

## DSM-5 Renaming Dementia (?)

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## Neurocognitive Disorders Work Group

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## Neurocognitive Disorders Premises

- A. **New title**
  - Replaces: delirium, dementia amnesic and geriatric cognitive disorders
- B. **Cognition**
  - Core deficit in cognition
  - Decline from previous level of function



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## Neurocognitive Disorders

- Delirium
- Major Neurocognitive Disorder (NCD)
- Mild Neurocognitive Disorder (NCD)

## Delirium

## Delirium

- Disturbance of attention and awareness
- Change over a short period of time
- Includes disturbance in cognition
- Not better explained by preexisting condition
- Caused by physiological consequence of medical condition, substance use, or withdrawal

## DSM-IV Definition

- "The essential feature of a delirium is a **disturbance in consciousness** that is accompanied by a change in cognition that cannot be better accounted for by a preexisting or evolving dementia."

## Proposed Changes in DSM-5

Change	Current
A. <b>Disturbance in level of awareness or arousal</b> with reduced ability to direct, focus, sustain, and shift attention.	A. <b>Disturbance of consciousness</b> (i.e., reduced clarity of awareness of the environment) with reduced ability to focus, sustain, or shift attention

## Addition

- **Note** : The following supportive features are commonly present in delirium but are not key diagnostic features: sleep-wake cycle disturbance, psychomotor disturbance, perceptual disturbances (e.g., hallucinations, illusions), emotional disturbances, delusions, labile affect, and EEG abnormalities (generalized slowing of background activity).

## Neurocognitive Disorders

## General Approach to NCD's

- Characterize the patient syndromically
  - Mild NCD
  - Major NCD
- Determine etiology of syndrome

## Major Change

- Now including a pre-dementia condition termed “Mild Neurocognitive Disorder”
- DSM IV characterized mostly conditions at the dementia stage and their subtypes

## Neurocognitive Disorders

### Major vs Mild

1. Severity
2. Independence
3. Usually a continuum with evolution  
Not always
4. Etiology

## Neurocognitive Disorders

### Domains

Domain	Tasks
<b>Complex attention</b>	Major: diminished, multiple stimuli Mild: takes longer
<b>Executive abilities</b>	Major: abandon complex activities Mild: ↑ effort, multi-tasking
<b>Learning/memory</b>	Major: repeat self in conversation Mild: recent events, occas repeat
<b>Language</b>	Major: anomia, paraphasias Mild: ↓ naming, word finding
<b>Visuoconstruction Visuoperception</b>	Major: not driving, ↓ navigation Mild: maps, effort
<b>Social cognition</b>	Major: insensitivity social contexts Mild: subtle personality, ↓ empathy



1. Cognitive decline
2. Single cognitive domain impaired (usually)
3. Preservation of independence

1. Cognitive decline
2. Significant cognitive impairment in one or more often multiple cognitive domains
3. Loss of independence



## Major NCD Dementia

- A. Cognitive decline (1 or usually 2 cognitive domains)
  - 1. Report by patient, informant, clinician  
and
  - 2. Deficits on assessment
- B. Interfere with independence assistance in IADL's
- C. Not delirium
- D. Not primarily attributable to another disorder

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## Mild NCD MCI

### Rationale

Mild cognitive impairment  
Early recognition  
Intervention  
Clinical trials

### Criteria

- A. Cognitive decline
  - 1. Report by patient, informant, clinician  
and
  - 2. Mild cognitive deficits
- B. Not interfere with independence greater effort
- C. Not delirium
- D. Not primarily attributable to another disorder

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## NCD Etiologies

- Alzheimer's Disease
- Frontotemporal degen
- Lewy body disorders
- Vascular cognitive imp
- Traumatic brain injury
- Substance/medications
- HIV/AIDS
- Prion disorders
- Parkinson's disease
- Huntington disease
- Other medical issues
- Multiple causes

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## Alzheimer's Disease

### General

1. Neurodegenerative disease
2. Gradual onset and decline
3. Typically includes a memory impairment
4. ? role of imaging and biomarkers

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## Alzheimer's Disease

### Major

1. Meets criteria for Major NCD

### Mild

1. Meets criteria for Mild NCD

### Probable and Possible AD



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## Alzheimer's Disease

### Major Probable AD

1. Genetic mutation
2. All 3  
Memory + other domain  
Progressive  
No additional contributions

### Mild Probable AD

1. Genetic mutation

### Mild Possible AD

1. All 3  
Memory disorder  
Progressive  
No additional contributions



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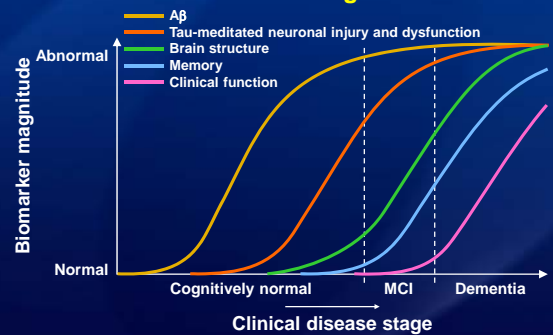
## Other Newish Criteria

- Alzheimer's Disease Spectrum  
NIA-AA
- Prodromal Alzheimer's Disease  
International Work Group



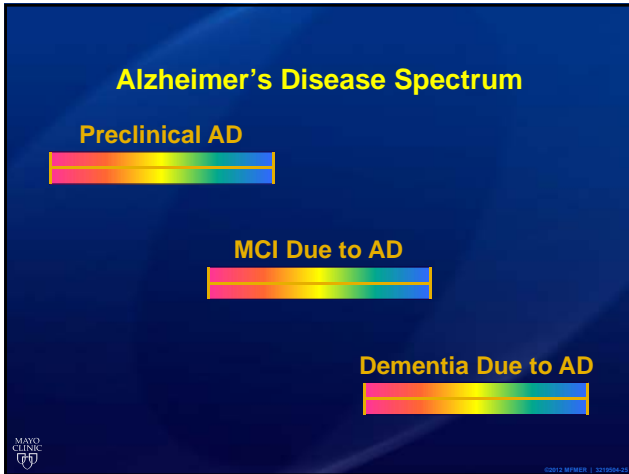
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## Hypothetical Model of Dynamic Biomarkers of the Alzheimer's Pathological Cascade



Jack et al: Lancet Neurol, 2010

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### Dementia Due to AD

Diagnostic category	Biomarker probability of AD etiology	A $\beta$ (PET or CSF)	Neuronal injury (tau, FDG, sMRI)
Probable AD dementia	Uninformative/available	Conflicting/indeterminant or unavailable	
Probable AD with evidence of path AD	Intermediate Highest	? Positive	Positive Positive
Possible AD dementia atypical with path	High consider secondary	Positive	Positive
Dementia unlikely AD	Lowest	Negative	Negative

McKhann et al: 2011

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### MCI Due to AD

Diagnostic category	Biomarker probability of AD etiology	A $\beta$ (PET or CSF)	Neuronal injury (tau, FDG, sMRI)
MCI	Uninformative	Conflicting/indeterminant or unavailable	
MCI due to AD – intermediate likelihood	Intermediate Intermediate	Positive Untested	Untested Positive
MCI due to AD – high likelihood	Highest	Positive	Positive
MCI – unlikely due to AD	Lowest	Negative	Negative

Albert et al: 2011

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### Preclinical AD

Diagnostic category	A $\beta$ (PET or CSF)	Neuronal injury	Clinical
Stage 1	Positive	Negative	Negative
Stage 2	Positive	Positive	Negative
Stage 3	Positive	Positive	Positive
Sage 0	Negative	Negative	Negative

Sperling et al: 2011

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## Prodromal Alzheimer's Disease

- Episodic memory deficit
  - Supported by biomarkers
  - Essentially, amyloid by imaging or CSF

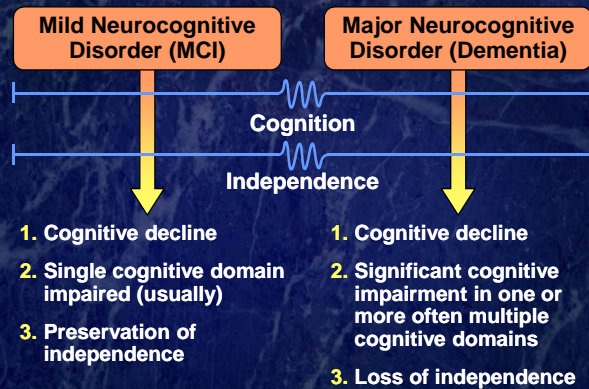


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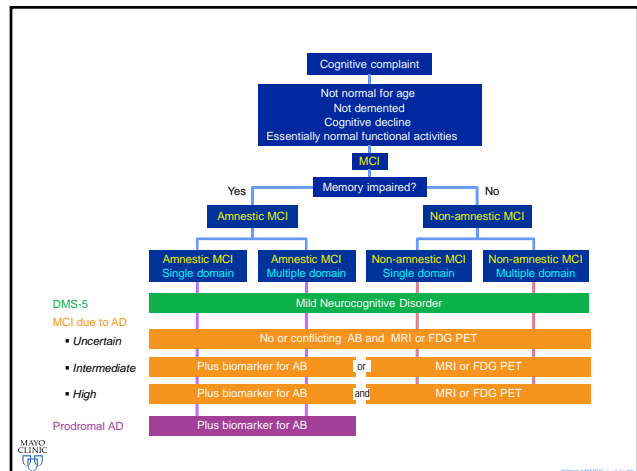
## Case Example



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## Summary

- **DSM-5**
  - New terminology, but no conceptual deviations
  - MCI due to AD and Dementia due to AD can be subsumed under Mild and Major NCD
  - Adoption of terminology, e.g., Major NCD vs. Dementia to be determined