Recordis™ for Strain

RECORDIS
Cardiac Sensor System

SCG-Derived Correlation with Global Longitudinal Strain

The Problem

Standard clinical markers such as ejection fraction are relatively insensitive to early myocardial dysfunction. A large proportion of patients with evolving cardiac disease appear "normal" by conventional assessment, even as pathologic changes are already underway [1]. Changes in heart function often begin silently — the heart muscle and left atrium can lose strength or flexibility years before symptoms develop.

Global longitudinal strain (GLS) and left atrial strain help close this gap. Strain measures how well the heart muscle stretches and shortens with each heartbeat, and can reveal early dysfunction before traditional markers become abnormal [2]. GLS has demonstrated clinical value across valve disease, cardiomyopathy, and heart failure. In cardio-oncology, assessing strain prior to chemotherapy provides insight into risk of treatment-related cardiac damage — now reflected in ESC guidelines [3, 4]. Large-scale, multi-centre research studies are increasingly adopting strain as a primary marker of heart function over ejection fraction [5].

The barrier is access. Measuring strain requires speckle-tracking echocardiography — expensive equipment, trained operators, and significant analysis time per patient. Availability is largely limited to specialized centres, making strain impractical for routine monitoring, longitudinal follow-up, or broad population use. If strain-level insight could be made scalable and operator-independent, clinicians could monitor early cardiac dysfunction over time and focus advanced imaging on the patients who need it most.

Recordis Cardiac Signal Analysis

Recordis is a seismocardiography system that captures cardiac mechanical signals — including amplitude and timing markers linked to contractile function — through a non-invasive sensor placed on the base of the sternum. Recordings take under 60 seconds, require minimal operator training, and are processed by an independent algorithm that removes traditional operator variability.

Our research is investigating the correlation between SCG-derived amplitude markers captured by Recordis and echocardiography-derived GLS measurements. The hypothesis: specific features of the SCG waveform — particularly those related to cardiac twist, untwist, and contractile force — may correlate with strain values obtained through speckle-tracking echo, potentially offering a scalable, reproducible measurement that clinicians could use alongside imaging-derived strain data.

This work builds on Recordis's potential to monitor cardiac cycle markers in patients with aortic stenosis following transcatheter aortic valve implantation (TAVI), demonstrating expected changes as compared to known echocardiographic findings [6].

The Evidence

Our preliminary research, presented at SCAI 2026, demonstrates a significant correlation between SCG-derived amplitudes and echocardiography derived GLS.

Metric	Population	Average GLS	Male Subgroup Correlation	Female Subgroup Correlation
Result	27 healthy participants (35 ± 11 years; 33% female) with no known cardiac disease	-21 ± 3%	Spearman ρ = -0.90, p<0.0001	Spearman ρ = -0.84, p<0.0001

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Investigational Use Only Under FDA Review

Commercial validation being planned in rural Canada. Studies exploring cardiac data applications in chronic disease prevention, triage optimization, and resource allocation efficiency.

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Study design: Prospective, observational, correlational. 1-minute Recordis recording prior to echocardiogram. SCG amplitude produced by the twisting and untwisting of the left ventricle was captured for each participant and correlated with echo-derived GLS.
This preliminary data suggests a strong correlation between Recordis and echocardiogram-derived GLS. External validation in clinical populations — including patients with cardiac disease — is the critical next step.

Clinical Relevance

For Clinicians: If validated across disease populations, SCG-derived strain correlation would provide clinicians with a rapid, standardized method to monitor changes in cardiac contractile function — particularly valuable in cardio-oncology, where serial strain monitoring is guideline-recommended but access to speckle-tracking echo is often limited. Recordis does not replace echocardiographic strain assessment; our research is investigating whether it may provide supporting data between imaging studies.

For Researchers & PIs: Strain is increasingly adopted as a primary outcome in clinical trials, but echocardiographic strain measurement creates cost, compliance, and scalability barriers in multi-site studies. Recordis is portable, operator-independent, and integrates into existing protocols with minimal burden. Multi-site research deployment is already operational across partnerships in New York, San Francisco, and Calgary.

For Industry & Pharma: Pharmaceutical trials evaluating cardiac effects of novel therapeutics — particularly in oncology — increasingly require serial strain monitoring. Recordis may offer a scalable, standardized data source that could supplement imaging endpoints at distributed trial sites, reducing per-patient imaging cost and supporting follow-up compliance.

Ongoing Validation

Our SCAI 2026 poster presents initial correlation data in healthy participants. The next phase extends this work into clinical populations — including patients with cardiac disease undergoing strain assessment as part of routine care. Broader validation is included in the ongoing 500+ patient multi-site study across clinical sites in New York and San Francisco, with core lab echocardiographic analysis in Quebec.

We are actively seeking research collaborators — particularly in cardio-oncology, cardiomyopathy, and heart failure, where longitudinal strain monitoring is clinically important but difficult to scale. If your institution or your trials could benefit from standardized, reproducible SCG-derived cardiac data, contact us at the booth or through the QR code below.

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