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Lumbar Spine Low Back Pain Non-Operative Guidelines

Adapted from Hospital for Special Surgery PT Program

The following guidelines developed by HSS Rehabilitation are categorized into levels of irritability as well as treatment sub-groups. These guidelines are intended to assist the clinician in structuring an individualized criteria-based treatment plan. They are based on the most current evidence and clinical pearls from experienced clinicians, however, are not meant to be a substitute for clinical reasoning and decision making. It is the clinician's responsibility to determine the most reasonable treatment model based on sound clinical judgement and assessment of objective clinical findings. For appropriate utilization of these guidelines, it is imperative that the clinician be familiar with the current clinical practice guidelines, treatment-based classifications systems and the influence of regional interdependence to make the most appropriate evidence-based decisions.

It is further noted that the language used by the clinician during the evaluation and throughout all treatments has a substantial impact on the patient's outcome. The clinician must always use a patient-centered approach to promote function and healthy lifestyle decisions. As the goals and plan of care are developed, it is important that the patient take an active role in making informed decisions about their health behavior. It is recommended that the clinician de-emphasizes pathoanatomical explanations of pain or dysfunction, and instead empower the patient by using language that promotes improvements in function based on the patient's behaviors and goals.

If any of these symptoms are present in conjunction with low back pain, refer for medical work up:

- Include Review of Systems / Red Flag Screening, for example:
  - New or recent trauma
  - New onset of bowel and bladder dysfunction (retention / incontinence)
  - Recent change in neurological status (new onset of saddle anesthesia)
  - Severe loss of coordination
  - LBP associated with constitutional symptoms
  - Previous history of cancer
    - Age < 20 years or > 50 years (malignancy), > 70 years (fracture)
  - Compression fracture
    - > 70 years, prolonged corticosteroid use, trauma, female
  - Failure to improve with conservative care
  - Note: For more information on red flags, see Beattie reference, page 9, table 2

If any of these yellow flag risk factors (see reference #2) are present in conjunction with neck pain, consider the impact on patient progression and consider the possibility for psychological referral:

- Depression/anxiety
- Psychosocial issues (e.g. secondary gain issues, No-Fault cases)

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- Work related conditions (e.g. job dissatisfaction, Worker's Compensation)
- Substance abuse or chronic opioid use
- Sleep disorders
- Chronic pain

Follow physician modifications as prescribed.

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Phase 1: Activity Modification (High to Moderate Irritability)

PRECAUTIONS

- Red, yellow, black flags
- Avoid exacerbating recurring symptoms

ASSESSMENT

- Numeric Pain Rating Scale (NPRS)
- Oswestry Disability Index (ODI)
- Fear-Avoidance Belief Questionnaire (FABQ)
- STarT Back Tool
- Static / Dynamic posture
- Bed mobility
- Gait
- ROM (Active / Accessory / Physiologic ROM)
- Function based assessment of impairments
- Neurologic and neurodynamic examinations
- Cluster testing for differential diagnosis

TREATMENT RECOMMENDATIONS

- Assignment to Treatment Based Classification

SYMPTOM MODULATION – PAIN CONTROL

- Specific exercise with regard to directional preference
    - Encourage movement / activity vs. inactivity
    - Aerobic exercise
- Traction / consider self-traction
- Temporary proprioceptive taping / bracing
- Soft tissue mobilization
- Mobilization / Manipulation (Consider Lumbar CPR or mobilization / manipulation of adjacent areas such as thoracic spine)
- Address impairments found on evaluation
- Provide proper posture modification at home / work

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CRITERIA FOR ADVANCEMENT

- Ability to tolerate symptoms throughout ADL's without increasing disability
- Patient demonstrates within and in-between session improvement

EMPHASIZE

- Importance of being an active participant in recovery process
- Provide posture/activity modifications, use of modalities
- Reduction of fear; re-conceptualize beliefs on fear, tissue damage and disability

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Phase 2: Addressing Impairments (Moderate Progressing to Low Irritability)

PRECAUTIONS

- Avoid exacerbating recurrent symptoms
- Any activity that increases signs and symptoms ≥ 1 day
    - Consider reverting to a previous phase if exacerbation is in excess of 1 day
- Avoid activities that result in symptom exacerbation / decline in neurological status

ASSESSMENT

- NPRS
- ODI
- FABQ
- Static / Dynamic Posture
- Bed Mobility
- Gait
- ROM (Active / Accessory / Physiologic ROM)
- Neurologic and neurodynamic examinations
- Cluster testing for differential diagnosis
- Assess motor control with functional movements

TREATMENT RECOMMENDATIONS

- Assignment to Treatment Based Classification
- Impairment based approach
- Independent symptom modulation

Manual interventions: based on evaluative findings- consider regional interdependence

- Movement sequencing
- Functional movements
- Breathing patterns
- Sit to stand / single leg stance / squat mechanics etc.
- Rolling patterns
- Gait training
- Stabilization
- Supine, prone, quadruped, seated, half kneeling, standing core progressions
- Introduce multi-planar movement patterns unloaded

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Balance progressions:

- Supine / prone -> quadruped -> seated -> tall / half kneeling -> standing
- Sagittal -> frontal -> transverse -> multiplanar
- Consider pattern assistance, resistance with assistance, and resistance
- Movement dissociation (create proximal stability to allow distal mobility)
- Local -> global sequencing

Strength / endurance / condition:

- Proper neuromuscular activation
- Back / core / lower extremity
- Consider crossed patterns and kinetic chains
- Aerobic conditioning for activity tolerance, conditioning, decreased pain pressure threshold

CRITERIA FOR ADVANCEMENT

- Independent symptom modulation
- No increase in symptoms with AROM
- Improvement in passive range of motion that exceeds minimal clinically important difference (MCID)

EMPHASIZE

- Patient education regarding recurrence rates with acute LBP
- Normalize mobility and ADL function
- Symptom modulation through lumbopelvic control and sequencing in multiple planes

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Phase 3: Restoration of Function (Low to No Irritability)

PRECAUTIONS

- Avoid exacerbating recurrent symptoms
- Any activity that increases signs and symptoms >/= 1 day
    - Consider reverting to a previous phase if exacerbation is in excess of 1 day
- Avoid high impact activities

ASSESSMENT

- NPRS
- ODI
- FABQ
- Functional movements: functional squat, single leg squat
- Single leg stance (time, quality, Trendelenburg)
- Step up / step downs
- Multi-planar AROM (rotational)
- Specific UE / LE strength
- Flexibility

TREATMENT RECOMMENDATIONS

Progress from Phase 2 and consider:

- Functional tasks based on activities with graded progression
- Progress core stabilization to standing
- Thoracic spine mobility and full integration exercises
- Leg press progression
- Bending / lifting light weight off ground with proper mechanics
- Standing core strengthening: pallof press variations
- PNF patterns in half kneeling and standing
- Advanced resistive multidirectional training
- Dynamic balance activities
- Lunges with weight
- Transfers: kneeling / half kneel / quadruped
- Advanced mobility exercises
- Work hardening exercises

CRITERIA FOR DISCHARGE (OR ADVANCEMENT IF RETURNING TO SPORT)

- Independent with progressive home / community-based activity programs
- Adequate strength and neuromuscular control of UE and LE
- ROM WFL

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- Minimal pain with functional activities
- Independent with ADL's
- Independent symptom management
- Discharge or move onto phase 4 if the goal is to return to sport or advanced functional activities

EMPHASIZE

- Advanced functional mobility
- Graded return to activity / work
- Maximize multi-planar and multi-joint function, neuromuscular control, and sequencing
- Self-monitor signs and symptoms during ADLs and occupational activities

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Phase 4: Return to Sport (if applicable)

PRECAUTIONS

- Monitor exercise dosing- avoid too much too soon and be certain to incorporate rest and recovery

ASSESSMENT

- NPRS
- ODI
- FABQ
- Functional movements: functional squat, single leg squat
- Single leg stance (time, quality, Trendelenburg)
- Step up / step downs
- Job or sports specific movements
- Flexibility

TREATMENT RECOMMENDATIONS

- Activity specific training
- Sport specific warm up and activities
- High resistance training
- Dynamic neuromuscular re-education
- Agility and coordination drills as necessary for sport
- Multi-planar and rotational movement patterns
- Loading of the spine with weight as tolerated
- Abdominal strength to meet sport-specific demands

CRITERIA FOR DISCHARGE (OR ADVANCEMENT IF RETURNING TO SPORT)

- Full activity participation
- **Independent symptom management**

EMPHASIZE

- Self-monitoring volume of exercise and load progressions
- Functional progressions
- Speed and accuracy
- Communication with appropriate Sports Performance expert

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