

29th Two Days in Cardiology

Cardiovascular Disease 2030
Predicting the next decade : ARRHYTHMIA

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Siriraj Hospital, Mahidol University



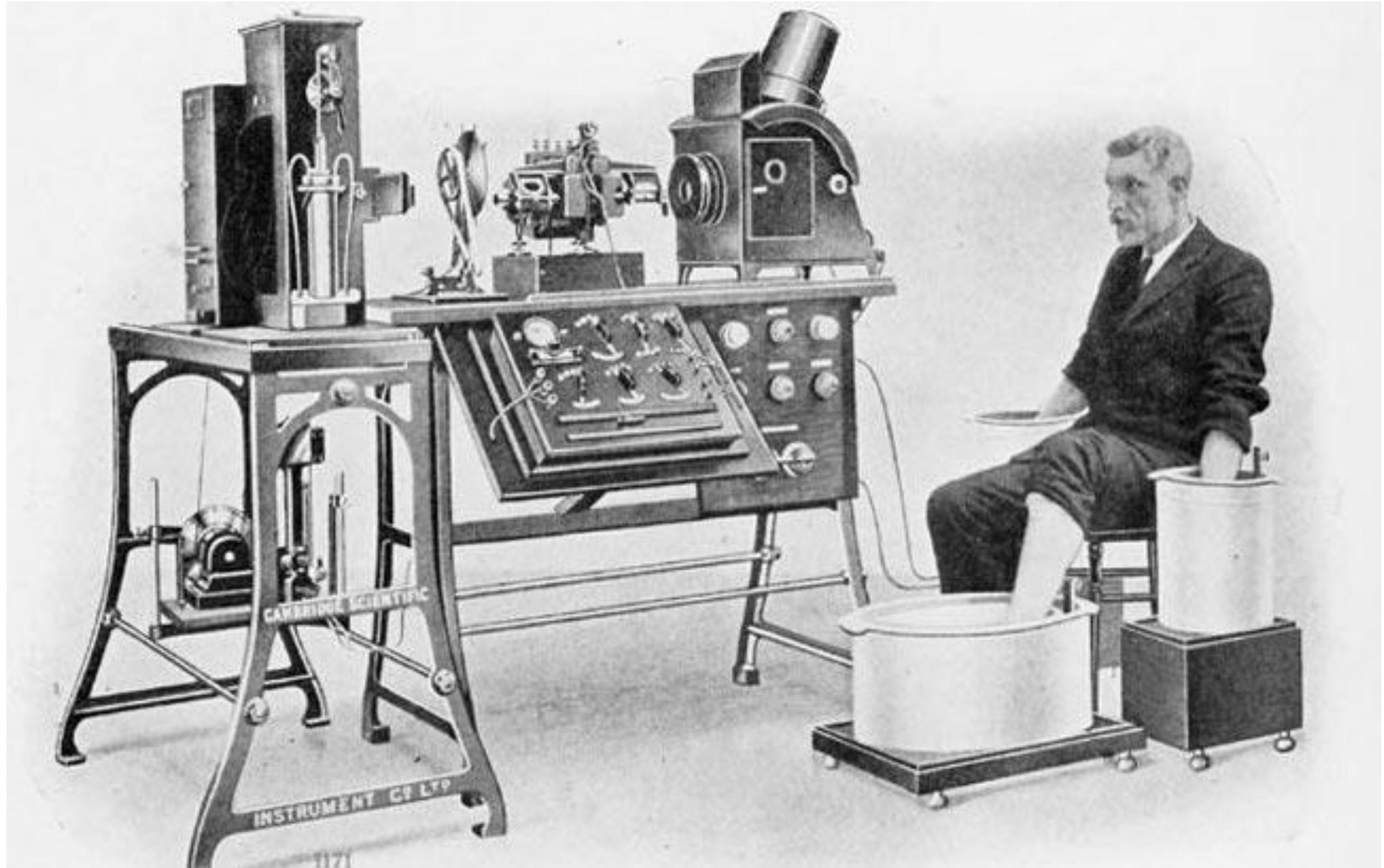
Cardiovascular Disease 2030

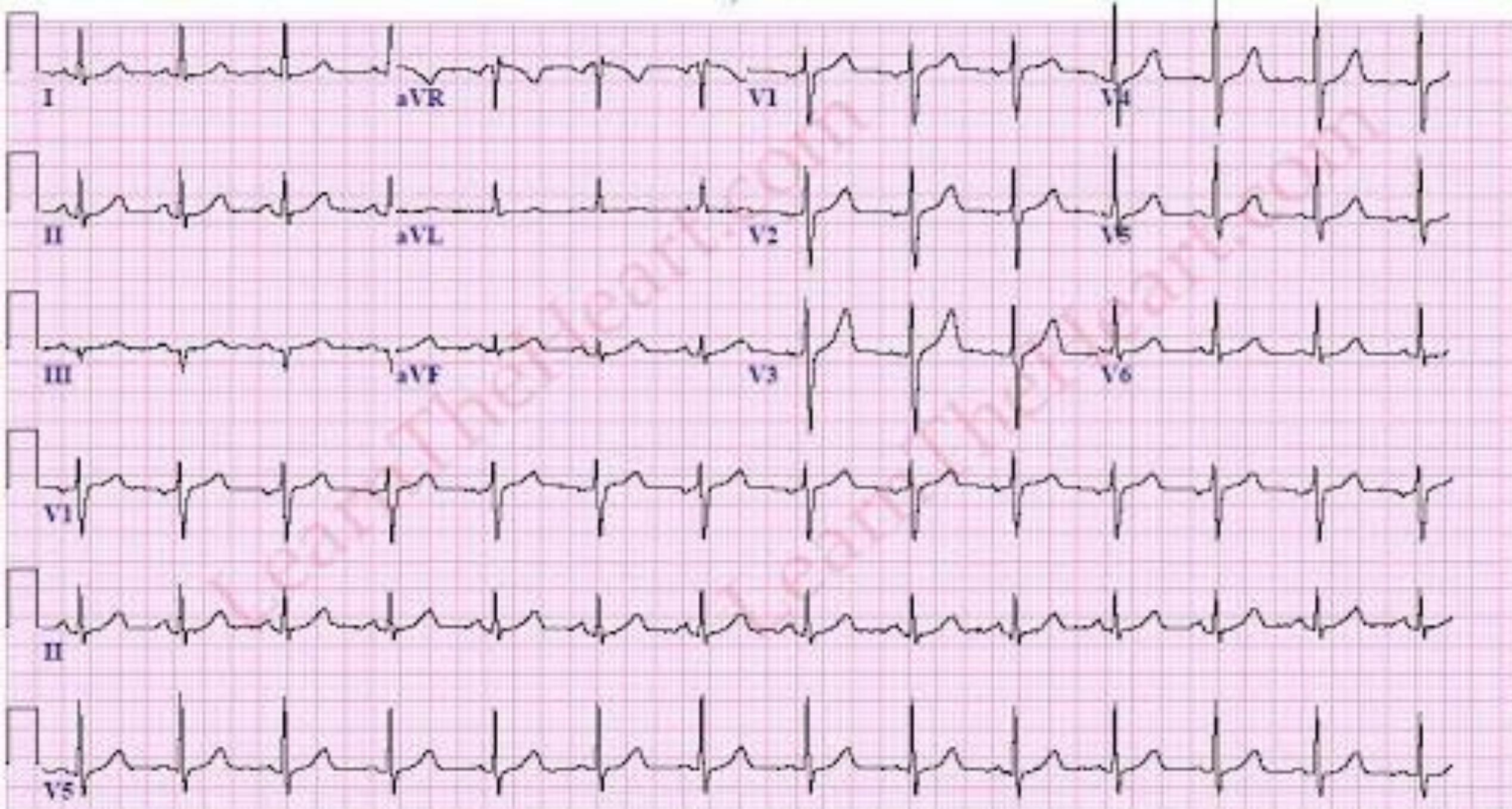
Predicting the next decade : Arrhythmia

- Screening, Detection and Monitoring

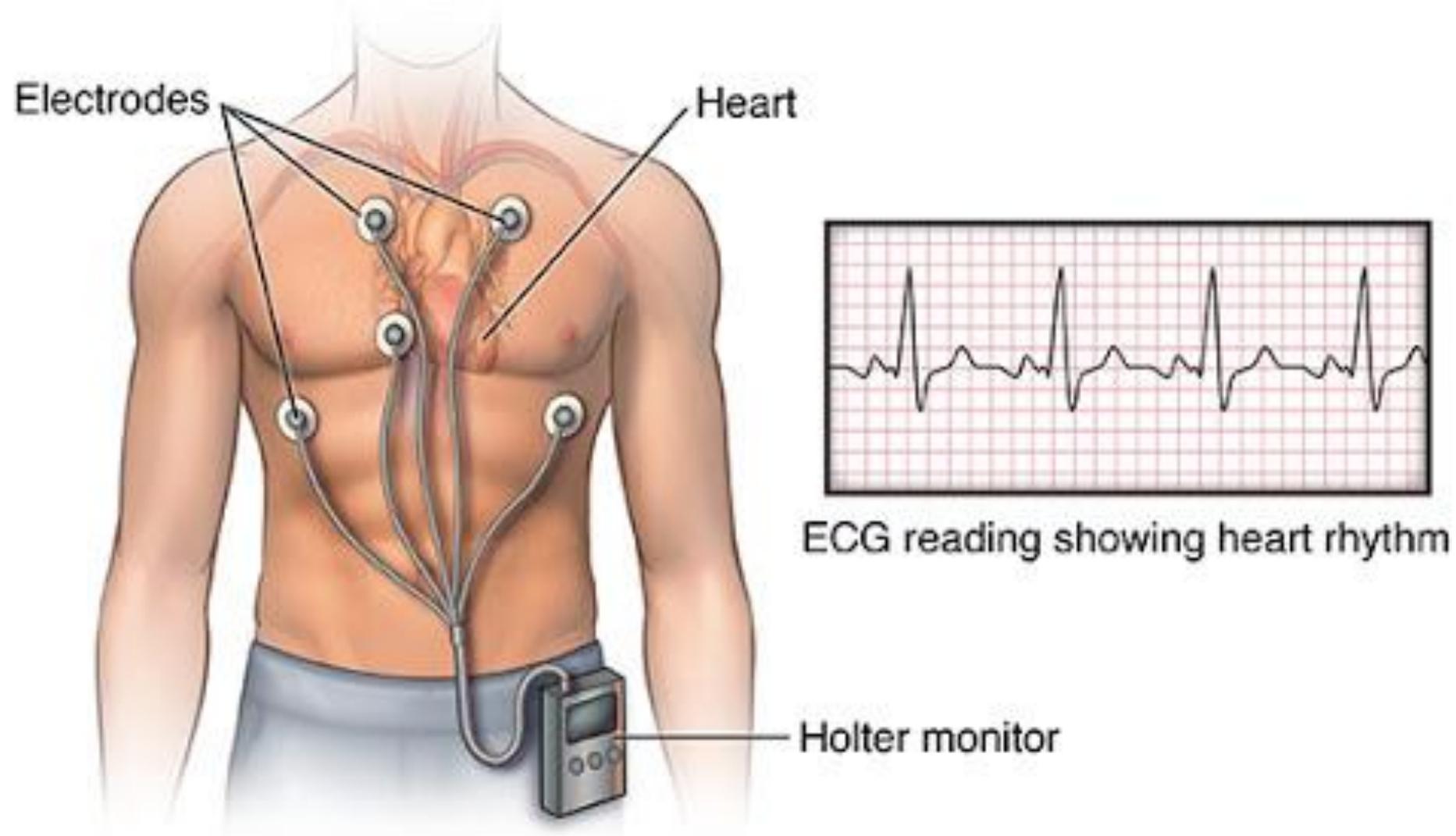


Einthoven : recording of a patient using 3 standard leads





Holter monitor with ECG reading

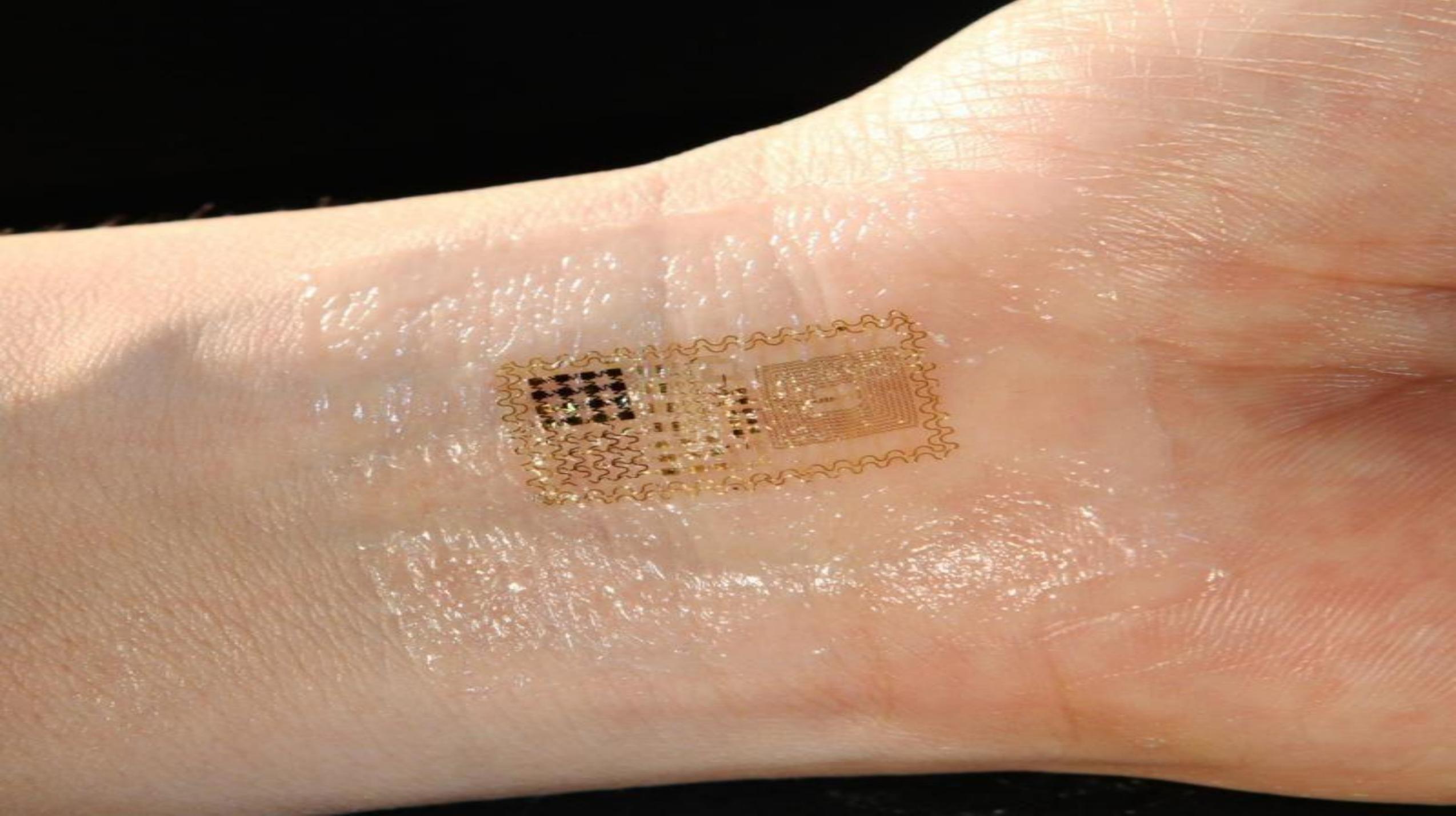


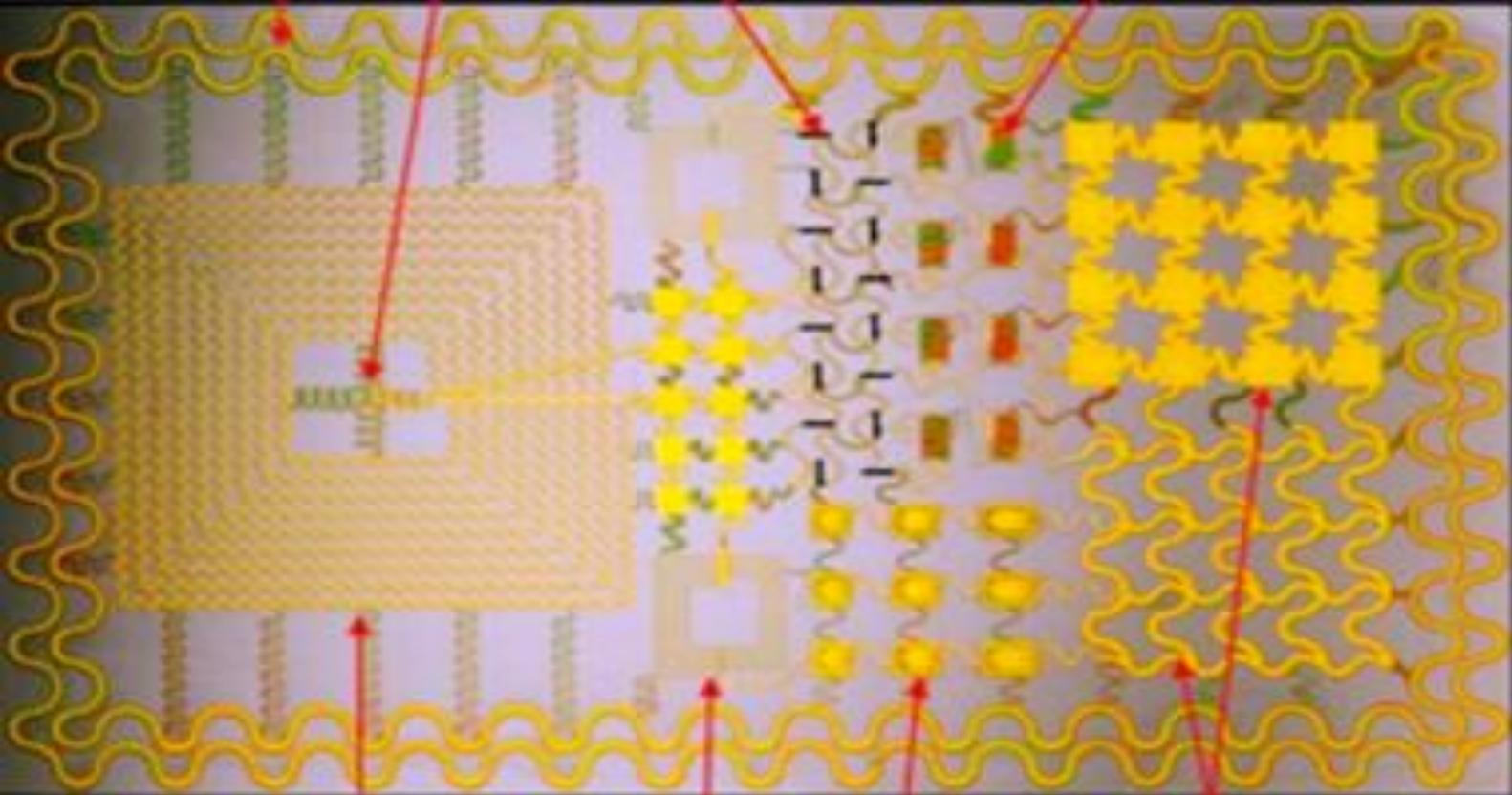




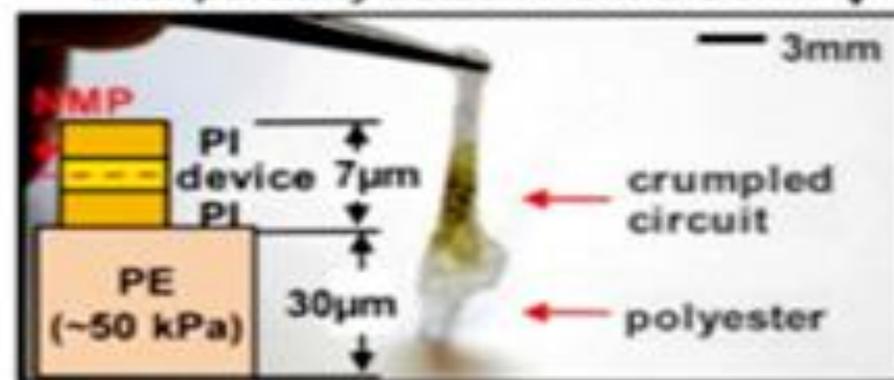








after partially detach from the skin ↓



after fully detach from the skin

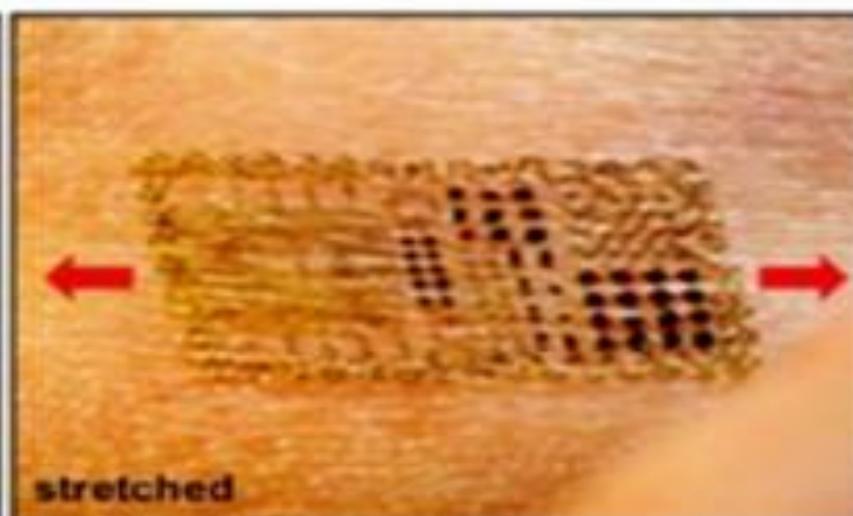
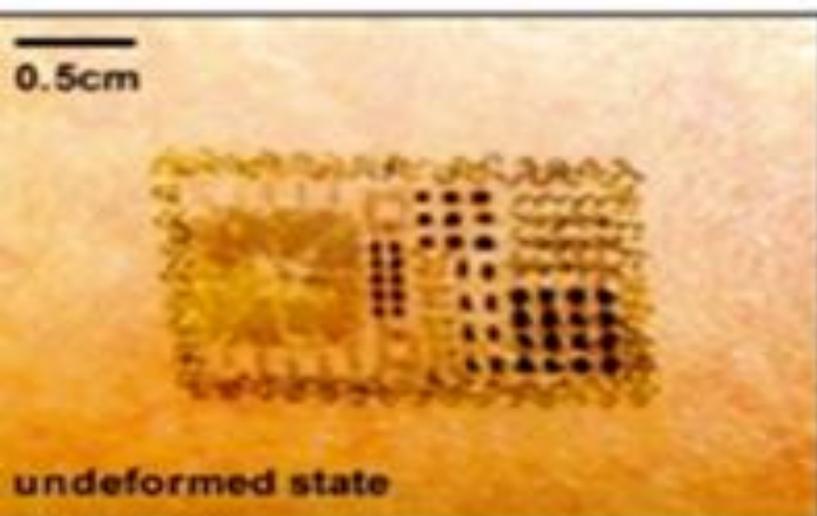
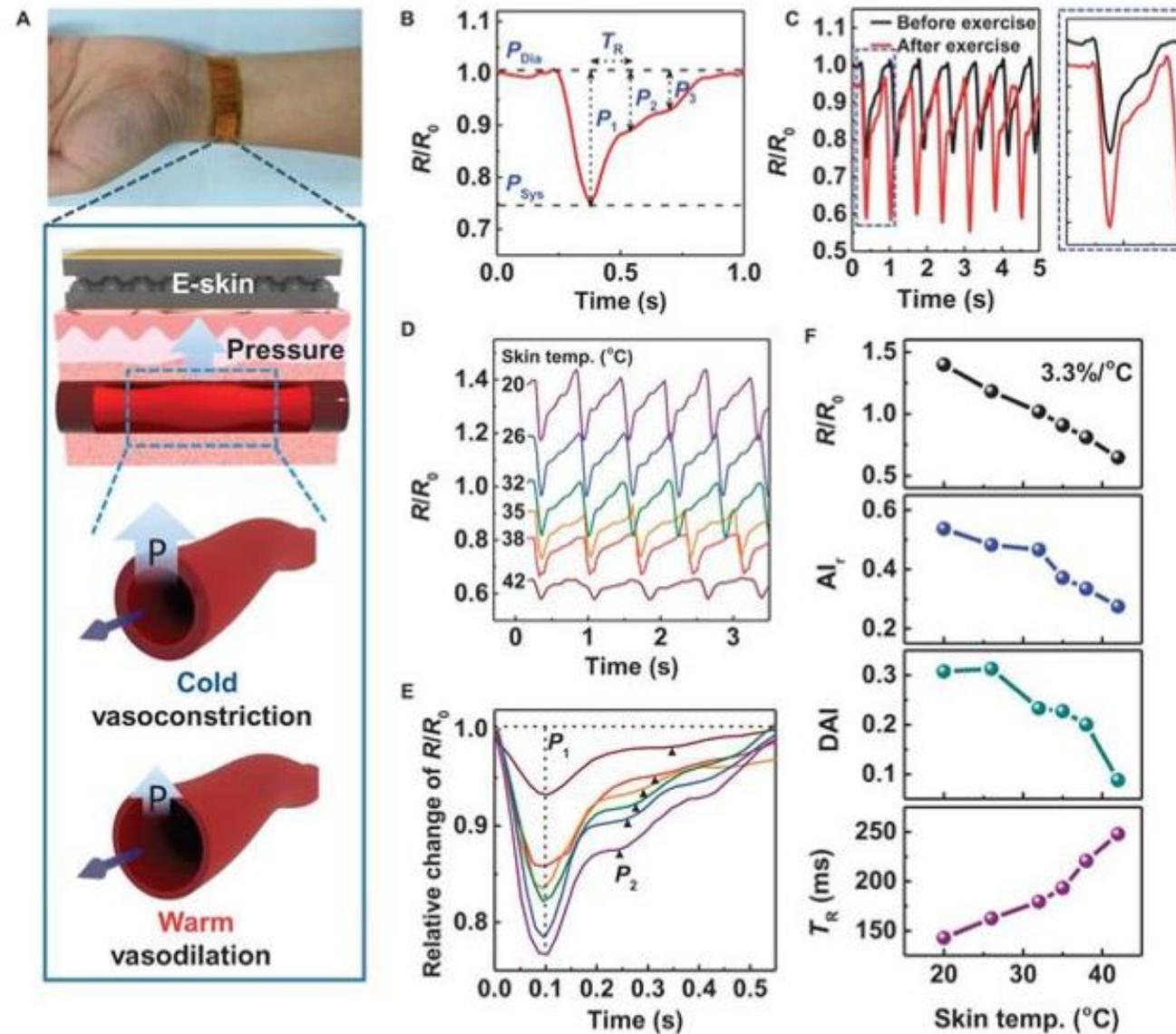
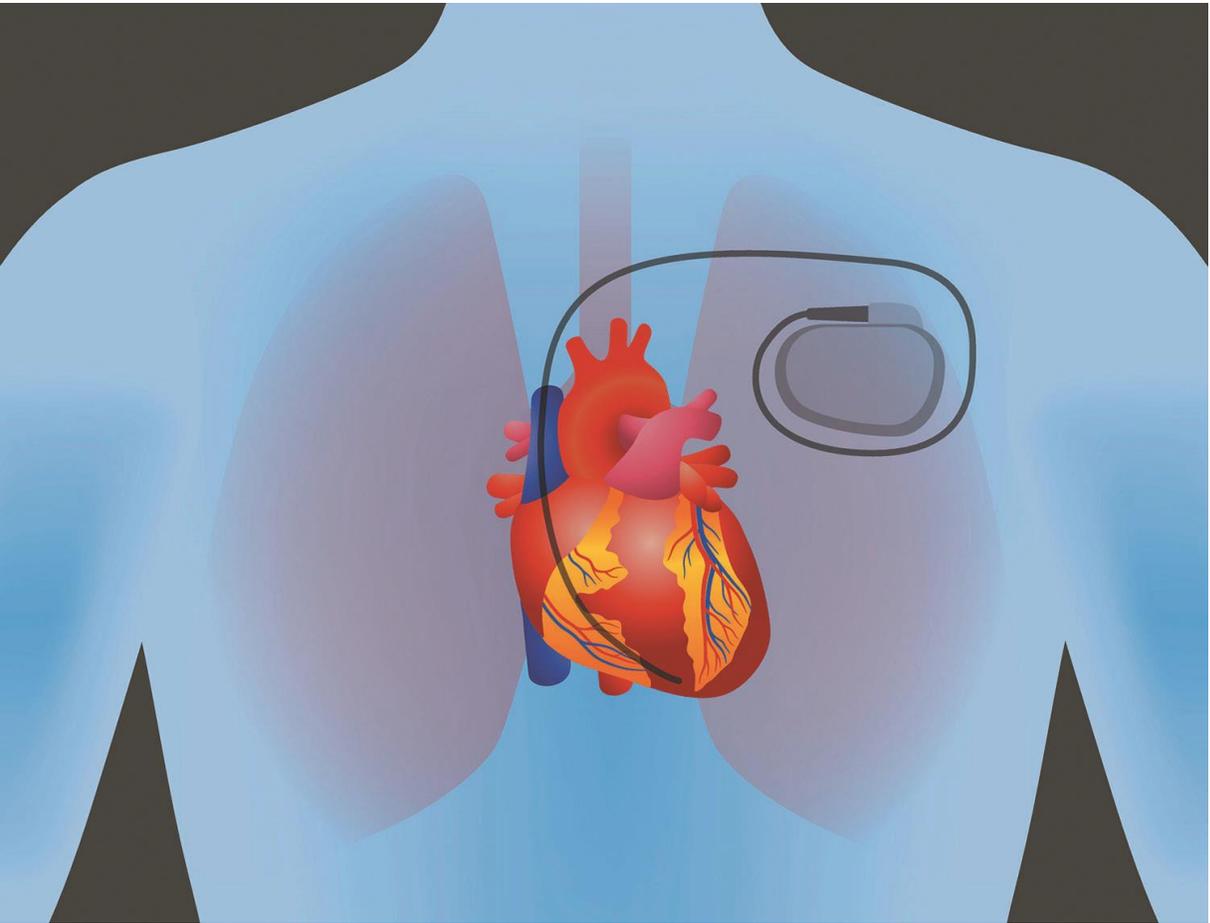


Fig. 4 Piezoresistive e-skin with interlocked microdome array for simultaneous monitoring of artery pulse pressure and temperature.





CareLink Monitor



Cardio Messenger II-S

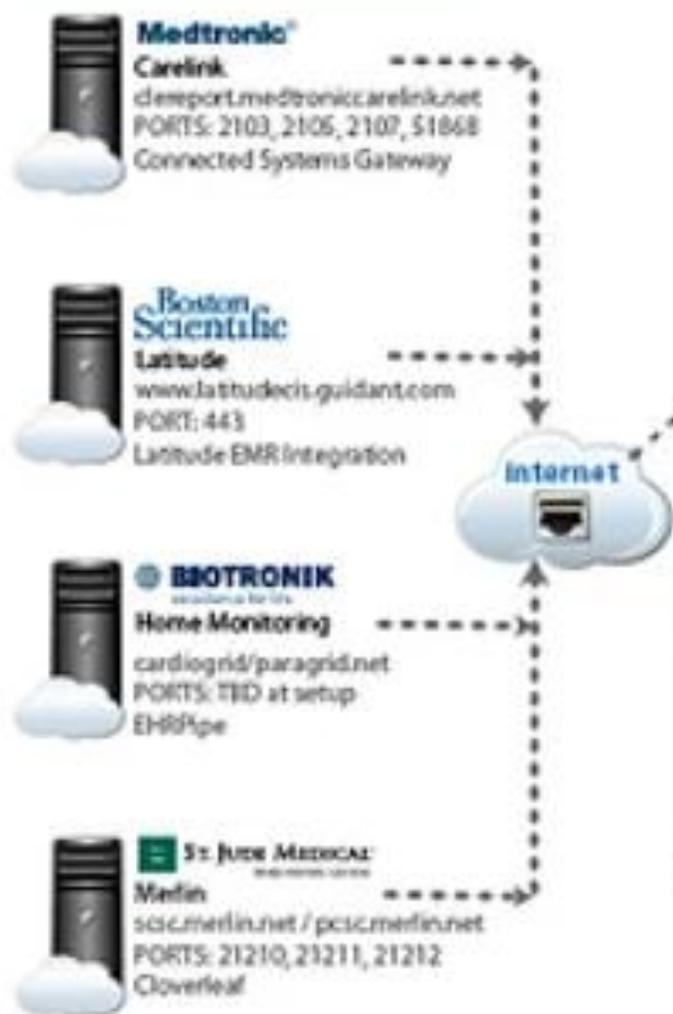


LATITUDE communicator

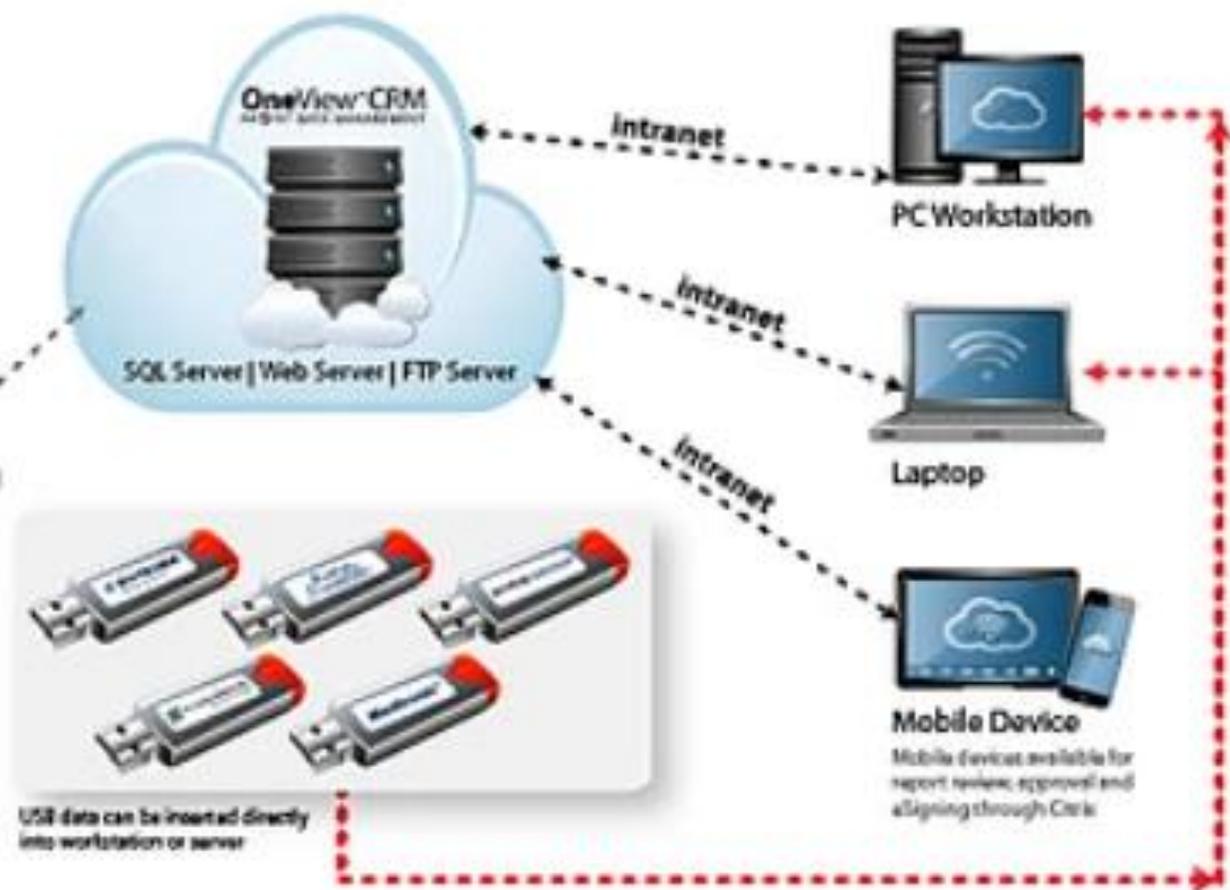


Merlin@Home

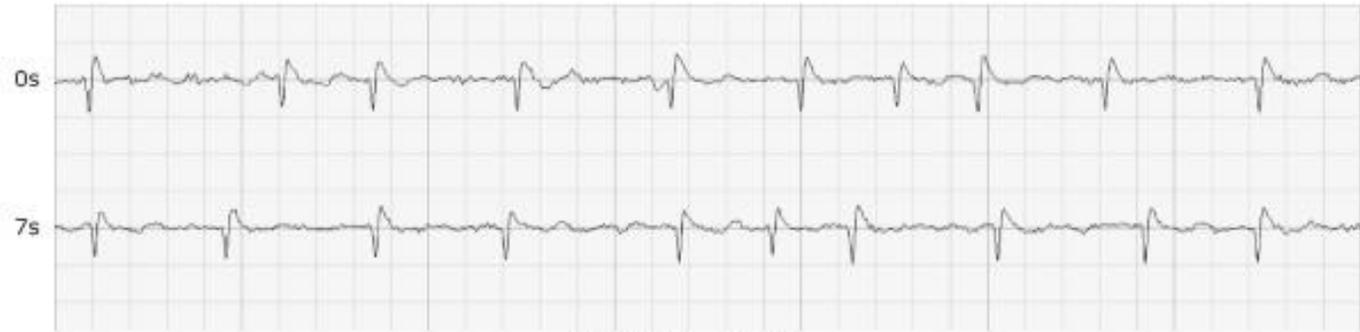
Remote Device Monitoring



In-Clinic Programmer Checks







EDUCARE

HeartLogic Heart Failure Diagnostic Learning Center

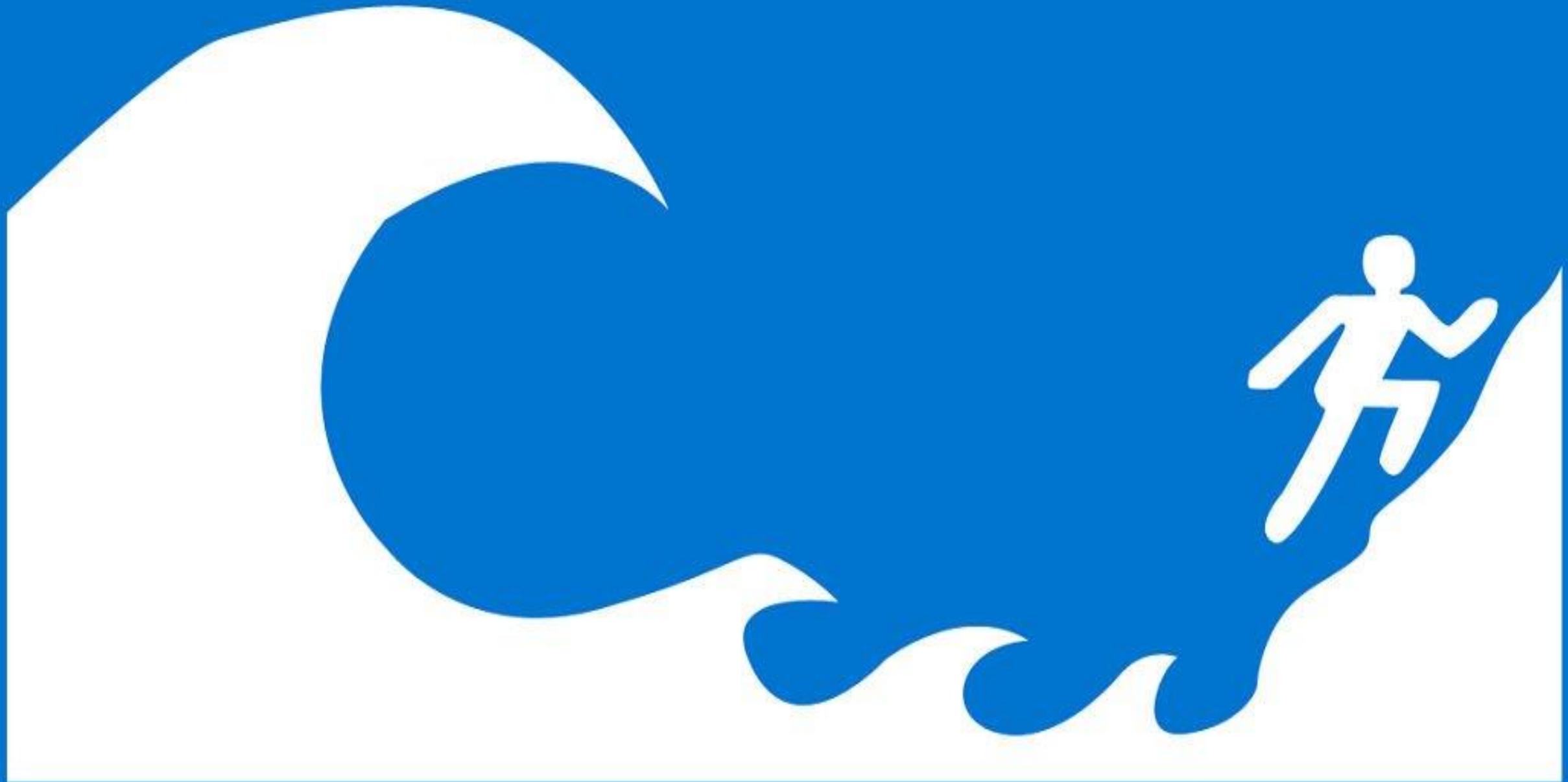
www.HeartLogictraining.com

Learn about HeartLogic, which was validated in the MultiSENSE Study to detect the **early warning signs of worsening heart failure** by combining data from **5 physiologic sensors into a single composite index.**

Learnings include:

- A 1-hour CEU interactive training program covering
 - Key takeaways from the MultiSENSE study
 - HeartLogic overview
 - Configuring HeartLogic within LATITUDE™ NXT
 - Managing HeartLogic Alerts
- Videos
- Links to available resources
- FAQs
- Submit your own case study

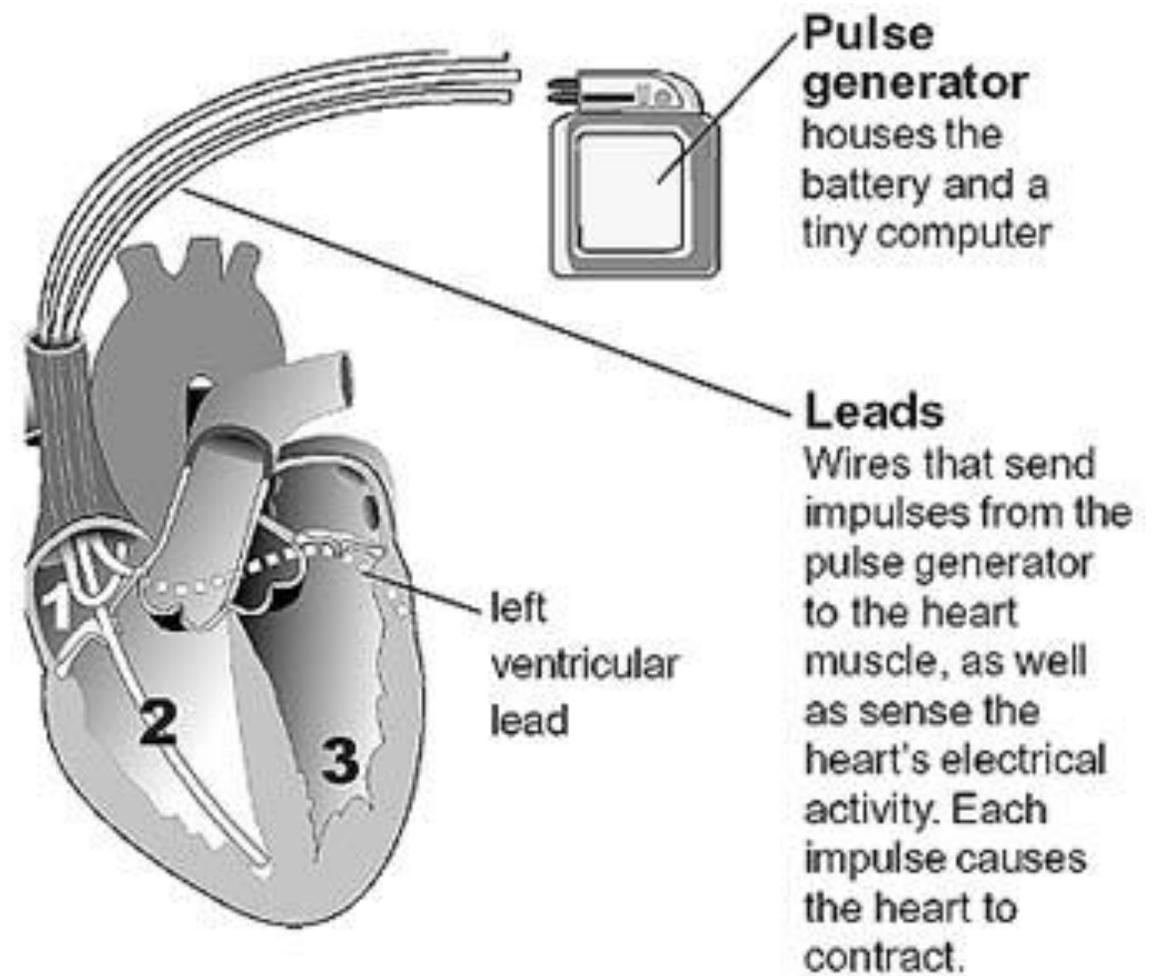
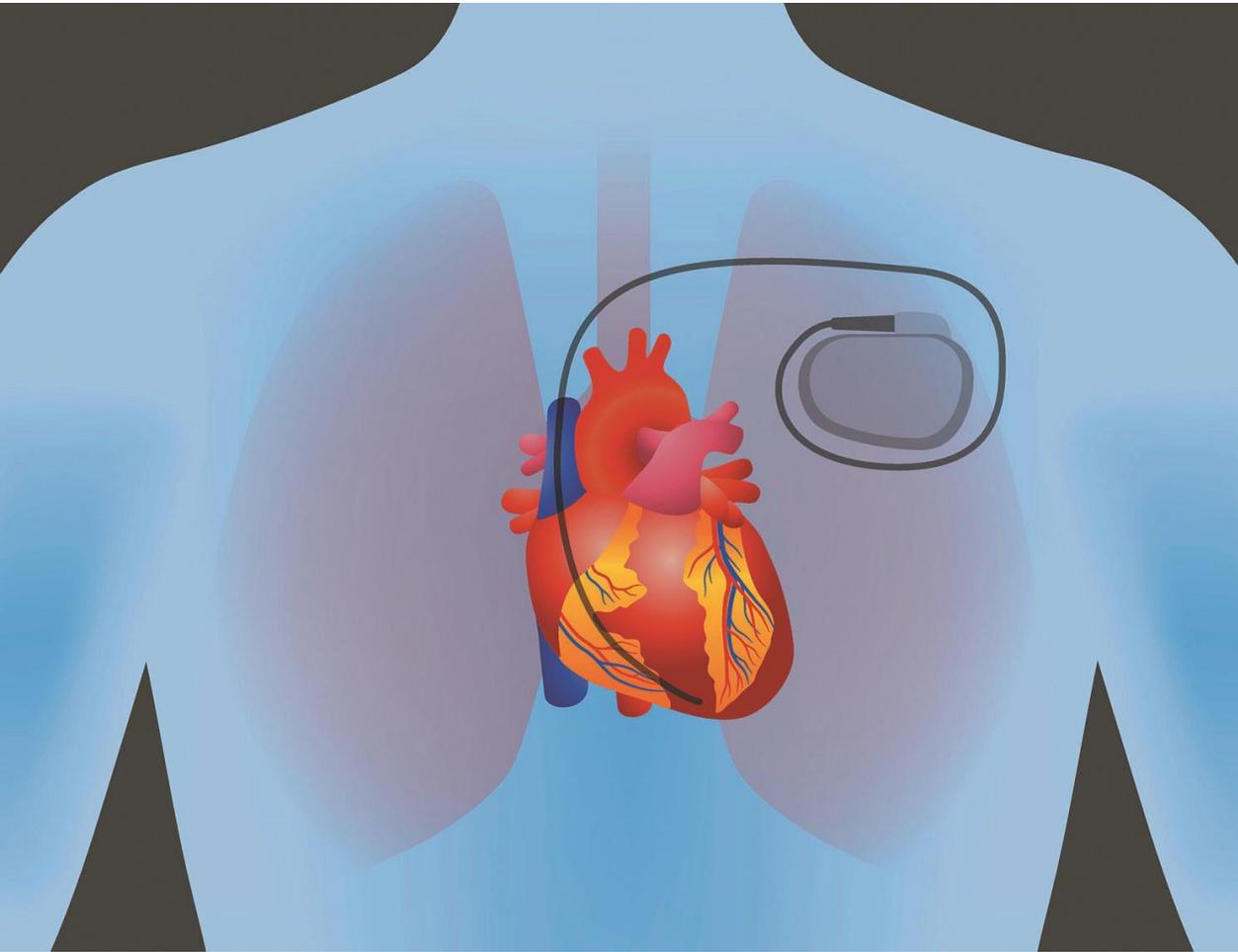
The screenshot shows the EDUCARE website for HeartLogic™ Heart Failure Diagnostic Training. The header includes the EDUCARE logo, the product name, and the Boston Scientific logo with the tagline "Advancing science for life™". A navigation bar contains links for CE TRAINING, VIDEOS, WORKBOOKS, RESOURCES, and FAQ. The main content area features a pink box with text: "Worsening heart failure may be associated with a decrease in the activity level or a low level of activity." To the right is a white box with a bar chart icon and the text "Activity reflects overall patient status and fatigue." Below this are two blue boxes: "Image Atlas" with an image of two sensors and a "Launch" button, and "HeartLogic Game" with a game wheel image and a "Play Now" button.



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Predicting the next decade : Arrhythmia

- Screening, Detection and Monitoring
- Cardiovascular Implantable Electronic Devices (CIED)





5800
First External
Pacemaker

1958



5858
Pediatric Asynchronous
Pulse Generator

1970



Activitrax®
Rate response

1986



MicroMinix®
Radically
smaller size

1990



Thera®
1st Micro-
processor-based,
Mode switching

1995



EnPulse®
Full automaticity

2004



RevoMRI®
1st MRI-
Conditional

2011

1960
First Implantable
Pacemaker

Chardack - Greatbatch



1979

Byrel®

1989
Dual chamber
rate response

Synergist™



1991

Elite™



1998
Rate response via activity
& minute ventilation

Kappa®



2006
MVP, Full
automaticity

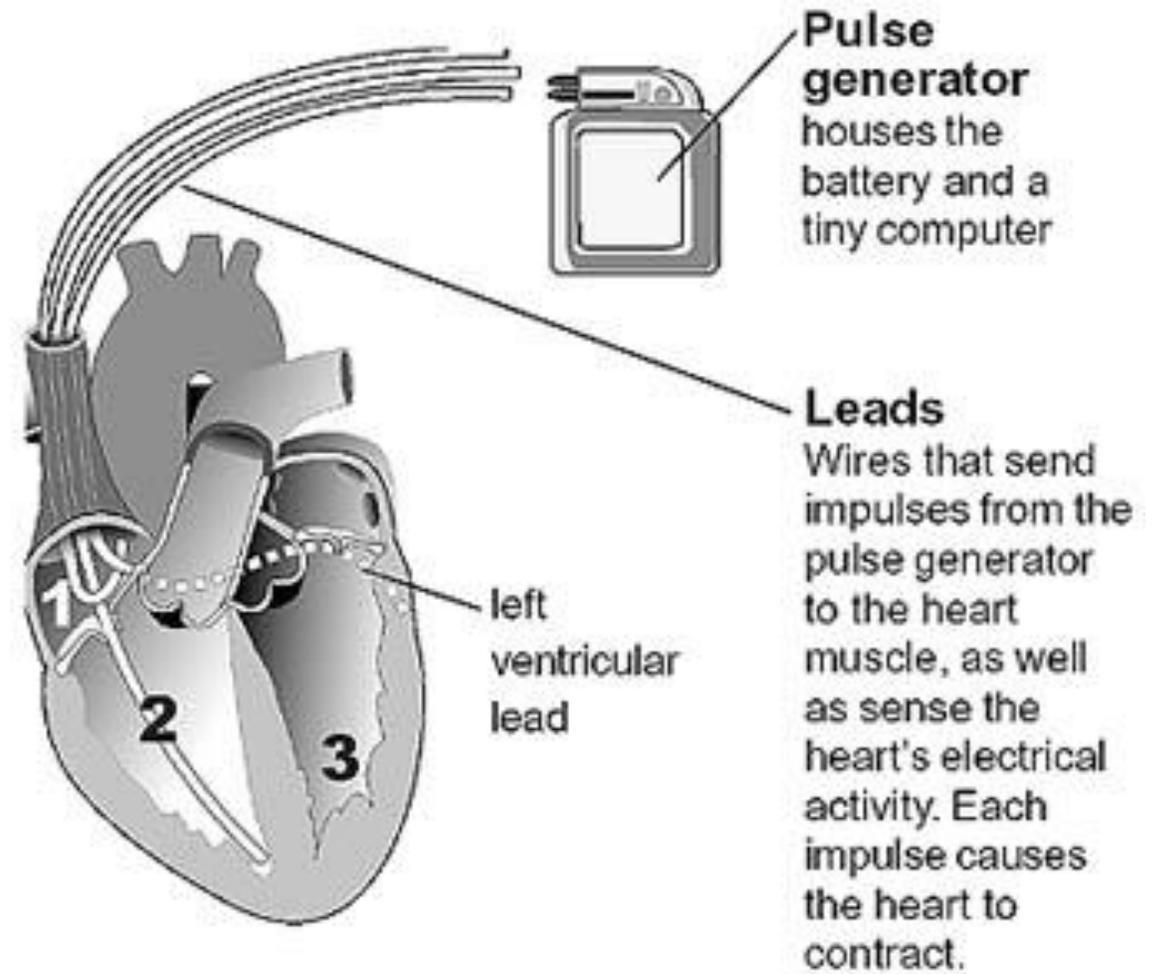
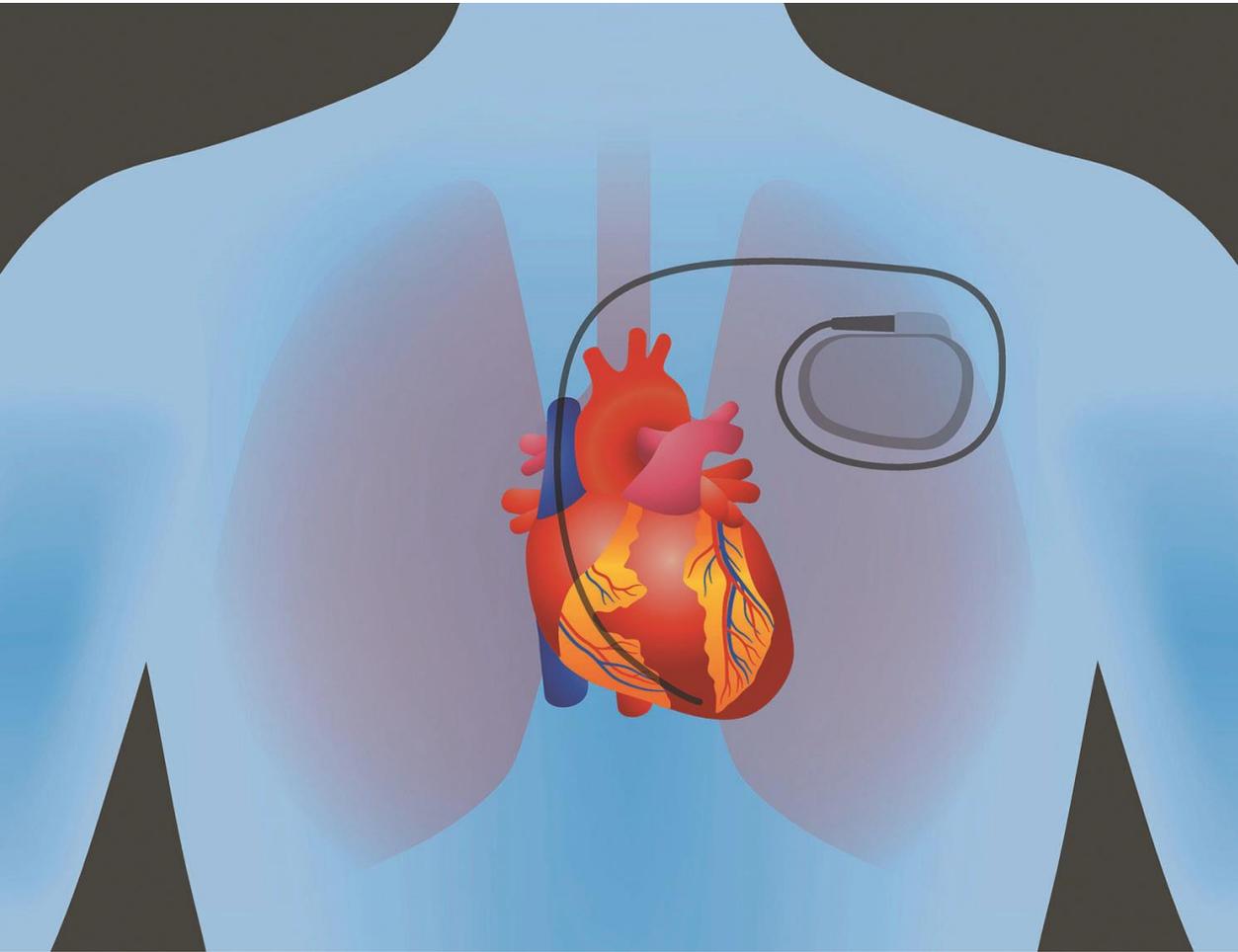
Adapta™



2013
2nd MRI-
Conditional

AdvisaMRI®







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Micra™
Transcatheter
Pacing System

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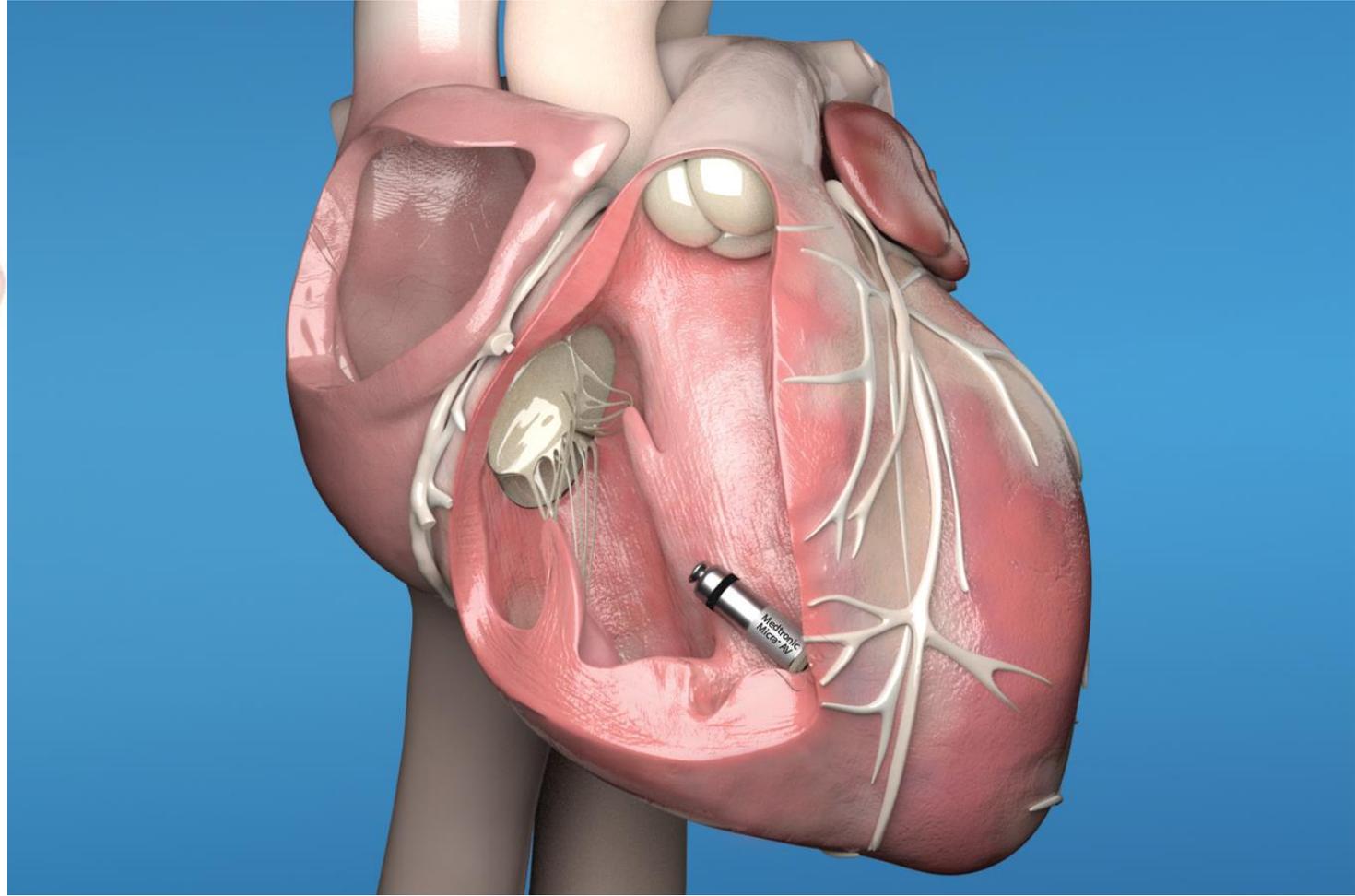
Adapta™



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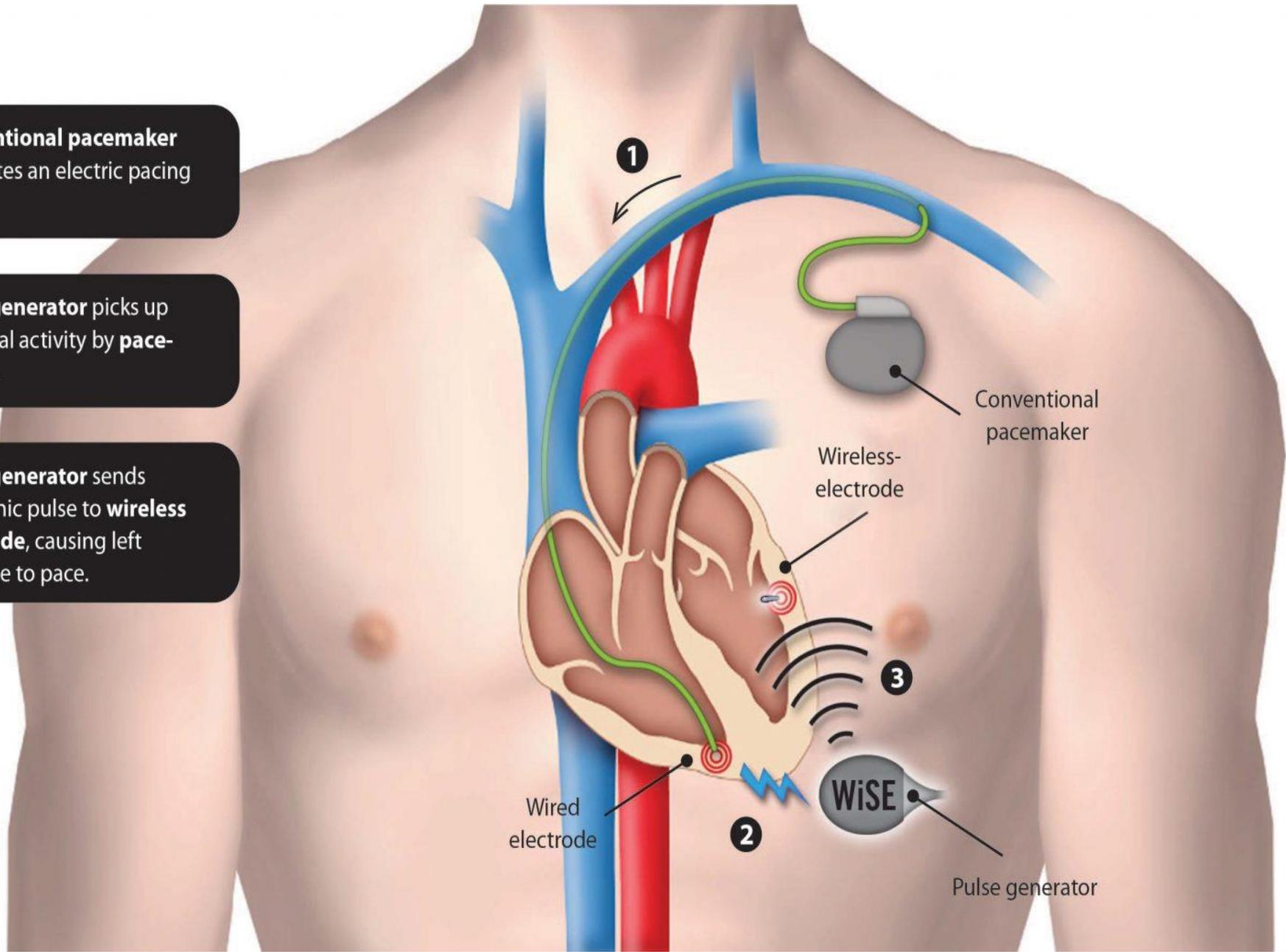


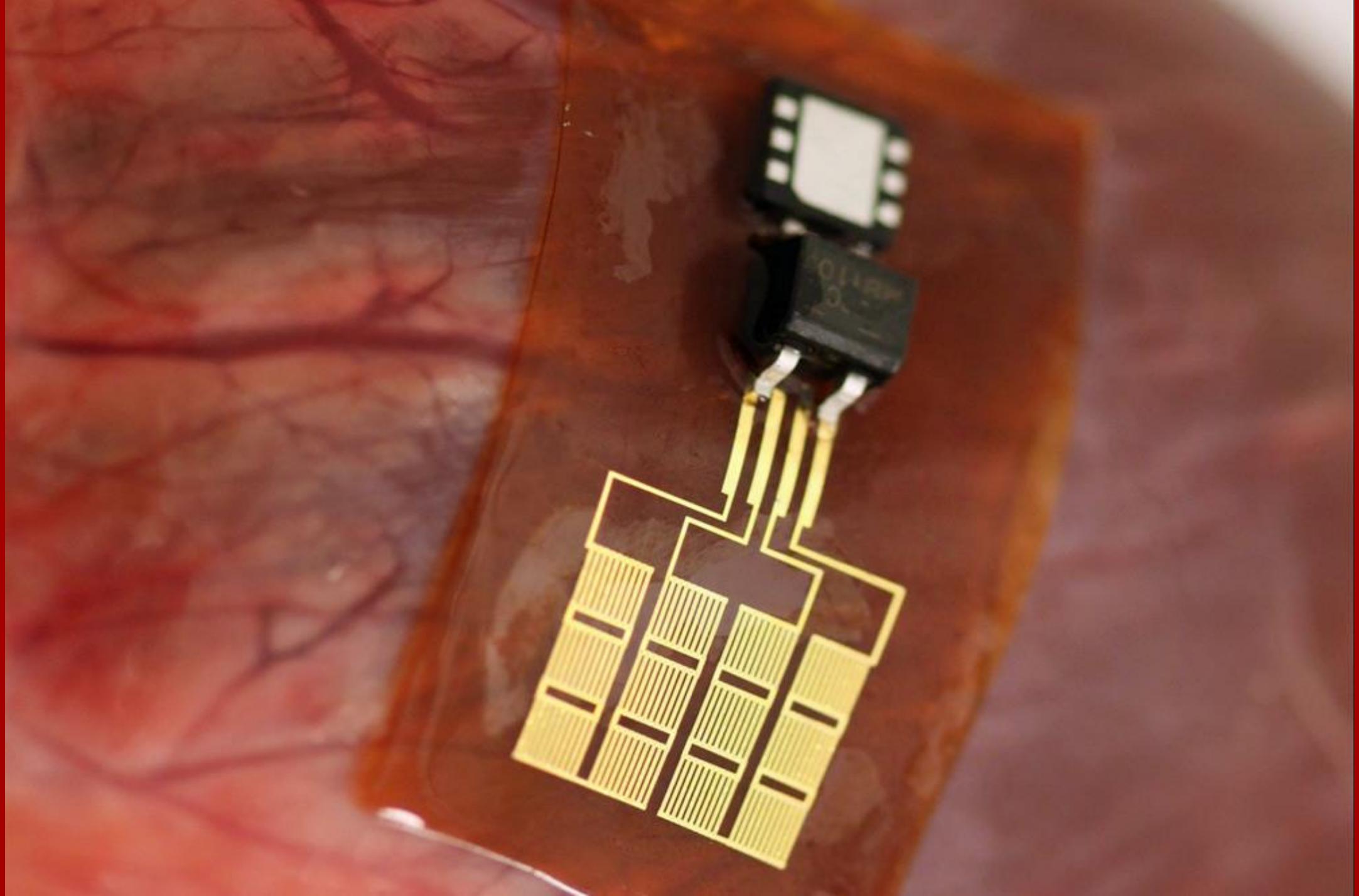


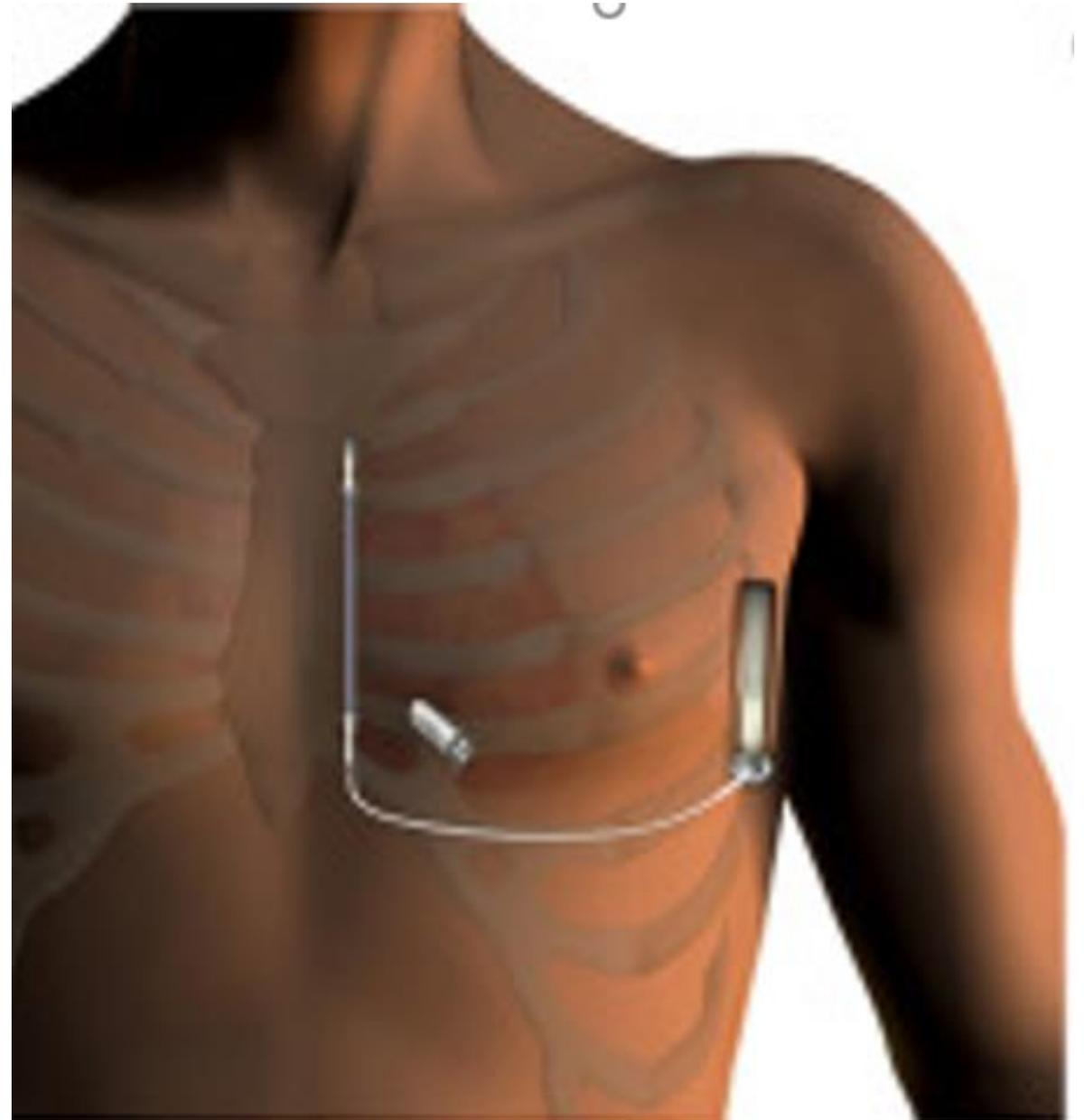
1 Conventional pacemaker generates an electric pacing pulse.

2 Pulse generator picks up electrical activity by **pacemaker**.

3 Pulse generator sends ultrasonic pulse to **wireless electrode**, causing left ventricle to pace.



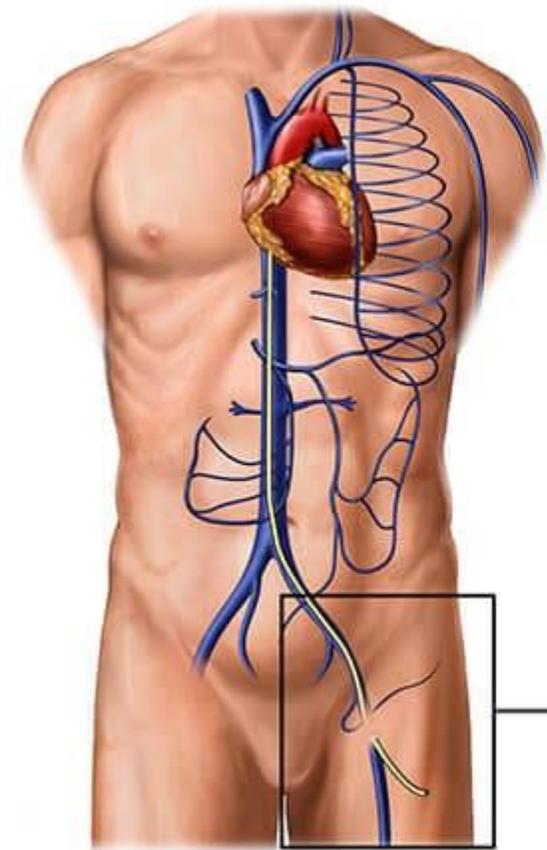




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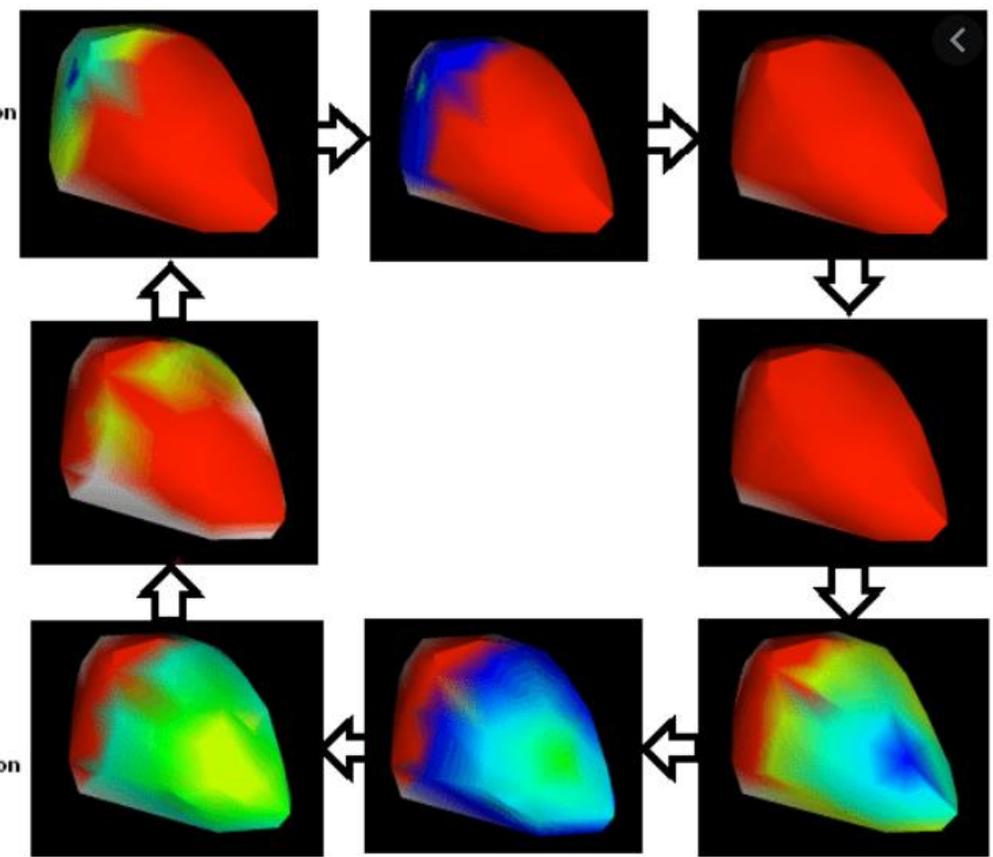
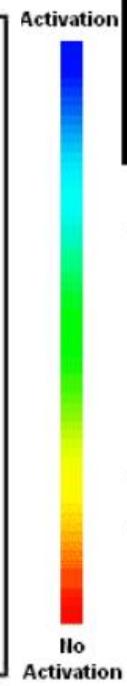
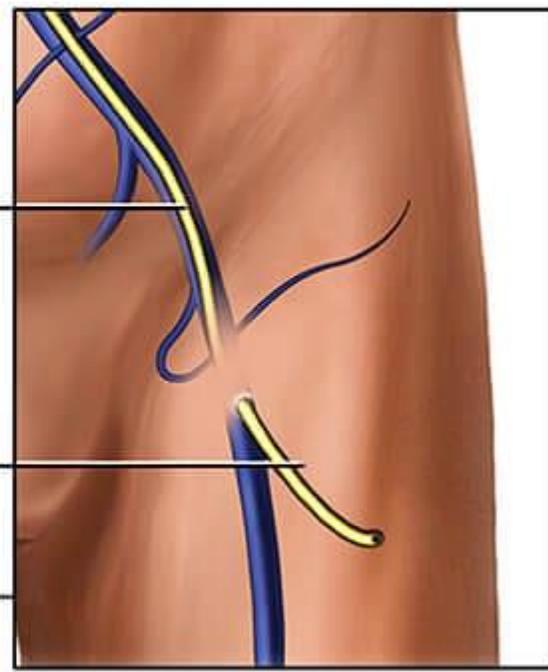
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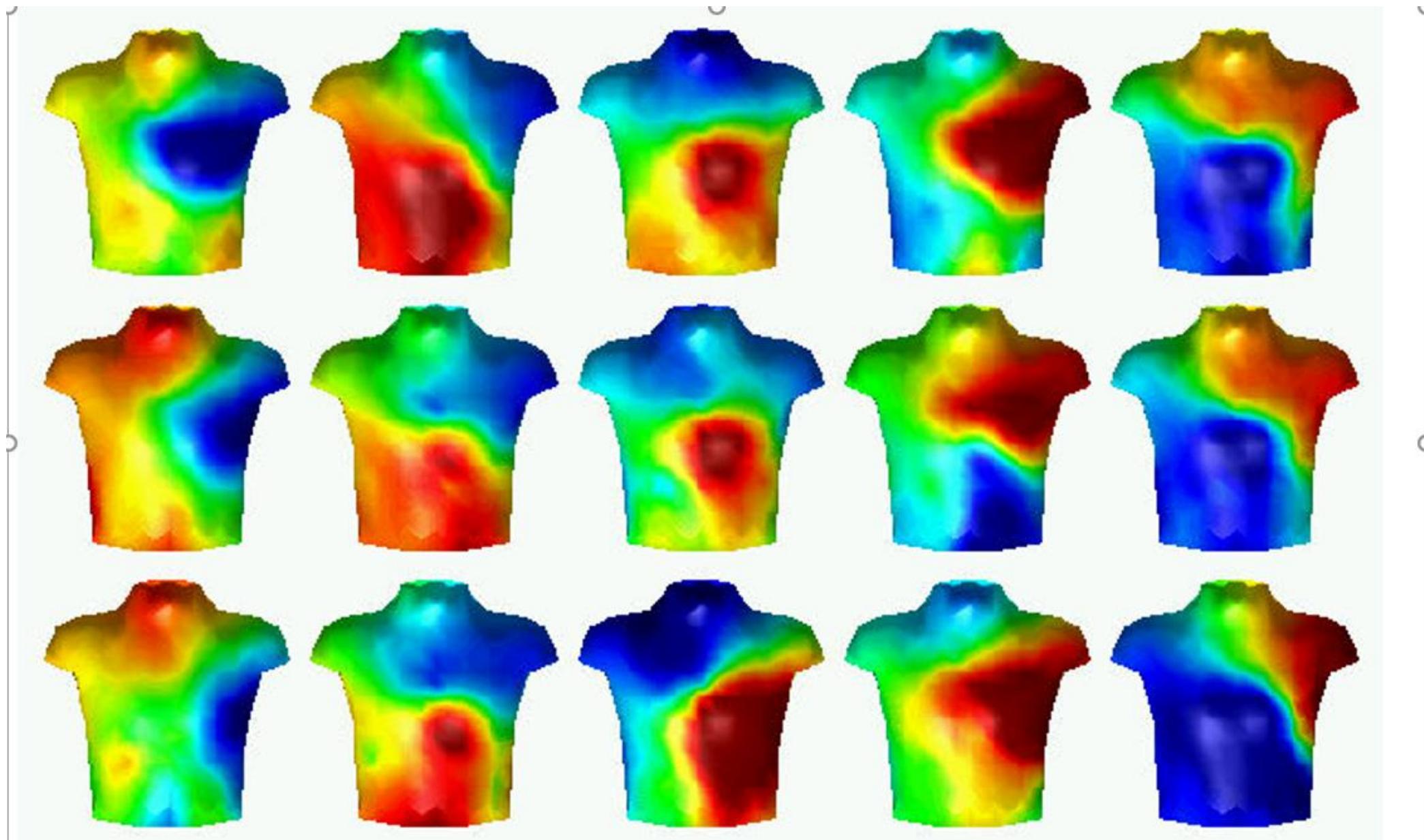


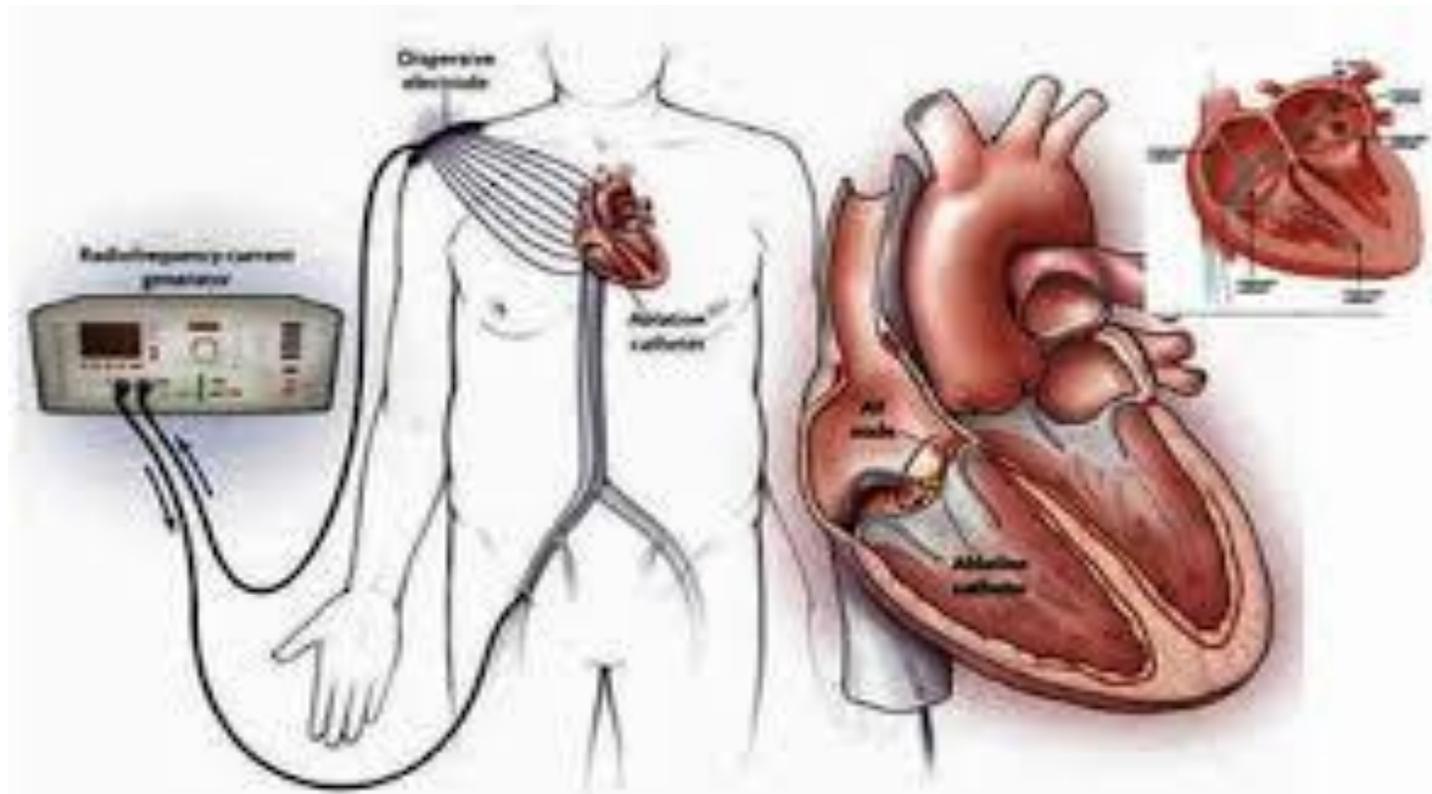
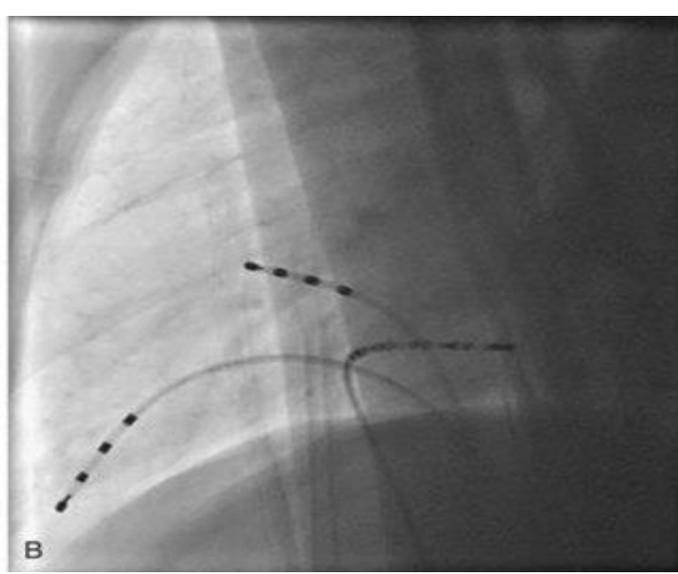
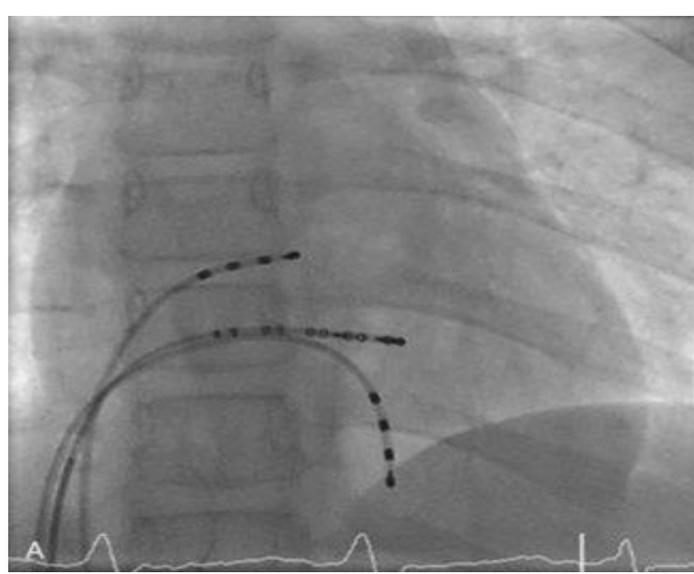
Femoral vein

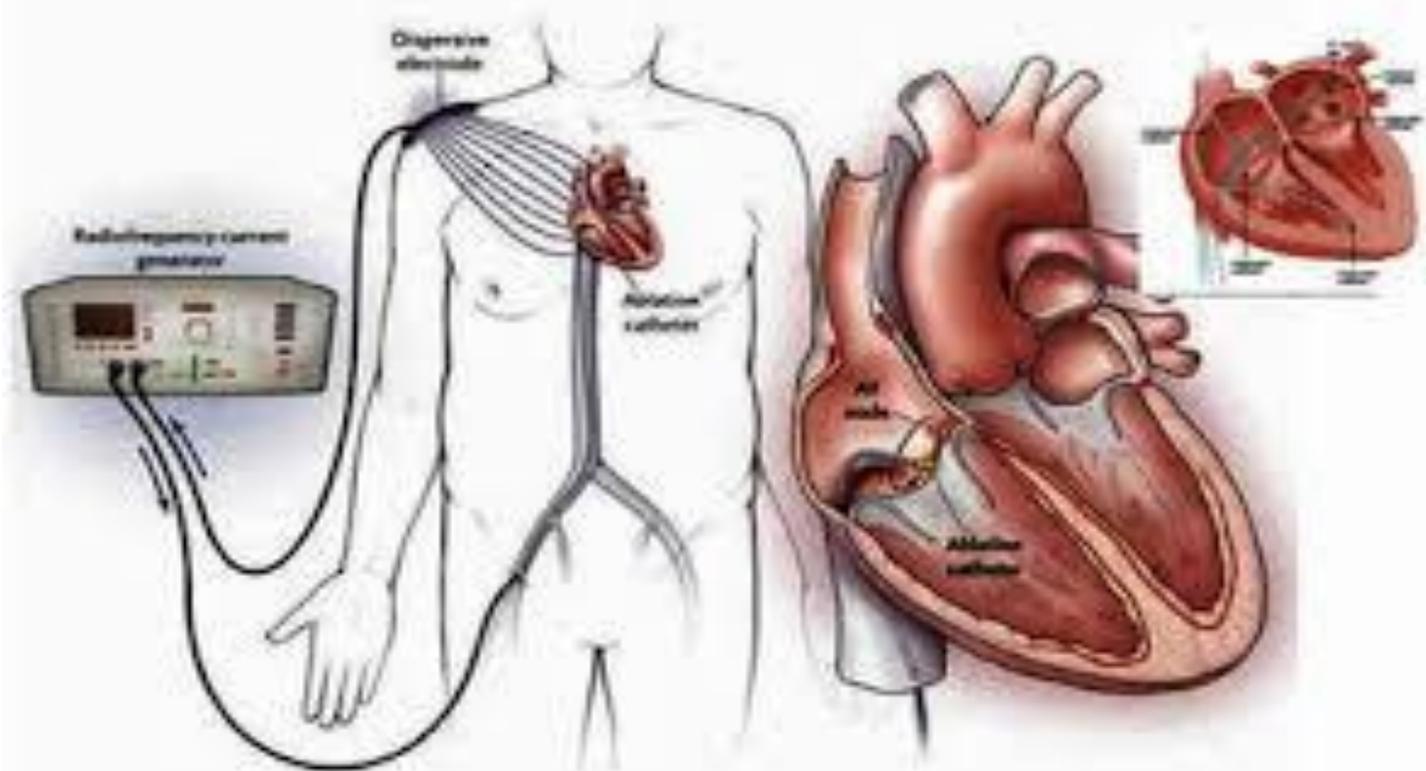
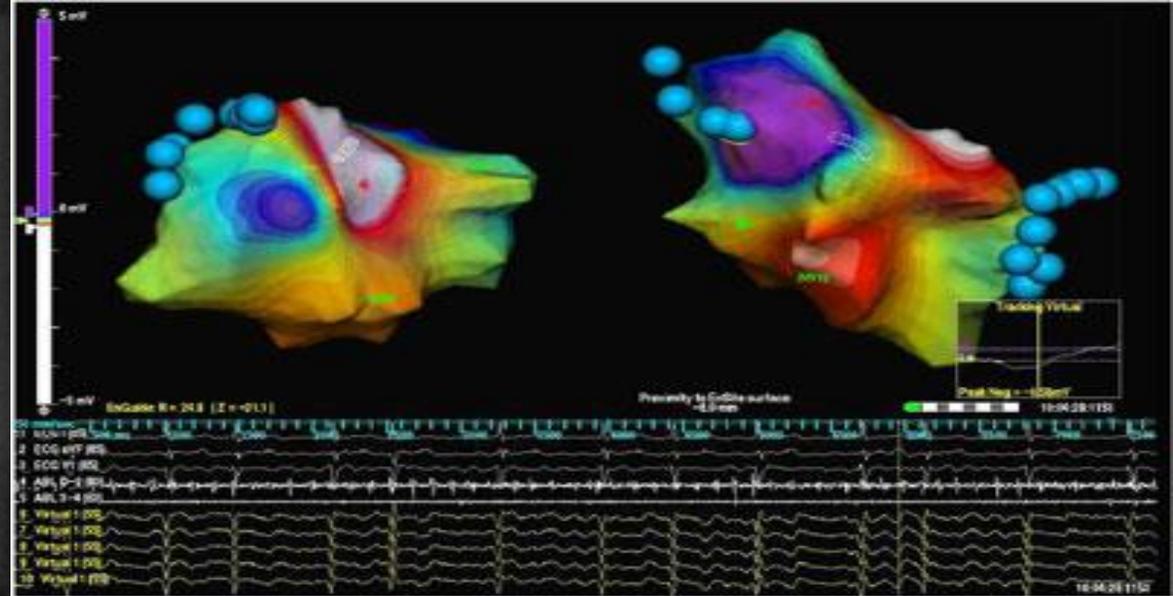
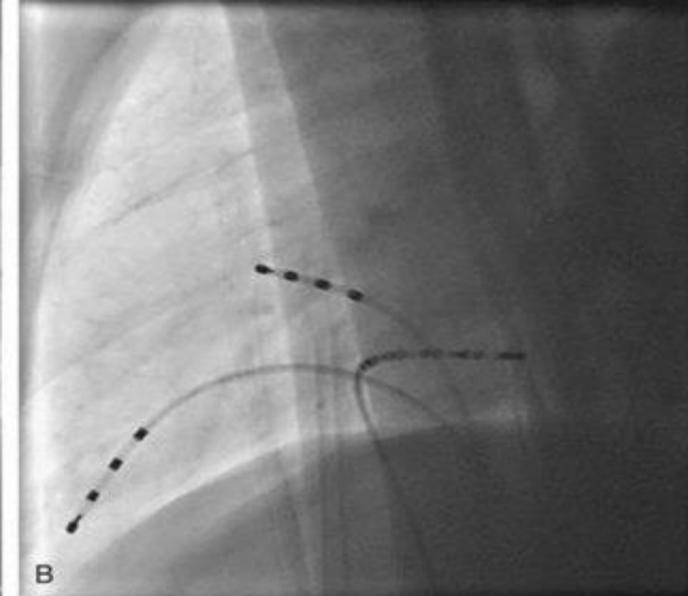
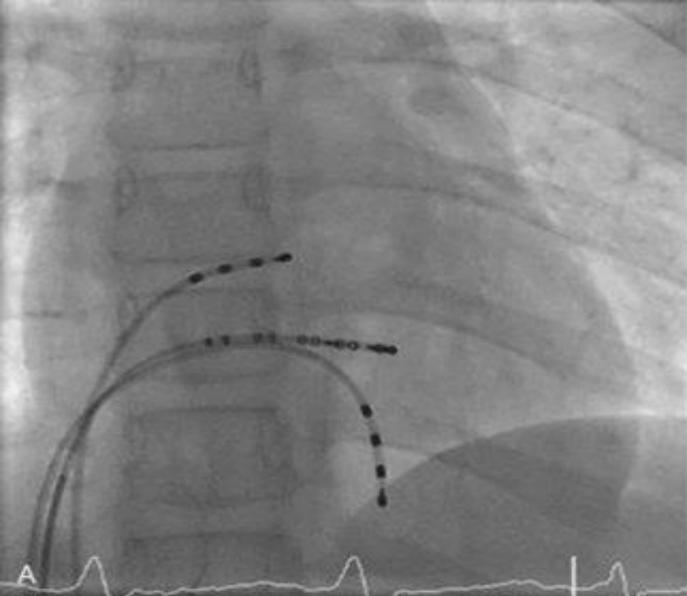
Catheter

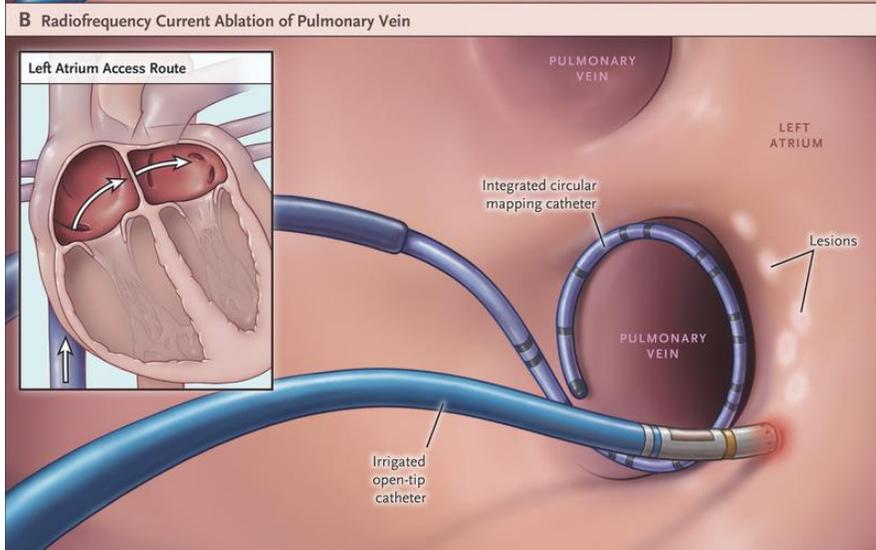
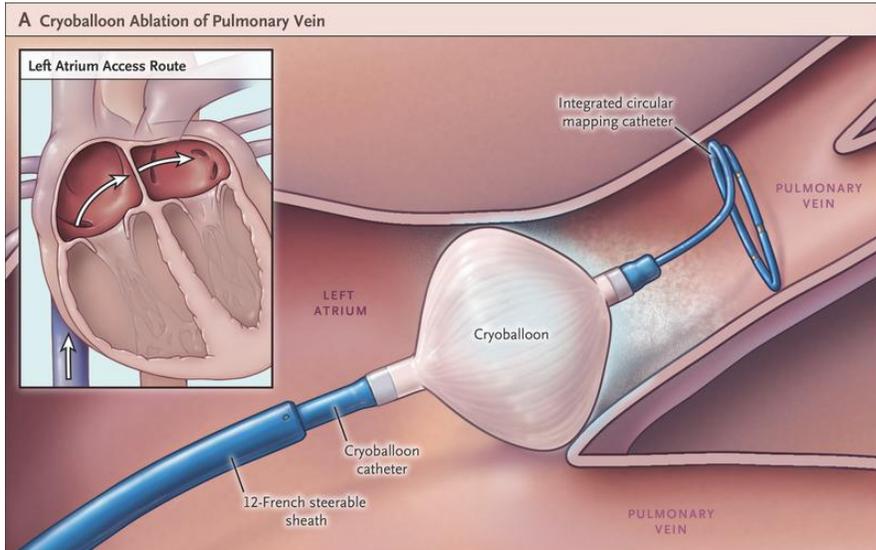




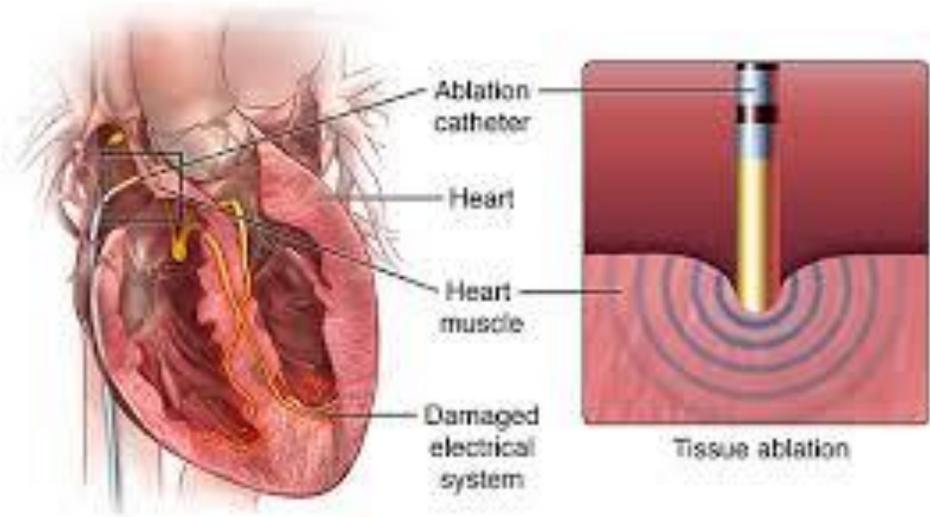


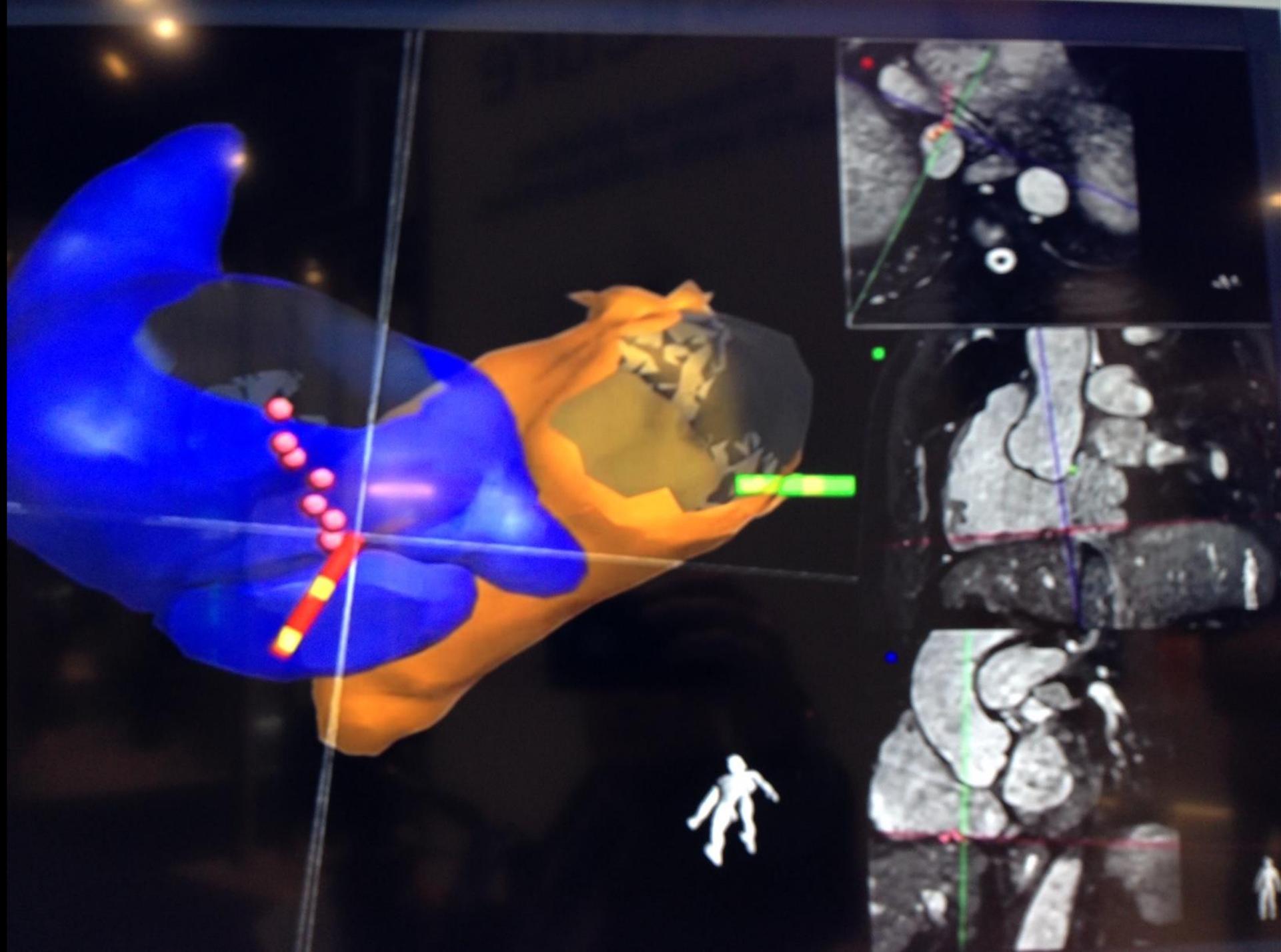






Catheter ablation







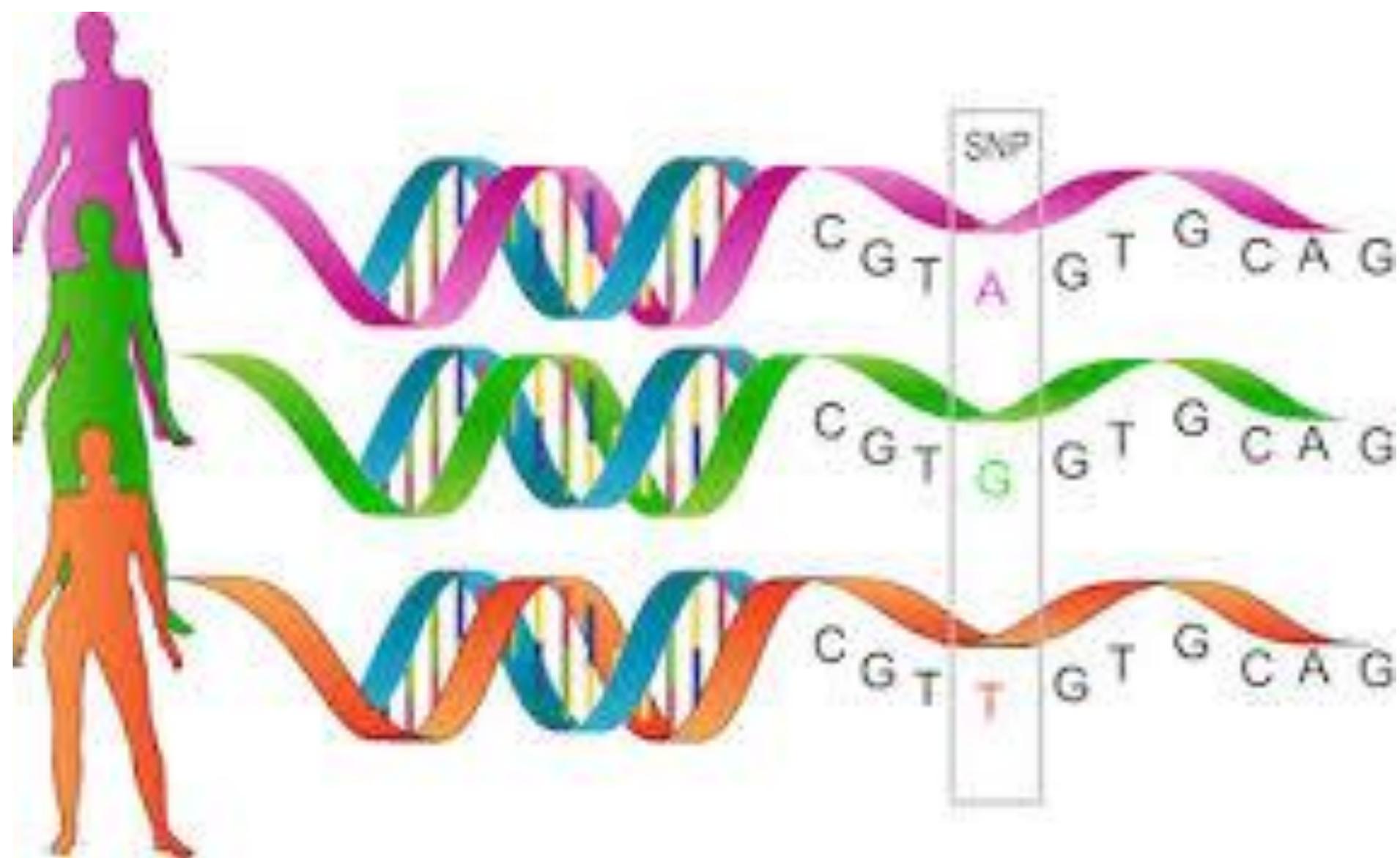
GENESIS
Robotic Man



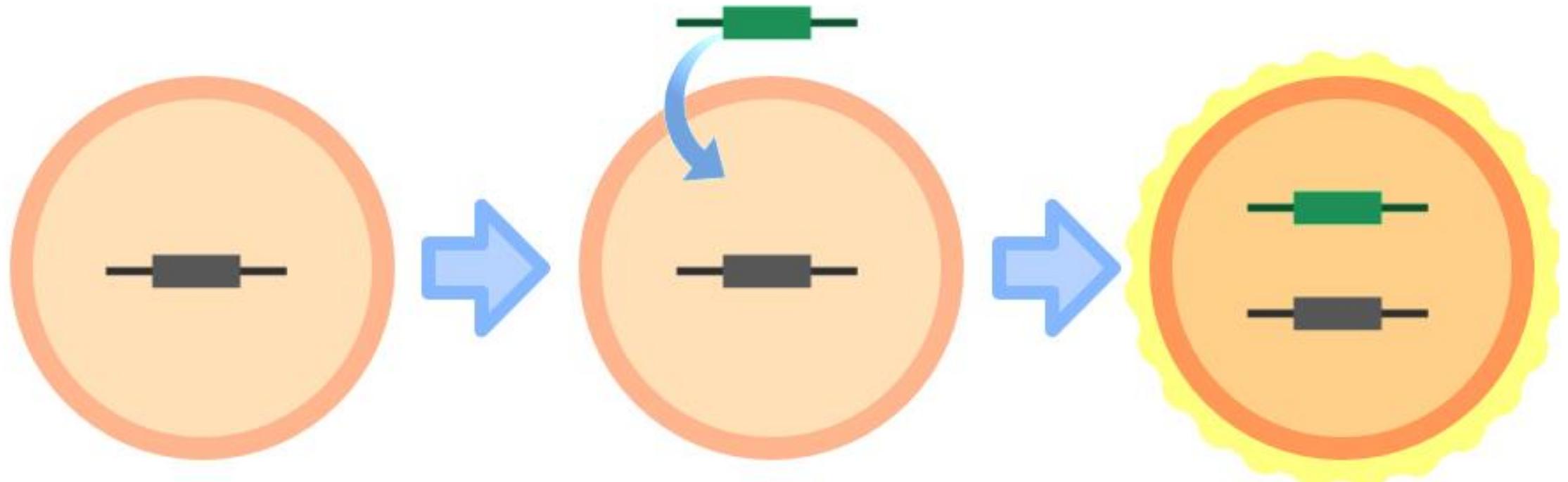
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healthy gene introduced



cell with defective gene

cell function restored



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Thank you for your attention