

Replacing the "Blue Box": Age Norms for a New Brake Reaction Device

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Abstract

- The purpose of this study was to develop norms for a new brake reaction timer device to be used by driving evaluators across the country. It will replace the AAA brake reaction timer that is no longer available. This new device is light, portable, and simple to use. The results seem to demonstrate that the SR-2S is a valid tool for use as a brake reaction timer.

Purpose for Study

- The purpose of this study was to develop norms for the Simple Reaction Time Tester as a reliable and valid indicator of brake reaction time.
- This is necessary as there is not a brake reaction time that is convenient and portable since the American Automotive Association's Blue Box that is no longer available.
- "Computerized, performance-based measures that are predictive of crashes in the elderly population can provide an objective criterion for determining the need for driver restriction or rehabilitation." Edwards, James, Walter Dinkel, Roemer, B. Ed (2003). Journal of Clinical and Gerontological Neuropsychology, 27, 529-543.

Instrument

- Consists of:
 - A foot pedal module with an accelerator pedal and a resistor control box, the resistor controls and reads the speed by touching the pedal button.
 - Two light boxes with fluorescent red and green lights to indicate the user when to press the brake.
 - The red and green lights can be modified for differences in visibility.
- The SR-2S Simple Reaction Time Tester is from Advanced Therapy Products, Inc. (Grand Rapids, Michigan, Virginia).



Sample

- The collection of data was a convenience sampling.
- For North Carolina residents, data was collected on the relative percentage of females across the life span.
- Data was collected at several health fairs and senior events.



Sample

Participant Demographics

Characteristic	Value
Age (Mean)	68.5
Age Range	55-85
Gender (Male/Female)	15/15
Education (High School/College/Postgraduate)	10/5/5
Occupation (Retired/Working)	12/3
Health Status (Good/Fair/Poor)	10/5/5

Use of RT at "Elder Fairs"

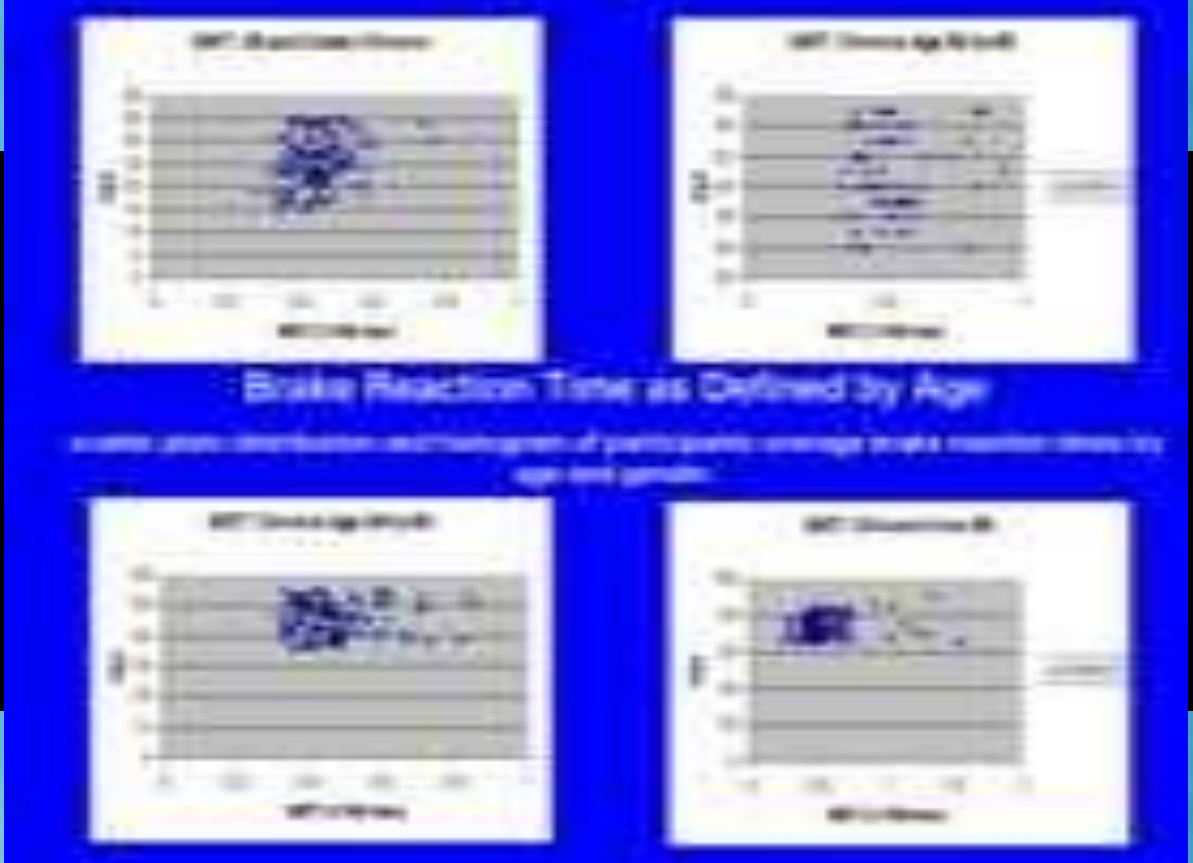
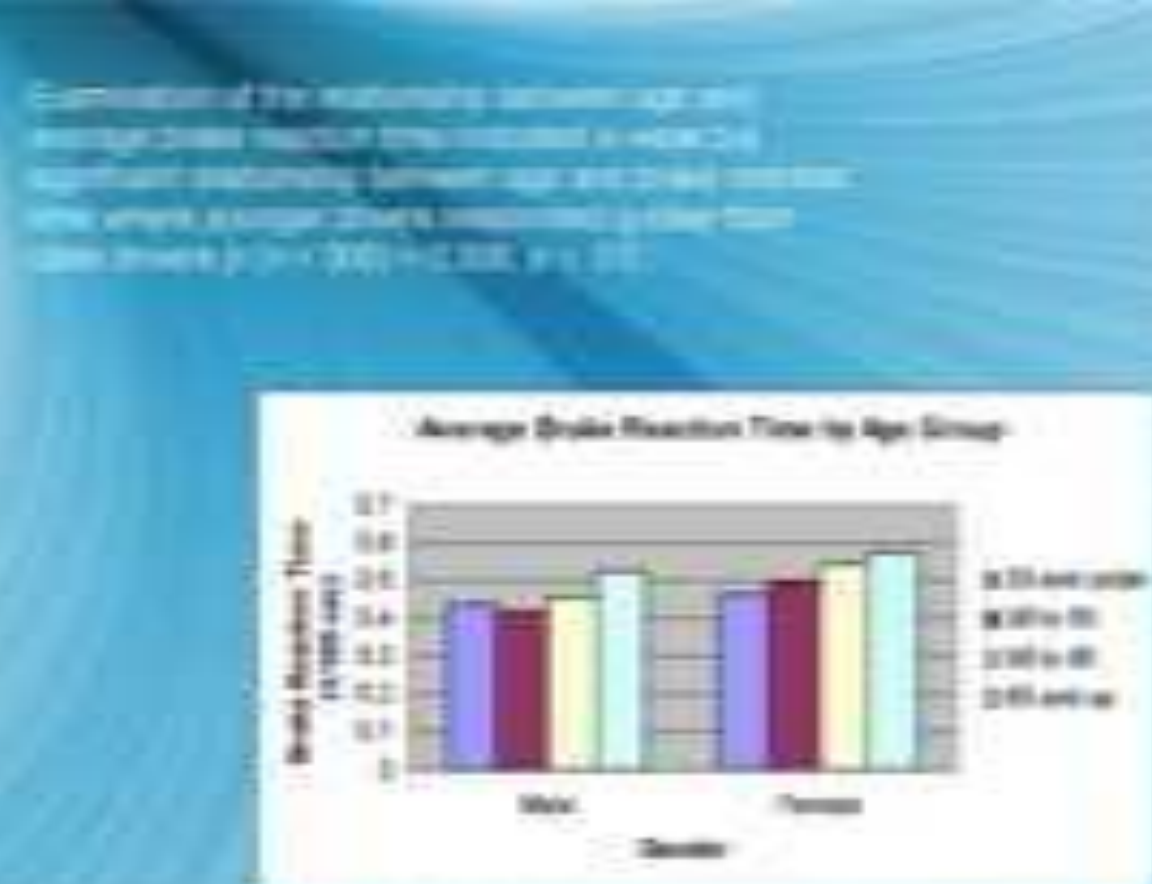
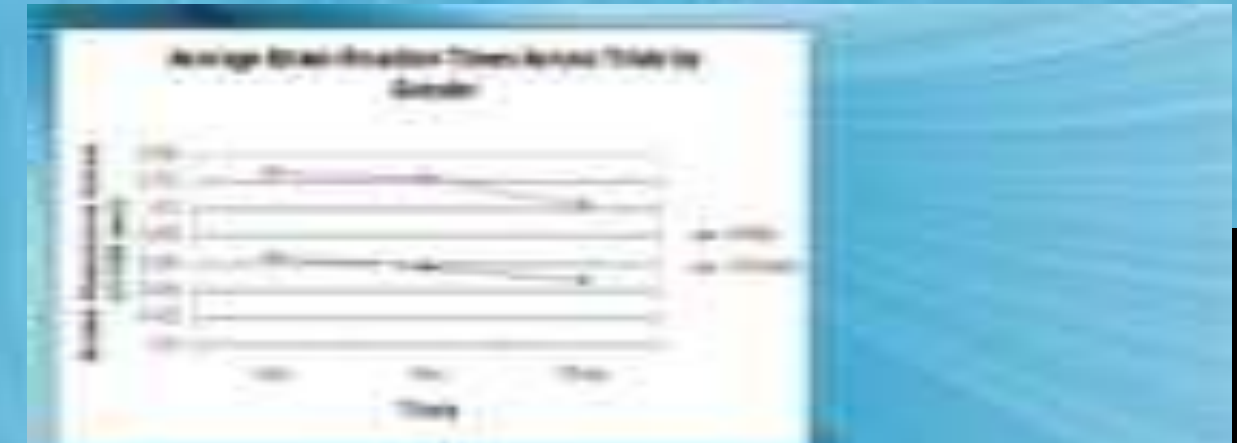
- Data for this study was collected at several health fairs, community centers, and senior centers. Through a simple, computerized, performance-based measure, the SR-2S Simple Reaction Time Tester provides an objective criterion for determining the need for driver restriction or rehabilitation.
- Occupational therapists or other driving evaluators could use the opportunity to inform the individual and/or the family the importance of a driving screening or evaluation.

Brake Reaction Time

- Reaction time is the time it takes for an individual to respond to a signal and then act on a response.
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Procedures

- The SR-2S was used with the same device, foot pedal, and resistor control box.
- Each individual was asked to position themselves in the chair with the pedal of the SR-2S foot pedal in relation to their feet.
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Summary & Conclusion

- Results
- We obtained a good normative sample of older adults.
- The SR-2S Brake Reaction Time is comparable to the AAA Blue Box.
- We found differences in gender, comparable to AAA Blue Box.
- We found age differences, even in the narrow range of older adults, comparable to the AAA Blue Box.
- Thus, this study broadly supports the validity of the SR-2S Brake Reaction Time.
- Need to do a parallel study using both the blue box and the SR-2S.
- Expand the number of trials, as three may not be used be enough to do an accurate average.
- Include a more standardized health screening tool to determine inclusion of the study.