



Digital Stethoscope



3 Lead EKG



12 Lead EKG



Echocardiogram



CARDIOSLEEVE

Visualize HEART MURMUR

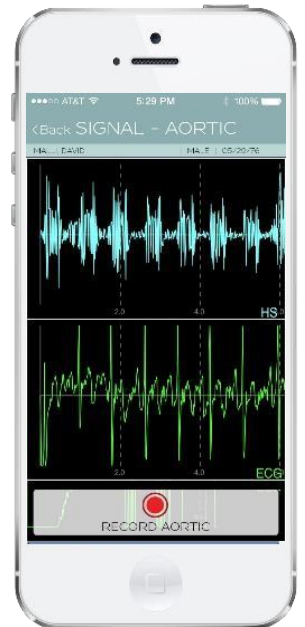
Synchronized Digital Auscultation with ECG allows for visualized heart sound and Murmur Detection.

Analyze HEART RHYTHM

Records High-Fidelity 3- Lead ECG tracings with a digital caliper to be viewed and analyzed on a connected device.

Identify HEART FAILURE

Detects heart failure at any point of care.



i2Dtx CardioSleeve is the first FDA Cleared stethoscope attachment device for clinicians to acquire 3-Lead ECG and Digital Heart Sound at any point of care.

It enhances the traditional stethoscope by recording, displaying and analyzing ECG and acoustical footprints, synchronized, in real time to any wirelessly connected portable device.

MURMUR DETECTION

3 LEAD ECG

CARDIAC FUNCTION

CLOUD EMR

STETHOSCOPE COMPARISONS

Traditional Stethoscope

- **No** heart murmur detection
- **No** ECG
- **No** arrhythmia detection/analysis
- **No** heart failure identification
- **No** visualizer
- Limitation of human hearing
- User dependent
- Reduced bedside skills
- Lack of objectivity
- Lack of confidence
- Unnecessary referrals
- Medical errors
- Resort to more expensive diagnostics

Electronic Stethoscope

Traditional stethoscope plus:

- Amplification only
- Audiovisual display requires additional software for desktop or laptop

CardioSleeve

- **Heart Sound visualizer: See what you hear**
- **Digitized heart sound with noise filtering**
- **Murmur assessment with more than 90% accuracy**
- **Murmur detection even at heart rates up to 180 bpm**
- **Comparison with a previously recorded murmur**
- **3 lead ECG with arrhythmia analysis**
- **Identify Heart Failure**
- Attachment to any standard stethoscope
- Maintain stethoscope functionality
- Smartphone, Tablet compatible
- Bluetooth Connectivity
- Record, store and forward findings
- Trend analysis
- Cloud based analysis and EMR
- Instant assurance to the patient with printed report
- Avoid Malpractice
- HIPPA compliant
- FDA cleared
- Telemedicine
- Transport, Airlines,
- Catastrophes, Clinics,
- Any point of care



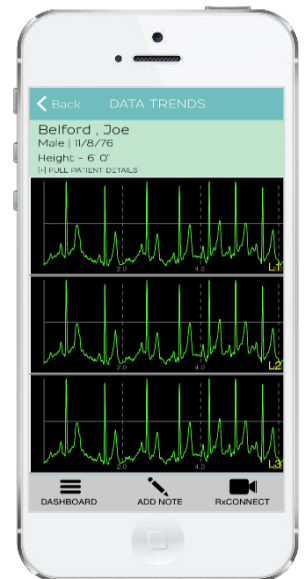
ECG COMPARISONS

12 Lead ECG

- Weighs up to 5 lbs.
- Disposable sticky electrodes
- Skin rash if patient allergic to gel
- Procedure takes ~ 15 minutes
- Not Paperless
- Not cloud based
- No Trend Analysis
- Requires a technician
- Not easily accessible at any point of care
- Not cost effective

CardioSleeve 3 Lead ECG

- **Portable ~ 2 oz.**
 - **Dry-contact sensors, Non allergenic, No gel**
 - **Takes less than 5 minutes**
 - **Paperless**
 - **High fidelity Digital recording**
 - **Pinch and zoom mechanism**
 - **Digital caliper**
 - **Trend Analysis**
 - **Comparison with a previously recorded rhythm**
 - **Recording and archiving the findings**
 - **Instant assurance to the patient and printed report**
 - **Transport, Airlines, Catastrophes, Clinics,**
 - **Any point of care**
-
- Smartphone, Tablet compatible
 - Bluetooth Connectivity
 - Cloud based analysis and EMR
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- HIPPA compliant for Telemedicine
 - FDA cleared for Quality assurance
 - Telemedicine
 - Cost efficient



ECG INDICATION COMPARISONS

12 Lead ECG

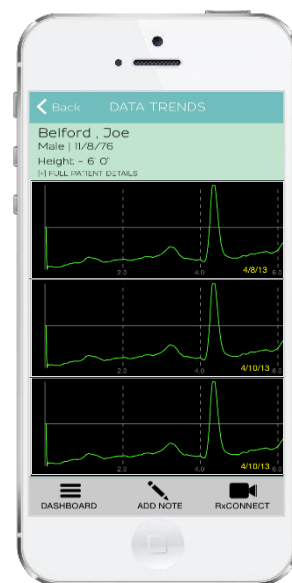
- Myocardial Ischemia
- Anterior wall MI
- Lateral wall, Inferior wall MI
- Heart enlargement

CardioSleeve 3 Lead ECG

- A single ECG lead is sufficient to diagnose cardiac arrhythmia, metabolic disturbance, monitor drug effects, measure intervals and QTc, or check a pacemaker rhythm (12 lead ECG not necessary)
- Sudden cardiac death rate in US is more than 600, 000 per year. Up to 50% of patients have sudden death as the first manifestation of cardiac disease. CardioSleeve allows for cost-effective preventivescreening.

Instant detection at any point of care:

- Cardiac arrhythmia
- Metabolic disturbance
- Drug induced alterations
- Atrial fibrillation detection 99% (Physical exam sensitivity 66%) for stroke prevention
- Risk of sudden cardiac death: QTc screening
- Myocardial Ischemia
- Inferior wall MI (Lead II, III)
- Lateral wall MI (Lead I)



ECHOCARDIOGRAM COMPARISONS

Echocardiogram

- Weighs up to 200lbs
- Usually takes ~ 45 minutes
- Accessible only at Hospitals or Clinics
- Not easily accessible at any point of care
- Requires a technician
- Not cost effective
- Diagnostic

CardioSleeve SPI

(Systolic Performance Index)

- Portable ~ 2oz
- Dry-contact sensors, Non allergenic, No gel
- Takes less than 5 minutes
- Paperless
- High fidelity ECG recording
- Digital heart sound recording
- Any point of care
- Trend Analysis
- Smartphone, Tablet compatible
- Bluetooth Connectivity
- Recording and archiving the findings
- Cloud based analysis and EMR
- Instant assurance to the patient and printed report
- HIPPA compliant
- Telemedicine
- Cost effective
- Prognostic
- **Monitor Heart Failure**
- **Resolve indeterminate BNP values**
- **Misdiagnosis correction: Heart failure often diagnosed as Pneumonia and COPD**
- **Monitor cardiotoxic chemotherapy**
- **Mass screening large populations**
- **Monitor heart transplant rejection without endocardial biopsy**
- **Monitor drug therapy for Heart Failure**
- **Assess ventricular function in Uremia, Sleep apnea, Diabetes, Hypertension and Coronary Artery Disease**
- **Recognition of myocardial ischemia and the development of LV dysfunction**
- **Most potent independent prognostic factor in acute MI, in relation to the development of heart failure and cardiac events**
- **Strong predictive value in relation to the severity of coronary artery disease**



EJECTION FRACTION

Echocardiogram

- Not easily accessible at any point of care
- Requires a technician
- Ejection fraction affected by age, heart rate, pre-load, afterload, atrioventricular valve regurgitation or geometry of the heart.

CardioSleeve SPI

(Systolic Performance Index)

- Easy, noninvasive and reproducible
- Pure number calculated from the ratio of time intervals
- Not affected by age, heart rate, blood pressure, preload, atrioventricular valve regurgitation or geometry of the heart
- Strong inverse relation with ejection fraction, the higher the value of SPI, the lower the ejection fraction and *vice versa*.
- Sensitivity and specificity of SPI value < 0.66 for predicting an LVEF value (EF) $> 55\%$ is 100% and 90.9 % respectively.

