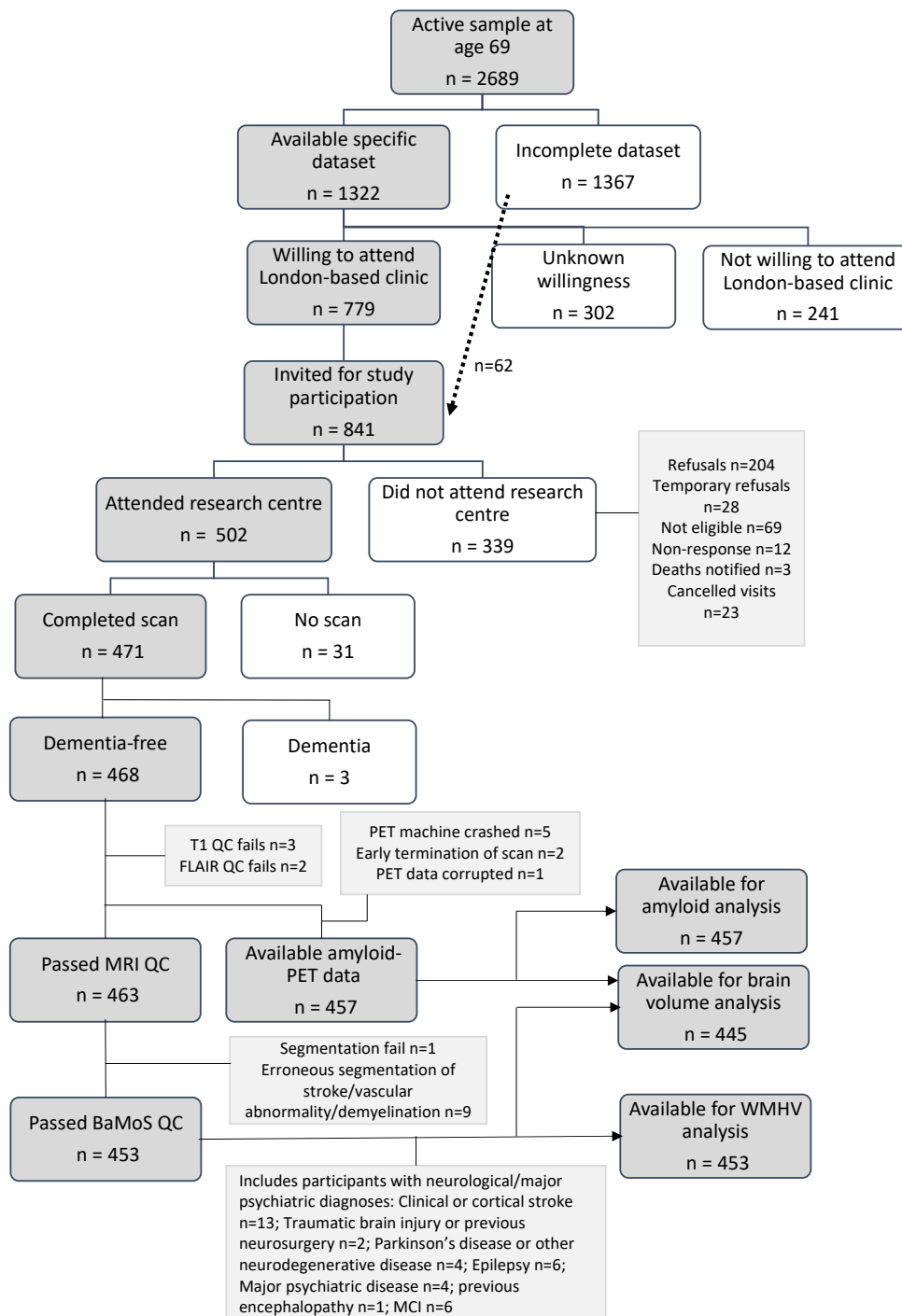


**Investigating the relationship between BMI across the life course and late life brain pathologies**  
**– Supplementary material**

**eMethods**

**Figure e-1** Flowchart providing an overview of Insight 46 recruitment from the MRC NSHD (modified with permission from James *et al*<sup>1</sup> under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>)) and summary of imaging data available. BaMoS, Bayesian Model Selection; MRI, magnetic resonance imaging; MCI, mild cognitive impairment; NSHD, National Survey of Health and Development; PET, positron emission tomography; QC, quality control; WMHV, white matter hyperintensity volume.



## eResults

**Table e-1 Comparison of clinical characteristics between individuals with missing imaging and BMI data and those who completed scanning and had complete BMI data.** By design, no individuals were missing BMI information at all time-points. 54 individuals were missing a single measurement, 9 individuals were missing a BMI measurement at two time points and 1 individual was missing a measurement at three time points. 2 individuals were missing *APOE-ε4* data. Specific *n* are provided for a given variable. BMI, body mass index; BP, blood pressure; IQR, interquartile range; MMSE, mini-mental state examination; n, number; NA, not applicable; SBP, systolic blood pressure; SD, standard deviation

Variable	Complete BMI information and completed scanning (n=404)	Missing BMI at any age but completed scanning (n=64)	Did not complete scanning protocol (n=31)
Male:Female	208:196	32:32	15:16
Age at Insight 46 assessment, mean (SD)	70.7 (0.7)	70.8 (0.7)	70.8 (0.6)
Amyloid positive, n (%)	71 (18.0) n=394	12 (19.1) n=63	NA
Whole brain volume in ml, mean (SD)	1101.3 (97.9) n=383	1091.8 (101.7) n=62	NA
Mean hippocampal volume in ml, mean (SD)	3.1 (0.3) n=383	3.1 (0.4) n=62	NA
White matter hyperintensity volume in ml, median (IQR)	3.3 (1.7, 6.9) n=391	2.3 (1.0, 5.2) n=62	NA
Total intracranial volume in ml, mean (SD)	1434.9 (132.2) n=391	1428.2 (133.6) n=62	NA
MMSE /30, mean (SD)	29.3 (0.9)	29.2 (0.9)	29.4 (1.0)
BMI at 36 in kg/m <sup>2</sup> , mean (SD)	23.7 (3.1)	23.5 (2.9) n=25	24.8 (3.6) n=30
BMI at 43 in kg/m <sup>2</sup> , mean (SD)	24.9 (3.2)	24.8 (3.2) n=44	26.5 (4.0)
BMI at 53 in kg/m <sup>2</sup> , mean (SD)	27.0 (4.1)	26.4 (3.8) n=55	28.1 (4.8) n=30
BMI at 60-64 in kg/m <sup>2</sup> , mean (SD)	27.6 (4.2)	27.4 (3.9)	29.6 (5.6)
BMI at 69 in kg/m <sup>2</sup> , mean (SD)	27.6 (4.4)	27.4 (4.2) n=57	30.7 (5.5) n=30
BMI at 71 in kg/m <sup>2</sup> , mean (SD)	27.5 (4.4)	27.7 (4.8)	30.4 (5.7)
Smoking Status at age 68, n (%)	Current smoker 14 (3.5)	2 (3.1)	2 (6.5)
	Ex-smoker 245 (60.6)	44 (68.8)	22 (71.0)
	Never smoker 145 (35.9)	18 (28.1)	7 (22.6)
Hypercholesterolaemia at age 71, n (%)	319 (79.0)	52 (81.3)	27 (87.1)
Diabetes mellitus at age 71, n (%)	42 (10.4)	8 (13.3) n=60	5 (16.7) n=30
SBP at age 71 in mmHg, mean (SD)	137.0 (16.5) n=403	136.9 (19.0)	138.6 (18.3)
Adult socioeconomic position, n (%)	Non-manual (Class I-III-N) 354 (87.6)	44 (68.8)	26 (83.9)
	Manual (Class III-M-V) 50 (12.4)	20 (31.3)	5 (16.1)
<i>APOE-ε4</i> carrier (1 or 2 alleles), n (%)	120 (29.9) n=402	19 (29.7)	7 (22.6)

## References

1. James SN, Lane CA, Parker TD, et al. Using a birth cohort to study brain health and preclinical dementia: Recruitment and participation rates in Insight 46. *BMC Res Notes*. 2018; 11(1):885