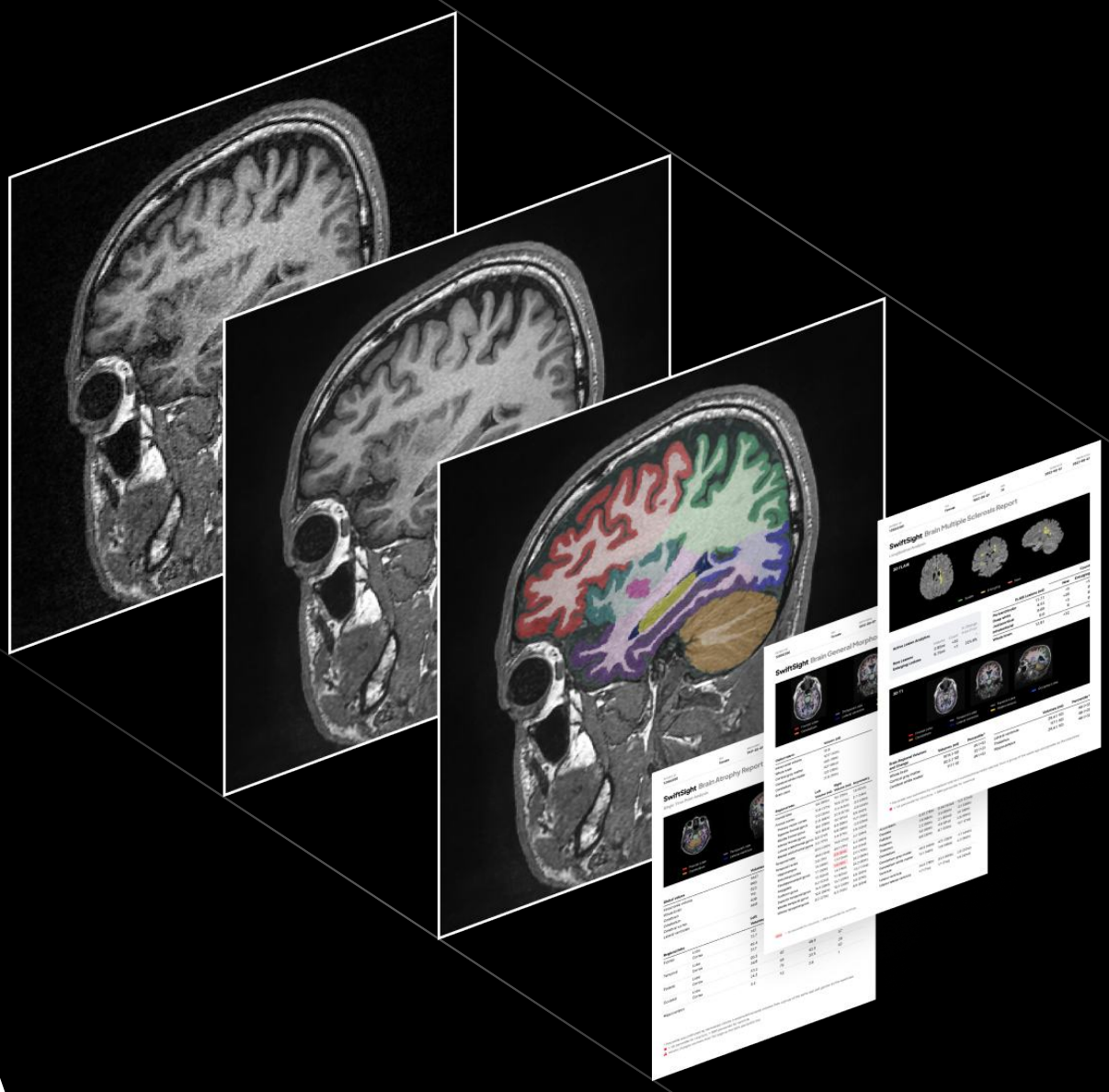
SwiftSight® – Brain

Measure the Patient.
Not the Scanner.

Consistent Quantitative MRI You Can Trust.



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The Measurement Problem

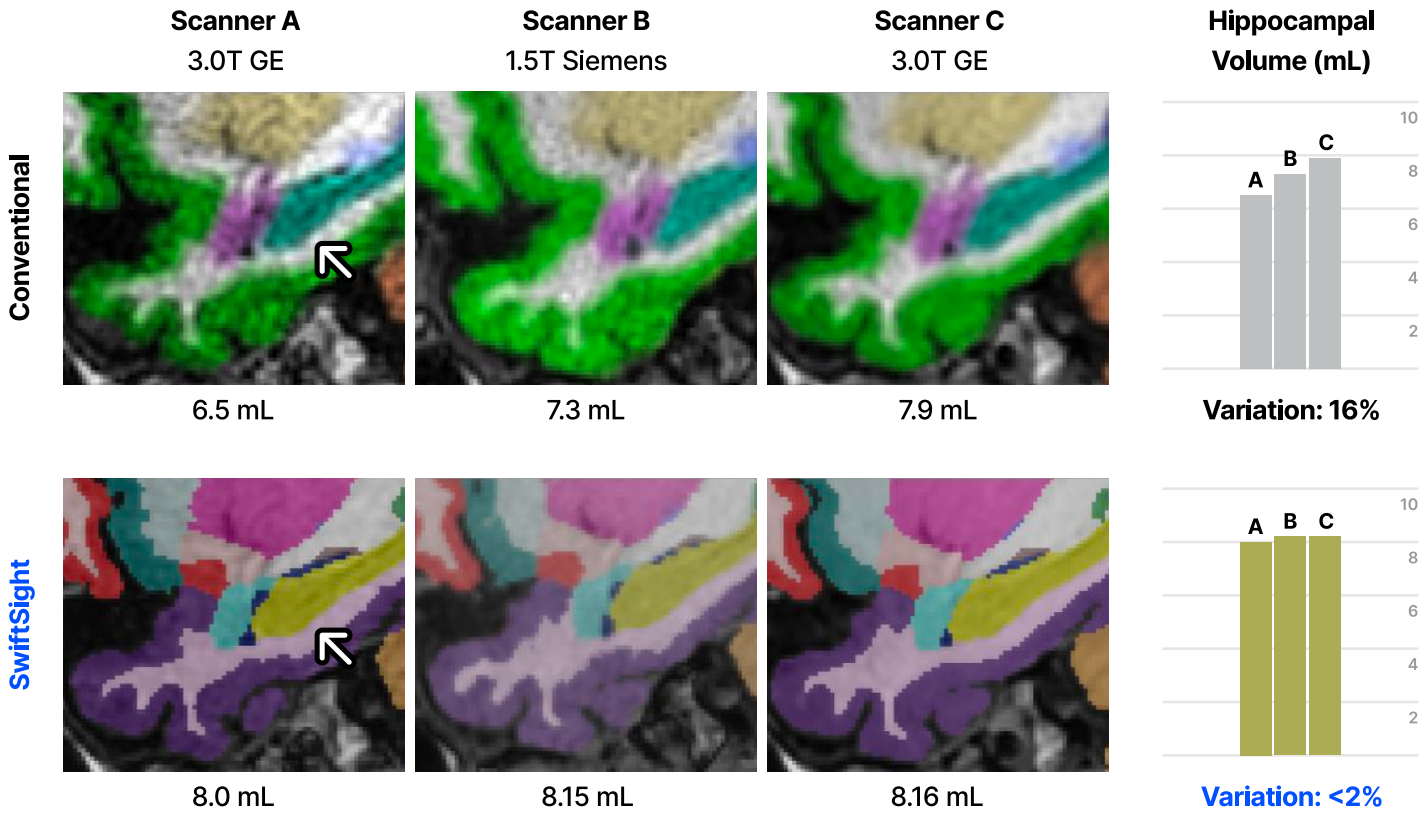
When the Measurement Changes, is it the Patient? Or the Scanner?

Quantitative MRI is becoming an increasingly important tool across a wide range of neurological disorders.

Patients are often scanned on different MRI systems throughout their care. Differences in manufacturer, field strength, acquisition protocol, and imaging site can introduce scanner variability into quantitative measurements.

For neuroradiologists, the challenge is determining whether a measured difference between exams reflects true disease change or scanner-related variability.

In the comparison below, SwiftSight-Brain reduced measurement variability across scanners from 16% to <2%, enabling more consistent quantitative brain measurements and more reliable longitudinal assessment across different scanners and field strengths.[1]



[1] Representative case example; individual results may vary.
For multi-scanner consistency data, see the SwiftSight-Brain Consistency Whitepaper.

Solving the Variability Problem

Reliable, reproducible brain volumetric measurement is the foundation.
The clinical value comes from what neuroradiologists can do with it.

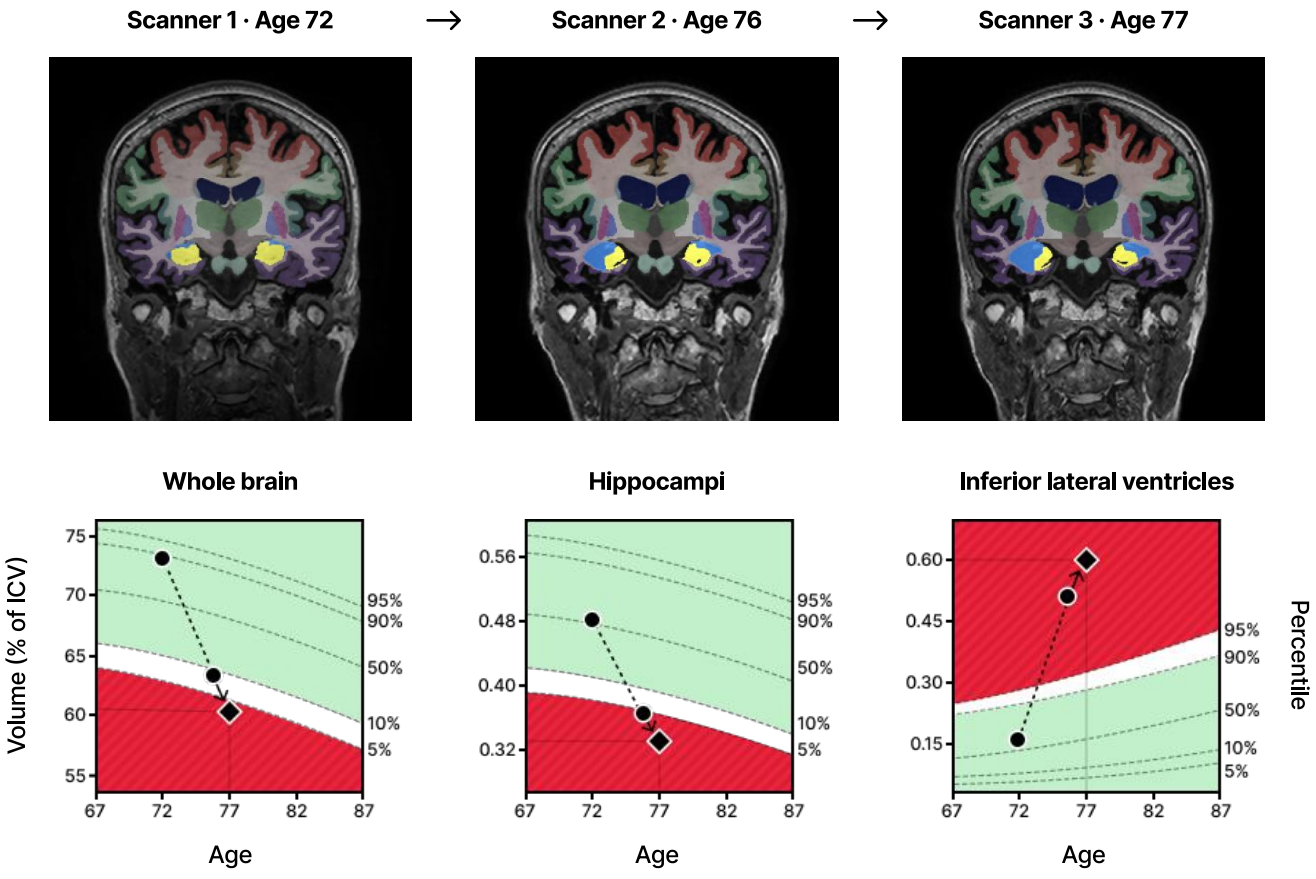
SwiftSight turns structural brain MRI into quantitative information that supports volumetric assessment, longitudinal tracking, and detailed regional analysis—adding objective context to visual interpretation. The following examples illustrate these capabilities.

1 Accurate volumetry

Track brain atrophy over time

Serial volumetry adds quantitative context to structural changes seen across follow-up MRI, even when exams are performed on different systems.

In this longitudinal case, SwiftSight–Brain quantifies declining whole-brain and hippocampal volumes alongside increasing inferior lateral ventricular volume from ages 72 to 77. Despite scans from three different vendors, SwiftSight produced a consistent, monotonic atrophy trajectory, without the scanner-induced volume variation that typically confounds longitudinal monitoring.[2]



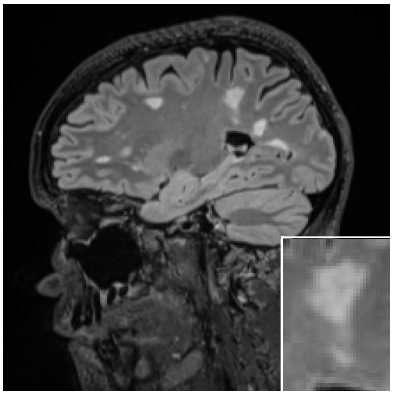
[2] Jung W, Suh J, Yang S, Chung I, Kim D, Yang J. SwiftSight-Brain Normative Database Whitepaper. AIRS Medical Inc; 2026.

2 Longitudinal consistency

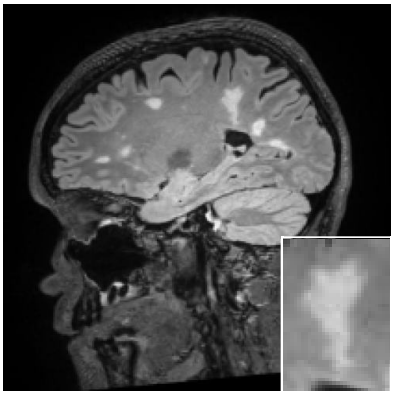
Quantify change across serial exams

Longitudinal assessment depends on confidence in change. Whether tracking lesion burden in MS or volume loss in neurodegenerative disease, clinicians need to know that an observed difference reflects true disease change, not limitations in image quality or visual interpretation.

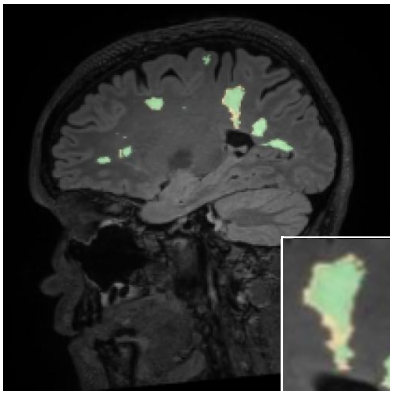
This patient was imaged one year apart on two different MRI systems: a Siemens Sola 1.5T at age 38 and a Siemens Vida 3T at age 39. In the third image, SwiftSight's objective lesion segmentation allowed for longitudinal quantification.



Siemens Sola 1.5T · Age 38



Siemens Vida 3T · Age 39



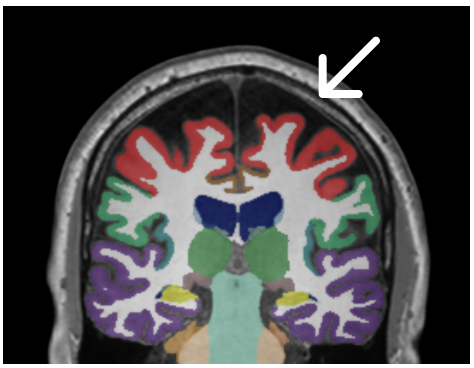
SwiftSight lesion segmentation

3 Advanced segmentation

Detailed region-level metrics reveal more

SwiftSight–Brain segments the brain at a finer level of anatomical detail, reporting lobar and cortical volumes separately and subdividing the brainstem, so atrophy patterns that cortex-level measurement miss become visible.

In the example below, cortical volumes across all four lobes fall within normal percentiles. But lobar measurement places the frontal lobe at the 6th percentile on the left and the 3rd on the right, consistent with the frontal atrophy visible on the scan.



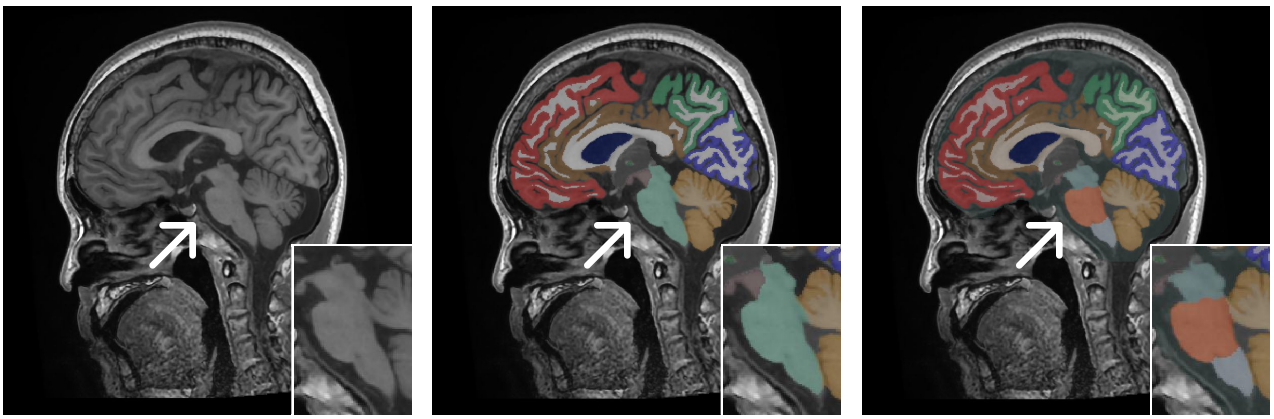
Measurement		Left vol. (mL)	Percentile	Right vol. (mL)	Percentile
Frontal	Lobe	145	6	142	3
	Cortex	78.6	36	76.7	26
Temporal	Lobe	88.2	11	90.9	27
	Cortex	56.9	27	59.6	53
Parietal	Lobe	99.0	13	101	12
	Cortex	52.6	45	54.1	50
Occipital	Lobe	45.6	42	41.8	15
	Cortex	25.8	61	23.5	24

4 Detailed anatomical segmentation

Quantify smaller structures

SwiftSight–Brain extends volumetric analysis beyond larger brain regions to smaller anatomical structures, including the midbrain, pons, medulla, and choroid plexus, with detailed cortical and subcortical segmentation.

This finer anatomical breakdown provides more localized quantitative information than whole-structure measurements alone.

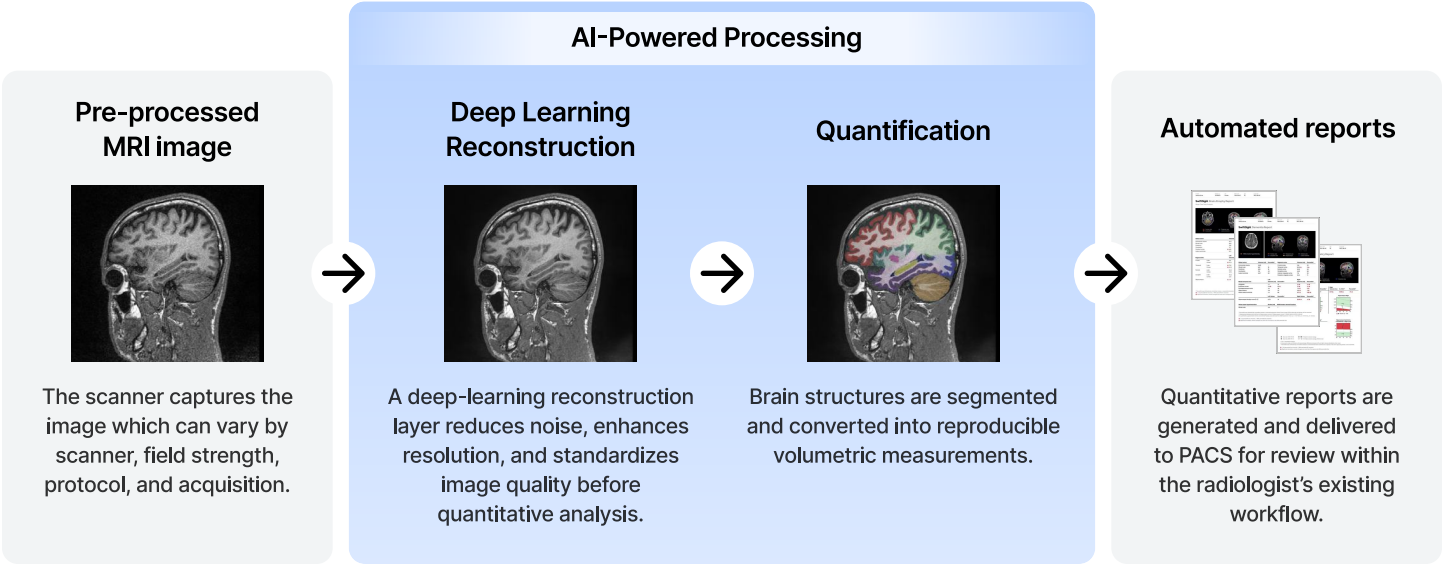


Input | Conventional | SwiftSight

Workflow Architecture

A single MRI initiates an AI workflow that standardizes the image, quantifies brain structures, & generates reports.

After images are received from the scanner, a deep-learning reconstruction layer reduces noise, enhances resolution, and standardizes image quality before quantitative analysis. SwiftSight then segments brain structures and generates reproducible volumetric measurements designed to remain consistent across scanners, field strengths, protocols, and imaging environments.[3] Quantitative reports are automatically generated and delivered to PACS.



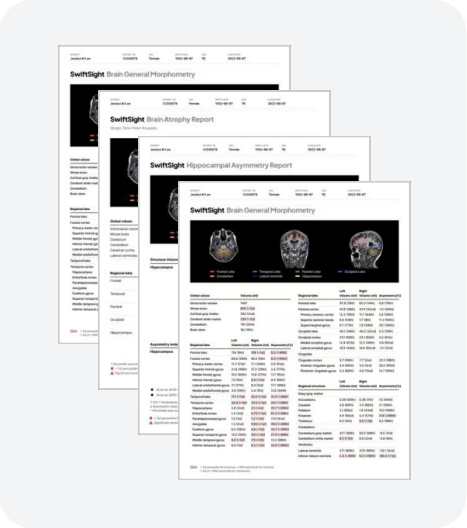
[3] Jung W, Suh J, Yang S, Chung I, Kim D, Yang J. SwiftSight-Brain Consistency Whitepaper. AIRS Medical Inc; 2026.

Reports

Automated Reporting, Integrated Into PACS

SwiftSight automatically generates quantitative reports and delivers them to PACS—bringing objective brain measurements directly into the radiologist's workflow.

Report availability may vary. Contact AIRS Medical for the most current selection.



Brain Atrophy Report

Longitudinal volume tracking with percentile comparisons across brain regions

Dementia Report

Regional volume analysis for Alzheimer's and related neurodegenerative conditions

General Morphometry Report

Comprehensive brain morphometry analysis providing global and regional volumetric assessment across brain structures

Multiple Sclerosis Report

Lesion tracking, volume changes, and longitudinal MS progression monitoring

Hippocampal Asymmetry Report

Quantitative assessment of hippocampal asymmetry for detecting lateralized structural abnormalities and supporting neurological diagnosis

Operational Benefits

Use the Full MRI Fleet

Schedule longitudinal follow-up based on scanner and site availability—not solely on where the baseline exam was performed.

Standardize Quantitative MRI across the Network

Reduce scanner-specific operational complexity by applying a consistent measurement approach across vendors, field strengths, and imaging locations.

Run Longitudinal Programs across Sites

Support brain-health and neurological monitoring programs across a distributed imaging network rather than tying patients to one scanner or facility.

Bring Quantification Into the Existing Workflow

SwiftSight automatically generates quantitative reports and routes results to PACS, putting structured measurements into the radiologist's established workflow.

Evidence and Validation

Built on Clinical Evidence

Reliable quantitative MRI begins with rigorous validation.

SwiftSight–Brain is supported by a large multi-vendor normative database and validation studies evaluating measurement repeatability and consistency across MRI systems, field strengths, and acquisition conditions.

SwiftSight-Brain Normative Database Whitepaper

Jung W, Suh J, Yang S, Chung I, Kim D, Yang J.
AIRS Medical Inc; 2026.

32,615 structurally normal subjects
18 – 97 age range of subjects
1,000+ subjects in every age & sex group

Built on a Robust Normative Database

Reliable quantitative brain measurements begin with a reliable reference population.

SwiftSight-Brain is supported by a normative database of 32,615 structurally normal subjects, ages 18–97, drawn from US and worldwide populations and acquired across Siemens Healthineers, GE Healthcare, and Philips MRI systems at both 1.5T and 3T using common clinical 3D T1 protocols.

Rather than relying on flexible curve fitting, SwiftSight-Brain uses a biologically motivated shifted-softplus model that reflects established patterns of age-related atrophy — including accelerated decline in later life and widening inter-individual variance with age.

What the Normative Framework Enables

- Age- and sex-adjusted percentile estimates normalized to total intracranial volume
- Stable, interpretable percentile trajectories across the adult lifespan
- Conservative abnormality thresholds to reduce over-interpretation of normal variation
- Regional and asymmetry percentiles that add context beyond absolute volume

SwiftSight-Brain Consistency Whitepaper

Jung W, Suh J, Yang S, Chung I, Kim D, Yang J.
AIRS Medical Inc; 2026.

0.45% test-retest CoV (n=4,565)
43% lower CoV vs conventional across 1.5T & 3T
33% lower CoV vs conventional, inter-scanner

Consistent Measurement Across Conditions

Reliable quantitative brain measurements must hold steady when the imaging environment changes.

SwiftSight-Brain was evaluated for measurement consistency across four dimensions of acquisition variation — repeat scans on the same scanner, field strength (1.5T vs 3T), scanner change, and in-plane resolution — using a large quality-controlled retrospective cohort and a prospective traveling-subjects study across Siemens Healthineers, GE Healthcare, and Philips platforms.

Consistency was quantified using the coefficient of variation (CoV) of repeated measurements and benchmarked against an established open-source volumetry pipeline on identical 3D T1-weighted scans.

Research Highlights

(mean CoV, SwiftSight-Brain vs conventional)

- Test–retest: 0.45% vs 0.64% (n = 4,565); ICC 0.97–1.00
- Field strength (1.5T/3T): 1.67% vs 2.92% (n = 189)
- Inter-scanner: 1.34% vs 1.99% (n = 327)
- Traveling subjects: 2.5% vs 5.4% (n = 6, 256 scans)

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Measure the Patient. Not the Scanner.

Discover how SwiftSight–Brain reduces measurement variability and enables more confident longitudinal brain assessment.

Scan the QR code to learn more.

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