

Financial Capacity in Older Adults With MCI and Dementia

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Disclosure

- *Financial Capacity Instrument (FCI)*
- *Semi-Structured Clinical Interview for Financial Capacity (SCIFC)*
 - ◆ Owned by UAB Research Foundation
 - ◆ Inventor Dr. Marson
 - ◆ No royalty income
- No relationships with pharmaceutical companies

Outline

- Capacity Assessment in an Aging Society
- Capacity/Competency Concepts
- Functional Change in Dementia
- Functional Change in MCI
- Financial Capacity
- New Approaches to Assessing Financial Capacity in MCI and Dementia
- A Neuroscience of Financial Capacity?

Capacity Assessment in an Aging Society

Definitions—Oxford Universal Dictionary

- *Capacity* ~1480 [selected definitions]
 - ◆ Mental receiving power; ability to take in impressions, ideas, knowledge. 1485
 - ◆ Active power of mind, talent. 1485
 - ◆ The power, ability, or faculty for anything in particular. 1647
 - ◆ Law. Legal qualification. 1480

Definitions—Oxford Universal Dictionary

- *Competent* ~1483 [selected definitions]
 - ◆ Law. Legally qualified or sufficient. 1483
- *Competence* ~1594 [selected definitions]
 - ◆ Sufficiency of qualification, capacity. 1700
 - ◆ Especially law—legal capacity. 1708

"As our society ages, clinical assessment of higher order functional capacities has become increasingly important.

In areas like financial capacity, medical decision making capacity, medication compliance, and driving, society has a strong interest in accurately discriminating intact from impaired functioning."

Marson et al. (2000) *Archives of Neurology*, 57: 877-844

Capacity Assessment and Aging

- Unprecedented aging society
- Older population vulnerable to cognitive disorders affecting decision-making ability
- Persons with diminished capacity vulnerable to poor decision-making and exploitation

Capacity Assessment and Aging

- Individualistic society
- Intergenerational transfer of wealth--\$6B to \$16B
- Breakdown of traditional family structure
- Family disputes over care of elderly
 - ◆ control of health care & financial decisions
 - ◆ use of estate and inheritance

Some Basic Capacity/Competency Concepts

What is Competency?

"A threshold requirement, imposed by society, for an individual to retain decision making power in a particular activity or set of activities."

Capacity vs. Competency

- Capacity--Incapacity:
 - ◆ denotes a clinical status determined by clinician
 - ◆ clinical judgment is "evidence" of legal competency
 - ◆ clinical judgment does not alter legal competency status
 - ◆ clinical judgment does not permit transfer of authority for decision making to another (exception: DPAs)

Capacity vs. Competency

- **Legal Competency--Incompetency:**
 - ◆ denotes a legal status determined by a judge
 - ◆ judgment based on clinical/lay evidence, case/statutory law, principles of justice, and other non-clinical factors
 - ◆ judgment of "incompetency" alters legal status by removing rights of self determination for specific matter
 - ◆ judgment of "incompetency" requires transfer of decisional authority to a court appointed proxy: guardian/conservator

Civil Capacities/Competencies

- Treatment consent capacity: make medical decisions
- Research consent capacity: research participation
- Financial capacity: manage financial affairs
- Testamentary capacity: make a will
- Driving capacity: operate a motor vehicle
- Voting capacity: capacity to cast a ballot in election
- **Capacity to live independently: global**

Capacity: A Medical-Legal Construct

- Capacity/competency is a hypothesized condition that cannot be directly observed or measured
- There is no "capacimeter"
- No "blood test" available
- Only behavioral signs/indications observable, measurable

Legal Presumption of Competency

- normal adult achieving age of majority presumed under law to be competent
- in court proceeding, burden of proof lies with party alleging a person is incompetent

Diagnosis Does Not Constitute Incompetency

- *What does a diagnosis of vascular dementia tell you about a person's capacity to drive a car?*
- Diagnosis relevant to issue of driving capacity
- But not determinative of driving capacity issue
- **Key Inquiry: Have to examine actual performance-- functional abilities constituent to driving**

Cognitive Impairment Does Not Constitute Incompetency

- *What does a MMSE score of 22 tell you about a person's capacity to consent to medical treatment?*
- Cognitive impairment relevant to issue consent capacity
- But not by itself determinative of consent capacity
- **Key Inquiry: Have to examine actual performance-- functional abilities constituent to consent capacity**

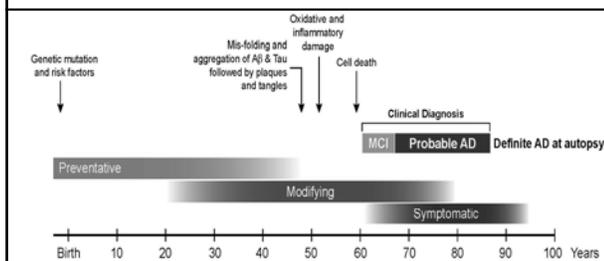
Competing Ethical Principles Underlying Capacity Issues

AUTONOMY versus PROTECTION

- To what extent should we support older person's autonomy (find her capable to act independently)?
- To what extent should we protect an impaired older person (and ourselves) from risks/dangers caused by her failing capacities (find her incapable and restrict autonomy)?
- Tension informs all competency assessments and protective actions
- Competency loss entails substantial loss of civil liberty

Functional Change in Dementia

Pathological Time-line for AD



Activities of Daily Living

- Activities of daily living (ADLs) are "the things we normally do in daily living including any daily activity we perform for self-care (such as feeding ourselves, bathing, dressing, grooming), work, homemaking, and leisure."
-MedicineNet.com Medical Dictionary

- ◆ Bathing
- ◆ Grooming
- ◆ Dressing and undressing
- ◆ Eating
- ◆ Transferring from bed to chair, and back
- ◆ Voluntarily control of urinary and fecal discharge
- ◆ Using the toilet
- ◆ Walking (not bedridden)

Instrumental Activities of Daily Living

- Instrumental activities of daily living are more complex activities that are not essential to self-care, but that enable the individual to live independently within a community
- ◆ Light housework
- ◆ Preparing meals and cleanup
- ◆ Shopping for groceries or clothes
- ◆ Using the telephone
- ◆ Using transportation (community mobility)
- ◆ Taking medications
- ◆ Health management and maintenance
- ◆ Managing money

IADLs As Early Functional Markers in Dementia Research

- IADLs are cognitively complex activities vulnerable to cognitive aging, MCI, and dementia
- IADLs show impairment in preclinical and early clinical stages of dementia
- Are diagnostically important markers for research on progression in MCI and conversion to dementia

Functional Change and Dementia Diagnosis

■ DSM-IV-TR (2000): Diagnostic Criteria for Dementia of the AD Type

A. Development of multiple **cognitive** deficits manifested by both
(1) **memory** impairment (impaired ability to learn new information or to recall previously learned information), and
(2) one (or more) of the following cognitive disturbances:

- (a) **aphasia** (language disturbance)
- (b) **apraxia** (impaired ability to carry out motor activities despite intact motor function)
- (c) **agnosia** (failure to recognize or identify objects despite intact sensory function)
- (d) disturbance in **executive functioning** (i.e., planning, organizing, sequencing, abstracting)

Functional Change and Dementia Diagnosis

■ DSM-IV-TR (2000): Diagnostic Criteria for Dementia of the AD Type

B. The cognitive deficits in Criteria A1 and A2 each:

- ◆ cause significant impairment in social or occupational functioning
"going to school, shopping, dressing, bathing, handling finances, ..."
- ◆ and represent a significant decline from a previous level of functioning.

Functional Change in Dementia

Mrs. Ethel C 69 year old white female

MMSE = 22/30 DRS = 120/144 Diagnosis = mild AD

◆ **Premorbid:** "Ethel handled the family bank account for most of our married life with little help from me--and balanced the checkbook."

◆ **Current:** "Approximately 2 years back she could no longer handle the family bank account--this happened very quickly--she failed to make deposits and enter the checks she had written--she now has no worry about finances."

YOUR MONEY

Stepping In for a Parent With Alzheimer's

By TARA SIEGEL BERNARD
Published November 5, 2010

As my grandfather's mind slipped away, first slowly, then quickly, as Alzheimer's disease moved in, he tried to be reassuring. "I remember the important things," he would tell us.

Enlarge This Image



Michael Houghton for The New York Times
Tom Davison, a financial planner, is familiar with the special needs of older clients.

And he did. He may not have remembered that Barack Obama was president or that he just had a bowl of ice cream (my kindergartner nephew took full advantage), but he always remembered his family.

Tara Siegel Bernard
is a personal finance reporter with The



Money management was another matter. Early on in the disease, small red flags began to appear — failure to pay the association fees on the condominium in Florida, overpaid bills or repetitive trips to the A.T.M. Over time, he had to hand off most financial responsibilities to my mother and grandmother.

Functional Change in MCI

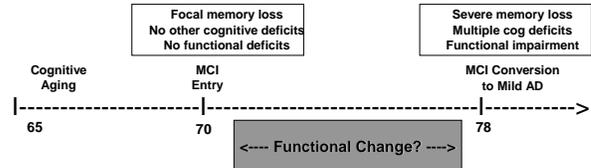
Functional Change and MCI

- Functional change an integral aspect to understanding MCI and progression to dementia
- Original Mayo (Petersen) criteria:
 - ◆ (1) subjective/family complaints of memory loss;
 - ◆ (2) objective impairment on formal memory testing;
 - ◆ (3) normal overall cognition;
 - ◆ (4) generally preserved activities of daily living; and
 - ◆ (5) no dementia by NINCDS-ADRDA or DSM-IV criteria.

Functional Change and MCI

- MCI not well defined *functionally*
- “No guidelines have been given as to what constitutes activities of daily life restriction in MCI” Ritchie et al (2001)
- What degree of functional change consistent with MCI?
- Key diagnostic issue since functional changes are a (the?) primary determinant of clinical progression to dementia

Functional Impairment in MCI



Evidence of Functional Impairment in MCI

- Touchon/Ritchie (1999):
 - ◆ Telephone use, dental hygiene, dressing 2 years prior to AD dx
 - ◆ Small lapses, carelessness, slowing
- Daly/Albert (2000):
 - ◆ Changes in financial skills, driving, hobbies, personal care associated with MCI and conversion to AD
- Tabert (2002):
 - ◆ Discrepancy between MCI patient and informant ADL report predictive of conversion in 2 year period; role of anosognosia
- Griffith (2003):
 - ◆ MCI patients show mild but distinct impairments in financial skills

RECORD ALL CHARGES OR CREDITS THAT AFFECT YOUR ACCOUNT						
NUMBER	DATE	DESCRIPTION OF TRANSACTION	DEPOSIT	✓	PER PAID TO	ACCOUNT DEBIT
162	5/29	Winn Dixie Deposit	30.15			100.00
						77.85
						450.00
						529.85

Summary

- Functional change is critical to diagnosing dementia
- Functional change is critical to diagnosing MCI and identifying progression to dementia
- Functional change is phenomenologically central to patient's and family members' experience of dementia
- Functional change causes enormous patient disability and burden to caregivers



Financial Capacity

“everyday use of money will be highly correlated with general success in independent living”

Melton et al. (1987) *Psychological Evaluations for the Courts*, p. 249

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The New York Times

Health

Money Woes Can Be Early Clue to Alzheimer's



Money Woes Can Be Early Clue to Alzheimer's

By GINA KOLATA

Renee Pachel used to have a typical suburban life. Her husband, Arthur, was a lawyer and also sold insurance. They lived in a town house just outside Philadelphia, and Mrs. Pachel took care of their home and family.

One day, it all came crashing down. The homeowners' association called asking for their fees. To Mrs. Pachel's surprise, her husband had simply stopped paying them. Then she learned he had stopped writing checks to his creditors, too.

It turned out that Mr. Pachel was developing Alzheimer's disease and had forgotten how to handle money. When she tried to pay their bills, Mrs. Pachel, who enlisted the help of a forensic accountant, could not find most of the couple's money.

6D - TUESDAY, MARCH 11, 2008 - USA TODAY

Health

Memory loss, money loss

Early-Alzheimer's patients flunk financial test

By Kathleen Fackelmann
USA TODAY



Warning signs in money matters
Seniors with early-stage Alzheimer's often have trouble with money matters. Here are some warning signs:

- Memory lapses**
Forgetting to pay bills or paying more than once.
- Disorganized**
Problems keeping track of finances or bills.
- Math mistakes**
Math and counting errors in everyday life.
- Confusion**
Difficulty understanding basic financial terms.
- Impaired judgment**
New interest in get-rich-quick schemes.

Source: Daniel Marson, University of Alabama-Birmingham

An Important Construct

- economic:
 - ◆ maintaining household and financial independence
- psychological
 - ◆ critical to self-perception of independence
- clinical:
 - ◆ marker of MCI and early dementia?
- legal:
 - ◆ financial competency and conservatorship
 - ◆ elder abuse/undue influence

A Challenging Construct to Measure

- Multidimensional
 - ◆ Declarative knowledge: concepts and numeracy
 - ◆ Procedural knowledge: completing a check, paying bills
 - ◆ Judgment
- Taps wide range of abilities:
 - ◆ Simple money skills
 - ◆ Bill payment
 - ◆ Managing checkbook and bank statement
 - ◆ Fraud awareness/detection
 - ◆ Investment strategies
- Financial experience varies widely across persons

A Poorly Understood Construct

- Little known empirically about financial capacity
- Surprising lack of conceptual models and research
- Prior conceptual formulations very sparse:
 - ◆ “money management skills”
 - ◆ “financial management”
- A need for conceptual models, instruments, research

Defining Financial Capacity: Two Key Perspectives

- **Performance Perspective:**
 - ◆ FC as the ability to carry out financial activities
 - ◆ Handle money, understand concepts, pay bills, etc.
 - ◆ Emphasizes role of performance.
- **Best Interest Perspective:**
 - ◆ FC as ability to identify and protect financial self-interest
 - ◆ Emphasizes role of judgment.

“the capacity to manage money and financial assets in ways that meet a person’s needs and which are consistent with his/her values and self-interest”

D. Marson October, 2007

Conceptual Model of Financial Capacity

Conceptual Model of FC

Clinically informed

Focus on functional abilities relevant to FC

Three levels:

- **Tasks**—specific financial abilities
- **Domains**—broad financial activities that each have clinical relevance to independence (eg., managing checkbook)
- **Global**—overall financial capacity

Financial Tasks

- | | |
|-------------------------------|--------------------------------|
| ■ Naming coins/currency | ■ Understanding checkbook |
| ■ Coin/currency relationships | ■ Using checkbook/register |
| ■ Count coins/currency | ■ Understanding bank statement |
| ■ Understanding concepts | ■ Using a bank statement |
| ■ Applying concepts | ■ Awareness of mail fraud |
| ■ Conduct cash transactions | ■ Awareness of telephone fraud |
| ■ Making change for vending | ■ Prioritizing bills |
| ■ Tipping in a restaurant | ■ Preparing bills for mailing |
| | ■ Making investment decision |

Financial Domains

- **Domain 1 Basic Monetary Skills**
- **Domain 2 Financial Conceptual Knowledge**
- **Domain 3 Cash Transactions**
- **Domain 4 Checkbook Management**
- **Domain 5 Bank Statement Management**
- **Domain 6 Financial Judgment**
- **Domain 7 Bill Payment**
- **Domain 8 Knowledge of Personal Assets/Estate**
- **Domain 9 Investment Decision Making**

Tasks by Domain

- **Domain 1 Basic Monetary Skills**
 - ◆ Task 1a Naming coins/currency Simple
 - ◆ Task 1b Coins/currency relationships Complex
 - ◆ Task 1c Counting coins/currency Simple
- **Domain 2 Financial Conceptual Knowledge**
 - ◆ Task 2a Define financial concepts Complex
 - ◆ Task 2b Apply financial concepts Complex

Tasks by Domain

- **Domain 3 Cash Transactions**
 - ◆ Task 3a 1 item grocery purchase Simple
 - ◆ Task 3b 3 item grocery purchase Simple
 - ◆ Task 3c Change/vending machine Complex
 - ◆ Task 3d Tipping Complex
- **Domain 4 Checkbook Management**
 - ◆ Task 4a Understand checkbook/register Complex
 - ◆ Task 4b Use checkbook/register Complex

Tasks by Domain

- **Domain 5 Bank Statement Management**
 - ◆ Task 5a Understand bank statement Complex
 - ◆ Task 5b Use bank statement Complex
- **Domain 6 Financial Judgment**
 - ◆ Task 6a Detect mail fraud risk Simple
 - ◆ Task 6c Identify telephone fraud Simple

Tasks by Domain

- **Domain 7 Bill Payment**
 - ◆ Task 7a Understand bills Simple
 - ◆ Task 7b Prioritize bills Simple
 - ◆ Task 7c Prepare bills for mailing Complex
- **Domain 8 Knowledge of Personal Assets/Estate**
- **Domain 9 Investment Decision Making**

Methods of Assessing Financial Capacity

Methods for Evaluating Financial Capacity

- Assessment of premorbid financial capacity
 - patient and collateral report
- Assessment of current financial capacity:
 - patient and collateral report
 - psychometric assessment
 - clinical interview

Self and Collateral Report

- Observational reports of current financial skills
- Accessible, ecologically sensitive, valuable IADL data source
- Research applications:
 - ◆ Cahn-Weiner et al. *JINS* 2007 Cognitive and neuroimaging predictors
- Disadvantages:
 - ◆ Biases in both patient and caregiver IADL reports
 - ◆ Anosognosia, denial, limited contact and knowledge
 - ◆ Report based information often global and vague--limited detail
- Wadley et al. *JAGS* 2003:
 - ◆ AD patients overrate their financial abilities
 - ◆ Caregiver ratings of AD patient financial capacity unstable over 1 month

Psychometric Assessment

- Direct assessment of performance in a controlled setting
- Standardized, objective scoring, norm referenced
- Finely grained measurement versus vague informant report
- Verify patient and family report of financial abilities
- Useful clinical addition to traditional NP test battery
- Disadvantages:
 - ◆ May lack ecological validity—difficult to replicate community setting in clinic
 - ◆ Requires trained administrator and are time consuming
 - ◆ Tests of financial capacity not commonly available

Financial Capacity Instrument (FCI-9)

- ◆ Standardized measure with scoring system and norms
- ◆ Directly tests performance on:
 - 18 financial tasks
 - 9 financial domains
 - global (overall) financial capacity
- ◆ Needs a trained administrator
- ◆ Takes about an hour to administer to dementia patients

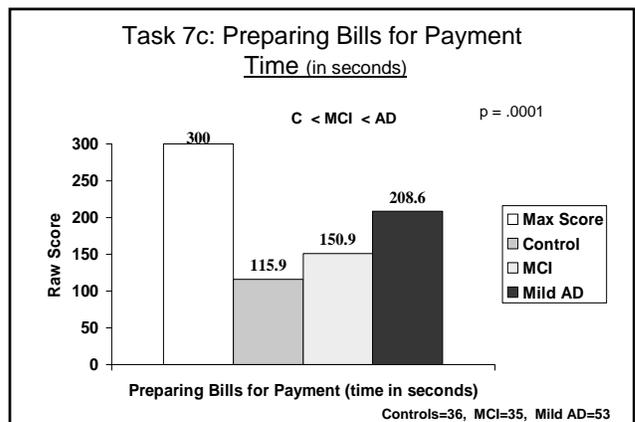
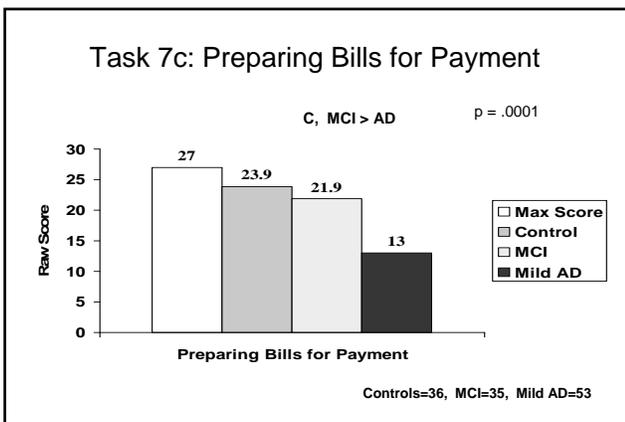
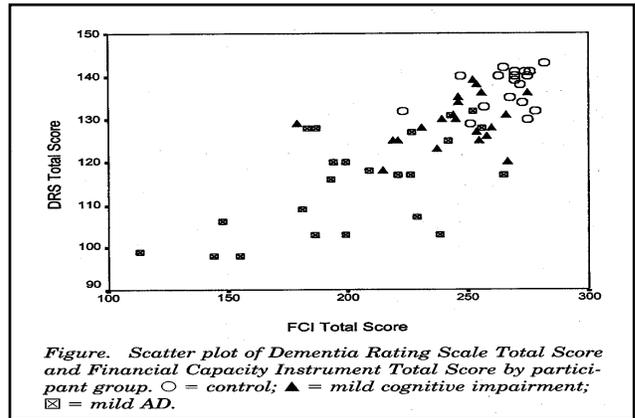
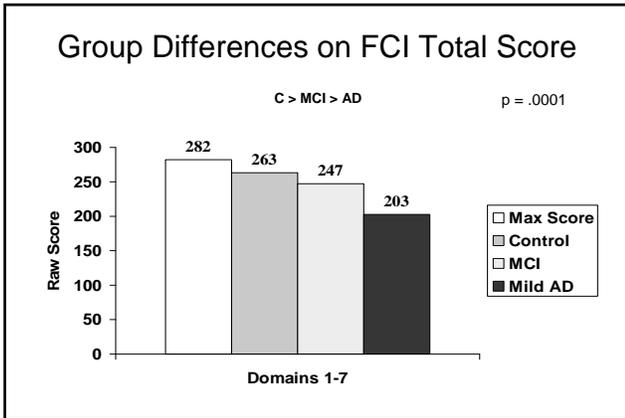
FCI Video:

Domain 7—Bill Payment

- Task 7a: Understanding Bills
- Task 7b: Prioritizing Bills
- Task 7c: Preparation of Bills for Payment

FCI Study Sample

	Controls	MCI	Mild AD	p
N	26	30	34	
Age	66.2 (7.7)	67.6 (8.9)	73.4 (8.4)	.05
Educ	14.5 (2.4)	14.6 (2.3)	14.6 (2.7)	ns
Race	73% W	77% W	94%W	ns
Gender	69% F	57% F	60% F	ns
MMSE	29.2 (1.1)	28.5 (1.2)	24.0 (2.9)	<.001
DRS	137.1 (4.6)	130.9 (5.7)	113.9 (10.2)	<.001
CDR sum box	0.0 (0.1)	1.0 (0.8)	5.1 (1.3)	<.001



- ### Raw Score/Time Dissociation
- MCI patients can perform many financial tasks about as well as controls
 - But it often takes MCI patients significantly longer to complete these tasks
 - Tasks are no longer as automatic and routine
 - At some point increasing task time = impairment

Cognitive Models of Financial Capacity

SCIFC Study Sample at Baseline

	Controls N=75	MCI N=58	Mild AD N=97	Mod AD N=31	p
Age	66.1 (7.7)	68.0 (8.3)	72.4 (8.4)	75.3 (8.4)	.0001
Educ	14.3 (1.6)	13.7 (2.0)	13.4 (2.1)	11.1 (3.7)	.0001
Gender (m/f)	24 / 51	18 / 40	52 / 45	10 / 21	.007
Race	65 W, 10AA	44 W, 14 AA	85 W, 12 AA	23 W, 8 AA	.12
MMSE	29.3 (1.0)	28.2 (1.9)	24.0 (3.1)	16.4 (4.2)	.0001

Physician Collaborators

Britt Anderson, M.D.	Neurology
Patricia Goode, M.D.	Geriatric Medicine
Cleveland Kinney, M.D.	Geriatric Psychiatry
Anthony Nicholas, M.D.	Neurology
Terri Steele, M.D.	Geriatric Psychiatry

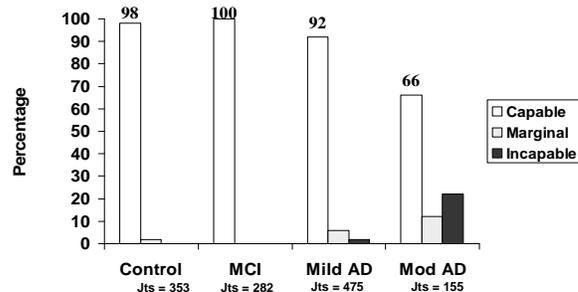
Physician Capacity Judgments

- Recruited 261 participants
- Study physicians made a total of 11,118 financial capacity judgments**
- Each physician made an average of 2,224 judgments
- 627 ratings missing out of 11,745 possible: **94.7% completion rate**
- Attests to effort/commitment of study physicians and staff

Basic Monetary Skills:

Judgment Outcomes By Percentage and Group

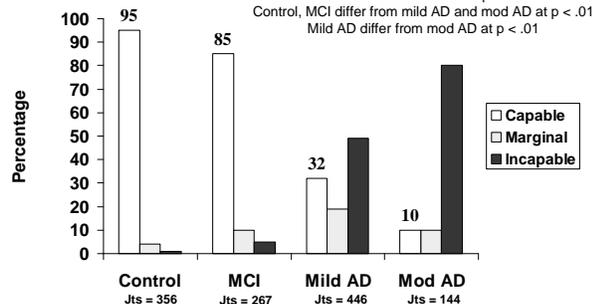
Control, MCI, mild AD differ from mod AD at $p < .01$ using GEE



Checkbook Management:

Judgment Outcomes By Percentage and Group

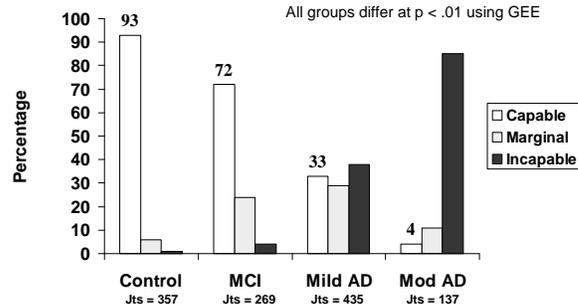
Control differ from MCI at $p = .06$
Control, MCI differ from mild AD and mod AD at $p < .01$
Mild AD differ from mod AD at $p < .01$



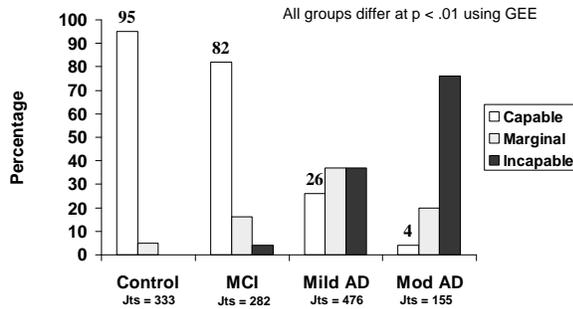
Bank Statement Management:

Judgment Outcomes By Percentage and Group

All groups differ at $p < .01$ using GEE



Global Financial Capacity: Judgment Outcomes By Percentage and Group



A Neuroscience of Financial Capacity?

Magnetic Resonance Imaging Volume of the Angular Gyri Predicts Financial Skill Deficits in People with Amnesic Mild Cognitive Impairment

H. Randall Griffith, PhD,^{1,2} Christopher C. Stewart, MS,² Luke E. Stoeckel, PhD,^{1,2}
Ozioma C. Okonkwo, PhD,² Jan A. den Hollander, PhD,^{1,2} Roy C. Martin, PhD,^{1,2}
Katherine Belue, BS,^{1,2} Jacquelyn N. Copeland, BS,¹ Lindsey E. Harrell, MD, PhD,^{1,2,3,4}
John C. Brockington, MD,^{1,2} David G. Clark, MD,^{1,2,5*} and Daniel C. Marson, JD, PhD^{1,2}

OBJECTIVES: To better understand how brain atrophy in amnesic mild cognitive impairment (MCI) as measured using magnetic resonance imaging (MRI) volumetrics could affect instrumental activities of daily living (IADLs) such as financial abilities.

DESIGN: Controlled, matched-sample, cross-sectional analysis regressing MRI volumetrics with financial performance measures.

SETTING: University medical and research center.

PARTICIPANTS: Thirty-eight people with MCI and 28 older adult controls.

MEASUREMENTS: MRI volumetric measurement of the hippocampus, angular gyri, precuneus, and medial frontal lobes. Participants also completed neuropsychological tests and the Financial Capacity Instrument (FCI).

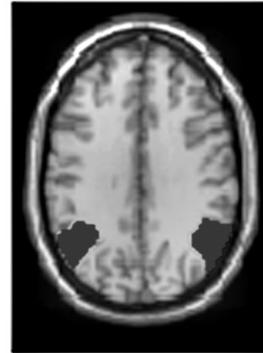
RESULTS: Correlations were performed between FCI scores and MRI volumes in the group with MCI. People with MCI performed significantly below controls on the FCI and had significantly smaller hippocampi. Among people with MCI, performance on the FCI was moderately correlated with angular gyri and precuneus volumes. Regression models demonstrated that angular gyrus volumes were predictive of FCI scores. Tests of mediation showed that measures of arithmetic and possibly attention partially mediated the relationship between angular gyrus volume and FCI score.

CONCLUSION: Impaired financial abilities in amnesic MCI correspond with volume of the angular gyri as mediated by arithmetic knowledge. The findings suggest that early neuropathology within the lateral parietal region in MCI leads to a breakdown of cognitive abilities that affect everyday financial skills. The findings have implications for diagnosis and clinical care of people with MCI and AD.

Key words: magnetic resonance imaging; mild cognitive impairment; financial capacity; angular gyrus; hippocampus; precuneus

Journal of the American Geriatrics Society, 58:265-274, 2010

Angular Gyri and Financial Capacity



Angular Gyri (AG)

- Area of inferior parietal lobe involved in language and cognition; linked to default mode network
- AG implicated in calculation abilities impaired in AD
- PET imaging has shown left AG metabolic abnormalities are associated with dyscalculia in AD
- Left AG linked to impaired calculation in stroke, trauma, and developmental dyscalculia
- AG also functionally related to language/metaphor comprehension

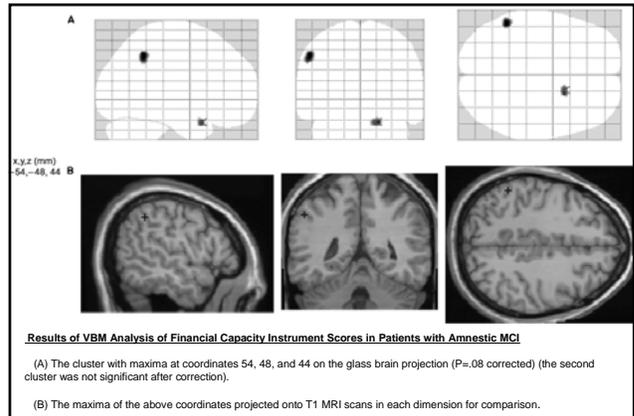
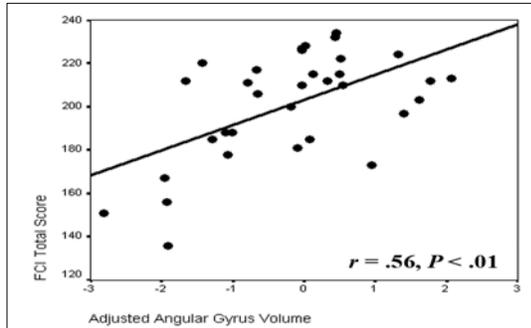
Brain Region Correlations with FCI Variables in aMCI Patients (n=33)

	AG	PC	HIP
FCI Total Score (D1-D7)	.57***	.35*	.30
D1 Basic Money Skills	.48**	.52**	.16
D2 Financial Concepts	.48**	.24	.19
D3 Cash Transactions	.48**	.32	.34
D4 Checkbook Mgmt	.41*	.32	.19
D5 Bank Statement Mgmt	.54***	.27	.33*
D6 Financial Judgment	.06	.03	.19
D7 Bill Payment	.26	.04	.20

AG: angular gyrus PC: posterior cingulate HIP: hippocampus

*** $p < .001$, ** $p < .01$, * $p < .05$

Relationship between FCI Total Score and Angular Gyrus Volume in MCI (n=33)



Operation Substitutions

$6 + 2 = 4$ $\frac{7}{73}$ $8 - 4 = 12$

Borrowing Error

$\begin{array}{r} 33 \\ -17 \\ \hline 26 \end{array}$

Carrying Errors

$\begin{array}{r} 17 \\ \times 4 \\ \hline 58 \end{array}$

Factual Errors

$\begin{array}{r} 7 \\ \times 6 \\ \hline 35 \end{array}$ $3 \times 4 = 28$

Zero Error

$9 \frac{4527}{56} = 2.7$

Perseverations

$2 + 7 = 27$ $\frac{724}{-597} = 1771$

Positional Errors

$9 \frac{1}{2} = 9.2$ $9 \frac{2}{7} = 9.27$

Error type examples from the Wide Range Achievement Test-3 Arithmetic problems.

Martin et al. (2003). Loss of calculation abilities in mild and moderate AD. *Archives of Neurology*. 60: 1585-1589.

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162	5/29	Winn Dixie Deposit	30.15					100.00	
								77.85	
								450.00	529.85

The Birmingham News

LIFESTYLE

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Beware of scams targeting elderly

SCAMS: Know what to look for

Bereavement scams: Scammers call widows or widowers and claim their spouses had outstanding debts that need to be paid immediately. If you are uncertain about owing a debt when collectors call, ask for written confirmation.

Investment and work at home opportunities: Promises of easy money often target older adults because they may be looking to supplement their incomes. The pitch might come in the form of an investment opportunity that promises big returns, or as a way to make money at home for an upfront cost. The victim is offered what sounds like a great opportunity but the extra income never materializes. Always research any work-at-home opportunity with the BBB. Beware of investment or money-making offers that seem too good to be true or use high pressure sales tactics to get you to sign up immediately. For more advice on avoiding scams and fraud visit bbb.org/us/consumer-tips-scams.

Medicare scams: Scammers claim to be with Medicare and ask for personal information such as Medicare, Medicaid, Social Security, credit card or bank account numbers. Seniors should know Medicare will never call to ask for sensitive personal financial information.

Sweepstakes and lottery scams: Victims usually receive letters stating they have won a lottery or sweepstakes, sometimes claiming to be from Publisher's Clearing House or Reader's Digest. The letters tell victims to deposit an enclosed check and wire a portion back to the company to cover taxes or administration fees. The funds initially appear in the bank account, but are removed when the bank determines the check is fake.

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Capacity--Brain Imaging Findings

- Angular gyrus (AG) volumes strongly and uniquely associated with FCI Total Score and other FC variables in patients with aMCI
- AG relationship to FCI Total Score specifically mediated by WRAT-3 Arithmetic score
- Results represent an initial step towards a neurological model of financial capacity in MCI/AD using cognition as a mediator

Looking Ahead

- Are we at the cusp of a neuroscience of capacity? Possibly.
- Will MRI imaging techniques someday help clinicians to identify persons at risk for decline in their financial abilities? Yes.
- Will MRI and other neuroscientific procedures be increasingly used to help decide legal questions of capacity? Probably.
- Will MRI and other neuroscientific procedures be used to decide legal questions of capacity entirely by themselves? No.

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