



REHABILITATION PROTOCOL

Acute Lumbar Disc Herniation

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GENERAL PRINCIPLES

This protocol for rehabilitation after Acute Lumbar Disc Herniation is designed to provide the rehabilitation professional with a general guideline for patient care with the [AlterG Anti-Gravity Treadmill](#). As such, it should be stressed that this is only a protocol and should not be a substitute for professional clinical decision-making regarding a patient's progression. And it should be further noted that progression should be individualized based upon each patient's specific needs, pain level, physician's guidelines, physical examination, progress, and presence of any complications.

The guidelines provided here are based upon our published experience with appropriate adjustments for a wide range of patients based on clinical expertise.

FREQUENCY OF ALTERG USE

Up to daily for high-level athletes, or 3-4 times per week for others.

CONTRAINDICATIONS

Increase in pain during or after use of the AlterG
Progressing neurological signs and symptoms

PHASE I (IMMEDIATE) Weeks 1-2

GOALS

- Protect injured tissue from excessive loading
- Decrease pain
- Avoid progressive nerve root damage

TREATMENT OPTIONS

- Bed rest
- Pain and muscle relaxant medications
- Anti-inflammatory medications
- Passive extension exercises (McKenzie)
- Hip and lower extremity flexibility exercises
- Early protected activity

GAIT TRAINING

(SEE PROGRESSION TABLE BELOW):

- Walking on the [AlterG Anti-Gravity Treadmill](#) may begin as soon as the patient can safely get into and out of the unit.
- Gait training should begin at ~50% BW, 3° - 5° incline to further reduce impact forces, and a comfortable walking speed approximately 2 -4 mph.
- The initial session should be limited to 10 minutes, and only if symptoms do not increase during the session.
- If symptoms are no worse after the session and the following day, then speed, duration and %BW can be gradually increased while monitoring for increases in symptoms during, immediately after, and the following day after each session.

PHASE II (EARLY RECOVERY PHASE) Weeks 2-4

GOALS

- Decrease residual pain
- Maintain aerobic fitness
- Stimulate healing connective tissue with controlled stress
- Initiate efforts to recover any strength loss from nerve root injury

THERAPEUTIC EXERCISE

- Progress as appropriate with passive extension exercises (McKenzie)
- Initiate trunk stabilization exercise program
- Initiate lower extremity strengthening for muscles with weakness due to nerve root injury

GAIT TRAINING

(SEE PROGRESSION TABLE BELOW):

- Gradually progress the speed, duration, and %BW. Reduce grade on the [AlterG Anti-Gravity Treadmill](#) as tolerated
- Continue to monitor for worsening of symptoms, and modify %BW on [AlterG Anti-Gravity Treadmill](#) if necessary

PHASE III (RECOVERY PHASE) Weeks 4+

GOALS

- Continue to stimulate healing connective tissue with controlled stress
- Strengthen trunk musculature
- Encourage body mechanics awareness
- Enhance aerobic fitness
- Recover strength loss from nerve root injury

THERAPEUTIC EXERCISE

- Progress with trunk stabilization exercise program, especially into functional positions
- Progress with lower extremity strengthening for muscles with residual weakness from nerve root injury

GAIT TRAINING

(SEE PROGRESSION TABLE BELOW):

- Gradually progress the speed, duration and %BW on the [AlterG Anti-Gravity Treadmill](#) as tolerated
- Continue to monitor for worsening of symptoms, and modify %BW on [AlterG Anti-Gravity Treadmill](#) if necessary

ALTERG PROGRESSION TABLE

Week	Program	Speed	Incline	Time
Weeks 1-2	Walking at ~50% BW	2-4 mph	3-5%	10-30 min
Weeks 2-4	Progress to ~25% BW as tolerated	Walking to running speeds	3-5% progressing to 0%	20-45 min
Weeks 4+	Progress to 0% BW as tolerated	Walking to running speeds	As desired	30-45+ min

1. Moore MN, Vandenakker-Albanese C, Hoffman MD. Aggressive return to running following lumbar disc herniation: A case report. Arch Phys Med Rehabil 2010; 91:803-805.