OREGON BOARD OF CHIROPRACTIC EXAMINERS

CHIROPRACTIC ASSISTANT STUDY GUIDE

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1. Introduction

1.1 Certification, Scope of Practice, and Regulation

Oregon certified chiropractic assistants (CAs) work under the license of supervising Oregon licensed chiropractic physicians (DCs). It is important that CA applicants review and understand the CA application process, CA renewal, and continuing education requirements, and all rules and regulations applicable to them. This is a link to the General Rules and Licensing for Chiropractic Assistants: OAR 811-010-0110

The supervising DC must supervise, acknowledge, and approve all duties performed by a CA applicant and certified CA. The supervising DC must be on the premises for a CA to perform their duties. A CA applicant cannot perform direct patient care until certified by the Oregon Board of Chiropractic Examiners (OBCE), except for meeting initial hands-on training requirements. CAs and CA applicants are required to report to the OBCE if the supervising DC is not present or supervising appropriately.

CAs may assist with many procedures in the office, including but not limited to recording a patient's subjective complaints, taking vitals, performing physiotherapies, and performing soft tissue therapy. CAs are not permitted to perform examinations or adjustments even if requested by a supervising chiropractic physician. It is important for the CA/CA applicant to be properly trained in the services they provide. If a CA is uncertain about treatment and/or answering patient questions appropriately or safely, they should cease care and notify their supervising DC or office manager. Review the Guide to Policy and Practice (P&P) available on the OBCE website for more information and answers to commonly asked questions.

Acts of wrongdoing may result in disciplinary action against the CA and their supervising DC. CAs are regulated by the Oregon Revised Statutes (ORS) and the Oregon Administrative Rules (OAR), which are enforced by the OBCE for the protection of the public. These links OAR 811-010-0008 (General Rules and Licenseing-Fees), OAR 811-010-0110 (General Rules and Licensing-Chiropractic Assistants), and OAR 811-035-0015 (Code of Ethics-Unprofessional Conduct in the Chiropractic Profession) explain the conduct and expected behavior of CAs. A public search is

available on the OBCE's website, allowing the public to search for a licensee and review any public documents associated with the license or certification.

1.2 Chiropractic Assistant Certification Process

To become a CA, you must:

1. Be at least 18 years of age;
2. Complete the chiropractic assistant application;
3. Complete 12 hours of initial training, which includes 8 hours of didactic (book-learning/lecture/study guide) and 4 hours of hands-on training covering hydrotherapy, electrotherapy, and physiotherapy;
4. Complete a background check, and provide an explanation of any criminal history; and
5. Complete and pass the Chiropractic Assistant Examination (an open book exam).

The background check will search for a record of any state or federal criminal charges or convictions of an applicant. Having criminal charges or convictions, depending on their nature, does not automatically exclude an applicant from obtaining a certificate. If the applicant has a criminal history that appears on a background check, they should be prepared to provide an explanation and related court and police records. If an applicant is uncertain if a conviction has been expunged or not reported, they should include an explanation during the application process. Failure to do so will result in delays in the application and certification process.

An incomplete application may delay the application and certification process. It is important to read the instructions and answer every question on the application.

Delays may occur due to the following:

- Failure to complete the application;
- Failure to include complete initial training;
- Failure to schedule a fingerprint/background check;
- Failure to report and/or provide an explanation of any criminal history;
- Failure to complete the NBCE CA examination; or

- Poor communication between the applicant and the OBCE staff.

The National Board of Chiropractic Examiners (NBCE) is the testing entity that hosts and grades the online CA examination. The NBCE is not affiliated with other aspects of OBCE's application process. After an applicant has been approved to take the exam, they will be notified by the NBCE to complete registration. The exam is an open book test; however, no other resources other than this CA Study Guide or applicant notes may be used. Applicants are required to take the exam themselves and should not search for answers using a web browser, accept assistance from others, or share exam answers.

1.3 Duty to Report

CAs are required to abide by the Duty to Report rule (OAR 811-010-0040). The OBCE is a resource for questions surrounding these issues. The OBCE receives and processes complaints when they are submitted. The OBCE does not investigate anonymous tips or complaints.

Duty to Report applies to self-reporting, including but not limited to: arrests, criminal charges, civil cases, or investigations/board actions, including by other state licensing boards. Unethical behavior and violations of law or rule must be reported. Duty to Report applies to DCs, CAs, and other healthcare professionals such as LMTs, Nurse Practitioners, Acupuncturists, and Medical Doctors.

Health professionals, including CAs, are mandatory reporters and have a duty to report abuse of children, the elderly, and adults with intellectual, developmental, or other disabilities in or out of the office. CAs must report abuse and neglect immediately. This requirement applies whether the CA observes or receives information about the abuse or neglect during work hours or personal time. Possible abuse and neglect must be reported through Oregon's toll-free hotline: 1-855-503-SAFE (7233) or on the DHS website. CAs should be prepared to leave contact information when reporting.

1.4 OBCE Complaint Process

The OBCE is a complaint-driven regulatory board; action is taken once a complaint is received. Complaints are submitted through the OBCE's online complaint form. The identity of the Complainant is confidential, meaning the OBCE does not disclose the identity of the Complainant. However, the identity of the Complainant may be assumed by the Respondent based on the nature of the allegations.

It may be determined as unprofessional conduct if a Respondent retaliates against a Complainant – Complainants are protected from retaliation by state law and administrative rule.

The OBCE will review the complaint and assign an investigator. The Complainant, witnesses, and Respondent may be interviewed. The Respondent will be informed by the OBCE of the allegations and will be requested to respond. When the investigation is complete, the Board will make a determination as to any disciplinary action. The Complainant will be notified after the Board makes its determination.

Both CAs and DCs are required to follow all statutes, rules, and policies relevant to chiropractic practice in Oregon. If CAs and DCs do not comply, there is a risk of patient harm and liability.

CAs may be included in a complaint against a DC or other CAs for failing to report the alleged misconduct.

Employment complaints are not within the jurisdiction of the OBCE. The Bureau of Labor and Industries (BOLI) is the appropriate state agency to contact for those types of complaints.

2. Boundaries

2.1 Power Dynamics

Power dynamics exist between employers and employees and between healthcare providers and patients. Taking advantage of unequal power may lead to unprofessional conduct as described in OAR 811-035-0015 (Code of Ethics-Unprofessional Conduct in the Chiropractic

Profession) and OAR 811-035-0019 (Code of Ethics-Sexual Unprofessional or Dishonorable Conduct).

2.2 Knowledge of Office Protocols

The CA is responsible for knowing and abiding by office policies on socializing with patients. This includes, but is not limited to social media, in person, and/or socially. It is the CA's responsibility to establish and maintain appropriate boundaries within patient conversations. CAs should use discretion regarding personal information about themselves and other office personnel. It is important for the CA to maintain a professional relationship with their patients.

CAs must be slow and purposeful with gowning instructions and level of undress. CAs must communicate with patients prior to exposing areas of the skin. It is important to maintain proper draping protocol during the care of a patient. Improper draping techniques are some of the many complaint types submitted to the OBCE.

2.3 Sexual Unprofessional Conduct

The OBCE maintains strict rules around sexual misconduct and boundaries in OAR 811-035-0019 (Code of Ethics-Sexual Unprofessional or Dishonorable Conduct). CAs are not allowed to engage with a patient in a sexual or romantic manner. If a CA is attracted to a patient and/or notices that a patient is attracted to them, the CA should immediately notify their supervising DC to discuss the situation, potential outcomes, and patient care. An exception to this rule includes an already established personal relationship prior to patient care.

3. Communication/Protocol

3.1 Language Barriers

Barriers to treatment may be present for patients who use English as an additional language (EAL). An interpreter who understands specific medical language may be necessary for EAL patients and in communicating vital information for appropriate and safe care. Family members and friends may not be appropriate interpreters due to the sensitivity and importance of accurate medical information shared between provider and patient.

Interpreters are available over the phone and in person and are required by law if the office accepts federal or state funding (Medicare/Medicaid). In Oregon, healthcare interpreters (HCIs) must be credentialed and registered through the Oregon Health Authority (OHA).

3.2 Cultural Competence

Best practice is to mirror the language a patient uses to identify themselves. This includes, but is not limited to race, ethnicity, religion, sexual orientation, gender identity, pronouns, age, disability, marital/relationship status, and veteran status. When addressing a patient and documenting within a chart, a healthcare provider should reflect preferred information.

3.3 Informed Consent

Informed consent is crucial for patient care - enabling patients to fully understand, agree, and participate in their care. Informed consent is a requirement for both CAs and DCs to obtain before engaging in care. It is the CA's responsibility to fully explain any treatment they provide prior to engaging in patient care. A patient has the right to decline any form of treatment which should be acknowledged. The CA should notify their supervising DC.

3.4 HIPAA – Health Insurance Portability and Accountability Act

The Health Insurance Portability and Accountability Act (HIPAA) is a federal law that ensures that patients are always entitled to the privacy of their records. When patients come into the office, they will need to sign a privacy statement or be made aware of the existence of these rules and what they mean. Patients do not need to give specific permission for their chart notes to be shared with their insurer. Permission is required to release medical records to their attorney, another doctor's office, or themselves.

If family members are treated in the same office, it might be tempting to share information. However, unless a release of information is on file, it is important not to share any information. Information about minors may be given to the consenting adult, but it is important to check with anyone being treated who they will share their information with. This may cause a little irritation to the patient if they need to sign a form for the office to be able to share the

information, but it is looking out for the patient's best interest and providing them with protection.

Patient permission to disclose records is not necessary if the information sought is required by law or by subpoena for judicial or administrative proceedings. Offices are not allowed to release protected health information to employers, even in the case of a worker's compensation claim. The employer is only allowed to know what the work restrictions are unless the patient wishes to share further information.

Patients do have the right, with workers' compensation and motor vehicle accident claims, to limit the information these companies receive regarding prior care. Work with the patient to send only the records they want to have sent; for example, limit disclosing any prior care to a specific date range or specific problem area.

3.5 Information Protection

Paper records

- Forms or charts that are on desktops may need to be face down until they are being actively worked on or addressed.
- No other patient charts should be in the treatment room other than the active patient in the room.
- Physical charts will need to be secured and locked up when not in the office and during break times.

Electronic records

- Keep computers physically in a place where patients cannot see other patient information.
- Use screen protectors which make it hard to see the screen from any angle, so only the person looking directly at the computer can see the information.
- Ensure that devices are locked/signed out of when not in use.

4. Duties of a Chiropractic Assistant

4.1 Documentation

Accurate chart notes are an important piece of patient care. Every page must include Patient ID (name, DOB, and one unique ID number that is not their social security number) and Provider ID (if a page is two-sided, both sides must have identifiers) in accordance with OAR 811-015-0005(1)(b) (Consumer Protection-Records). CAs should review patient files for information regarding specific patient care instructions such as patient requests, contraindications, etc.

Subjective, Objective, Assessment/Action, and Plan (SOAP) are a common progress/chart note used within healthcare professions.

- **S-Subjective**
    - Obtain patient description of patient's primary complaint, including type(s) of pain, location(s), progression (better, worse, no change).
    - Review activities of daily living (ADLs) and/or limitations, e.g. basic life tasks, work, social, and physical activities.
- **O-Objective**
    - Chiropractic physician's examination findings of patient's complaints.
    - Vitals (height, weight, blood pressure, pulse, temperature).
- **A-Assessment/Action**
    - Chiropractic physician's diagnosis and assessment resulting from information gathered during subjective and objective sections.
- **P-Plan**
    - Chiropractic physician's detail and modify patient treatment plans, short-term/long-term goal(s), and records additional concerns and referrals.

CA documentation within SOAP:

- **S-Subjective**
    - CAs may be tasked to record patient symptom descriptions.

    - If a new injury or aggravation occurs, document and report to doctor for instructions before continuing.
- **O-Objective**
    - CAs may be tasked to obtain vitals (height, weight, pulse, blood pressure, and/or temperature) and document the findings.
    - CAs may be tasked to perform palpation/visual inspection (bruising, muscle tonicity/tenderness, open wounds, spasms, swelling, etc.) and document findings/observations.
- **A-Assessment/Action**
    - Chiropractic physician section.
- **P-Plan**
    - CAs may be tasked to provide therapies (electrotherapy, hydrotherapy, physiotherapy) and document the findings.
        - Required documentation for therapies:
            - Therapy provided;
            - Location of therapy provided;
            - Time, wattage, and/or intensity of therapy provided (include clock time or number of minutes);
            - Name or initial of healthcare professional who provided therapy.

4.2 Outcome Markers (Forms and Assessments)

Outcome markers are forms used to assess and measure current disabilities, functionalities, activities of daily living (ADLs), risks, effects of treatment and/or the progress of a patient. Some offices may incorporate these forms as part of a patient's intake paperwork and when the patient is being re-evaluated. Some insurance companies may require these forms for pre-authorization of care.

If a patient complains of a new injury or problem, some clinics may utilize these forms to gather a baseline assessment and to monitor the patient's treatment progress. There are online scoring tools for the more complex forms. Become familiar with all office forms and when to use them.

Common forms include:

Bournemouth Back Questionnaire (BBQ) - This form is a brief comprehensive tool that measures outcomes and tracks the progress of a patient's low back pain. This may be used with or instead of the Oswestry form.

Disabilities of Arm, Shoulder, and Hand (DASH) - This form is a questionnaire which helps describe the disability experienced by people with upper extremity disorders and helps monitor changes in symptoms and function over time. There are a full DASH form and a quick DASH form.

Lower Extremity Functional Scale (LEFS) - This form is used to evaluate the functional impairment of patients with various lower extremity musculoskeletal conditions. It helps quantify a patient's ability to perform common physical tasks and monitor their progress over time.

Neck Disability Index (NDI) - This form is used to measure patients' self-reported pain intensity and limitations in performing ADLs for work (lifting, bending, concentration) and leisure (personal care, reading, driving, sleeping). There are 10 questions on the form with 6 choices for every question, producing an NDI score. The higher the score, the higher the disability.

Oswestry Disability Index (ODI) - This is a form designed to assess a subjective percentage score of level of function/disability in ADLs for those with acute or chronic back pain. The ODI consists of 10 questions in which there are 6 choices for the patient to choose. Scores range from 0% (no disability) to 100% (most severe disability).

STarT Back Screening Tool (SBST) - This form helps to identify patients at risk of developing chronic low back pain and helps tailor treatment plans to improve outcomes. Scores range from 0-9 and, depending on the score, patients are categorized as low-risk, medium-risk, and high-risk.

4.3 Billing

It is the clinic's responsibility to inform patients of all costs prior to engaging in care. Some procedures and therapies may not be covered by insurance. The insurance contract will state if the patient can be billed for the non-covered services.

It is important to know therapy billing codes, otherwise known as Current Procedural Terminology (CPT) Codes. Therapies performed are billed either as timed or service-based codes. The exact start/stop clock time or the total time the therapy was provided must be documented for time-based CPT codes.

CAs may be asked to chart the therapies provided, including who performed the therapies, time of therapies, and mark the bill for therapies provided.

CPT codes are reviewed annually and are subject to change.

4.3a Current Procedural Terminology (CPT) Codes-Timed

It is important to recognize that some therapies have timed codes. Timed based codes are 15-minute increments to perform 1-on-1 services.

UNITS	TIME FRAME IN MINUTES
1 unit	8-22 minutes
2 units	23-37 minutes
3 units	38-52 minutes
4 units	53-67 minutes

The Medicare 8-minute rule states 'to bill for timed CPT codes, one must spend at least 8 minutes of face-to-face time with the patient.'

If treatment is under 8 minutes, a code modifier must be used.

Based on the table above and the 8-minute rule, billing for the units must be in the time frames listed. For example, for the billing to be one unit, the procedure must be 8-22 minutes. Preparing and cleaning instruments, tables, supplies, and room time is included in the billing.

Some insurance companies allow billing for reduced units of care which are less than 8 minutes, but typically not billable at 5 minutes or under.

If 2 timed therapies are being provided at the same time, only one of the therapies may be billed for that time period. Typically, the clinic will be allowed to bill for the code that reimburses at the highest relative value unit (RVU), or highest paying rate.

Common time-based CPT code examples:

- Electrical stimulation-attended (97032)
- Iontophoresis (97033)
- Manual therapy techniques (97140)
- Neuromuscular re-education (97112)
- Therapeutic activities (97530)
- Therapeutic exercise (97110)
- Ultrasound (97035)

4.3b Current Procedural Terminology (CPT) Codes-Service

Service-based codes are therapy services that are independent of time and can only be billed once per treatment session, no matter how long the treatment lasts.

Common service-based CPT code examples:

- Diathermy (97024)
- Electrical stimulation-unattended (97014)
- Hot/cold packs (97010)
- Paraffin bath (97018)
- Whirlpool (97022)

5. Anatomy Terms

Chiropractic Assistants will need to be familiar with common anatomy and terms used by both the patient and the doctor.

5.1 Bony Anatomy

The body can be divided into regions.

Regions of the body:

- Head/neck
- Upper limb (extremities)-Shoulders to fingers
- Thorax, back, abdomen
- Pelvis, perineum, ilium
- Lower limb (extremities)-Hips to toes

Regions of the spine:

- Cervical spine (typically 7 vertebrae in neck)
- Thoracic spine (typically 12 vertebrae in upper and mid-back)
- Lumbar spine (typically 5 vertebrae in lower back)
- Sacrum (base of spine)
- Coccyx (tailbone)

There are 12 pairs of ribs connected to the thoracic spine. Ten of the ribs attach to cartilage and to the chest bone (sternum) in the front. The last two sets, ribs 11 and 12, are floating ribs and do not have a cartilage attachment.

Extraspinal regions:

- Jaw
- Anterior rib (Chest)
- Shoulder
- Elbow

- Wrist
- Hand
- Finger
- Anatomical hip (Hip joint)
- Knee
- Ankle
- Foot
- Toe

5.2 Muscular Anatomy

Muscles are controlled by the brain and nerves which attach to those muscles.

Skeletal muscle-Voluntary part of the skeletal muscle system involving bones, tendons, and ligaments and helps to move and support the body.

Smooth muscle-Involuntary muscles of the organs and body systems (respiratory, digestive, reproductive, urinary).

Cardiac muscle-Involuntary muscle of the heart.

5.3 Associated Skeletal Muscular Anatomy

Muscles have tendons at each end which help attach the muscle to the bone.

Joint-Where two bones meet.

Ligament-Tissue that connects bone to bone.

Tendon-Tissue that connects muscle to bone.

6. Terminology

Terminology is based on anatomical position. In this position, a person is standing upright with the lower limbs together or slightly apart, feet flat on the floor and facing forward, upper limbs at the sides with the palms facing forward and thumbs pointing away from the body, and head

and eyes directed straight ahead. In addition, the arms are usually placed slightly apart from the body so that the hands do not touch the sides. The positions of the limbs, particularly the arms, have important implications for directional terms in those appendages.

6.1 Location Terminology

Location	**Description**
Midline	Vertical plane that bisects the body into left and right
Ipsilateral	Same side of the body
Contralateral	Opposite side of the body
Posterior	Referring to the back of an area
Anterior	Referring to the front of an area
Medial	Towards the midline or the center of the body
Lateral	Away from the midline of the body
Superior	Above
Inferior	Below
Proximal	Closer to the midline of the body
Distal	Further from the midline of the body

6.2 Movement Terminology

Spinal joints move in the following directions.

Movement	**Description**
Flexion	Bending forward
Extension	Bending backward
Right Lateral Flexion	Tilting to the right
Left Lateral Flexion	Tilting to the left
Right Rotation	Rotating or twisting to the right
Left Rotation	Rotating or twisting to the left

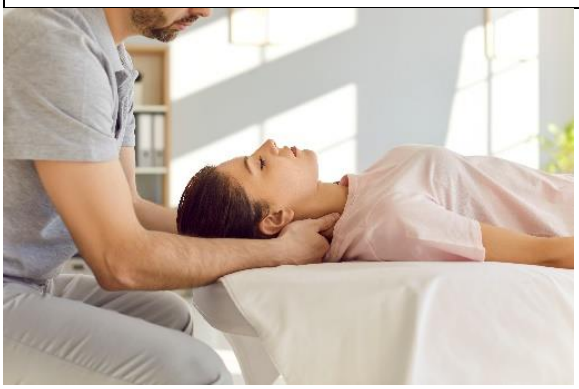
Extraspinal joints have additional movements.

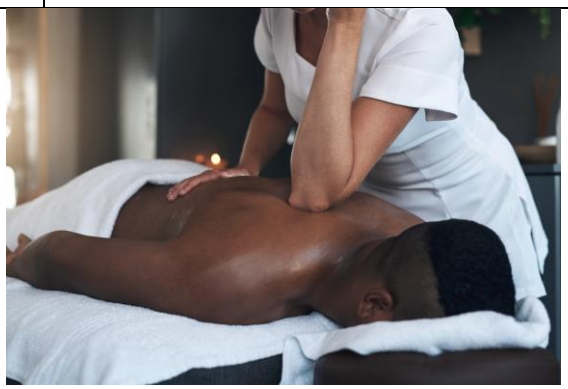
Movement	Description
Flexion	Decreasing the angle between two structures
Extension	Increasing the angle between two structures
Plantarflexion	Flexion of the plantar (underside) part of the foot
Dorsiflexion	Flexion of the dorsum (topside) part of the foot
Inversion	Plantar side of the foot is rotated towards the midline
Eversion	Plantar side of the foot is rotated away from the midline
Adduction	Moving toward the midline
Abduction	Moving away from the midline
Protrusion	Moving straight ahead or forward (tongue, mandible)
Retrusion	Moving backwards (tongue, mandible)
Protraction	Moving forward and laterally simultaneously (scapula)
Retraction	Moving backward and medially simultaneously (scapula)
Depression	Moving downward or inferior
Elevation	Moving upward or superior
Medial (Internal) Rotation	Rotating towards the midline
Lateral (External) Rotation	Rotating away from the midline
Pronation	Medial rotation of the radius, resulting in the palm of the hand facing posteriorly (if in anatomical position or inferiorly (if elbow is flexed)
Supination	Lateral rotation of the radius, resulting in the palm of the hand facing anteriorly (if in anatomical position) or superiorly (if elbow is flexed)
Circumduction	Movement of a limb in a circular motion
Deviation	Movement of the wrist joint towards the radial or ulnar sides (radial deviation, ulnar deviation)
Opposition	Touching the pad of any one finger with the thumb of the same hand
Reposition	Separating the pad of any finger away from the thumb of the same hand

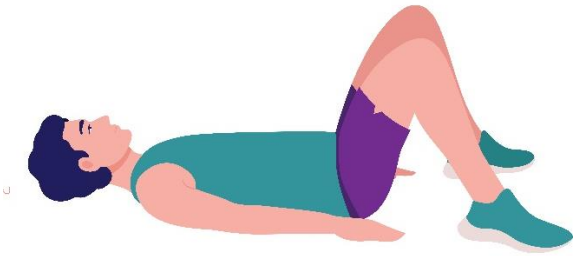
6.3 Positional Terminology

Patients will position themselves on the table based on the doctor's instructions. Be sure to receive clear patient positioning instructions from the supervising chiropractic physician. Below are the basic definitions.

Position	**Description**
Supine	Face up
Prone	Face down
Hook Lying	Face up with knees bent and feet flat
Side Lying	Lying on either side









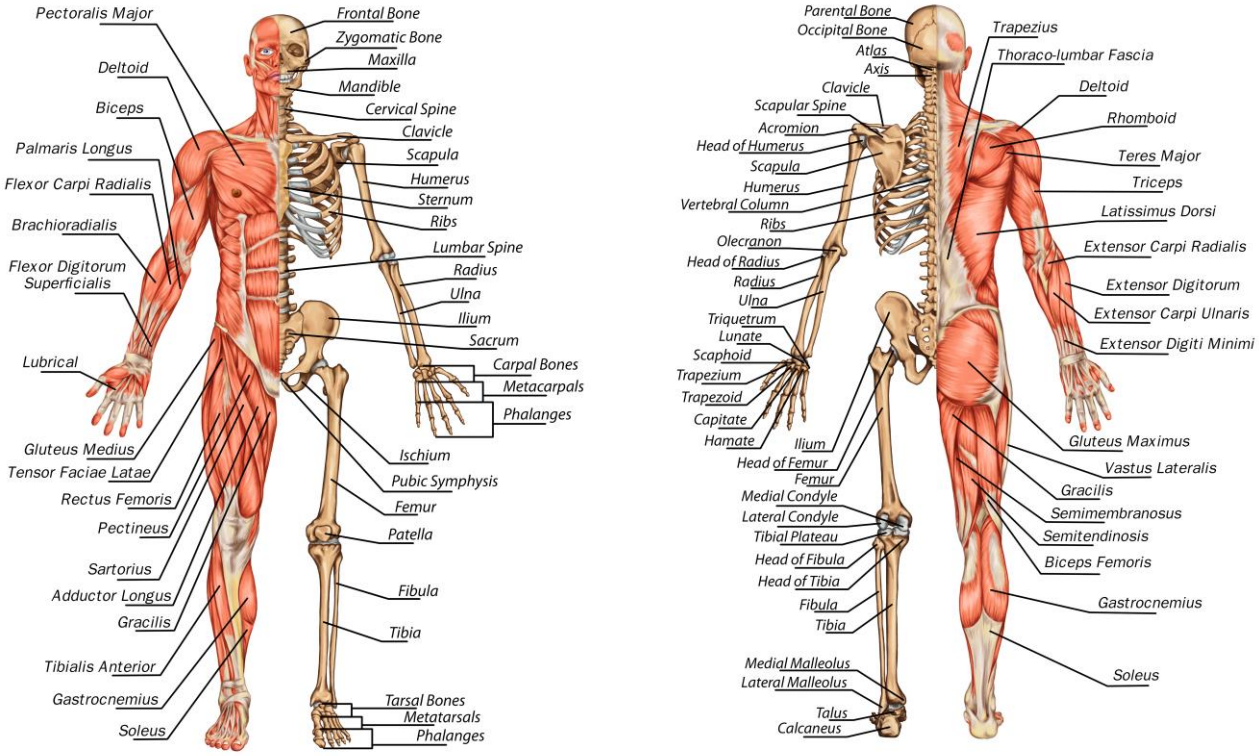
7. Commonly Treated Muscles

The chiropractic assistant's job may be to provide therapies for specific muscle groups. This is not an all-inclusive list.

The following two links go to interactive 3D models of muscle and bone structures:

Interactive Guide to the Muscular System | Innerbody

Zygote Body 3D Anatomy Online Visualizer | Human Anatomy 3D



Erector spinae/Paraspinals - Composed of muscles on either side of the spine from the cervical region to the sacrum.

Fibularis (Peroneals) - Group of three muscles located in the lateral part of the lower leg.

Gastrocnemius - Large superficial muscle located on the lower back part of the leg.

Gluteals (Minimus, Medius, Maximus) - Three muscles that attach to the hip and TFL from the sacrum and ilium

Hamstrings (Hammies) - Three muscles located on the upper back part of the leg.

Levator scapula (Lev scap) - Slender muscle located at the back and side of the neck.

Quadratus lumborum (QL) - Lower back muscle from the lowest rib to the top of the ilium.

Quadriceps (Quads) - Four large muscles located on the upper front part of the leg.

Rotator cuff - Composed of the supraspinatus, infraspinatus, teres minor, and subscapularis muscles of the shoulder. Supports the shoulder.

Scalenes (Anterior, Middle, Posterior) - Set of three muscles on each side of the neck.

Soleus - Flat deep muscle located on the lower back part of the leg.

Sternocleidomastoid (SCM) - Muscle in front of the neck that has two heads. Sternal starts at the sternum and clavicular starts at the clavicle. Both attach at the mastoid process (behind the jaw at the base of the skull).

Suboccipitals - Four paired muscles located on the back of the head at the occipital bone.

Tensor fasciae latae (TFL) - Located in the lateral thigh and is associated with the ilio-tibial (IT) band.

Trapezius (Trap) - Divided into the upper, middle, and lower traps.

8. Common Injuries

8.1 Fractures

A fracture occurs when the bone breaks or cracks. Patients will often confuse the terms; a ‘break’ and a ‘crack’ are both fractures. There are multiple types of fractures. The supervising chiropractic physician may be the one to diagnose the types of fractures the patient has. Fractures can be a combination of the list below:

- **Avulsion Fracture -** When a piece of bone is pulled off the main part of the bone by a sudden movement.
- **Burst Fracture -** Type of compression fracture caused by high loading forces pushing down on vertebrae.
- **Closed or Simple Fracture -** When the broken bone does not pierce the skin.
- **Comminuted Fracture -** When the bone shatters into three or more pieces.
- **Displaced Fracture -** When the bones break and the pieces move out of alignment.
- **Greenstick Fracture -** When bones bend without snapping; occurs in children under 10.
- **Impacted Fracture -** When the broken ends of the bone are driven together.
- **Nondisplaced Fracture -** When the bone breaks but the pieces stay in alignment.
- **Oblique Fracture -** When a break occurs diagonally across the bone.
- **Open or Compound Fracture -** When the broken bone is piercing the skin.
- **Pathological Fracture -** When a fracture is caused by a pathological weakness in the bone (osteoporosis, tumor, etc.)
- **Segmental Fracture -** When the same bone is fractured in two places, leaving a 'floating' segment of bone between the two breaks.
- **Spiral Fracture -** When a fracture spirals around the bone; caused by a twisting force or impact.
- **Stable Fracture -** When the bones line up and the bone is barely out of place.
- **Stress or Hairline Fracture -** When tiny cracks in the bone are caused by repeated stress or weakened bones; can be difficult to diagnose with regular X-rays.
- **Transverse Fracture -** When a break occurs in a straight line across the bone.
- **Vertebral Compression Fracture -** When there is a break or crack in the vertebrae that causes the bone to collapse.

Some offices have on-site radiology equipment to perform X-rays, and some refer out. It is not within a CA's scope of practice or duties to perform X-rays without additional training and certification through the Oregon Board of Medical Imaging.

8.2 Soft Tissue Injuries

There are multiple types of soft tissue injuries. The list below are the more common types of soft tissue injuries that patients may refer to:

- **Contusion –** A bruise
- **Hematoma –** A more severe contusion or a collection (or pooling) of blood outside the blood vessel
- **Strain –** When the muscle or tendon in the body is torn (partially or completely)
- **Sprain –** When the ligament around a joint is torn (partially or completely)

8.3 Stages of Condition/Injury

The stages of injury recovery are crucial for understanding the body's natural healing process.

- **Acute Stage (0-6 weeks) –** A new injury that may be swollen, red, warm to the touch, and very painful.
- **Healing Stage (7-12 weeks) –** An injury that has progressed beyond the acute stage and has begun to repair. The area may still be swollen, red, warm to the touch, and painful.
- **Chronic Stage (over 12 weeks) –** An old injury or ongoing condition that is no longer swollen, red, or warm to the touch. The muscles may be tight (hypertonicity) and/or weak and scar tissue may have formed.

8.4 Types of Pain or Sensation

When documenting a patient's subjective complaint, it is important to note where the pain is, whether it travels anywhere, and include a descriptor of the pain such as numb, sharp, shooting, etc. Patients should be encouraged to use their own words to describe these sensations. A more detailed description of pain may enhance the written treatment plan.

Local pain – Pain located in the area of complaint

Radicular pain – Pain that travels to a different area of the body

Paresthesia – Abnormal sensation such as numbness, tingling, or burning

9. Vitals

Obtaining a patient's blood pressure is part of the duties of a chiropractic assistant. Main points to remember:

1. Sit the patient in a comfortable chair with their back supported.
2. Have the patient put both feet flat on the ground and keep their legs uncrossed.
3. Rest their arm with the cuff on at chest height.
4. Make sure the blood pressure cuff is the appropriate size and is snug but not too tight.
5. Pump up the cuff until no pulse is felt in the wrist.
6. Place the stethoscope under the cuff. Slowly release the cuff pressure and listen for the first pulse (systolic pressure). Note number on cuff pressure reading.
7. Listen for the pulse to stop (diastolic pressure). Note number on cuff pressure reading.
8. Record these findings in the chart. Systolic pressure goes over diastolic pressure.

Notify the doctor of any abnormal blood pressure reading. Normal blood pressure reading is 120/80.

Some causes of artificially high blood pressure readings:

- Being in a physician's office (white coat syndrome)
- Having to use the restroom
- Stress
- Caffeine (if consumed up to 30 minutes prior)
- Smoking/tobacco (if used 30 minutes prior)
- Alcohol (if consumed up to 30 minutes prior)

10. Safety and Sanitation Protocols, and Patient Positioning/Draping

The Occupational Safety and Health Administration (OSHA) and Oregon OSHA have specific protocols for each health care profession. Protocols are dependent on the number of employees, if there is an in-house lab, and if the clinic is multidisciplinary. The Oregon Health

Authority (OHA) may also mandate emergency protocols, as needed. CAs must follow federal, state, and clinic specific sanitation and safety protocols.

Patient positioning and draping is important for the modesty and comfort of the patient.

10.1 Safety Protocols

General safety in a chiropractic office involves cleaning between patients. CAs should use the clinics' and/or manufacturers' recommended care and maintenance instructions.

- Follow clinic policy regarding sick patient protocols e.g. masking, cancellation, and rescheduling.
- During State of Emergencies, the OHA and the OBCE may have additional requirements for health care offices that will be in addition to other standard regulations.
- Follow universal precautions and guidelines from Center for Disease Control (CDC) and OSHA to avoid contact with bodily fluids and for proper disinfection.
- Follow clinic policy regarding allergies and sensitivities to scents.
    - Review patient chart/electronic health records (EHRs) and/or ask patient for any allergy sensitivities.
    - Personal use of scented lotions, soaps, shampoos, etc.
    - Use of aromas, lotions, latex gloves, table cleaner, and laundry detergent.
- Review medical chart/EHRs for contraindicated conditions for soft tissue and other therapies.
    - Follow supervising DCs protocols for contraindicated conditions e.g. surgeries, temperature sensitivities, artificial joints, cancer, skin lesions.

10.2 Sanitation Protocols

Sanitation is important to help keep the patient safe and clean.

- Clean equipment, tables, and machines between patients.
- Sponge pads should be soaked in a germicide solution.
- Clean reusable pads for electrical therapy between patients.

    - Ensure disposable multi-use pads are stored and labeled according to the clinic policy.
- Clean reusable sheets, gowns, shorts, and towels between patients per clinic policy.
    - Dispose of single-use gowns, shorts, and table paper between patients.
- Wash hands using soap and water or use hand sanitizer between patients.
- Clean reusable office items e.g. pens, clipboards, electronic devices, etc. between patients.

10.3 Patient Positioning/Draping

It is important that the patient be comfortable, warm, and that the area being treated is positioned and draped appropriately. The supervising physician should instruct the CA about the best position for the treatment. These are some guidelines:

1. Place patients in a comfortable position.
    a. Supine: Place a large pillow or bolster under the knees and a small pillow under the head and neck. Some treatment tables allow the headpiece to lift. Not all patients will need a pillow under their knees.
    b. Side-lying: Place pillows between the knees and under the head. A pillow supporting the top arm might also help, especially if the patient has shoulder or arm problems.
    c. Prone: Place a small roll or bolster under the ankles, if desired. Some patients may also prefer a pillow supporting their chest or abdomen.
2. Be sure that all body parts are supported in a resting and comfortable position.
3. Drape the patient with blankets or sheets, exposing only the area to be treated. After the treatment has begun, this area can often be covered as well.
    a. Parental consent is required for any treatment to minors (14 years old or younger).
4. When giving gowning or clothing instructions, be very specific on what the patient needs to take off and what to leave on, and how to put the gown on.

5. Instruct patients to use appropriate body mechanics to get on and off the treatment table.
    a. When a patient is getting off the table from a supine position, have them roll to their side, bring their feet off the table, and then have them push up with their hands while keeping their torso straight. The patient should not lift their head up first.
    b. When a patient is getting off the table from a prone position, have them slide a leg off the table, bend their knees, and then push up with their hands.

11. Physiotherapy

Physiotherapy is used to increase the benefit of chiropractic adjustment and to aid in the healing process. Different forms of physiotherapy may be used at different times to reduce pain, speed healing, reduce swelling, relax muscle spasms, or strengthen weak muscles.

Chiropractic physicians choose the physiotherapy modality or modalities that will best meet the needs of their patients.

It is important that the CA follows the doctors' instructions carefully. Any changes in the patient's progress should be shared with the supervising physician. If the CA has any doubts or questions about the instructed treatment, they should ask the supervising physician directly.

Physiotherapy modalities include, but are not limited to:

- Exercises, stretching, rehabilitation, strength training
- Extracorporeal shockwave therapy (ESWT)
- Heat therapy
- Kinesiology taping, bracing, splinting, crutches, walkers, canes
- Laser therapy Class I-IV (low level light therapy (LLLT)/cold laser therapy)
- Massage and Instrument Assisted Soft Tissue Mobilization (IASTM)- (Graston, scraping, gua sha)
- Mechanical traction table
- Phonophoresis

- Whole body vibration

It is generally within the CA scope of practice to use physiotherapy, guided by patient tolerance and chiropractic physician's instruction. Document the treatment within the plan section of SOAP.

Some physiotherapies may require additional training and/or education. It is the responsibility of the CA and their supervising DC to ensure all requirements are met prior to providing care.

11.1 Exercises, Stretching, Rehabilitation, Strength Training

Exercises, stretching, rehabilitation, and strength training are therapies that may be done in the clinic and/or at home.

Indications for Exercises, Stretching, Rehabilitation, Strength Training

- Doctor prescribed

Contraindications for Exercises, Stretching, Rehabilitation, Strength Training

- Recent cardiac or pulmonary conditions
- Significant hypertension (high blood pressure)
- Unstable diabetes (peripheral neuropathy)
- Recent surgery
- Certain musculoskeletal injury
- Certain joint instabilities

11.2 Extracorporeal Shockwave Therapy (ESWT)

ESWT uses high-energy acoustic waves delivered through a hand-held device.

Indications for ESWT

- Shoulder tendinopathy
- Plantar fasciitis
- Golfer's elbow/Tennis elbow

- Pulled hamstring
- Adhesive capsulitis (frozen shoulder)
- Heel spurs
- Jumper's knee
- Achilles tendinopathy
- Connective tissue pain, degeneration, muscle pain, and injuries

Contraindications for ESWT

- Pregnancy
- Malignant tumors or nearby tissues
- Near brain, spine, or lungs
- Any type of bleeding disorder
- Active infection
- Skin abrasions
- Cardiac conditions
- Near epiphyseal plates (growth plates)
- Recent steroid injections

11.3 Heat Therapy

The general therapeutic effects of heat are warmth, pain relief, reduction of muscle spasm, relaxation, and preparing muscles for stretching and exercise.

Caution must be used when applying heat to patients who have a decreased awareness of sensory stimulation or touch. This is common in elderly patients, patients with diabetes, medications, heart conditions, or for those who have had a compromise of their sensory abilities from a surgical procedure.

Some patients do not tolerate heat very well; they may become dizzy, nauseous, or faint. It is possible that some patients' pain levels will be increased with the application of heat. Be cautious by monitoring the patient closely during the initial treatment.

Heat modalities can be divided into two major categories: superficial and deep heat. Superficial heat includes moist heat, paraffin baths, and infrared heat. Deep heat includes shortwave, microwave, and ultrasound diathermy.

11.3a Superficial Heat Therapy

Superficial heat applications generally affect only those tissues close to the skin surface and do not penetrate deeper structures.

When applying superficial heat to a patient, there will be an increase in blood flow to that area. Heat that feels only mildly warm to a CA's touch may be too much heat for the patient. This varies greatly from patient to patient and from area to area. Both the patient's level of sensitivity and their condition must be taken into consideration.

Indications for Superficial Heat

- Chronic muscle spasm, nerve pain, injuries after 24-48 hours
- Chronic arthritis
- Chronic sprains and strains after 24-48 hours
- Skin boils or superficial skin inflammation (cellulitis)

Contraindications for Superficial Heat

- Insensitivity to heat (diabetes, nerve damage, etc.)
- Increased sensitivity to heat (multiple sclerosis, elderly, pediatric patients)
- Poor circulation (heart condition, arteriosclerosis, high blood pressure)
- Tendency to bleed (hemophilia)
- Cancer
- Pregnancy
- Severe swelling of arms, legs, or abdomen
- Tuberculosis
- Medications (consult supervising chiropractic physician)

A. Moist Heat

When utilizing or applying moist heat, be sure the patient has a way of removing the heat or calling for assistance. Depending on the sensitivity of the patient to the heat, more layers or towels can be utilized. Instruct the patient to communicate if the heat is too intense. Hot packs are the most frequent cause of burns in patients who are receiving therapies.

- **Hydrocollator**
    - When heat packs are removed from the water, they should be placed in a commercial hot pack cover with an appropriate number of towels used as a barrier.
    - Place the heat pack on the patient.
    - Once the treatment is complete, return the heat pack to the hydrocollator.



- **Moist Heating Pad**
    - Place the heating pad in an appropriate cover.
    - Turn on the heating pad. CAs should consult the supervising chiropractic physician regarding specific temperatures.
    - Place the heating pad on the patient.
    - Once the treatment is complete, turn off the heating pad, and remove the cover to launder.

B. Paraffin Bath

Paraffin baths are excellent for the treatment of hands, feet, or elbows and are particularly useful for arthritic pain in the extremities.

- Before treating the patient, remove all jewelry from the extremity to be immersed.
- Wash the extremity with hand soap and towel dry.
- Examine the skin for open wounds, unhealed scars, or skin infections. If these conditions are present, paraffin baths should not be used.
- Immerse the extremity being treated in the paraffin bath and remove.
- Wait momentarily for the wax on the extremity to harden slightly and then immerse it again.
- Repeat this process until a thick coat of wax forms on the extremity.
- Immediately after the last immersion, wrap the area in wax paper or plastic wrap and cover with a dry towel or a mitt.
- The patient can be left in this wrap for up to 20-30 minutes.
- Once the treatment is complete, unwrap the extremity, peel off the paraffin, and discard the wax.

Dirt and debris will collect in the paraffin with use. The paraffin should be replaced whenever impurities are noted. When not in use, keep the paraffin bath covered and protected from contamination.



C. Infrared Heat

Infrared heat is a dry superficial heat. There are two types of infrared heat lamps: bulb and coil. Some infrared heat lamps have moveable reflectors that allow flexibility in directing the heat.

- Preheat the infrared lamp for five minutes.
- Position and drape the patient to appropriately expose the treatment area.
- Inspect the treatment area and remove all metal.
- If directing the heat to the face, place wet cotton cloths over the patients' eyes to prevent burning of this sensitive tissue.
- Place the lamp 18-36" from the area to be treated.
- Inform the patient that they should feel a mild sense of warmth. If the patient feels too warm or their skin is too warm, move the lamp farther away.
- Treat the patient for 20-30 minutes.

11.3b Deep Heat Therapy

Deep heat applications penetrate 3-5 centimeters below the skin. These modalities cause deep heat and include shortwave diathermy, microwave diathermy, and ultrasound.

Indications for Deep Heat

- Muscle sprain
- Ligament strain
- Tendonitis
- Bursitis
- Arthritis
- Scar tissue and adhesions (ultrasound only)
- Swelling (ultrasound only)
- Radiculitis or nerve irritation (ultrasound only)
- Wound healing (diathermy only)
- Pneumonia (diathermy only)

Contraindications for Deep Heat

- Cancer
- Infections
- Pregnancy
- Tuberculosis
- Hemophilia, blood clots, poor blood supply, hemorrhage, or other bleeding disorders
- Pacemaker or any other metal implants such as total joint replacements, pins, staples, plates, screws, a diaphragm, or an IUD with metal
- Through the heart, brain, eyes, front of neck, reproductive organs, or across the spine
- Fracture or over the growth centers (the ends of the long bones) in a growing child
- Within 20 feet of an operating interferential machine (diathermy only)
- Severe osteoporosis (diathermy only)

A. Shortwave Diathermy

Shortwave diathermy is used to apply high-frequency electromagnetic energy to produce heat in the body's tissues.

The electrodes are placed on each side of the treatment area, separated from the skin by a dry insulating material.

B. Microwave Diathermy

Microwave diathermy is a form of electromagnetic radiation and does not penetrate as deep as shortwave diathermy.

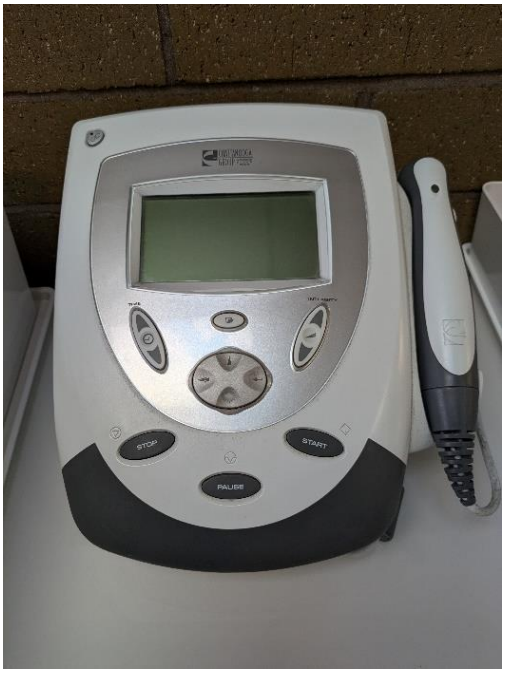
Place the diathermy head approximately 1-8" from the skin with the flat part of the head parallel with the skin. The farther the head is from the skin, the larger the treatment area will be, and the higher the intensity needed.

C. Ultrasound

Ultrasound can be pulsed or continuous. Pulsed ultrasound is useful for acute conditions or for small areas of treatment because it does not build up as much heat as continuous ultrasound.

The use of special conducting gel, lotion, or water is necessary because ultrasound does not travel well through air. If the ultrasound is turned on without the sound head being against gel, lotion, or water, the heat builds up inside the sound head and may burn out the crystal. This is especially important around use over a bony prominence due to the possibility of periosteal burns. It is important to keep the sound head against the patient's skin with gel or lotion or underwater whenever the machine is on.

1. Position and drape the patient to appropriately expose the treatment area.
2. Inspect the treatment area and remove all metal.
3. Apply conductive gel or place extremity into water.
4. Place sound head on gel or in water.
5. Turn on desired intensity. Remember to keep the ultrasound head in continuous contact.
6. Once treatment has begun, keep the ultrasound head moving continuously to avoid burning the patient.
7. Once treatment ends, pause the machine, wipe off the gel, and dry the area.







11.4 Taping and Supportive Durable Medical Equipment (DME)

Taping is a form of physiotherapy. The supervising DC will instruct on how to perform this duty. Supportive DME includes fitting of braces, walkers, canes, and crutches.

Taping, also referred to as 'Kinesio taping' or 'K-taping', utilizes elastic, breathable, adhesive tape on the skin.

Indications for Taping

- Support and stabilize joints and muscles
- Reduce pain
- Aid in lymphatic drainage
- Improve athletic performance

Contraindications for Taping

- Severe allergic reaction/sensitive skin
- Open wounds/infections
- Deep vein thrombosis
- Uncontrolled diabetes
- Active cancer
- Circulatory disorders
- Kidney disease

Braces are generally used to allow resting and healing to muscles, joints, ligaments, and other tissues. Braces come in a variety of materials and styles; some offer little support while others can be very restrictive and supportive.

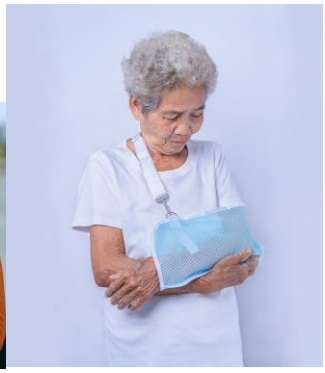
The supervising DC may ask CAs to fit a brace or periodically check the fit of a brace. The supervising DC will inform the CA and the patient which brace to use, when to use the brace, how it should fit, and how long it should be worn. The supervising DC should instruct on the special fitting needs of each brace.

The following are the more common braces:

- Ankle brace
- Back brace
- Clavicle brace
- Elbow strap
- Knee brace
- Shoulder sling
- Soft cervical collar
- Wrist splint







Some basic principles to remember when fitting a brace are:

- The brace should hold the part in a neutral or resting position without any twisting or bending of the body part.

- The brace should fit as snugly as possible without pinching the skin or cutting off circulation.
    - If the skin turns white or the patient complains of numbness or tingling, the brace may be too tight and should be loosened.

Indications for Bracing

- Musculoskeletal conditions
- Injury recovery
- Posture correction
- Post-surgery recovery

Contraindications for Bracing

- Open wounds
- Increase in discomfort or pain

Crutches are used to lean on or support patients who have difficulty walking because of foot or leg injury.

Walkers can provide added stability for patients with mobility limitations to assist in walking.

Canes help patients maintain balance and support while walking but are not to be used as a weight bearing device.







11.5 Laser Therapy Class I-IV (Low Level Light Therapy, Cold Laser Therapy)

Laser therapy utilizes light in a focused beam to reduce pain and inflammation by stimulating the metabolic process at the cellular level. Class IV lasers may require additional specialized training.

Indications for Laser Therapy

- Inflammation
- Pain management
- Wound healing
- Musculoskeletal conditions

Contraindications for Laser Therapy

- Pregnancy, breast feeding
- Unstable diabetes
- Certain herbs (St. John's Wort, Calendula)
- Cancer
- Seizure disorders
- Sunburn
- Sun-sensitizing drugs

11.6 Massage and Instrument Assisted Soft Tissue Mobilization (IASTM) (Graston, Scraping, Gua Sha)

Massage and IASTM are both forms of manual therapy.

Massage is the rubbing or kneading of the body's soft tissues. Massage techniques are commonly applied with fingers, hands, elbows, knees, forearms, feet, or a device.

Indications for Massage/Manual Therapy

- Muscle tension and pain
- Soft tissue restrictions

- Improved circulation
- Headaches and migraines

Contraindications for Massage/Manual Therapy

- Blood vessel disorder
- Deep vein thrombosis
- Fever
- Acute inflammation

IASTM is a technique that uses instruments to manipulate soft tissues to stimulate healing. Gua sha and scraping are forms of IASTM. Materials for IASTM can include stainless steel, titanium, plastic, buffalo horn, stone, quartz, and jade.

Indications for IASTM

- Soft tissue injuries
- Chronic pain conditions
- Post-surgical conditions
- Movement restrictions
- Sports injuries

Contraindications for IASTM

- Open wounds
- Uncontrolled hypertension
- Thrombophlebitis
- Myositis ossificans
- Unhealed fractures
- Hematoma and hemophilia

11.7 Mechanical Traction Table

A mechanical traction table is a device that gently stretches the spine. Mechanical traction tables come in a variety of shapes and sizes and may include additional features such as heat, vibration, or electrical stimulation.

Indications for Mechanical Traction Table

- Low back pain
- Spinal stenosis
- Disc protrusions or spinal herniations
- Muscle spasm
- Post-surgical rehabilitation

Contraindications for Mechanical Traction Table

- Osteoporosis/osteopenia
- Recent spinal surgery
- Certain types of arthritis
- Infections or tumors in the spine

11.8 Phonophoresis

Phonophoresis is an ultrasound therapy used to push topical medications into the skin.

Indications for Phonophoresis

- Pain
- Inflammation
- Muscles, ligaments, and joints

Contraindications for Phonophoresis

- Pregnancy
- Active infection
- Neuropathy

- Malignant tumors
- Open wounds
- Deep vein thrombosis (DVT)
- Near epiphyseal plates (growth plates)
- Pacemakers and implants
- Skin sensitivity
- Thermal burns

11.9 Whole Body Vibration

Whole body vibration refers to the mechanical oscillation transmitted to the body through a vibrating platform.

Indications for Whole Body Vibration

- Muscle strength and performance
- Improve circulation
- Weight loss and fat reduction
- Reduce muscle soreness

Contraindications for Whole Body Vibration

- Recent surgery
- Cardiovascular condition
- Pregnancy
- Severe diabetes
- Epilepsy or seizure disorder
- Acute thrombosis
- Hernia
- Severe migraine
- Kidney or bladder stones

12. Hydrotherapy

Hydrotherapy is the use of water to treat a variety of symptoms. It may be called cold water therapy, pool therapy, or aquatic therapy.

Hydrotherapy modalities include:

- Contrast bath/therapy
- Hot/cold packs
- Ice bath/whirlpool
- Ice massage
- Moist heat therapy
- Water massage bed

In general, hydrotherapies have similar indications and contraindications.

Indications for Hydrotherapy

- Pain (muscular, menstrual)
- Stiffness
- Bruising
- Swelling
- Burns
- Osteoarthritis
- Fibromyalgia
- Neuropathy
- Ankylosing Spondylitis (AS)
- Cerebral palsy
- Multiple Sclerosis (MS)
- Parkinson’s disease

Contraindications for Hydrotherapy

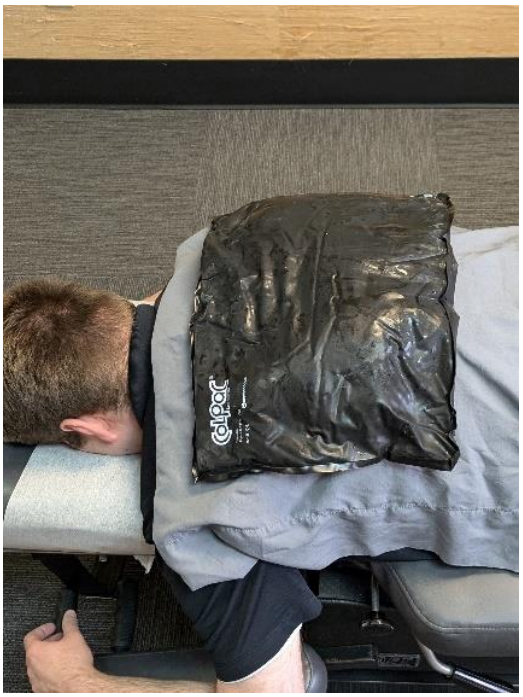
- Infectious disease
- Severe cardiac and respiratory conditions
- Open wounds or skin conditions
- Pregnancy complications
- Heat/cold sensitivity
- Elderly and young children
- Impaired circulation

12.1 Contrast Bath/Therapy

Contrast bath/therapy involves alternating between hot and cold-water immersion.

12.2 Hot/Cold Packs

Hot/cold packs typically consist of a gel or liquid-filled pouch that can be heated or chilled with a maximum application time of 20 minutes.



12.3 Ice Bath/Whirlpool

An ice bath or whirlpool involves immersing the body in hot/cold water.



12.4 Ice Massage

Ice massage utilizes cold temperatures and massage to promote healing.

12.5 Moist Heat Therapy

Moist heat therapy applies heat to the body using a moist medium - such as a hydrocollator pack, warm damp towel, moist heating pad, or hot compress. The moisture allows the heat to penetrate deeper into tissues than dry heat alone. Use 3-layers of towel as a medium between the heat pack and skin.

12.6 Water Massage Bed

Water massage bed or dry hydrotherapy massage systems, use heated jets of water to target specific areas of the body, without the water touching the body.

13. Electrotherapy

Electrotherapy, sometimes referred to as e-stim, is a therapeutic technique using electrical signals to stimulate nerves and muscles.



Electrotherapy modalities include:

- High voltage pulse galvanic current
- Interferential current
- Iontophoresis
- Micro-current
- Russian e-stimulation
- Transcutaneous electrical nerve stimulation/low voltage (TENS)

Indications for Electrotherapy

- Musculoskeletal conditions
- Neck and back pain
- Shoulder disorders
- Acute and chronic pain
- Muscle spasms
- Muscle atrophy
- Blood circulation

- Muscle rehabilitation/reeducation
- Maintain/increase range of motion
- Wound healing
- Drug delivery (iontophoresis)

Contraindications for Electrotherapy

- Medical implants
- Cardiovascular diseases
- Pregnancy
- Deep vein thrombosis (DVT)
- Open wound

13.1 High Voltage Pulse Galvanic Current (HVPGC)

HVPGC is a type of electrical current that uses high voltage with low frequency and low pulse duration.

13.2 Interferential Current

Interferential current utilizes two medium-frequency currents passing through the tissues simultaneously that are set-up so the paths cross and interfere with each other.

13.3 Iontophoresis

Iontophoresis is a procedure using mild electrical currents to deliver medication or treat conditions through the skin.

13.4 Micro-Current

Micro-Current is a device utilizing less than 1 mA of electrical current.

13.5 Russian E-Stimulation

Russian E-Stim is a neuromuscular electrical stimulation using medium-frequency alternating current. This enhances muscle strength and recovery.

13.6 Transcutaneous Electrical Nerve Stimulation/Low Voltage (TENS)

Transcutaneous electrical nerve stimulation (TENS) is a small, portable device that produces a mild electrical current, stimulating the nerves, typically used for pain relief.

