

**2018**  
**LSU Life Course and Aging Center (LCAC)**  
**Spring Symposium**



*College of Human Sciences and Education*  
*Louisiana State University*

## ABOUT THE CENTER

The Life Course & Aging Center (LCAC) began in 1998 as a faculty interest group. It grew to include LSU faculty across five colleges, faculty of seven different institutions around Louisiana, and numerous community partners. LCAC members have expertise in all facets of human development and education from infancy until the end of the life span.

LCAC promotes interdisciplinary research and the study of human development and aging across the lifespan. With the aging of the post-WWII baby boom generation, 10,000 Americans reach the age of 65 every day. The increase of older adults in America has created a tremendous need for pathways to promote healthy aging while minimizing the risk for frailty and disability.

LCAC plays a prominent role in the state to address pressing matters resulting from an increasing aging population in the US recognizing the fact that successful aging starts at birth. The focus of the center is to generate and apply lifespan science from birth till old age, as well as providing educational and research opportunities to the citizens of Louisiana.

### The LCAC Executive Board:

Arend W. A. Van Gemmert, PhD	<i>Executive Director</i>
Priscilla (Lilly) D. Allen, PhD	<i>Associate Executive Director</i>
Katie E. Cherry, PhD	<i>Director of Research &amp; Community Outreach</i>
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Stanley E. Smith *Graduate Assistant*

### Office:

C-100 Kirby Smith Hall (Room 121)  
Louisiana State University  
Baton Rouge, LA, 70803  
225-578-6117

## ABOUT THE SYMPOSIUM

The Spring Symposium exemplifies the Life Course & Aging Center's (LCAC) mission to engage in multidisciplinary partnerships promoting healthy development and aging across the lifespan. This demonstrates LSU's values of collaboration, innovation, and transformation to make a positive impact on the world. The LCAC is comprised of LSU faculty across five colleges, faculty of seven different institutions around Louisiana, and numerous community partners.

The strategic challenges addressed at the symposium are focused on understanding healthy development and aging across the lifespan and using this understanding to improve and maintain

quality of life. The student experience encompassed in the event includes poster presentations of their research to potential employers and community members. The symposium will highlight a sample of some of the faculty interests by posters presented by students mentored by LCAC faculty. The posters and keynote speaker address issues facing Louisiana and beyond.

Location:

The Cook Conference Center  
3848 West Lakeshore Drive  
Baton Rouge, LA 70808  
225-383-2665

**PROGRAM**

- 8.30am Registration
- 8.50am Welcome & Opening Symposium
- 9:00am Poster presentation & Breakfast buffet.
- 10:45am Keynote  
*“Keeping Control: Impacts of Aging and Stroke on Sensorimotor Function”.*  
Dr. Robert Scheidt,  
Professor, Biomedical Engineering; Electrical & Computer Engineering  
Marquette University  
Program Director, Mind, Machine and Motor Nexus (M3X)  
National Science Foundation
- 11.45am End remarks
- 12.00pm Symposium closed

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## **The Male Athlete As Collegiate Competitor, Retiree, and Future Sport Parent**

Reynolds II, J.F.<sup>1</sup>, & Chaney, C.D.<sup>2</sup>

*School of Social Work, Louisiana State University<sup>1,2</sup>*

The purpose of this abstract was to explore influences upon male athletes during their time as college athletes through athletic retirement, and as future sport parents. Methods: (N=21) Using a risk and resilience framework (Fraser, Galinsky, & Richman, 1999), semi-structured interviews were conducted with former male college revenue-sport (baseball, basketball, and football) athletes. A literature review explored available educational materials for parents of young athletes. Results: Participants reported psychosocial challenges such as role engulfment (Adler & Adler, 1991), delayed career development, and identity foreclosure or a strong resistance to developing a new identity without athletics (Brewer & Petitpas, 2017). Role engulfment often began in youth sports. Educational programs, engagement in religious activities, family support, ongoing relationships with non-coach athletic department staff, and teammates were noted protective factors. A conceptual model outlining influences upon the experiences of male revenue sport college athletes was developed. Evidence-based materials for parents which promote and support appropriate psychosocial development of young athletes are limited. Conclusions: An impetus to further explore influences upon the life course of male athletes is warranted. More research is needed to develop evidence-based materials for parents which support both appropriate psychosocial development of young athletes and in addition, those who have retired from college athletics. The author will use this research as a framework for future research concerning the influence of sport participation across the life span.

Acknowledgements: The author conducted this study in conjunction with the College Sport Research Institute at the University of South Carolina.

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## **Differences in Subjective and Objective Cognition Across the Adult Lifespan**

Allison McBride, & Katie Cherry

*Department of Psychology, Louisiana State University*

As humans age throughout their lifespan, cognitive decline is demonstrated across younger to older adulthood. However, peoples perceptions of their cognitive abilities often differ from their actual performance. Purpose. The purpose of this study was to determine whether ones perception of his or her cognitive functioning aligned or deviated from objective cognitive performance in an adult lifespan sample of individuals who were exposed to the 2016 August flooding in the Baton Rouge region. Method. A total of 122 participants were compared across three age groups: youngest adults (18-34 years; n = 29), middle-aged adults (35-64 years, n =63), and older adults (65-87 years, n = 30). Subjective cognition was measured using psychometrically-validated self-report questionnaires of applied cognition and executive functioning. Objective performance was estimated using measures of working memory capacity (WMC), comprised of operation, symmetry, and rotation span scores. Results. Results indicated that overall, none of the subjective cognition measures correlated significantly with

any of the objective cognition measures. Age group was significantly associated with WMC scores. Our objective measure of cognition, with post-hoc comparisons revealed significant decreases in WMC score with increasing age. In contrast to objective cognition, age did not affect subjective cognition. Conclusions. These data imply that subjective and objective cognitive performance may be related to different factors. Further research to examine this discrepancy between self-perception and performance on neurocognitive tasks is warranted.

Acknowledgments: This poster has previously been presented at the LSU Undergraduate Research Conference in Baton Rouge, LA November 17, 2017. This research was funded by a National Science Foundation grant to the third and fourth authors. This support is gratefully acknowledged. We thank Masab Mansoor, Katelyn McNeely, Cayman Loader, Alyssa DeVito, Jordan Quadorrah, Julia Rawls, Taylor York, Lilly LaPlace, Quyen Ngyuen, Brooke Bose, Tim Carroll, Taylor DelGreco, and Victoria Disedare for their assistance in testing participants and data entry. We thank Father Mike Moroney St. Alphonsus Catholic Church, Mary Stein Goodwood Library, Stephanie Mayeux Ascension Parish Library, Jenna Jaureguy Bluebonnet Regional Library, Father Frank Uter Immaculate Conception Catholic Church, and Pastor Tony Spell Life Tabernacle Church, for their generosity in providing space for testing.

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### **Educators' Insight on Young Children's Well-being: A Qualitative Approach**

Amber Smith & Susan K. MacGregor

*Curriculum and Instruction-Early Childhood Education, Louisiana State University*

The purpose of this study was to conduct a qualitative mini case study to gain understand teachers' perceptions of positive early childhood outcomes and contributions to later outcomes. This study looked at early childhood teachers' perspectives on two areas of child development and education. The first was teachers' perspectives on family involvement. The second was teachers' perspectives on family involvement in relation to children's well-being and academic success. Methods: Two teachers with extended experience teaching in early childhood education participated in the study. Participants were chosen based on meeting the following criteria: 1. the participant must be a teacher, and 2. The participant had experience specifically teaching in early childhood education, ranging from preschool to grade 3. Data was collected through two individual interviews. Questions were designed by the investigator and each interview followed a structured protocol. Participants were interviewed for thirty minutes and asked total of six questions and four sub-questions. Interviews were also recorded with the participants' consent. Data was collected and coded after each interview had been conducted. Results: Analysis revealed the following themes occurring in both interviews and shared by both participants: Family involvement is important, Child-centered philosophy and approach to learning, Importance for Family Involvement, Approaching families with humility, and High success rates with preschool family involvement. Conclusions: From interviewing the participants, it is concluded that they believe family involvement is important and crucial To children's well-being and academic success throughout their development. However, it was noted by the participants that the following should be considered. First, teacher approaches to early learning must consideration for the children's interests. Second, the environment needs to be utilized to help foster childrens learning. Third, it is important teaching practices consistently involve families. Lastly, teachers must be mindful of their approach to families, and that it should consist of an approach that acknowledges families as collaborators. A

limitation in this study is the sample size. This study should be conducted on a larger scale with a higher number of participants to find out the beliefs of other teachers on this issue, discover any correlations between the beliefs of the participants and other teachers, if any, and to conclude the importance of family involvement and other teachers' beliefs on family involvement.

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**Gait, Executive Function, and Falling in Older Adults**

Tyler K. Aisner<sup>1</sup>, Matthew R. Calamia<sup>2</sup>, Jeffrey N. Keller<sup>3</sup>,  
Robert Brouillette<sup>3</sup>, & Arend W. A. Van Gemmert<sup>1</sup>

<sup>1</sup>*Fine Motor Control & Learning Lab (FMCL), School of Kinesiology, Louisiana State University*

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Louisiana State University*

<sup>3</sup>*Aging and Neurodegeneration Laboratory, Pennington Biomedical Research Center*

Falls are a severe risk factor for injury, hospitalization, and even mortality in older adults (OA). Research has revealed specific gait variables that differ between OA who fall and those whom do not. For example, OA who fall have slower walking speed, shorter step length, and increased variability, but differences in these gait variables to predict falls have shown mixed findings due to a surfeit of methodological differences. Furthermore, understanding how cognitive components relate to gait and falls is imperative to improve care of OA at risk of falling. The purpose of this study was to investigate the differences in gait characteristics between OA with (FALL) and without (NF) fall history during single task (ST) and dual task (DT) walking. 648 healthy OA (55-95 years) were divided into two groups based on their fall history (N=142; FALL and N=506 NF groups) in the previous year. Participants were instructed to walk on a Gait Rite system at a normal pace for two 6 meter laps for ST and to perform this task while counting backwards by 7 from a 3 digit number for DT. The Gait Rite system measures footfall information to determine mean and standard deviations of gait variables, while gait variability was estimated by calculating the coefficient of variation (CV). One-way ANOVA results showed that in ST the FALL group differed significantly from the NF group in CV stride velocity, CV stance time, CV stride time, CV stride length, CV step time, and CV step length, while in DT the FALL group was significantly different in CV stride velocity, CV stride length, CV step length, double support load time, double support time, single support time, stance time, swing time, and stride time. Principal Component Analysis for ST and DT each yielded 5 different components explaining 83.1% and 84.6% of the variance respectively. These results corroborate previous findings that gait variables differ between OA with and without fall history, but vary in which variables change. Furthermore, gait changes differ when adding a cognitive component to the task, clarifying previous mixed findings suggesting that fall reduction investigations should include DT conditions or use variability measurements of ST gait. Further investigation is warranted to understand how changes in gait characteristics differ between tasks and populations in their relationship to cognitive aspects of motor control. Understanding these changes will help determine which gait characteristics are optimal for predicting and reducing falls in OA and provide insight into the role of executive function in gait.

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**Communication Effectiveness in the Different Stages of Parkinson's Disease  
Based on Hoehn & Yahr Stages**

Surani G. Nakkawita, & Neila J. Donovan

*Dept of Communication Sciences and Disorders, Louisiana State University, Baton Rouge, LA*

Parkinson’s disease (PD) is a neurodegenerative disease results in both physical and communicative deficits which create significant challenges for those diagnosed to fulfill life roles at home, work, school, or in the community. The Hoehn & Yahr (H&Y) scale is used to describe the progression of disease in PD: stage 1 minimal impairment through stage 5 severe impairment. The Communicative Effectiveness Survey-Revised (CESR) is a self-report measure that rates how deficits in effective communication impact a person with PDs ability to fulfill life roles. Purpose: To investigate how CESR ratings of individuals with PD vary according to their H&Y stage of physical impairment. Method: Scores for both scales were obtained from 57 individuals with PD in a previous study. For analysis, participants were grouped according to the H&Y stage. Group one included 22 individuals in H&Y stage 1, Group two included 26 individuals in H&Y stage 2, and Group 3 consisted of 9 individuals in H&Y stage 3. One-way ANOVA was completed to investigate if CESR scores differ among different groups. Results: Analysis indicated no statistically significant difference between the groups ( $F(2,54) = 2.119, p = .130$ ). Conclusions: Decrements in communicative effectiveness did not follow the same trajectory as the H&Y stages. This study only looked at H&Y stages 1-3; consequently, future studies are needed to ascertain if the findings would vary with the inclusion of H&Y stage 4.

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**Post-traumatic Stress and Poor Cognitive Functioning After Disasters: Is Sleep Disturbance  
and Impairment Responsible?**

Katie E. Stanko, Matthew Calamia, & Katie E. Cherry

*Department of Psychology, Louisiana State University*

In the aftermath of a natural disaster, such as the Great Flood of 2016 in Baton Rouge, LA, some individuals will exhibit symptoms of post-traumatic stress disorder (PTSD), including chronic sleep disturbance and impaired cognitive function. Investigating the relationships amongst these variables can provide a better understanding of how to assist disaster survivors who display these symptoms. Purpose: We tested mediational models to further explore the positive relationship between PTSD symptoms and deficits across several neurocognitive domains, including subjective, self-report measures of applied cognition and executive functioning, and objective, behavioral tasks of working memory and attention/vigilance. Method: The study sample was comprised of mostly middle-aged and older adults who were indirectly and directly exposed to the 2016 flooding in Baton Rouge. (n = 120, M age = 50.33, Range: 18-84 years). These persons completed a variety of cognitive and health-related measures across three days. PTSD symptomology was measured through the PTSD Checklist-Civilian Version, subjective cognition through the PROMIS Applied Cognition and Barkley

Deficits in Executive Functioning Scales, and objective cognition through Working Memory Composite (WMC) and Sustained Attention to Response Task (SART) scores. Results: Using subjective cognition as outcome, sleep disturbance and impairment significantly mediated the relationship between PTSD symptoms and self-reported cognitive impairment. In regards to our objective cognition outcomes, WMC and SART, we did not find any significant relationship between PTSD, sleep disturbance, and performance on either measure. Conclusions: These results imply that people's self-reports of cognitive functioning in relation to PTSD are impacted by their quality of sleep. In a clinical setting, treating sleep disturbance and impairment alone in individuals who exhibit symptoms of PTSD may improve self-reports of cognitive functioning.

Acknowledgements: This research was funded by a National Science Foundation grant to the second and third authors. This support is gratefully acknowledged. We thank Masab Mansoor, Katelyn McNeely, Allison McBride, Cayman Loader, Alyssa DeVito, Jordan Quadorrah, Julia Rawls, Taylor York, Lilly LaPlace, Quyen Ngyuen, Brooke Bose, Tim Carroll, Taylor DelGreco, and Victoria Disedare for their assistance in testing participants and data entry. We thank Father Mike Moroney St. Alphonsus Catholic Church, Mary Stein Goodwood Library, Stephanie Mayeux Ascension Parish Library, Jenna Jaureguy Bluebonnet Regional Library, Father Frank Uter Immaculate Conception Catholic Church, and Pastor Tony Spell Life Tabernacle Church, for their generosity in providing space for testing.

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**Examining the Factor Structure of the Attentional Control Scale in Younger and Older Adults: Relationships with Anxiety and Depression**

Alyssa DeVito<sup>1</sup>, Matthew Calamia<sup>1</sup>, Scott Roye<sup>1</sup>, & Peter Castagna<sup>1</sup>

<sup>1</sup>*Department of Psychology, Louisiana State University*

The Attentional Control Scale (ACS) is a self-report questionnaire that is used to measure attentional control. Despite its widespread use, there is limited and conflicting data regarding the factor structure of the ACS in younger adults and the factor structure has yet to be evaluated in older adults. The purpose of this study was to examine the factor structure of the ACS in younger and older adults as well as analyze relationships of anxiety and depression with self-reported attentional control. Methods: The current study compared the factor structure of the ACS in younger (n=411) and older adult samples (n=366) using exploratory and confirmatory factor analyses. Multiple regression was used to determine the relationships between attentional control, anxiety, and depression. Results: Confirmatory factor analysis supported a reduced 13-item, two-factor model comprised of shifting and focusing subscales. It was found that the ACS subscales were negatively related to anxiety and depression in both samples, with more robust relationships observed between anxiety and depression with focusing in both samples. Conclusions: The findings from this study suggest that a modified 13-item version of the ACS might be most appropriate when considering both younger and older adult populations. Further, relationships between cognitive and emotional factors favored relationships involving focus, more so than shifting. Given previously supported notions that both depressive and anxious thoughts interfere with attention, and cognitive inhibition decreases within older adults, it is possible that the ACS factor structure may be identifying perceived deficits in daily cognition, as a result of the emotional symptoms.

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**Saccadic eye movements improve postural sway under fatigued states regardless of proprioceptive declines**

Matthew A. Yeomans, Arnold G. Nelson, Michael J. MacLellan, & Jan M. Hondzinski  
*School of Kinesiology, Louisiana State University*

Purpose: Musculoskeletal, neural, and sensory feedback systems decline as people age. These changes can lead to balance impairments and increase an older persons likelihood of falling. Fatigue can decrease muscle force and increase body sway during stance, presenting an additional concern for older adults who fatigue easily or after acute bouts of exercise for health benefits. The purpose of this study was to determine possible mechanisms responsible for postural control declines resulting from muscle fatigue in young adults with future plans to assess older adults. In an effort to counteract fatiguing effects on balance, we determined if saccadic eye movements during quiet stance could attenuate sway thus improve balance. Methods: Young adults stood still on a force plate and either stared at a fixation point (FIX) or performed saccadic eye movements (SAC) by viewing targets appearing on each side of a computer screen (20-degree visual angle, 1 Hz). Subjects performed 6 trials (3 FIX and 3 SAC) under non-fatigued (NF), stretched (S), and fatigued (F) states with either a wide or narrow base of support. S involved rounds of passive dorsiflexion and plantarflexion. F involved toe rises until range of motion decreased below 75% of maximum or subjects could do no more. Results: Muscular fatigue, known to decrease force and proprioception, increased postural sway ( $P < .05$ ), while stretching, known to decrease force and increase proprioception did not ( $P > .05$ ). Use of SAC reduced postural sway in NF, S, and F states compared to FIX. Conclusions: Increased sway due to muscular fatigue likely resulted from decreased proprioception, not decreased force production, expected from stretched and fatigued states. SAC may be a viable tool for decreasing sway when fatigued.

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**Perceptions of Stuttering in China**

Carli Bodnar, Meghan Savage, & Ashley Meaux  
*Communication Sciences and Disorders, Southeastern Louisiana University*

The purpose of this study was to investigate Chinese undergraduate/graduate students' familiarity and perceptions of people who stutter. There are many theories on the etiology of stuttering, which results in numerous definitions. Some of these definitions have led to a "stuttering stereotype", which is the belief that PWS are frustrated, anxious, shy, and nervous (Kelkar & Makundan, 2017; St. Louis et al., 2013). The stuttering stereotype's impact on peoples perceptions can affect diagnosis and treatment for PWS. Bebout et al. (1992) studied cross-cultural attitudes toward speech disorders. Asian cultures viewed stuttering as a lack of discipline and if the PWS worked hard enough, their speech disorder would improve. This study explored if these perceptions are maintained in the millennial generation in China. Methods: Eighty surveys were completed by undergraduate/graduate students in English class at a University in Nanjing, China. Ten likert-scale questions assessed familiarity, attitudes,

treatment, and causes of stuttering. The last question was an open-ended question about the etiology of stuttering. Results: Majority of the people completing the survey indicated that they disagree that they know someone who stutters. Respondents were neutral about feeling comfortable around PWS and about whether PWS should seek treatment by a speech therapist. Most agreed that PWS can get better if they tried hard and PWS are emotionally disturbed. Qualitative measures indicated most respondents indicated stuttering has a genetic cause, followed by an emotional or behavioral response. Conclusion: The results of this survey suggest that Chinese students' familiarity and perception of PWS remain stagnant.

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**Examining Cognitive Correlates with Self-Reported Driving Ability in Cognitively Healthy Older Adults: Preliminary Findings of the Louisiana Observational Driving Study**

John P.K. Bernstein<sup>1</sup>, & Matthew Calamia<sup>1</sup>

<sup>1</sup>*Department of Clinical Psychology, Louisiana State University*

Impaired cognitive performance in several domains (e.g., visuospatial abilities) has demonstrated relationships with unsafe driving practices in cognitively healthy older adults. However, less work has explored associations between cognition and specific aspects of driving (e.g., everyday driving behaviors, driving in particular road conditions). The purpose of this study was to examine associations between cognitive domains and several self-reported facets of driving ability in a sample of 51 non-demented older adults. Methods: Participants (66.7% female, 92.2% white, average age 72.2 years (SD = 8.11, range 54-91), average education 16.7 years (SD = 2.26, range 12-20)) completed a cognitive test battery representing a range of domains (i.e., select measures from the Neuropsychological Assessment Battery; Trails; Symbol-Digit Modalities) and self-report measures of driving ability. Driving measures assessed everyday accidental and deliberate dangerous driving behaviors (i.e., Driving Behavior Questionnaire), difficulties driving in higher-risk conditions (e.g., rain) (Fitness to Drive Screening Measure), and recent history of driving-related accidents and citations. Results: Pearson correlations revealed that poorer visuospatial abilities were associated with greater everyday attentional lapses behind the wheel and deliberate dangerous driving behaviors. However, after controlling for the effects of age, gender and education, linear regressions revealed that poorer simple attention, learning and memory all predicted poorer situational driving abilities, while associations between visuospatial abilities and everyday driving behaviors were no longer significant. Conclusions: Among healthy older adults, cognition demonstrates independent relationships with driving in higher-risk conditions, but not with everyday driving behaviors. These results hint at the importance of specific cognitive domains in higher-demand aspects of driving within this population.

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## **Preliminary Validation Study of the Western Aphasia Battery-Revised for the Native Bangla Speakers**

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<sup>2</sup>*Centre for Linguistics, Jawaharlal Nehru University, New Delhi, Delhi, India*

Worldwide, stroke is common in older adults. Aphasia, an acquired language disorder, occurs in 25%-40% of stroke survivors. It results in difficulty listening, speaking, reading, and writing, affects the persons communicative effectiveness and impacts the entire familys quality of life. Speech-language pathologists can treat aphasia once they know the type and severity, which is accomplished through aphasia-assessment. Languages without standardized aphasia-assessments randomly translate standardized assessments for diagnosis and treatment; Bangla is one of them. It is the 6th leading language with two hundred and fifty million existing speakers primarily residing in India and Bangladesh. Purpose: To complete the preliminary validation of the Western Aphasia Battery-Revised (WAB-R), an English aphasia assessment into the Bangla language. Methods: Twenty-seven neurologically healthy individuals, and 36 patients with the history of cerebrovascular accident participated in this study. The data were collected from three different hospitals in Kolkata, India. Results: Normal controls completed the test with 100% scores on most of the sub-tests while the patients performance was significantly lower. Eighty percent of the patients had aphasia, based on their test scores and investigators could categorize the patients by aphasia type based on the aphasia quotient and bedside aphasia score. There is a high correlation between the subtests scores of Record form part1 and Bedside record form. Conclusion: Preliminary validation study demonstrated that the Bangla WAB-R could differentiate the healthy population from the patients with aphasia by their language performance. Investigators will attempt to standardize the test in the next phase of the study.

Acknowledgements: This project was supported by the University Grant Commission (UGC) of India.

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## **Evidence that Intervention Against Type 2 Diabetes Modifies Risk of Late-Life Cognitive Decline**

Anna B. Madden<sup>1,2</sup> , & Owen T. Carmichael<sup>1</sup>

<sup>1</sup>*Pennington Biomedical Research Center,* <sup>2</sup>*Louisiana State University*

Background: The diagnosis of Type Two Diabetes Mellitus (T2DM) in midlife is correlated with cognitive decline later in life [1]. This finding has led to measurement of cognitive outcomes in T2DM interventions, to determine if successful treatment of T2DM improves cognitive performance. The purpose of this review is to determine the extent to which increased risks of late-life cognitive decline can be reduced in individuals with T2DM who participated in a T2DM intervention. Methods: We identified published findings from interventions for T2DM that collected data on cognitive performance. We searched Pub-Med and EBSCO for such publications. Included studies were interventions that had the primary goal of improving metabolic health in T2DM and collected standardized cognitive tests. Excluded studies included

interventions focused on type 1 or gestational diabetes mellitus or other types of chronic disease; and / or used non-standardized cognitive tests. Following article selection, we organized interventions first by intervention type (diet, exercise, pharmacological, and multi-component) and then by the significance or non-significance of associations between T2DM treatment and cognitive outcomes. Results: Within each intervention type, apart from diet, we found both significant and non-significant results (significant/non-significant) exercise (1 significant /1 non-significant), diet (2/0), pharmacological (11/1), and multicomponent (3/6). While diet did not have any nonsignificant findings, pharmacological interventions had the highest number of significant outcomes, and had the largest amount of experimental literature. Within the significant pharmacological literature, the highest indicator of success appears to be smaller sample sizes as well as short intervention duration. Conclusions: There may be some cognitive benefit to combating T2DM, but the extent and breadth of this benefit has not been clearly defined by current literature. While small and short pharmacological T2DM interventions appear to be the most successful, the diversity of methodologies among these interventions is large. Further T2DM interventions is necessary for further clarity in this topic.

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