement therapy on activity and participation after stroke: a systematic review and meta-analysis of randomized controlled trials. *Clin Rehabil*. 2012 Mar;26(3):209-23.
145. Pieters L, Lewis J, Kuppens K, Jochems J, Bruijstens T, Joossens L, Struyf F. An Update of Systematic Reviews Examining the Effectiveness of Conservative Physical Therapy Interventions for Subacromial Shoulder Pain. *J Orthop Sports Phys Ther*. 2020 Mar;50(3):131-141.
146. Pinheiro YT, E Silva RL, de Almeida Silva HJ, et al. Does current evidence support the use of kinesiology taping in people with knee osteoarthritis?. *Explore (NY)*. 2021;17(6):574-577.
147. Plotas P, Papadopoulos A, Apostolelli EM, et al. Effects of hippotherapy on motor function of children with cerebral palsy: a systematic review study. *Ital J Pediatr*. 2024;50(1):188. Published 2024 Sep 19. doi:10.1186/s13052-024-01715-9.
148. Pollock A, Baer G, Campbell P, Choo PL, Forster A, Morris J, et al. Physical rehabilitation approaches for the recovery of function and mobility following stroke. *Cochrane Database Syst Rev*. 2014 Apr 22;4:CD001920.
149. Pourahmadi M, Dommerholt J, Fernández-de-Las-Peñas C, Koes BW, Mohseni-Bandpei MA, Mansournia MA, Delavari S, Keshtkar A, Bahramian M. Dry Needling for the Treatment of Tension-Type, Cervicogenic, or Migraine Headaches: A Systematic Review and Meta-Analysis. *Phys Ther*. 2021 May 4;101(5):pzab068.
150. Prieto A, Martins Almeida Ayupe K, Nemetala Gomes L, Saúde AC, Gutierrez Filho P. Effects of equine-assisted therapy on the functionality of individuals with disabilities: systematic review and meta-analysis. *Physiother Theory Pract*. 2022;38(9):1091-1106. doi:10.1080/09593985.2020.1836694
151. Pulman J, Buckley E, Clark-Carter D. A meta-analysis evaluating the effectiveness of two different upper limb hemiparesis interventions on improving health-related quality of life following stroke. *Top Stroke Rehabil*. 2013 Mar-Apr;20(2):189-96.
152. Quinn É, Hynes SM. Occupational therapy interventions for multiple sclerosis: A scoping review. *Scand J Occup Ther*. 2021;28(5):399-414.
153. Radi R, Ng W, Simcoe R, Lyon C, DeSanto K. Dry Needling for Low Back Pain. *Am Fam Physician*. 2023;107(3):299-300.

154. Ramey SL, DeLuca SC, Stevenson RD, et al. Constraint-Induced Movement Therapy for Cerebral Palsy: A Randomized Trial. *Pediatrics*. 2021;148(5):e2020033878. doi:10.1542/peds.2020-033878
155. Regalado A, Decker B, Flaherty BM, Zimmer L, Brown I. Effectiveness of Constraint-Induced Movement Therapy for Children With Hemiparesis Associated With Cerebral Palsy: A Systematic Review. *Am J Occup Ther*. 2023;77(3):7703205160. doi:10.5014/ajot.2023.050152
156. Revised by the Commission on Practice, 2020; Casto SC, Davis C, et al. Standards of Practice for Occupational Therapy. *Am J Occup Ther*. 2022;75(Supplement\_3):7513410030. doi:10.5014/ajot.2021.75S3004
157. Rodríguez-Mansilla J, González-Sánchez B, De Toro García Á, Valera-Donoso E, Garrido-Ardila EM, Jiménez-Palomares M, González López-Arza MV. Effectiveness of dry needling on reducing pain intensity in patients with myofascial pain syndrome: a Meta-analysis. *J Tradit Chin Med*. 2016 Feb;36(1):1-13.
158. Roll SC, Hardison ME. Effectiveness of Occupational Therapy Interventions for Adults With Musculoskeletal Conditions of the Forearm, Wrist, and Hand: A Systematic Review. *Am J Occup Ther*. 2017;71(1):7101180010p1-7101180010p12
159. Sabari J, Lieberman D. Occupational therapy practice guidelines for adults with stroke. Bethesda (MD): American Occupational Therapy Association (AOTA); 2008.
160. Sakzewski L, Ziviani J, Boyd RN. Efficacy of upper limb therapies for unilateral cerebral palsy: a meta-analysis. *Pediatrics*. 2014 Jan;133(1):e175-204..
161. Sakzewski L, Gordon A, Eliasson AC. The state of the evidence for intensive upper limb therapy approaches for children with unilateral cerebral palsy. *J Child Neurol*. 2014 Aug;29(8):1077-90.
162. Sánchez-Infante J, Navarro-Santana MJ, Bravo-Sánchez A, Jiménez-Díaz F, Abián-Vicén J. Is Dry Needling Applied by Physical Therapists Effective for Pain in Musculoskeletal Conditions? A Systematic Review and Meta-Analysis. *Phys Ther*. 2021 Mar 3;101(3):pzab070.
163. Santos de Assis G, Schlichting T, Rodrigues Mateus B, Gomes Lemos A, Dos Santos AN. Physical therapy with hippotherapy compared to physical therapy alone in children with cerebral palsy: systematic review and meta-analysis. *Dev Med Child Neurol*. 2022;64(2):156-161. doi:10.1111/dmcn.15042
164. Scottish Intercollegiate Guidelines Network (SIGN) and the National Clinical Programme for Stroke, Ireland. National clinical guideline for stroke for the UK and Ireland ; 2023 Apr. Retrieved on October 28, 2024 from <https://www.sign.ac.uk/our-guidelines/national-clinical-guideline-for-stroke-for-the-uk-and-ireland/>
165. Sheerin M, O'Riordan C, Conneely M, et al. Effectiveness of occupational therapy interventions on function and occupational performance among adults with conditions of the hand, wrist, and forearm: A systematic review and meta-analysis [published online ahead of print, 2023 Oct 4]. *Aust Occup Ther J*. 2023;10.1111/1440-1630.12905. doi:10.1111/1440-1630.12905
166. Shi YX, Tian JH, Yang KH, Zhao Y. Modified constraint-induced movement therapy versus traditional rehabilitation in patients with upper-extremity dysfunction after stroke: a systematic review and meta-analysis. *Arch Phys Med Rehabil*. 2011 Jun;92(6):972-82.
167. Silberstein N. Dry hydrotherapy: don't add water. *Rehab Manag*. 2006 Jun;19(5):22-3.
168. Silkwood-Sherer DJ, Killian CB, Long TM, Martin KS. Hippotherapy—an intervention to habilitate balance deficits in children with movement disorders: a clinical trial. *Phys Ther*. 2012 May;92(5):707-17.

169. Singh P, Pradhan B. Study to assess the effectiveness of modified constraint-induced movement therapy in stroke subjects: A randomized controlled trial. *Ann Indian Acad Neurol*. 2013 Apr;16(2):180-4.
170. Sirtori V, Corbetta D, Moja L, Gatti R. Constraint-induced movement therapy for upper extremities in stroke patients. *Cochrane Database Syst Rev*. 2009 Oct 7;(4):CD004433.
171. Skelly AC, Chou R, Dettori JR, et al. Noninvasive Nonpharmacological Treatment for Chronic Pain: A Systematic Review. Rockville (MD): Agency for Healthcare Research and Quality (US); June 2018.
172. Skelly AC, Chou R, Dettori JR, Turner JA, Friedly JL, Rundell SD, Fu R, Brodt ED, Wasson N, Kantner S, Ferguson AJR. Noninvasive Nonpharmacological Treatment for Chronic Pain: A Systematic Review Update [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2020 Apr. Report No.: 20-EHC009. PMID: 32338846.
173. Sousa Filho LF, Barbosa Santos MM, Dos Santos GHF, da Silva Júnior WM. Corticosteroid injection or dry needling for musculoskeletal pain and disability? A systematic review and GRADE evidence synthesis. *Chiropr Man Therap*. 2021;29(1):49. Published 2021 Dec 2. doi:10.1186/s12998-021-00408-y
174. Stevenson T, Thalman L, Christie H, Poluha W. Constraint-Induced Movement Therapy Compared to Dose-Matched Interventions for Upper-Limb Dysfunction in Adult Survivors of Stroke: A Systematic Review with Meta-analysis. *Physiother Can*. 2012 Fall;64(4):397-413.
175. Steultjens EM, Dekker J, Bouter LM, van de Nes JC, van de Ende CH. Occupational therapy for stroke patients. A systematic review. *Stroke*. 2003 Mar;34(3):676-87.
176. Steultjens EM, Dekker J, Bouter LM, van Schaardenburg D, van Kuyk MA, van den Ende CH. Occupational therapy for rheumatoid arthritis. *Cochrane Database Syst Rev*. 2004;(1):CD003114.
177. Steultjens EM, Dekker J, Bouter LM, Cardol M, Van de Nes JC, Van den Ende CH. Occupational therapy for multiple sclerosis. *Cochrane Database Syst Rev*. 2003;(3):CD003608.
178. Steultjens EM, Dekker J, Bouter LM, Leemrijse CJ, van den Ende CH. Evidence of the efficacy of occupational therapy in different conditions: an overview of systematic reviews. *Clin Rehabil*. 2005 May;19(3):247-54.
179. Sung IY, Ryu JS, Pyun SB, Yoo SD, Song WH, Park MJ. Efficacy of forced-use therapy in hemiplegic cerebral palsy. *Arch Phys Med Rehabil*. 2005 Nov;86(11):2195-8.
180. Taub E, Ramey SL, DeLuca S, Echols K. Efficacy of constraint-induced movement therapy for children with cerebral palsy with asymmetric motor impairment. *Pediatrics*. 2004 Feb;113(2):305-12.
181. Tekin L, Akarsu S, Durmuş O, Cakar E, Dinçer U, Kıralp MZ. The effect of dry needling in the treatment of myofascial pain syndrome: a randomized double-blinded placebo-controlled trial. *Clin Rheumatol*. 2013;32(3):309-15.
182. Tough EA, White AR, Cummings TM, Richards SH, Campbell JL. Acupuncture and dry needling in the management of myofascial trigger point pain: a systematic review and meta-analysis of randomised controlled trials. *Eur J Pain*. 2009;13(1):3-10.
183. Trombly CA, Ma HI. A synthesis of the effects of occupational therapy for persons with stroke, Part I: Restoration of roles, tasks, and activities. *Am J Occup Ther*. 2002 May-Jun;56(3):250-9.
184. Valdes K, Marik T. A systematic review of conservative interventions for osteoarthritis of the hand. *Journal of Hand Therapy* 2010;23(4):334-50.

185. Walker MF, Leonardi-Bee J, Bath P, Langhorne P, Dewey M, Corr S, et al. Individual patient data meta-analysis of randomized controlled trials of community occupational therapy for stroke patients. *Stroke*. 2004 Sep;35(9):2226-32.
186. Walker C, Shierk A, Roberts H. Constraint Induced Movement Therapy in Infants and Toddlers with Hemiplegic Cerebral Palsy: A Scoping Review. *Occup Ther Health Care*. 2022;36(1):29-45. doi:10.1080/07380577.2021.1953206
187. Wang X, Sun Q, Wang M, et al. Electrical Dry Needling Plus Corticosteroid Injection for Osteoarthritis of the Knee: A Randomized Controlled Trial. *Arch Phys Med Rehabil*. 2022;103(5):858-866. doi:10.1016/j.apmr.2021.12.026
188. Wang Y, Li X, Sun C, Xu R. Effectiveness of kinesiology taping on the functions of upper limbs in patients with stroke: a meta-analysis of randomized trial. *Neurol Sci*. 2022;43(7):4145-4156. doi:10.1007/s10072-022-06010-1
189. Wheeler S, Acord-Vira A. Occupational Therapy Practice Guidelines for Adults With Traumatic Brain Injury. *Am J Occup Ther*. 2023;77(4):7704397010. doi:10.5014/ajot.2023.077401
190. White E, Zippel J, Kumar S. The effect of equine-assisted therapies on behavioural, psychological and physical symptoms for children with attention deficit/hyperactivity disorder: A systematic review. *Complement Ther Clin Pract*. 2020 May;39:101101.
191. White J, Ivins N, Wilkes A, Carolan-Rees G, Harding KG. Non-contact low-frequency ultrasound therapy compared with UK standard of care for venous leg ulcers: a single-centre, assessor-blinded, randomised controlled trial. *Int Wound J*. 2015 Jan 25.
192. Williams S, Whatman C, Hume PA, Sheerin K. Kinesio taping in treatment and prevention of sports injuries: a meta-analysis of the evidence for its effectiveness. *Sports Med*. 2012 Feb 1;42(2):153-64.
193. Williamson TK, Rodriguez HC, Gonzaba A, Poddar N, Norwood SM, Gupta A. H-Wave® Device Stimulation: A Critical Review. *J Pers Med*. 2021;11(11):1134. Published 2021 Nov 2.
194. Wolf SL, Winstein CJ, Miller JP, Taub E, Uswatte G, Morris D, et al; EXCITE Investigators. Effect of constraint-induced movement therapy on upper extremity function 3 to 9 months after stroke: the EXCITE randomized clinical trial. *JAMA*. 2006 Nov 1;296(17):2095-104.
195. Wood J, Henderson W, Foster ER. Occupational Therapy Practice Guidelines for People With Parkinson's Disease. *Am J Occup Ther*. 2022;76(3):7603397010. doi:10.5014/ajot.2022.763001
196. Yu H, Côté P, Shearer HM, Wong JJ, Sutton DA, Randhawa KA, Varatharajan S, Southerst D, Mior SA, Ameis A, Stupar M, Nordin M, van der Velde GM, Carroll L, Jacobs CL, Taylor-Vaisey AL, Abdulla S, Shergill Y. Effectiveness of passive physical modalities for shoulder pain: systematic review by the Ontario protocol for traffic injury management collaboration. *Phys Ther*. 2015 Mar;95(3):306-18.
197. Zhang J, Xiao X, Jin Q, et al. The effect and safety of constraint-induced movement therapy for post-stroke motor dysfunction: a meta-analysis and trial sequential analysis. *Front Neurol*. 2023;14:1137320. Published 2023 Apr 18. doi:10.3389/fneur.2023.1137320

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