

# Incidence of Preoperative Motor Weakness and Recovery after Spinal Surgery

Nathan John Lee BS; Jeremy Steinberger MD; Samuel K Cho MD; John M. Caridi MD  
Mount Sinai Hospital

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## Introduction

The postoperative course of patients who present with preoperative neurological deficits is not well-documented. It is unclear if duration of preoperative deficit affects the likelihood and pace of neurologic recovery. It is also nebulous whether age, sex, diagnosis, type of surgery, severity of weakness, physical therapy, and ambulation play a role.

## Methods

A retrospective evaluation of a cohort of 705 patients from March 2011 to July 2014 who underwent spine surgery by two spine surgeons. Data collected included age, sex, presence of neurological deficit preoperatively, severity of deficit, number of involved muscle groups, comorbidities, diagnosis, type of surgery, degree of recovery, time to recovery, follow up physical therapy, and days to ambulate. Neurologic examinations were recorded at every visit according to the Frankel grading system.

## Results

705 patients were studied from 3/2011-7/2014. Of these, 222 patients had a neurologic deficit prior to surgery. 16 patients were excluded from the study due to loss of follow up. Patients presenting with neurological deficit were 56 years old on average; 51.9% were male, and the average deficit motor grade was 3.3/5 on the Frankel motor score. The median time to recovery was 18 days. 92% of patients had some improvement from their preoperative Frankel motor score – 80% a full recovery of function, 20% a partial improvement. The duration of deficit prior to surgery did not affect likelihood of postoperative recovery of function. Patients who went to acute rehabilitation were more likely to improve their neurologic function and walking sooner after surgery was associated with recovery of neurologic function.

## Conclusions

Spine surgery has a high rate of improving preoperative neurologic deficits. Duration of deficit preoperatively does not affect recovery. The median time to recovery is 18 days.

## Learning Objectives

To investigate timing and extent of neurologic recovery after spine surgery and to investigate what factors play a role.

## References

none