



### Assessing the Risk of IADL Tasks from the Perspective of Medically-at-risk Older Adults and their Caregivers

*Jennifer Gaudy worked under the direction of Dr. Anne Dickerson.*

The purpose of this study was to explore what instrumental activities of daily living tasks are meaningful to older adults and the impact of chronic disease on functional performance of these tasks. Data was collected through an interview with twelve older adults and their caregivers. The participants were recently discharged from a hospital due to their chronic disease. Disorders included heart disease, stroke, COPD, dementia, or diabetes. Data analysis indicates that the most important IADL tasks for the participants are driving, managing medication, cooking, and phone use. Results suggest that caregivers see more impact on the daily tasks while participants perceive less impact on functional performance. These results will further the understanding of the impact of chronic disease on functional ability in older adults. It is hypothesized that these findings will be used to assist in the development of a functional assessment tool for complex IADL in older adult populations.

### The RT-2S Simple Reaction Time Tester: Test/Retest Reliability



**Laurel Mann, Angela Brake and Leticia Hernandez** worked under the direction of Dr. Anne Dickerson.

The purpose of this study was to examine the test/retest reliability of the RT-2S brake reaction timer. A brake reaction timer may assist in determining a driver's ability to safely operate a motor vehicle. The establishment of a reliable and valid reaction time tester is critical for occupational therapists who evaluate drivers for safe mobility in a motor vehicle. The design is a simple test/retest design, measuring the brake reaction of an individual one day on the ST-2S and repeating the measurements in 3-14 days later. Eight reaction trials were averaged for a mean reaction time which is compared for trials one and two. The correlation for test/retest reliability was 0.871, which is significant. Based on an ANOVA, there was a significant difference among age groups. The difference was between the over 66 age group and the 21-35 age group ( $p=0.003$ ) and between the over 66 group and the 36-55 group ( $p=0.005$ ). There was also a significant difference between males and females with males demonstrated greater improvement from time one to time two. The brake reaction timer is a useful tool for Occupational Therapists who evaluate driving. It is recommended that the brake reaction timer be used

as part of a multi-disciplinary evaluation rather than used alone. Additional studies that included a greater sample size and a more diverse age sample would be ideal.

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### Students Complete Transportation Project with NCST



Lindsie Webster, Sharon (Beth) Faircloth, Melissa Concord, Lesley Evans, and Jaclyn Wilkerson worked with Dr. Anne Dickerson to complete the project.

The National Center for Senior Transportation awarded Dr. Anne Dickerson \$2,000 to support the development of the “Practitioners' Clinical Reasoning Framework for Community Mobility” by student scholars. Dr. Dickerson worked with five occupational therapy graduate students this summer to complete the project. The purpose of the project was to develop a clinical reasoning framework that will guide the practitioner as to what the best options are for their older adult client in the process of driving modifications and cessation. The methods included interviewing several stakeholder groups including older drivers, caregivers, practitioners, and service providers. Based on the interview information, the framework was drafted, revised, and is ready for use with practitioners. Once pilot tested, feedback will allow finalization of a product for practitioners who work with older adults as they consider their transportation options.

The students prepared a power point and presented the framework to the National Center for Senior Transportation staff members in a webinar that featured all the scholar awardees. The five students selected “Older Adult Drivers” as their area of research for their master's projects, but completed this project in addition to their other research responsibilities.

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### **Participant's Perceptions of the Usefulness of CarFit**

Using a quasi-experimental research design, forty-four seniors from three different settings participated in a CarFit event and were interviewed about the experience. Data was analyzed to describe driving histories of participants and make inferences about perceptions of the program's usefulness. Results show the average age of participants as 76.69 years old with a range of 55-86 years. Participants were from a retirement community, city area, and rural area. Using a Likert scale with 1 being poor/strongly disagree and 5 being excellent/strongly agree, the mean rating of the CarFit experience was 4.61 and rating of the value/usefulness was 4.58. Participants indicated they would recommend CarFit to a friend or family member. It was also found that 24% of participants drove a Buick and the majority of cars were made in 2000 or later. The majority of participants traveled within 50 miles of their homes, regardless of age or setting. As a result of CarFit, twenty-seven participants indicated that they thought more about their driving after attending CarFit. Further comparison of the three groups needs additional analysis. Results suggest that most participants perceive CarFit as a beneficial and useful experience because they learned helpful information related to safe driving.

*Courtney Cosentino, Iesha Hernandez, and Kimberly Hocking completed this project under the direction of Dr. Anne Dickerson and Dr. Jane Painter.*

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### **Comparison of the AAA Brake Reaction Timer and the RT-2S Brake Reaction Timer**

The purpose of the study was to examine the correlation in brake reaction times by age group and gender between the RT-2S and American Automobile Association (AAA) blue box, which has established validity. A convenience sample was used for the 224 participants from Eastern North Carolina. Subjects were randomly assigned to counterbalance groups and conducted both brake reaction measurements in order to establish a relationship between the interventions. Results were analyzed against the establish norms for the AAA blue box. Results indicated that brake reaction times are faster for males than females and as age increases, brake reaction times decrease, similar to past studies. The study did find that the RT-2S is a valid instrument for measuring simple brake reaction time. Although the RT-2S brake reaction times are slower than the AAA norms, it is likely that the RT-2S may be more accurate.

*Daryl Bourgeois completed this study under the direction of Dr. Anne Dickerson.*

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### **On the Road to Safety: Standardizing the RT-2S Brake Reaction Time Tester**

With the older adult population on the rise, it is imperative that measures are in place to test the ability of older adults to safely perform the occupation of operating a motor vehicle. The purpose of this study was to standardize the RT-2S Simple Reaction Time Tester as reliable and valid instrument for use in driving evaluations as compared to norms established by the already standardized American Automobile Association Brake Reaction Timer. A correlational research design was used. The results of this study indicated that the RT-2S is a valid and reliable tool. Thus, occupational therapists will continue to have an effective and valid method to measuring simple brake reaction time, an important factor in older adult driving evaluations.

*Meredith Parnell, Stephanie Robinson, Kristin Stone, and Kristin Whitley worked under the direction of Dr. Anne Dickerson.*

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### **60 going on 16: A Driver Safety Program for Older Adults Purpose**

The purpose of this research study is to determine whether a community based educational intervention is an effective means for changing the awareness of driving behavior of older adults. Methods: A quasi-experimental design was used for this study. A community educational program was developed focusing on aging and how it affects driving ability. The program was presented to three local senior groups. A pretest and posttest were used to measure the effectiveness of the presentation as well as the participant's perception of driving. Data was compiled and analyzed. Results: Data analysis yielded an 11% increase in post-test scores compared with those of the pre-test. Using a paired t-test, there was a significant difference between pretest to posttest scores on the older adults' perceived importance of driving and on their reported skills and knowledge of driving. The results suggest that older adults' perceived view of driving changed significantly from participating in the program. Conclusion: Occupational therapy community educational interventions are effective for increasing older adult's perception of driving ability and importance, as well as changing safety awareness of driving behaviors.

*Ashley Christopher & Amy Wentz worked under the direction of Dr. Anne Dickerson.*

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### **Is There a Relationship Between Performance on In-Clinic Driving Assessments and On-road Driving Performance Among Elderly Adults?**

The purpose of this study was to determine if there is a relationship between performance on in-clinic assessments and on-road driving performance in elderly that have been referred for a driving evaluation and community-based well-elderly. The study examined the performance of 9 elderly people that were referred to Pitt County Memorial Hospital for a driving evaluation as well as 8 community-based well-

elderly volunteers ages 65 and over. Data was collected through various in-clinic assessments administered by two occupational therapy students. Assessments tested areas of vision, cognition, physical ability, proprioception, reaction time, and rules of the road. Data was also compared between the two groups in order to identify discrepancies in in-clinic performance that may identify at-risk drivers. This study may help occupational therapy practitioners determine appropriate screening tools that will identify at risk older drivers who may need a full driving evaluation. This will help to eliminate unnecessary and costly driving evaluations, assist the occupational therapy practitioner identify when to refer a client for a full driving evaluation, and assist in determining when driving rehabilitation would enhance performance.

*Heidi Hebert and Jennifer Albright worked under the direction of Dr. Anne Dickerson.*

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### **Does the AMPS Predict Problems with Driving in Older Adults?**

The purpose of this study was to determine if the AMPS (Assessment of Motor Processing Skills) could be used as a screening tool for a driving evaluation. Driving evaluations are often expensive and time intensive. Finding an accurate, effective, and cost effective screening tool is essential to benefit older drivers. Since the AMPS is a sensitive assessment completed under an hour, it could be effective for screening older drivers. Thirteen subjects were recruited for the study. All of the subjects were older adults living in the community. Five subjects were referred by either a physician or the Department of Motor Vehicles as “at risk” drivers and were to complete a driving evaluation. Eight subjects were recruited as healthy, safe drivers. All subjects completed a full driving evaluation consisting of both in-clinic assessments and a behind the wheel driving tests and all completed the AMPS assessment by a certified AMPS therapist. The results found were that there was no significant difference between the well subjects and the referred, “at risk” subjects on the AMPS assessment in terms of motor and process skills. Although, the well group did not have any referrals for the driving assessment, they did have some underlying problems that affected their AMPS score. The AMPS did prove that it is a sensitive tool that can detect disabilities in the motor and process skills of people but further research is warranted to determine if it can be used as an effective tool for screening older drivers.

*Kristin Bullock worked under the direction of Dr. Anne Dickerson.*