

# P&S Network, Inc.

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## Notice of Independent Review Decision

**DATE OF REVIEW:** 07/28/09

**IRO CASE #:**

**A DESCRIPTION OF THE QUALIFICATIONS FOR EACH PHYSICIAN OR OTHER HEALTH CARE PROVIDER WHO REVIEWED THE DECISION:**

This case was reviewed by a Orthopaedic Surgery, Licensed in Texas and Board Certified. The reviewer has signed a certification statement stating that no known conflicts of interest exist between the reviewer and the injured employee, the injured employee's employer, the injured employee's insurance carrier, the utilization review agent (URA), any of the treating doctors or other health care providers who provided care to the injured employee, or the URA or insurance carrier health care providers who reviewed the case for a decision regarding medical necessity before referral to the IRO. In addition, the reviewer has certified that the review was performed without bias for or against any party to the dispute.

### **DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE**

Inpatient length of stay for three (3) days for revision, decompression at L3-4, L4-5, L5-S1 with dynamic spine stabilization of L3-S1

### **REVIEW OUTCOME**

Upon independent review the reviewer finds that the previous adverse determination/adverse determinations should

be: Upheld (Agree)

### **PATIENT CLINICAL HISTORY [SUMMARY]:**

According to the medical records and prior reviews the patient is a xx-year-old long employee who sustained an industrial injury to the low back on xx/xx/xx when he jarred his back exiting the back of the .

Lumbar MRI was performed on September 20, 2007 and revealed at L3-4, mild to moderate disc dessication with a central and paracentral broad-based protrusion, measuring 3 x 12 mm (AP x traverse). In addition, there is mild associated facet hypertrophy causing mild to moderate spinal canal stenosis and lateral recess narrowing bilaterally. At L4-5, there is mild to moderate disc dessication with a moderate focal central disc protrusion, measuring 8 x 18 mm (AP x traverse). In addition, there is moderate posterior extrusion along with mild endplate spondylosis, posterior vertebral osteophytes, facet hypertrophy causing moderate spinal canal stenosis and moderate lateral recess narrowing bilaterally with mild anterior effacement of the right and left L5 nerve roots. At L5-S1, there is mild to moderate disc dessication with a central and left central broad-based disc protrusion, measuring 4 x 14 mm (AP x traverse). In addition, there is mild posterior extrusion along with mild endplate spondylosis, posterior vertebral osteophytes and facet arthrosis causing mild to moderate spinal canal stenosis and lateral recess narrowing bilaterally which is most prominent on the left. There is a Grade I retrolisthesis of L4 on L5 with a mild Grade I retrolisthesis of L5 on L4 and of L5 on S1 without spondylolysis.

The patient underwent right L4-5 and right L5-S1 transforaminal epidural steroid injection on November 1, 2007. The same month he attended chiropractic and physical therapy with some benefits reported. He had electrodiagnostic studies which were interpreted as negative. This injection was later noted to provide 1-2 days of good relief only. An SI joint injection provided no

relief.

The patient initiated treatment with his current provider on December 4, 2007. He presented with bilateral thigh numbness and aching into the legs. He tried Darvocet, Lortab and oxycodone each of which helped for several days only. He discontinued medication and is working light duty. He takes Atenolol for high blood pressure. He recently resumed smoking. He is 6' 1" and 262 pounds. He has restricted motion. Motor strength is full. Reflexes are unobtainable at the knees. There is some pain with left straight leg at 45 degrees. PT and Lyrica were recommended.

At reevaluation of January 15, 2008 the patient reported increased pain of 5-6/10. He is still waiting to initiate PT. He is concerned about testicular pain. MRI did not suggest any spinal cord reason for his symptoms. Lortab will be adjusted and Neurontin initiated. The medical report of January 29, 2008 notes PT was denied as he had PT prior. He is doing HEP with a ball but needs some instruction in core strengthening. Neurontin is helping but is sedating as he titrates upward. The hydrocodone helped for several days but then his body got used to it. He will switch back and forth between hydrocodone and Darvocet. Examination findings suggest L5 nerve root involvement.

The medical report of February 20, 2008 indicates the patient is attending PT with some benefit. A second epidural injection was provided on March 26, 2008 at the right L5-S1 which was reported on April 2, 2009 to have provided benefit for several days only. He can no longer live with the pain and desires a surgical solution. He has moderate to large disc protrusions at L4-5 and L5-S1 with radicular symptoms (despite normal EMG in October 2007), excellent response, although brief, to epidural injection, extended PT and HEP. He will be sent for a surgical consultation.

Initial examination with the osteopathic/spinal specialist was conducted on April 9, 2008. He is able to heel and toe walk but does have a lot of pain. EHL and dorsiflexion strength is 4/5, right side slightly worse than left. Recommendation is for laminectomy/discectomy at L4-5.

Flexion/extension radiographs taken on April 9, 2008 show no evidence of instability in the lumbar spine.

The patient was cleared psychologically for surgery on April 22, 2008.

The patient returned to his orthopedic provider for reassessment on August 19, 2008. He is using Zanaflex. He will restart Lyrica for his leg pain. His surgery has been put off until November as he needs to get his diabetes under control. When reassessed on October 7, 2008 the patient demonstrates full lower extremity motor strength, he is able to heel and toes walk without difficulty and sensation is grossly intact. On November 18, 2008 he reports increased pain to 8/10, right EHL strength is 5-/5. He is looking forward to surgery. In December 2008 the surgeon ordered an updated MRI.

Lumbar MRI of December 4, 2008 reveals disc hydration and slight loss of disc space height at the lower three levels. Central disc extrusions are present at the lower three levels. There is slight cephalad extension of the disc material above the level of the disc space at L3-4 and caudal extension of disc material below the level of the disc space at L4-5. Both of these extrusions extend slightly more to the right than left of midline. At L3-4, this is 5-6 mm in AP extent. There is potential for mass effect on the traversing right L4 nerve root. There is borderline central spinal stenosis. At the L4-5 level, the AP extent is 7-8 mm. There is high-intensity T2 signal in the posterior annulus, compatible with an annular fissure. There is potential for mass effect on the right greater than left L5 nerve roots. Again, there is mild central spinal stenosis without foraminal stenosis. There is smaller central disc extrusion at L5-S1 without obvious mass effect on the S1 nerve roots. There is no significant central or foraminal stenosis. The conus is unremarkable. There is bifurcated infiltration of the filum terminale which extends all the way from the conus to the sacral tip. This does not exceed 2 mm in thickness at any level and is likely an incidental finding, but clinical correlation is suggested.

On December 18, 2008 the patient's surgeon recommended decompressing L3-4 and L5-S1 along with L4-5 based on the patient's increased symptoms and the updated MRI findings.

The operative report of January 20, 2009 describes removal of disc material at L4-5. No further compression was seen on the nerve roots or the thecal sac. At post-op reassessment on February 2, 2009 the patient reported complete relief of his buttock and leg pain, but his back pain continues. His neurologic exam is normal. He will initiate PT with pool therapy.

In follow-up with his regular provider on March 5, 2009 the patient reported worsening pain, continuing scrotal and right leg pain and numbness in the right and left anterolateral thighs. An L5 transforaminal epidural steroid injection at L5 was planned.

In follow-up with the surgeon on March 16, 2009 the patient reports complete resolution of his leg pain with some continuing back pain. He has finished PT. He needs a work hardening program.

At reevaluation with his regular provider on March 17, 2009 the patient notes good results with the L4-5 discectomy/laminectomy. He no longer has leg pain and his back pain has been reduced to 4/10. He has been returned to light duty and is looking for a job.

On March 31, 2009 the patient described an exacerbation of back pain and right leg pain when playing on the floor with his nephew. He is neurologically intact with some pain on the right with straight leg raise. He was provided a Medrol Dosepak.

Updated MRI was performed April 27, 2009 and provided impression of: 1. There is nonspecific straightening of the usual lumbar lordosis. There is disc dehydration and slight loss of disc height at the lower three lumbar levels. 2. There are

postoperative changes from decompression laminectomies at L4-5. There is a central disc extrusion at this level with caudal migration of the disc material well below the level of the disc space. The extruded disc material extends slightly more to the left than right of midline. The AP extent of the extrusion is about 7 mm. There is mass effect on the thecal sac which is displaced posteriorly. There is potential for mass effect on the left greater than right L5 nerve root. High intensity T2 signal is present in the posterior annulus here compatible with an annular fissure. 3. There are central disc protrusions superimposed on broad-based annular disc bulges at L3-4 and L5-S1. These are largely contained by the ventral epidural fat at both levels. They indent the ventral thecal sac but do not clearly compress or displace nerve roots. There is at least mild central spinal stenosis at L3-4. There is no significant central or fat-saturation at L5-S1.

The patient was seen in follow-up on April 30, 2009. He has primarily axial back pain and not much in the way of leg pain. He reports worsening pain. A fusion surgery was discussed as the discs at L3-4, L4-5 and L5-S1 are drying up and material is extruded at each level. There is also scar tissue seen at L4-5. Due his young age, there is concern with a fusion surgery and it was decided to bring his case up at the clinic conference where several specialists can offer advice and treatment plans.

At reevaluation on May 5, 2009 the patient is reporting quite a bit of leg pain. The L5 radicular pain never did go away. He is using Norco and Darvocet-N 100, alternating every 3 days for better effect. Lower extremity strength is 5/5. There is decreased sensation to light touch in the bilateral anterior thighs. He reports a pain level of 8-9/10.

When reassessed by his surgeon on May 14, 2009 the patient reports quite a bit of low back pain that radiates onto the back of his legs, more back pain than leg pain. MRI shows a recurrent disc herniation at L4-5. He has disc herniation at L3-4 and L5-S1. The specialists at the clinic reviewed his case and have recommended a revision decompression at L3-4, L4-5 and L5-S1 with a dynamic spine stabilization of L3-S1.

The most recent reevaluation from the patient's provider is dated June 23, 2009. The patient reports back pain of 9/10. Darvocet and Vicodin are not helping. OxyContin was helpful in the past so he is provided OxyContin 10 mg. An epidural will be requested to calm things down while he waits for surgical opinions. Fortunately his leg symptoms are minimal. He reports some aching in the left lateral calf and occasionally at the medial calf but more consistent with the L5 nerve, but he rates his back pain at 9/10 and his leg pain as 4-5/10.

Request for decompression at L3-4, L4-5, L5-S1 with dynamic spine stabilization of L3-S1 with a 3-day inpatient stay was not certified in review on June 2, 2009 with rationale that ODG does not recommend the dynamic spine stabilization technique at this time. The Dynamic neutralization system (made by Zimmer) is a non-fusion pedicle screw stabilization system that uses flexible materials to stabilize the affected lumbar region while preserving the natural anatomy of the spine, and it was developed in an attempt to overcome the inherent disadvantages of rigid instrumentation and fusion. Per ODG, there is limited support for the notion that semirigid fixation of the lumbar spine results in better patient-oriented outcomes than those typical of fusion.

Request for reconsideration for laminectomy at L3-S1 with possible fusion was not certified in review on June 22, 2009 with rationale that the patient does not meet the ODG criteria for laminectomy/discectomy. At L3-4 and L5-S1 there is not evidence of herniation, just bulging, on MRI. Additionally, there is no correlating severe radiculopathy at L4-5 clinically. It was noted that on exams on 2/2/09 and 5/5/09 the neurological exam is normal. Additionally, there is no apparent instability demonstrated for which fusion is indicated. The pathology is not limited to two levels and there has been no recent psychological evaluation and all pain generators have not been identified.

#### **ANALYSIS AND EXPLANATION OF THE DECISION INCLUDE CLINICAL BASIS, FINDINGS AND CONCLUSIONS USED TO SUPPORT THE DECISION.**

The patient had a bilateral laminectomy and discectomy at L4-5 on January 20, 2009 with good results until about the beginning of April 2009 when he reported re-aggravation of his symptoms when playing on the floor with his nephew. An updated MRI showed a central disc extrusion at L4-5 with caudal migration of the disc material well below the level of the disc space. The extruded disc material extends slightly more to the left than right of midline. The AP extent of the extrusion is about 7 mm and there is potential for mass effect on the left greater than right L5 nerve root. An epidural injection was discussed but does not appear to have been provided. The patient's back pain remained primary and at times his leg pain appeared to have resolved. He has reportedly finished PT and work hardening was recommended but apparently not initiated. His case was discussed by specialists at the clinic and recommendation is for recommended a revision decompression at L3-4, L4-5 and L5-S1 with a dynamic spine stabilization of L3-S1.

According to ODG, the dynamic spine stabilization system requested is not recommended for non-specific LBP, but may be an option for spondylolisthesis in elderly patients instead of fusion. There is limited support for the notion that semi-rigid fixation of the lumbar spine results in better patient-oriented outcomes than those typical of fusion. The safety and effectiveness of the Dynesys System has not been fully established.

ODG also has very limited support for fusion procedures in the lumbar spine: Not recommended for patients who have less than six months of failed recommended conservative care unless there is objectively demonstrated severe structural instability and/or acute or progressive neurologic dysfunction, but recommended as an option for spinal fracture, dislocation, spondylolisthesis or frank neurogenic compromise, subject to the selection criteria outlined in the section below. Pre-operative measures include dynamic imaging to substantiate instability. It is noted that, per the medical reports, there is a Grade I retrolisthesis of L4 on L5 with a mild Grade I retrolisthesis of L5 on L4 and of L5 on S1 without spondylolysis. However, flexion/extension radiographs taken on April 9, 2008 show no evidence of instability in the lumbar spine. It is also noted in the records that the patient takes Atenolol for high blood pressure, has recently resumed smoking (December 2007) and has diabetes not well controlled, which are all risk factors for surgery and fusion.

In regard to the medical necessity of decompression and discectomy, as noted above, the operative report of January 20, 2009 describes removal of disc material at L4-5. No further compression was seen on the nerve roots or the thecal sac. On February 2 and March 5, 2009 the patient has a normal neurologic exam. On March 16 and 17, 2009 he reports complete resolution of his leg pain. He reports increased pain on March 31, 2009 when playing with a nephew, although he is noted to be neurologically intact. The ODG criteria for decompression at L4-5 include, substantiation of L5 nerve root compression with one of the following: 1. Severe unilateral foot/toe/dorsiflexor weakness/mild atrophy 2. Mild-to-moderate foot/toe/dorsiflexor weakness 3. Unilateral hip/lateral thigh/knee pain. This criteria has not been documented.

Based on three factors of, lack of support for the Dynasys System, lack of documentation of instability and lack of sufficient criteria for a laminectomy/discectomy at L3-4, L4-5 and L5-S1, recommendation cannot be given to proceed with the recommended intervention. Therefore, my recommendation is to agree with the previous non-certification of the request for Inpatient length of stay for three (3) days for revision, decompression at L3-4, L4-5, L5-S1 with dynamic spine stabilization of L3-S1.

The IRO's decision is consistent with the following guidelines:

**A DESCRIPTION AND THE SOURCE OF THE SCREENING CRITERIA OR OTHER CLINICAL BASIS USED TO MAKE THE DECISION:**

- ACOEM- AMERICAN COLLEGE OF OCCUPATIONAL & ENVIRONMENTAL MEDICINE UM KNOWLEDGEBASE
- AHCPR- AGENCY FOR HEALTHCARE RESEARCH & QUALITY GUIDELINES
- DWC- DIVISION OF WORKERS COMPENSATION POLICIES OR GUIDELINES
- EUROPEAN GUIDELINES FOR MANAGEMENT OF CHRONIC LOW BACK PAIN
- INTERQUAL CRITERIA
- MEDICAL JUDGEMENT, CLINICAL EXPERIENCE AND EXPERTISE IN ACCORDANCE WITH ACCEPTED MEDICAL STANDARDS
- MERCY CENTER CONSENSUS CONFERENCE GUIDELINES
- MILLIMAN CARE GUIDELINES
- ODG- OFFICIAL DISABILITY GUIDELINES & TREATMENT GUIDELINES
- PRESSLEY REED, THE MEDICAL DISABILITY ADVISOR
- TEXAS GUIDELINES FOR CHIROPRACTIC QUALITY ASSURANCE & PRACTICE PARAMETERS
- TEXAS TACADA GUIDELINES
- TMF SCREENING CRITERIA MANUAL
- PEER REVIEWED NATIONALLY ACCEPTED MEDICAL LITERATURE (PROVIDE A DESCRIPTION)
- OTHER EVIDENCE BASED, SCIENTIFICALLY VALID, OUTCOME

ODG - Lumbar Chapter (7-22-2009) Dynamic neutralization system:

Not recommended for non-specific LBP. May be an option for spondylolisthesis in elderly patients instead of fusion. A dynamic neutralization system for the spine, the Dynesys® Spinal System (Zimmer USA), is a nonfusion pedicle screw stabilization system that uses flexible materials to stabilize the affected lumbar region while preserving the natural anatomy of the spine, and it was developed in an attempt to overcome the inherent disadvantages of rigid instrumentation and fusion. The results of studies indicate that both back and leg pain are, on average, still moderately high 2 years after instrumentation with the Dynesys system. Only half of the patients declared that the operation had helped and had improved their overall quality of life; less than half reported improvements in functional capacity. The reoperation rate after Dynesys was relatively high. There is limited support for the notion that semirigid fixation of the lumbar spine results in better patient-oriented outcomes than those typical of fusion. The manufacturer study for FDA approval concluded that Dynesys may be preferable to fusion for surgical treatment of degenerative spondylolisthesis and stenosis because it decreases back and leg pain while avoiding the relatively greater tissue destruction and the morbidity of donor site problems encountered in fusion. However, long-term follow-up care is still recommended. In elderly

patients with spinal stenosis and degenerative spondylolisthesis, dynamic stabilization maintains enough stability to prevent progression of spondylolisthesis, but the degenerative disease still is progressive and degeneration at adjacent motion segments remains a problem. The Dynesys Spinal System was cleared by the FDA via a 510(k) clearance in 2006. This type of approval does not involve extensive clinical trial data submission and review by the FDA. In order to qualify for a 510(k) clearance a manufacturer need only prove that their device is similar in function to a device that had previously been granted FDA approval for interstate commerce prior to May 28, 1976. Numerous new posterior dynamic stabilization (PDS) devices have been developed for the treatment of disorders of the lumbar spine. Devices include: Interspinous Spacer Devices; The Wallis System; The X STOP Device; The DIAM System; The Coflex, ExtendSure, and CoRoent Devices; Pedicle Screw/Rod-Based Stabilization Devices; The Graf System; The Dynesys System; The AccuFlex, PEEK, and Isobar Rods; Total Facet Replacement Systems; The TFAS Implant; The TOPS Implant; The Stabilimax NZ Implant. See also DIAM (device for intervertebral assisted motion).

The Official Disability Guidelines - Low back Chapter (7-22-2009) Fusion:

Not recommended for patients who have less than six months of failed recommended conservative care unless there is objectively demonstrated severe structural instability and/or acute or progressive neurologic dysfunction, but recommended as an option for spinal fracture, dislocation, spondylolisthesis or frank neurogenic compromise, subject to the selection criteria outlined in the section below.

There is limited scientific evidence about the long-term effectiveness of fusion for degenerative disc disease compared with natural history, placebo, or conservative treatment. Studies conducted in order to compare different surgical techniques have shown success for fusion in carefully selected patients.

According to the recently released AANS/NASS Guidelines, lumbar fusion is recommended as a treatment for carefully selected patients with disabling low back pain due to one- or two-level degenerative disc disease after failure of an appropriate period of conservative care. This recommendation was based on one study that contained numerous flaws, including a lack of standardization of conservative care in the control group. At the time of the 2-year follow up it appeared that pain had significantly increased in the surgical group from year 1 to 2. Follow-up post study is still pending publication. In addition, there remains no direction regarding how to define the "carefully selected patient."

A recently published well respected international guideline, the "European Guidelines," concluded that fusion surgery for nonspecific chronic LBP cannot be recommended unless 2 years of all other recommended conservative treatments - including multidisciplinary approaches with combined programs of cognitive intervention and exercises - have failed, or such combined programs are not available, and only then in carefully selected patients with maximum 2-level degenerative disc disease.

A recent randomized controlled trial comparing decompression with decompression and instrumented fusion in patients with foraminal stenosis and single-level degenerative disease found that patients universally improved with surgery, and this improvement was maintained at 5 years. However, no obvious additional benefit was noted by combining decompression with an instrumented fusion.

For nonradicular low back pain with common degenerative changes, there is fair evidence that fusion is no better than intensive rehabilitation with a cognitive-behavioral emphasis for improvement in pain or function, and less than half of patients experience optimal outcomes (defined as no more than sporadic pain, slight restriction of function, and occasional analgesics) following fusion.

Lumbar fusion for spondylolisthesis: Recommended as an option for spondylolisthesis. Patients with increased instability of the spine after surgical decompression at the level of degenerative spondylolisthesis are candidates for fusion. This study found only a 27% success from spinal fusion in patients with low back pain and a positive single-level low-pressure provocative discogram, versus a 72% success in patients having a well-accepted single-level lumbar pathology of unstable spondylolisthesis.

Patient Selection Criteria for Lumbar Spinal Fusion:

For chronic low back problems, fusion should not be considered within the first 6 months of symptoms, except for fracture, dislocation or progressive neurologic loss. Indications for spinal fusion may include: (1) Neural Arch Defect - Spondylytic spondylolisthesis, congenital neural arch hypoplasia. (2) Segmental Instability (objectively demonstrable) - Excessive motion, as in degenerative spondylolisthesis, surgically induced segmental instability and mechanical intervertebral collapse of the motion segment and advanced degenerative changes after surgical disectomy. [For excessive motion criteria, see AMA Guides, 5th Edition, page 384 (relative angular motion greater than 20 degrees). (Andersson, 2000) (Luers, 2007)] (3) Primary Mechanical Back Pain (i.e., pain aggravated by physical activity)/Functional Spinal Unit Failure/Instability, including one or two level segmental failure with progressive degenerative changes, loss of height, disc loading capability. In cases of workers' compensation, patient outcomes related to fusion may have other confounding variables that may affect overall success of the procedure, which should be considered. There is a lack of support for fusion for mechanical low back pain for subjects with failure to participate effectively in active rehab pre-op, total disability over 6 months, active psych diagnosis, and narcotic dependence. [For spinal instability criteria, see AMA Guides, 5th Edition, page 379 (lumbar inter-segmental movement of more than 4.5 mm). (Andersson, 2000)] (4) Revision Surgery for failed previous operation(s) if significant functional gains are anticipated. Revision surgery for purposes of pain relief must be approached with extreme caution due to the less than 50% success rate reported in medical literature. (5) Infection, Tumor, or Deformity of the lumbosacral spine that cause intractable pain, neurological deficit and/or functional disability. (6) After failure of two discectomies on the same disc, fusion may be an option at the time of the third discectomy, which should also meet the ODG criteria. (See ODG Indications for Surgery -- Discectomy.)

Pre-Operative Surgical Indications Recommended: Pre-operative clinical surgical indications for spinal fusion should include all of the following: (1) All pain generators are identified and treated; & (2) All physical medicine and manual therapy interventions are completed; & (3) X-rays demonstrating spinal instability and/or myelogram, CT-myelogram, or discography (see discography criteria) & MRI demonstrating disc pathology; & (4) Spine pathology limited to two levels; & (5) Psychosocial screen with

confounding issues addressed. (6) 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. (Colorado, 2001) (BlueCross BlueShield, 2002)

ODG - Lumbar Chapter (7-22-2009) Discectomy/Laminectomy:

ODG Indications for Surgery -- Discectomy/laminectomy -

Required symptoms/findings; imaging studies; & conservative treatments below:

I. Symptoms/Findings which confirm presence of radiculopathy. Objective findings on examination need to be present. For unequivocal evidence of radiculopathy, see AMA Guides, 5th Edition, page 382-383. (Andersson, 2000) Straight leg raising test, crossed straight leg raising and reflex exams should correlate with symptoms and imaging.

Findings require ONE of the following:

C. L5 nerve root compression, requiring ONE of the following:

1. Severe unilateral foot/toe/dorsiflexor weakness/mild atrophy
2. Mild-to-moderate foot/toe/dorsiflexor weakness
3. Unilateral hip/lateral thigh/knee pain

D. S1 nerve root compression, requiring ONE of the following:

1. Severe unilateral foot/toe/plantar flexor/hamstring weakness/atrophy
2. Moderate unilateral foot/toe/plantar flexor/hamstring weakness
3. Unilateral buttock/posterior thigh/calf pain

(EMGs are optional to obtain unequivocal evidence of radiculopathy but not necessary if radiculopathy is already clinically obvious.)

II. Imaging Studies, requiring ONE of the following, for concordance between radicular findings on radiologic evaluation and physical exam findings:

- A. Nerve root compression (L3, L4, L5, or S1)
- B. Lateral disc rupture
- C. Lateral recess stenosis

Diagnostic imaging modalities, requiring ONE of the following:

1. MR imaging
2. CT scanning
3. Myelography
4. CT myelography & X-Ray

III. Conservative Treatments, requiring ALL of the following:

A. Activity modification (not bed rest) after patient education ( $\geq$  2 months)

B. Drug therapy, requiring at least ONE of the following:

1. NSAID drug therapy
2. Other analgesic therapy
3. Muscle relaxants
4. Epidural Steroid Injection (ESI)

C. Support provider referral, requiring at least ONE of the following (in order of priority):

1. Physical therapy (teach home exercise/stretching)
2. Manual therapy (chiropractor or massage therapist)
3. Psychological screening that could affect surgical outcome
4. Back school