

EEG BRAIN SCANNER

Just 10 min.

**A NEW INNOVATION
IN QEEG ANALYSIS**

Experience innovative AI
brain scanning & diagnostics!

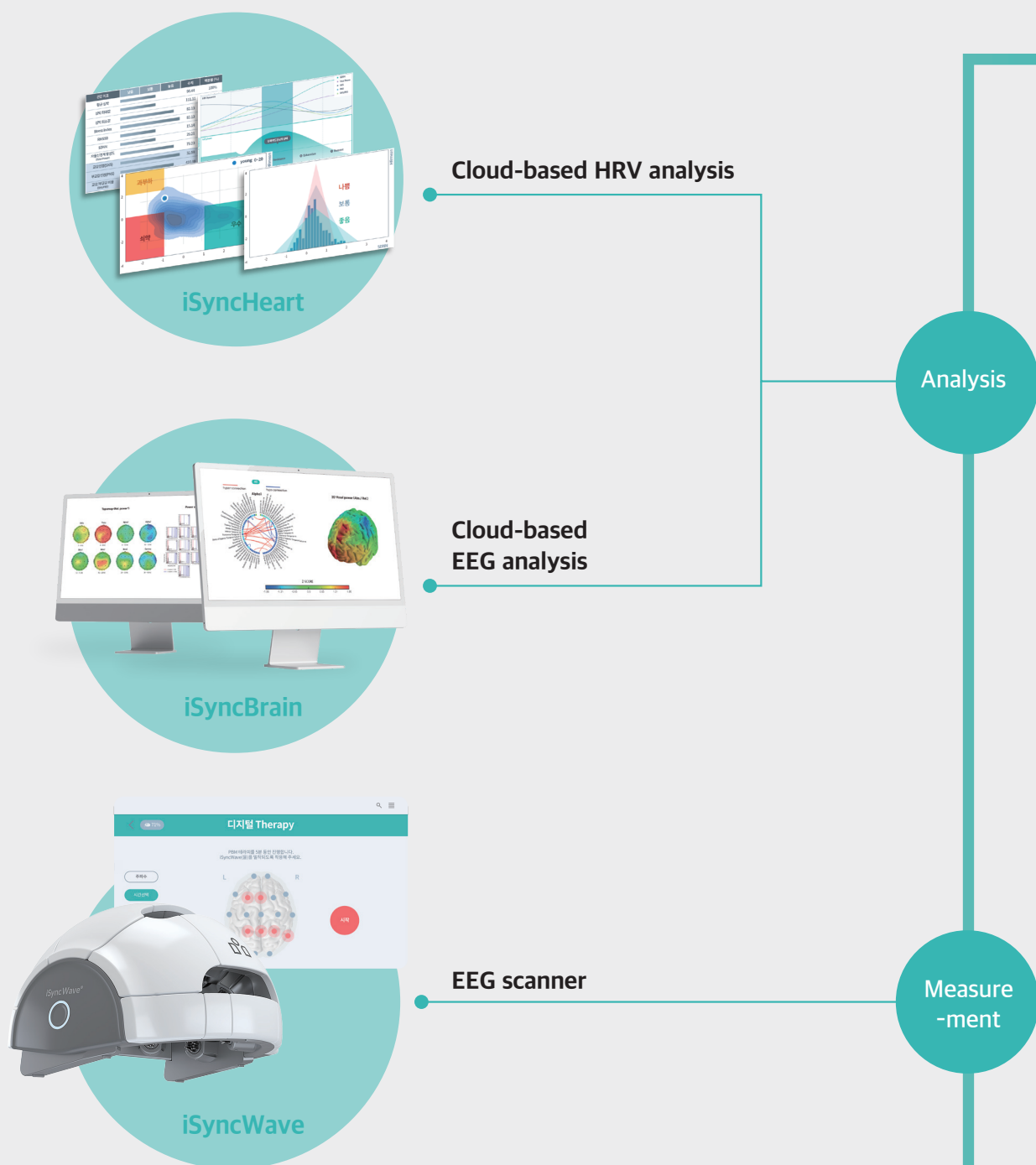
iMediSync

iSyncWave®



iMediSync Solution

iMediSync made it possible to provide diagnosis and care services - anytime and anywhere - for neuropsychiatric disorders by combining hardware and software to build an integrated AI telemedicine platform ecosystem. This all in one solution provides everything from measurement analysis and diagnosis to treatment and prescription.



FDA application number

iSyncWave : K220056

iSyncBrain-C : K222838

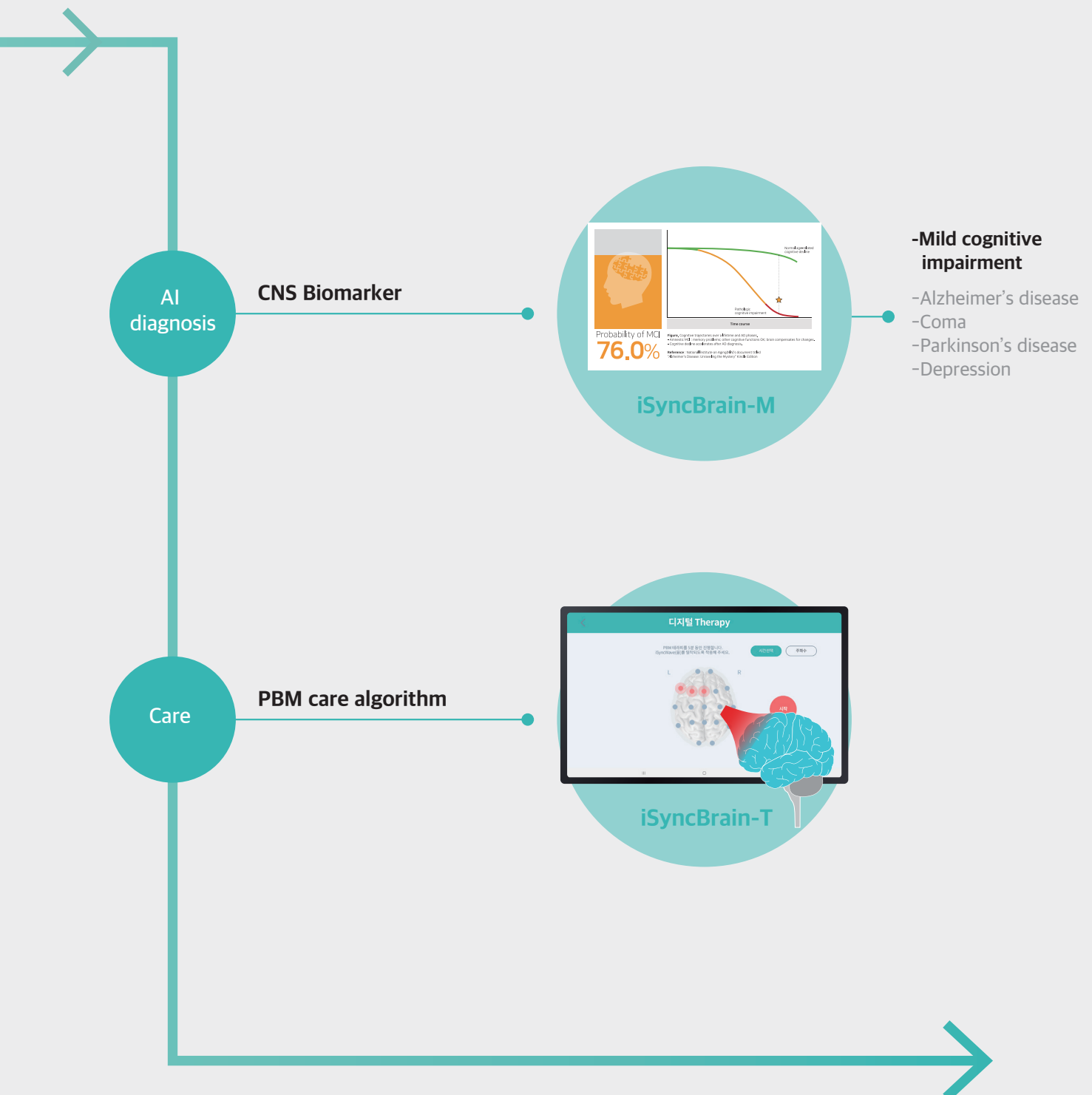
Trademark application number

iSyncWave : 21-2051

iSyncBrain-C : 20-4800

iSyncBrain-MCI : 20-750

iSyncHeart : 20-4567



iSyncWave

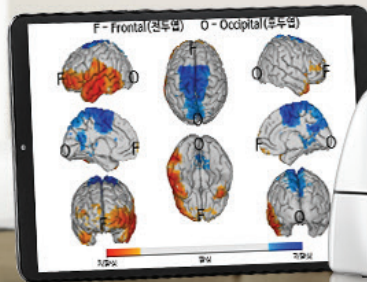
Non-stop AI brain scanner that implements measurement, analysis, and care at a time

iSyncWave is an AI brain scanner that helps determine whether there is an abnormality in brain function. It also analyzes the results of the autonomic nervous system, cardiovascular disease risk, depression, anxiety, and stress through simultaneously measuring the Heart Rate Variability (HRV) and EEG. The LED photo-stimulator mounted on iSyncWave generates near-infrared rays of 850nm. It is known to be effective in restoring brain function in patients with stroke, cognitive impairment, Parkinson's disease, and traumatic brain injury by promoting ATP production in brain cells and cerebral blood flow.

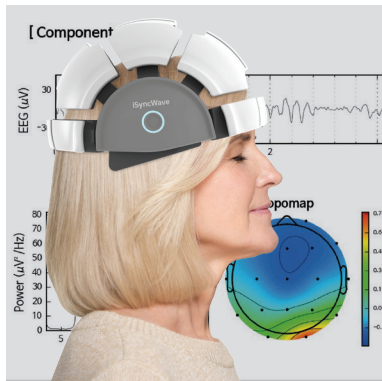
*FDA 510K cleared



reddot winner 2022



Features



100% Dry EEG measurement

A gel-free dry headset allows the equipment to be worn by oneself and does not require cleaning after removal.



Measurement and analysis in just 10 minutes

Provides fast analysis and results through AI programs installed on the cloud.



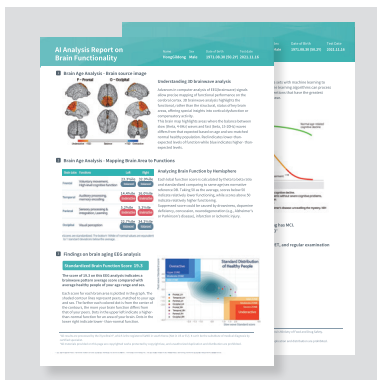
Anyone can wear it

Adjustable size fits any age / sex head while maintaining the 10/20 system.



Excellent signal quality

Electrodes coated with Ag/AgCl produces excellent conductivity for high-quality signal measurement.



Provision of AI analysis Summary Report

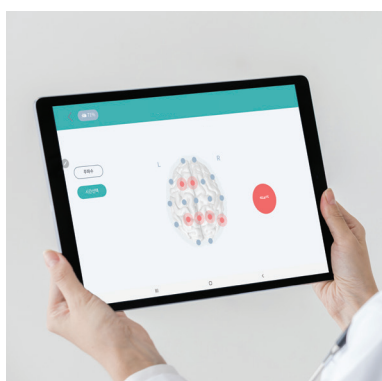
Provides results of 'Brain Health' through 3D mapping and 'Sensitivity Analysis and Heart Health' through HRV measurement.



Provision of Heart Rate Variability (HRV)

Simultaneous measurement of EEG and heart rate variability provides results of autonomic nerve, depression, anxiety, and stress analysis.

* FDA under review



The world's first EEG measurement and LED photostimulation care function

Ability to select frequency and activated areas according to EEG measurement results.

iSyncBrain

AI automatic EEG analysis solution

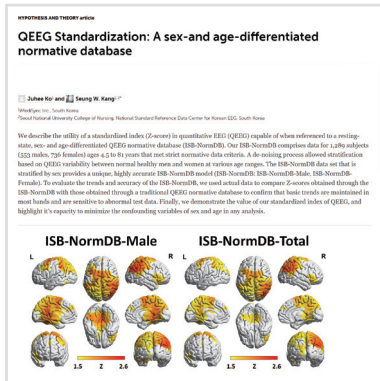
iSyncBrain is a cloud AI-guided analytics system for EEG/HRV biosignals.

iMediSync developed the first-ever age/sex-classified healthy EEG norm DB and is currently developing an EEG-based brain health market with patented automatic EEG denoising, amICA, and deep learning on the cloud platform.

iMediSync cloud service provides brain health reports and amnesic MCI early screening biomarker reports.



Features



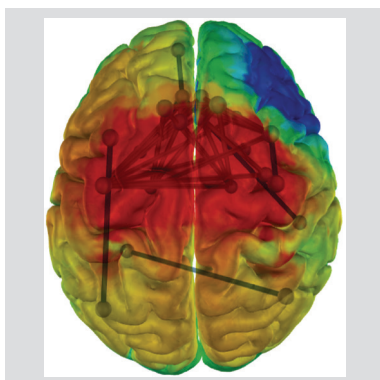
The world's only age/sex differentiated QEEG DB

Comprised of 1,300 healthy people data derived from the National Reference EEG DB project by the Ministry of Trade, Industry, and Energy.



Artificial Intelligence Diagnosis Support Solution

Classify 'Mild Cognitive Impairment' using pre-dementia detecting machine learning model.



Provision of tailored remote care service

Measure and monitor EEG anytime and anywhere before and after care.



EEG signal processing technology using cloud server

QEEG main indicator values are generated by uploaded EEG signals that are automatically processed through the analysis engine.



Visual automatic EEG analysis reports

Provides denoised results by applying an automatic noise removal algorithm that combines deep learning and ICA.



Academic and research support

Provides support and analysis for research and academia.

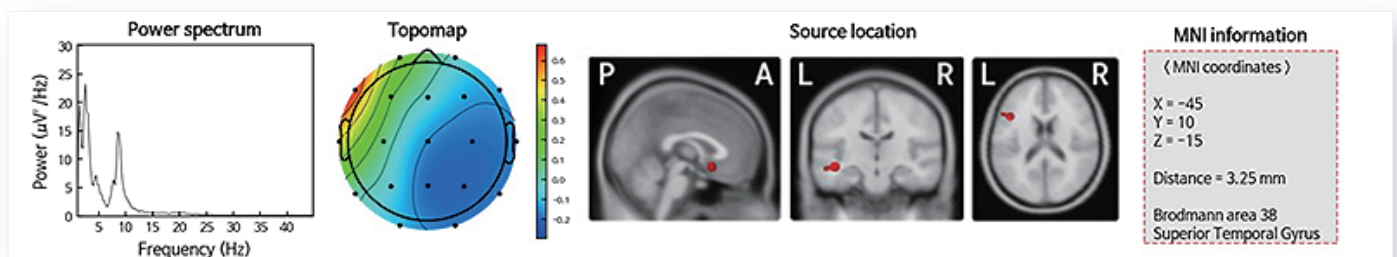
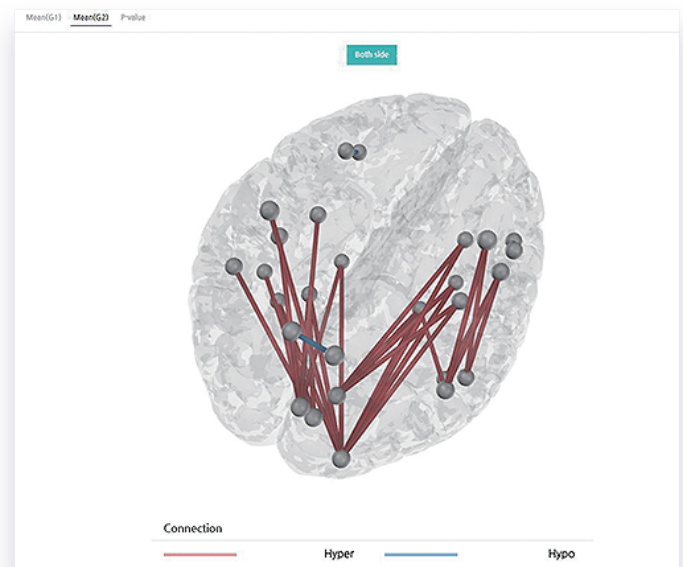
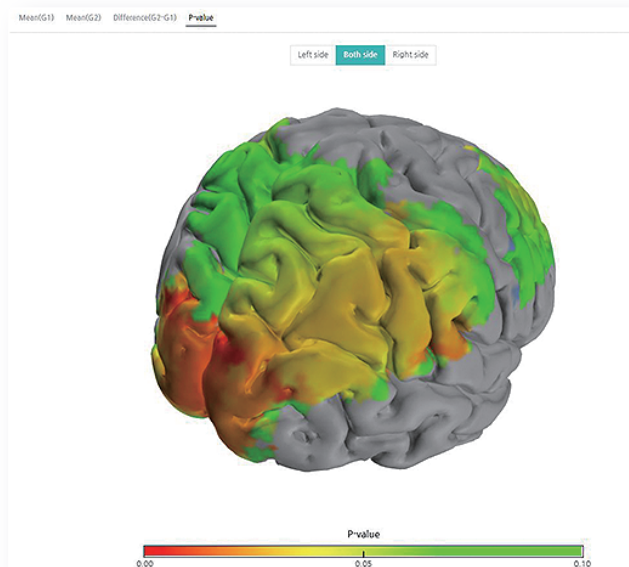
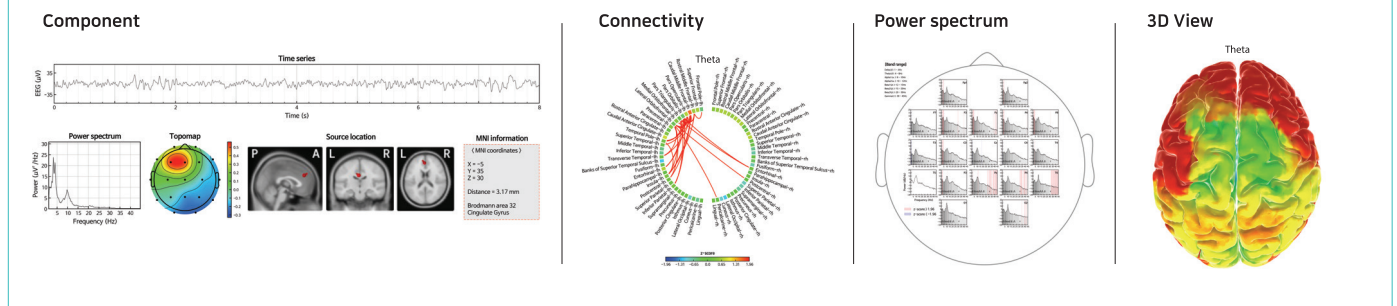
Indicator of total mental care solution

EEG-biomarker, the basis of diagnostic support, enables clinical trials for research.

iSyncBrain M&C series

sLORETA 3D source level power and connectivity mapping with AMICA components.

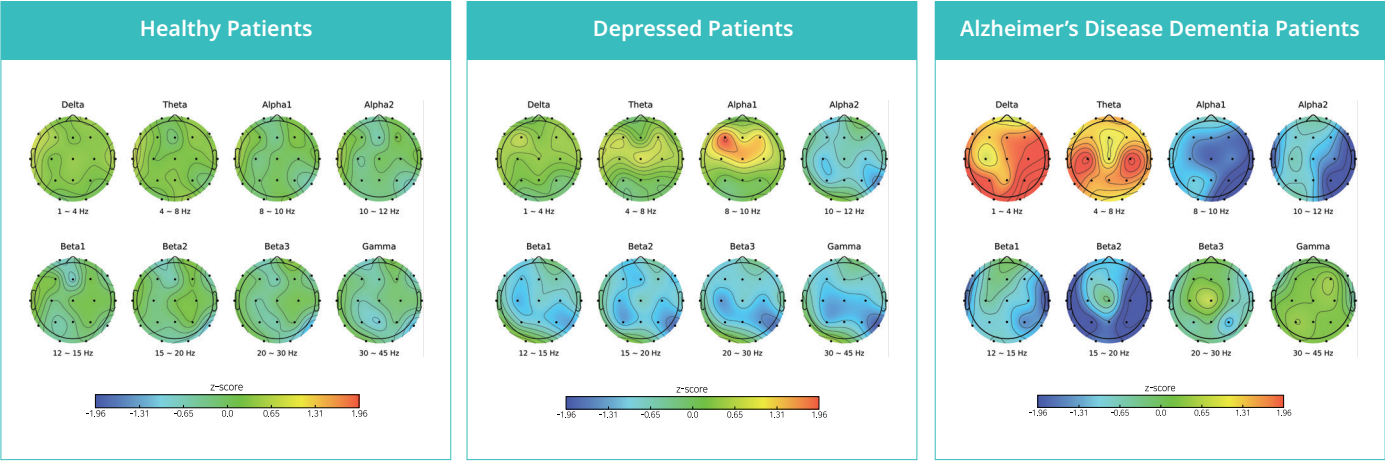
Results



- ✓ Maximize time saving with AI denoising for clinicians and for researchers
- ✓ First-ever age/sex classified norm comparison
- ✓ 3D rendering of voxel power and ROI connectivity with each frequency band, respectively

Visualized EEG analysis

sLORETA 3D source level power and connectivity mapping with AMICA components.



AI Analysis Report on Brain Functionality

Name: HongGildong Sex: Male Date of birth: 1971.08.30 (50.2Y) Test date: 2021.11.16

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1 Brain Age Analysis - Brain source image

Understanding 3D brainwave analysis

Advances in computer analysis of EEG (brainwave) signals allow precise mapping of functional performance on the cerebral cortex. 3D brainwave analysis highlights the functional, rather than the structural, status of key brain areas, offering special insights into cortical dysfunction or compensatory activity. This brain map highlights areas where the balance between slow (theta, 4-8Hz) and fast (beta, 12-15Hz) differs from that expected levels of normal healthy population.

AI EEG Analysis of aMCI Probability Report

Name: HongGildong Sex: Male Date of Birth: 1971.08.30 (50.2Y) Test Date: 2021.11.16

Understanding iSyncBrain-M

iSyncBrain-M is an AI-powered screening solution for aMCI. It combines big data sets with machine learning to provide EEG-based analyses of unparalleled precision. Specially trained machine learning algorithms can process quantitative EEG to identify subtle evidence of aMCI, thus enabling early interventions that have the greatest potential for delaying or preventing the progression of aMCI to Alzheimer's disease.

Figure. Different trajectories for normal and AD-related cognitive decline.

Normal age-related cognitive decline

Pathologic cognitive impairment

Time course

Probability of aMCI: 64.7%

This analysis indicates there is a 64.7% probability that HongGildong has MCI. MCI stage (based on probability range: 60-70%): 'Non-Alzheimer MCI'

Recommendation: Further assessments, e.g., SNSB, MRI, amyloid PET, and regular examination by a physician within 3 months.

2 Brain Age Analysis - Mapping Brain Area to Functions

BrainLobe	Functions	Left	Right
Frontal	Voluntary movement, High-level cognitive function	23.3%ile Balanced	32.9%ile Balanced
Temporal	Auditory processing, memory encoding	14.4%ile Underactive	16.0%ile Underactive
Parietal	Sensory processing & integration, Learning	5.2%ile Underactive	5.2%ile Underactive
Occipital	Visual perception	22.7%ile Balanced	34.2%ile Balanced

*Scores are standardized. The bottom 16%ile of normal values are equivalent to 1 standard deviations below the average.

Standardized Brain Function Score 19.3

The score of 19.3 on this EEG analysis indicates a brainwave pattern average score compared with average healthy people of your age range and sex.

Each score for each brain area is plotted in the graph. The shaded contour lines represent peers, matched to your age and sex. The farther each colored dot is from the center of the contours, the more your brain function differs from that of your peers. Dots in the upper left indicate a higher-than-normal function for an area of your brain. Dots in the lower right indicate lower-than-normal function.

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3 Findings on brain aging EEG analysis

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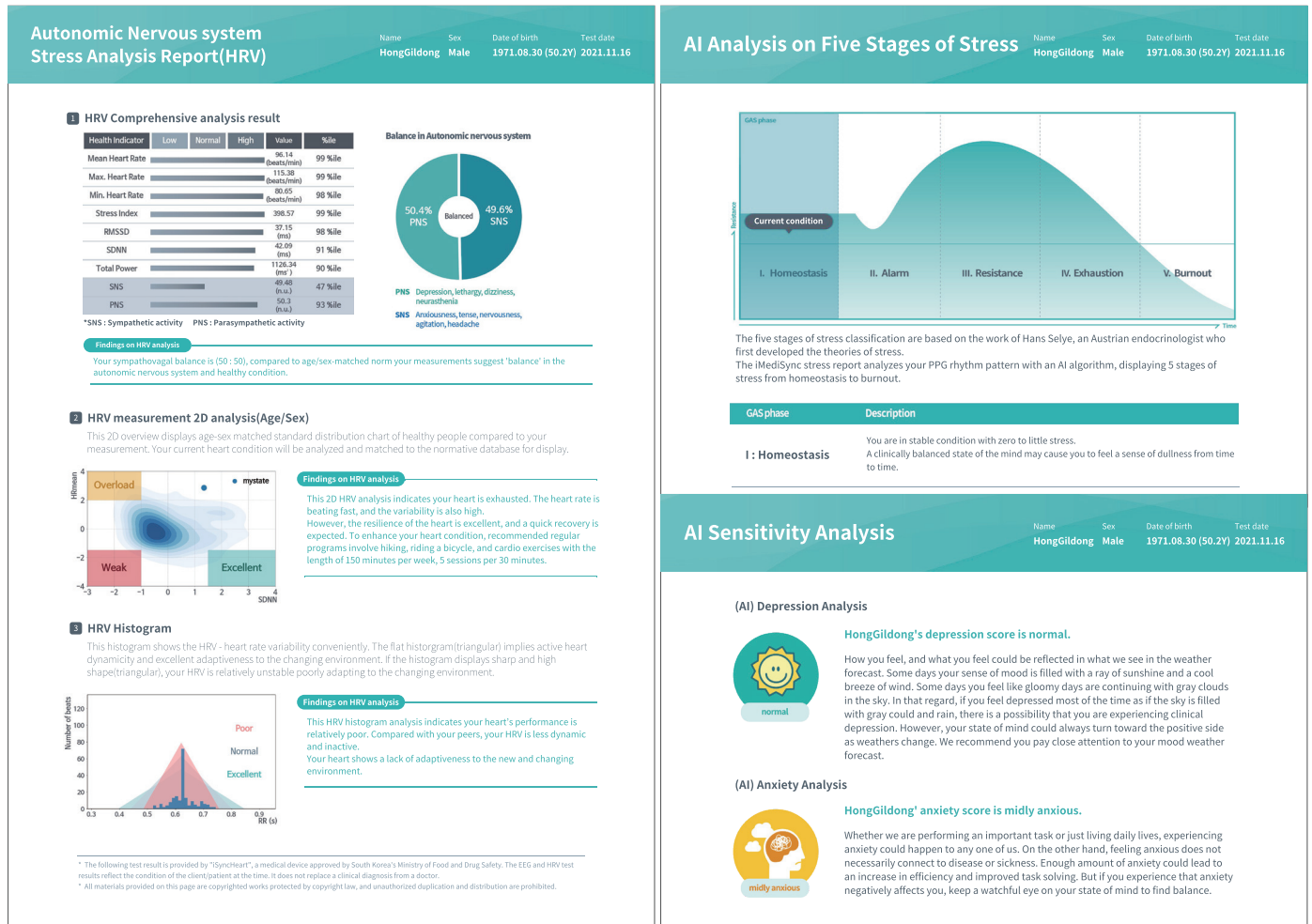
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- ✓ App connected web interface for maximum usability and efficiency
- ✓ Visualized brain mapping report
- ✓ Major brain disease biomarker report

iSyncHeart

Beyond conventional HRV analytics, innovative biomarker developments including stress, depression, anxiety and major brain diseases can be applied to various clinical circumstances.



Cloud-based conveniences

- ✓ Age and sex classified norm-based analytics
- ✓ HRV parameters
- ✓ Sympathovagal balances
- ✓ Emotion analysis
- ✓ GAS phase stress analysis

***GAS (General Adaptive Syndrome):** The body and mind go through the stages of alarm, resistance, exhaustion, and burnout when exposed to continuous stress.

Light Therapy

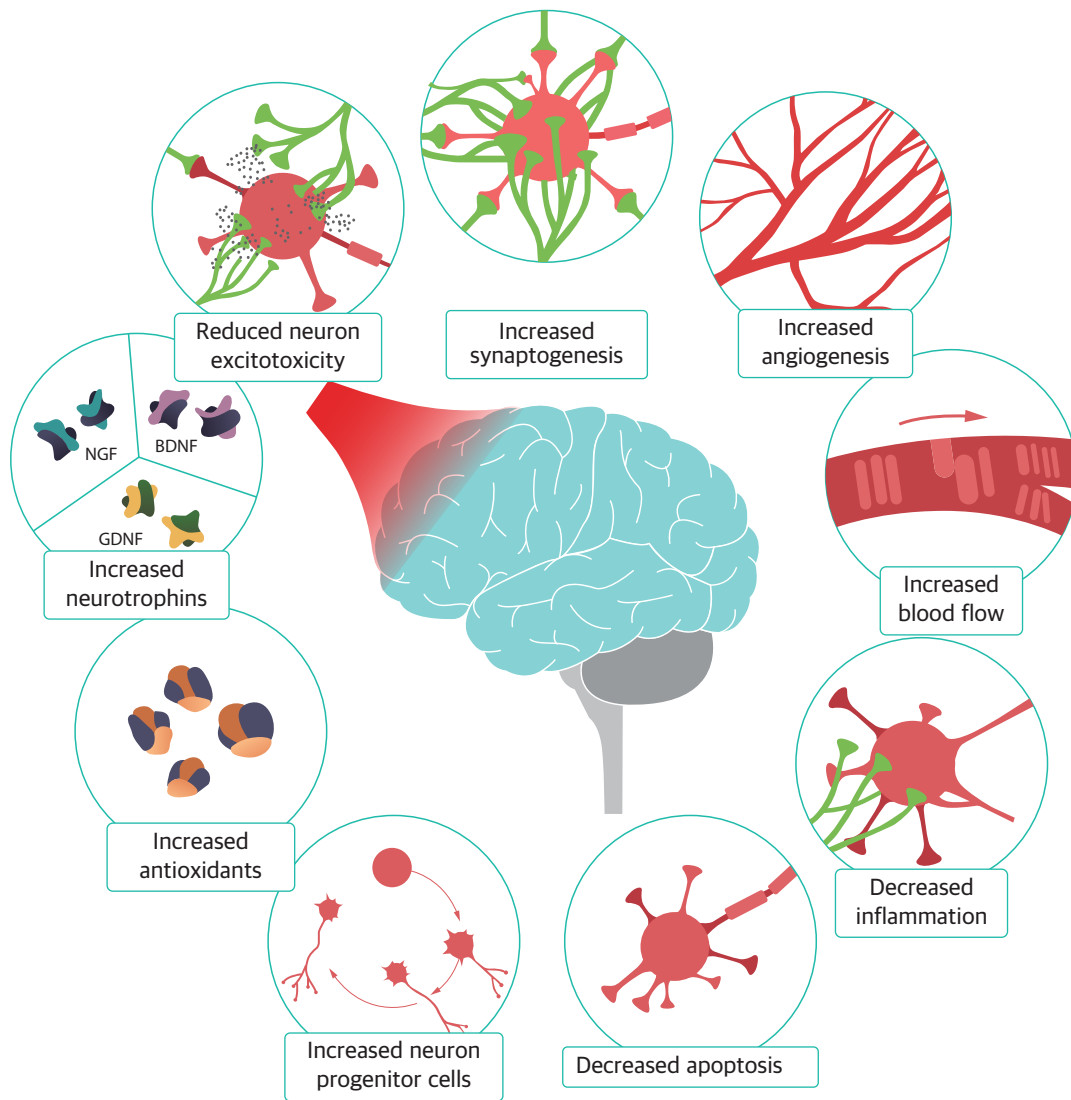
Photobiomodulation, PBM

Accelerates cell and tissue regeneration

iSyncWave provides QEEG guided personalized light therapy(PBM) through built-in LEDs.

The optimum targeting PBM for Alzheimer's, strokes, traumatic brain injuries is under development.

Meanwhile, PBM safety and efficacy have been shown in US Navy and Harvard Medical School studies.



Reference : Salehpour, Farzad, et al. "Brain photobiomodulation therapy: a narrative review." Molecular neurobiology 55.8 (2018): 6601-6636.

※Near-Infrared LED light penetrates skull and brain tissues 6 times higher than red LED.

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