DIVISION OF WORKERS' COMPENSATION

COLORADO DIVISION OF WORKERS' COMPENSATION: REFERENCE GUIDE FOR CLAIMS ADJUSTERS

CERVICAL SPINE INJURY

Adopted: February 3, 2014; Effective March 31, 2014

This Reference Guide links directly to and incorporates the principals and tenets set forth in the Cervical Spine Injury Medical Treatment Guidelines.

The Guide is intended for use by claims adjusters, recognizing that their role is strategically central to the timely review, authorization and payment of medical benefits. The format is designed to provide access to specific information on medical procedures: recommendations for and against; indications for appropriate use, time to produce an effect, and requirements for prior authorization. The purpose is to ensure compliance, provide clarity and encourage dialog between provider and payer for the most timely and effective care of injured workers in Colorado.

Instructions on Use

1. **To access the General Sections of Low Back Pain Treatment Guideline Reference Guide, click on the desired links on the Table of Contents on the next page.**

2. **Go to the Index to find categories such as: "Prior Authorization," "Time Parameters," and other categories specific to managing the Workers' Compensation Claim.**

3. **To go to either the Table of Contents or the Index, select the one of the links at the top of the page.**

4. **The adjuster should review the General Guideline Principles (The General Principals may vary slightly from Guideline to Guideline). The full guidelines are available online at www.colorado.gov/cdle/medical-treatment-guidelines**

   The General Guideline Principles for Low Back Pain are as follows:

   GENERAL GUIDELINE PRINCIPLES
   1. APPLICATION OF GUIDELINES
   2. EDUCATION
   3. INFORMED DECISION MAKING
   4. TREATMENT PARAMATER DURATION
   5. ACTIVE INTERVENTIONS
   6. ACTIVE THERAPEUTIC EXERCISE PROGRAM
   7. POSITIVE PATIENT
   8. RE-EVALUATION OF TREATMENT EVERY THREE TO FOUR WEEKS
   9. SURGICAL INTERVENTIONS
   10. SIX-MONTH TIME FRAME
   11. RETURN TO WORK
   12. DELAYED RECOVERY
   13. GUIDELINE RECOMMENDATIONS AND INCLUSION OF MEDICAL EVIDENCE
   14. CARE BEYOND MAXIMUM MEDICAL IMPROVEMENT (MMI)

5. **Absent a final order to the otherwise, payment must be made for treatment consistent with the Guidelines on admitted injuries.**

6. **Effective January 1, 2016, Rule 16-10 (B) requires that payers contesting a request for prior authorization must have the request reviewed by a**

Level I or Level II accredited, Colorado licensed physician or chiropractor.

7. **There is an index near the end of this document which contains hyperlinks to the body of the Adjuster's Guide. These hyperlinks are designed specifically for the adjuster to locate diagnostic and therapeutic interventions, recommendations, prior authorization requirements, time parameters, and other important notes.**

As a claims adjuster, you are often the first point of contact when a medical provider requests an intervention that lies outside of the guidelines. There are a several considerations to keep in mind.

a. **First, determine whether the requested service requires prior authorization, as time requirements are very stringent. The prior authorization procedure can be found under Rule 16, 16-9, 16-10, and 16-11.**
b. **In considering payment of the procedure the first question that should be posed to the physician is whether the requested treatment is expected to improve function, such as return-to-work, or activities of daily living? The reader must keep in mind two of the Division's Guidelines Principles: Positive Patient Response; and Surgical Interventions (if surgery is under consideration).**

It is appropriate for the director or an administrative law judge to consider the medical treatment guidelines adopted under C.R.S. 8-42-101(3), in determining whether certain medical treatment is reasonable, necessary, and related to an industrial injury or occupational disease. However, the director or administrative law judge is not required to utilize the medical treatment guidelines as the sole basis for such determinations. (See C.R.S. 8-43-201 (2))

If you would like to give feedback on this guide, please visit https://www.surveymonkey.com/r/G8NKC53

Table of Contents

INITIAL DIAGNOSTIC PROCEDURES

Imaging is ***Not Recommended*** for at least 6 weeks after the initial injury unless it is necessary prior to a spinal injection or to rule out other acute diagnoses such as fracture, occult cancer, infection, upper extremity weakness, or signs of myelopathy. The Division recommends the Initial Diagnostic Procedures be considered, at least initially the responsibility of the Workers' Compensation Carrier. In other words, it is recommended that the insurer pay the cost of the following diagnostic procedures, where indicated, for the purpose of evaluating compensability.

History of Present Injury: Taken in temporal proximity to the time of injury.

Past History: Includes past medical, review of systems, smoking history, psychosocial history, vocational/recreational pursuits.

Physical Examination: Should include accepted tests and exam techniques applicable to the area being examined. May also include spinal cord evaluation if clinical presentation suggests a possible severe injury. A full neurological examination for possible spinal cord injury may be indicated.

Spinal cord lesions should be classified according to the American Spine Injury Association (ASIA) impairment scale. A worksheet detailing dermatomes and the muscle testing required is available from ASIA.

Relationship to Work and Other Activity: This includes a statement of the probability that the illness or injury is medically work-related.

IMAGING: The following suggested indications are:

- History of significant trauma, especially high impact motor vehicle accident, rollover, ejection, bicycle, or recreational vehicle collision or fall from height greater than one meter;
- Age over 55 years;
- Suspicion of fracture, dislocation, instability, or objective evidence of neurologic deficit - Quebec Classification Grades III and IV;
- Unexplained or persistent cervical pain for at least 6 weeks or pain that is worse with rest;
- Localized pain, fever, constitutional symptoms, or history or exam suggestive of intravenous drug abuse, prolonged steroid use, or osteomyelitis;
- Suspected lesion in the cervical spine due to tumor or systemic illness, such as a rheumatic/rheumatoid disorder or endocrinopathy;
- Past medical history suggestive of pre-existing spinal disease, osteoporosis, spinal instrumentation, or cancer;
- Optionally, (radiographic imaging) prior to any manipulative treatment.

LABORATORY TESTING:

- Blood-glucose level, which can be used to detect evidence of Type 1 or Type 2 diabetes.
- Erythrocyte sedimentation rate (ESR), rheumatoid factor (RF), anti-nuclear antigen (ANA), human leukocyte antigen (HLA), and C-reactive protein (CRP), which can be used to detect evidence of a rheumatologic disorder, infection, or connective tissue disorder;
- Serum calcium, phosphorous, uric acid, alkaline phosphatase, and acid phosphatase, which can detect metabolic bone disease; and
- Liver and kidney function, which may be performed for prolonged anti-inflammatory use, or with use of other medications requiring monitoring.

FOLLOW-UP DIAGNOSTIC IMAGING AND TESTING PROCEDURES

Imaging Studies: 6 to 8 weeks of treatment is frequently an adequate period of time before an imaging procedure is in order, but the clinician should use judgment in this regard.

Magnetic Resonance Imaging (MRI): Useful in suspected nerve root compression, in myelopathy to evaluate the spinal cord and/or masses, infections such as epidural abscesses or disc space infection, bone marrow involvement by metastatic disease, and/or suspected disc herniation or cord contusion following severe neck injury. MRI scanners compatible with pacemakers are now available. MRI should be performed immediately if there is a question of infection or metastatic disease with cord compression.

Specialized MRI Scans:

MRI with 3-dimensional Reconstruction: May be used as a pre-surgical diagnostic procedure to obtain accurate information of characteristics, location, and spatial relationships among soft tissue and bony structures.

Dynamic-kinetic MRI of the Spine: ***Not Recommended.***

Contrast MRI: Usually required for those with prior cervical surgery, possible infection, possible malignancy, or tumor.

Computed Axial Tomography (CT): For suspected cervical spine fracture in a patient with negative plain films, or to further delineate a cervical fracture. CT scanning is also quite useful for congenital anomalies at the skull base and at the C1-2 levels.

Myelography: May be used as a pre-surgical diagnostic procedure to obtain accurate information of characteristics, location, and spatial relationships among soft tissue and bony structures.

Indications include:

- when CT and MRI are unavailable;
- when CT or MRI is contraindicated;
- and when other tests prove non-diagnostic in the surgical candidate.

CT Myelogram:

- multiple prior operations;
- tumorous conditions;
- or those that cannot have MRI due to implants, etc.

Lineal Tomography: For evaluation of bone surfaces, bony fusion, or pseudarthrosis.

Bone Scan (Radioisotope Bone Scanning): May be useful in diagnosing metastatic/primary bone tumors, occult or stress fractures, osteomyelitis, infection, and other inflammatory les ions, but it cannot distinguish between these conditions.

Other Radioisotope Scanning: Used to diagnose lesions seen on other diagnostic imaging studies.

Dynamic [Digital] Fluoroscopy: May be used in the acute trauma setting to evaluate the cervical spine. Requires prior authorization in a post-acute setting.

Electrodiagnostic Testing:

Electromyography (EMG) and Nerve Conduction Studies (NCS): May be useful for patients with suspected neural involvement.

Portable Automated Electrodiagnostic Device (also known as Surface EMG): ***Not Recommended.***

Somatosensory Evoked Potential (SSEP): Useful for the evaluation of myelopathy***. Not Recommended*** to identify radiculopathy.

Current Perception Threshold Evaluation (CPT): May be useful as a screening tool, but its diagnostic efficacy has not been determined. Therefore, CPT is ***Not Recommended*** as a diagnostic tool.

Injections – Diagnostic:

General Notes for all Diagnostic Injections

Diagnostic injections may be useful in localizing the source of pain.

- Since these procedures are invasive, less invasive or non-invasive procedures should be considered first. All patients who undergo spinal diagnostic injections should have had an MRI or CT scan at some point during treatment;
- Informed decision making should be documented;
- Special Requirements for Spinal Diagnostic Injections: Since multi-planar fluoroscopy during procedures is required to document technique and needle placement, an experienced physician should perform procedures;
- There should be pain relief of approximately 80% demonstrated by pre and post Visual Analog Scale (VAS) scores. Documentation of functional changes is required. Patient-completed pain diary must be part of the medical record.

Indications for Epidural Spinal Injections:

Needle Placement: Multi-planar fluoroscopic imaging is required for all epidural steroid injections. Injection of contrast dye to assure correct needle placement is required to verify the flow of medication. Permanent images are required to verify needle placement.

1. When a patient with radicular findings due to herniated disc, meets all of the indications for surgery at approximately 6-8 weeks post active therapy, one epidural may be attempted at the patient's discretion.

2. For rare, acute ruptured (herniated) disc with clear objective radiculopathy if, after one to two weeks of initial oral analgesic and conservative treatment; the patient:

   - has continued pain interfering with most activities of daily living (ADL) functions; **and**
   - is unable to tolerate the required movements to participate in therapy; **and**
   - has pain greater in the arm than in the neck, generally of 7 or greater on a VAS scale of 10; **and**
   - has pain following a correlated radicular dermatome; **and**
   - there is a herniated disc on the MRI at the level of subjective and objective findings; **and**
   - has either:

     - dural tension, Spurlings' Sign, traction/distraction, or upper limb tension test (ULTT); **and/or**
     - one of the following documented, reproducible findings, which correlates with the suspected nerve root impingement:

       - ✓ Decreased reflexes, **or**
       - ✓ Radicular sensation deficits, **or**
       - ✓ Motor weakness on testing.

3. Spinal Stenosis Patients:

   Patients with radicular findings: When the patient has documented spinal stenosis, has completed 6-8 weeks of active therapy, has persistent radicular findings and difficulty with some activities, thus meeting criteria for surgical intervention, the patient may have one diagnostic injection. Because stenosis is not likely to change anatomically, unlike herniated discs which recede overtime, and due to the success rate of surgery for this condition in most cases, early surgical consultation is encouraged whenever the patient remains symptomatic after conservative therapy. If the patient does not wish to have a surgical intervention two additional

injections may be provided if the original diagnostic intervention was successful per guideline standards.

Patients with claudication: The patient has documented spinal stenosis, has completed 6-8 weeks of active therapy, has persistent claudication symptoms and difficulty with some activities, thus meeting criteria for surgical intervention. The patient may have one diagnostic injection. Patients who have any objective neurologic findings should proceed as the above patient with radicular findings for whom an early surgical consultation is recommended. Those who have mild claudication, or moderate or severe claudication and who do not desire surgery, may continue to receive up to 2 additional injections if the original diagnostic intervention was successful per guideline standards.

- ❖ Time to produce effect: Local anesthetic, less than 30 minutes.

Medial Branch Blocks:

A separate comparative block on a different date should be performed to confirm the level of involvement.

The success rate of radiofrequency neurotomy is likely to decrease with lesser percentages of pain relief from a branch block.

Needle Placement: Multi-planar fluoroscopic imaging is required for all medial branch blocks injections. Injection of contrast dye to assure correct needle placement is required to verify the flow of medication. Permanent images are required to verify needle placement.

Indications: Individuals should have met all of the following indications:

- Physical exam findings consistent with facet origin pain, **and**
- At least 3 months of pain, unresponsive to 6-8 weeks of conservative therapies, including manual therapy, **and**
- A psychosocial screening (e.g., thorough psychosocial history, screening questionnaire) with treatment as appropriate.

- ❖ Frequency and Maximum Duration: May be repeated once for comparative blocks. Limited to 2 anatomic facet levels or 3 medial branch levels.

Zygapophyseal (Facet) Blocks:

Needle Placement: Injection of contrast dye to assure correct needle placement is required to verify the flow of medication. Permanent images are required to verify needle placement.

Indications: Patients with pain 1) suspected to be facet in origin based on exam findings and 2) affecting activity; OR patients who have refused a rhizotomy and appear clinically to have facet pain; OR patients who have facet findings with a thoracic component. Due to the lack of proof that these injections improve outcome, prior authorization is required. All injections should be preceded by an MRI or a CT scan.

- Time to produce effect: Up to 30 minutes for local anesthetic.

- Frequency and Maximum Duration: Once per suspected level, limited to two levels unilaterally or bilaterally. If radiofrequency neurotomy is being considered, refer to the medial branch block section of this document. It is recommended that morning cortisol levels are checked prior to the 3rd or 4th steroid injection.

Personality/Psychological/Psychosocial Evaluation: Formal psychological or psychosocial evaluation should be performed on patients not making expected progress within 6 to 12 weeks following injury.

- Frequency: One-time visit for evaluation. If psychometric testing is indicated as a portion of the initial evaluation, time for such testing should not exceed an additional two hours of professional time.

Provocation Discography:

Not Recommended. However, it may be performed in specific cases when a single level fusion or artificial disc replacement is being considered for a patient with isolated one level axial pain who meets all of the other requirements for the procedure.

Thermography: For diagnosis of complex regional pain disorders. Refer to the Division's Complex Regional Pain Syndrome/Reflex Sympathetic Dystrophy Medical Treatment Guidelines.

Computer-Enhanced Evaluations: Determining validity of effort, effectiveness of treatment, and demonstrated motivation. These evaluations should not be used alone to determine return-to-work restrictions.

- Frequency: One time for evaluation, one for mid-treatment assessment, and one at final evaluation.

Functional Capacity Evaluation (FCE):

- Can be used: (1) initially to determine baseline status; and (2) for case closure when patient is unable to return to the pre-injury position and further information is desired to determine permanent work restrictions. Prior authorization is required for FCEs performed during treatment.

Jobsite Evaluation: Job descriptions provided by the employer are helpful but should not be used as a substitute for direct observation.

Requests for a jobsite evaluation should describe the expected goals for the evaluation. Goals may include, but are not limited to the following:

- Frequency: One time with 1-2 additional visits as needed for follow-up per jobsite.

Vocational Assessment: If the injury is such that the practitioner can easily determine that the worker will be unable to return to his/her previous occupation, then vocational assessment at that time may aid in the overall medical management and rehabilitation of the patient.

- Frequency: One time with additional visits as needed for follow-up.

Work Tolerance Screening: A determination of an individual's tolerance for performing a specific job based on a job activity or task and may be used when a full FCE is not indicated.

- Frequency: One time for initial screen. May monitor improvements in strength every 3 to 4 weeks up to a total of 6 visits.

THERAPEUTIC PROCEDURES – NON-OPERATIVE

For Physical and Occupational Therapy, please see Specific Intervention.

Acupuncture: Acupuncture must be performed by credentialed practitioners (L.A.c., R.A.c, or Dipl. Ac.), with experience in evaluation and treatment of chronic pain patients, in accordance with state and other applicable regulations and within their professional scope of practice and licensure.

Indications: [for acupuncture and acupuncture with electrical stimulation]

Joint pain, joint stiffness, soft tissue pain and inflammation, paresthesia, post-surgical pain relief, muscle spasm, and scar tissue pain.

Acupuncture with Electrical Stimulation: Indicated to treat chronic pain conditions, radiating pain along a nerve pathway, muscle spasm, inflammation, scar tissue pain, and pain located in multiple sites.

Other Acupuncture Modalities: Acupuncture treatment is based on individual patient needs and therefore treatment may include a combination of procedures to enhance treatment effect. Other procedures may include the use of heat, soft tissue manipulation/massage, and exercise.

Total Time Frames For Acupuncture and Acupuncture with Electrical Stimulation: Time frames are not meant to be applied to each section separately. The time frames are to be applied to all acupuncture treatments regardless of the type or combination of therapies being provided.

- Time to Produce Effect: 3 to 6 treatments.
- Frequency: 1 to 3 times per week.
- Optimum Duration: 1 to 2 months.
- Maximum Duration: 15 treatments.

Treatment beyond 15 treatments must be documented with respect to need and ability to facilitate positive symptomatic and functional gains.

Biofeedback: A form of behavioral medicine that helps patients learn self-awareness and self-regulation skills for the purpose of gaining greater control of their physiology, such as muscle activity, brain waves, and measures of autonomic nervous system activity. Other applications include training to improve self-management of pain, anxiety, panic, anger or emotional distress, opioid withdrawal, insomnia/sleep disturbance, and other central and autonomic nervous system imbalances.

If the patient has not been previously evaluated, a psychological evaluation should be performed prior to beginning biofeedback treatment for chronic pain.

Psychologists or psychiatrists, who provide psycho-physiological therapy which integrates biofeedback with psychotherapy, should be either Biofeedback Certification International Alliance (BCIA) certified or practicing within the scope of their training. All non-licensed health care providers of biofeedback for chronic pain patients must be BCIA certified and shall have their biofeedback treatment plan approved by the authorized treating psychologist, psychiatrist, or physician. Biofeedback treatment must be done in conjunction with the patient's psychosocial intervention.

EMG/Electromyogram (EMG): Used for self-management of pain and stress reactions involving muscle tension.

Skin Temperature: For self-management of pain and stress reactions, especially vascular headaches.

Respiration Feedback (RFB): Used for self-management of pain and stress reactions via breathing control.

Respiratory Sinus Arrhythmia (RSA): for self-management of pain and stress reactions via synchronous control of heart rate and respiration. RSA is a benign phenomenon which consists of a small rise in heart rate during inhalation, and a corresponding decrease during exhalation.

Heart Rate Variability (HRV): Used for self-management of stress via managing cardiac reactivity.

Electrodermal Response (EDR): Used for self-management of stress involving palmar sweating or galvanic skin response.

Electroencephalograph (EEG, QEEG): Used for self-management of various psychological states by controlling brainwaves.

Time parameters for Biofeedback Sessions:

- Time to Produce Effect: 3 to 4 sessions.
- Frequency: 1 to 2 times per week.
- Optimum Duration: 6 to 8 sessions.
- Maximum Duration: 10 to 12 sessions. Treatment beyond 12 sessions must be documented with respect need, expectation, and ability to facilitate positive symptomatic and functional gains.

Specific Therapeutic Injections

For all therapeutic injections:

- Informed decision making should be documented.
- Morning cortisol measurements may be ordered prior to repeat steroid injections or initial spinal steroid injection when the patient has received multiple previous steroid joint injections.
- Documentation of functional results is required. •There should be pain relief of approximately 80% demonstrated by pre and post Visual Analog Scale (VAS) scores. Documentation of functional changes is required. Patient-completed pain diary must be part of the medical record.

Spinal Therapeutic Injections:

These should only be used after diagnostic injections & imaging studies established pathology which has not clinically improved after active engagement (6-8 weeks) of physical therapy and in patients who otherwise qualify for more invasive procedures and may need injections because they do not wish to proceed to surgery. The purpose of spinal injections is to *facilitate active therapy* by providing short-term relief through reduction of pain and inflammation. Patients must commit to continuing appropriate exercise with functionally directed rehabilitation usually beginning within 7 days, at the injectionist's discretion. Active treatment, which patients should have had prior to injections, frequently requires a repeat of sessions previously ordered.

Special Requirements for Spinal Injections: Since multi-planar fluoroscopy during procedures is required to document technique and needle placement, an experienced physician should perform the procedure. Injection of contrast dye to assure correct needle placement is required to verify the flow of medication. Permanent images required to verify needle placement. Unnecessary fluoroscopy should be avoided due to the radiation exposure contributing to cancer risk.

- Since these procedures are invasive, less invasive or non-invasive procedures should be considered first. All patients who undergo spinal diagnostic injections should have had an MRI or CT scan at some point during treatment.
- Informed decision making should be documented.
- Special Requirements for Spinal Diagnostic Injections: Since multi-planar fluoroscopy during procedures is required to document technique and needle placement, an experienced physician should perform procedures.

- Documentation of functional results is required. There should be pain relief of approximately 80% demonstrated by pre and post Visual Analog Scale (VAS) scores. Documentation of functional changes is required. Patient-completed pain diary must be part of the medical record.

Epidural Steroid Injection (ESI): May include caudal, transforaminal, or interlaminar injections.

Needle Placement: Multi-planar fluoroscopic imaging is required for all epidural steroid injections. Injection of contrast dye to assure correct needle placement is required to verify the flow of medication. Permanent images are required to verify needle placement.

***Indications:* The following sets of patients may have epidural injections.**

1. When a patient: with radicular findings due to herniated disc meets all of the indications for surgery at approximately 6-8 weeks post active therapy, one epidural may be attempted at the patient's discretion.

2. For rare, acute ruptured: (herniated) disc with clear objective radiculopathy if, after one to two weeks of initial oral analgesic and conservative treatment; the patient:
   - has continued pain interfering with most ADL function; **and**
   - is unable to tolerate the required movements to participate in therapy; **and**
   - has pain greater in the leg than in the back, generally of 7 or greater on a VAS scale of 10; **and**
   - has pain following a correlated radicular dermatome; **and**
   - there is a herniated disc on the MRI at the level of subjective and objective findings; **and**
   - has either:
     - ➢ dural tension signs of straight leg raising or slump test resulting in radicular symptoms correlating with imaging pathology; **and/or**
     - ➢ one of the following documented, reproducible findings, which correlates with the suspected nerve root impingement:
       - ✓ Decreased reflexes, **or**
       - ✓ Radicular sensation deficits, **or**
       - ✓ Motor weakness on testing.

3. Patients with Spinal Stenosis:

Patients with radicular findings: If patient has documented spinal stenosis, has completed 6-8 weeks of active therapy, has persistent radicular findings and difficulty with some activities, thus meeting criteria for surgical intervention, patient may have one diagnostic injection. Early surgical consultation is encouraged whenever the patient remains symptomatic after conservative therapy. If patient does not wish to have a surgical intervention two additional injections may be provided if original diagnostic intervention was successful per guideline standards.

Patients with claudication: Patient has documented spinal stenosis, completed 6-8 weeks of active therapy, has persistent claudication symptoms and difficulty with some activities, thus meeting criteria for surgical intervention, patient may have one diagnostic injection. Patients who have any objective neurologic findings should proceed as the above patient with radicular findings for whom an early surgical consultation is recommended. Those who have mild claudication, or moderate or severe claudication and who do not desire surgery, may continue to receive up to 2 additional injections if the original diagnostic intervention was successful per guideline standards.

Time Parameters for Epidural Steroid Injections:

- Light sedation and pain relief may be needed for some patients requiring therapeutic injection.
- Time to produce effect: Local anesthetic, less than 30 minutes.
- Frequency: One or more divided levels can be injected in one session. Whether injections are repeated depends upon the patient's response to the previous injection. There is no role for a "series" of 3 injections. Each injection should be judged on the actual functional outcome. Patients with existing osteoporosis or other risk factors for osteoporosis should rarely receive epidural steroid injections. Subsequent injections may occur after 1 to 2 weeks if patient response has been favorable. Injections can be repeated after a hiatus of six months if the patient has demonstrated functional gain and pain returns or worsens. If the first injection does not provide a diagnostic response of temporary and sustained pain relief (approximately 80% lasting between 2 and 6 weeks) substantiated by accepted pain scales and improvement in function documented preferably by a therapist or non-injectionist authorized physician, similar

injections should not be repeated. Patients should complete a pain diary over several days post injection.

- ❖ Optimum duration: Usually 1 to 3 injection(s) over a period of six months depending upon each patient's response and functional gain. Most patients will not require 3 injections within 6 months and injections should not be repeated without documented functional change.
- ❖ Maximum duration: Up to 4 per year. It is recommended that morning cortisol levels are checked prior to the 3rd or 4th steroid injection. Patients should be reassessed after each injection for evidence of functional improvement and an 80% improvement in pain (as measured by accepted pain scales).

Intradiscal Steroid Injections: ***Not Recommended.***

Intradiscal injections of other substances such as bone marrow, stem cells, are ***Not Recommended.***

Transforaminal Injection with Etanercept: ***Not Recommended.***

Zygaphophyseal (Facet) Injections:

Indications:

- Pain suspected to be facet in origin based on exam findings and affecting activity; **or**
- patients who have refused a rhizotomy and appear clinically to have facet pain; **or**
- patients who have facet findings with a thoracic component.

  - ❖ Time to produce effect: Up to 30 minutes for local anesthetic; corticosteroid up to 72 hours.
  - ❖ Frequency: 1 injection per level with a diagnostic response. A well-controlled, large retrospective cohort study found that individuals with the same risk factors for osteoporotic fractures were 20% more likely to suffer such a lumbar fracture if they had an epidural steroid injection. The risk increased with multiple injections. Thus the risk must be carefully discussed with the patient, particularly for patients over 60, and repeat injections should be generally avoided unless the functional goals to be reached outweigh the risk for future fracture. Patients with existing osteoporosis or other risk factors for osteoporosis should rarely receive steroid injections. It is unknown whether facet steroid injections contribute to increased vertebral fractures, however appropriate caution should be taken for at risk patients as described above.

Facet injections may be repeated if they result in increased documented functional benefit for at least 3 months and at least an 80% initial improvement in pain scales as measured by accepted pain scales (such as VAS).

- Optimum duration: 2 injections for each applicable joint per year. Not to exceed two joint levels.
- Maximum Duration: 2 per level per year only when at least 3 months of functional benefit is documented. Prior authorization must be obtained for injections beyond two levels. Recommended that morning cortisol levels are checked prior to the 3rd or 4th steroid injection.

Other Injections

Botulinum Toxin Injections:

Indications: For conditions which produce chronic spasticity or dystonia. There should be evidence of limited range-of-motion prior to the injection. ***Not recommended*** for cervicogenic headaches. Refer to the Division's Traumatic Brain Injury (TBI) Medical Treatment Guidelines for indications regarding headache.

- Time to Produce Effect: 24 to 72 hours post injection with peak effect by 4 to 6 weeks.
- Frequency: No less than 3 months between re-administration. Patients should be reassessed after each injection session for an 80% improvement in pain (as measured by accepted pain scales) and evidence of functional improvement for 3 months. A positive result would include a return to base line function, return to increased work duties, and measurable improvement in physical activity goals including return to baseline after an exacerbation.
- Optimum Duration: 3 to 4 months.
- Maximum Duration: Currently unknown. Repeat injections should be based upon functional improvement and therefore used sparingly in order to avoid development of antibodies that might render future injections ineffective. In most cases, not more than four injections are appropriate due to accompanying muscle atrophy.

Epiduroscopy and Epidural Lysis of Adhesions: ***Not Recommended.***

Epiduroscopy-directed steroid injections: ***Not Recommended.***

Prolotherapy: Also known as sclerotherapy. ***Not Recommended.***

Radio Frequency Ablation – Dorsal Nerve Root Ablation: ***Not Recommended***. Refer to the Division's Chronic Pain Disorder Medical Treatment Guidelines.

Radio Frequency (RF) Denervation - Medial Branch Neurotomy/Facet Rhizotomy:

- Cooled radiofrequency (A type of RF neurotomy) generally ***Not Recommended.***
- This procedure is ***Not Recommended*** for patients with multiple pain generators or involvement in more than 3 levels of medial branch nerves.
- Needle Placement: Multi-planar fluoroscopic imaging is required for all epidural steroid injections. Injection of contrast dye to assure correct needle placement is required to verify the flow of medication. Permanent images are required to verify needle placement.
- All should continue appropriate exercise with functionally-directed rehabilitation.
- Informed Decision Making must be documented.
- Post-procedure active therapy-patients unwilling to participate in active therapy should not have the procedure.

Indications: All of the following:

- Physical exam findings consistent with facet origin pain; **and**
- Positive response to controlled medial branch blocks; **and**
- At least 3 months of pain, unresponsive to 6-8 weeks of conservative therapies, including manual therapy; **and**
- A psychosocial screening (e.g., thorough psychosocial history, screening questionnaire) with treatment as appropriate has been undergone.

Time Parameters:

- ❖ Requirements for repeat radiofrequency medial branch neurotomy (or additional-level RF neurotomies): In some cases pain may recur. Successful RF neurotomy usually provides from six to eighteen months of relief.
- ❖ Due to denervation of spinal musculature repeated rhizotomies should be limited. Refer to the Division's Chronic Pain Disorder Medical Treatment Guidelines for details.
- ❖ Before a repeat RF neurotomy is done, a confirmatory medial branch injection should be performed if the patient's pain pattern presents differently than the initial evaluation. In occasional patients, additional levels of RF neurotomy may be necessary. The same indications and limitations apply.

Transdiscal Biacuplasty – *Not Recommended*.

Trigger Point Injections and Dry Needling Treatment: Trigger Point Injections and Dry Needling Treatment: To relieve myofascial pain and facilitate active therapy and stretching of affected areas. To be used as an adjunctive treatment in combination with other treatments modalities such as active therapy programs.

- Time to produce effect: Local anesthetic 30 minutes; 24 to 48 hours for no anesthesia.
- Frequency: Weekly. Suggest no more than 4 injection sites per session per week to avoid significant post-injection soreness.
- Optimum duration: 4 Weeks.
- Maximum duration: 8 weeks. Occasional patients may require 2 to 4 repetitions of trigger point injection series over a 1 to 2 year period.

Interdisciplinary Rehabilitation Programs:

In general these programs evaluate and treat multiple and sometimes irreversible conditions, including, but not limited to: painful musculoskeletal, neurological, and other chronic pain conditions and psychological issues; drug dependence, abuse, or addiction; high levels of stress and anxiety; failed surgery; and pre-existing or latent psychopathology. The Division recommends consideration of referral to an interdisciplinary program within six months post-injury in patients with delayed recovery, unless successful surgical interventions or other medical and/or psychological treatment complications intervene.

Formal Programs include the following:

1. Interdisciplinary Pain Rehabilitation;
2. Occupational Rehabilitation;
3. Spinal Cord Programs.

Interdisciplinary Pain Rehabilitation:

- Time to Produce Effect: 3 to 4 weeks.
- Frequency: Full time programs – No less than 5 hours per day, 5 days per week; part-time programs – 4 hours per day, 2–3 days per week.
- Optimum Duration: 3 to 12 weeks at least 2–3 times a week. Follow-up visits weekly or every other week during the first 1 to 2 months after the initial program is completed.
- Maximum Duration: 4 months for full-time programs and up to 6 months for part-time programs. Periodic review and monitoring thereafter for 1 year, AND additional follow-up based on the documented maintenance of functional gains.

Interdisciplinary Occupational Rehabilitation:

- Time to Produce Effect: 2 weeks.
- Frequency: 2 to 5 visits per week, up to 8 hours per day.
- Optimum Duration: 2 to 4 weeks.
- Maximum Duration: 6 weeks. Participation in a program beyond 6 weeks must be documented with respect to need and the ability to facilitate positive symptomatic and functional gains.

Interdisciplinary Spinal Cord Programs:

- Timeframe durations for any spinal cord program should be determined based on the extent of the patient's injury and at the discretion of the rehabilitation physician in charge.

Informal Interdisciplinary Team Programs: Different from a formal program in that it involves lower frequency and intensity of services/treatment. Informal rehabilitation is geared toward those patients who do not need the intensity of service offered in a formal program or who cannot attend an all-day program due to employment, daycare, language, or other barriers.

- Time to Produce Effect: 3 to 4 weeks.
- Frequency: Full-time programs – No less than 5 hours per day, 5 days per week.
- Part-time programs – 4 hours per day for 2–3 days per week.
- Optimum Duration: 3 to 12 weeks at least 2–3 times a week. Follow-up visits weekly or every other week during the first 1 to 2 months after the initial program is completed.

Maximum Duration: 4 months for full-time programs and up to 6 months for part-time programs. Periodic review and monitoring thereafter for 1 year, and additional follow-up based upon the documented maintenance of functional gains.

Use of Medications: Will vary widely due to the spectrum of injuries, from simple strains to post-surgical healing. A thorough medication history, including use of alternative and over-the-counter medications, should be performed at the time of the initial visit and updated periodically. Treatment for pain control is initially accomplished with acetaminophen and/or NSAIDs.

Acetaminophen:

- Optimum Duration: 7 to 10 days.

- ❖ Maximum Duration: Extended use as indicated on a case-by-case basis. Use of this substance long-term (for 3 days per week or greater) may be associated with rebound pain upon cessation.

Antibiotics for chronic pain secondary to disc herniation:

Indications:

- Modic type 1 changes at adjacent vertebra at the time of treatment initiation.
- 6 to 24 months of pain with an average of 6/10 (calculate average by using the worst reported pain within the last 2 weeks, current pain, and usual pain in the last 2 weeks).
- Pain interferes with function, e.g., not able to return to full duty.
- Use of chronic opioids to control pain.
- No contraindications to antibiotic use.

Intravenous Steroids: The benefits of preventing neurological damage from acute spinal cord compression in an emergent situation generally outweigh the risks of pharmacologic side effects from steroids.

Glucosamine: ***Not Recommended*** for chronic lumbar spinal or non-joint pain.

Muscle Relaxants:

Indications:

Appropriate for muscle spasm with pain.

Chronic use of benzodiazepines or any muscle relaxant is ***Not Recommended*** due to their habit-forming potential, seizure risk following abrupt withdrawal, and documented contribution to deaths of patients on opioids due to respiratory depression. A number of muscle relaxants interact with other medications.

- ❖ Optimum Duration: 1 week.
- ❖ Maximum Duration: 2 weeks (or longer if used only at night).

Non-Steroidal Anti-Inflammatory Drugs (NSAIDs): Chronic use of NSAIDs is ***Generally Not Recommended*** due to increased risk of cardiovascular events and GI bleeding.

Selective Non-Steroidal Anti-Inflammatory Drugs (NSAIDs): Useful for pain and inflammation.

- ❖ Optimal Duration: 1 week.
- ❖ Maximum duration: 1 year. Use of these substances long-term (3 days per week or greater) is associated with rebound pain upon cessation.

Non-Selective Non-Steroidal Anti-Inflammatory Drugs: Selective Cyclo-oxygenase-2 (COX-2) Inhibitors:

- Optimal Duration: 7 to 10 days.
- Maximum Duration: Chronic use is appropriate in individual cases. Use of these substances long-term (3 days per week or greater) is associated with rebound pain upon cessation.

Opioids:

- Optimum Duration: 3 to 7 days.
- Maximum Duration: 2 weeks. Use beyond 2 weeks is acceptable in appropriate cases. Refer to the Division's Chronic Pain Disorder Medical Treatment Guidelines, which give a detailed discussion regarding medication use in chronic pain management. Use beyond 30 days after non-traumatic injuries, or 6 weeks post-surgery after the original injury or post operatively is ***Not Recommended***. If necessary the physician should access the Colorado Prescription Drug Monitoring Program (PDMP) and follow recommendations in Chronic Pain Guideline. This system allows the prescribing physician to see most of the controlled substances prescribed by other physicians for an individual patient.

Oral Steroids: Have Limited Use But Accepted In Cases Requiring A Potential Inflammatory Effect. ***Not Generally Recommended.***

Psychotropic/Anti-Anxiety/Hypnotic Agents:

Indications: May be useful for mild and chronic pain, dysesthesias, sleep disorders, depression. However, ***Not Generally Recommended.***

- Optimum Duration: 1 to 6 months.
- Maximum Duration: 6 to 12 months, with monitoring.

Tramadol: ***Not Generally Recommended*** for those with prior opioid addiction

Indications: May be useful in relief of mild low back pain

- Optimum Duration: 3 to 7 days.
- Maximum Duration: 2 weeks. Use beyond 2 weeks is acceptable in appropriate cases.

ORTHOTICS:

Cervical Collars: Rigid collars, such as a Philadelphia Orthosis, are useful post-operatively or in emergency situations. These collars restrict flexion and extension motion, and to a lesser degree, lateral bending and rotation. Duration of wear post-surgery is dependent on the surgeon and degree of cervical healing, but it is generally not used beyond eight weeks.

Poster Appliances: ***Not Recommended*** in sprain or strain injuries.

Cervicothoracic Orthosis: ***Not Recommended*** in sprain or strain type injuries.

Halo Devices: Used in the treatment of cervical fracture, dislocation, and instability at the discretion of the treating surgeon.

Other Orthosis Devices and Equipment: Special orthosis or equipment may have a role in the rehabilitation of a cervical injury, such as those injuries to a cervical nerve root resulting in upper extremity weakness or a spinal cord injury with some degree of paraparesis or tetraparesis. Use of such devices should be in a structured rehabilitation setting as part of a comprehensive rehabilitation program.

EDUCATION/INFORMED DECISION MAKING:

- Frequency: Should occur at every visit.

PERSONALITY/PSYCHOLOGICAL/PSYCHOSOCIAL INTERVENTION:

Psychosocial treatment is recommended as an important component in the total management of a patient with chronic pain and should be implemented as soon as the problem is identified.
Cognitive behavioral therapy (CBT) refers to a group of psychological therapies that are sometimes referred to by more specific names, such as Rational Emotive Behavior Therapy, Rational Behavior Therapy, Rational Living Therapy, Cognitive Therapy, and Dialectic Behavior Therapy. Variations of CBT methods can be used to treat a variety of conditions, including chronic pain, depression, anxiety, phobias and post-traumatic stress disorder (PTSD).

Cognitive Behavioral Therapy (CBT) or similar treatment:

- Time to Produce Effect: 6 to 8 1-2 hour session, group or individual, 1 hour individual or two-hour group.
- Maximum Duration: 16 sessions.

NOTE: Before CBT is done, the patient must have a full psychological evaluation. The CBT program must be done under the supervision of a PhD, PsyD, EdD, or Psychiatric MD/DO.

Other psychological/psychiatric interventions:

- Time to Produce Effect: 6 to 8 weeks.
- Frequency: 1 to 2 times weekly for the first 2 weeks (excluding hospitalization, if required), decreasing to 1 time per week for the second month. Thereafter, 2 to 4 times monthly with the exception of exacerbations which may require increased frequency of visits. Not to include visits for medication management.
- Optimum Duration: 2 to 6 months.
- Maximum: 6 months. Not to include visits for medication management. For select patients, longer supervised psychological/psychiatric treatment may be required, especially if there are ongoing medical procedures or complications. If counseling beyond 6 months is indicated, the management of psychosocial risks or functional progress must be documented. Treatment plan/progress must show severity.

RESTRICTION OF ACTIVITIES: Patients should be educated regarding the detrimental effects of immobility versus the efficacious use of limited rest periods. Adequate rest allows the patient to comply with active treatment and benefit from the rehabilitation program. In addition, complete work cessation should be avoided, if possible, since it often further aggravates the pain presentation and promotes disability. Modified return-to-work is almost always more efficacious and rarely contraindicated in the vast majority of injured workers with neck pain.

RETURN-TO-WORK: Returning to work and/or work-related activities whenever possible is one of the major components in chronic pain management and rehabilitation. Return-to-work is a subject that should be addressed by each workers' compensation provider at the first meeting with the injured employee, and be updated at each additional visit. A return-to-work format should be part of a company's health plan, knowing that return-to-work can decrease anxiety, reduce the possibility of depression, and reconnect the worker with society. Because a prolonged period of time off work will decrease the likelihood of return to work, the first weeks of treatment are crucial in preventing and/or reversing chronicity and disability mindset.

The following should be considered when attempting to return an injured worker with chronic pain to work.

Job History Interview: The authorized treating physician should perform a job history interview at the time of the initial evaluation and before any plan of treatment is established.

Coordination of Care: Management of the case is a significant part of return-to-work and may be the responsibility of the authorized treating physician, occupational health nurse, risk manager, or others.

Communication: This is essential between the patient, authorized treating physician, employer, and insurer.

Establishment of Return-To-Work Status: Return-to-work for persons with chronic pain should be considered therapeutic, assuming that work is not likely to aggravate the basic problem or increase the discomfort. In most cases of chronic pain, the worker may not be currently working or even employed.

Establishment of Activity Level Restrictions:

- A formal job description for the injured worker is necessary to identify physical demands at work and assist in the creation of modified duty.
- A jobsite evaluation may be utilized to identify applicable tasks and the number of hours that may be worked per day.
- Occupationally focused functional capacity evaluation may be necessary.
- Between one and three days after the evaluation, there should be a follow-up evaluation by the treating therapist and/or the authorized treating physician to assess the patient's status. Work restrictions assigned by the authorized treating physician may be temporary or permanent.
- Case manager should continue to seek out modified work until restrictions become less cumbersome or as the worker's condition improves or deteriorates.
- Rehabilitation and Return-To-Work: As part of rehabilitation, every attempt should be made to simulate work activities so that the authorized treating physician may promote adequate job performance. The use of ergonomic or adaptive equipment, therapeutic breaks, and interventional modalities at work may be necessary to maintain employment.

THERAPY – ACTIVE: Factors such as exacerbation of symptoms, re-injury, interrupted continuity of care and co-morbidities may also extend durations of care.

The following active therapies are listed in alphabetical order:

Activities of Daily Living (ADLs): Well-established interventions that involve instruction, active-assisted training, and/or adaptation of activities or equipment to improve a person's capacity in normal daily activities such as self-care, work re-integration training, homemaking, and driving.

- ❖ Time to Produce Effect: 4 to 5 treatments.
- ❖ Frequency: 3 to 5 times per week.
- ❖ Optimum Duration: 4 to 6 weeks.
- ❖ Maximum Duration: 6 weeks.

Functional Activities: Therapeutic activities to enhance mobility, body mechanics, employability, coordination, balance, and sensory motor integration.

- ❖ Time to Produce Effect: 4 to 5 treatments.
- ❖ Frequency: 3 to 5 times per week.
- ❖ Optimum Duration: 4 to 6 weeks.
- ❖ Maximum Duration: 6 weeks.

Functional Electrical Stimulation: It may be indicated for muscle atrophy due to radiculopathy.

- Time to Produce Effect: 2 to 6 treatments.
- Frequency: 3 times per week.
- Optimum Duration: 8 weeks.
- Maximum Duration: 8 weeks. If beneficial, provide with home unit.

Neuromuscular Re-education:

Indications include the need to promote neuromuscular responses through carefully timed proprioceptive stimuli, elicit and improve motor activity in patterns similar to normal neurologically developed sequences, and improve neuromotor response with independent control. There are multiple types of neuromuscular education: Spinal Stabilization and Directional Preference:

Total Time Frames for all Neuromuscular Re-education:

- Time to Produce Effect: 4 to 8 treatments.
- Frequency: 3 to 5 times per week.
- Optimum Duration: 4 to 8 weeks.
- Maximum Duration: 8 weeks

Therapeutic Exercise:

Therapeutic exercise can also include complementary/alternative exercise movement therapy (with oversight of a physician or appropriate healthcare professional).

- Time to Produce Effect: 2 to 6 treatments.
- Frequency: 3 to 5 times per week.
- Optimum Duration: 4 to 8 weeks.
- Maximum Duration: 8 weeks.

Work Conditioning: It should be initiated when imminent return of a patient to modified or full duty is not an option, but the prognosis for returning the patient to work at completion of the program is at least fair to good.

- Length of Visit: 1 to 2 hours per day.
- Frequency: 2 to 5 visits per week.
- Optimum Duration: 2 to 4 weeks.

Maximum Duration: 6 weeks. Participation in a program beyond six weeks must be documented with respect to need and the ability to facilitate positive symptomatic or functional gains.

Work Simulation: Use of this program is appropriate when modified duty can only be partially accommodated in the work place, when modified duty in the work place is

unavailable, or when the patient requires more structured supervision. The need for work place simulation should be based upon the results of a functional capacity evaluation (FCE) and/or jobsite analysis.

- Length of Visit: 2 to 6 hours per day.
- Frequency: 2 to 5 visits per week.
- Optimum Duration: 2 to 4 weeks.

Maximum Duration: 6 weeks. Participation in a program beyond 6 weeks must be documented with respect to need and the ability to facilitate positive symptomatic or functional gains.

THERAPY – PASSIVE: Principally effective during the early phases of treatment and are directed at controlling symptoms such as pain, inflammation, and swelling and to improve the rate of healing soft tissue injuries. Should be used adjunctively with active therapies such as postural stabilization and exercise programs to help control swelling, pain, and inflammation during the active rehabilitation process. Passive therapies may be used intermittently as a therapist deems appropriate or regularly if there are specific goals with objectively measured functional improvements during treatment.

The following passive therapies are listed in alphabetical order:

Electrical Stimulation (Unattended): Indications include, muscle spasm, atrophy, and the need for osteogenic stimulation. A home unit should be purchased if treatment is effective, and frequent use is recommended.

- Time to Produce Effect: 2 to 4 treatments.
- Frequency: Varies, depending on indication, from between 2 to 3 times per day to 1 time per week. A home unit should be purchased if treatment is effective, and frequent use is recommended.
- Optimum Duration: 4 treatments for clinic use.
- Maximum Duration: 8 treatments for clinic use.

Iontophoresis: ***Not Recommended***

Manipulation:

- Time to Produce Effect: 4 to 6 treatments.
- Frequency: 1 to 2 times per week for the first 2 weeks as indicated by the severity of the condition. Treatment may continue at 1 treatment per week for the next 6 weeks.
- Optimum Duration: 8 weeks.
- Maximum Duration: 8 weeks. At week 8, patients should be re-evaluated. Care beyond 8 weeks may be indicated for certain chronic pain patients in whom manipulation is helpful in improving function, decreasing pain, and improving quality of life. In these cases, treatment may be continued at one treatment every other week until the patient has reached MMI and maintenance treatments have

been determined. Extended durations of care beyond what is considered "maximum" may be necessary in cases of re-injury, interrupted continuity of care, exacerbation of symptoms, and in those patients with co-morbidities. Such care should be re-evaluated and documented on a monthly basis.

Manipulation under General Anesthesia (MUA): ***Not Recommended.***

Manipulation under Joint Anesthesia (MUJA): Refers to manipulation of the cervical spine in combination with a fluoroscopically guided injection of anesthetic with or without corticosteroid agents into the facet joint at the level being manipulated. There are no controlled clinical trials to support its use. It is not recommended.

Massage – Manual or Mechanical: Indications include edema (peripheral or hard and non-pliable edema), muscle spasm, adhesions, the need to improve peripheral circulation and ROM, or to increase muscle relaxation and flexibility prior to exercise.

As with all passive therapies, massage must be accompanied by exercise and patient education.

- Time to Produce Effect: Immediate.
- Frequency: 1 to 2 times per week.
- Optimum Duration: 6 weeks.
- Maximum Duration: 2 months.

Mobilization (Joint): Indications include the need to improve joint play, segmental alignment, improve intracapsular arthrokinematics, or reduce pain associated with tissue impingement. Mobilization should be accompanied by active therapy.

- Time to Produce Effect: 6 to 9 treatments.
- Frequency: Up to 3 times per week.
- Optimum Duration: 4 to 6 weeks.
- Maximum Duration: 6 weeks.

Mobilization (Soft Tissue): Indications include muscle spasm around a joint, trigger points, adhesions, and neural compression. Mobilization should be accompanied by active therapy.

- Time to Produce Effect: 4 to 9 treatments.
- Frequency: Up to 3 times per week.
- Optimum Duration: 4 to 6 weeks.
- Maximum Duration: 6 weeks.

Short-Wave Diathermy: Indications include enhanced collagen extensibility before stretching, reduced muscle guarding, reduced inflammatory response, and enhanced reabsorption of hemorrhage/hematoma or edema.

- Time to Produce Effect: 2 to 4 treatments.
- Frequency: 2 to 3 times per week up to 3 weeks.
- Optimum Duration: 3 to 5 weeks.
- Maximum Duration: 5 weeks.

Superficial Heat and Cold Therapy (Excluding Infrared Therapy): Indications include acute pain; edema and hemorrhage; and the need to increase pain threshold, reduce muscle spasm, and promote stretching/flexibility. Cold and heat packs can be used at home as an extension of therapy in the clinic setting.

- Time to Produce Effect: Immediate.
- Frequency: 2 to 5 times per week.
- Optimum Duration: 3 weeks as primary or intermittently as an adjunct to other therapeutic procedures up to 2 months.
- Maximum Duration: 2 months.

Traction – Manual: Indications include decreased joint space, muscle spasm around joints, and the need for increased synovial nutrition and response.

- Time to Produce Effect: 1 to 3 sessions.
- Frequency: 2 to 3 times per week.
- Optimum Duration: 30 days.
- Maximum Duration: 1 month.

Traction – Mechanical: Sometimes used for patients with continuing radicular symptoms. If successful it should be shifted to home traction. A home cervical traction unit may be purchased if therapy proves effective.

- Time to Produce Effect: 1 to 3 sessions up to 30 minutes. If response is negative after 3 treatments, discontinue this modality.
- Frequency: 2 to 3 times per week. A home cervical traction unit may be purchased if therapy proves effective.
- Optimum Duration: 4 weeks.
- Maximum Duration: 4 weeks.

Transcutaneous Electrical Nerve Stimulation (TENS): Indications include muscle spasm, atrophy, and decreased circulation and pain control. Minimal transcutaneous electrical nerve stimulation (TENS) unit parameters should include pulse rate, pulse width, and amplitude modulation.

- Time to Produce Effect: Immediate.
- Frequency: Variable.
- Optimum Duration: 3 sessions.
- Maximum Duration: 3 sessions. Purchase or provide with home unit if effective.

Ultrasound (Including Phonophoresis): ***Not Recommended.***

VOCATIONAL REHABILITATION: Initiation of vocational rehabilitation requires adequate evaluation of patients for quantification of highest functional level, motivation, and achievement of MMI. Vocational rehabilitation may be as simple as returning to the original job or as complicated as being retrained for a new occupation.

THERAPEUTIC PROCEDURES – OPERATIVE

In order to justify operative interventions, clinical findings, clinical course, and diagnostic tests must **all** be consistent resulting in a reasonable likelihood of at least a measurable and meaningful functional and symptomatic improvement.

In general, if the program of non-operative treatment fails, operative treatment is indicated when symptoms and findings suggest a surgically amenable problem and:

1. Improvement of the symptoms has plateaued and the residual symptoms of pain and functional disability are unacceptable at the end of 6 to 12 weeks of active therapy and manual treatment. (Mere passage of time with poorly guided treatment is not considered an active treatment program.) In cases of myelopathy and some cases of severe nerve root compression, earlier intervention is indicated or;

2. Frequent recurrences of symptoms cause serious functional limitations, even if a non-operative active treatment program provides significant improvement of symptoms, and restoration of function on each recurrence; and

3. The patient and treating physician have identified functional operative goals and the likelihood of achieving improved ability to perform activities of daily living or work activities. The patient should agree to comply with the pre- and post-operative treatment plan including home exercise. The provider should be especially careful to make sure the patient understands the amount of post-operative treatment required and the length of partial- and full-disability expected post-operatively. The patient should have committed to the recommended post-operative treatment plan and fully completed the recommended active, manual and pre-operative treatment plans.

Informed decision making should be documented for all invasive procedures.

For any potential surgery, particularly fusions, it is recommended that the injured worker refrain from smoking for at least six weeks prior to surgery and during the period of healing. Because smokers have a higher risk of non-union and higher post-operative costs, it is recommended that insurers cover a smoking cessation program peri-operatively.

<u>General Notes for Post-Operative Treatment:</u>

An individualized rehabilitation program based upon communication between the surgeon and the therapist and using the therapies outlined in the Therapeutic Procedures Non-Operative section of this document. Communication between the physician and therapist is important to the timing of exercise progressions.

Every post-operative patient should be involved in an active treatment program after clearance by the surgeon. Interdisciplinary interventions should be strongly considered

post-operatively in any patient not making functional progress within expected time frames.

Post-operative active treatment will frequently require a repeat of the therapy sessions previously ordered.

ACUTE FRACTURES & DISLOCATIONS: Decisions regarding the need for surgery in acute traumatic injury depend on the specific injury type and possibility of long-term neurologic damage.

Halo Immobilization:

Surgical Indications: Cervical fractures requiring the need for nearly complete restriction of rotational control, and to prevent graft dislodgment, spine mal-alignment, or pseudarthrosis.

Post-Operative Treatment: Traction may be required for re-alignment and/or fracture reduction (amount to be determined by surgeon), active and/or passive therapy, and pin care.

Anterior Or Posterior Decompression With Fusion:

Surgical Indications: When a significant neurological deficit exists in the presence of spinal canal compromise or nerve root pressure.

Post-Operative Treatment: Cervical bracing may be appropriate, usually for 6–12 weeks with fusion. Home programs with instruction in activities of daily living (ADLs), limitations in range of motion, posture, and a daily walking program should be an early part of the rehabilitation process. Referral to a formal rehabilitation program, with emphasis on cervical, scapular, and thoracic strengthening, and restoration of range of motion (ROM), is appropriate once the fusion is solid and without complication. If active treatment is performed, care should be taken not to overly mobilize the section above and below the fusion at that time.

Recombinant Human Bone Morphogenetic Protein (rhBMP-2): Not recommended. If the FDA approves its use in the cervical spine, prior authorization is required. The patient *must* meet all indications on the device manufacturer's list and have no contraindications.

DISC HERNIATION AND OTHER CERVICAL CONDITIONS:

Operative treatment is indicated only when the natural history of an operatively treatable problem is better than the natural history of the problem without operative treatment. All patients being considered for surgical intervention should undergo a comprehensive neuromuscular examination. Timely decision making for operative intervention is critical to avoid deconditioning, and increased disability of the cervical spine.

For Cervical Fusion With Discectomy: Recommended that the injured worker refrain from smoking for at least six weeks prior to surgery and during the time of healing. Because smokers have a higher risk of non-union and higher post-operative costs, it is recommended that insurers cover a smoking cessation program peri-operatively.

General Indications for Surgery: When improvement of radicular symptoms has plateaued and the residual symptoms of pain and functional disability are unacceptable at the end of six weeks of treatment. In cases of multiple trauma or complex injuries, the procedure may be delayed due to lack of early recognition or the need to treat other conditions first.

1. ***Specific Indications for patients with myelopathy:*** Expedited surgical evaluation and treatment are indicated.

2. ***Specific Indications for patients with cervical radiculopathy:*** (Refer to radiculopathy as described at the beginning of this section).

    - Early intervention may be required for acute incapacitating pain in the presence of progressive neurological deficits, persistent motor deficit; **or**
    - Persistent or recurrent arm pain with functional limitations, unresponsive to conservative treatment after six weeks; **or**
    - Progressive functional neurological deficit; **or**
    - Static neurological deficit associated with significant radicular pain; **and**
    - Confirmatory imaging studies (usually MRI) consistent with clinical findings, demonstrating nerve root or spinal cord compromise.

Specific Indications for patients with persistent non-radicular cervical pain: In the absence of a radiculopathy, it is recommended that a decisive commitment to surgical or nonsurgical interventions be made within four to five months following injury. In patients with non-radicular cervical pain for whom fusion is being considered, required pre-operative indications include ***all*** of the following:

- When the program of non-operative treatment fails; **and**
- Improvement of the symptoms has plateaued, and the residual symptoms of pain and signs of functional disability are unacceptable at the end of 6 months of active treatment; **or**
- Frequent recurrences of symptoms cause serious functional limitations even if a non-operative active treatment program provides satisfactory relief of symptoms, and restoration of function on each recurrence.

Mere passage of time with poorly guided treatment is not considered an active treatment program.

- All pain generators are adequately defined and treated; **and**
- All physical medicine and appropriate manual therapy interventions are completed; **and**
- X-ray, MRI, or CT demonstrating spinal instability or positive CT discography; **and**
- Spine pathology limited to one and rarely two levels; **and**
- Psychosocial evaluation for confounding issues addressed.

Anterior Cervical Discectomy with or without Fusion:

Surgical Indications: Radiculopathy from ruptured disc or spondylosis, spinal instability, or patients with non-radicular neck pain meeting fusion criteria. For any potential surgery, particularly fusions, it is recommended that the injured worker refrain from smoking for at least six weeks prior to surgery and during the period of healing. Because smokers have a higher risk of non-union and higher post-operative costs, it is recommended that insurers cover a smoking cessation program peri-operatively.

Recombinant Human Bone Morphogenetic Protein (rhBMP-2): ***Not Recommended.***

Post-Operative Treatment: Cervical bracing may be appropriate (usually 6–12 weeks with fusion). Home programs with instruction in ADLs, limitation in range of motion, posture, and a daily walking program should be an early part of the rehabilitation process. Core strength should be emphasized. Referral to a formal rehabilitation program, with emphasis on cervical, scapular, and thoracic strengthening and restoration of functional ROM is appropriate, once fusion is solid and without complication. The goals of the therapy program should include instruction in a long-term home-based exercise program. Refer to Therapy – Active, within this document.

Anterior Cervical Corpectomy:

Surgical Indications: Single or two-level spinal stenosis, spondylolisthesis, or severe kyphosis, with cord compression. Refrain from smoking recommended prior to any potential surgery. It is recommended that insurers cover smoking cessation.

Post-Operative Treatment: Cervical bracing may be appropriate (usually 6–12 weeks with fusion). Home programs with instruction in ADLs, limitation in range of motion, posture, and a daily walking program should be an early part of the rehabilitation process. Core strength should be emphasized. Referral to a formal rehabilitation program, with emphasis on cervical, scapular, and thoracic strengthening and restoration of functional ROM is appropriate, once fusion is solid and without complication. If active therapy is performed, care should be taken not to

overly mobilize the section above and below the fusion at that time. The goals of the therapy program should include instruction in a long-term home-based exercise program.

Posterior Cervical Laminectomy, foraminotomy, discectomy with or without Fusion:

Surgical Indications: Neural compression. For any potential surgery, particularly fusions, it is recommended that the injured worker refrain from smoking for at least six weeks prior to surgery and during the period of healing. Because smokers have a higher risk of non-union and higher post-operative costs, it is recommended that insurers cover a smoking cessation program peri-operatively.

Post-Operative Treatment: An individualized rehabilitation program based upon communication between the surgeon and the therapist and using the therapies as outlined in Section F. Therapeutic Procedures Non-Operative of the Medical Treatment Guideline. In all cases, communication between the physician and therapist is important to the timing of exercise progressions. Cervical bracing may be appropriate (usually 6–12 weeks with fusion). Home programs with instruction in ADLs, limitation in range of motion, posture, and a daily walking program should be an early part of the rehabilitation process. Core strength should be emphasized. Referral to a formal rehabilitation program, with emphasis on cervical, scapular, and thoracic strengthening and restoration of functional ROM is appropriate, once fusion is solid and without complication. Post-operative active treatment will frequently require a repeat of the therapy sessions previously ordered, with an emphasis on core strengthening. The goals of the therapy program should include instruction in a long-term home-based exercise program. Refer to Therapy – Active, within this document.

Posterior Cervical Laminoplasty:

Surgical Indications: Multi-level disease: cervical spinal stenosis or spondylitic myelopathy. Not indicated in cervical kyphosis. For any potential surgery, particularly fusions, it is recommended that the injured worker refrain from smoking for at least six weeks prior to surgery and during the period of healing. Because smokers have a higher risk of non-union and higher post-operative costs, it is recommended that insurers cover a smoking cessation program peri-operatively.

***Post-Operative Treatment*:** May include 4 to 12 weeks of cervical bracing. Home programs with instruction in ADLs, limitation in range of motion, posture, and daily walking program should be an early part of the rehabilitation process. Referral to a formal rehabilitation program with emphasis on cervical, scapular, and thoracic strengthening and restoration of ROM is appropriate once the cervical spine is stable and without complication. Patients should have had active therapy prior to surgery. Post-operative active treatment will frequently require a repeat of the therapy sessions previously ordered. The goals of the therapy program should include

instruction in a long-term, home-based exercise program. Refer to Therapy – Active, within this document.

Percutaneous Discectomy:

Surgical Indications: Only in cases of suspected septic discitis in order to obtain diagnostic tissue. The procedure is not recommended for contained disc herniations or bulges with associated radiculopathy due to lack of evidence to support long-term improvement.

Total Artificial Disc Replacement (TDR):

Surgical Indications: Patient meets one of the 2 sets of indications:

1. Symptomatic one-level degenerative disc disease (on MRI) with established radiculopathy or myelopathy and not improved after 6 weeks of therapy; **and**

   Radiculopathy or myelopathy documented by EMG or MRI with correlated objective findings or positive at one level; **or**

2. All of the following:

   - ✓ Symptoms unrelieved after six months of active non-surgical treatment and one painful disc established with discogram; **and**
   - ✓ All pain generators are adequately defined and treated; **and**
   - ✓ All physical medicine and manual therapy interventions are completed; **and**
   - ✓ Spine pathology limited to one level; **and**
   - ✓ Psychosocial evaluation with confounding issues addressed.

   Post-Operative Treatment: Bracing may be appropriate. A formal physical therapy program should be implemented post-operatively. The implementation of a gentle aerobic reconditioning program and neck education within the first post-operative week is appropriate in uncomplicated post-surgical cases. Some patients may benefit from several occupational therapy visits to improve performance of ADLs. Participation in an active therapy program which includes restoration of ROM, core stabilization, strengthening, and endurance is recommended to be initiated at the discretion of the surgeon. The goals of the therapy program should include instruction in a long-term home based exercise program. Refer to Therapy – Active, within this document.

Percutaneous radiofrequency disc decompression: ***Not recommended.***

Epiduroscopy and Epidural Lysis Of Adhesions: Refer to Epiduroscopy and Epidural Lysis of Adhesions within this document.

Intraoperative Monitoring: To evaluate spinal cord integrity and screw placement during the operative procedure.

INDEX

(Contains Hyperlinks)

A

B

C

D

E

F

I

J

L

M

O

P

R

S

T

V

W

TO TABLE OF CONTENTS

GENERAL GUIDELINE PRINCIPLES

The principles summarized in this section are key to the intended implementation of all Division of Workers' Compensation guidelines and are critical to the reader's application of the guidelines in this document.

1. **APPLICATION OF GUIDELINES**: The Division provides procedures to implement medical treatment guidelines and to foster communication to resolve disputes among the provider, payer, and patient through the Worker's Compensation Rules of Procedure. In lieu of more costly litigation, parties may wish to seek administrative dispute resolution services through the Division or the Office of Administrative Courts.

2. **EDUCATION:** Education of the patient and family, as well as the employer, insurer, policy makers and the community should be the primary emphasis in the treatment of chronic pain and disability. Currently, practitioners often think of education last, after medications, manual therapy, and surgery. Practitioners must implement strategies, to educate patients, employers, insurance systems, policy makers, and the community as a whole. An education-based paradigm should always start with inexpensive communication providing reassuring and evidence-based information to the patient. More in-depth patient education is currently a component of treatment regimens which employ functional restorative, preventive, and rehabilitative programs. No treatment plan is complete without addressing issues of individual and/or group patient education as a means of facilitating self-management of symptoms and prevention.

3. **INFORMED DECISION MAKING**: Providers should implement informed decision making as a crucial element of a successful treatment plan. Patients, with the assistance of their health care practitioner, should identify their personal and professional functional goals of treatment at the first visit. Progress towards the individual's identified functional goals should be addressed by all members of the health care team at subsequent visits and throughout the established treatment plan. Nurse case managers, physical therapists, and other members of the health care team play an integral role in informed decision making and achievement of functional goals. Patient education and informed decision making should facilitate self-management of symptoms and prevention of further injury.

4. **TREATMENT PARAMATER DURATION**: Time frames for specific interventions commence once treatments have been initiated, not on the date of injury. Patient compliance, as well as availability of services will impact duration of treatment. Clinical judgment may substantiate the need to accelerate or decelerate the time frames discussed in this document.

TO TABLE OF CONTENTS

5. **ACTIVE INTERVENTIONS**: Active interventions emphasizing patient responsibility, such as therapeutic exercise and/or functional treatment, are generally emphasized over passive modalities, especially as treatment progresses. Generally, passive interventions are viewed as a means to facilitate progress in an active rehabilitation program with concomitant attainment of objective functional gains.

6. **ACTIVE THERAPEUTIC EXERCISE PROGRAM**: Exercise program goals should incorporate patient strength, endurance, flexibility, coordination, and education. This includes functional application in vocational or community settings.

7. **POSITIVE PATIENT RESPONSE**: Positive results are defined primarily as functional gains that can be objectively measured. Objective functional gains include, but are not limited to, positional tolerances, range of motion (ROM), strength, endurance, activities of daily living (ADLs), cognition, psychological behavior, and efficiency/velocity measures that can be quantified. Subjective reports of pain and function should be considered and given relative weight when the pain has anatomic and physiologic correlation. Anatomic correlation must be based on objective findings.

8. **RE-EVALUATION of TREATMENT EVERY three TO four WEEKS**: If a given treatment or modality is not producing positive results within three to four weeks, the treatment should be either modified or discontinued. Before discontinuing the treatment, the provider should have a detailed discussion with the patient to determine the reason for failure to produce positive results. Reconsideration of diagnosis should also occur in the event of poor response to a seemingly rational intervention.

9. **SURGICAL INTERVENTIONS**: Surgery should be contemplated within the context of expected functional outcome and not purely for the purpose of pain relief. The concept of “cure” with respect to surgical treatment by itself is generally a misnomer. Clinical findings, clinical course, and diagnostic tests must be consistent in order to justify operative interventions. A comprehensive assimilation of these factors must lead to a specific diagnosis with positive identification of pathologic conditions.

10. **SIX-MONTH TIME FRAME**: The prognosis drops precipitously for returning an injured worker to work once he/she has been temporarily totally disabled for more than six months. The emphasis within these guidelines is to move patients along a continuum of care and return to work within a six-month time frame, whenever possible. It is important to note that time frames may not be pertinent to injuries that do not involve work-time loss or are not occupationally related.

TO TABLE OF CONTENTS

11. **RETURN TO WORK**: Return to work is therapeutic, assuming the work is not likely to aggravate the basic problem. The practitioner must provide specific written physical limitations, and the patient should never be released to work with non-specific and vague descriptions such as, "sedentary" or "light duty." The following physical limitations should be considered and modified as recommended: lifting, pushing, pulling, crouching, carrying, walking, using stairs, bending at the waist, awkward and/or sustained postures, tolerance for sitting or standing, hot and cold environments, repetitive motion tasks, sustained grip, tool usage, and vibration factors. Even if there is residual chronic pain, return to work is not usually contraindicated.

    The practitioner should understand all of the physical demands of the patient's job position before returning the patient to full duty and should request clarification of the patient's job duties. Clarification should be obtained from the employer or, if necessary, including, but not limited to, an occupational health nurse, occupational therapist, vocational rehabilitation specialist, or an industrial hygienist.

12. **DELAYED RECOVERY**: Strongly consider a psychological evaluation, if not previously provided, as well as interdisciplinary rehabilitation and vocational goal setting, for those patients who are failing to make expected progress 6 to 12 weeks after an injury. The Division recognizes that, even despite optimal care, 3–10% of all industrially injured patients will not recover within the timelines outlined in this document. Such individuals may require treatments beyond the limits discussed within this document, but such treatment will require clear documentation by the authorized treating practitioner focusing on objective functional gains afforded by further treatment and impact on prognosis.

13. **GUIDELINE RECOMMENDATIONS AND INCLUSION OF MEDICAL EVIDENCE**: ***All recommendations are based on available evidence and/or consensus judgment***. When possible, guideline recommendations will note the level of evidence supporting the treatment recommendation. It is generally recognized that early reports of a positive treatment effect are frequently weakened or overturned by subsequent research. When interpreting medical evidence statements in the guideline, the following apply:

    A. Consensus means the judgment of experienced professionals based on general medical principles. Consensus recommendations are designated in the guideline as "generally well-accepted," "generally accepted," "acceptable/accepted," or "well-established."

    B. "Some" means the recommendation considered at least one adequate scientific study, which reported that a treatment was effective. The

Division recognizes that further research is likely to have an impact on the intervention's effect.

C. "Good" means the recommendation considered the availability of multiple adequate scientific studies or at least one relevant high-quality scientific study, which reported that a treatment was effective. The Division recognizes that further research may have an impact on the intervention's effect.

D. "Strong" means the recommendation considered the availability of multiple relevant and high-quality scientific studies, which arrived at similar conclusions about the effectiveness of a treatment. The Division recognizes that further research is unlikely to have an important impact on the intervention's effect.

All recommendations in the guideline are considered to represent reasonable care in appropriately selected cases, irrespective of the level of evidence or consensus statement attached to them. Those procedures considered inappropriate, unreasonable, or unnecessary are designated in the guideline as "***not recommended***."

14. **CARE BEYOND MAXIMUM MEDICAL IMPROVEMENT (MMI)**: MMI should be declared when a patient's condition has plateaued to the point where the authorized treating physician no longer believes further medical intervention is likely to result in improved function. However, some patients may require treatment after MMI has been declared in order to maintain their functional state. The recommendations in this guideline are for pre-MMI care and are not intended to limit post-MMI treatment.