The Journal of Prevention of Alzheimer's Disease 13 (2026) 100683

Contents lists available at ScienceDirect

The Journal of Prevention of Alzheimer's Disease

journal homepage: www.elsevier.com/locate/tjpad

Original Article

Estimating the eligible population for amyloid-targeting monoclonal antibody therapy in memory clinics: Application to lecanemab in France

Lisa Le Scouarnec [a,b,*], Vincent Bouteloup [a,b], Leslie Grasset [a], Vincent Planche [c,d], Geneviève Chêne [a,b], Carole Dufouil [a], for the MEMENTO Study Group [1]

[a] University Bordeaux, Inserm, Bordeaux Population Health, Bordeaux, UMR1219, France
[b] CIC 1401 EC, Pôle Santé Publique, CHU de Bordeaux, France
[c] University Bordeaux, CNRS, Institut des Maladies Neurodégénératives, Bordeaux, UMR 5293, France
[d] Pôle de Neurosciences Cliniques, Centre Mémoire de Ressources et de Recherche, CHU de Bordeaux, France

ARTICLE INFO

Keywords:
Alzheimer's disease
Lecanemab
Anti-amyloid therapy
Treatment eligibility
Memory clinics
Transportability methods

ABSTRACT

Lecanemab was the first amyloid-targeting monoclonal antibody approved by the European Commission for treating patients with mild cognitive impairment (MCI) and mild dementia due to Alzheimer's disease (AD). While this marketing authorization led to heterogeneous situations across European countries, France declined reimbursement, citing limited clinical benefit and concerns about the healthcare system's capacity to implement this new care pathway. This capacity depends directly on the number of eligible patients, yet robust estimates remain limited and highly variable across studies. Our objective was therefore to estimate the population eligible for lecanemab in France.

Using transportability methods based on inverse odds of selection weighting, we articulated the nationwide consultation data from the French National Alzheimer Database (BNA) with the deeply phenotyped MEMENTO clinical cohort. Eligibility for lecanemab followed the French appropriate use recommendations: 1) clinical eligibility (age 50–90 years, MCI with common AD phenotype or mild AD dementia, MMSE $\geq$22), 2) biological eligibility (amyloid confirmation determined sequentially using plasma p-tau217, cerebrospinal fluid biomarkers and amyloid-PET), 3) absence of contraindications (APOEε4 homozygosity, anticoagulant use, MRI risk markers for ARIA).

Among patients consulting French memory clinics, 19.5% met clinical eligibility criteria. Of these, 73.0% (95%CI: 67.6–77.9) were amyloid-positive, and 49.7% (95%CI: 44.0–55.5) remained eligible after applying safety criteria. Overall, 9.7% (95%CI: 8.6–10.8) of patients consulting memory clinics were estimated to be eligible for lecanemab, representing approximately 18,200 individuals nationally (annual average, 2022–2024).

These results inform healthcare planning for disease-modifying therapy implementation in France and comparable countries.

1. Introduction

Until the years 2010s, approved treatments for Alzheimer's disease (AD) and related diseases primarily focused on managing symptoms at advanced stages of the illness. The development of amyloid-targeting monoclonal antibodies has opened new avenues for transforming AD care, with potential disease-modifying therapies that may be administered during the early symptomatic phases [1]. Among the amyloid-targeting monoclonal antibodies, lecanemab was granted a European marketing authorization in 2025, with an indication restricted to patients with early AD and biological confirmation of AD pathology [2,3].

Following this European market access authorization, the French National Authority for Health, concluded that lecanemab medical benefit was insufficient to justify reimbursement by social security organizations [4]. This decision was primarily based on the limited impact

* Corresponding author at: Bordeaux Population Health, UMR 1219, Bâtiment ISPED, Université de Bordeaux, 146, rue Léo Saignat CS61292, 33076, Bordeaux cedex, France.
E-mail address: lisa.le-scouarnec@u-bordeaux.fr (L. Le Scouarnec).
[1] The members of the MEMENTO Study Group are listed in Supplementary materials of the article.

https://doi.org/10.1016/j.tjpad.2026.100683
Received 27 April 2026; Received in revised form 27 May 2026; Accepted 6 October 2026
Available online 14 October 2026
2274-5807/© 2026 The Author(s). Published by Elsevier Masson SAS on behalf of SERDI Publisher. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

associated with lecanemab treatment on cognitive trajectories. Although this issue was not central to its decision, the Commission also expressed concerns about the health system's capacity to implement the care pathway that would be required for the prescription of lecanemab. Indeed, lecanemab care pathway requires specialized medical expertise and access to amyloid biomarkers, such as amyloid positron emission tomography (PET), cerebrospinal fluid (CSF) analysis, or, once sufficiently validated, blood-based biomarkers. In addition, it involves close monitoring of treatment-related adverse events, particularly amyloid-related imaging abnormalities (ARIA), which necessitate repeated brain magnetic resonance imaging (MRI) examinations. In this context, the French federation of memory clinics has issued appropriate use recommendations (AUR) for lecanemab to translate clinical trial criteria into routine practice while optimizing the risk–benefit ratio [5].

Prior to assessing the feasibility of implementing such a treatment in real-world settings, an accurate estimation of the number of patients who would be eligible in routine clinical practice is required. However, this number remains poorly characterized across Europe [6–8]. In France, a recent study conducted at a tertiary memory clinic in Paris reported that 23.8% of patients with biomarker-confirmed AD met the French AUR criteria for lecanemab, yet nationwide estimates representative of all patients consulting memory clinics (regardless of prior biomarker assessment) remain lacking [9]. A few studies have attempted to quantify the proportion of patients eligible for lecanemab, but reported estimates vary widely across settings, ranging from approximately 3% to over 30% [10–14]. This variability reflects the absence of a common denominator, as well as differences in source populations and in the application of eligibility criteria.

In France, the diagnosis of AD and other causes of dementia is mainly structured around more than 300 memory centers covering the whole country and including memory clinics and specialized University hospital-based units. The patients consulting in these settings represent the relevant population for estimating eligibility for lecanemab. In routine practice, standardized data from all patients are collected in the French National Alzheimer Database (Banque Nationale Alzheimer, BNA) [15]. However, the minimal core data recorded into the BNA does not capture all the information required to apply the French AUR, especially amyloid positivity. On the other hand, MEMENTO, a highly phenotyped multicentric cohort of patients consulting in French memory clinics gathered all the information needed to operationalize the eligibility criteria, but is subject to selection biases that limit generalizability [16]. To address the limitation of each data sources, we therefore applied statistical transportability methods to align the MEMENTO cohort with the characteristics of patients observed in the BNA, enabling the estimation of lecanemab eligibility in a population representative of real-world memory clinic activity [15,17].

The objective of this study was to apply a sequential eligibility framework based on the French AUR to estimate, among consulting memory clinics' patients in France, the proportions of individuals who are (1) clinically eligible for lecanemab, (2) eligible after confirmation of amyloid pathology, and (3) ultimately eligible after consideration of safety criteria.

2. Material & methods

This study relied on the combination of two complementary data sources:

(i) The nationwide consultation data from the French National Alzheimer Database (Banque Nationale Alzheimer, BNA), used to represent real-world memory clinic activity in France; and
(ii) the MEMENTO cohort, a deeply phenotyped prospective clinical cohort enabling the operationalization of sequential lecanemab eligibility criteria [15,16].

We first estimated the proportion of patients meeting the clinical eligibility criteria in the BNA.

We then applied a transportability approach to reweight the MEMENTO cohort to reflect the characteristics of patients observed in the BNA and estimate lecanemab eligibility in the memory clinic population.

2.1. Data sources

2.1.1. BNA

The BNA is a nationwide information system established in 2010, designed to collect routine clinical data on patients consulting for cognitive disorders in France in specialized settings, including specialized University hospital-based units (Centres Mémoire de Ressources et de Recherche, CMRR), memory clinics (Centres Mémoire, CM), and consultations conducted by private specialists [15]. The BNA is a standardized database that ensures homogeneous data collection across centres included demographic characteristics, clinical stage of cognitive impairment (cognitive complaint, MCI or dementia), main phenotypic presentation (amnestic, dysexecutive, aphasic, visuospatial, diffuse), etiological diagnosis, and neuropsychological assessments. For the current study, BNA data recorded between January 2022 and December 2024 were used.

2.1.1.1. Analytical sample. The analytical BNA subsample consisted of patients aged 50 to 90 years who had at least one recorded consultation related to cognitive assessment and diagnostic work-up, in a CMRR or memory clinic, during the study period. When multiple consultations were available for a given individual, information out of the most recent consultation was retained.

2.1.2. MEMENTO cohort

MEMENTO is a national, multicentric, prospective cohort, designed to investigate the early stages and progression of AD and related cognitive disorders. Between April 2011 and June 2014, 2323 non-demented participants, with either isolated cognitive complaint or mild cognitive impairment, were consecutively recruited in 26 memory clinics across France. Several neurological and psychiatric conditions likely to interfere with cognitive assessment or follow-up served as exclusion criteria, including major neurological disorders, severe psychiatric diseases, and known autosomal dominant Alzheimer's disease mutations.

From inception, participants underwent regular follow-up visits every six to twelve months over a five-year period. Each visit included a standardized clinical evaluation and neuropsychological testing. Brain magnetic resonance imaging and blood sampling were systematically performed at baseline and repeated during follow-up according to the study protocol. Cerebrospinal fluid (CSF) sampling and amyloid PET imaging were available but not mandatory. Full details of the study design and procedures have been published previously [16].

2.1.2.1. Analytical sample. To align the MEMENTO population with the clinically eligible population for lecanemab, the MEMENTO analytical sample was restricted to participants aged between 50 and 90 years, with a diagnosis of either MCI due to AD or mild AD dementia, and a Mini-Mental State Examination (MMSE) score $\geq$ 22. To capture cases of mild AD dementia, participants were selected from the 12, 24, or 36 month follow-up visits.

2.1.2.2. Biological data collection. Amyloid-related biomarkers were collected using blood samples, CSF, and amyloid PET imaging. Plasma phosphorylated tau 217 (p-tau217) was measured from baseline blood samples. Quantification was performed using the University of Gothenburg (UGOT) p-tau217 assay on a Quanterix HD-X analyzer at the Paris Brain Institute [18].

CSF samples were collected using standardized procedures and

centrally stored at −80 °C. Amyloid-β and tau protein concentrations were measured using INNOTEST assays (Fujirebio) [19].

Amyloid PET imaging was performed using either 18F-florbetapir or 18F-flutemetamol tracers in ancillary studies: Insight-PreAD (Alzheimer's Predictors in Subjective Memory Complainers) and MEMENTO-AMYGING (Longitudinal Study of Brain Amyloid Imaging) [20,21].

APOE genotyping was performed using fluorescence-based competitive allele-specific polymerase chain reaction on baseline blood samples.

2.1.2.3. Neuroimaging data collection. MRI scans were acquired on 1.5 T or 3 T scanners, centrally quality-controlled, and post-processed by the CATI (http://cati-neuroimaging.com). Cerebral microbleeds (CMBs) and cortical superficial siderosis were visually assessed by an expert team at the Toulouse Department of Neurology (Hôpital Pierre-Paul Riquet). CMBs were evaluated on T2*-weighted gradient-echo sequences using the Microbleed Anatomical Rating Scale (MARS), with classification by number, distribution, and location (lobar or deep). White matter hyperintensities were quantified using the automated WHASA software and complemented by a centralized visual rating using the Fazekas scale [22].

2.2. Definition of lecanemab eligibility and application in the data sources

Eligibility for lecanemab was defined in accordance with the French federation of memory clinics' AUR and implemented as a sequential three-step process [5].

Step 1: Clinical eligibility

Clinical eligibility consisted of patients aged between 50 and 90 years, with either mild cognitive impairment due to AD or mild Alzheimer's disease dementia, with a Mini-Mental State Examination score of 22 or higher.

In the BNA, patients were classified as having MCI due to AD or mild dementia due to AD based on the recorded clinical stage (DSM-V categories of mild or major neurocognitive disorder). As the BNA does not distinguish dementia severity, major neurocognitive disorder with an MMSE score ≥22 was used as a proxy for mild dementia. This classification was combined with either (i) an etiological diagnosis of "Alzheimer's disease," "probable Alzheimer's disease," or "Alzheimer's disease with biomarkers," or (ii) a compatible syndromic presentation, including dominant amnestic or non-amnestic involving language or visuospatial domains.

In MEMENTO, Clinical Dementia Rating (CDR) scale was used to define mild cognitive impairment (CDR score=0.5) or mild dementia (CDR score=1). Patients with an amnestic syndrome of hippocampal type (defined by a total score ≤ 42/48 on the three free and cued recall trials of the Free and Cued Selective Reminding Test) as well as those presenting with posterior cortical atrophy or the logopenic variant of primary progressive aphasia (identified by local investigators using international diagnostic criteria), were considered to present a common AD phenotype [23]. By combining cognitive status and phenotypic presentation, patients were classified as having "MCI due to AD or mild AD dementia."

In both datasets, the MMSE threshold was applied on the total score measured at the visit retained for analysis (most recent consultation in the BNA and selected follow-up visit in MEMENTO).

Because detailed biomarker, genetic, treatment, and neuroimaging data were not available in the BNA, subsequent steps were assessed exclusively in MEMENTO.

Step 2: Biological eligibility (Amyloid status)

Among clinically eligible patients, amyloid status was assessed using a sequential biomarker-based strategy as described in the French AUR.

Plasma p-tau217 was considered as a first-line biomarker to predict the presence of amyloid. Individuals' predictions were derived from a multivariable logistic regression model based on p-tau217 concentrations, adjusted for age, sex, and APOE ε4 carrier status, following a previously published methodology [24]. Patients were classified as amyloid-positive, amyloid-negative, or indeterminate according to predefined double-threshold approach targeting both sensitivity and specificity of 97.5%.

In patients with an indeterminate blood-based biomarker result, cerebrospinal fluid analysis was considered using amyloid and tau profiles. Amyloid positivity was defined by an amyloid-β 42/40 ratio < 0.065 in combination with pathological tau levels ≥ 60 pg/ml.

Finally, when CSF was unavailable or inconclusive (A^-/T^+ or A^+/T^-), amyloid PET imaging was used. Amyloid positivity was defined by a centiloid value ≥ 24.4, according to standardized international procedures [25]. The complete sequential amyloid classification algorithm is described in Supplement 1.

This step defined the population that met both the clinical and biological eligibility criteria.

Step 3: Safety and contraindications

Patients meeting both clinical and biological eligibility criteria were assessed for safety considerations. Following the EMA indication and the French AUR that lecanemab treatment should be restricted to APOE ε4 non-carriers and heterozygotes, APOE ε4 homozygosity was considered a contraindication to treatment initiation. Additional contraindications included ongoing anticoagulant therapy (identified using Anatomical Therapeutic Chemical (ATC) codes B01AA, B01AB, B01AE, B01AF, and B01AX), and neuroimaging features associated with an increased risk of amyloid-related imaging abnormalities (ARIA). According to the French AUR, these imaging markers included more than four (deep and lobar) microbleeds, the presence of more than one lobar microbleed, cortical superficial siderosis, and severe white matter hyperintensities defined by a Fazekas score of 3 or higher.

Patients who did not present any of these contraindications were considered eligible for lecanemab treatment.

2.3. Statistical analysis

2.3.1. Harmonised covariates

For transportability analyses between MEMENTO and the BNA, a set of common variables was harmonized to rely on shared definitions and categories across both datasets: age, sex, educational level, MMSE score, and cognitive status. Age and MMSE score were treated as continuous variables. Sex, educational level, and cognitive status (MCI or dementia) were treated as categorical variables. Educational level was classified into three categories: low (middle school completion or less), intermediate (general high school completion), and high (education beyond high school).

2.3.2. Comparison of study samples

As an initial step of the transportability framework, the BNA and MEMENTO datasets were combined to characterise differences in samples composition. Harmonized covariates were compared between the two samples to assess baseline imbalance. Covariate balance was evaluated using standardized mean differences (SMDs). For each covariate, the SMD corresponded to the difference in means or proportions between MEMENTO and BNA, scaled by the standard deviation observed in the BNA sample. An absolute SMD below 0.1 was considered indicative of acceptable balance [26].

2.3.3. Weight construction and evaluation

To account for differences in covariate distributions between the MEMENTO cohort and the population of patients consulting memory clinics represented by the BNA, a transportability approach based on inverse odds of selection weighting (IOSW) was implemented [27–29].

In a pooled dataset comprising both the BNA and MEMENTO population clinically eligible for lecanemab, each individual's probability of being included in MEMENTO was estimated using a logistic regression

model including the set of harmonized covariates. Stabilized inverse odds of selection weights were then derived for MEMENTO participants, while individuals from the BNA were assigned a weight of one. Stabilization was performed using the marginal probability of inclusion in MEMENTO analytical sample to improve the robustness of the estimates.

To limit the influence of extreme weights, stabilized weights were winsorized by truncating values below the 1st percentile and above the 99th percentile.

Covariate balance was optimized using an iterative model-building strategy. Interaction terms were progressively added to the selection model, and balance was reassessed after each iteration using SMDs. The procedure was stopped once all covariates achieved minimal imbalance. When several models provided comparable balance, the model with the lowest Akaike Information Criterion (AIC) was selected.

The impact of weighting was evaluated by reassessing covariate balance after weighting using SMDs. In addition, the overlap in the distributions of estimated selection probabilities between MEMENTO and BNA was examined using density plots. Sufficient overlap was interpreted as evidence that the covariate profiles observed in the BNA were adequately represented in MEMENTO, supporting the validity of transporting estimates to the target population.

2.3.4. *Weighted estimation in the target population represented by BNA*

Final stabilized weights were applied to the MEMENTO analytical sample to estimate, first, the proportion of amyloid-positive individuals among patients meeting the clinical eligibility criteria. Estimates were obtained overall and stratified by sex, age group, and cognitive status using weighted logistic regression models. Second, we estimated the proportion of individuals eligible for lecanemab treatment, defined by the presence of clinical and biological eligibility criteria and the absence of contraindications.

Finally, these proportions were extrapolated to the overall population consulting memory clinics by combining the weighted estimates with the proportion of patients meeting the clinical eligibility criteria previously estimated in the BNA.

Absolute numbers were then estimated by applying these proportions to the average annual number of patients aged 50–90 years consulting a memory clinic at least once in France, based on nationwide BNA data from 2022 to 2024.

2.4. *Missing data*

The BNA contains missing data for several key variables: MMSE score (19.8% missing), clinical stage (3.5%), syndromic presentation (9.5%), etiological diagnosis (8.7%), and educational level (13%). To avoid selection bias induced by a full-cases analytic strategy, we performed multiple imputation. For each variable imputed, other variables available in the BNA were used as predictors: center type, sex, year of birth, profession, instrumental activities of daily living (IADL), lifestyle, and protective measures. Imputation was carried out using 10 imputed datasets and 20 iterations, applying predictive mean matching (PMM) for the MMSE and classification and regression trees (CART) for categorical variables (*mice* R packages*)*

Individual stabilized weights and estimates of the proportion of patients eligible for lecanemab were computed for each imputed dataset. Final results were obtained by pooling estimates according to Rubin's rules [30].

2.5. *Sensitivity analysis*

Because all patients with mild dementia (CDR = 1) in the MEMENTO analytical sample were amyloid-positive, we conducted a sensitivity analysis to assess the robustness of the overall amyloid positivity estimate to this assumption. A bootstrap procedure (1000 iterations) was implemented: at each iteration, two of the eleven amyloid-positive patients with mild dementia were randomly selected and reclassified as amyloid-negative. For each modified dataset, stabilized inverse odds of selection weights were recomputed across all 10 imputed datasets, and weighted prevalence estimates were pooled using Rubin's rules.

All analyses were conducted using R software (version 4.5.2).

3. Results

As a first step, using data from the BNA, we estimated that 19.5% of patients aged 50–90 years of consulting memory clinics in France between 2022 and 2024 met the clinical eligibility criteria for lecanemab (Fig. 1). This represents the proportion of memory clinics patients eligible for amyloid biomarker assessment in the context of eligibility for anti-amyloid treatment according to the French AUR.

Table 1 presents the characteristics of the BNA population and the MEMENTO analytical sample before weighting. Compared with the nationwide BNA population, participants in MEMENTO were younger (median age 72.5 vs 78.0 years), less frequently female (45.6%vs 54.2%), and had a higher educational level. Cognitive impairment was less severe in MEMENTO, with a higher median MMSE score (27 [25–28] vs 25 [23–27]) and a markedly lower proportion of patients classified as having mild dementia (3.8%vs 32.0%). These differences resulted in substantial baseline imbalance between the two datasets, as reflected by standardized mean differences exceeding 0.1 for several harmonized covariates, including age, MMSE score, education level, and cognitive status (Fig. 2).

After application of sIOSW to the MEMENTO cohort derived from the optimal logistic regression model (Supplement 2), covariate balance between MEMENTO and the BNA was markedly improved. As shown in Fig. 2, all harmonized covariates achieved standardized mean differences below 0.1 after weighting. The density plot (Supplement 3), used to evaluate the weights, further confirms substantial overlap in the propensity score distributions between MEMENTO and the BNA.

In the transportability-weighted analyses, the estimated proportion of amyloid-positive individuals among clinically eligible patients was 73.0% (95% CI: 67.6–77.9) (Fig. 1- Table 2). Amyloid positivity increased strongly with age, ranging from 17.0% (95% CI: 7.2–35.0) in patients aged 50–59 years to 87.4% (95% CI: 75.2–94.0) in those aged 80–90 years. Amyloid positivity was slightly higher in women than in men (76.3%vs 69.0%). By cognitive status, 61.5% (95% CI: 54.6–68.1) of patients with MCI were amyloid-positive, whereas patients classified with mild dementia were estimated to be almost all amyloid-positive (99.4%, 95% CI: 91.2–100, Supplement 4).

In the final step, among clinically eligible patients, application of safety criteria led to the exclusion of individuals with at least one contraindication, including APOE ε4 homozygosity, anticoagulant treatment, and MRI markers associated with increased ARIA risk. The distribution and overlap of contraindication categories are displayed in supplement 5. After consideration of these criteria, 49.7% (95% CI: 44.0–55.5) of clinically eligible patients were estimated to be eligible for lecanemab treatment (Fig. 1- Table 2).

When projected to the overall population of patients aged 50–90 years consulting memory clinics, we estimated that 14.2% (95% CI: 13.2–15.2) of patients met both the clinical and biological eligibility criteria, and 9.7% (95% CI: 8.6–10.8) were ultimately eligible for lecanemab treatment (Table 2). On average over the three-year period (2022–2024), 187,729 individuals aged 50–90 years consulted a memory clinic at least once per year in France. When scaled up to the national level using BNA consultation data, this corresponds to an estimated 36,607 clinically eligible patients**,** 26,658 clinically and biologically eligible patients (95% CI: 24,780–28,535), and 18,210 patients fully eligible for lecanemab treatment (95% CI: 16,145–20,275) according to French AUR (Table 2). Over this same three-year period, approximately 60% of patients consulting memory clinics each year were newly consulting, relative to the previous year, indicating that the annual consulting population represents a mixed prevalent pool including both newly referred and previously followed patients. Restricting the

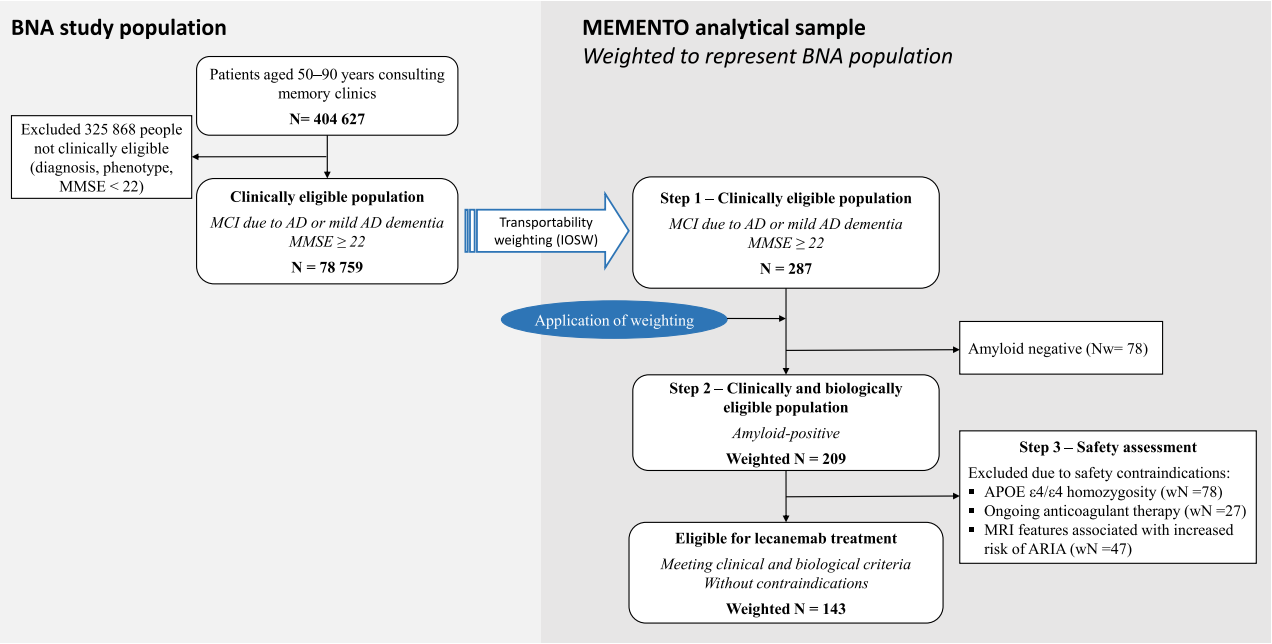

Fig. 1. Sequential estimation of lecanemab eligibility among patients consulting memory clinics in France.

Table 1
Characteristics of clinically eligible population in BNA (2022–2024) and MEMENTO analytical samples.

	MEMENTO (N = 287)	BNA (N = 78 759)
Sex, female, (%)	45.6	54.2
Age (years), median [Q1–Q3]	72.5 [67.2–78.2]	78 [73–84]
Age, (%)		
[50–60[	10.5	4.6
[60–70[	26.1	11.4
[70–80[	45.3	38.8
[80–90]	18.1	45.2
Educational level, (%)		
Low	31.7	53.3
Intermediate	36.9	20.1
High	31.4	26.6
MMSE, median [Q1–Q3]	27 [25–28]	25 [23–27]
MMSE ≥ **27,** (%)	57.8	31.5
Cognitive status, (%)		
Mild dementia	3.8	32.0
MCI	96.2	68.0
Amyloid positive, (%)	48.1	–

Note: BNA Characteristics are averaged across 10 multiply imputed datasets. Clinically eligible population was defined as individuals aged 50–90 years with MCI due to AD or mild AD dementia and an MMSE score ≥22.
Abbreviations: BNA, French National Alzheimer Database (Banque Nationale Alzheimer); MCI, mild cognitive impairment; MMSE, Mini-Mental State Examination.

estimate to newly consulting patients only would correspond to approximately 10,900 potential treatment initiations annually.

In the sensitivity analysis described above, the overall estimated proportion of amyloid-positive patients decreased modestly to 67.3% (95% CI: 64.0–70.4). Similarly, the proportion of patients eligible for lecanemab decreased to 46.5% (95% CI: 42.0–49.7). Estimates remained unchanged among patients with MCI, while, consistent with the reclassification, the proportion of amyloid positivity among patients with mild dementia decreased to 80.7% (95% CI: 69.8–91.3). Overall, these findings support the robustness of the main results. Indeed, when extrapolated to the national level, the estimated number of patients fully eligible for lecanemab was 17,018 (95% CI: 15,372–18,188), remaining within the confidence interval of the main estimate (18,210; 95% CI: 16,145–20,275) (Supplement 6).

4. Discussion

In this study, we provide a nationwide estimation of patient eligibility for lecanemab in French memory clinics by applying a sequential framework aligned with the French AUR and leveraging complementary data sources through a transportability approach. Our results indicate that approximately half of patients with MCI or mild dementia probably due to AD ultimately meet all eligibility criteria after biomarkers and contra-indication assessments. When extrapolated to the overall population consulting in the French memory clinics in a year, this corresponds to 9.7% of patients, that is, a cross-sectional estimate of approximately 18,000 individuals, representing the prevalent pool of eligible patients who may receive the treatment. This estimate should be interpreted as the annual prevalent pool of potentially eligible patients rather than the number of annual treatment initiations. Based on consultation turnover observed in the BNA, approximately 60% of these patients would represent newly consulting individuals, corresponding to roughly 10,900 potential treatment initiations per year.

Our findings are consistent with previous studies showing that only a limited proportion of patients who are clinically eligible to lecanemab ultimately meet full eligibility criteria, and that safety-related contraindications constitute a non-negligible constraint on treatment initiation across settings [6,10,31]. Eligibility estimates nevertheless vary substantially across studies, mainly due to differences in source populations, study design, and the definition, availability, and sequential application of eligibility criteria. In some memory clinic–based studies using the overall clinic population as denominator, the proportion of patients eligible for lecanemab is in the same range as our estimate. Vigneswaran et al. estimated that 6% of all patients attending a tertiary memory clinic were eligible for lecanemab using criteria aligned with those of the European Medicines Agency [32], while studies from South Korea and Sweden reported eligibility proportions ranging from 9% to 13% when amyloid positivity, cognitive thresholds, MRI safety markers, and anticoagulant use were jointly considered [8,31,33]. In France specifically, a recent study in a tertiary memory clinic reported a higher eligibility proportion (23.8%), which is expected given its restriction to amyloid-positive patients with a common AD phenotype [9]. Our lower estimate (9.7%) reflects the use of an unselected memory clinic

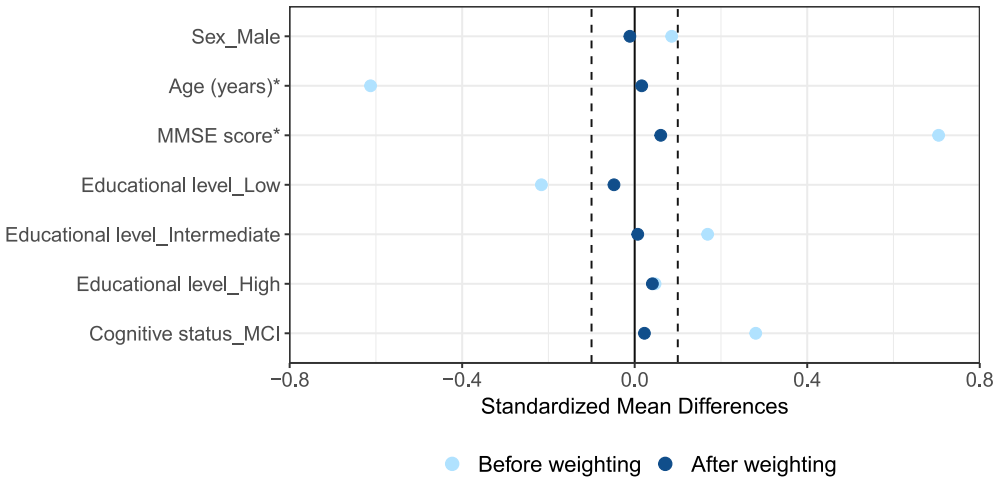

Fig. 2. Balance of harmonized covariates between the MEMENTO cohort and the French National Alzheimer Database (BNA) population, measured by standardized mean differences, before and after application of sIOSW to MEMENTO.

Table 2
Sequential estimation of lecanemab eligibility among patients consulting memory clinics in France.

	Proportion among clinically eligible patients (%) [95% CI]	Proportion among all patients consulting memory clinics (%) [95% CI]	Estimated number of patients in memory clinics by years N = 187 729
Clinically eligible population	—	19.5	36 607
Clinically and biologically eligible	73.0 [67.6 – 77.9]	14.2 [13.2 – 15.2]	26 658 [24 780 – 28 535]
Eligible for lecanemab treatment	49.7 [44.0 – 55.5]	9.7 [8.6 – 10.8]	18 210 [16 145 – 20 275]

Note: Proportions among clinically eligible patients were estimated using transportability-weighted analyses of the MEMENTO cohort.
Proportions among all patients consulting memory clinics and corresponding numbers were derived by combining weighted estimates with nationwide consultation data from the BNA.
Estimated numbers correspond to the average annual number of patients aged 50–90 years consulting memory clinics or CMRR in France over the 2022–2024 period (N = 187 729), with each individual counted once per year, regardless of multiple consultations within the same year.

population as denominator.

In contrast, population-based studies generally report lower eligibility proportions, reflecting the inclusion of individuals at earlier disease stages and the absence of a consultation-driven selection process [11]. Conversely, studies that do not rely on individual-level biomarker data, either approximating amyloid status using proxy measures or defining eligibility without requiring biomarker confirmation, tend to report higher eligibility estimates, which limits their comparability with studies based on complete clinical and biological data [6,14].

Although fewer than one in ten patients consulting memory clinics would be eligible for lecanemab, this proportion translates into a non-negligible absolute number at the national level. The estimated 18,000 eligible individuals would correspond to a prevalent pool at the time of treatment implementation. Given the complexity of the care pathway to initiate and administer lecanemab treatment, which requires amyloid biomarker assessment, repeated MRI monitoring, genetic testing, and specialized multidisciplinary management, integrating this patient population into such a resource-intensive pathway would represent an organizational and capacity challenge for existing healthcare systems. The MRI monitoring burden associated with lecanemab treatment is a key component of this organizational challenge. The French AUR guidelines recommend a minimum of four scheduled MRI scans per patient during the first year of treatment, plus additional unscheduled scans if ARIA is detected through symptoms or imaging. If fully deployed across the estimated 18,000 eligible patients, this would translate to approximately 72,000 scheduled MRI examinations annually in France.

Beyond national figures, marked territorial disparities are likely in access to memory clinics, biomarker assessments, APOE genotyping, and MRI monitoring. In particular, 68% of clinically eligible patients in the BNA are currently followed in standard memory clinics (CM) rather than in University hospital-based units (CMRR), which alone are equipped to prescribe and monitor lecanemab. Real-world implementation of anti-amyloid therapies will therefore depend not only on the size of the eligible population, but also on local healthcare resources, regional organization, and the development of structured CM-CMRR care pathways.

Several factors not fully captured in our approach may also influence real-world eligibility. First, frailty was not incorporated into the eligibility criteria, although it is emphasized in the French AUR as an important determinant of treatment tolerance and clinical decision-making [5]. For instance, recent real-world data in pre-frail and frail clinically and biologically eligible individuals suggest that 47.5% would be considered eligible for lecanemab according to the French AUR [34], contrasting with the estimation of 68% in our study. This difference of about 20 percentage points suggests that our results may overestimate real-world eligibility.

Second, beyond explicit eligibility criteria, the French AUR emphasize individualized clinical judgement within a shared decision-making process between physician and patient, which may lead to additional implicit exclusions not captured in our analysis, particularly in the presence of comorbidities or overall health considerations [5]. However, many comorbidities, particularly severe or unstable cardiovascular, metabolic, psychiatric, or immunological diseases, were excluded from the CLARITY-AD trial and may affect both treatment efficacy and safety, as well as overall prognosis [2]. Although, by design, participants in MEMENTO with major neurological disorders or severe psychiatric diseases were excluded, the absence of explicit exclusion criteria based on these conditions in our analyses may also have led to an overestimation of real-world eligibility.

Furthermore, not all 18,000 eligible patients will wish to enter such a complex care pathway given the benefit–risk ratio of lecanemab, and

reliable data on treatment refusal remain limited in countries where lecanemab has been authorized. In England, approximately 90% of patients accept currently available symptomatic treatments such as donepezil or memantine once proposed [14]. Given that even these well-established, oral, and minimally invasive therapies have a non-negligible refusal rate, acceptance is likely to be lower for monoclonal antibodies. Indeed, a recent French bicentric study showed that, after appropriate information was provided in a context of shared and supported medical decision-making, 84% of eligible patients and 64% of caregivers found the treatment acceptable [35].

While our estimates may overstate eligibility under current conditions, they may also underestimate future demand. The availability of a disease-modifying therapy may alter healthcare-seeking behaviour, potentially encouraging more individuals with early cognitive symptoms to seek specialist assessment in anticipation of treatment. This demand-generation effect could substantially increase the number of memory clinic consultations over the medium term, making our current estimates a conservative lower bound for future healthcare planning purposes.

This study has several important strengths. First, by combining nationwide consultation data with a deeply phenotyped cohort and applying transportability methods, we reconciled real-world representativeness with detailed biological eligibility assessment to produce nationally relevant estimates. The weighted prevalence of amyloid positivity in MCI was consistent with prior memory clinic studies, further supporting the external validity of our transportability approach [36–38]. For patients with mild dementia, the estimated prevalence of amyloid positivity was higher than the approximately 80% typically reported in neuropathological and clinical studies of this population [37, 39,40]. Importantly, however, the sensitivity analysis demonstrated that even under the assumption of 80% amyloid positivity in this subgroup, the final eligibility estimate remained consistent with the main analysis.

Second, our eligibility framework followed a sequential approach aligned with French AUR, mirroring the real-world diagnostic and therapeutic pathway from clinical eligibility to amyloid confirmation and safety assessment. Importantly, our statistical approach is flexible and reproducible, and can be adapted to other potential upcoming disease-modifying therapies. Beyond estimating final eligibility, it provides actionable information for healthcare planning, particularly regarding biomarker assessment needs.

Third, incorporating plasma p-tau217 as a first-line biomarker represents a forward-looking strength of this study. By modelling amyloid positivity using blood-based biomarkers prior to CSF or PET confirmation, our framework anticipates the expected integration of blood biomarkers into routine clinical practice [41].

Some limitations should be acknowledged. First, MEMENTO and the BNA share a limited set of common variables, and the latter contains substantial missing data for key variables, including MMSE score and educational level. Therefore, the transportability framework relied on the assumption that, conditional on the available harmonized covariates, the distributions of biological eligibility and contraindications observed in MEMENTO reasonably approximated those of the national BNA population. Although we observed appropriate weight estimations, satisfactory variable balance between both data sources once weights were applied and the use of multiple imputation procedures, residual uncertainty in estimations cannot be entirely excluded.

Second, the analytical MEMENTO sample, restricted to participants with MCI or mild dementia and complete data on amyloid biomarkers, MRI markers, anticoagulant treatment, and APOE genotype, was relatively small (N = 287). This limited sample size contributed to wide confidence intervals for some subgroup estimates and may reduce the precision of transportability-weighted projections, especially for the subgroup of patients with mild dementia (n = 11).

MRI acquisitions in MEMENTO were performed using either 1.5T or 3T scanners, consistent with the French AUR which accept both field strengths for contraindication assessment. Given the higher sensitivity of 3T acquisitions for detecting cerebral microbleeds, the frequency of MRI-defined contraindications may have been slightly underestimated among the 12% of participants scanned at 1.5T, potentially leading to a marginal overestimation of eligibility. The limited proportion of 1.5T acquisitions, combined with the fact that the French AUR explicitly endorse both field strengths in clinical practice, suggests that the overall impact on our estimates is negligible.

Finally, first intention amyloid determination relies on plasma p-tau217-based model, and despite a conservative sensitivity=specificity=97.5% double-threshold approach, misclassification of individuals cannot be entirely excluded.

5. Conclusions

In conclusion, our study shows that approximately 10% of patients consulting memory clinics would be eligible for lecanemab under current French AUR. The absolute number of eligible patients is substantial and can carry important implications for healthcare organization. Beyond providing national estimates, our study illustrates that transportability methods can be applied to bridge deeply phenotyped research cohorts and real-world healthcare databases in this context. Using a transparent, sequential, and transportable estimation framework, this work provides essential evidence to inform national policy discussions regarding the potential implementation, reimbursement decisions, and infrastructure preparation for anti-amyloid therapies in France. As eligibility criteria, biomarker accessibility, and healthcare-seeking behaviour may evolve over time, this framework can be readily updated to provide revised estimates.

Declarations

Ethics approval and consent to participate

This study was performed in accordance with the Declaration of Helsinki. All participants provided written informed consent. The MEMENTO cohort protocol was approved by the local ethics committee ("Comité de Protection des Personnes Sud-Ouest et Outre Mer III"; approval number 2010-A01394–35) and was registered on 16 August 2013 in ClinicalTrials.gov (Identifier: NCT01926249).

Study funding

The MEMENTO cohort has been funded by the Fondation Plan Alzheimer (Alzheimer Plan 2008-2012), through the Plan Maladies Neurodégénératives (2014-2019), and the French Ministry of Research (MESRI, DGRI 2020–2024). This work was also supported by CIC 1401-EC, Bordeaux University Hospital (CHU Bordeaux, sponsor of the cohort), Inserm, and the University of Bordeaux. The MEMENTO cohort has received funding support from AVID, GE Healthcare, and FUJIREBIO through private–public partnerships. Sponsors and funders were not involved in the study conduct, analysis, and interpretation of data.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the authors used AI tools based on large language models (LLMs) to improve the language and clarity of the manuscript. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication. The use of AI-assisted technologies was limited to language refinement and involved less than 15% of the overall writing process.

CRediT authorship contribution statement

Lisa Le Scouarnec: Writing – review & editing, Writing – original draft, Project administration, Methodology, Formal analysis, Data

curation, Conceptualization. **Vincent Bouteloup:** Writing – review & editing, Validation, Methodology. **Leslie Grasset:** Writing – review & editing, Validation, Methodology. **Vincent Planche:** Writing – review & editing, Validation, Methodology. **Geneviève Chêne:** Writing – review & editing, Validation, Methodology, Funding acquisition. **Carole Dufouil:** Writing – review & editing, Validation, Supervision, Funding acquisition, Conceptualization.

Competing interests

LLS, VB, LG, GC and CD have no competing interest to declare.

Over the past three years, V.P. has served as an unpaid local investigator or sub-investigator for clinical trials funded by Novo Nordisk, Janssen, Alector, BMS, and Roche. He has not received any personal funding from the pharmaceutical industry or from companies commercializing biomarkers.

Acknowledgements

The authors thank the participants, their relatives, and all the members of the Bordeaux University Hospital involved in MEMENTO.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.tjpad.2026.100683.

Data availability

MEMENTO data access request is available via the Dementia Platform UK Data Access appliance form (https://portal.dementiasplatform.uk/Apply) or from the MEMENTO Secretariat (sophie.lamarque@u-bordeaux.fr).

References

[1] Fox NC, Belder C, Ballard C, et al. Treatment for Alzheimer's disease. Lancet 2025;406(10510):1408–23.
[2] Van Dyck CH, Swanson CJ, Aisen P, et al. Lecanemab in early Alzheimer's Disease. N Engl J Med 2023;388(1):9–21.
[3] Leqembi | European Medicines Agency (EMA). February 28, 2025.
[4] Décision n°2025.0204/DC/SEM du 4 septembre 2025 du collège de la Haute Autorité de santé portant refus d'accès précoce de la spécialité LEQEMBI (lécanémab). Haute Autorité de Santé.
[5] Villain N, Planche V, Lilamand M, et al. Lecanemab for early Alzheimer's disease: appropriate use recommendations from the French federation of memory clinics. J Prev Alzheimers Dis 2025;12(4):100094.
[6] Dobson R, Patterson K, Malik R, et al. Eligibility for antiamyloid treatment: preparing for disease-modifying therapies for Alzheimer's disease. J Neurol Neurosurg Psychiatry 2024;95(9):796–803.
[7] Defrancesco M, Gizewski ER, Mangesius S, et al. Investigating patient eligibility for anti-amyloid monoclonal antibody treatment of Alzheimer's disease: real-world data from an Austrian psychiatric memory clinic population. BJPsych Open 2024;10(5):e160.
[8] Rosenberg A, Öhlund-Wistbacka U, Hall A, et al. β-amyloid, tau, neurodegeneration classification and eligibility for anti-amyloid treatment in a Memory Clinic population. Neurology 2022;99(19):e2102–13.
[9] Vrillon A, Götze K, Dumurgier J, et al. Eligibility for lecanemab treatment in a French memory clinic setting. J Neurol 2026;273(4):228.
[10] Logroscino G, Urso D, Gnoni V, et al. Mild cognitive impairment and early Alzheimer's disease eligibility for disease modification therapies in a tertiary centre for cognitive disorders: a simultaneous real-word study on aducanumab and lecanemab. Eur J Neurol 2025;32(1):e16534.
[11] Pittock RR, Aakre JA, Castillo AM, et al. Eligibility for anti-amyloid treatment in a population-based study of cognitive aging. Neurology 2023;101(19).
[12] Rosen J, Jessen F. Patient eligibility for amyloid-targeting immunotherapies in Alzheimer's disease. J Prev Alzheimers Dis 2025;12(4):100102.
[13] Rosenberg A, Solomon A, Bonnard A, et al. Preparing for the implementation of anti-amyloid therapies in Europe: assessing real-world eligibility for lecanemab and donanemab in a Swedish memory clinic. J Prev Alzheimers Dis 2026;13(3):100476.
[14] Laurell AAS, Venkataraman AV, Schmidt T, et al. Estimating demand for potential disease-modifying therapies for Alzheimer's disease in the UK. Br J Psychiatry 2024;224(6):198–204.
[15] Le Duff F, Develay AE, Quetel J, et al. The 2008-2012 French Alzheimer plan: description of the national Alzheimer information system. J Alzheimers Dis 2012;29(4):891–902.
[16] Dufouil C, Dubois B, Vellas B, et al. Cognitive and imaging markers in non-demented subjects attending a memory clinic: study design and baseline findings of the MEMENTO cohort. Alzheimer's Res Ther 2017;9(1):67.
[17] Lesko CR, Buchanan AL, Westreich D, Edwards JK, Hudgens MG, Cole SR. Generalizing study results: a potential outcomes perspective. Epidemiology 2017;28(4):553–61.
[18] Gonzalez-Ortiz F, Ferreira PCL, González-Escalante A, et al. A novel ultrasensitive assay for plasma p-tau217: performance in individuals with subjective cognitive decline and early Alzheimer's disease. Alzheimer's Dement 2024;20(2):1239–49.
[19] Dumurgier J, Schraen S, Gabelle A, et al. Cerebrospinal fluid amyloid-β 42/40 ratio in clinical setting of memory centers: a multicentric study. Alzheimer's Res Ther 2015;7(1):30.
[20] Dubois B, Epelbaum S, Nyasse F, et al. Cognitive and neuroimaging features and brain β-amyloidosis in individuals at risk of Alzheimer's disease (INSIGHT-preAD): a longitudinal observational study. Lancet Neurol 2018;17(4):335–46.
[21] University Hospital, Bordeaux. Longitudinal study of brain amyloid imaGing in MEMENTO. 2022. clinicaltrials.gov.
[22] Samaille T, Fillon L, Cuingnet R, et al. Contrast-based fully automatic segmentation of white matter hyperintensities: method and validationHerholz K, editor. PLoS One 2012;7(11):e48953. editor.
[23] Dubois B, Villain N, Schneider L, et al. Alzheimer disease as a clinical-biological construct—an International Working Group recommendation. JAMA Neurol 2024;81(12):1304.
[24] Bouteloup V, Villain N, Vidal JS, et al. Cognitive phenotyping and interpretation of Alzheimer blood biomarkers. JAMA Neurol 2025;82(5):506.
[25] La Joie R, Ayakta N, Seeley WW, et al. Multisite study of the relationships between antemortem [11C]PIB-PET centiloid values and postmortem measures of Alzheimer's disease neuropathology. Alzheimer's Dement 2019;15(2):205–16.
[26] Austin PC, Stuart EA. Moving towards best practice when using inverse probability of treatment weighting (IPTW) using the propensity score to estimate causal treatment effects in observational studies. Stat Med 2015;34(28):3661–79.
[27] Westreich D, Edwards JK, Lesko CR, Stuart E, Cole SR. Transportability of trial results using inverse odds of sampling weights. Am J Epidemiol 2017;186(8):1010–4.
[28] Hayes-Larson E, Mobley TM, Mungas D, et al. Accounting for lack of representation in dementia research: generalizing KHANDLE study findings on the prevalence of cognitive impairment to the California older population. Alzheimer's Dement 2022;18(11):2209–17.
[29] Gibbons LE, Mobley T, Mayeda ER, et al. How generalizable are findings from a community-based prospective cohort study? Extending estimates from the adult changes in thought study to its source population. J Alzheimers Dis 2024;100(1):163–74.
[30] Rubin DB. Multiple imputation for nonresponse in surveys. 1st ed. Wiley; 1987.
[31] Jeon SY, Byun MS, Choi HJ, et al. Eligibility for lecanemab and donanemab in Korea under appropriate Use Recommendations. Alzheimer's Dement 2025;21(11):e70875.
[32] Vigneswaran S, Vijverberg EGB, Barkhof F, et al. Real-world" eligibility for anti-amyloid treatment in a tertiary memory clinic setting. Alzheimer's Dement 2025;21(6):e70375.
[33] Borgström Bolmsjö B, Barbosa Djärf J, van Westen D, et al. Eligibility for amyloid targeting therapies among primary care patients with cognitive symptoms. Alz Res Ther 2026;18. Published online March 21.
[34] Bellelli F, Delrieu J, van Kan GA, et al. Are pre-frail and frail amyloid positive individuals eligible to Lecanemab? A cross-sectional analysis from the Cogfrail real-world cohort. Alz Res Ther 2026;18. Published online February 4.
[35] Burry E, Plumacker F, Villain N, et al. Simulated shared and supported decision making for amyloid immunotherapy in Alzheimer's disease: a bicentric study. Rev Neurol 2026;182(4):270–9.
[36] Ossenkoppele R, Jansen WJ, Rabinovici GD, et al. Prevalence of amyloid PET positivity in dementia syndromes: a meta-analysis. JAMA 2015;313(19):1939.
[37] Jansen WJ, Ossenkoppele R, Knol DL, et al. Prevalence of cerebral amyloid pathology in persons without dementia: a meta-analysis. JAMA 2015;313(19):1924.
[38] Chételat G, La Joie R, Villain N, et al. Amyloid imaging in cognitively normal individuals, at-risk populations and preclinical Alzheimer's disease. NeuroImage Clin 2013;2:356–65.
[39] Salloway S, Sperling R, Fox NC, et al. Two phase 3 trials of Bapineuzumab in mild-to-moderate Alzheimer's disease. N Engl J Med 2014;370(4):322–33.
[40] Beach TG, Monsell SE, Phillips LE, Kukull W. Accuracy of the clinical diagnosis of Alzheimer disease at National Institute on aging Alzheimer disease centers, 2005–2010. J Neuropathol Exp Neurol 2012;71(4):266–73.
[41] Commissioner O of the. FDA clears first blood test used in diagnosing Alzheimer's disease. FDA. May 28, 2025.