Return to Driving After Foot and Ankle Surgery: A Novel Validated Driver Readiness Survey

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• Elizabeth McDonald, BA; Rachel Shakked, MD; Brian S. Winters, MD; Joseph N. Daniel, DO; and Steven M. Raikin, MD have no conflicts to disclose.

• David I. Pedowitz, MD reports personal fees from Integra LLC, Zimmer-Biomet, and Arthrex, outside the submitted work. In addition, Dr. Pedowitz has a patent Cadence Total Ankle Replacement with royalties paid.
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Background

• General recommendations to return to driving, but little objective data to guide physicians in providing individual recommendations\(^1\)\(^-\)\(^4\)

• Brake reaction time (BRT) is only validated tool to determine safe return to driving
  • BRT cumbersome in clinical setting

• Previous paper-based surveys only moderately associated with safe return to driving\(^5\)\(^-\)\(^9\)

Purpose

• To present a novel, validated psychometric survey that confirms safe return to driving after orthopaedic surgery of the right foot and ankle
Methods

• A sequential cohort of patients enrolled prospectively over 21 month period
• S/p right Achilles rupture repair, total ankle arthroplasty (TAA), and hallux valgus correction
• Single center, 5 fellowship-trained foot and ankle surgeons
## Methods

- **At 6 week post-op visit:**
  - **4-question survey**
  - **braking reaction time (BRT); pass ≤ 0.850s**

### 4-Question 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.

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

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

- 171 patients
  - 55 Achilles rupture repairs (32%)
  - 51 TAA (30%)
  - 65 hallux valgus corrections (38%)
- Ages 21 to 83 years (mean 52 years)
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Results

• 162 of 171 patients (95%) achieved passing BRT ≤ 0.850s by 7.6 wks

• Initially, survey w/ low internal consistency (Chronbach’s alpha=0.57)

• Removed “same” question
  • 3-question survey improved internal consistency (Chronbach’s alpha=0.73)

• Max score 15 points

• ≥ 10 points assoc w/ 99% probability of success (95% confidence interval: 96%, 100%)
This novel, 3-question driving readiness survey can accurately predict a passing braking reaction test after orthopaedic surgery of the right foot and ankle as early as 6 weeks post-operatively.
References

1. Hernandez VH, Ong A, Orozco F, Madden AM, Post Z. "When is it safe for patients to drive after right total hip arthroplasty?" J Arthroplasty, Apr 2015: 627-630.


THANK YOU.