

# ***What Do We Know So Far?***

## ***Current Disclosure Best Practices & Outcomes***

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# CLARiTI Disclosure Core



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# ADRC Network Return of Research Results

## Type of participant

### Dementia or MCI

### Normal Cognition or SMC

### Type of information

#### Roberts Survey 2019

#### CLARiTI Survey 2024

#### Roberts Survey 2019

#### CLARiTI Survey 2024

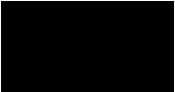
Consensus research diagnosis	25 (83%)	<b>27 (75%)</b>	23 (77%)	25 (69%)
Neuropsychological test results	22 (73%)	27 (75%)	21 (70%)	25 (69%)
Amyloid PET results	13 (43%)	17 (47%)	8 (27%)	<b>16 (44%)</b>
MRI results	12 (40%)	<b>21 (58%)</b>	10 (33%)	<b>22 (61%)</b>
FDG PET results	8 (27%)	<b>6 (17%)</b>	6 (20%)	<b>4 (11%)</b>
Genetic test results, not APOE*	4 (13%)	<b>2 (6%)</b>	3 (10%)	2 (6%)
Tau imaging results	3 (10%)	<b>6 (17%)</b>	2 (7%)	<b>4 (11%)</b>
CSF biomarker results	3 (10%)	<b>8 (22%)</b>	1 (3%)	<b>5 (14%)</b>
APOE genetic test results	2 (7%)	<b>5 (14%)</b>	2 (7%)	<b>5 (14%)</b>

\* Indicated in present survey as "Other"

**Roberts et al., 2021 N = 30**

**Present survey N = 36**

 **≥ 5% increase**

 Consistent with 2021

 **≥ 5% decrease**

# ***Section 1: Considerations for Disclosure***

# Legal & Social Considerations for Returning Results

> [J Law Med Ethics](#). 2018 Jun;46(2):485–498. doi: 10.1177/1073110518782955.

## The Proactive Patient: Long-Term Care Insurance Discrimination Risks of Alzheimer's Disease Biomarkers

[Jalayne J Arias](#)<sup>1</sup>, [Ana M Tyler](#)<sup>1</sup>, [Benjamin J Oster](#)<sup>1</sup>, [Jason Karlawish](#)<sup>1</sup>

Affiliations + expand

PMID: 30147000 DOI: [10.1177/1073110518782955](#)

- Supporting informed decision-making about testing/disclosure for participants with cognitive impairment
- Disclosure in the context of CLIA vs. non-CLIA labs
- Potential for medicolegal discrimination as a consequence of data sharing

[J Law Biosci](#). 2021 Jan-Jun; 8(1): Isab004.

PMCID: PMC8132957

Published online 2021 May 19. doi: [10.1093/jlb/Isab004](#)

PMID: [34040780](#)

‘That would be dreadful’: The ethical, legal, and social challenges of sharing your Alzheimer’s disease biomarker and genetic testing results with others

[Emily A Largent](#), [Shana D Stites](#), [Kristin Harkins](#), and [Jason Karlawish](#)

▶ [Author information](#) ▶ [Article notes](#) ▶ [Copyright and License information](#) [PMC Disclaimer](#)

[Alzheimers Dement \(Amst\)](#). 2022; 14(1): e12339.

PMCID: PMC9405485

Published online 2022 Aug 25. doi: [10.1002/dad2.12339](#)

PMID: [36035626](#)

Implications of preclinical Alzheimer's disease biomarker disclosure for US policy and society

[Claire M. Erickson](#)<sup>1, 2</sup>, [Lindsay R. Clark](#)<sup>2, 3</sup>, [Fred B. Ketchum](#)<sup>4</sup>, [Nathaniel A. Chin](#)<sup>2</sup>, [Carey E. Gleason](#)<sup>2, 3</sup> and [Emily A. Largent](#)<sup>5</sup>

# Psychological Risks of Disclosure

August 10, 2020

## Short-term Psychological Outcomes of Disclosing Amyloid Imaging Results to Research Participants Who Do Not Have Cognitive Impairment

Joshua D. Grill, PhD<sup>1,2,3,4</sup>; Rema Raman, PhD<sup>5</sup>; Karin Ernstrom, MS<sup>5</sup>; [et al](#)

[> Author Affiliations](#) | [Article Information](#)

*JAMA Neurol.* 2020;77(12):1504-1513. doi:10.1001/jamaneurol.2020.2734

- **No increases in depression, anxiety, or suicidality after learning amyloid PET results as part of clinical trial eligibility screening**



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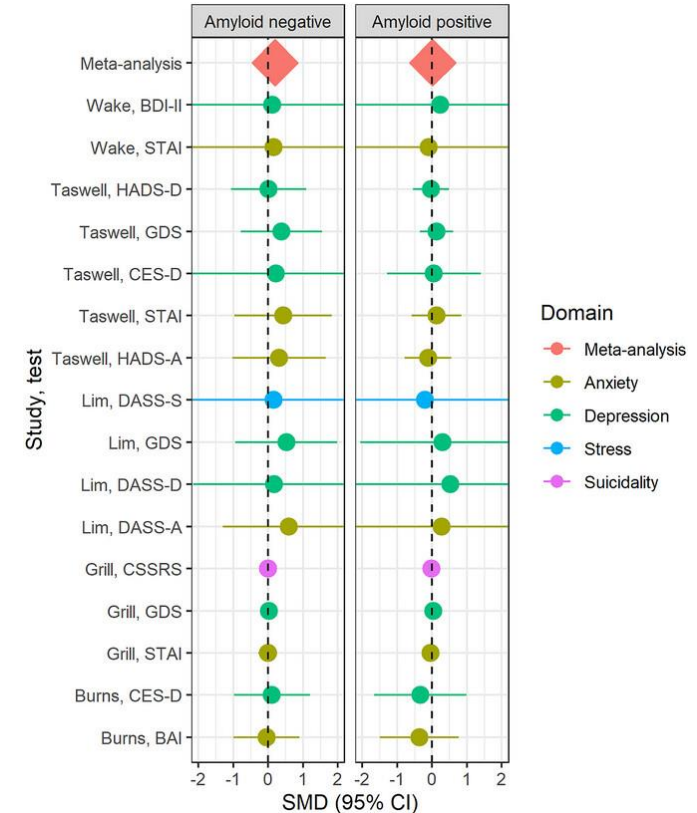
SHORT REPORT | [Full Access](#)

## A randomized controlled trial of amyloid positron emission tomography results disclosure in mild cognitive impairment

Jennifer H. Lingler [✉](#), Susan M. Sereika, Meryl A. Butters, Ann D. Cohen, William E. Klunk, Melissa L. Knox, Eric McDade, Neelesh K. Nadkarni, J. Scott Roberts, Lisa K. Tamres, Oscar L. Lopez

First published: 26 June 2020 | <https://doi.org/10.1002/alz.12129> | Citations: 17

- **Amyloid PET disclosure does not clearly improve the understanding or perceived efficacy to cope with a diagnosis of mild cognitive impairment**



van der Schaar J, Visser LNC, Ket JCF, et al. Impact of sharing Alzheimer's disease biomarkers with individuals without dementia: A systematic review and meta-analysis of empirical data. *Alzheimer's Dement.* 2023; 19: 5773–5794. <https://doi.org/10.1002/alz.13410>

- **Meta-analysis indicates no short-term psychological impact of sharing biomarker results with adults without dementia**



# Why Return Research Results?



- Participants want their results! Some see it as their right. (Walter et al., 2022, Participant Bill of Rights, *JAD*)



- Enhancing diagnostic confidence, personalized treatment planning, and access to clinical care and research



- Motivating lifestyle change, regardless of result
  - Health behaviors
  - Advanced planning
  - Role preparation

Rabinovici et al (2019) Association of Amyloid Positron Emission Tomography With Subsequent Change in Clinical Management Among Medicare Beneficiaries With Mild Cognitive Impairment or Dementia, *JAMA*

# Why Return Research Results?



- Greater transparency and increased personal benefit may enhance diverse participation in ADRD research.
- The requirement to learn one's biomarker result does not discourage enrollment in ADRD research.
  - Participants are not concerned about study partners learning their result; in fact, they prefer it.
- Novel blood-based biomarkers may reduce time, cost, and access barriers, improving enrollment in trials, particularly for those from underserved communities.

Gabel et al. (2022) Retaining Participants in Longitudinal Studies of Alzheimer's Disease, *J Alz Disease*  
Grill & Karlawish (2017) Study partners should be required in preclinical Alzheimer's disease trials, *Alz Res Ther.*  
Schindler et al. (2023) Using Alzheimer's disease blood tests to accelerate clinical trial enrollment, *Alz Dement.*



## ***Section 2: Disclosure Practices***

# Who Should Disclose?

- There is no single discipline or training background required for disclosure; in fact, an interdisciplinary team may be most effective.
  - Physicians (e.g., primary care, neurology, geriatrics)
  - Clinical psychologists, health psychologists, neuropsychologists
  - Social Workers
  - Nursing
  - Physician Associates/Assistants
  - Advanced trainees\*
- Clinical license is strongly preferred

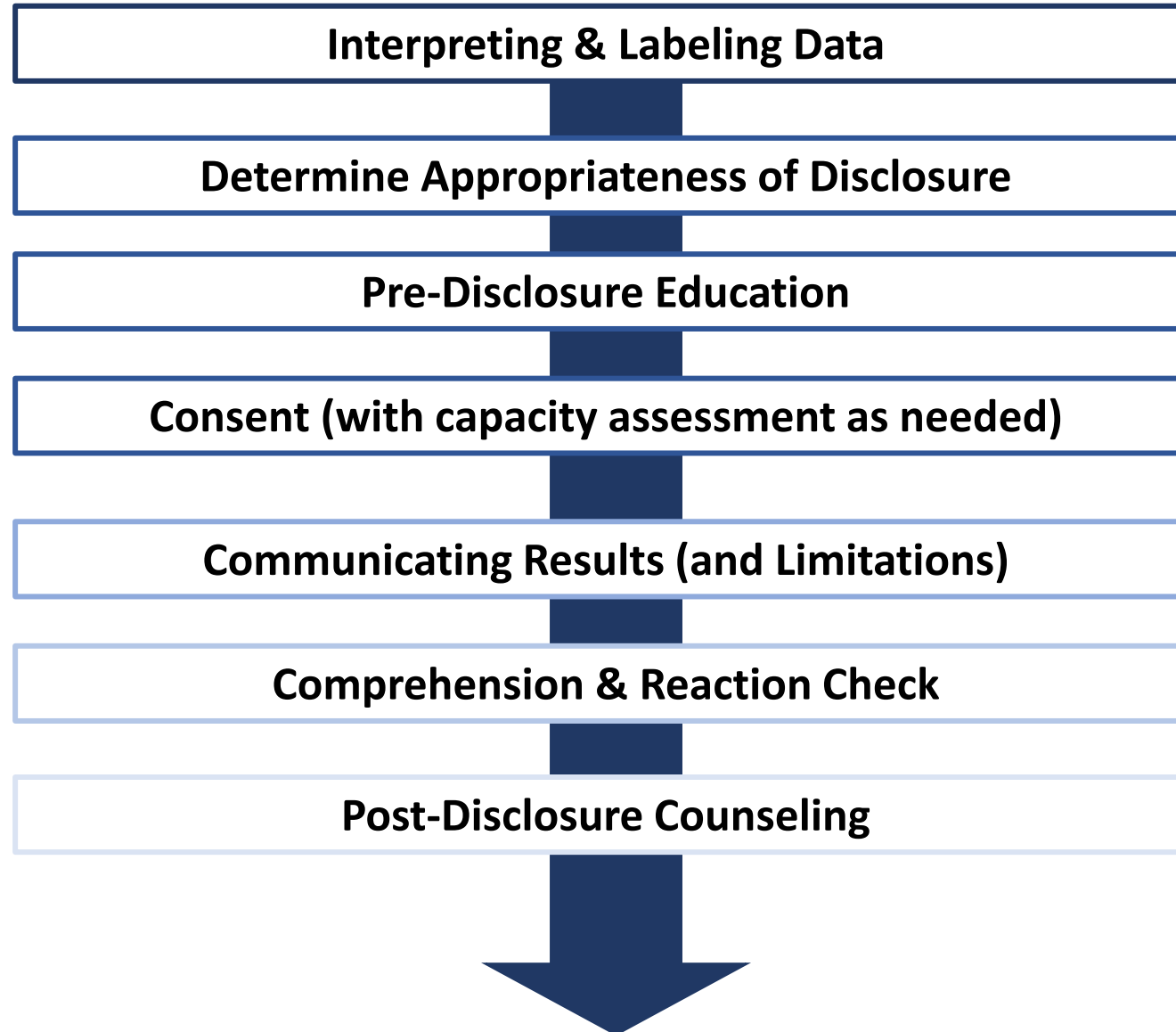


# To Whom Should We Disclose?

- **Adults Without Cognitive Impairment:**
  - Biomarker testing not indicated for clinical care (for now)
  - Research-based biomarker testing acceptable with sufficient safety monitoring
- **Adults with Cognitive Impairment (Mild Cognitive Impairment or Dementia):**
  - Biomarker testing indicated for both clinical care and research purposes.
  - Clinical stage is important in determining the relative utility, risks, and benefits of disclosure.
- **Individuals with Depression, Anxiety, or Other Psychiatric Illness:**
  - Biomarker testing/disclosure not necessarily contraindicated; however, case should be carefully evaluated to determine if and when testing should occur.

ADRC Best Practice Guidelines: Biomarker Disclosure:  
<https://files.alz.washington.edu/best-practices/biomarker-disclosure.pdf>

# Disclosure Framework



ADRC Best Practice Guidelines: Biomarker Disclosure: <https://files.alz.washington.edu/best-practices/biomarker-disclosure.pdf>

Largent et al. (2023) Testing for Alzheimer Disease Biomarkers and Disclosing Results Across the Disease Continuum, *Neurology*

# Pre-Disclosure Mental Health Screening

- Participants should have **stable and positive mental health** prior to disclosure
- Select **pre-disclosure screening** based on population
  - If already highly screened into study, may use quick screens (e.g., PHQ-7, GAD-7).
  - If community population, may use more comprehensive screens (e.g., GDS-15, BAI).
  - If evidence of prior mental health conditions, complete more thorough interview (e.g., past/current mental health treatment, risk assessment, CSSRS).
- Consider **treatment, social support, and protective/coping resources**
- Develop **pathways** to receive these resources post-disclosure





# Pre-Disclosure Education

- Domains covered:
  - What **procedures** are involved?
  - What **alternatives** are there to this test?
  - What **will** this test tell me?
  - What **won't** this test tell me?
  - What are the **risks** of learning my results?
  - What are the **benefits** of learning my results?
  - **Who** else should I talk to about this decision?
- Modalities:
  - 1:1 pre-disclosure counseling sessions
  - Brochures/informational guides
  - Self-paced decision aid\*

**Mild Cognitive Impairment and Brain Amyloid Imaging Decision Aid**

A tool to help you decide whether to undergo brain amyloid imaging and learn the results

This guide provides information about brain amyloid imaging for people with mild cognitive impairment (MCI). People with MCI may have the opportunity to undergo brain amyloid imaging as part of a clinical evaluation or through research. This guide describes MCI and amyloid imaging, how MCI is related to Alzheimer's disease, and what amyloid imaging can tell us about this relationship.

Contents:

Mild Cognitive Impairment	Page
What is mild cognitive impairment (MCI)?	2
What types of thinking changes occur with MCI?	2
What causes MCI?	2
What is Alzheimer's disease?	3
What happens to people with MCI over time?	3
Brain Amyloid Imaging	
What is amyloid imaging?	4
What information does amyloid imaging provide people with MCI?	4
What can amyloid imaging tell a person about the prognosis of MCI?	5
What can be done if a scan is "positive" (shows significant amyloid buildup)?	5
What else is important to know about amyloid imaging and MCI?	5
Why might someone with MCI choose to have amyloid imaging?	6
Why might someone with MCI choose not to have amyloid imaging?	6
What else should I consider before deciding whether to have amyloid imaging and learn the results?	6

**What causes MCI?**

- MCI has many possible causes, just like dementia has many possible causes.
- Sometimes MCI is due to a reversible problem that affects the brain, such as a thyroid imbalance or medication side effect.
- In other cases, MCI is due to an irreversible problem within the brain, such as Alzheimer's disease or damage from strokes.

**What happens to people with MCI over time?**

- People with MCI get worse over time.
- Some people with MCI stay the same over time.
- Some people with MCI get better over time.
- Some people with MCI even have their thinking problems improve and get back to normal, depending on what caused the problems.
- There are many factors that influence whether MCI worsens over time, including the type of MCI (amnesic, non-amnesic, or both) and the underlying cause(s). A careful evaluation that includes blood tests and standard brain scans, such as a CT or MRI scan, can help clinicians better assess the underlying cause(s) of MCI.

**Tangles:** made up of a protein called tau

... in which there is an abnormal buildup of proteins

... the function of brain cells involved in

... up many years before symptoms develop, so might be initially "silent," but eventually may cause significant problems (dementia).

# Communicating Results

Interpretation Step	Sample Script
<b>Describe the meaning of the ‘headline’ or label (i.e., elevated vs. not-elevated)</b>	“An elevated amyloid result means that there is a significant amount of abnormal amyloid in your brain.”
<b>Describe what the finding means in terms of etiology/neurodegenerative disease</b>	A+/T? or A+/T-: “This result means that Alzheimer’s disease brain changes are already occurring in your brain” / A+/T+: “This result means that you have Alzheimer’s disease”
<b>Describe the relationship to cognitive problems (if present)</b>	Cognitively Unimpaired A+: “Amyloid may build up many years before symptoms begin, but if you notice thinking changes, they are likely due in part to Alzheimer’s disease.” Cognitively impaired A+: “Your thinking changes are likely due in part to Alzheimer’s disease.”
<b>Describe risk for future decline</b>	A+: “It is not guaranteed that you will go on to develop dementia; however, you are at increased risk for developing dementia.”

# Communicating Limitations

- ⊗ We **cannot give specific numbers** or percentiles, as there is no universal biomarker, let alone threshold/cut-point for positivity.
- ⊗ In the case of negative results, **we cannot guarantee that the individual will remain negative.**
- ⊗ We **cannot rule in or out other neurodegenerative or medical conditions.**
- ⊗ We **cannot predict if/how/when decline will occur**, regardless of results.
- ⊗ We **cannot accurately combine risk factors** to predict trajectories.
- ⊗ Limited research with racial-ethnic minorities (and some evidence of differential meaning of biomarkers in non-White communities) suggests that some **biomarkers should be disclosed with care in these populations**

# Assessing Comprehension of/Reaction to Results

- Consider a formal post-disclosure comprehension test to identify and clarify misunderstandings.
  - ***Coming Soon: AGREED FAQs for Disclosure Document***
- Extent of post-disclosure psychological screening should be based on the sample/participant.
  - Consider including a **test-specific distress questionnaire**, like the Impact of Neuroimaging in AD scale
- Reactions may change as participants and loved ones process results; consider a **check-in** ~1 week post-disclosure and/or a ‘hotline’ to discuss results.

# Future Directions



## CLARiTi Disclosure Toolkit

- Leveraging ADRC infrastructure to develop, disseminate, and implement community informed disclosure toolkit
- Large-scale evaluation of disclosure safety and efficacy across diverse groups
- Evaluate effect of disclosure on recruitment & retention in longitudinal ADRD research

### PET Amyloid & Tau Scan

- We reviewed the results from the PET scan you completed as part of *STIM/the Driving Study/DAPPER* on XX/XX/XXXX.
- Your results were analyzed by trained professionals to determine whether you had a significant amount of AD-specific amyloid or tau in your brain.
- You will receive separate results for amyloid and tau.

### Amyloid, Tau, & Alzheimer's Disease

Result	Is this Alzheimer's Disease?	How does this affect risk for Dementia—Alzheimer's Type?
Neither Amyloid nor Tau Elevated	Not Alzheimer's Disease; "Normal" Result	No increase in risk for DAT
Amyloid Elevated, Tau Not Elevated	Concern for Alzheimer's disease brain changes	Increased risk for DAT
Elevated, Amyloid Elevated	Not Alzheimer's Disease; Concern for other abnormal brain changes	No increase in risk for DAT; Concern for other neurologic problem
Amyloid Elevated, Tau Elevated	Alzheimer's disease	Increased risk for DAT

Having amyloid raises concern for Alzheimer's disease.  
Having amyloid and tau confirms Alzheimer's disease.

### Mr./Ms. XXX's PET Results

Results indicated that:

Your amyloid level is elevated.

Your tau level is elevated.

### Mr./Ms. XXX's PET Results

If you have Elevated Amyloid and Elevated Tau:

What does this result mean?

- At this time, there is a significant amount of AD-associated amyloid and tau in your brain.
- This result means that there is a high likelihood that you have Alzheimer's disease.
- This result means that your cognitive symptoms are likely due to Alzheimer's disease.

What should I expect?

- You are at increased risk to develop Dementia—Alzheimer's Type. Increased risk means there is a greater likelihood; it does NOT mean DAT is guaranteed.
- We cannot predict how severely or how quickly you will decline.
- We cannot rule in or out other conditions, including other forms of dementia.

### Blood Tests for Alzheimer's Disease Decision Guide

A tool to help you decide whether to have a blood test for Alzheimer's disease

This guide provides information about blood tests for people with cognitive difficulties, such as problems with memory and/or thinking, which could be due to Alzheimer's disease (AD). Testing for people with cognitive difficulties may be offered as part of a clinical evaluation or research study. This guide describes what information can be provided by a blood test and how the results are related to AD.

### Mild Cognitive Impairment and Brain Amyloid Imaging Decision Guide

A tool to help you decide whether to undergo brain amyloid imaging and learn the results

This guide provides information about brain amyloid imaging for people with mild cognitive impairment (MCI). People with MCI may have the opportunity to undergo brain amyloid imaging as part of a clinical evaluation or through research. This guide describes MCI and amyloid imaging, how MCI is related to Alzheimer's disease, and what amyloid imaging can tell us about this relationship.





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