

Neuropathology Data - Methods

Summary: The neuropathology data in the ADNI database relevant to Alzheimer disease (AD) are derived from application of the National Institute on Aging-Alzheimer's Association guidelines for the neuropathologic assessment of AD (1). The neuropathologic data may be considered the 'gold standard' against which other clinical, neuropsychological, genetic, neuroimaging and body fluid biomarkers may be compared. Neuropathology data may be used to underpin multimodal studies of the natural history of AD. Data relevant to other neurodegenerative diseases are derived from the application of other appropriate contemporary neuropathologic guidelines.

Methods

Acquisition of Neuropathology Data

Pathological lesions within the brain are assessed using established neuropathologic diagnostic criteria. The NIA-AA criteria recognize that AD neuropathologic change (ADNC) may occur in the apparent absence of cognitive impairment. In accordance with the NIA-AA protocol, an "ABC" score for ADNC is generated from histopathologic assessments of the anatomic distribution of amyloid β plaques (A), the distribution and density (staging) of neurofibrillary tangles (B), and the maximal density of neocortical neuritic plaques (C). In addition, detailed methods for assessing common co-morbid conditions such as Lewy body disease, vascular pathology and associated brain injury, hippocampal sclerosis, argyrophilic grain disease, and TAR DNA binding protein (TDP) immunoreactive inclusions are included (Reference).

Neuropathology data were captured in the format of the Neuropathology Data Form Version 10 of the National Alzheimer's Coordinating Center (NACC) established by the National Institute on Aging/NIH (U01 AG016976). For more information see:

Neuropathology Coding Guidebook NACC Version 10:

<https://www.alz.washington.edu/NONMEMBER/NP/npguide10.pdf>

Neuropathology Data Collection Form NACC Version 10:

<https://www.alz.washington.edu/NONMEMBER/NP/npform10.pdf>

Neuropathology Data Dictionary NACC Version 10:

<https://www.alz.washington.edu/NONMEMBER/NP/npded10.pdf>

Dataset Information: This methods document applies to the following dataset(s) available from the ADNI repository:

Dataset Name	Date Submitted
Neuropathology Core – Data Methods	5/5/2021
Neuropathology Core – Neuropathology Data	5/5/2021

Reference: Montine TJ, et al. National Institute on Aging - Alzheimer's Association guidelines for the neuropathologic assessment of Alzheimer's disease: a practical approach. *Acta Neuropathol.* 2012; 123: 1-11.

About the Authors: This document was modified from a previous version by Richard J. Perrin, M.D., Ph.D., Knight Alzheimer Disease Research Center, Department of Pathology & Immunology, Washington University School of Medicine, Saint Louis, Missouri 63110. For more information, please contact Dr. Perrin (314-362-8079; rperrin@wustl.edu) or the ADNI Neuropathology Core Coordinator, Haley Bernhardt (314-273-1269; hbernhardt@wustl.edu).

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