Supplementary Table 2. Characteristics of excluded DTA studies

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| --- | --- |
| **Study** | **Reason for exclusion** |
| **Bastin 2010** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators.  Study design: threshold not used (Author's email on 14th August 2012) |
| **Beckett 2010** | Study design: threshold not used. The focus of the study was to compare annual changes in rCMRglc levels between MCI converters and MCI non-converters at follow-up (ADNI study). |
| **Cabral 2015\*** | Study design: baseline 18F-FDG images/a threshold not used for predicting conversion from MCI to AD dementia; for each MCI-converter participant, all the available 18FDG images were labelled according to the temporal distance between their acquisition time and the moment of conversion (e.g., TC24; TC18; TC6; TC0); baseline 18FDG images were used only for MCI-non-converters. Focus of the study was to predict conversion from MCI to AD dementia with 18FDG images at different prodromal stages. Data for creating 2X2 table not available. ADNI study.  *Conclusion:* “*The accuracy of the prediction of whether an MCI patient will convert to AD or not begins to decrease only 12 months before conversion, but even at 24 months before the time of conversion (TC),* around *70% of the converters were correctly identified.”* |
| **Caroli 2012\*** | Participants: AD patients (mild and moderate); MCI-AD converters (fast and slow converters); healthy controls  Study design: cross-sectional. ADNI study.  Target condition: not conversion from MCI to AD dementia  Aim: to distinguish moderate or mild AD dementia patients and MCI patients who subsequently converted to AD dementia from normal older adults  *Conclusion:* *“The three tested techniques have the potential to help detect AD in research and clinical settings. Additional efforts are needed to clarify their ability to address particular scientific and clinical questions. Their incremental diagnostic value over other imaging and biologic markers make them easier to implement by other groups for these purposes”* |
| **Caroli 2015\*** | Participants: ADNI MCI patients categorized as: A-/N-; A+/N-; A+/N+; SNAP (suspected non-AD disease pathology).  Index test: combined  MCI participants with only hypometabolism present/absent pathology at baseline were not considered. The accuracy of baseline 18F-FDG PET scan alone in predicting the progression from MCI to dementia was not assessed  Aim: to investigate predictors of progressive cognitive deterioration in patients with SNAP  Index test: combined biomarkers of amyloid pathology (CSF Aβ42) and neurodegeneration pathology (18F-FDG PET and MRI)  Conclusion: a specific risk progression profile assessed; the accuracy of 18F-FDG PET in combination with other biomarkers, or alone, was not reported. |
| **Charil 2011** | Study design: threshold not used. The focus of the study was to investigate annual changes in FDG-PET scans in different study groups (ADNI study). |
| **Chen 2010** | Target condition: not conversion from MCI to dementia.  Study design: threshold not used. The focus of the study was the measurement of the cerebral metabolic rate for glucose over a 12-month period (ADNI study). |
| **Chen X 2015\*** | Conference Abstract publication. ADNI participants.  Data for creating 2X2 table not available. Additional information (e.g., whether there is a full paper published, etc.) and missing data were requested from the author but no further information was available at the time this review was prepared. |
| **Chetelat 2001** | Study design: threshold not used. The focus of the study was to statistically compare initial PET data of people who developed ADD to those who did not at follow-up. |
| **Chetelat 2005** | Target condition: not conversion from MCI to dementia.  Study design: threshold not used. The focus of the study was the measurement of the cerebral metabolic rate for glucose and comparison between that measurement and neuropsychological assessment in predicting global cognitive deterioration in people with MCI over an 18-month period |
| **Desikan 2010** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators but no further information was available at the time this review was prepared.  Study design: threshold not used (ADNI study). |
| **Drzezga 2003** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators but no further information was available at the time this review was prepared.  Study design: threshold not used. The focus of the study was to evaluate changes in the baseline and follow-up ¹⁸F-FDG-PET scans. |
| **Forsberg 2008** | Study design: threshold not used. The focus of the study was to compare rCMRglc levels between MCI converters and MCI non-converters at follow-up. |
| **Galluzzi 2013\*** | Aim: to support the use of biomarkers in the diagnosis of MCI due to AD disease according to the revised NIA-AA diagnostic criteria; the accuracy of baseline 18F-FDG PET as a single test in predicting the progression from MCI to dementia not assessed.  Participants: categorized by biomarker profile: i) Aβ42; ii) Aβ42 and 18F-FDG PET or tau; iii) Aβ42 and 18F-FDG PET or tau, and hippocampal volume; iv) all biomarkers; v) any other biomarker combination; vi) no abnormal biomarkers  Index test: combined biomarkers  The accuracy (sensitivity/specificity) of the biomarkers not assessed. Data for creating 2x2 tables not available. A specific risk progression profile assessed |
| **Garibotto 2008** | Study design: threshold not used. The focus of the study was to assess education and occupation as proxies for reserve in aMCI converters. |
| **Gray 2012** | Study design: threshold not used. The focus of the study was to investigate the value of combining cross-sectional and longitudinal multi-region 18FDG-PET information for classification of Alzheimer's disease (ADNI study). |
| **Hunt 2007** | Study design: threshold not used. The focus of the study was to compare rCMRglc levels between MCI converters and MCI non-converters at follow-up. |
| **Ishii 2009** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators but no further information was available at the time this review was prepared.  Study design: threshold not used. The focus of the study was to compare rCMRglc levels between MCI converters and MCI non-converters at follow-up. |
| **Ishii 2011** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators but no further information was available at the time this review was prepared. |
| **Ishii 2014\*** | Conference Abstract publication.  Data for creating 2X2 tables not available. Additional information (e.g., whether there is a full paper published, etc.) and missing data were requested from the author but no further information was available at the time this review was prepared. |
| **Jagust 2007** | Target condition: not conversion from MCI to dementia.  Study design: threshold not used |
| **Kadir 2012** | Study design: threshold not used. The focus of the study was to examine dynamic changes in FDG imaging at different stages of Alzheimer's disease. |
| **Kawashima 2012** | Study design: threshold not used. The focus of the study was to examine the association between baseline profiles and risk of early conversion to AD dementia (ADNI study). |
| **Kim 2010** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators.  Study design: threshold not used (Author's email on 4th October 2013) |
| **Landau 2011** | Study design: threshold not used. The focus of the study was to assess annual changes in biomarkers (ADNI study). |
| **Landau 2012** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators but no further information was available at the time this review was prepared |
| **Lee 2011** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators but no further information was available at the time this review was prepared. |
| **Lo 2011** | Target condition: not conversion from MCI to dementia.  Study design: threshold not used. The focus of the study was to investigate rates of change in level of FDG uptake (ADNI study). |
| **Lo 2012** | Target condition: not conversion from MCI to dementia.  Study design: threshold not used. The focus of the study was to investigate the vascular contribution to longitudinal changes of rCMRglc in MCI and AD dementia participants (ADNI study). |
| **Lorenzi 2010** | Target condition: not conversion from MCI to dementia.  Study design: threshold not used. The focus of the study was to assess the benefit of the enrichment of MCI participants with true Alzheimer's disease cases by means of ¹⁸F-FDG-PET scan and other biomarkers (ADNI study). |
| **Lucidi 2012** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators but no further information was available at the time this review was prepared. |
| **Morbelli 2010** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators but no further information was available at the time this review was prepared.  Study design: threshold not used. The focus of the study was to concurrently investigate patterns of hypometabolism and atrophy in people with aMCI converted to AD dementia. |
| **Morbelli 2012** | Study design: threshold not used. The focus of the study was to explore resting-state metabolic connectivity in people with aMCI who converted to AD dementia at follow-up. |
| **Morbelli 2015a\*** | Participants: patients with amnestic MCI (aMCI-converters and aMCI-non-converters) and healthy controls  Study design: retrospective analysis of aMCI longitudinal data and data from healthy controls  Aim: to compare the diagnostic performance of visual interpretation with an automatic tool results in MCI patients and healthy participants  Discriminating aMCI-AD converters from healthy controls  Expert reading: sensitivity 89.6%, specificity 89.0%, accuracy 89.2%.  Two moderately-skilled readers: sensitivity 62.3%, specificity 91.7%, accuracy 79.6%.  Assessment of 50 aMCI-non converters  In 30/50, the expert recognized the AD pattern. In 13/50, both the expert and PALZ score were negative. In 7/50, only the PALZ score was positive.  The accuracy of visual versus semi-quantitative analysis of 18F-FDG PET imaging in predicting conversion from MCI to AD dementia/ ‘all causes’ of dementia is not performed (Professor Nobili contacted). Data for creating 2X2 table not available. |
| **Pagani 2010** | Study design: threshold not used. The focus of the study was to test the hypothesis that the combination of memory and brain metabolic assessment could identify subgroups of those MCI who would convert or would not convert to dementia at follow-up. |
| **Pagani 2015\*** | Aim: to assess the accuracy of the diagnostic ability of 18F-FDG PET imaging in discriminating patients with MCI due to AD disease and healthy controls.  Patients with MCI were followed during the observational period (mean 22.6±16.0 months, range 6-24 months); only those patients who developed AD dementia, MCI-AD-converters, were included in the analysis alongside and healthy controls were included in the analysis.  The accuracy (sensitivity/specificity) of 18F-FDG PET imaging in predicting the progression from MCI to dementia was not assessed. Data for 2X2 tables not available |
| **Small 1995** | Study design: threshold not used. The focus of the study was to investigate predictors of cognitive changes in middle-aged and older adults with memory loss. |
| **Teipel 2015\*** | Data for creating 2X2 table not available. Additional information and missing data were requested from the author but no further information was available at the time this review was prepared. ADNI study. |
| **Torosyan 2011** | Insufficient data to complete 2 x 2 tables. Additional data were requested from the trial investigators but no further information was available at the time this review was prepared. |
| **Toroysan 2017** | Target condition: cognitive decline not conversion from MCI to dementia |
| **Walhovd 2010** | Study design: threshold not used. The focus of the study was to combine FDG-PET, MRI and CSF biomarkers in the 2-year prognosis of MCI and Alzheimer's disease participants (ADNI study). |
| **Zhang 2012** | Insufficient data to complete 2X2 table. Additional data were requested from the trial investigators but no further information was available at the time this review was prepared.  Study design: threshold not used. The focus of the study was to assess the predictive value of longitudinal and multimodal biomarkers in conversion from MCI to AD dementia (ADNI study). |

rCMRglc, regional cerebral metabolic rate for glucose; MCI, mild cognitive impairment; AD, Alzheimer’s disease; TC, time conversion; ADNI, Alzheimer’s Disease Neuroimaging Initiative; A, amyloid; N, neurodegeneration; SNAP, suspected non–Alzheimer disease pathology; CSF, cerebrospinal fluid; MRI, magnetic resonance imaging; NIA-AA, National Institute on Aging-Alzheimer’s Association; aMCI, amnestic MCI; PALZ, Probability of ALZheimer  
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