

Driving After Total Ankle Arthroplasty

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Introduction/Purpose: With the increase in number of total ankle arthroplasty surgery, physician guidelines on when to begin to consider patients' return to driving is valuable. The ability to accurately and efficiently determine when a patient can return to driving is important both from a patient safety and a medicolegal perspective. The purpose of the study was to determine when patients' brake reaction time (BRT) returns to a safe value after right total ankle arthroplasty. We also aimed to identify predictive factors that may identify those patients who may not be safe to drive.

Methods: After institutional review board approval, fifty-five patients undergoing right total ankle arthroplasty were recruited prospectively. Patient demographics include an age range of 43 to 83 years (median 63 years), of which 31 were male (56%) and 24 were female (44%). BRT was tested at six weeks and repeated weekly until patients achieved a passing BRT. A control group of twenty healthy patients was used to establish a passing BRT of 0.850 seconds. Patients were given a validated, novel driver readiness survey to complete of which a 10/15 point or higher score was considered passing.

Results: At 6 weeks, 50 patients (91%) achieved a passing BRT and were considered safe to drive, and the passing group average BRT was 0.662 seconds. At 9 weeks, 52 patients (100%) of those who completed the study achieved a passing BRT. Patients that failed at 6 weeks had statistically greater visual analog scale (VAS) for pain ($p=0.037$) and significantly diminished ankle plantarflexion ($p=0.029$). There is a significant ($p<0.001$) and large ($r=-0.455$) correlation between BRT and the validated driver readiness survey scores. 5/5 (100%) patients that failed the BRT also failed the driver readiness survey ($p=0.049$). Interestingly, males were more likely to think they were ready to drive based on their driver readiness survey but were no more likely to pass the BRT than females ($p=0.002$).

Conclusion: Over 90% of patients may be eligible to return to driving as early as 6 weeks post-operatively. Indications that a patient is not safe to return to driving at 6 weeks are higher VAS, limited plantarflexion, and a failed driver readiness survey. Although many factors determine whether a patient may safely return to driving, patients may be informed that BRT normalizes 9 weeks after right total ankle arthroplasty.

Figure 1. Driver Readiness Survey

To score, add the point values that correspond to the response for each of the 3 included questions (questions 1, 2, and 4). Total score of at least 10 points or greater is consistent with safe return to driving.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I think my brake reaction time is slower than most drivers my age.	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
2. I think my brake reaction time is faster than most drivers my age.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
3. I think my brake reaction time is about the same as most drivers my age.*	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
4. Based on what I think my brake reaction time is, I think I am ready to drive.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

*Statement excluded from survey based on statistical results for survey validity.