



GOVERNARE IL FUTURO DEL SSN

Dall'innovazione biologica alla sanità digitale,
dalla prevenzione alla medicina di precisione

18 - 19 - 20 FEBBRAIO 2026

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Malattie neurodegenerative



PD

MSA

PSP

CBD

DLB

FTD

AD

CJD

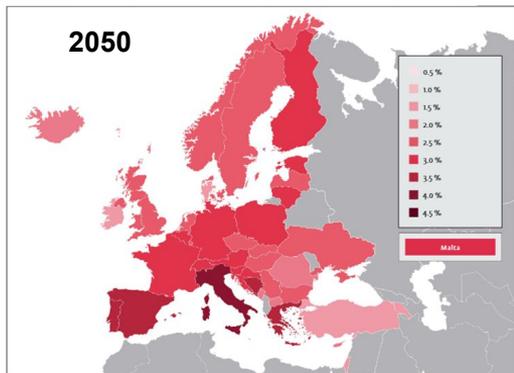
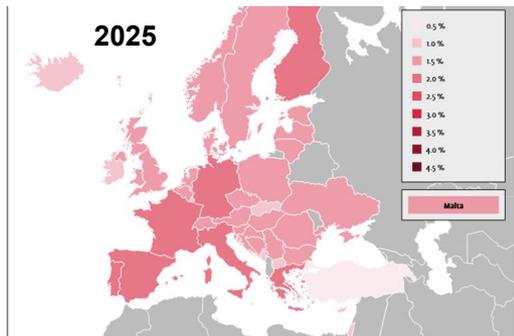


CJD

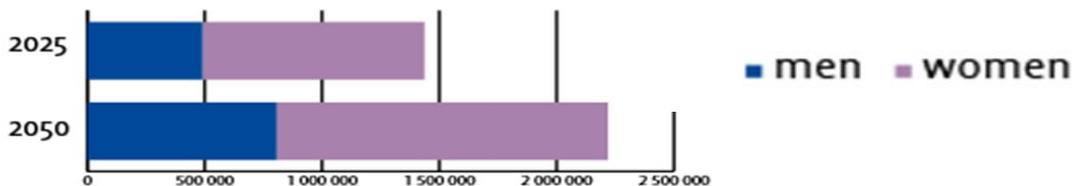
+ β-amiloide

The Prevalence of Dementia – Alzheimer Europe 2025

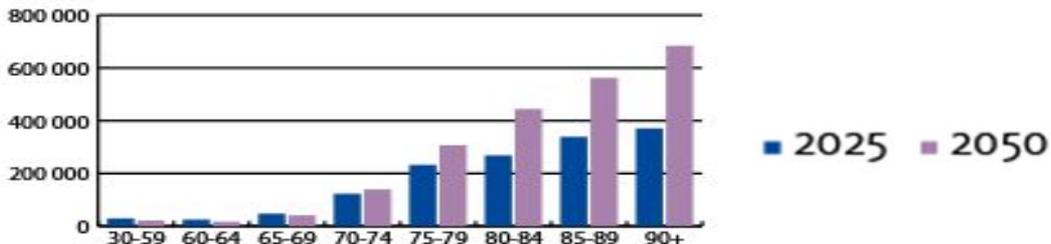
Percentage of dementia of the total population



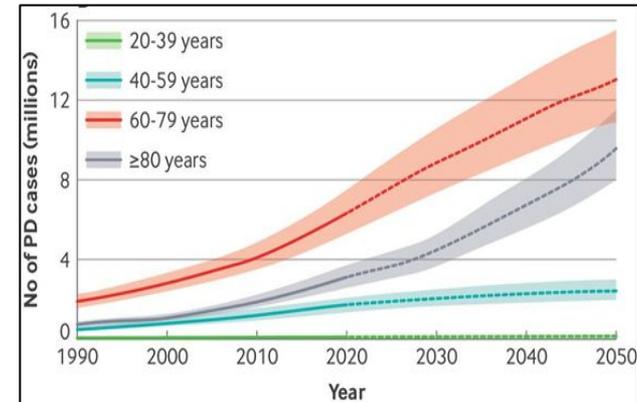
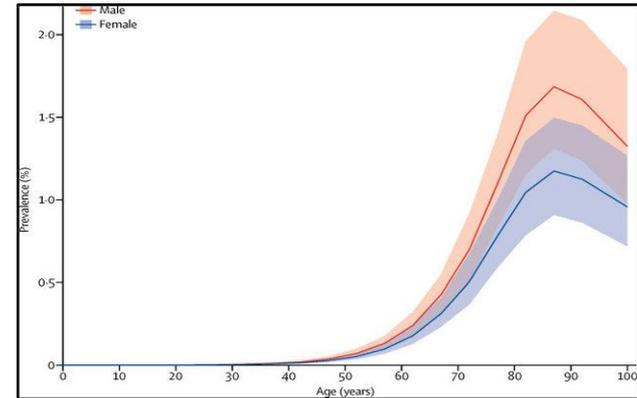
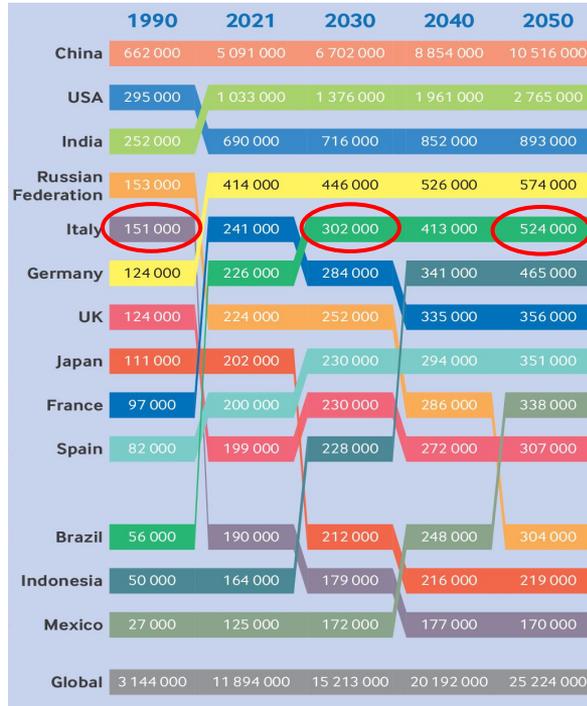
Number of people with dementia in Italy in 2025 and 2050



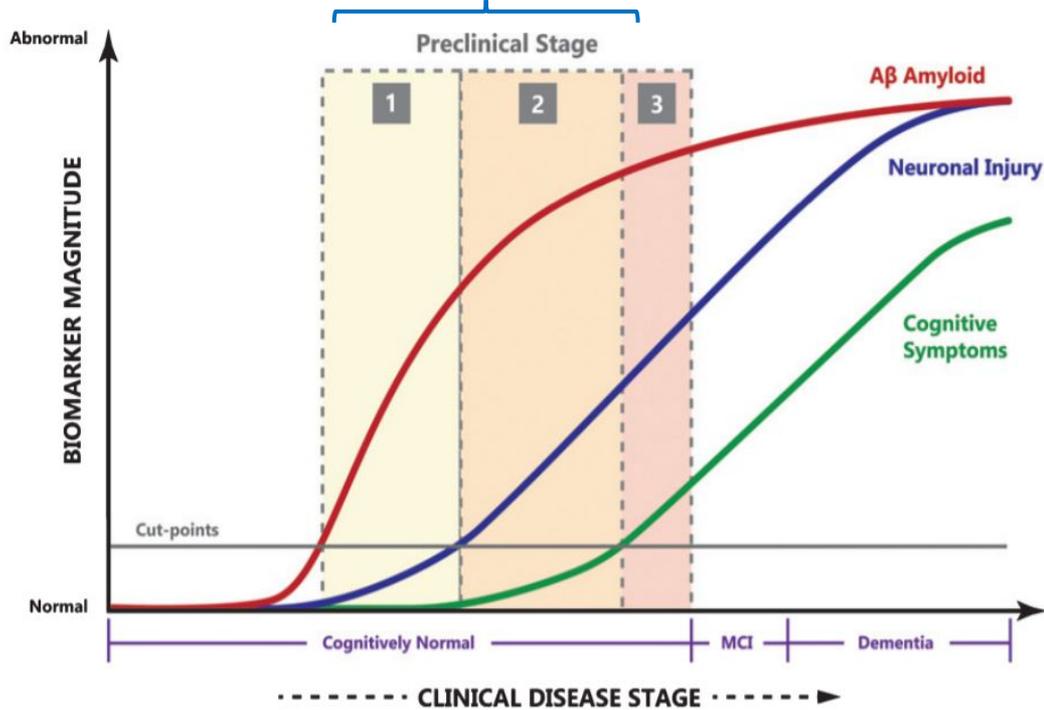
Number of people with dementia in Italy in 2025 and 2050 by age group



Prevalence of Parkinson's disease up to 2050



Diagnosi: disturbo cognitivo soggettivo, mild cognitive impairment, Malattia di Alzheimer



Diagnosi biologica

- Esame liquorale (p-Tau, Aβ42)
- PET radioligandi amiloide

Diagnosi clinica

- Profili NPS
- RM encefalo
- PET cerebrale FDG

Screening Biologico

- Genotipo APOE (all. ε 2, ε 3, ε 4)
- Biomarcatori plasmatici (p-Tau, Aβ42)

Conversione da condizioni pre-sintomatiche e pauci-sintomatiche a demenza

- **Disturbo cognitivo soggettivo (SDC)**

- 6.6 % all'anno → MCI
- 2.3% all'anno → AD
- 24,4% in 4 anni → MCI
- 10,9% in 4 anni → AD

- **Mild cognitive impairment (MCI)**

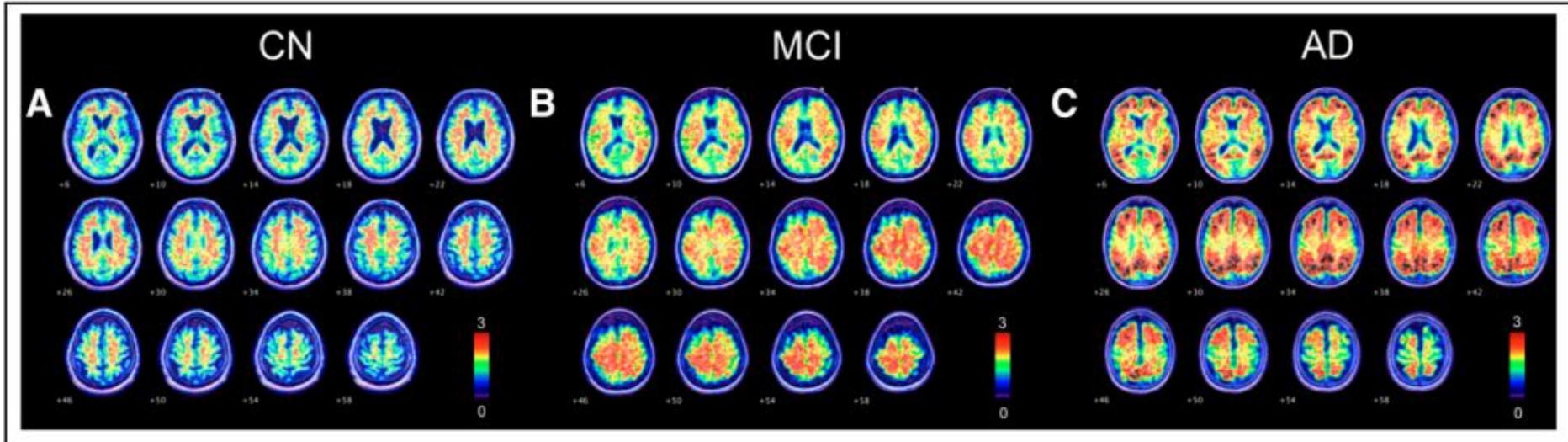
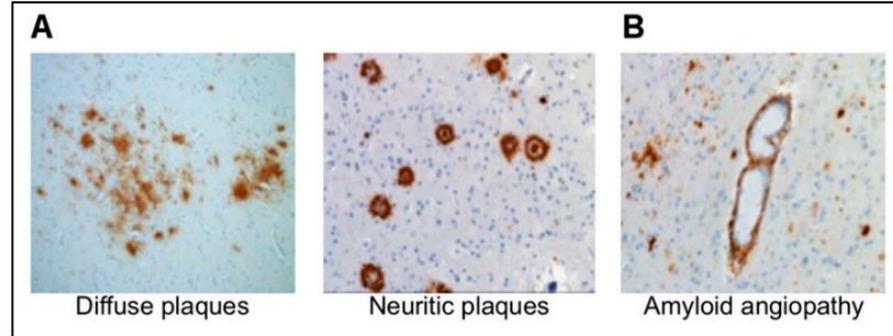
- 8-15 % all'anno → AD
- 20-40% in 3 anni → AD
- 30-55% in 5 anni → AD

- **APO allele ε4**

- 20-25 % eterozigote in AD
- 30-55% omozigote in AD

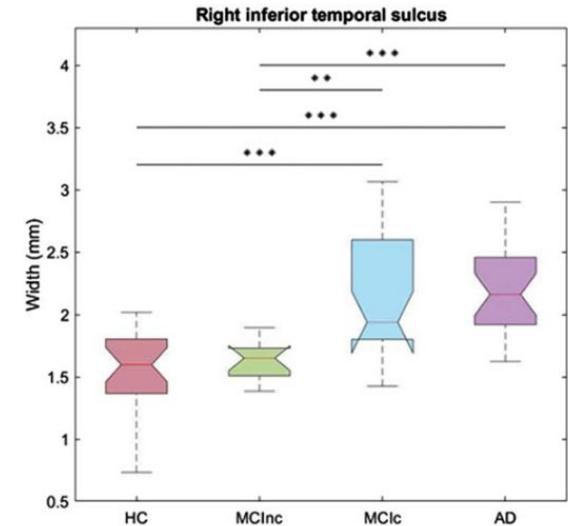
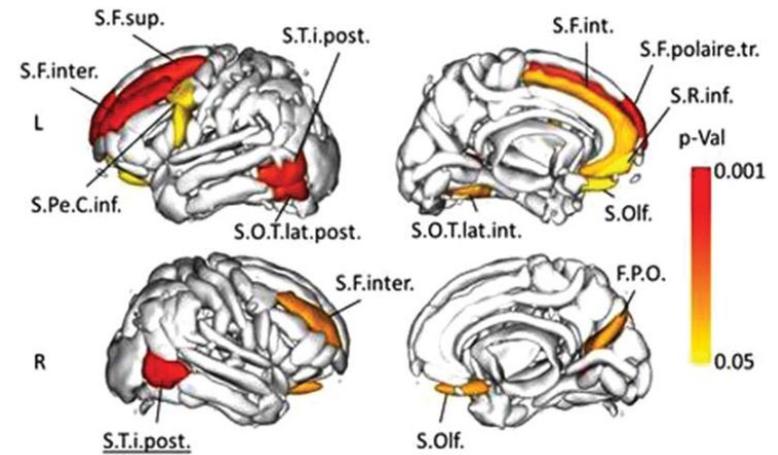
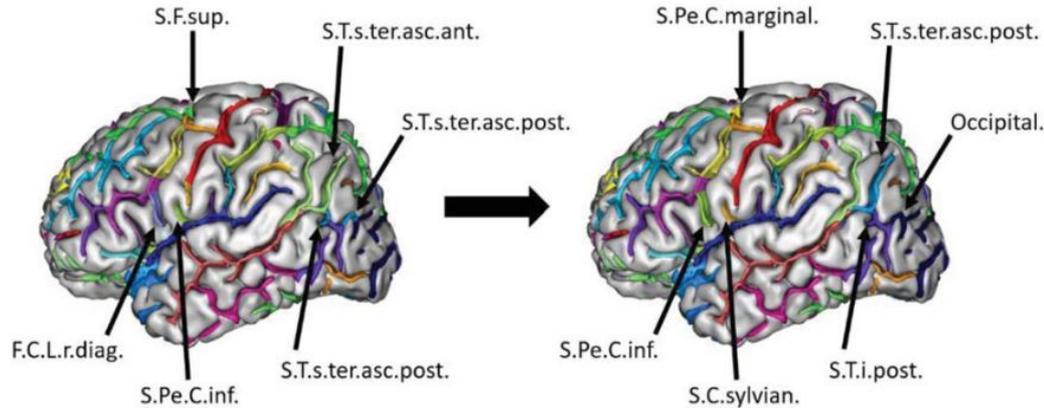
The Role of Amyloid PET in Imaging Neurodegenerative Disorders

- Positive amyloid PET or CSF studies indicative of AD are needed for initiating treatment with Lecanemab/Donanemab
- Monitoring response to treatment



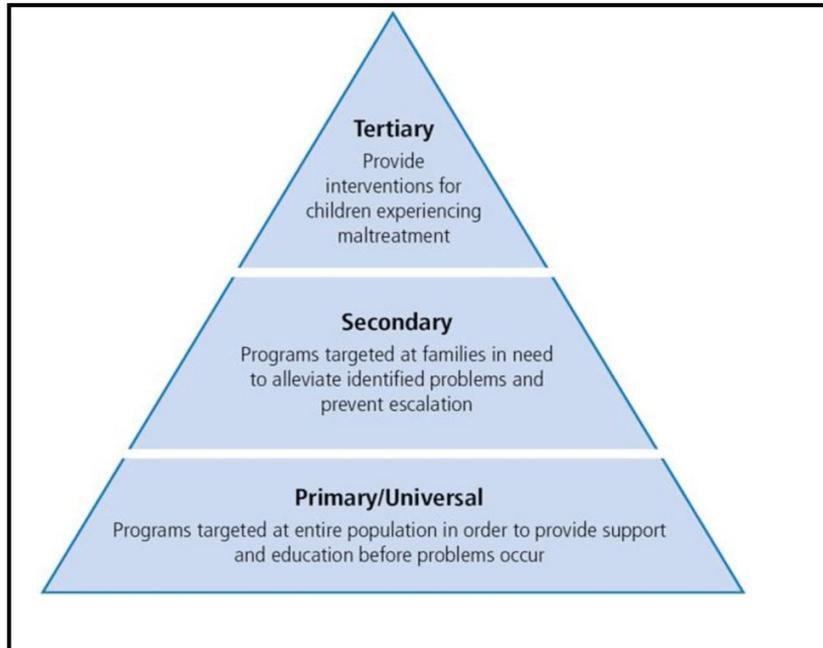
Sulcal Morphometry Predicts Mild Cognitive Impairment Conversion to Alzheimer's Disease

**MCI to AD conversion
prediction AUC = 0.907**



Early diagnosis of neurodegenerative disorders: is it worth the effort?

Disease prevention



Disease modifying therapies (DMT) EMA approved

The image shows two covers of The New England Journal of Medicine. The top cover, dated May 6, 2021, features the title 'Donanemab in Early Alzheimer's Disease'. The bottom cover, dated January 5, 2023, features the title 'Lecanemab in Early Alzheimer's Disease'. Both covers include the journal's name in red serif font, the establishment year 'ESTABLISHED IN 1812', and volume/issue information.

The **NEW ENGLAND**
JOURNAL *of* **MEDICINE**

ESTABLISHED IN 1812 MAY 6, 2021 VOL. 384 NO. 18

Donanemab in Early Alzheimer's Disease

The **NEW ENGLAND**
JOURNAL *of* **MEDICINE**

ESTABLISHED IN 1812 JANUARY 5, 2023 VOL. 388 NO. 1

Lecanemab in Early Alzheimer's Disease

Prevenire la Demenza: fattori di rischio modificabili

Clinici

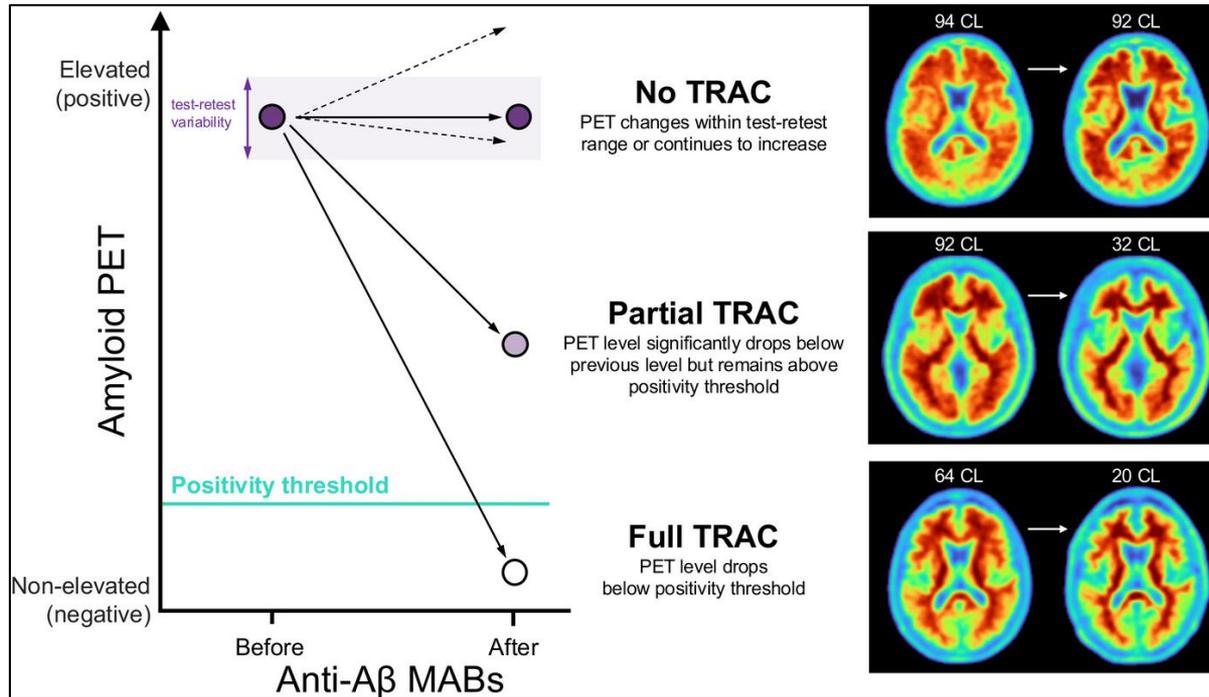
- Diabete
- Alto colesterolo LDL
- Ipertensione
- Obesità
- Trauma cranico
- Depressione
- Deficit uditivo
- Deficit visivo

Riduzione
fino al 45%
del rischio
di demenza

Stili di vita ed ambientali

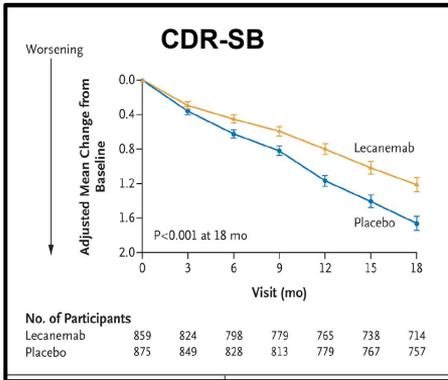
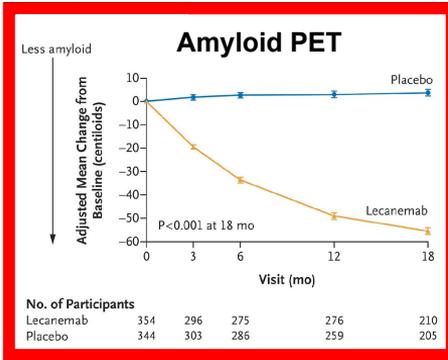
- Fumo
- Consumo di Alcool
- Inattività fisica
- Isolamento sociale
- Ridotta attività cognitiva
- Inquinamento

Treatment-related amyloid clearance

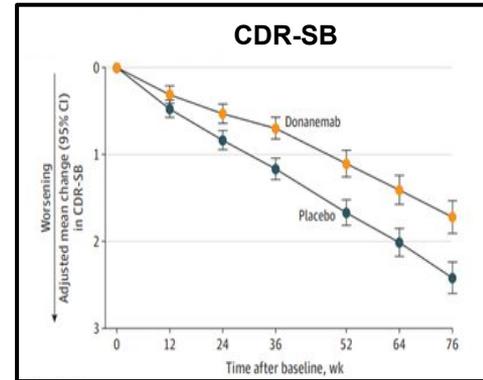
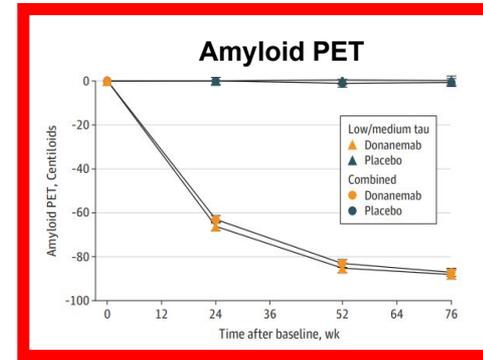


Lecanemab in Early Alzheimer's Disease

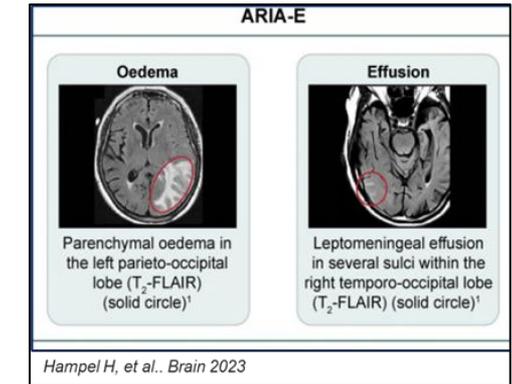
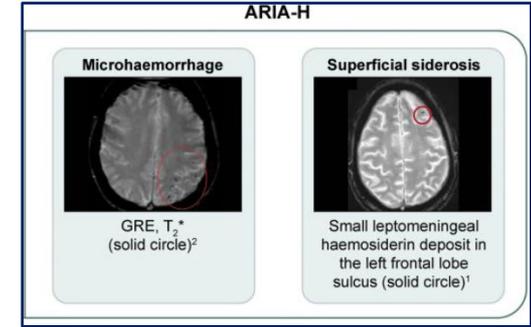
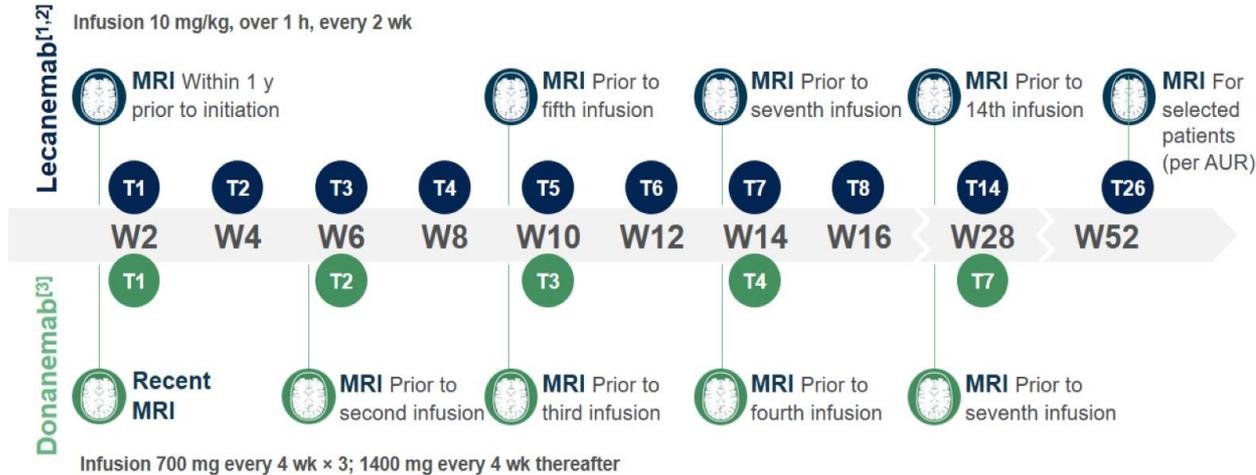
C.H. van Dyck, C.J. Swanson, P. Aisen, R.J. Bateman, C. Chen, M. Gee, M. Kanekiyo, D. Li, L. Reyderman, S. Cohen, L. Froelich, S. Katayama, M. Sabbagh, B. Vellas, D. Watson, S. Dhadda, M. Irizarry, L.D. Kramer, and T. Iwatsubo



Donanemab in Early Symptomatic Alzheimer Disease The TRAILBLAZER-ALZ 2 Randomized Clinical Trial



MRI protocols in anti-amyloid treatments



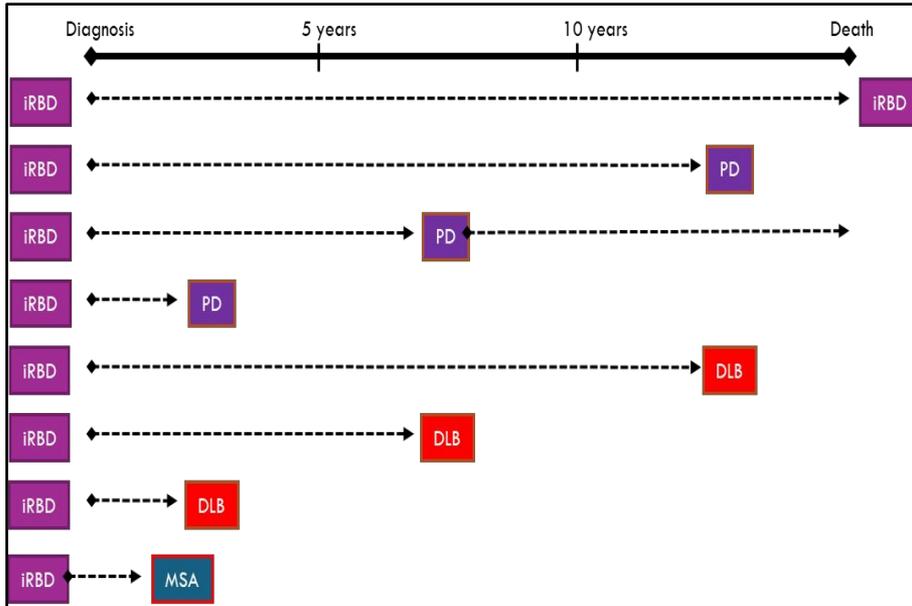
Disturbo comportamentale in sonno REM (RBD)

Loss on REM
sleep
muscle
atonia



Schenck CH, Sleep 1986

'Idiopathic' RBD patients have several trajectories



Risk and predictors of dementia and parkinsonism in idiopathic REM sleep behaviour disorder: a multicentre study BRAIN 2019; 142; 744–759

- 24 centers worldwide
- 1280 patients
- Risk of phenoconversion:
 - 2 y □ 10.6 %
 - 3 y □ 17.9 %
 - 5 y □ 31.3 %
 - 8 y □ 51.4 %
 - 10 y □ 60.2 %
 - 12 y □ 73.5 %
- Disease manifestation
 - 56.5 % Parkinsonism first
 - 43.5 % Dementia first

PD: where are we now?

	Biomarker status	Method of evaluation	Sensitivity*	Specificity*
S*	Endorsed	α -synuclein seed amplification assays in CSF	High	High
S*	Endorsed	α -synuclein seed amplification assays in skin	High	High
S*	Endorsed	α -synuclein immunohistochemistry or immunohistofluorescence in skin	Moderate	High

Höglinger GH et al. Lancet Neurol 2024

ORIGINAL ARTICLE

Trial of Pr

Gennaro Pagano, M.D., Ph.D., Kirsten I. Taylor,
Ronald B. Postuma, M.D., Nicola Pavese, M.D., et al.



Tri

Anthony E. Lang, M.D., Andrew D. Siderowf, M.D., Eric A. Macklin, Ph.D., Werner Poewe, M.D., David J. Brooks, M.D., D.Sc., Hubert H. Fernandez, M.D., Olivier Rascol, M.D., Nir Giladi, M.D., Fabrizio Stocchi, M.D., Caroline M. Tanner, M.D., Ph.D., Ronald B. Postuma, M.D., David K. Simon, M.D., Ph.D., et al., for the SPARK Investigators*

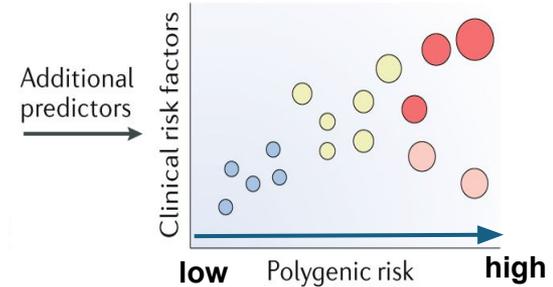
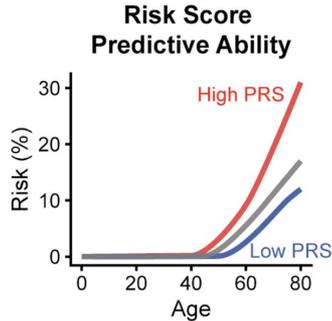
son's Disease

D., Tanya Simuni, M.D., Kenneth Marek, M.D., Ph.D.,
Brit Mollenhauer, M.D., Lydia López-Manzanares, M.D.,
Group*

ion's Disease

Thinking big: Poligenic Risk and Composite Risk score

Genomic profiling delle coorti di pazienti e calcolo dei **Polygenic Risk Scores**



Polygenic Risk Score (PRS)



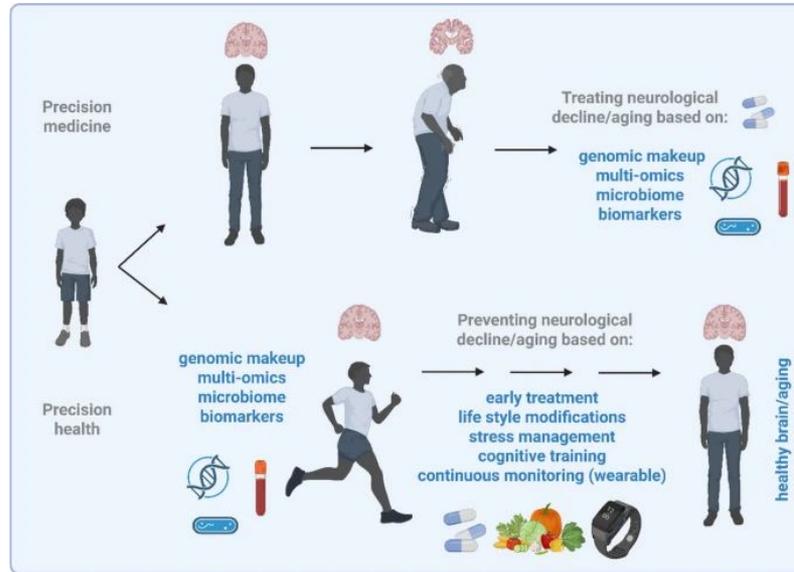
Il PRS considera l'**effetto combinato di numerose varianti genetiche**, ciascuna con un piccolo impatto individuale, per valutare il rischio di un individuo di sviluppare una malattia o determinate caratteristiche (età d'esordio, traiettoria clinica, risposta alla terapia)

Composite Risk Score (CRS)



Il CRS **combina il PRS con altri fattori genetici e non genetici** (es. ambiente, stili di vita ecc), per fornire una valutazione più completa del rischio di una specifica malattia o di sue determinate caratteristiche (**stratificazione dei pazienti**)

Shifting the paradigm from Precision Medicine to Precision Health in Neurodegenerative Conditions and Aging



- ❑ **Precision medicine** focuses on tailoring therapeutic interventions based on an individual's unique biological and genetic profile to treat an existing disease
- ❑ **Precision health** represents a proactive model that leverages **these same biomarkers to predict disease risk and prevent its onset**

Il Sistema degli IRCCS del Ministero della salute

54 IRCCS: 24 pubblici e 30 privati Budget core annuo ~ € 180 ml

6 Reti IRCCS di patologia - Budget core annuo ~ € 19 ml



Ministero della Salute



Dipartimento della prevenzione,
della ricerca e delle emergenze sanitarie



Direzione generale della ricerca
e dell'innovazione in sanità

Le Reti IRCCS del Ministero della Salute

Denominazione Rete IRCCS	Anno di costituzione	IRCCS partecipanti (n)
Alleanza contro il Cancro (ACC)	2020	27
Rete Cardiologica (CARDIO)	2017	20
Rete delle Neuroscienze e della Neuroriabilitazione (RIN)	2017	29
Associazione Rete Italiana salute Dell'Età evolutiva (Rete IDEA)	2017	11
Rete Aging	2017	13
Rete Apparato Muscolo Scheletrico (RAMS)	2019	7



The German Center for Neurodegenerative Diseases (DZNE)

Ten Sites – One Institution

Budget Core annuo ~ € 100 ml

The DZNE bundles excellent, nationwide expertise within a single research institution. The DZNE currently has around 1,000 employees. They cooperate closely with universities, their clinics and non-university institutions at our ten sites - Berlin, Bonn/Cologne, Dresden, Göttingen, Magdeburg, Munich, Rostock/Greifswald, Tübingen, Ulm and Witten.

All these activities are strategically coordinated. In this way, a critical mass of experts is brought together, which makes it possible to explore new treatment options in a targeted manner. Partnerships also exist with industry, patient organisations and research institutions around the world.



Osservatorio Demenze ISS



	CCOD principali	CCOD distaccati	Centri Diurni Centri Diurni Integrati	Strutture residenziali
Abruzzo	19	0	0	8
Basilicata	3	0	1	12
Calabria	38	2	2	6
Campania	74	23	4	14
Emilia-Romagna	63	13	69	193
Friuli-Venezia Giulia	6	1	8	18
Lazio	36	14	20	77
Liguria	7	15	9	88
Lombardia	73	9	151	443
Marche	16	6	15	89
Molise	1	0	1	7
Piemonte	23	15	9	173
Puglia	27	4	33	87
Sardegna	16	9	0	7
Sicilia	29	11	8	7
Toscana	36	3	49	175
Trentino-Alto Adige	15	6	22	56
Umbria	12	4	15	28
Valle d'Aosta	1	0	1	2
Veneto	40	15	43	188
	535	150	460	1678