LVivo Cardiac Toolbox on Acclarix
Empower Ultrasound Users with AI

Edan Instruments has partnered with DiA to make its AI-based cardiac ultrasound LVivo Cardiac Toolbox available on the Acclarix ultrasound system.

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

LVivo AI solutions – Immediate results, in just one click

LVivo cardiac solutions provide automated AI-based analysis to support ultrasound users with varying levels of experience, resulting in reduced variability and increased efficiency and accuracy throughout the analysis process.

Objective & Automated
vs. subjective manual or visual analysis, supports clinicians with varying levels of experience

Shorter measurement time
Quick results, reduces load on medical staff and bottlenecks

At point-of-care
Easy patient monitoring at bedside and minimized risk of exposure to infection

Strain reimbursement
Physicians in the USA can report and bill for strain as of Jan 2020 (CPT code +93356)

No ECG required – to run LVivo AI analysis

LVivo EF
Quantified Ejection Fraction Analysis in One Click

Ejection fraction (EF) is a key indicator for global function of the left ventricle (LV) and a key driver of clinical decisions at the point of care (POC).

Clinical value:
Measured in patients presenting with:
- shortness of breath
- suspected heart failure
- chest pain
- cardiogenic shock

LVivo EF
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

"The use of LVivo reduces the variability associated with subjective visual ultrasound analysis and can accurately and effectively support users in their decision-making process."

**Ziv Dadon, M.D**
Cardiology Department

LVivo Strain
Quantified Strain Analysis in One Click

Strain provides information about the contraction and myocardial strain, and is an early indicator of reduced Left Ventricle (LV) function.

Clinical value:
Identifies clinical abnormalities
- Before & after coronary events
- Before aortic stenosis valve replacement surgeries
- In patients undergoing chemotherapy
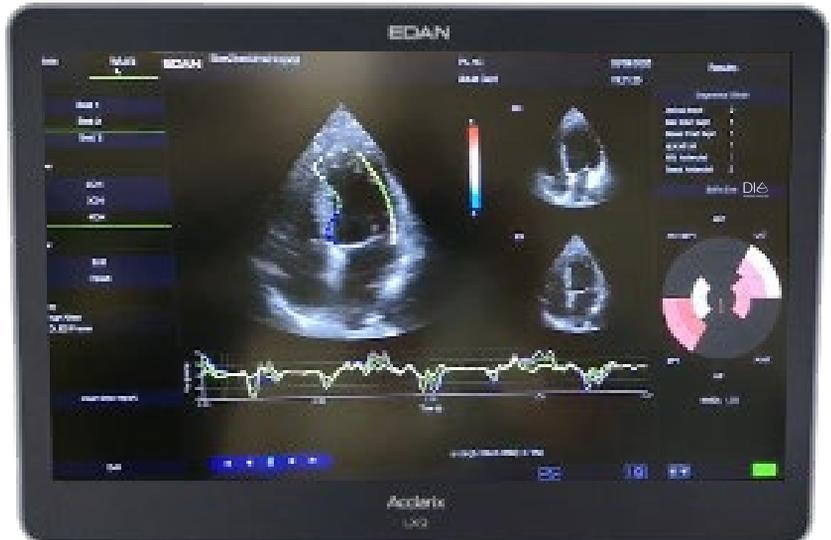
LVivo Strain

LVivo Strain provides objective and fully automated global and segmental strain analysis to detect clinical abnormalities in LV function.

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:
- Border points for every frame
- Endocardial border divided into segments
- Strain graph presentation
- "Bullseye" diagram with segmental strain and color coding for the 17 LV muscle segments
- GLS

Key features:
- Beat selection
- Manual border adjustment
- Manual initiation in case of failure

"This is an automated presentation and the analysis is almost instantaneous with the strain image displayed on the bottom. It's a remarkable tool"

Steve Feinstein, M.D
Cardiology Department, Rush University Medical Center

LVivo SWM
Quantified Segmental Wall Motion Analysis in One Click

Segmental Wall Motion (SWM) provides information about the contraction and strain of the various Left Ventricle (LV) segments.

Clinical value:
Identifies clinical abnormalities
- Before & after coronary events
- Early disease detection
- 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 has the potential to provide accurate and objective quantification to support decision-making right at the patient bedside, saving time and resources."

Martin Goldman, M.D
Cardiology Department, Mount Sinai Hospital

LVivo AI solutions on the frontline

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]

LVivo AI solutions help to:

- Automated workflow enables quick analysis of cardiac function
- Minimized patient contact and risk of infection
- Shorter measurement time reduces patient bottlenecks

The new normal in POCUS

As the number of COVID-19 cases decrease, POCUS procedures will increase. New protocols recommend minimizing contact with patients and shortening scan time to minimize risk of infection.

LVivo Toolbox automates the cardiac analysis process, with objective and reproducible results

"LVivo EF makes it possible for clinicians to quickly, accurately and safely analyze COVID-19 patients' cardiac function at bedside."

**Evan (Avi) Alpert, M.D
Department of Emergency Medicine**

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*

**DiA
IMAGING ANALYSIS**

To learn more about DiA's LVivo AI solutions on Acclarix, click here