

LVivo Cardiac Toolbox on Suitestensa CVIS® AI-based Cardiac Ultrasound Analysis in One Click

DiA Imaging Analysis has partnered with the Ebit (Esaote Group), to offer DiA's LVivo Cardiac Toolbox as an integrated part of Ebit's Suitestensa CVI PACS.

Cardiac ultrasound imaging analysis is usually done through either visual estimation or manually, making the process subjective, error-prone and dependent on the user's experience.

Quantified and reproducible cardiac analysis

LVivo AI-based solutions automate the ultrasound analysis process, enabling clinicians to quickly and easily assess cardiac function, with reduced variability, increased efficiency and improved accuracy.



Objective and Automated
vs. subjective manual or visual analysis



Faster evaluation
AI enables quick results to alleviate bottlenecks



Vendor neutral
Supports DICOM images from any ultrasound device



Cost effective
Unlimited number of LVivo users on site



LVivo EF

Quantified Ejection Fraction Analysis in One Click

Ejection fraction (EF) is a key indicator for global function of the left ventricle (LV) in patients presenting with shortness of breath, suspected heart failure or cardiogenic shock.



After acquiring 4CH and/or 2CH, LVivo EF immediately delivers analysis, supporting single clips and biplane analysis for each beat separately to present:

- Edge detection of the LV endocardial border in motion
- Ejection Fraction (EF)
- End-Systolic Volume (ESV)
- End-Diastolic Volume (ED)
- Global Longitudinal Strain (GLS)
- Stroke Volume (SV)

Key features

- Beat Selection
- Manual border adjustment
- Manual initiation in case of failure

“DiA’s automated software gives us the Ejection Fraction. It is reliable and it is fast. What we get from the DiA software is an accurate, fast measurement of EF”

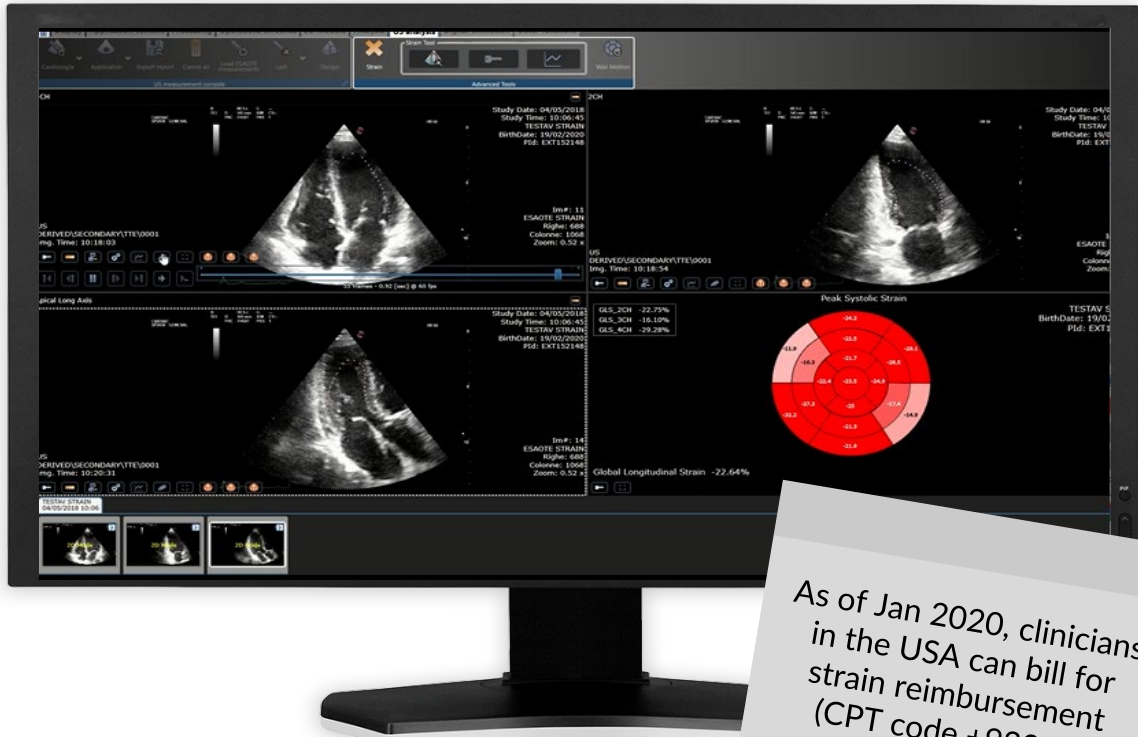


Steven Feinstein, M.D
Cardiology Department

LVivo Strain

Quantified Global and Segmental Strain Analysis in One Click

Strain is a key indicator for monitoring subclinical Left Ventricle (LV) dysfunction, important in cases of cardiotoxicity, chemotherapy-treated patients, follow up after coronary events and prior to aortic stenosis valve replacement surgeries.



As of Jan 2020, clinicians in the USA can bill for strain reimbursement (CPT code +93356)

LVivo Strain – on every workstation

LVivo Strain provides objective and fully automated global and segmental strain analysis to support existing clinical workflows.

After selecting each or all of the 3 apical views, LVivo Strain generates an auto-analysis of the global and segmental strain for each view to present:

- Bullseye diagram segmental strain color-coding and scoring for the 17 LV muscle segments
- Strain graph presentation for each segment
- GLS scoring index
- Endocardial border in motion divided into segments

Key features:

- Beat selection
- Manual border adjustment
- Manual initiation in case of failure

LVivo Segmental Wall Motion (SWM)

Quantified 2D SWM Analysis in One Click

Segmental Wall Motion (SWM) provides information about the contraction and strain of the various Left Ventricle (LV) segments. Identifying abnormalities is especially important during and after coronary events, and for early disease detection and monitoring in patients with coronary artery disease.



LVivo SWM: The first and only quantified 2D SWM analysis

LVivo SWM uses machine learning algorithms based on 12 features of motion and displacement of each segment to provide segmental scores.

After acquiring the 3 apical views each or all, LVivo SWM generates an auto analysis of SWM to present:

- Bullseye diagram with color-coding and scoring of the 17 LV muscle segments
- SWM graph presentation for each segment
- Segmental Score index
- Endocardial border in motion divided into segments

Key features:

- Beat Selection
- Manual border adjustment

LVivo AI solutions during COVID-19

How COVID-19 affects the heart

Recent data from COVID-19 frontlines show that heart issues were a frequent cause of death for 50% of COVID-19 patients.¹

ASE and EACVI recommend performing limited echo exams on COVID-19 patients at point-of-care, to monitor patients' Left Ventricle and detect dysfunction.^{2, 3}

The new normal

As the number of COVID-19 cases decrease, the number of echo procedures is expected to increase, creating a load on sonographers and echocardiographers.

LVivo Toolbox automates the cardiac analysis process for all echo exams, with objective and reproducible results

LVivo AI solutions on Suitestensa CVIS help to:



Automated workflow enables quick analysis of cardiac function



Minimized patient contact and risk of infection



Shorter measurement time reduces patient bottlenecks



"In the new COVID normal, sonographers and echocardiographers will face a new challenge in coping with increased procedures in the echo lab while supporting patients on the frontlines. AI-based tools like LVivo can help alleviate bottlenecks by automating workflows and shortening evaluation times to support faster decisions and minimize unnecessary risk of exposure to COVID19."



Dr. Noah Liel Cohen,
Department of Echocardiology

1. Shi S, Qin M, Shen B, et al. Association of Cardiac Injury With Mortality in Hospitalized Patients With COVID-19 in Wuhan, China. *JAMA Cardiol*. Published online March 25, 2020. doi:10.1001/jamacardio.2020.0950
2. ASE statement on COVID-19, March 2020
3. COVID-19 pandemic and cardiac imaging: EACVI recommendations on precautions, indications, prioritization, and protection for patients and healthcare personnel, *European Heart Journal - Cardiovascular Imaging*, April 2020