



**A. Akinwuntan; K. Baker; M. Manley; E. McGonegal; C. O'Connor; K. Phillips; K. Turchi**  
 Department of Physical Therapy, Georgia Regents University, Augusta GA

### Introduction

- Current practices to evaluate fitness-to-drive of individuals with MS involve the use of as many as 15 - 22 tests, last 3 to 4 hours, cost approximately \$600, and involves a lot of human resources.

### Objective

- To identify the most important of the commonly used tests and determine the accuracy with which the tests will together predict participants' driving performance.

### Hypothesis

- A combination of five tests at most will predict participants' driving performance with > 80% accuracy.

### Methods

#### Study design

- A predictive correlational study

#### Participants

- 44 individuals with relapsing-remitting MS; legal active drivers; age = 46 ± 11 years; 37 females 7 males; EDSS between 1 and 7

#### Protocol

- Motor, visual, cognitive, and on-road evaluation

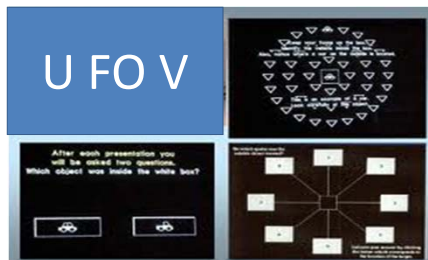
#### Variables

- 4 visual and 16 cognitive tests and on-road evaluation

#### Data analysis

- Correlation; Univariate, and Multivariate Regression Analyses; Discriminant analysis

### Predictor variables



### Outcome variable



### Results

Variable	PE	SE	t	p
Stroop color	-0.22	0.08	-2.61	0.01
Direction	0.10	0.08	1.23	0.23
Compass	0.05	0.06	0.89	0.38
Road Sign Recog.	0.33	0.16	1.98	0.05
UFOV- speed	-0.01	0.01	-1.42	0.17
	<b>On-road performance</b>			
<b>Predicted</b>	Fail	Pass		
<b>Fail</b>	7	1		
<b>Pass</b>	3	33		

**R<sup>2</sup> = 0.59; 91% accurate; 70% sensitive; 97% specific**

### Discussion

The five tests contained in the best model identified in this study can together be administered in less than 45 minutes, should cost no more than \$150, and is 91% accurate in detecting if an individual with relapsing-remitting MS is fit to drive or not.

### Conclusion

A short battery of five cognitive test predicted fitness-to-drive of individuals with relapsing-remitting MS with 91% accuracy. Future studies are needed to confirm and validate the findings in this study.

### Acknowledgement

This study was supported by a pilot study grant from the Consortium of Multiple Sclerosis Centers.