

## Return to Driving After Anterior Total Hip Arthroplasty

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**INTRODUCTION:** The standard recommendation for return to driving for patients after total hip arthroplasty (THA) is 6-8 weeks based on studies using the posterior approach. The muscle-sparing anterior total hip arthroplasty (A-THA) has been shown to facilitate faster recovery. The objective of this prospective study was to objectively assess brake reaction time (BRT) pre- and post-operatively in patients undergoing right and left A-THA. Our hypothesis is that patients undergoing an A-THA will have their BRT return to baseline before the 6<sup>th</sup> post-operative week. We also hypothesize that a patient's BRT will not be affected after a left A-THA.

**METHODS:** We prospectively followed 32 patients who elected to undergo an A-THA (21 right, 11 left). BRTs were recorded on the patient's last pre-operative visit as well as 2 and 6 weeks post-operatively. Pain was assessed during each trial using the visual analog scale (VAS) and an Oxford Hip Score (OHS) was filled out at the pre-operative and last post-operative visit.

**RESULTS:** Comparing the pre-operative BRTs (0.67s) to post-operative values in patients undergoing a right A-THA, 85.7% of patients reached or surpassed their pre-operative BRT at 2 weeks post-operatively. There were significant improvements in BRTs at 2 weeks (0.60s, P=0.01) and 6 weeks (0.58s, P=0.03) post-operatively. OHS improved from 36 to 19 and VAS pain scores improved steadily over the post-operative course. When comparing BRTs in patient who underwent a left A-THA, there was no significant difference between pre-operative BRTs (0.63s) and BRTs at 2 weeks (0.60s, P= 0.53) and 6 weeks (0.58s, P=0.31). OHS improved over the 6-week period from 37 to 20 and VAS pain scale showed no obvious trend (**Figures 1, 2, 3, and 4**).

**DISCUSSION:** Patients who underwent a right A-THA had significant improvements in their BRTs by the second post-operative week and patients that had a left A-THA and break with their right foot were unaffected in regards to their driving. With the direct anterior approach, patients may be safe to return to driving earlier than suggested by studies focusing primarily on the posterior approach. Limitations of this study include small sample size. Future studies with larger sample sizes should be conducted to corroborate the findings of this study.

**SIGNIFICANCE/CLINICAL RELEVANCE:** This study adds to a growing body of evidence that patients may be able to return to driving earlier than previously thought with the emergence of minimally invasive and muscle sparing surgical approaches after THA.

