

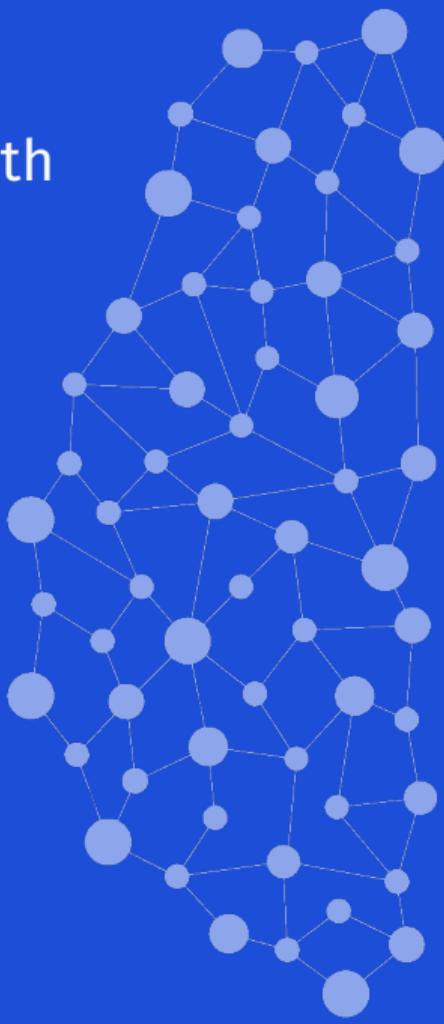
# Supporting treatment decisions for patients with Alzheimer's disease using explainable artificial intelligence

Norway Life Science, 10.02.26



Esten H. Leonardsen

Chief Scientific Officer, baba.vision  
Post-doctoral research fellow,  
Department of Psychology,  
University of Oslo



baba vision

# New treatment options for Alzheimer's disease



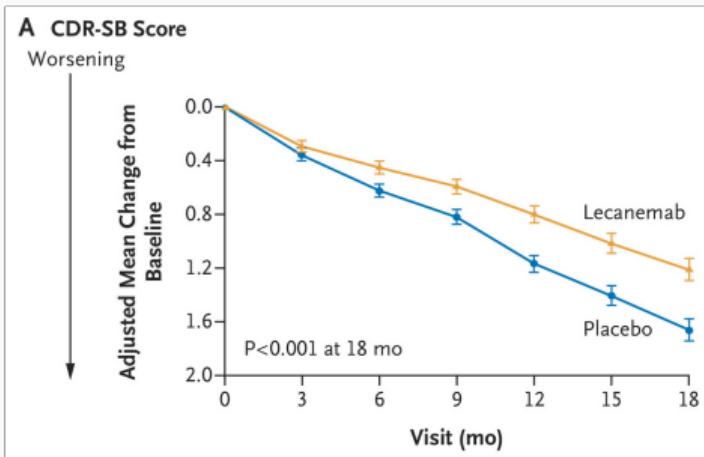
The image shows a white vial of LEQEMBI (lecanemab-imb) injection and its accompanying white and maroon box. The box features the product name 'LEQEMBI' in large blue letters, followed by '(lecanemab-imb) injection' and '500 mg/5 mL (100 mg/mL)' in black text. Below this, it says 'For intravenous infusion' and 'Must be diluted prior to use'. At the bottom, it includes 'Attention Dispenser', 'Dispense the incomplete Medication Guide to each patient.', and 'Single-Dose Vial Discard unused portion.'



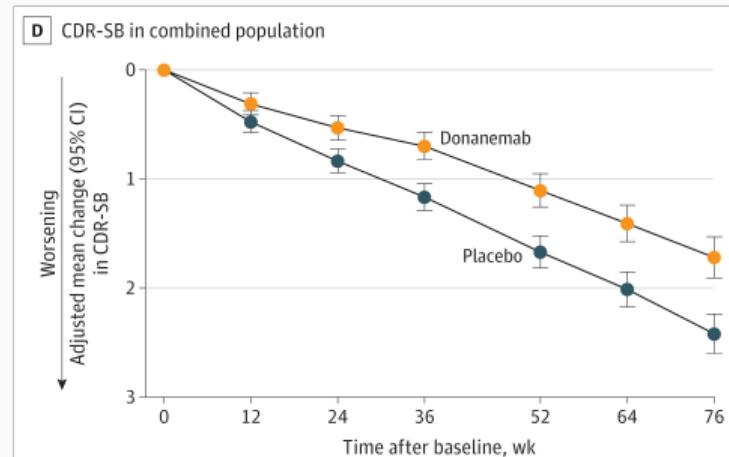
**European Medicines Agency reviews and revises its opinion on Lecanemab**



# New treatment options for Alzheimer's disease



Van Dyck, C. H., Swanson, C. J., Aisen, P., Bateman, R. J., Chen, C., Gee, M., ... & Iwatsubo, T. (2023). Lecanemab in early Alzheimer's disease. *New England Journal of Medicine*, 388(1), 9-21.



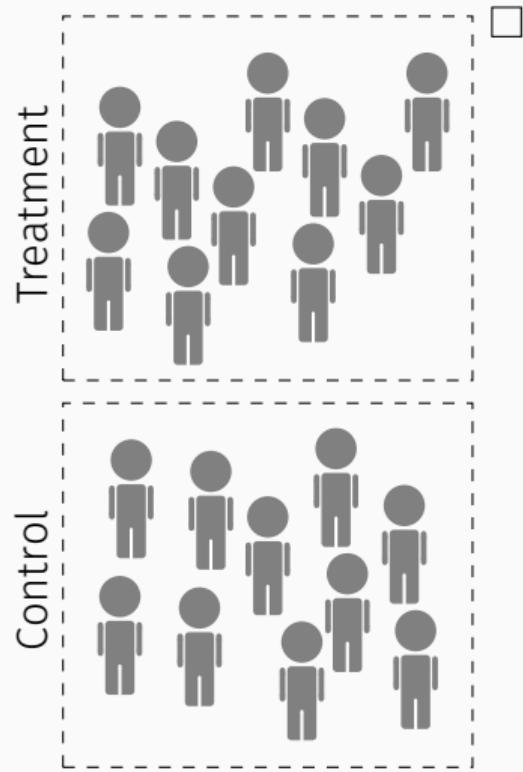
Sims, J. R., Zimmer, J. A., Evans, C. D., Lu, M., Ardayfio, P., Sparks, J., ... & Kaul, S. (2023). Donanemab in early symptomatic Alzheimer disease: the TRAILBLAZER-ALZ 2 randomized clinical trial. *JAMA*, 330(6), 512-527.



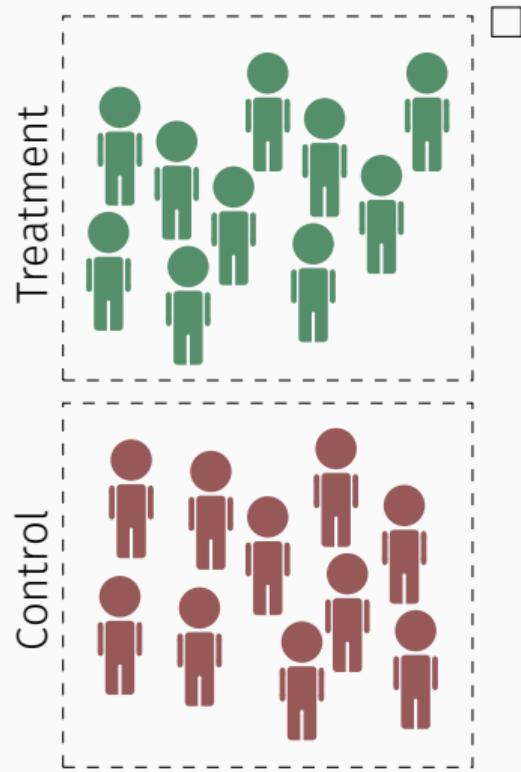
# New treatment options for Alzheimer's disease



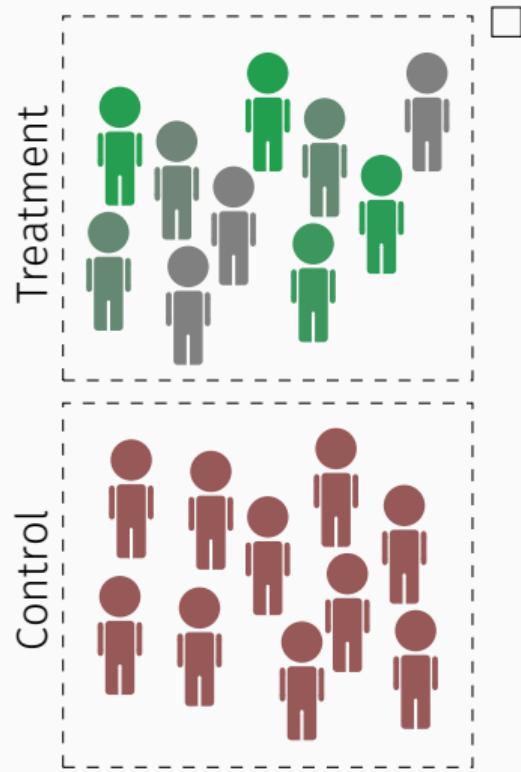
# New treatment options for Alzheimer's disease



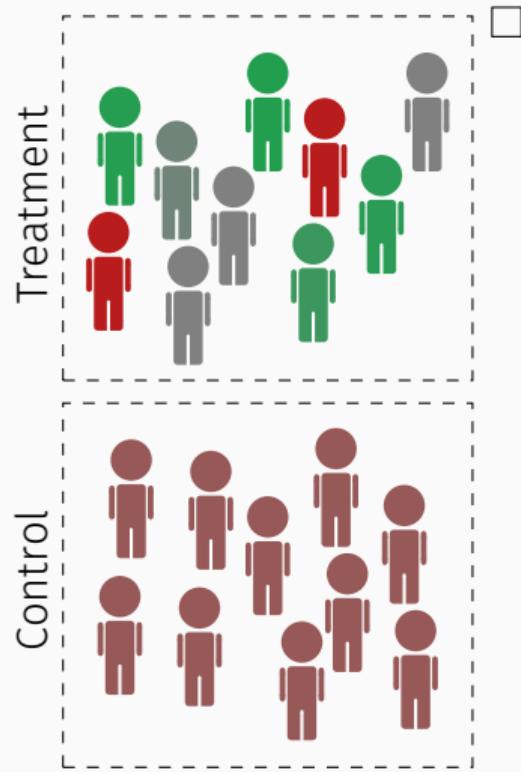
# New treatment options for Alzheimer's disease



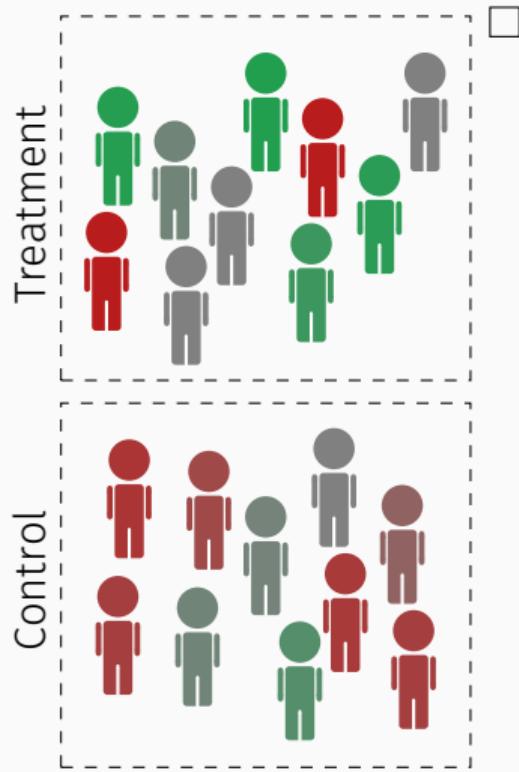
# New treatment options for Alzheimer's disease



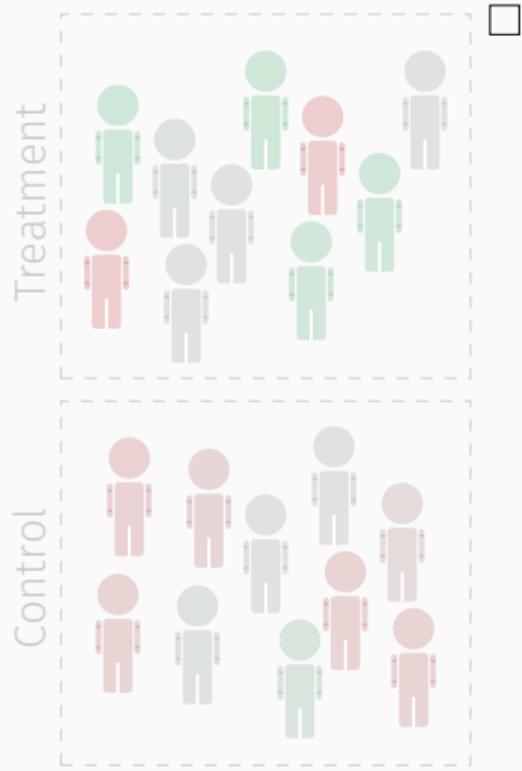
# New treatment options for Alzheimer's disease



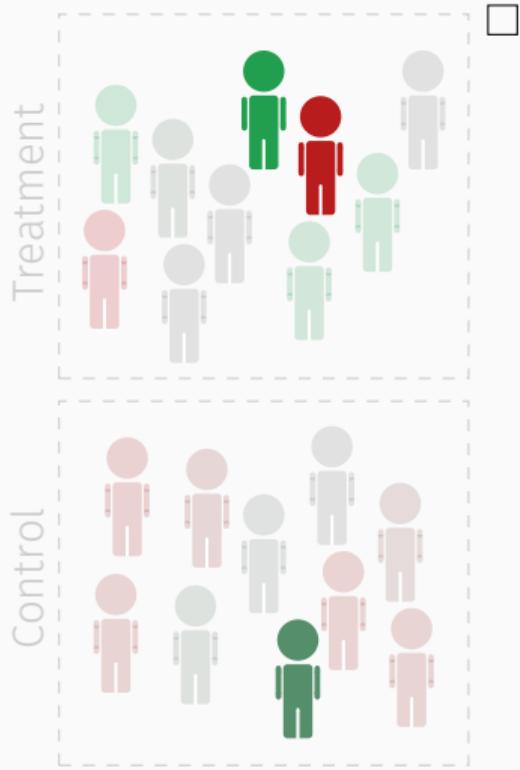
# New treatment options for Alzheimer's disease



# New treatment options for Alzheimer's disease



# New treatment options for Alzheimer's disease



# New treatment options for Alzheimer's disease

baba vision

Home Patients Reports Patient Astrid Holm Female / Age: 68 Timeline Baseline 2030-07-04

**Findings**

**MRI**  
Modality T1  
June 17, 2030

**Cognitive Scores**  
MMSE 28  
June 10, 2030

**Digital biomarkers**  
Speech Value  
June 17, 2030

**Genetic Markers**  
APOE4 Negative  
May 12, 2030

**Marker**  
Value  
May 12, 2030

**Biological Tests**  
pTau217 Percentile  
May 12, 2030 90th

Aβ42/40 May 12, 2030 12th

NfL May 12, 2030 86th

**Lequembi**  
Patient View

**Prognosis**  
AI-predicted treatment outcomes over 3 years.

**Predicted treatment effect**  
5 months Delay in cognitive decline

**Side effect risk**  
17% Moderate side effect risk

# Treatment eligibility



## MRI-based contraindications

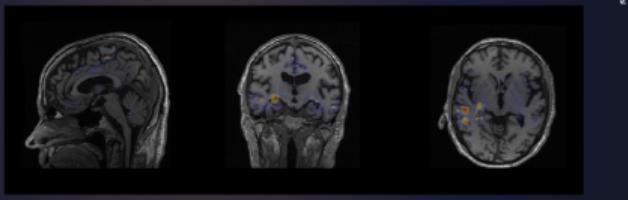
- A history of macrohemorrhages
- More than 4 microhemorrhages
- Evidence of superficial siderosis
- Evidence of brain vasogenic edema
- Significant white matter hyperintensities
- Multiple lacunar strokes
- Cerebral strokes involving a major vascular territory
- Central nervous system infection
- Evidence of cerebral contusion, encephalomalacia, brain aneurysms or other vascular malformations
- Brain tumors other than meningioma
- Arachnoid cysts
- Evidence of underlying cerebral amyloid angiopathy-related inflammation
- Evidence of Amyloid-Beta-related angiitis

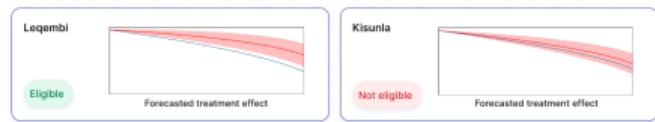
# Treatment eligibility

baba vision

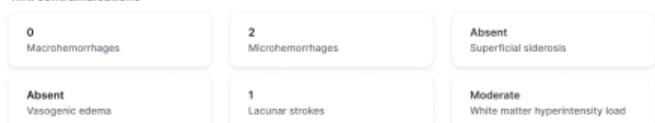
Home Patients Reports Patient Astrid Holms Female / Age: 68 Timeline Baseline 2026-01-01 Assessments MRI T1 January 1, 2026 T2 FLAIR January 1, 2026 T2\* January 1, 2026 SWI January 1, 2026 Genetic Markers APOE January 2, 2026 c3 TREM2 January 2, 2026 R47H Biological Tests pTau217 January 2, 2026 90th Ab42/40 January 2, 2026 12th NFL January 2, 2026 86th Settings Support











Treatment eligibility

Leqembi Eligible Forecasted treatment effect

Kisunla Not eligible Forecasted treatment effect

Disease status

Differential Diagnosis 93% Alzheimer's disease

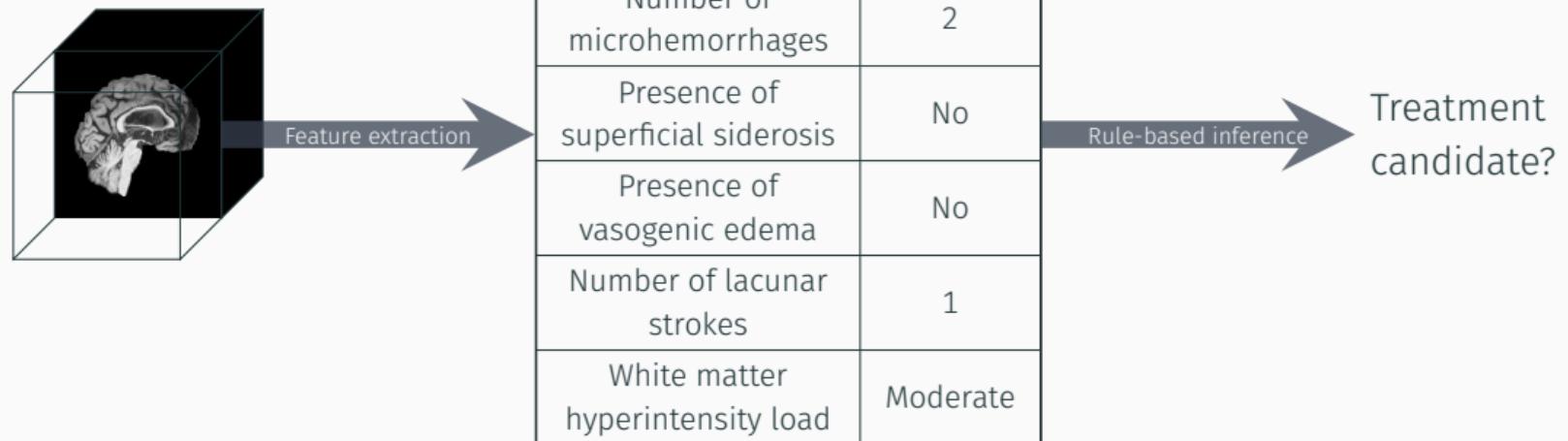
Disease stage Stage 1/4 Mild cognitive impairment

Predicted progression rate 85th Risk percentile

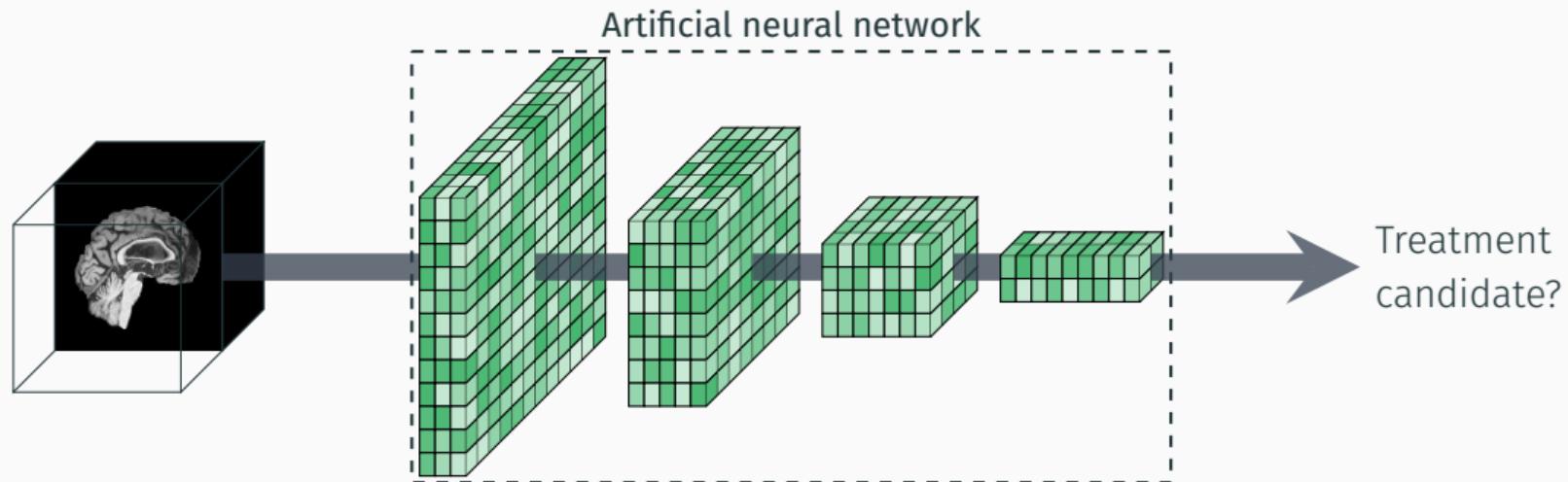
MRI contraindications

Contraindication	Count	Description
Macrohemorrhages	0	Absent
Microhemorrhages	2	Moderate
Superficial siderosis	Absent	
Lacunar strokes	1	
White matter hyperintensity load	Moderate	

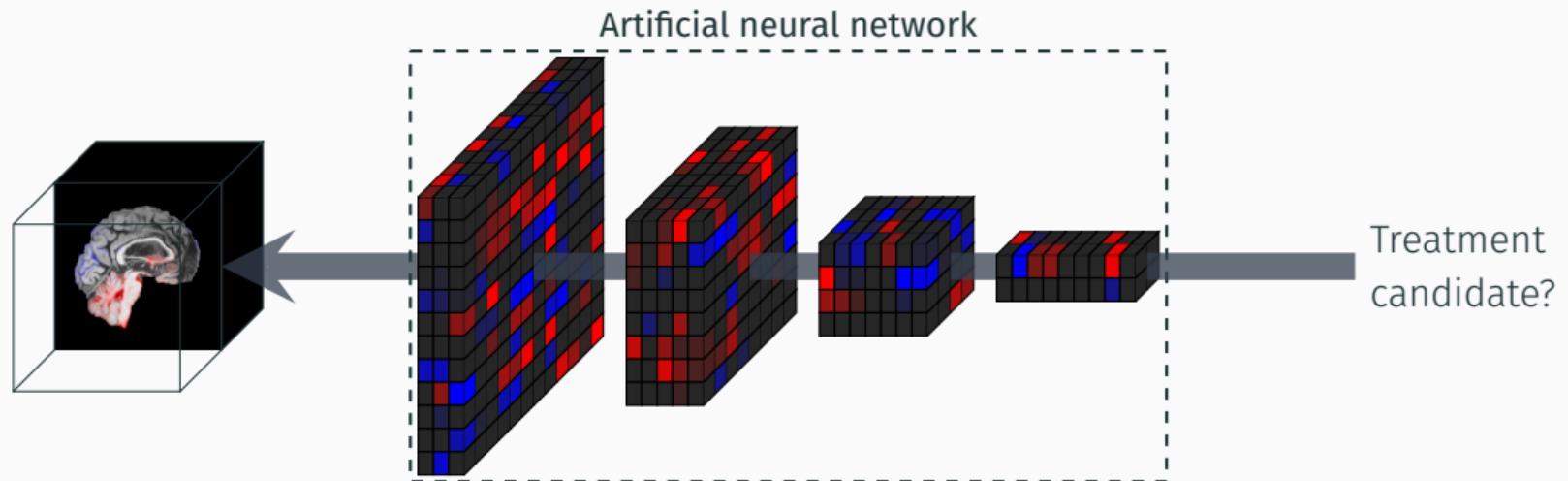
# Explainable artificial intelligence



# Explainable artificial intelligence

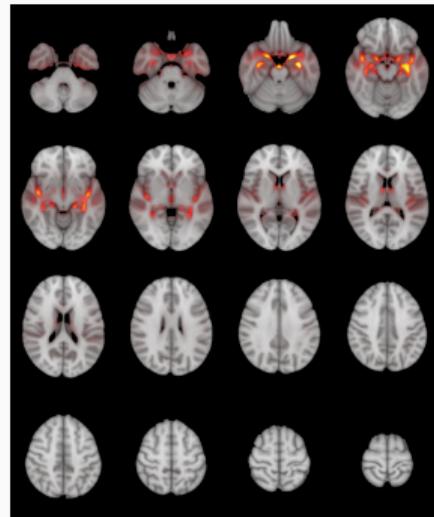


# Explainable artificial intelligence



# Explainable artificial intelligence

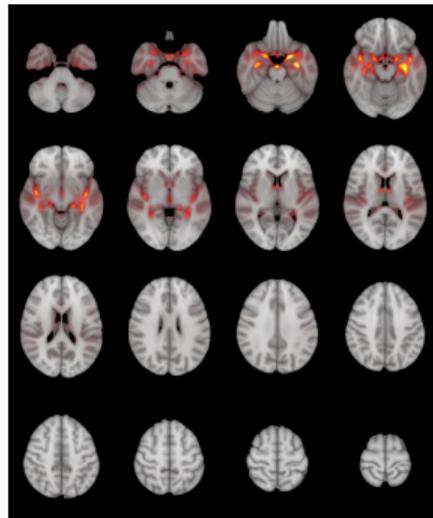
## Explainable AI



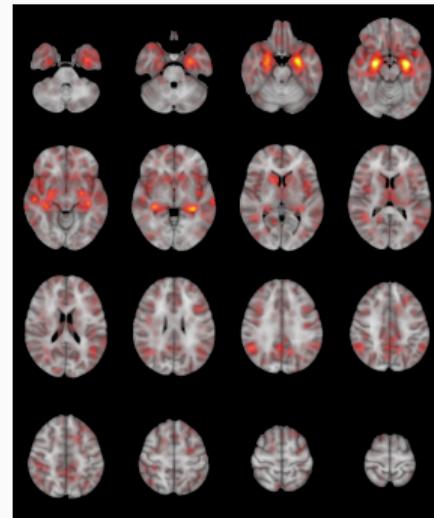
Leonardsen, E. H., Persson, K., Grødem, E., Dinsdale, N., Schellhorn, T., Roe, J. M., ... & Wang, Y. (2024). Constructing personalized characterizations of structural brain aberrations in patients with dementia using explainable artificial intelligence. *NPJ digital medicine*, 7(1), 110.

# Explainable artificial intelligence

Explainable AI

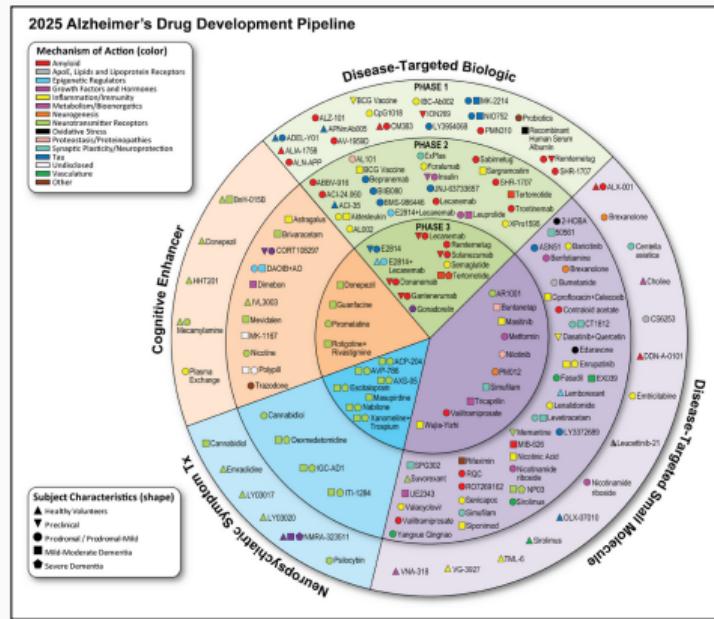


Human researchers



Leonardsen, E. H., Persson, K., Grødem, E., Dinsdale, N., Schellhorn, T., Roe, J. M., ... & Wang, Y. (2024). Constructing personalized characterizations of structural brain aberrations in patients with dementia using explainable artificial intelligence. *NPJ digital medicine*, 7(1), 110.

# The future of Alzheimer's treatment



Cummings, J. L., Zhou, Y., Lee, G., Zhong, K., Fonseca, J., Leisgang-Osse, A. M., & Cheng, F. (2025). Alzheimer's disease drug development pipeline: 2025. *Alzheimer's & Dementia: Translational Research & Clinical Interventions*, 11(2), e70098.

# The future of Alzheimer's treatment

baba vision

- Home
- Patients
- Reports

Patient  
Astrid Holm Female / Age: 68

Timeline  
Baseline 2030-07-04

Findings	
MRI	
Modality	T1
June 17, 2030	
Cognitive Scores	
MMSE	28
June 10, 2030	
Digital biomarkers	
Speech	Value
June 17, 2030	
Genetic Markers	
APOE4	Negative
May 12, 2030	
Marker	Value
May 12, 2030	
Biological Tests	
pTau217	Percentile
May 12, 2030	90th
Ab42/40	Percentile
May 12, 2030	12th
NTfL	Percentile
May 12, 2030	86th

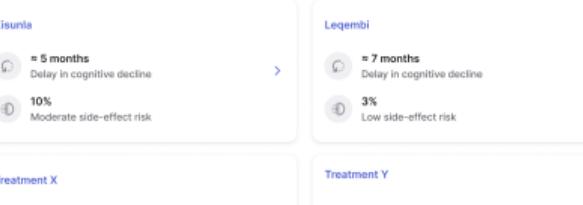
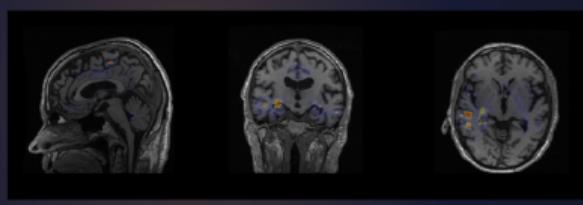
- Settings
- Support

**Treatment evaluation**  
AI-predicted treatment outcomes over 3 years.

Kisunila	Leqembi
= 5 months Delay in cognitive decline	= 7 months Delay in cognitive decline
10% Moderate side-effect risk	3% Low side-effect risk

Treatment X	Treatment Y
= 12 months Delay in cognitive decline	Not eligible Patient does not meet early-stage criteria
55% Severe side-effect risk	

No treatment
0 months Delay in cognitive decline
30% Risk of dementia progression



Thank you for your attention!  
esten@baba-vision.com

baba vision

