MEMENTO

MINISTÈRE CHARGÉ DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE
Liberté
Égalité
Fraternité

Direction générale de l'enseignement supérieur et de l'insertion professionnelle
Direction générale de la recherche et de l'innovation

The Memento cohort

Inserm
Institut national de la santé et de la recherche médicale

université de BORDEAUX

CHU BDX CENTRE HOSPITALIER UNIVERSITAIRE BORDEAUX

Founding principles

A large multicenter clinical cohort study aiming at better understanding the natural history of Alzheimer's disease and related dementia

- Consecutive inclusions (vs. Convenient sampling)
- Deep phenotyping through clinical, biological, neuroimaging, genetic markers (vs. Population studies)
- Efforts (training, centralisation) for harmonisation/standardisation
- Strengthen analytical approaches
- A platform for research

Setting

Multicenter national prospective observational cohort including 2323 individuals consecutively recruited from French memory clinics and followed-up at least 5 years

Adults

Having at least light cognitive impairment detected less than 6 months ago;

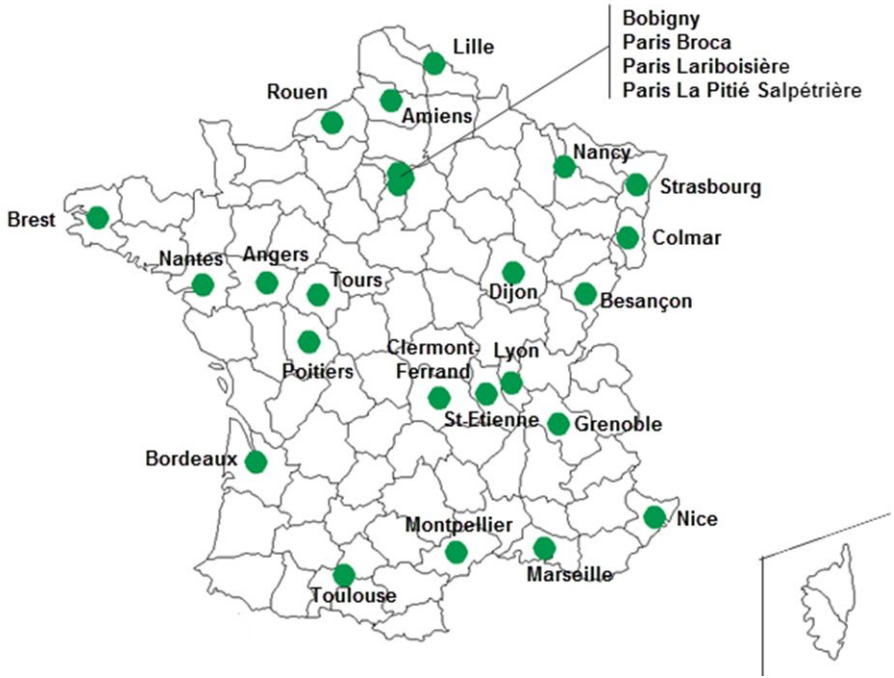
Or

Having isolated cognitive complaint regardless of its duration while being 60 years and older

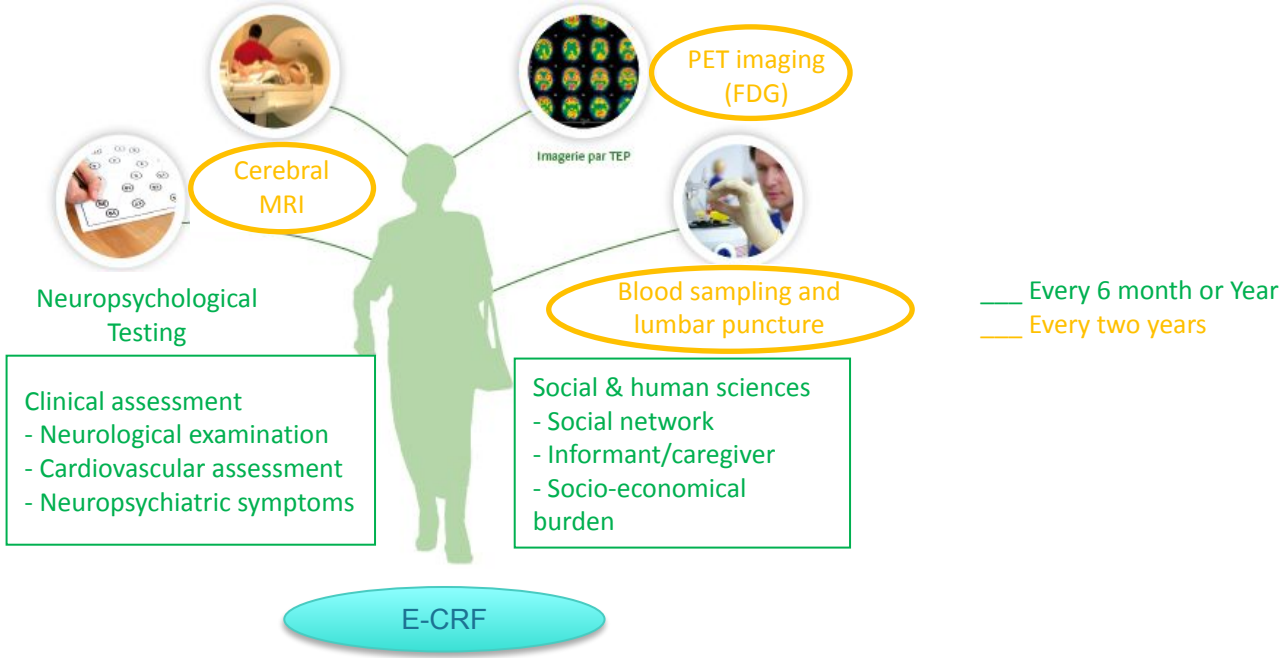
Not demented (Clinical Dementia Rating scale ≤0.5)

Agreeing to have brain MRI and blood sampling

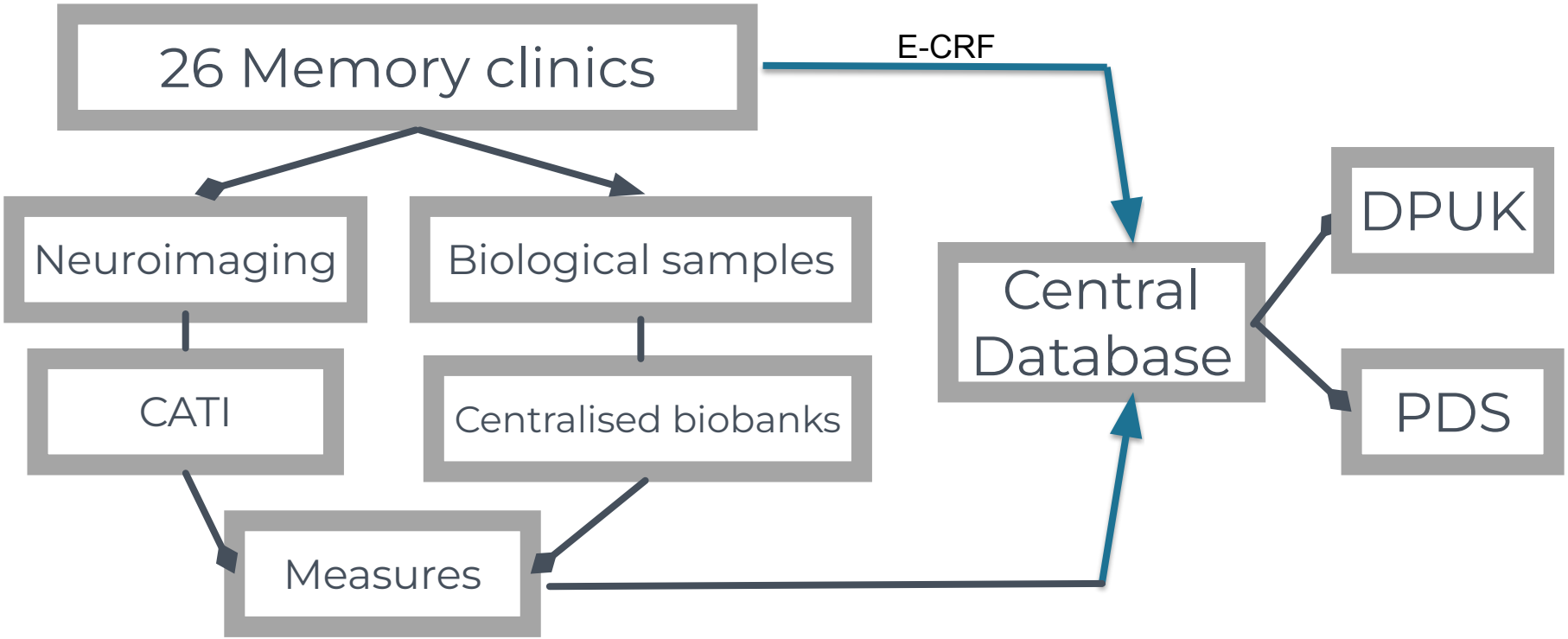
Setting


Bobigny
Paris Broca
Paris Lariboisière
Paris La Pitié Salpétrière
Lille
Rouen
Amiens
Nancy
Strasbourg
Brest
Colmar
Nantes
Angers
Tours
Dijon
Besançon
Clermont
Ferrand
Lyon
Poitiers
St-Etienne
Grenoble
Bordeaux
Montpellier
Nice
Marseille
Toulouse

Data collection



Data collection



Data collection (every 6 or 12 months)

- Neuropsychological tests
  - MMSE
  - Digit span
  - Free and Cued selective reminding Test
  - Delayed to matching Sample 48
  - Verbal fluency
  - Image denomination DO80
  - Gestural ideational and ideomotor praxis
  - Rey-Osterrieth Complex Figure
  - Test TMT A et B
  - Frontal assessment Battery
- CDR
- Subjective complaint: visual analogic scale
- Autonomy (IADL-ADL)
- Neuropsychiatric symptoms : NPI

Data collection (every 6 or 12 months)

- Sociodemographics
- Social network
- Short Physical Performance Battery (SPPB)
  - Balance subscale: side-by-side, semi-tandem, and tandem stands.
  - Walking Speed subscale: time to walk an 8-meter
  - Lower Extremity Strength subscale : time to stand up and sit down in a chair as quickly as possible five times (repeated chair stands).
- Clinical examination
- Quality of life
- Diet habits according to a brief food frequency questionnaire
- Physical activity using International Physical activity questionnaire
- Medication
- Medical history (including family)
- Lewy Body disease symptoms questionnaire

Biomarkers available

Data collection (years 0, 2, 4)

MRI SEQUENCES

- 3D-T1
- T2 FLAIR
- 2D-T2*
- Resting state (BOLD EPI)
- Diffusion (DTI – DWI EPI)

FDG-PET (Up to 3 time points)

BLOOD SAMPLING

	Quantity	N
Serum	0.25 mL	12
Plasma EDTA	0.25 mL	8
Total blood heparin	1 mL	2
Plasma heparin	500 µg	4
Blood EDTA without plasma	0.25 mL	1
Blood heparin without plasma	3 mL	1
Tempus	3 mL	2

LUMBAR PUNCTURE

Blood sampling

- GWAS
- Routine biological tests (every year, locally): glucose, lipids, creatinine, blood counts, haemoglobin, liver enzymes, and electrolytes

- Biobank blood samples (M0/M24/M48)

- Inflammatory markers: IL6, IL10, IL12p70, IL18, TNFα, RANTES, IP-10 (Quanterix CorePlex)

- AD markers: ptau-181, AB40, AB42, NfL (Quanterix commercial kits)

M0 : t-Tau

M24-M48 : GFAP

CSF (up to three time points)

- AB42, AB40, p181-Tau, Total Tau, NfL (Fujirebio commercial kits)

- Total tau, p181-Tau, AB42, AB40 (Quanterix)

MRI

- Global et ROI volumes (SPM, FreeSurfer), WMH (WHASA)
- Hippocampus segmentation (SACHA, FreeSurfer)
- Cortical thickness (FreeSurfer)
- Cortical folds (Morphologist),
- Diffusion markers (ADC, FA),
- Resting state & Salience networks, small vessel disease markers (ongoing work)
- Visual scales: hippocampal atrophy (Scheltens), WMH (Fazekas), microbleeds (MARS scale), lacunes

PET

- 18-FDG PET (optional, M0/M24/M48): Overall and in 120 ROI SUVR
- PET Amyloid (optional, 2 acquisitions in 2 years): Florbetapir/flutemetamol SUVR overall and in 120 ROI

Baseline sample characteristics

Female gendern (%)	1426	(61.9)
Age in years median (Q1;Q3)	72	(66; 77)
Baccalaureate and above n (%)	1249	(54.6)
Living alone n (%)	702	(31.0)
CDR 0.5 n (%)	1364	(59.6)
MMSE median (Q1;Q3)	28	(27; 29)

Indicators

2323 PARTICIPANTS

COGNITIVE PROFILE

- 738 non amnestic MCI
- 370 isolated cognitive complaints

BRAIN NEUROIMAGING

- At least one MRI : 95%
- At least one FDG-PET : 67%

BLOOD & CSF SAMPLINGS

- Blood : 99%
- CSF : 18%
- DNA : 90%

FOLLOW-UP (each 6-month)

- 75% visits completed
- 0.09 to 2.12% missing data
- 305 dementia cases (ERC)

MONITORING

- 230 on site visits
- 835 days of monitoring

Thank you for your attention