Supplementary Table 1. Sources searched and search strategies

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| --- | --- | --- |
| **Source** | **Search strategy** | **Hits retrieved** |
| 1. MEDLINE (Ovid) | 1. exp Dementia/2. Cognition Disorders/3. (alzheimer$ or dement$).ti,ab.4. ((cognit$ or memory or cerebr$ or mental$) adj3 (declin$ or impair$ or los$ or deteriorat$ or degenerat$ or complain$ or disturb$ or disorder$)).ti,ab.5. (forgetful$ or confused or confusion).ti,ab.6. MCI.ti,ab.7. ACMI.ti,ab.8. ARCD.ti,ab.9. SMC.ti,ab.10. CIND.ti,ab.11. BSF.ti,ab.12. AAMI.ti,ab.13. MD.ti,ab.14. LCD.ti,ab.15. QD.ti,ab.16. AACD.ti,ab.17. MNCD.ti,ab.18. MCD.ti,ab.19. ("N-MCI" or "A-MCI" or "M-MCI").ti,ab.20. or/1-1921. "Positron emission tomography".ti,ab.22. \*Positron-Emission Tomography/23. PET.ti,ab.24. "FDG-PET".ti,ab.25. ("PET-FDG" or "18f-fdg" or "fdg uptake").ti,ab.26. fluodeoxyglucose\*.ti,ab.27. fluorodexyglucose\*.ti,ab.28. Fluorodeoxyglucose F18/29. or/21-2830. glucose metabolism.ti,ab.31. hypometabolism.ti,ab.32. cerebral metabolic rate.ti,ab.33. metabolic activity.ti,ab.34. hypoperfusion.ti,ab.35. (CMRgl or rCMRGlu).ti,ab.36. or/30-3537. 20 and 29 and 3638. disease progression/39. (dement\* or alzheimer\* or AD or MCI).ti,ab.40. exp \*Dementia/41. 39 or 4042. 41 and 3843. 29 and 4244. 37 or 4345. exp Dementia/di46. 36 and 4547. 44 or 46 | Jan 2016: 427July 2017:286 |
| 2. EMBASE (Ovid ) | 1. exp dementia/2. (alzheimer\* or dement\*).ti,ab.3. ((cognit\* or memory or cerebr\* or mental\*) adj3 (declin\* or impair\* or los\* or deteriorat\* or degenerat\* or complain\* or disturb\* or disorder\*)).ti,ab.4. (forgetful\* or confused or confusion).ti,ab.5. MCI.ti,ab.6. ACMI.ti,ab.7. ARCD.ti,ab.8. SMC.ti,ab.9. CIND.ti,ab.10. BSF.ti,ab.11. AAMI.ti,ab.12. LCD.ti,ab.13. QD.ti,ab.14. AACD.ti,ab.15. MNCD.ti,ab.16. MCD.ti,ab.17. ("N-MCI" or "A-MCI" or "M-MCI").ti,ab.18. ("nMCI" or "aMCI" or "mMCI").ti,ab.19. or/1-1820. "positron emission tomography".ti,ab.21. \*positron emission tomography/22. PET.ti,ab.23. "FDG-PET".ti,ab.24. ("PET-FDG" or "18f-fdg" or "fdg uptake").ti,ab.25. fluodeoxyglucose\*.ti,ab.26. fluorodexyglucose\*.ti,ab.27. fluorodeoxyglucose f 18/28. or/20-2729. glucose metabolism.ti,ab.30. hypometabolism.ti,ab.31. "cerebral metabolic rate\*".ti,ab.32. metabolic activity.ti,ab.33. hypoperfusion.ti,ab.34. (CMRgl or rCMRGlu).ti,ab.35. or/29-3436. 19 and 28 and 3537. disease course/38. (dement\* or alzheimer\* or AD or "cognit\* impair\*" or MCI).ti,ab.39. exp dementia/40. 38 or 3941. (diagnosis or sensitivity or specificity or "disease progression" or converted or conversion).ti,ab.42. 37 or 4143. 40 and 4244. 28 and 4345. 36 or 44 | Jan 2016: 2241July 2017:1405 |
| 3. PSYCINFO(Ebsco) | 1. exp Dementia/2. (alzheimer\* or dement\*).ti,ab.3. ((cognit\* or memory or cerebr\* or mental\*) adj3 (declin\* or impair\* or los\* or deteriorat\* or degenerat\* or complain\* or disturb\* or disorder\*)).ti,ab.4. (forgetful\* or confused or confusion).ti,ab.5. MCI.ti,ab.6. ACMI.ti,ab.7. ARCD.ti,ab.8. SMC.ti,ab.9. CIND.ti,ab.10. BSF.ti,ab.11. AAMI.ti,ab.12. LCD.ti,ab.13. QD.ti,ab.14. AACD.ti,ab.15. MNCD.ti,ab.16. MCD.ti,ab.17. ("N-MCI" or "A-MCI" or "M-MCI").ti,ab.18. ("nMCI" or "aMCI" or "mMCI").ti,ab.19. or/1-1820. exp Positron Emission Tomography/21. "positron emission tomography".ti,ab.22. PET.ti,ab.23. "FDG-PET".ti,ab.24. ("PET-FDG" or "18f-fdg" or "fdg uptake").ti,ab.25. fluodeoxyglucose\*.ti,ab.26. fluorodexyglucose\*.ti,ab.27. or/20-2628. "glucose metabolism".ti,ab.29. hypometabolism.ti,ab.30. "cerebral metabolic rate\*".ti,ab.31. metabolic activity.ti,ab.32. hypoperfusion.ti,ab.33. (CMRgl or rCMRGlu).ti,ab.34. or/28-3335. 19 and 2736. 34 and 35 | Jan 2016: 187July 2017: 298 |
| 4. BIOSIS Previews (Thomson Reuters Web of Science) | Topic=(dementia OR cognition OR MCI OR alzheimer\* OR AD OR lewy OR memory OR cognitive OR FTLD) AND Topic=("Positron emission tomography" OR PET OR "FDG-PET" OR "PET-FDG" OR "18f-fdg" OR "fdg uptake" OR fluodeoxyglucose\* OR fluorodexyglucose\*) AND Topic=("glucose metabolism" OR hypometabolism OR "cerebral metabolic rate" OR "metabolic activity" OR hypoperfusion OR CMRgl OR rCMRGlu)Timespan=All Years. Databases=BIOSIS Previews.Lemmatization=On | Jan 2016: 258 |
| 5. Web of Science Core Collection, including Conference Proceedings Citation Index  | Topic=(tau OR p-tau OR t-tau OR pTau OR tTau OR hyperphosphorylation OR pTau181 OR "phospho-tau\*" or "total-tau\*" OR tau231) AND Topic=(dement\* OR alzheimer\* OR MCI OR "cognit\* impair\*" OR "CDR 0.5" OR "petersen criteria" OR aMCI OR nMCI OR mMCI) AND Topic=(diagnosis OR sensitiv\* OR specificit\* OR ROC OR "receiver operat\*" OR "Area under curve" or AUC OR sROC OR accura\* OR "follow\*-up" OR "positive predictive value\*" OR "negative predictive value\*" OR longitudinal OR longitudinally)Timespan=All Years. Databases=BIOSIS Previews.Lemmatization=On | Jan 2016: 58July 2017:1039 |
| 6. LILACS (BIREME) | positron OR PET OR tomografía OR hypometabolism OR hypoperfusion OR CMRgl OR rCMRGlu [Words] and demências OR dementia OR dementias OR demência OR Alzheimer OR Alzheimers OR Alzheimer's OR cognitive OR cognitive OR cognitive OR cognition OR "déficit cognitive" OR cognición OR cognição OR Memória OR memory OR Memoria OR "frontotemporal lobar degeneration" OR "degeneração lobar frontotemporal" OR FTLD OR FTD OR "pick's disease" OR "primary progressive aphasia" [Words] | Jan 2016: 58July 2017: 12 |
| TOTAL before de-duplication and first assessment | Jan 2016:3719July 20172404  |
| TOTAL after de-duplication | Jan 2016:2438July 20172404 |

1 exp Dementia/
2 Cognition Disorders/
3 Mild Cognitive Impairment/
4 (alzheimer$ or dement$).ti,ab.
5 ((cognit$ or memory or cerebr$ or mental$) adj3 (declin$ or impair$ or los$ or deteriorat$ or degenerat$ or complain$ or disturb$ or disorder$)).ti,ab.
6 (forgetful$ or confused or confusion).ti,ab.
7 MCI.ti,ab.
8 ACMI.ti,ab.
9 ARCD.ti,ab.
10 SMC.ti,ab.
11 CIND.ti,ab.
12 BSF.ti,ab.
13 AAMI.ti,ab.
14 LCD.ti,ab.
15 AACD.ti,ab.
16 MNCD.ti,ab.
17 MCD.ti,ab.
18 or/1-17
19 "Positron emission tomography".ti,ab.
20 exp Tomography, Emission-Computed/
21 PET.ti,ab.
22 tomograph\*.ti,ab.
23 or/19-22
24 FDG.ti,ab.
25 ("18f-fdg" or 18fdg or fdg18).ti,ab.
26 Fluorodeoxyglucose.ti,ab.
27 Fluorodeoxyglucose F18/
28 Glucose/
29 glucose metabol\*.ti,ab.
30 cerebral metabolic rate.ti,ab.
31 (CMRgl or rCMRGlu).ti,ab.
32 or/24-31
33 18 and 23 and 32

34 exp Dementia/di

35 34 AND 32

36 33 OR 35