DIVISION OF WORKERS' COMPENSATION

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

LOW BACK PAIN MEDICAL TREATMENT GUIDELINES

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

COLORADO
Department of
Labor and Employment

This Reference Guide links directly to and incorporates the principals and tenets set forth in the Low Back Pain 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 RESPONSE
   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, 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 section 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. C.R.S. 8-43-201 (2)

If you would like to give feedback on this guide, please visit https://www.surveymonkey.com/r/WYMFTS7.

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 necessary to diagnose conditions such as fracture, occult cancer, infection, lower extremity weakness, or signs of myelopathy. The Division recommends the following diagnostic procedures be considered the responsibility of the workers' compensation insurer, at least initially. 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 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

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

Radiographic Imaging: Suggested indications include:

- History of significant trauma, especially blunt trauma or fall from a height;
- Age over 55 years;
- Suspicion of fracture, dislocation, instability, or objective evidence of neurologic deficit;
- Unexplained or persistent low back 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 lumbosacral spine due to tumor or systemic illness, such as a rheumatic/rheumatoid disorder or endocrinopathy. Suspected lesions may require special views;
- Flexion and extension views to evaluate instability; and
- Past medical history suggestive of pre-existing spinal disease, osteoporosis, spinal instrumentation, or cancer;
- Optionally, prior to any manipulative treatment.

Laboratory Testing:

1. Complete blood count (CBC) with differential
2. Blood-glucose level, erythrocyte sedimentation rate (ESR), rheumatoid factor (RF), anti-nuclear antigen (ANA), human leukocyte antigen (HLA), and C-reactive protein (CRP),
3. Serum calcium, phosphorous, uric acid, alkaline phosphatase, and acid phosphatase, vitamin D levels;
4. Urinalysis;
5. Liver and kidney function.

FOLLOW-UP DIAGNOSTIC IMAGING AND TESTING PROCEDURES

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

Magnetic Resonance Imaging (MRI):

Useful in suspected nerve root compression, myelopathy, masses, infections, metastatic disease, disc herniation, annular tear, and cord contusion. MRI scanners compatible with pacemakers are now available.

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.*** Enables upright, weight bearing patient positioning.

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

Computed Axial Tomography (CT): Visualization of bone and evaluation of bony masses.

Myelography: Injection of radiopaque material into the spinal subarachnoid space, with x-rays then taken to define anatomy. May be a pre-surgical diagnostic procedure. Indications include:

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

CT Myelogram:

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

Lineal Tomography: Infrequently used. May be helpful in the 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 lesions, but it cannot distinguish between these conditions.

Other Radioisotope Scanning: Utilized for localizing infection or inflammation and is usually not used for the lumbar spine.

Dynamic [Digital] Fluoroscopy: ***Not recommended*** for use in the diagnosis of lumbar instability.

Electrodiagnostic Testing:

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

Portable Automated Electrodiagnostic Device (also known as Surface EMG): Not a substitute for conventional diagnostic testing in clinical decision-making, and therefore, is ***Not Recommended***.

Somatosensory Evoked Potential (SSEP): ***Not Recommended*** to identify radiculopathy. It may be used to evaluate myelopathy and other rare neurological disorders, such as neurogenic bladder and sexual dysfunction.

Current Perception Threshold (CPT) Evaluation: ***Not Recommended*** as a diagnostic tool.

Large Array Surface Electromyography: ***Not Recommended***

Surface EMG in combination with Range of Motion and/or Functional Capacity Evaluation, and/or a Comprehensive Muscular Activity Profile: ***Not Recommended*** as a diagnostic tool and cannot distinguish malingering from sub-maximal effort for other reasons, such as fear/avoidance behavior.

Specific Diagnostic Injections

General Notes for all Diagnostic Injections:

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

- Indications: 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 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 to produce effect for all epidural injections: Less than 30 minutes for local anesthetic.

Medial Branch Blocks:

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

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.

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

Sacroiliac Joint Injection:

Needle Placement: Multi-planar fluoroscopic imaging is required for all 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: Primarily diagnostic to rule out sacroiliac joint dysfunction versus other pain generators. Intra-articular injection can be of value in diagnosing the pain generator. To qualify for an injection the patient must have at least 3 positive physical exam maneuvers (e.g. Patrick's sign, Faber's test, Ganslen, distraction or gapping, or compression test).

- ❖ Time to Produce Effect: Up to 30 minutes for local anesthetic.
- ❖ Frequency and Maximum Duration: 1 injection. It is recommended that morning cortisol levels are checked prior to the 3rd or 4th steroid injection..

Zygapophyseal (Facet) Blocks:

Needle Placement: Injection of a contrast dye to assure correct needle placement is required to verify flow of medication. Permanent images required to verify correct 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. It is recommended that morning cortisol levels are checked prior to the 3rd or 4th steroid injection..

Personality/Psychological/Psychosocial Evaluation: Psychosocial evaluation should be performed on patients not making expected progress within 6–12 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:

Discography is accepted, but rarely indicated. It remains extremely controversial as an invasive diagnostic procedure to identify or refute a discogenic source of pain for patients who are surgical candidates for fusion or disc replacement.

Important points related to provocation discography:

- Discograms have a significant false positive rate.
- It is essential that all indications, pre-conditions, special considerations, procedures, reporting requirements, and results are carefully and specifically followed.
- Results should be interpreted judiciously.

- Discography should only be performed by physicians who are experienced and have been proctored in the technique.
- Informed Decision Making should be documented.
- Should not be performed on those with somatoform disorders.
- Discography should never be the sole indication for surgery.

Indications: Discography may be indicated when a patient has a history of functionally limiting, unremitting low back pain of greater than four months duration, with or without leg pain, which has been unresponsive to all conservative interventions and meets all of the criteria for spinal fusion. Those diagnostic and pre-operative indications for *spinal fusion* are:

Diagnostic:

- Neural Arch Defect usually with stenosis or instability: Spondylolytic spondylolisthesis, congenital unilateral neural arch hypoplasia. It should be noted that the highest level of success for spinal fusions is when spondylolisthesis grade 2 or higher is present.
- Segmental Instability: Excessive motion, as in degenerative spondylolisthesis 4mm or greater, surgically induced segmental instability.
- Primary Mechanical Back Pain/Functional Spinal Unit Failure: Multiple pain generators objectively involving two or more of the following: (a) internal disc disruption (poor success rate if more than one disc involved), (b) painful motion segment, as in annular tears, (c) disc resorption, (d) facet syndrome, and/or (e) ligamentous tear. Because surgical outcomes are less successful when there is neither stenosis nor instability, the requirements for pre-operative indications must be strictly adhered to for this category of patients.
- Revision surgery for failed previous operation(s) if significant functional gains are anticipated.
- Other diagnoses: Infection, tumor, or deformity of the lumbosacral spine that cause intractable pain, neurological deficit, and/or functional disability.

Pre-surgical:

- All pain generators are adequately defined and treated; and
- All physical medicine and manual therapy interventions are completed; and
- X-ray, MRI, or CT myelography demonstrate spinal stenosis with instability or disc pathology, requiring decompression that may surgically induce segmental instability or a positive discogram; and

- Spine pathology is limited to two levels; and
- Psychosocial evaluation with confounding issues addressed; (required for all cases except those with degenerative spondylolisthesis with persistent claudication or radicular leg pain with neurologic signs); and
- For any potential fusion surgery, it is recommended that the injured worker refrain from smoking for at least six weeks prior to surgery and during the period of fusion 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.

Pre-conditions for provocation discography include all of the following:

1. A patient with functionally limiting, unremitting back and/or leg pain of greater than four months duration in whom conservative treatment has been unsuccessful and in whom the specific diagnosis of the pain generator has not been made apparent on the basis of other non-invasive imaging studies (e.g., MRI, CT, plain films, etc.). , the patient should undergo other diagnostic testing as appropriate in an effort to define the etiology.

2. Prior to consideration of discography, the patient should undergo other diagnostic testing as appropriate in an effort to define the etiology of the patient's complaint including psychological evaluation, myelography, CT, and MRI.

3. Psychosocial evaluation has been completed.

4. Patients are considered surgical candidates (e.g., symptoms are of sufficient magnitude and the patient has been informed of the possible surgical and non-surgical options that may be available based upon the results of discography).

5. Informed consent regarding the risks and potential diagnostic benefits of discography has been obtained.

Special Considerations:

- Discography should not be performed by the physician expected to perform the therapeutic procedure nor by physicians in the same practice. The procedure should be carried out by an experienced individual who has received specialized training in the technique of provocation discography.

- Discography should be performed in a blinded format that avoids leading the patient with anticipated responses. The procedure should always include one or more disc levels thought to be normal or non-painful in order to serve as an internal control.

Reporting of Discography:

All results should be clearly separated in the report from the narrative portion.

- ❖ Frequency: One time only.
- ❖ Maximum Duration: Repeat discography rarely indicated.

Thermography: no use as diagnostic test for low back pain.

SPECIAL TESTS:

Computer-Enhanced Evaluations: Should not be used alone to determine work restrictions.

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

Functional Capacity Evaluation:

- ❖ Frequency: 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 for FCEs during treatment.

Jobsite Evaluation: Job descriptions provided by employer helpful but do not substitute for direct observation.

- ❖ 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 as based on a job activity or task and is generally preferable to a full FCE.

- 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: Credentialed practitioners with experience in evaluation and treatment of chronic pain must perform acupuncture evaluations. Must be performed by practitioners with the appropriate credentials in accordance with state and other applicable regulations. Therefore if not otherwise within professional scope of practice and licensure, those performing acupuncture must have the appropriate credentials, such as L.A.c., R.A.c, or Dipl.Ac.

Indications:

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

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

Acupuncture with Electrical Stimulation:
It is 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.

Total Time Frames for Acupuncture and Acupuncture with Electrical Stimulation:

- 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 the ability to facilitate positive symptomatic and functional gains. All treatments should be accompanied by active therapy.

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: 1) training to improve self-management of pain, 2) anxiety, 3) panic, 4) anger or emotional distress, 5) opioid withdrawal, 6) insomnia/sleep disturbance, and 7) 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 or psychiatrist.

Biofeedback treatment must be done in conjunction with the patient's psychosocial intervention. Biofeedback may also be provided by health care providers who follow a set treatment and educational protocol. Such treatment may utilize standardized material or relaxation tapes.

Electromyogram (EMG): 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): 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 that consists of a small rise in heart rate during inhalation, and a corresponding decrease during exhalation.

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

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

Electroencephalograph (EEG, QEEG): 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 to 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 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 (refer to complications section). 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***

Sacroiliac Joint Injection:

Indications:

Primarily diagnostic to rule out sacroiliac joint dysfunction versus other pain generators. Intra-articular injection can be of value in diagnosing the pain generator. To qualify for an injection the patient must have at least 3 positive physical exam maneuvers (e.g. Patrick's sign, Faber's test, Ganslen, distraction or gapping, or compression test).

- ❖ Time to Produce Effect: Up to 30 minutes for local anesthetic.
- ❖ Frequency and Maximum Duration: 1 injection. It is recommended that morning cortisol levels are checked prior to the 3rd or 4th steroid injection.

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

Zygaphophyseal (Facet) Injections:

Indications:

- Pain 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.

- ❖ 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: Used to temporarily weaken or paralyze muscles. ***Not Recommended*** for use for low back pain or other myofascial trigger points. May be indicated in cases of chronic piriformis syndrome established by 3 trigger point injections and unrelieved by other therapy. Patients need to have a marked but temporary improvement (80% or better), verified with demonstrated improvements in functional activities, from the 3 separate trigger point injections.

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

Epiduroscopy-Directed Steroid Injections: ***Not Recommended***

Prolotherapy: Also known as sclerotherapy. ***Not Generally Recommended*** for patients with non-specific low back pain.

- Informed decision making must be documented.
- Patients must be willing to perform engage in active therapy and manual therapy needed to recover.

Indications for Prolotherapy:

- Insufficient functional progress after 6 months of an appropriate program that includes a combination of active therapy, manual therapy and psychological evaluation and treatment.
- Documented relief from previously painful maneuvers (e.g., Patrick's or Faber's test, Gaenslen, distraction or gapping, and compression test).
- A positive result from SI joint diagnostic block including improvement in at least three previously identified physical functions.
- At the minimum, manual therapy, performed weekly per guideline limits by professional specializing in manual therapy (such as a doctor of osteopathy or chiropractor)

Radio Frequency Ablation - Dorsal Nerve Root Ganglion: *Not Recommended*

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

Several Notes:

- 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: Successful procedure 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.
- ❖ 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.

Radio Frequency Denervation - Sacro-iliac (SI) Joint Cooled:

Needle Placement:

- 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 required to verify needle placement.

Indications:

- Physical exam findings of at least 3 positive physical exam maneuvers (e.g. Patrick's sign, Faber's test, Ganslen distraction or gapping, or compression test). Insufficient functional progress after 6 months of appropriate program that includes combination of active therapy, manual therapy and psychological evaluation and treatment.
- Two fluoroscopically guided comparative blocks of the appropriate branches with differing anesthetics, 80% relief of pain for the appropriate time periods, and functional improvement must be documented to meet standards for control blocks.
- Informed decision making must be documented including a discussion of possible complications and likelihood of success.

    - ❖ Requirements for Repeat Radiofrequency SI Joint Neurotomy: In some cases pain may recur. Successful RF Neurotomy usually provides from six to eighteen months of relief. Repeat neurotomy should only be performed if the initial procedure resulted in improved function for 6 months.

Transdiscal Biacuplasty: ***Not Recommended.***

Trigger Point Injections and Dry Needling Treatment: To relieve myofascial pain and facilitate active therapy and stretching of affective areas. An adjunct to, combined other treatments because of active therapy.

- 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): 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:

- **Foot Orthoses and Inserts:** Accepted for spinal disorders due to aggravated mechanical abnormalities such as leg-length discrepancy, scoliosis, or lower extremity misalignment. Shoe inserts may be effective. A trial of taping may be performed prior to evaluate potential effectiveness.
- **Lumbar Support Devices:** Includes backrests for car seats and chairs. May provide relief for and movement reduction in chronic back problems.
- **Lumbar Corsets and Back Belts:** Have limited application. Injured worker should be advised of potential harm of using support for a period of time greater than prescribed.
- **Lumbosacral Bracing:** Commonly used for post-fusion, scoliosis, vertebral fractures. Sacroiliac belts may be indicated for short periods.

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 low back 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 2-hour group).
- Maximum Duration: 16 sessions.

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 Duration: 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 patient to comply with active treatment and benefit from rehabilitation programs. 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 low back pain.

RETURN TO WORK: Returning to work and/or work-related activities whenever possible is one of the major components in low back 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 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.

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: The following active therapies are listed in alphabetical order:

Activities of Daily Living (ADLs):

- 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.

Aquatic Therapy:

- Cannot tolerate active land-based or full-weight bearing therapeutic procedures;
- Require increased support in the presence of proprioceptive deficit (tendency to fall or collapse);
- Are at risk of compression fracture due to decreased bone density;
- Have symptoms that are exacerbated in a dry environment;
- Would have a higher probability of meeting active therapeutic goals than in a dry environment.

The pool should be large enough to allow full extremity range of motion and fully erect posture. Aquatic vests, belts and other devices can be used to provide stability, balance, buoyancy, and resistance.

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

A self-directed program is recommended after the supervised aquatics program has been established.

Back Schools: When prescribed, back schools should be initiated in the early phases of treatment.

Functional Activities: Therapeutic activity 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 in the limbs due to a 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. Two specific types are described: Spinal Stabilization; 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: Indications include the need for cardiovascular fitness, reduced edema, improved muscle strength; improved connective tissue strength and integrity, increased bone density, promotion of circulation to enhance soft tissue healing, improvement of muscle recruitment, improved proprioception, and coordination, and increased range of motion.

- Time to Produce Effect: 2 to 6 treatments.
- Frequency: 3 to 5 times per week.
- Optimum Duration: 4 to 8 weeks and concurrent with an active daily home exercise program.
- Maximum Duration: 8 to 12 weeks of therapist oversight. Home exercise should continue indefinitely.

Other movement therapy which may be included in therapeutic exercise includes yoga and other alternative exercise therapy supervised by a physician or other appropriate health care professional.

- Time to Produce Effect: 6 to 8 private or small group sessions.
- Frequency: 3 to 5 times per week with daily home practice.
- Optimum Duration: 6 to 8 weeks of classes and concurrent with an active daily home exercise program.
- Maximum Duration: 8 to 10 weeks of therapist oversight. Home exercise should continue indefinitely.

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.

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 upon indication, between 2 to 3 times per day to 1 time per week.
  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***

Low Level Laser: ***Not Recommended***

Manipulation:
Manipulation may be indicated in patients who have not had an evaluation for manual medicine, or who have not progressed adequately in an exercise program.

- 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): ***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 the need to increase muscle relaxation and flexibility prior to exercise.

- 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, and intracapsular arthrokinematics, or the need to reduce pain associated with tissue impingement.

- 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. Best practice suggests that 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 re-absorption 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, the need to increase pain threshold, the need to reduce muscle spasm, and the need to 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: ***Not Recommended.***

Transcutaneous Electrical Nerve Stimulation (TENS): Indications include muscle spasm, atrophy, and decreased circulation and pain control. Minimal 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. If beneficial, provide with home unit or purchase if effective.

Ultrasound (including phonophoresis): ***Not recommended***

Vertebral Axial Decompression (VAX-D)/DRX, 9000: ***Not Recommended.***

VOCATIONAL REHABILITATION: Colorado limits its use as a result of Senate Bill 87-79. 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.

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 (refer to F.5. Interdisciplinary Rehabilitation Programs).

Informed decision making should be documented for all invasive procedures. This must include a thorough discussion of the pros and cons of the procedure and the possible complications as well as the natural history of the identified diagnosis. Since most patients with the most common conditions will improve significantly over time, without

invasive interventions, patients must be able to make well-informed decisions regarding their treatment.

Return to work restrictions should be specific. Return to Work. Most surgical patients can return to a limited level of duty between three to six weeks. Full activity is generally achieved between three months to one year, depending on the procedure, the type of duties performed, and healing of the individual. Patient should be informed of expected time off work.

DISCECTOMY (usually accompanied by partial laminectomy):

Surgical Indications: To include all of the following:

- specific diagnosis of nerve root compression proven by MRI or CT myelogram and correlated to exam findings,
- primary radicular symptoms,
- radiculopathy on exam) and
- failure of 6 weeks of active therapy.
  - In some cases, surgery may need to occur sooner due to an individual's inability to participate in active therapy.
  - Although epidural injections have not been proven to have long-term benefit; they may be trialed prior to surgery if the patient wishes to try to avoid surgery or is unable to participate in therapy after the first 2 weeks.

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. In all cases, communication between the physician and therapist is important to the timing of exercise progressions. Post-operative active treatment will frequently require a repeat of the therapy sessions previously ordered. The implementation of a gentle aerobic reconditioning program (e.g., walking) and back 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 often recommended to be initiated three to twelve weeks post-operatively. The goals of the therapy program should include instruction in a long-term home based exercise program (refer to F.12. Therapy – Active). Medium or heavy lifting should not be begun before 10 to 12 weeks in most cases.

PERCUTANEOUS DISCECTOMY:

Surgical Indications: Percutaneous discectomy is indicated 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.

LAMINOTOMY/LAMINECTOMY/FORAMENOTOMY/FACETECTOMY for central or lateral spinal stenosis:

Surgical Indications: Include all of the following:

1. Radicular symptoms or symptoms of neurogenic claudication, often with clinical evidence of radiculopathy that correlates with the patient's pain and findings.

2. Evidence of nerve root compression generally proven by MRI or CT myelogram.

3. Failure of non-surgical care. For patients with stenosis non-surgical active treatment should generally consist of 6 to 12 weeks for an adequate trial. Patients with severe stenosis that correlates with symptoms often do not improve with conservative care.

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. In all cases, communication between the physician and therapist is important to the timing of exercise progressions. Post-operative active treatment will frequently require a repeat of the therapy sessions previously ordered. The implementation of a gentle aerobic reconditioning program (e.g., walking) and back 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 often recommended to be initiated three to twelve weeks post-operatively. The goals of the therapy program should include instruction in a long-term home based exercise program (refer to F.12. Therapy – Active). Medium or heavy lifting should not be begun before 10 to 12 weeks in most cases.

SPINAL FUSION (usually combined with decompression):

Surgical Indications: A timely decision-making process is recommended when considering patients for possible fusion. Treatment for some patients with lumbar fractures may be immediate fusion. For chronic low back problems, fusion should not be

performed within first five months of symptoms, except for fracture, dislocation, or for some patients with functional loss due to stenosis and instability.

Recombinant Human Bone Morphogenetic Protein (rhBMP-2) in fusions: A member of a family of cytokines capable of inducing bone formation. It is produced from genetically modified cell lines using molecular cloning techniques. At the time of this guideline revision, rhBMP-2 is FDA approved for use in anterior lumbar interbody fusion (ALIF) at one level from L4-S1 in a skeletally mature patient and is used with a carrier, such as a collagen sponge or other matrix, and a cage.

Diagnostic Indications: Diagnostic indications for spinal fusion may include the following:

- Neural Arch Defect usually with stenosis or instability: Spondylolytic spondylolisthesis, congenital unilateral neural arch hypoplasia. It should be noted that the highest level of success for spinal fusions is when spondylolisthesis grade 2 or higher is present.
- Segmental Instability: Excessive motion, as in degenerative spondylolisthesis 4mm or greater, surgically induced segmental instability.
- Primary Mechanical Back Pain/Functional Spinal Unit Failure: Multiple pain generators objectively involving two or more of the following: (a) internal disc disruption (poor success rate if more than one disc involved), (b) painful motion segment, as in annular tears, (c) disc resorption, (d) facet syndrome, and/or (e) ligamentous tear. Because surgical outcomes are less successful when there is neither stenosis nor instability, the requirements for pre-operative indications must be strictly adhered to for this category of patients.
- Revision surgery for failed previous operation(s) if significant functional gains are anticipated.
- Other diagnoses: Infection, tumor, or deformity of the lumbosacral spine that cause intractable pain, neurological deficit, and/or functional disability.

Pre-operative Surgical Indications: Required pre-operative clinical surgical indications for spinal fusion include all of the following:

- All pain generators are adequately defined and treated; and
- All physical medicine and manual therapy interventions are completed; and
- X-ray, MRI, or CT myelography demonstrate spinal stenosis with instability or disc pathology, requiring decompression that may surgically induce segmental instability or a positive discogram; and
- Spine pathology is limited to two levels; and
- Psychosocial evaluation with confounding issues addressed; (required for all cases except those with degenerative spondylolisthesis with persistent claudication or radicular leg pain with neurologic signs); and

For any potential fusion surgery, it is recommended that the injured worker refrain from smoking for at least six weeks prior to surgery and during the period of fusion 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. In all cases, communication between the physician and therapist is important to the timing of exercise progressions. There is some evidence that it is appropriate to defer active rehabilitation until 12 weeks as groups beginning at 6 week had worse outcomes. Post-operative active treatment will frequently require a repeat of the therapy sessions previously ordered. The implementation of a gentle aerobic reconditioning program (e.g., walking), and back 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 that includes core stabilization, strengthening, and endurance is recommended to be initiated once the fusion is solid and without complication. If it 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.

Barring complications, patients responding favorably to spinal fusion may be able to:

- Return to sedentary-to-light work within six to twelve weeks post-operatively;
- Light-to-medium work within six to nine months post-operatively;
- Medium-to-medium/heavy work within six to twelve months post-operatively; and

- Heavy-to-very-heavy post-operative labor should be considered for vocational assessment as soon as reasonable restrictions can be predicted.
- The practitioner should release the patient with specific physical restrictions and should obtain a clear job description from the employer if necessary. Once an injured worker is off work greater than six months, the functional prognosis with or without fusion becomes guarded for that individual.

Dynamic Neutralization System: ***Not Recommended.***

SACROILIAC JOINT FUSION:

Sacroiliac (SI) joint fusion may be indicated for stabilization of a traumatic severe disruption of the pelvic ring. This procedure has limited use in minor trauma and would be considered only on an individual case-by-case basis. This procedure is ***Not Recommended*** for mechanical low back pain.

IMPLANTABLE SPINAL CORD STIMULATORS: Reserved for those low back pain patients with pain, radiculopathy, and failed surgery of greater than six months duration who have not responded to the standard non-operative or operative interventions previously discussed within this document. Refer to the Division's Chronic Pain Disorder Medical Treatment Guidelines.

INTRADISCAL ELECTROTHERMAL ANNULOPLASTY (IDEA) (more commonly called IDET, or Intradiscal Electrothermal therapy): IDET is an outpatient procedure. A wire is guided into the identified painful disc using fluoroscopy. The wire is then heated at the nuclear annular junction within the disc. Due to lack of evidence indicating benefit from this procedure, it is ***Not Recommended***.

Interspinal spacers:

Surgical indications: The device is indicated for treatment of patients 50 or older suffering from neurogenic intermittent claudication caused by lumbar spinal stenosis (with X-ray, MRI and/or CT evidence of thickened flavum, narrowed lateral recess and/or central canal narrowing).

- Only patients who meet the following should be considered:
- All pain generators are adequately defined and treated; and
- All physical medicine and manual therapy interventions are completed over 6 months; and
- Impaired physical function correlated with physical findings; and
- CT or MRI that demonstrates stenosis; and
- Spine pathology is limited to one or two levels; and
- Psychological evaluation with confounding issues addressed; and
- It is recommended that the injured worker refrain from smoking for at least six weeks prior to surgery and during the period of healing.
- Additionally, the candidate should meet the following criteria:
- 50 years or older; and
- Sit for 50 minutes without pain; and
- Walk up to 50 feet or more; and
- Relief in flexion from their symptoms of leg/buttock/groin pain, with or without back pain

Post-Procedure Therapy: A formal physical therapy program should be implemented post-operatively. Some patients may benefit from several occupational therapy visits.

Rehabilitation may take as long as 6 months and include stretching during the first month, floor exercise program, and sports activities in the 5th and 6th months as tolerated. The goals of the therapy program should include instruction in a long-term home-base exercise program (refer to F.13. Therapy-Active).

Return to Work: Barring complications, the patient may be able to return to limited duty after one to two weeks. Sitting upright is limited to 30-45 minutes for the first two weeks. Lifting limits are Zero to 10 pounds for the first 6 weeks post-procedure. If successful, patients may return to medium work category (20-50 pounds per U.S. Department of Labor standards) at 4 to 6 months.

LASER DISCECTOMY: ***Not Recommended***.

ARTIFICIAL LUMBAR DISC REPLACEMENT:

This involves the insertion of a prosthetic device into an intervertebral space from which a degenerated disc has been removed, sparing only the peripheral annulus.

Surgical Indications:

- Symptomatic one-level degenerative disc disease established by objective testing (CT or MRI scan followed by [positive provocation discogram]);
- Symptoms unrelieved after six months of active non-surgical treatment;
- All pain generators are adequately defined and treated;
- All physical medicine and manual therapy interventions are completed;
- Spine pathology limited to one level; and
- Psychosocial evaluation with confounding issues addressed.

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. In all cases, communication between the physician and therapist is important to the timing of exercise progressions. Bracing may be appropriate. A formal physical therapy program should be implemented post-operatively. Post-operative active treatment will frequently require a repeat of the therapy sessions previously ordered. The implementation of a gentle aerobic reconditioning program (e.g., walking) and back 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. Lifting and bending are usually limited for several months at least. Sedentary duty may be able to begin within six weeks in uncomplicated cases. The goals of the therapy program should include instruction in a long-term home based exercise program (refer to F.12. Therapy – Active).

Kyphoplasty:

Surgical Indications: There is no evidence that kyphoplasty improves long-term outcome over conservative care. Kyphoplasty is an accepted treatment during the first 12 weeks, for all the following indications:

- Compression fracture, and
- Vertebral height loss between 15% and 85%, and
- Patients whose pain is severe while using analgesics after the first 4 weeks and who are unable to perform activities of daily living

Vertebroplasty:

Indications:

The available information suggests that vertebroplasty may be considered for a selected subgroup of patients with painful vertebral compression fractures if they:

- have been radiographically confirmed,
- have been localized clinically to the level of the vertebral fracture,
- are unable to perform activities of daily living,
- have failed to respond to at least 4 weeks of conservative management,
- are between 4 and 12 weeks since pain onset,
- sufficiently healthy to undergo surgery if necessary for decompression,
- have a vertebral height loss between 15% and 85%, and
- intact posterior wall

1. **Percutaneous radiofrequency disc decompression:** ***Not Recommended.***

2. **Nucleus pulposus replacement:** ***Not Recommended.***

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

4. **INTRAOPERATIVE MONITORING:** A common intraoperative electrodiagnostic technique that may include somatosensory evoked potentials (SSEP), motor evoked potentials (MEP), or pedicle screw monitoring. For details regarding training and technical procedures refer to Rule 18.

INDEX

(Contains Hyperlinks)

A

B

C

D

E

F

I

J

K

L

M

N

O

P

R

S

T

V

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.

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.

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.