

**Objectives:** Despite the well-established benefits of lumbar discectomy, many patients wait for their surgery which delays their return to work and potentially increases healthcare costs. The economic repercussions of such delays have not been well studied. The goal of this study was to quantify the economic advantages in terms of direct and indirect costs of early vs late surgery for symptomatic disc herniation.

**Methods:**

This is a retrospective analysis of prospectively collected data from the CSORN registry. The Ontario Health Insurance Plan (OHIP) claims history database was used for direct costs estimates. Canada Income Statistics and the human capital method were used to calculate indirect costs. Comparisons were made between patients receiving surgery less than 60 days after consent (short wait) and 60 days or more after consent (long wait).

**Results:**

A total of 493 patients were included in this study with 272 patients (55.2%) in the short wait group and 221 patients (44.8%) in the long wait group. Demographics were similar between the two groups. The proportions of patients who returned to work at 3-months and 12-months post-operatively were similar ( $p < 0.596$ ;  $p < 0.798$ ). Time from surgery to return to work was similar between both groups (34.0 vs 34.9 days,  $p < 0.804$ ). Inherently, the longer wait group had significantly longer time from consent to return to work. This extended wait corresponded to an additional \$11,753.10 indirect cost due to productivity loss while waiting for surgery. The short wait group showed increased healthcare usage with patients more commonly visiting the emergency department (52.6% vs 25.0%,  $p < 0.032$ ), using physiotherapy (84.6% vs 72.0%,  $p < 0.001$ ) and receiving MRI (65.2% vs 41.4%,  $p < 0.043$ ). This corresponded to an additional direct cost of \$518.21 per patient. The short wait group had higher baseline NPR leg, ODI, EQ5D, PCS and MCS. A higher proportion of patients reached MCID in terms of NRS leg pain at 3-month follow up in the short wait group (84.0% vs 75.9%,  $p < 0.040$ ). Conclusion Early surgery is associated with cost saving of \$11,234.89 per patient when compared to late surgery for lumbar disc herniation. The higher healthcare utilisation in patients receiving early surgery is counterbalanced by the additional productivity loss of the long waiters. From a societal economic perspective, early surgery seems beneficial and should be promoted.