



# Coronary Flow Imaging

*Demo Teaching – Cardiac Application*

*US Marketing*





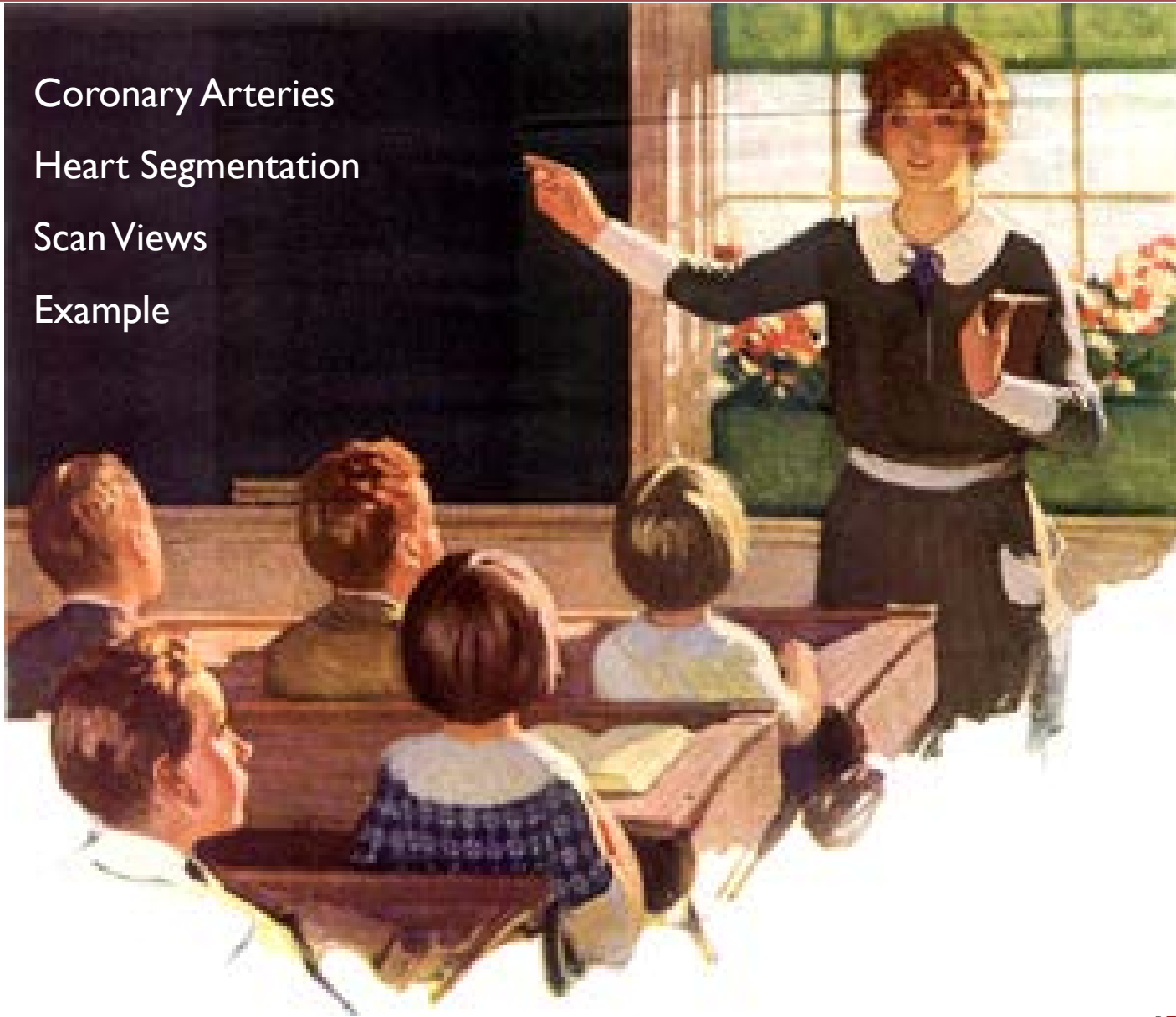
# Next arguments

Coronary Arteries

Heart Segmentation

Scan Views

Example

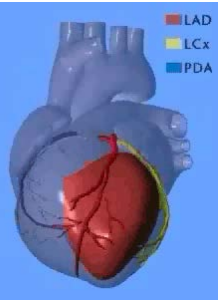
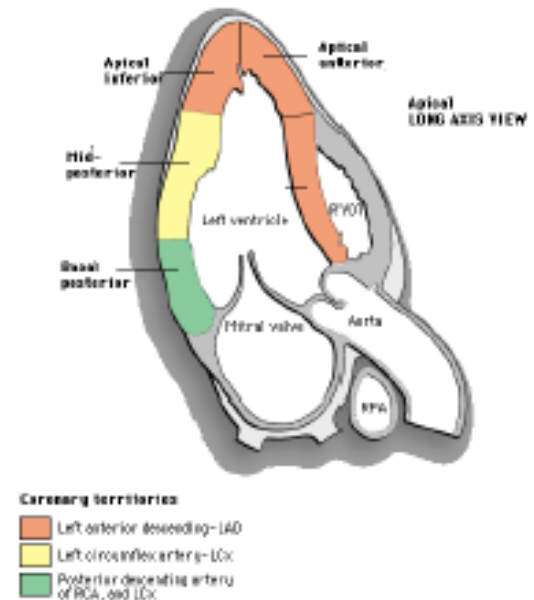
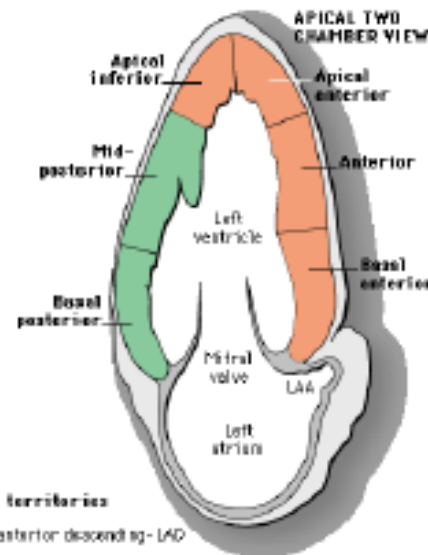
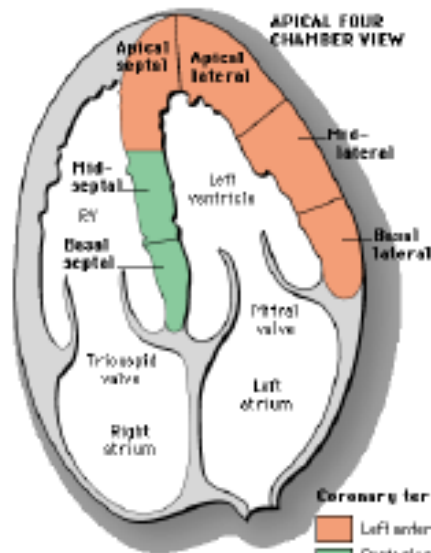




# Doppler: CFR quantification

## Why LAD Coronary is so important??

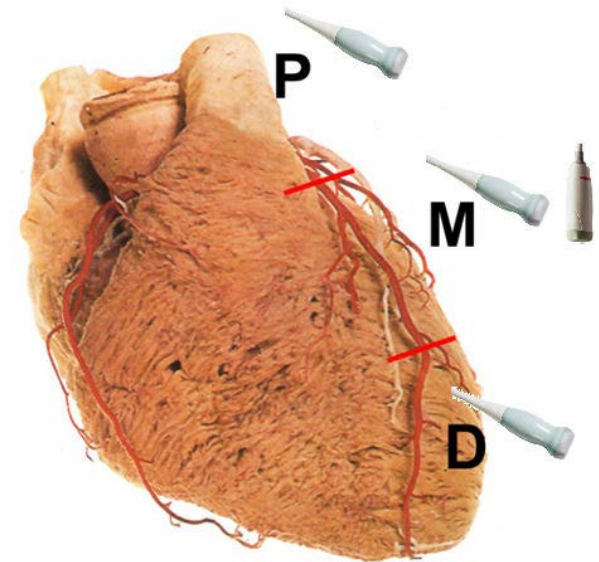
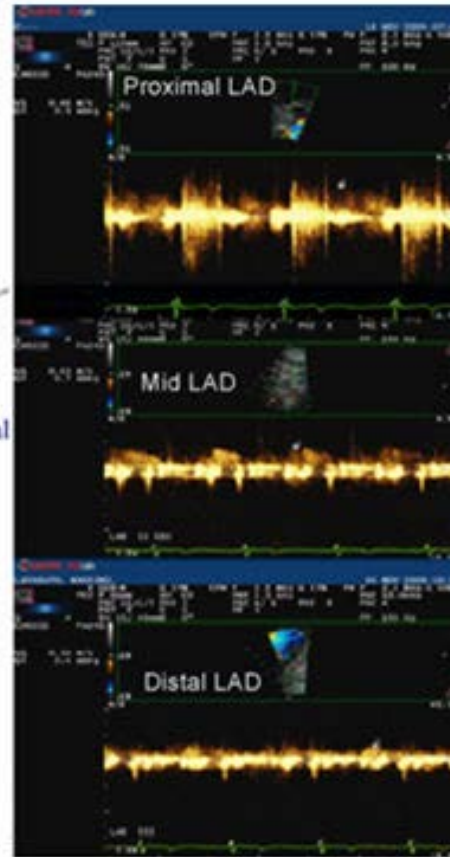
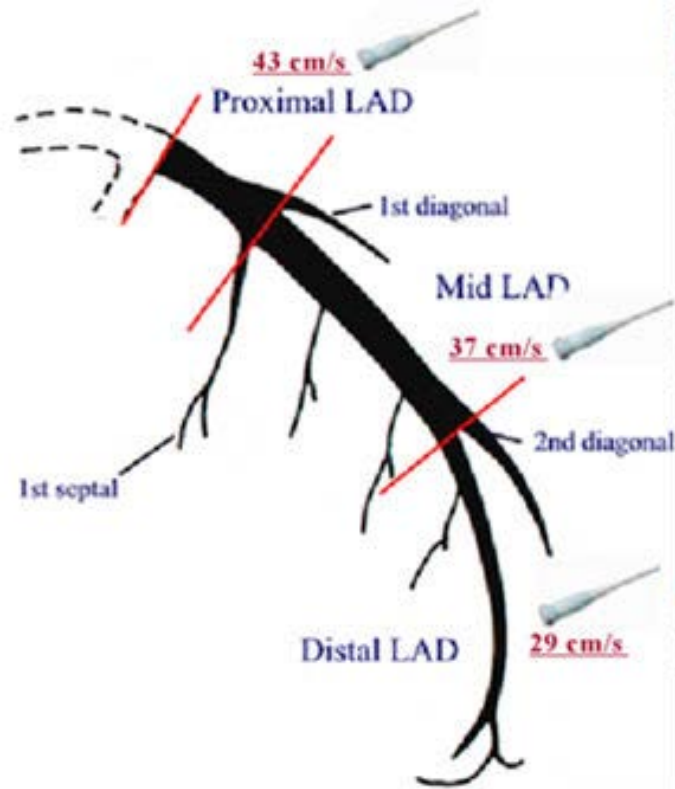
It's important because it supplies the blood to **12 segments** of the total **17 heart segments**



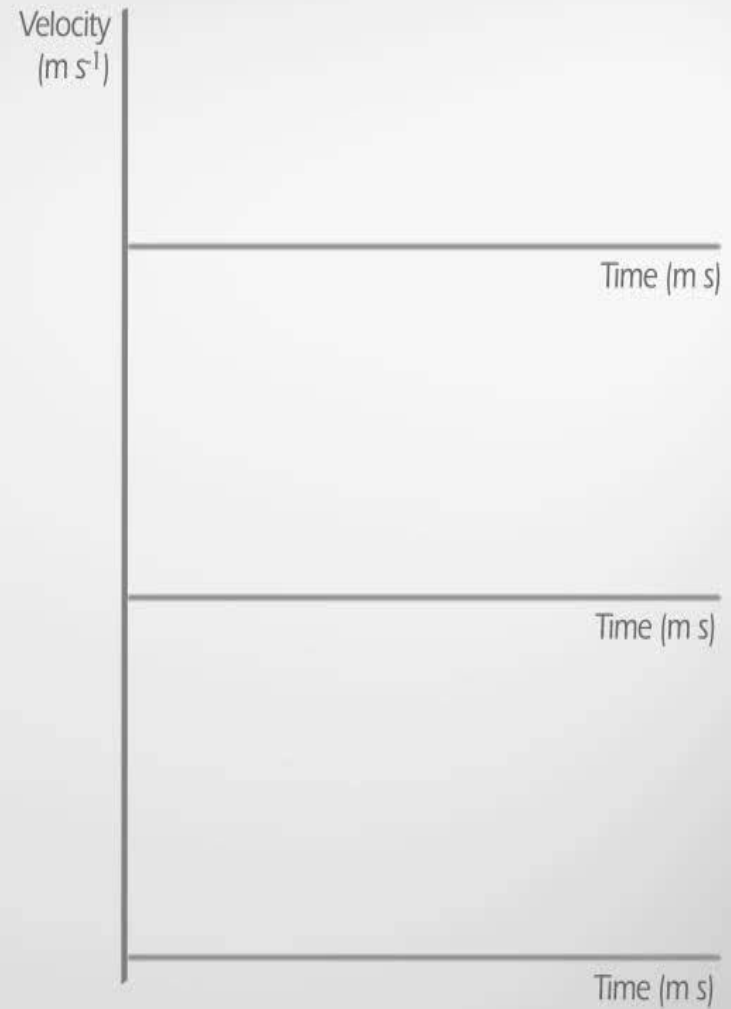
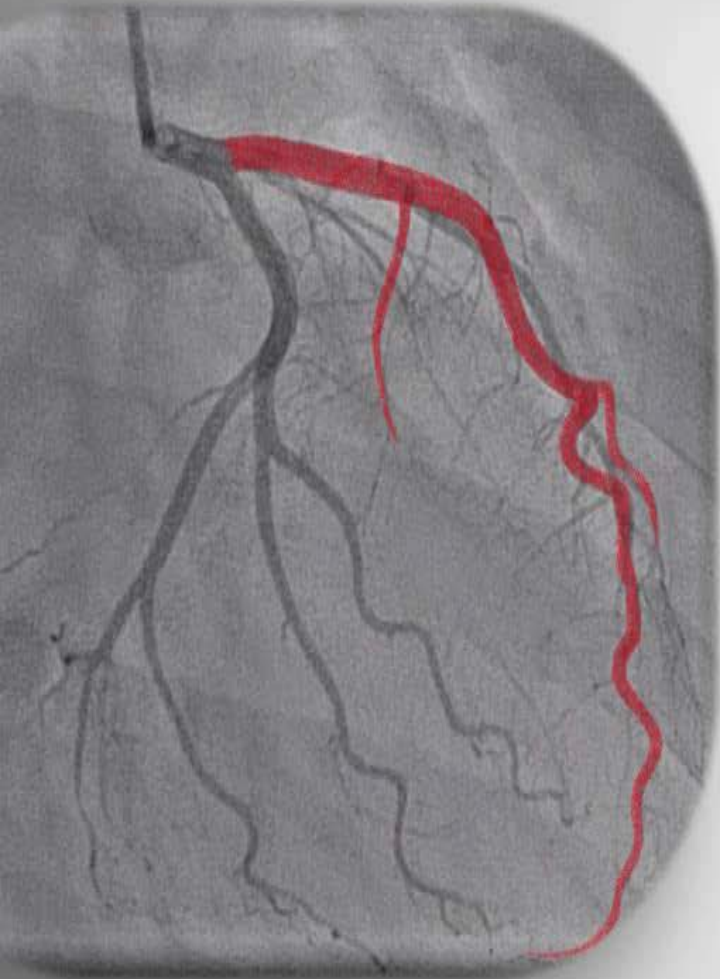
Coronary Flow Imaging



# Doppler: CFR quantification



# NORMAL PATTERN

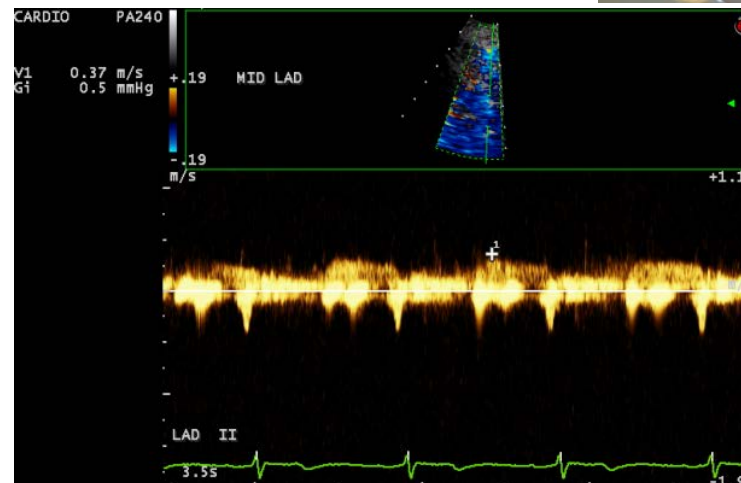
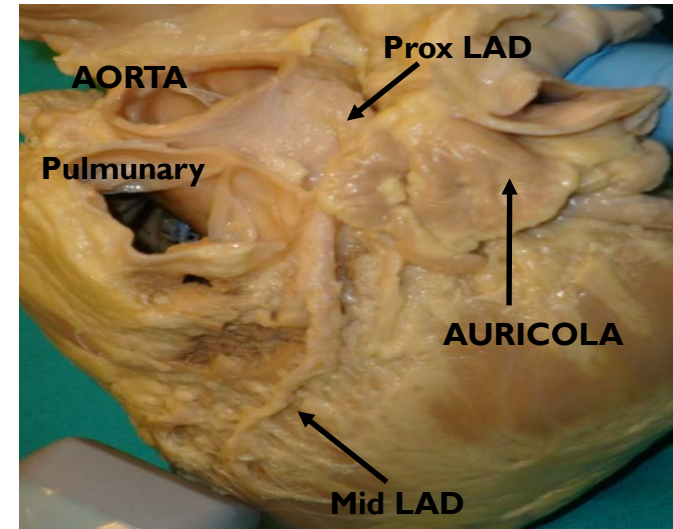






# Doppler: Quantification of Coronary Flow Reserve (CFR) for LAD (Left Anterior Descending Coronary Artery)

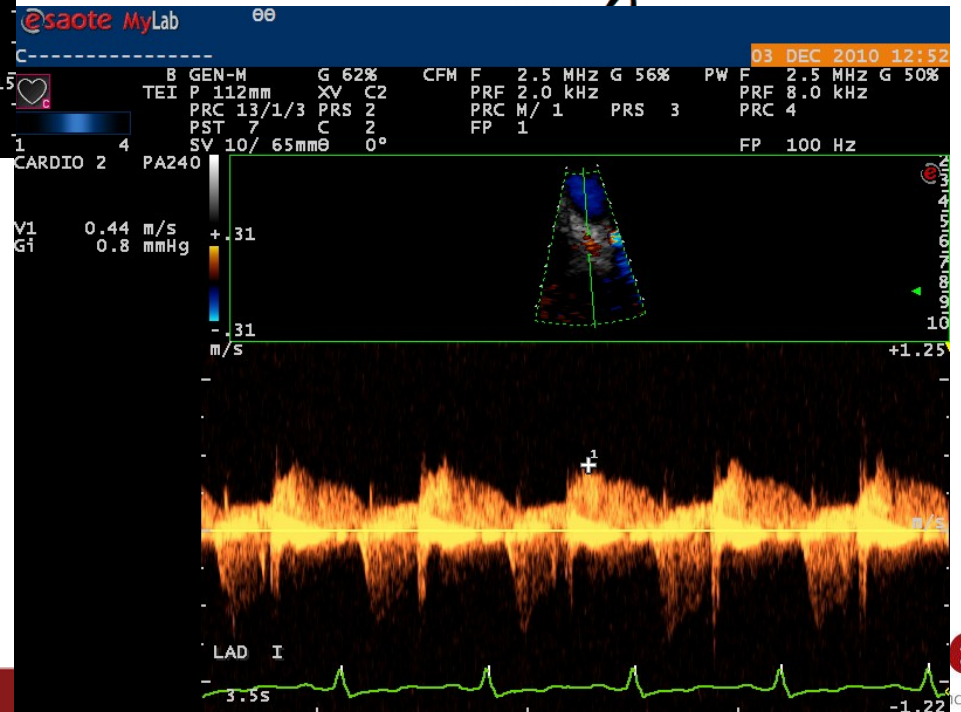
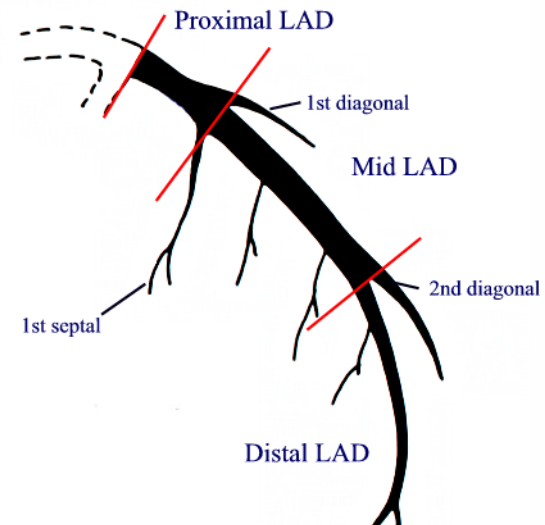
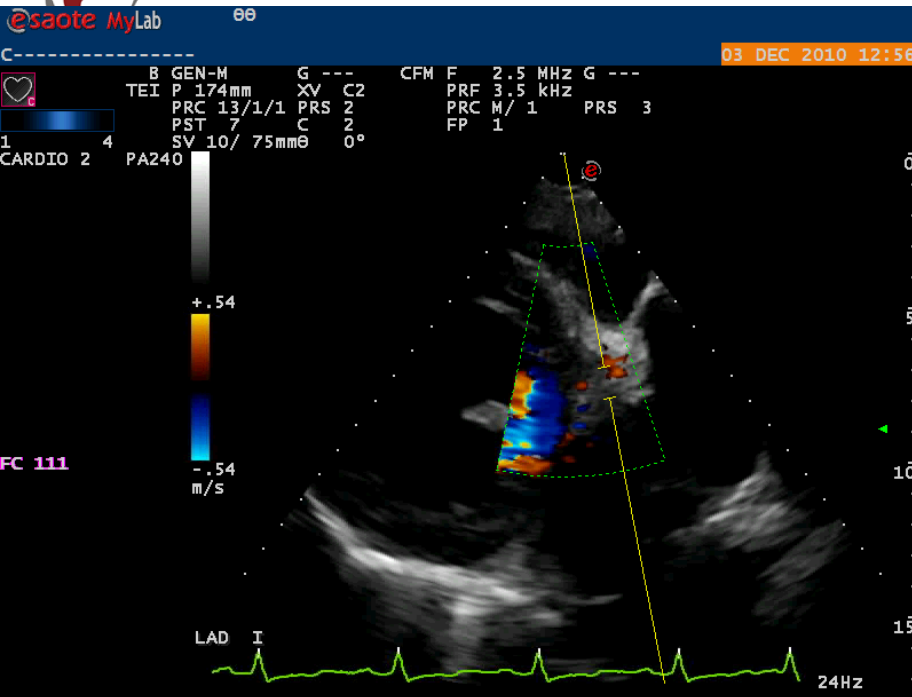
## Ultrasound findings of coronary arteries: **LAD (Prox-Mid tracts)**



**Normal values**  
MFV=35±9 cm/s

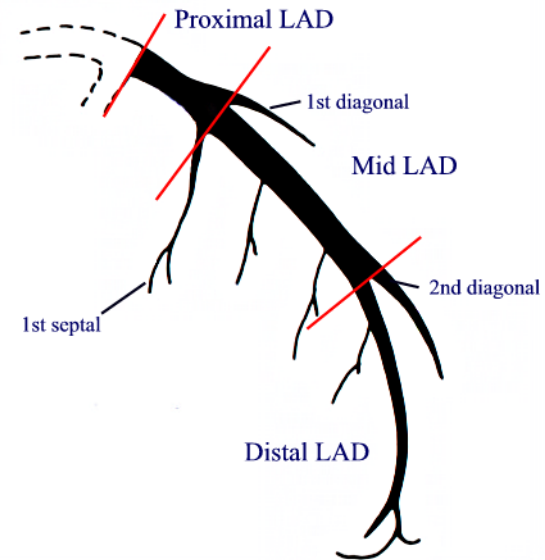
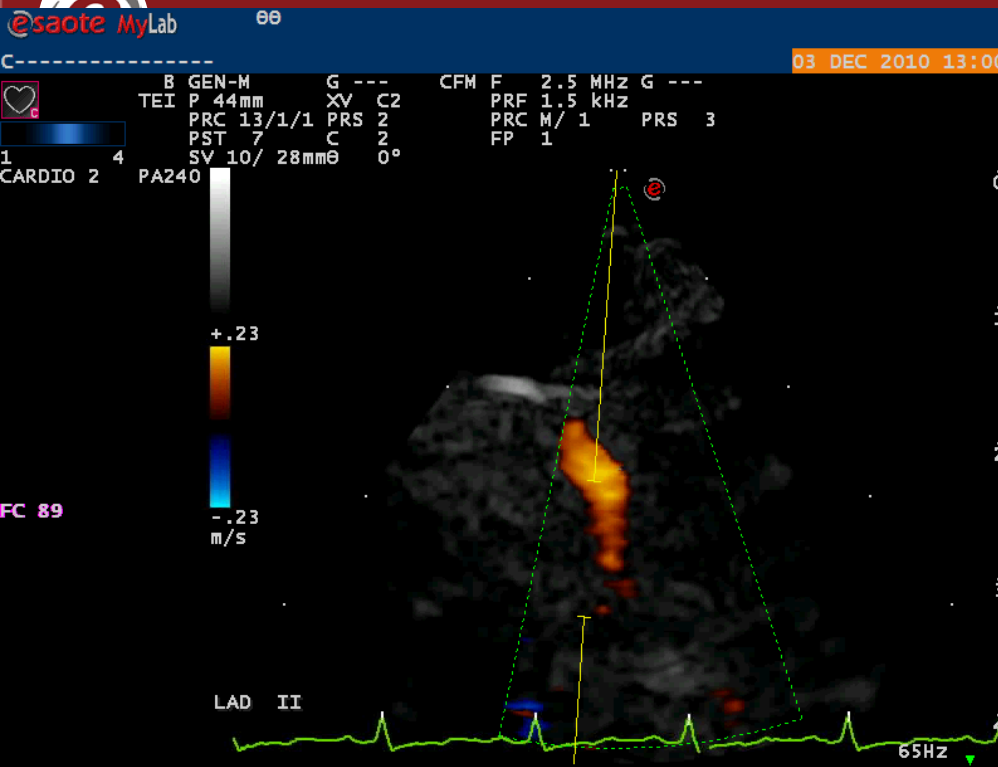


# LAD I = Proximal Tract

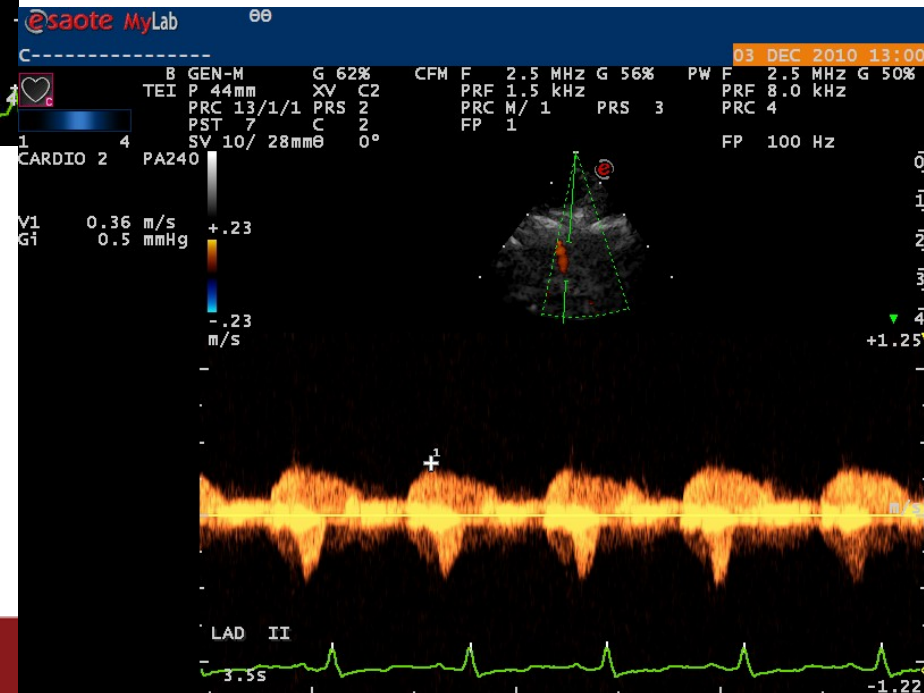


44 cm/s

# LAD II = Medial Tract



36 cm/s

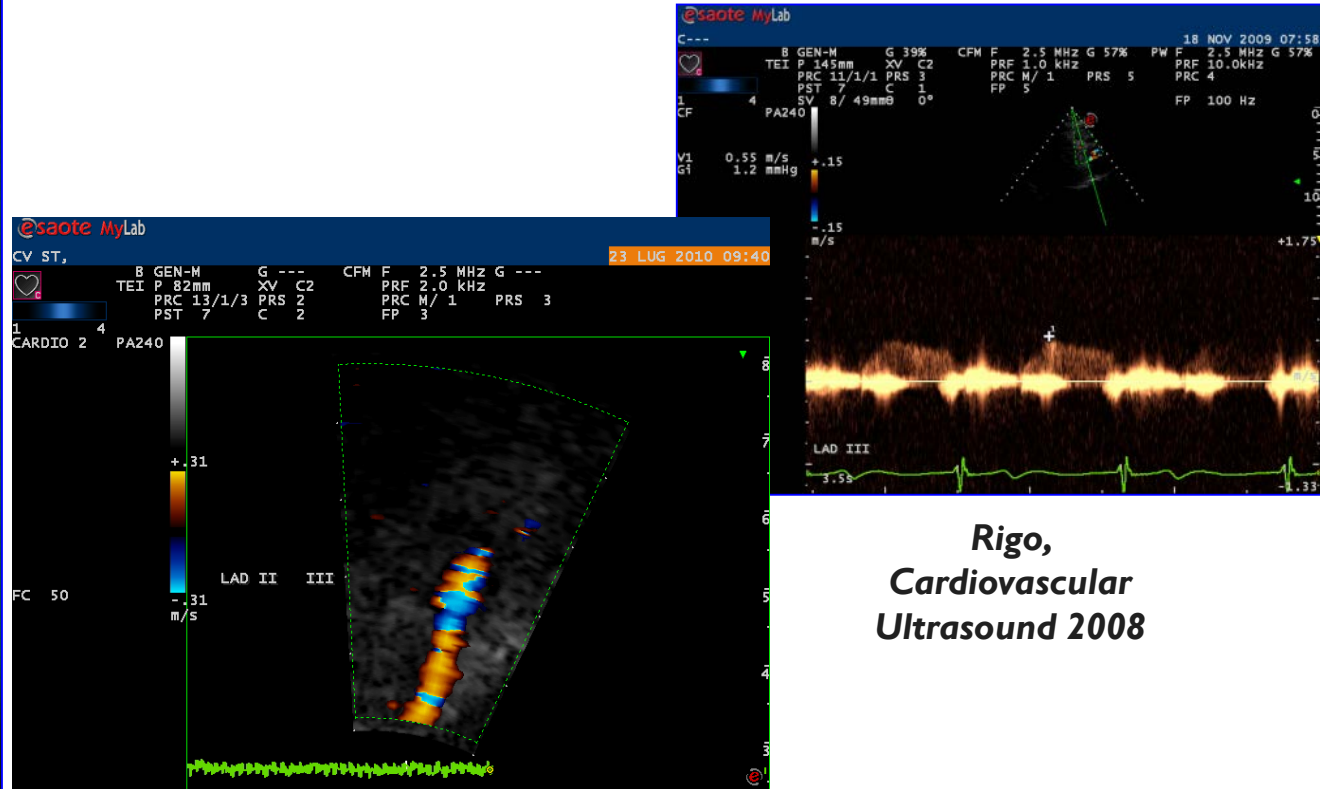
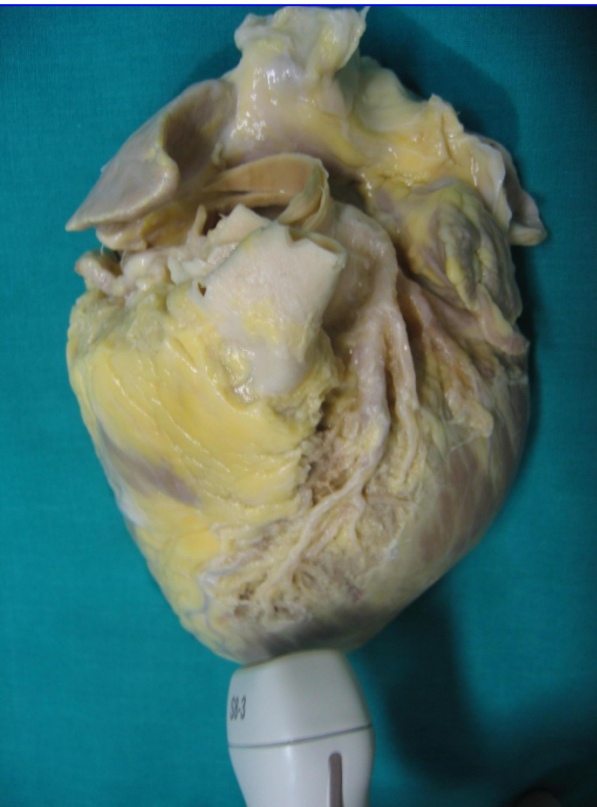




# Doppler: Quantification of Coronary Flow Reserve (CFR) for LAD (Left Anterior Descending Coronary Artery)



## Ultrasound findings of coronary arteries: LAD (Mid-Distal tract)



Rigo,  
Cardiovascular  
Ultrasound 2008

Lad: **mid-distal tract**

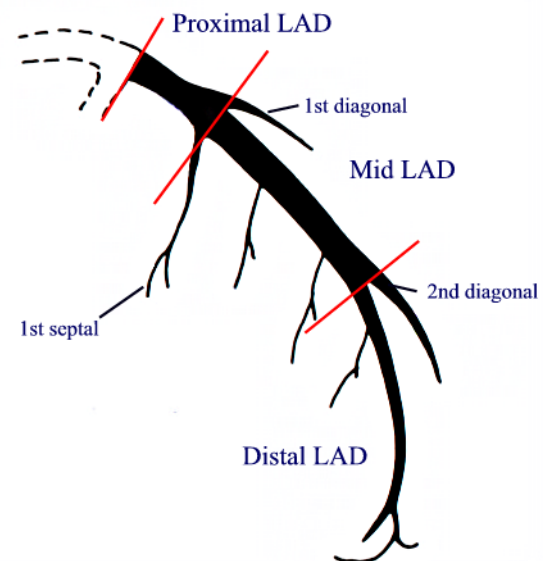
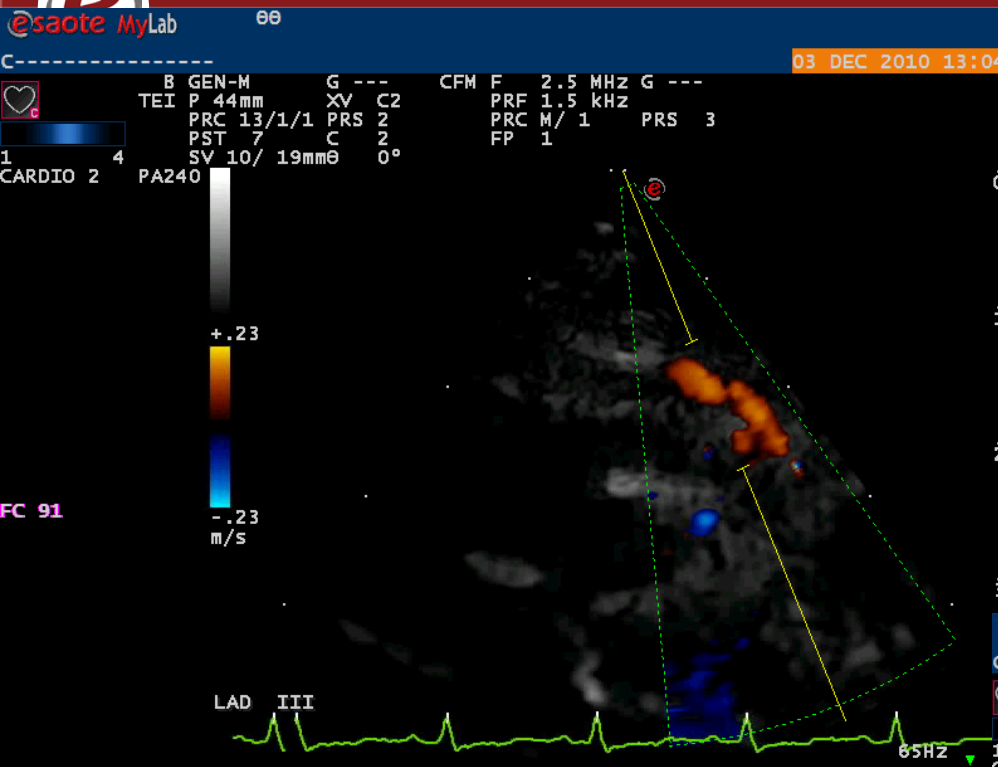
Feasibility **98% pts**

**Normal values**  
**MFV=25±7 cm/s**

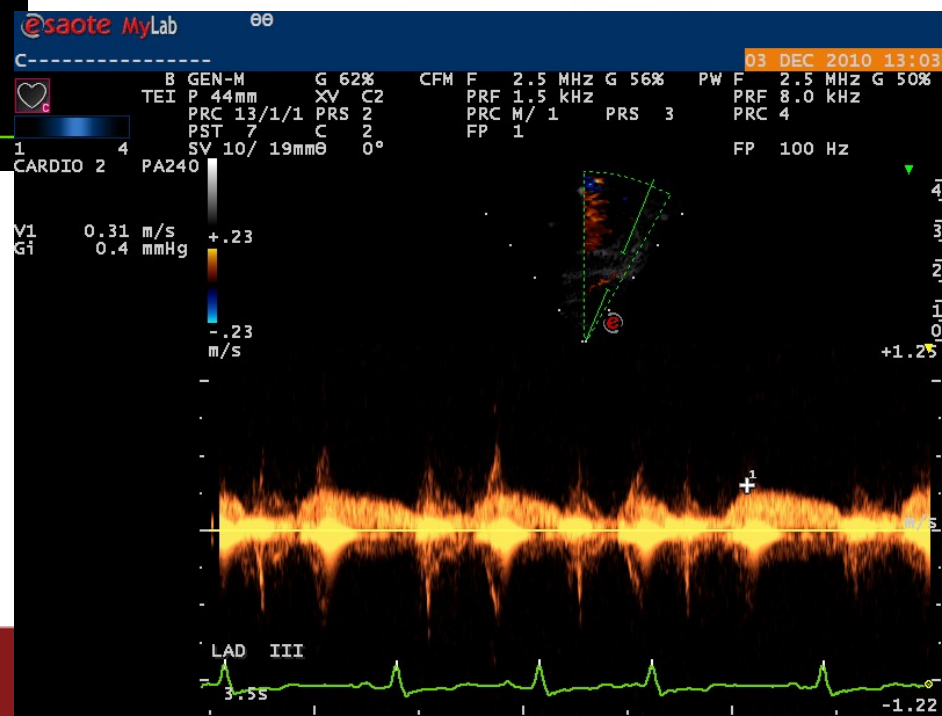
*Images and data courtesy of Prof. Rigo*



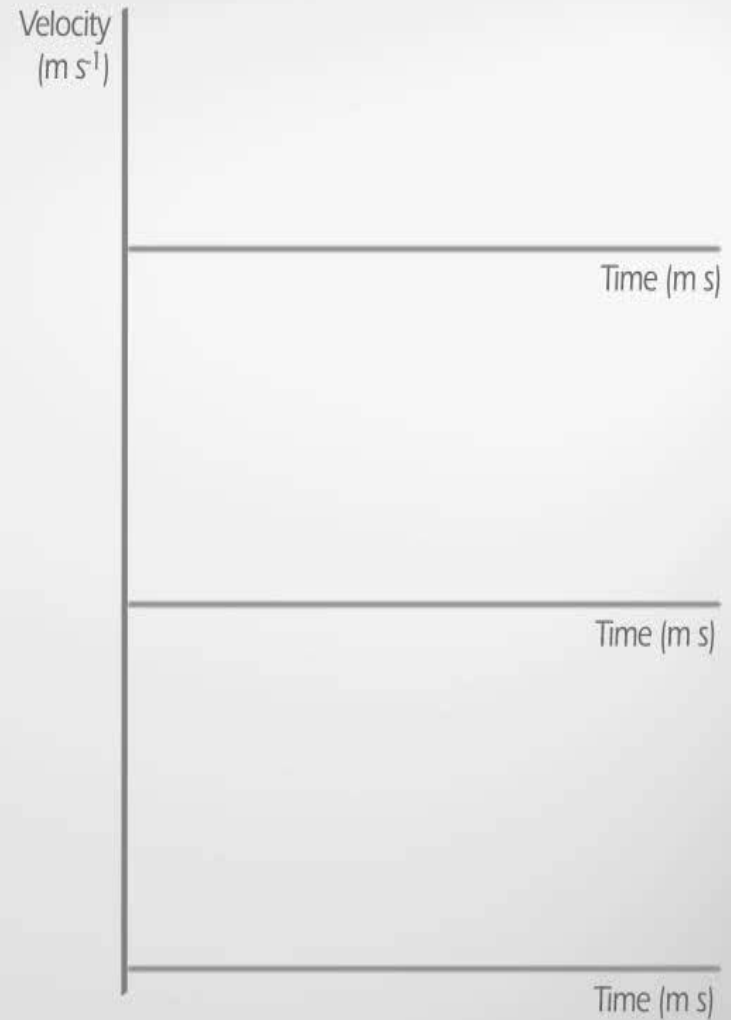
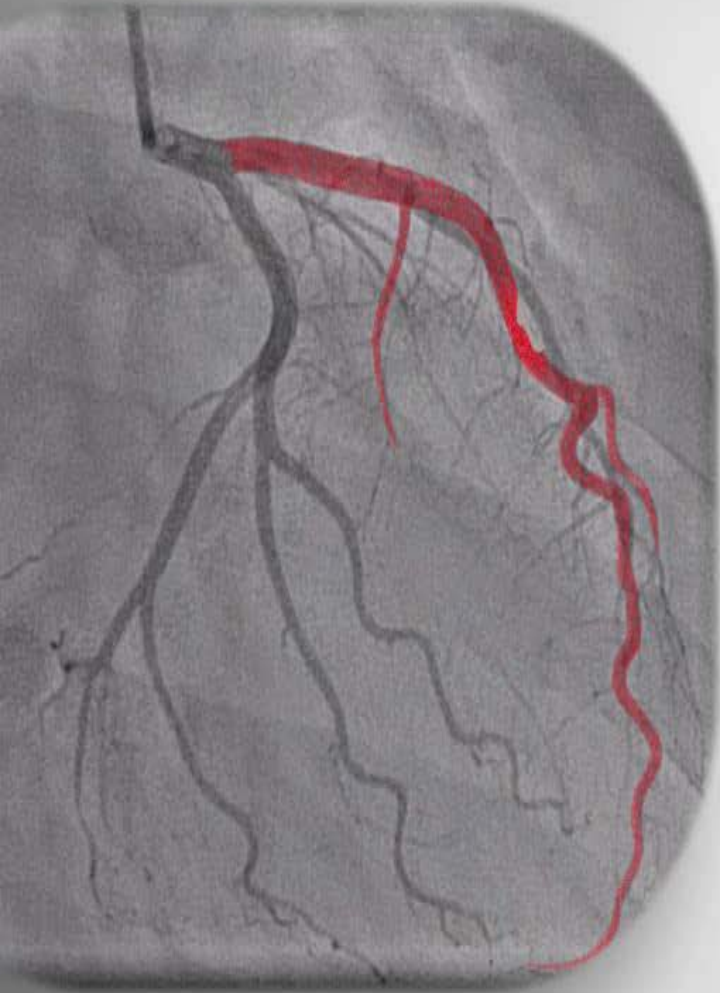
# LAD III = Distal Tract



31 cm/s



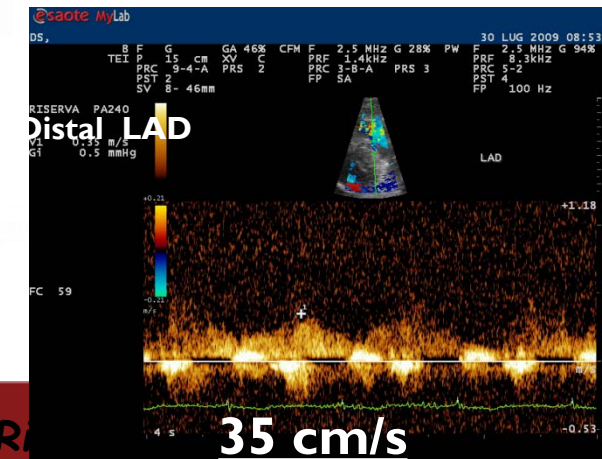
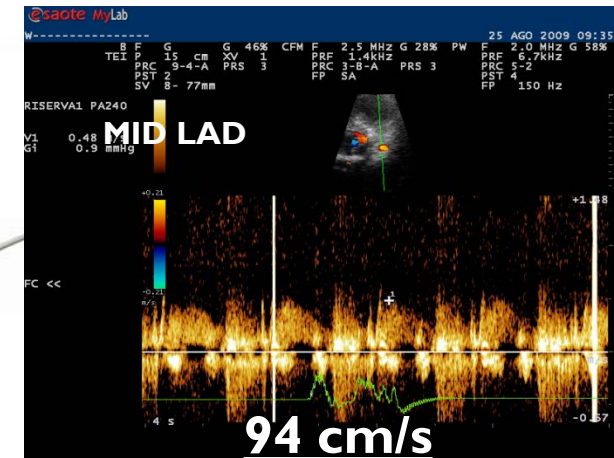
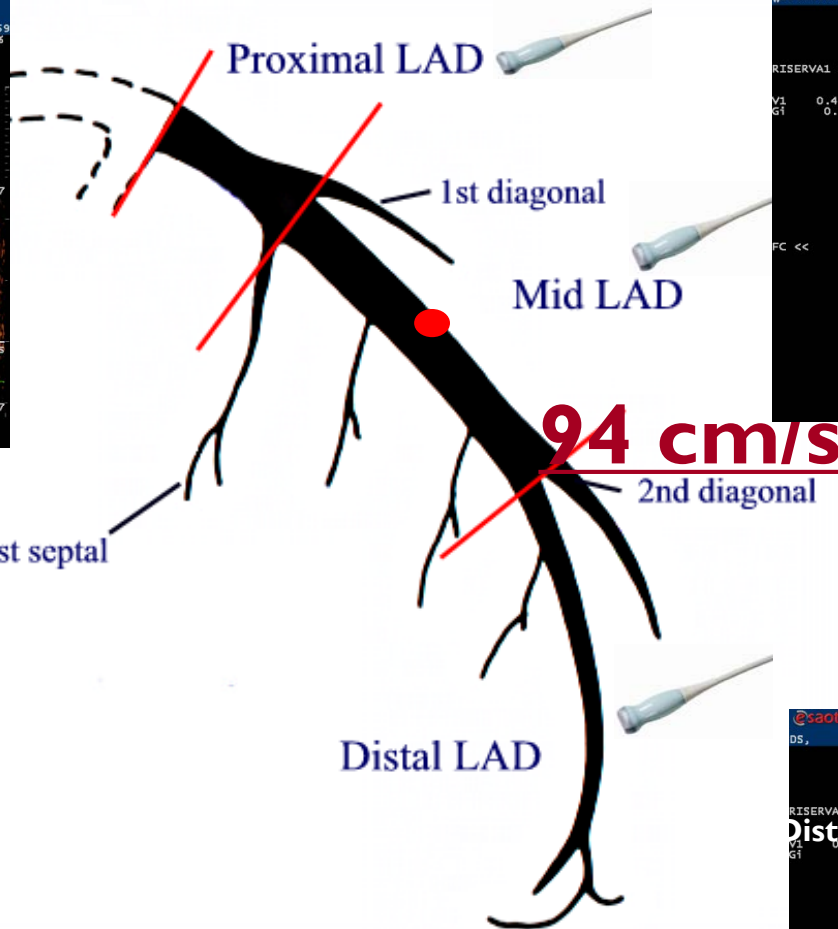
# PATHOLOGICAL PATTERN





# Doppler: Quantification of Coronary Flow Reserve (CFR)

## Example of Pathological coronary flow pattern (stenosis)



TTD NON INVASIVE

Images and data courtesy of Prof. Rigo

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# PATOLOGIC PATTERN

