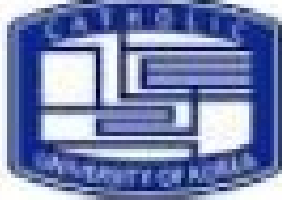


Development of predictive plasma biomarkers and home-based cognitive monitoring system in subjective cognitive decline



가톨릭대학교
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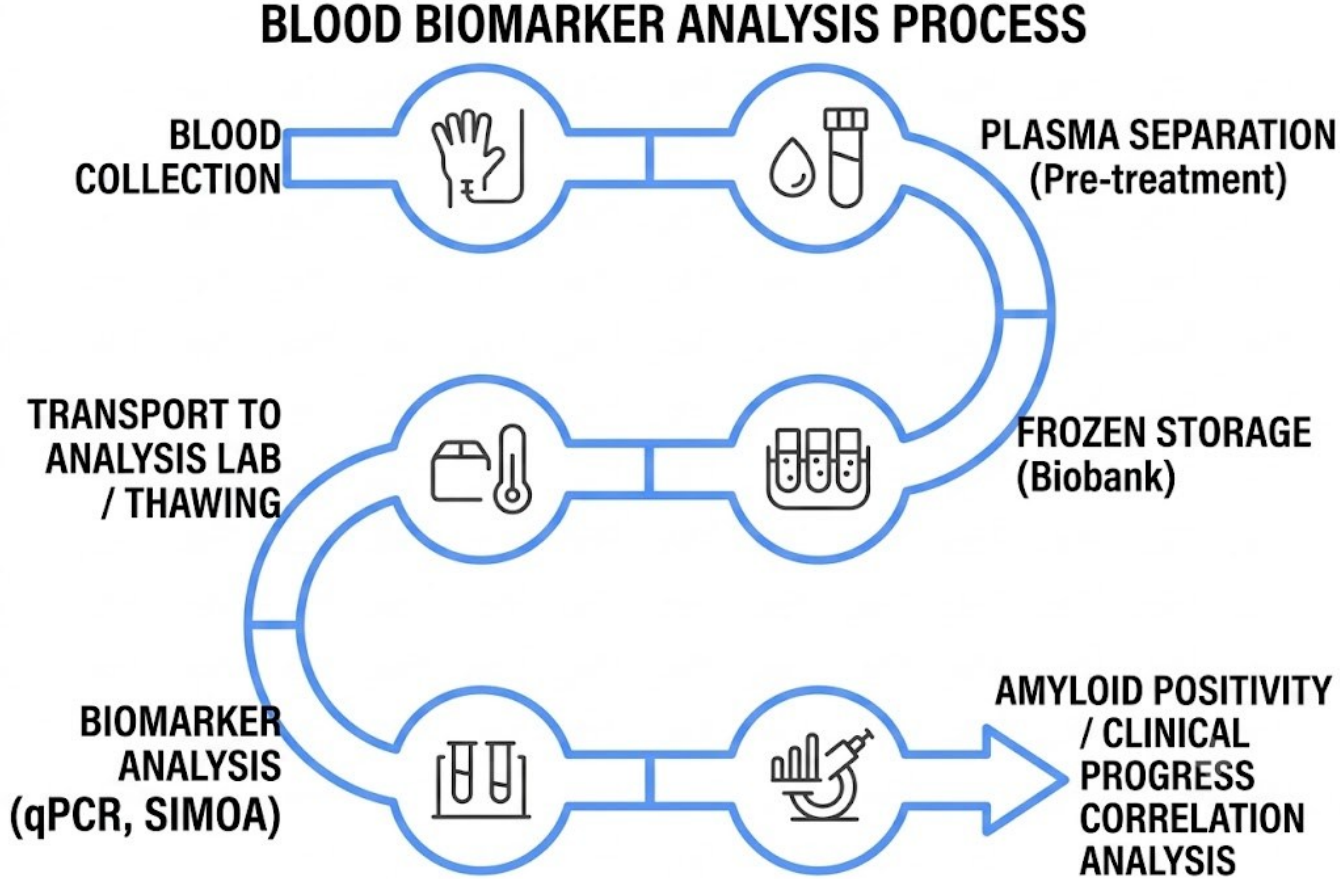
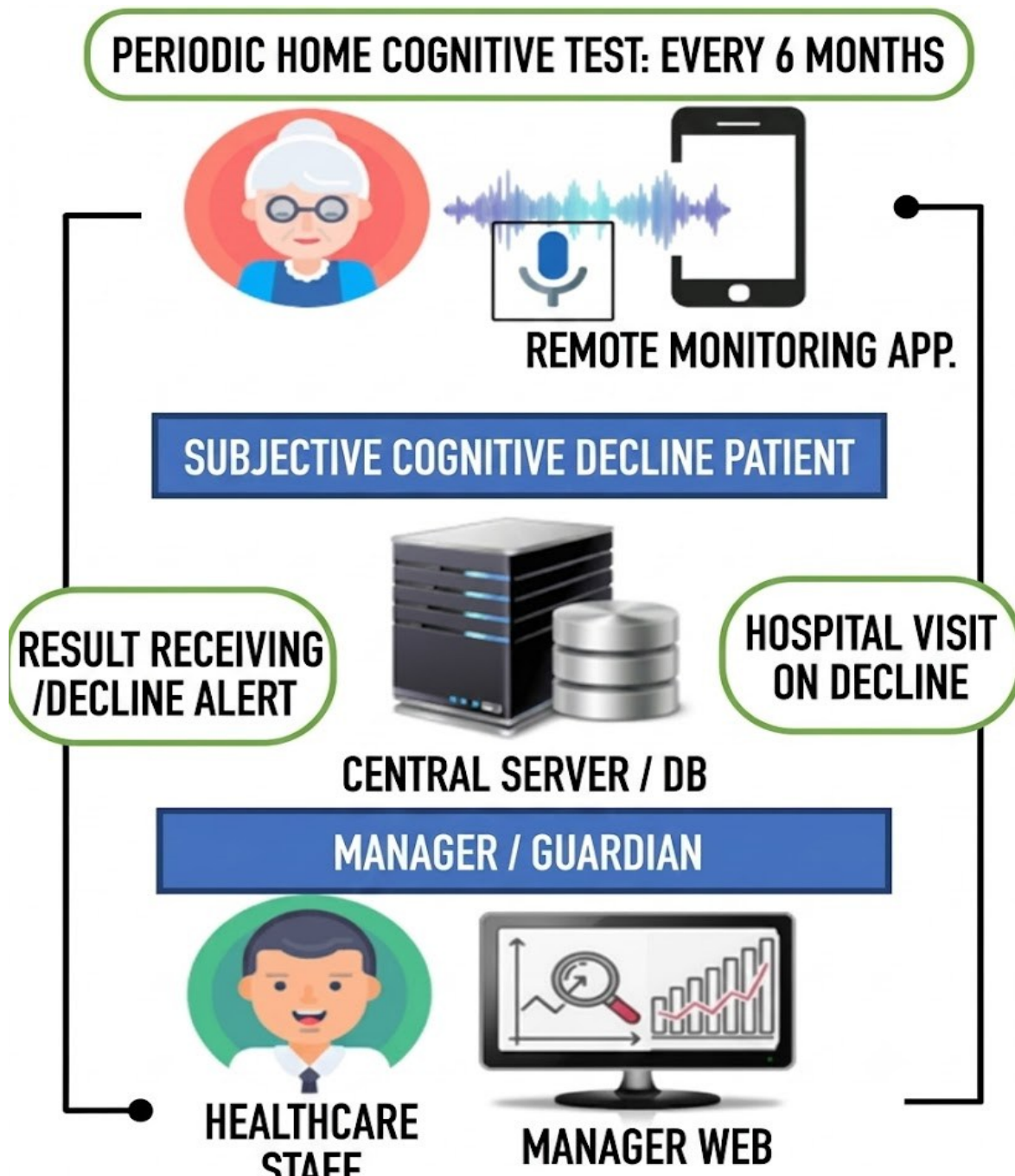


ALZHEIMER'S ASSOCIATION

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- ✓ This study plan to develop a new blood-based biomarker panel to predict rapid clinical progression in cognitively unimpaired subjects with subjective cognitive decline.
- ✓ A prospective real-world cohort study (N=100, 2020~2028, ongoing) integrating multimodal biomarkers.

INTRODUCTION	METHODS 1	METHODS 2	RESULTS	CONCLUSIONS
Background: Subjective cognitive decline (SCD) may represent the earliest help-seeking stage of Alzheimer’s disease (AD), reflecting preclinical AD. However, longitudinal monitoring using conventional in-person cognitive tests remains challenging because they typically do not require regular hospital visits and have a low annual progression rate (approximately 5–10%). Aims: This study developed a blood-based biomarker model designed to predict rapid clinical progression in SCD patients, integrated with a smartphone platform for remote cognitive monitoring	Design: A prospective real-world cohort study (N=100, 2020~2028) Inclusion criteria: • aged 60 years or older • subjective cognitive complaints • normal cognition on neuropsychological tests (-1 SD) Outcomes: Cohort database (maximum 8 yr fu) Clinical data Cognitive tests physical exam Voice (digital) Blood based biomarker Amyloid PET :quantitative Brain MRI :volumetry • Amyloid PETquantitative analysis (florbetaben) • Brain MRI volumetry • Clinical assessments will be performed yearly	• Blood biomarkers (Olink & SIMOA method: Ab42/40, p-tau217, GFAP, Nfl, p-tau205, alpha-syn, TDP-43, NPTX) BLOOD BIOMARKER ANALYSIS PROCESS  • A scalable home-based cognitive monitoring. 	• Hypothesis: • Individuals with SCD exhibiting high-risk multimodal biomarker profiles will progress more rapidly to MCI compared to those with low-risk profiles. • Blood-based biomarkers will allow for early and sensitive detection of rapid clinical progression in a real-world SCD population.	• Expected results: • This study aims to establish a clinically feasible home-based cognitive monitoring system capable of detecting early clinical progression in SCD and facilitating timely linkage to preventive interventions. • Additionally, we seek to develop a population-specific blood-based biomarker model for early prediction of AD progression, supporting personalized and proactive managements.