

Einführung in den Ultraschall

Grundlagen
Bildeinstellungen
POCUS Konzept

1. Tools und presets

Eindringtiefe
(niedrige Frequenz)



Sektorsonde



Konvexsonde

Auflösung
(hohe Frequenz)

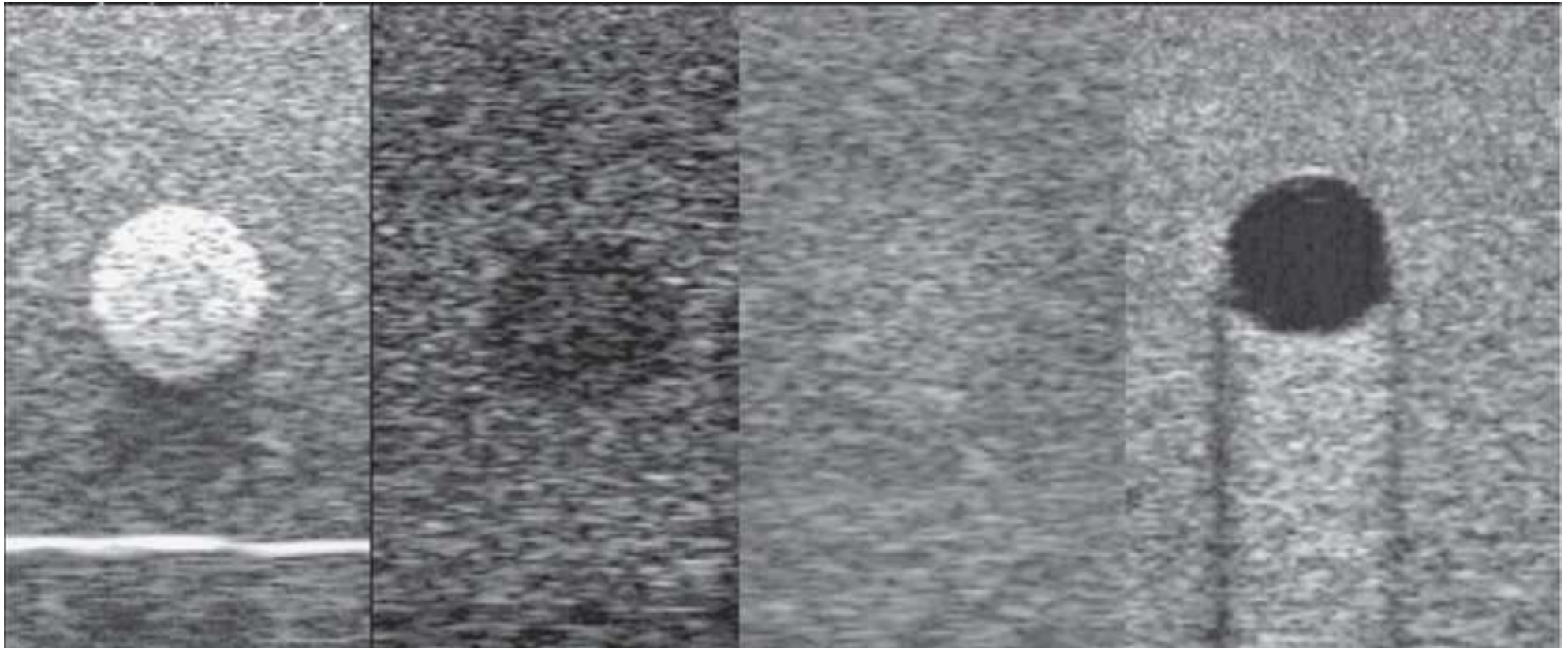


Linearsonde



Stabsonde

2. Sprache



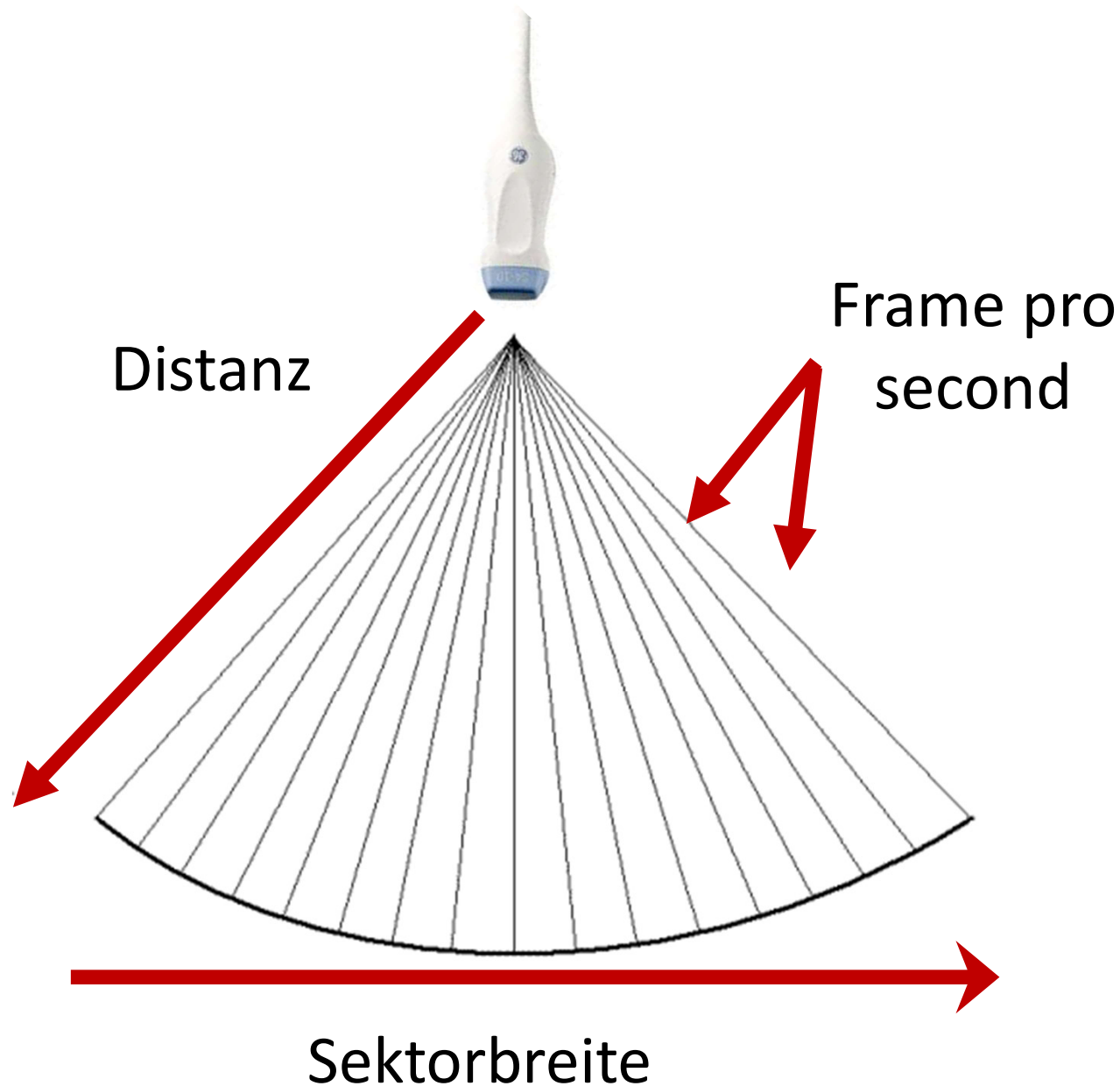
Hyperchogen

Hypoechogen

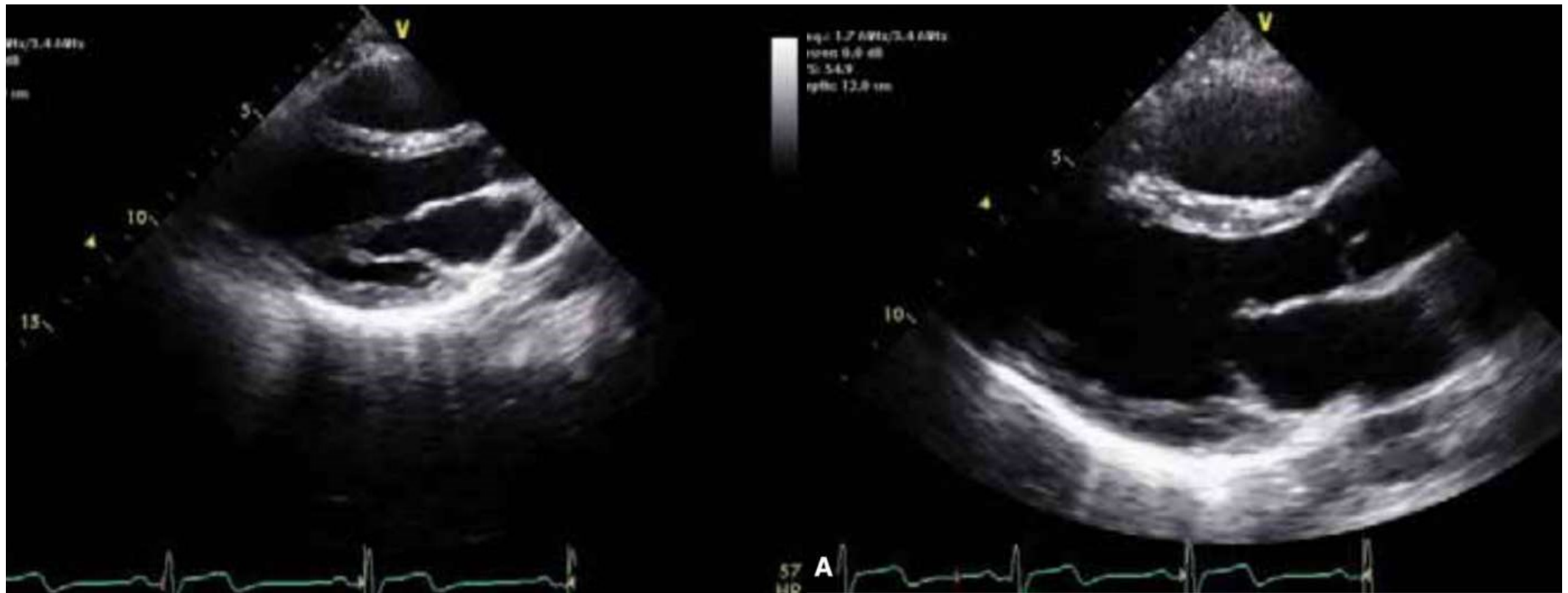
Isoechogen

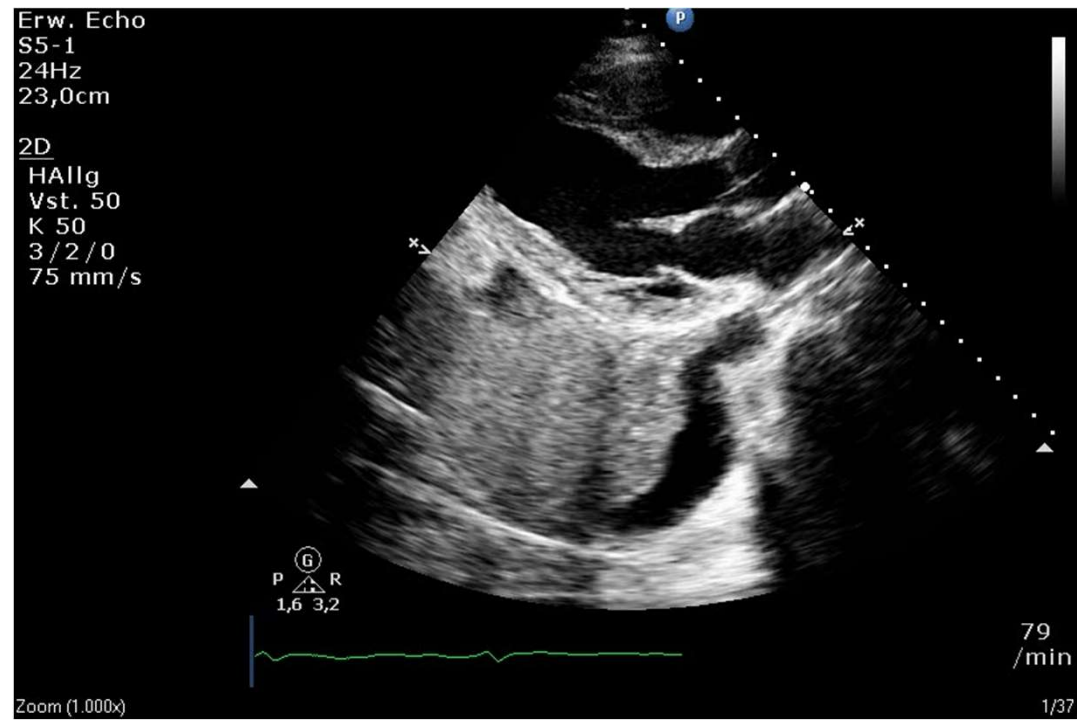
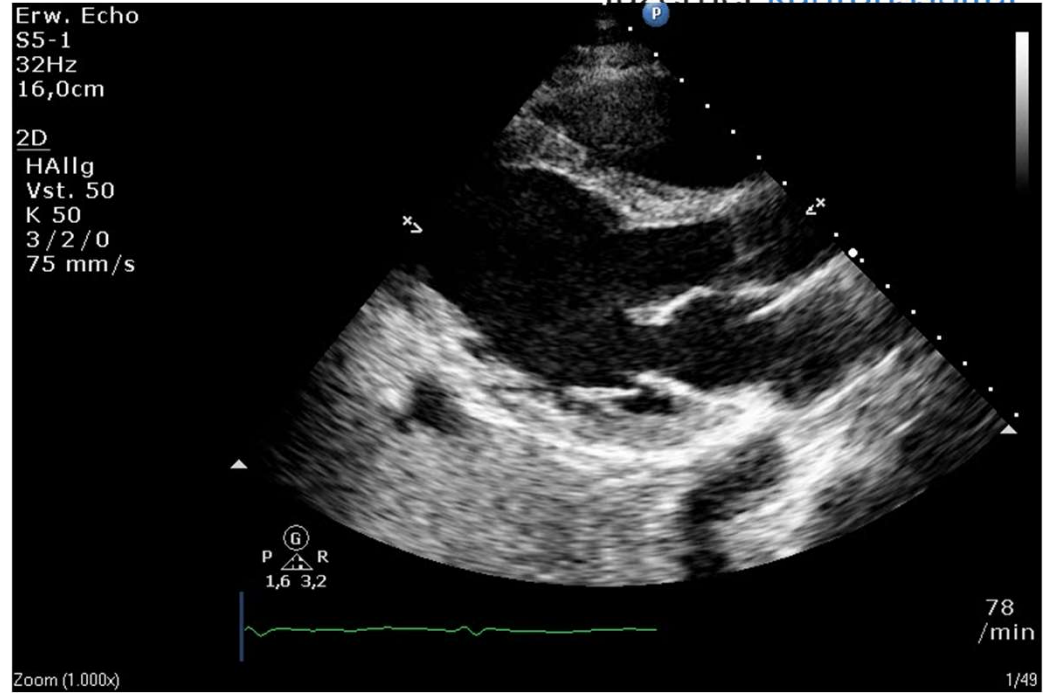
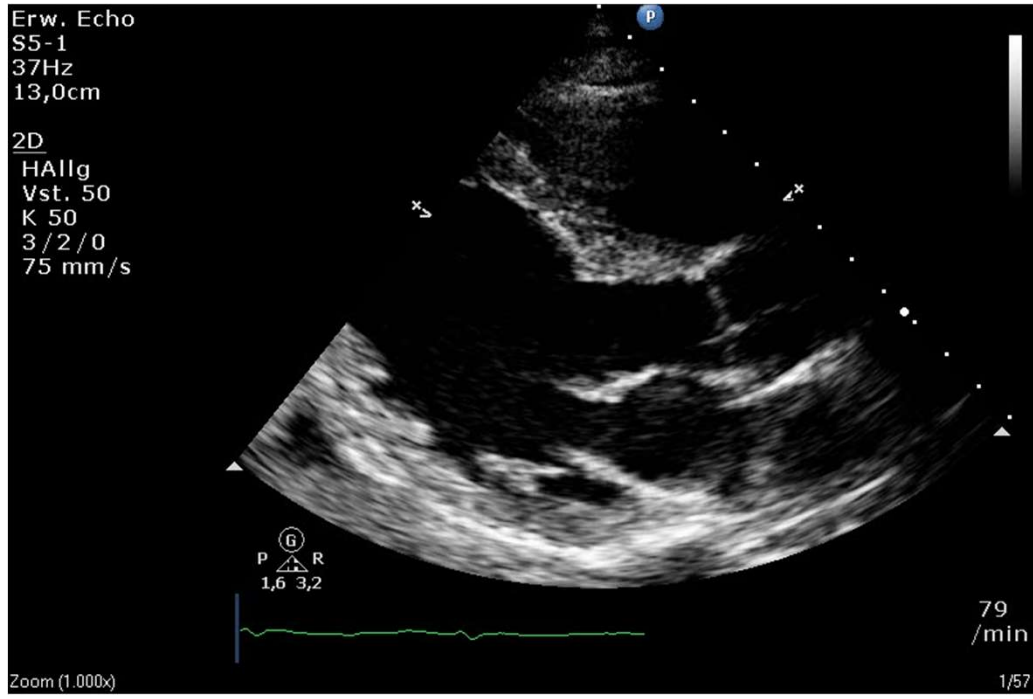
Anechogen

3. Verständnis von Physik

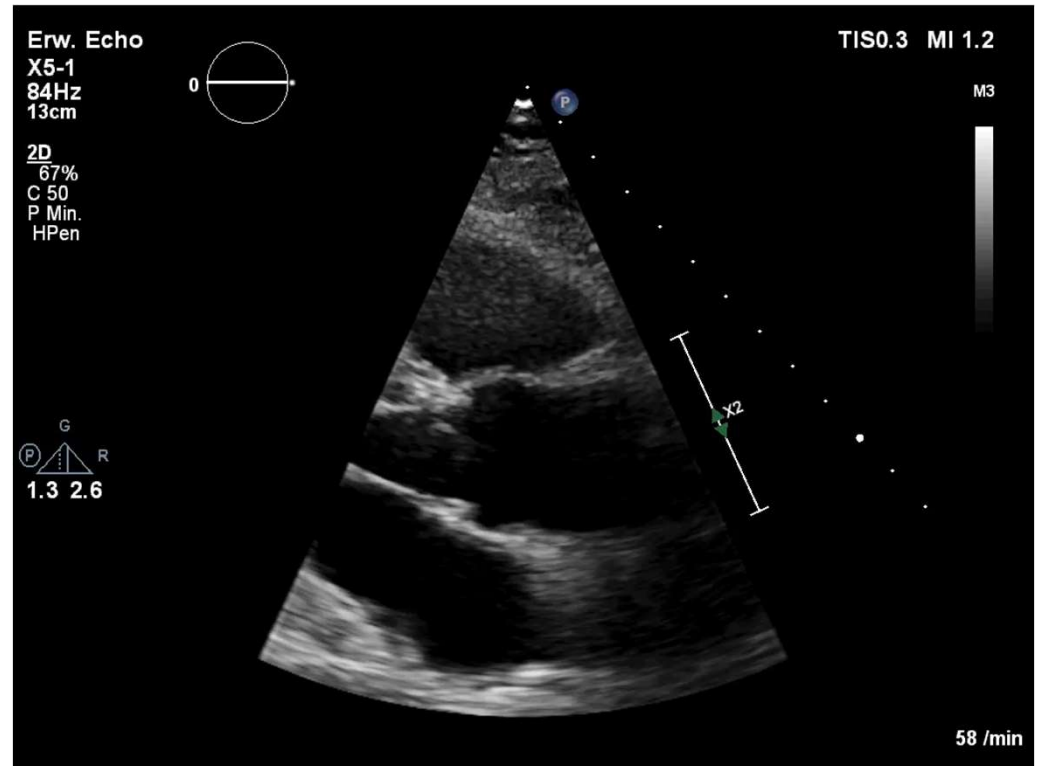
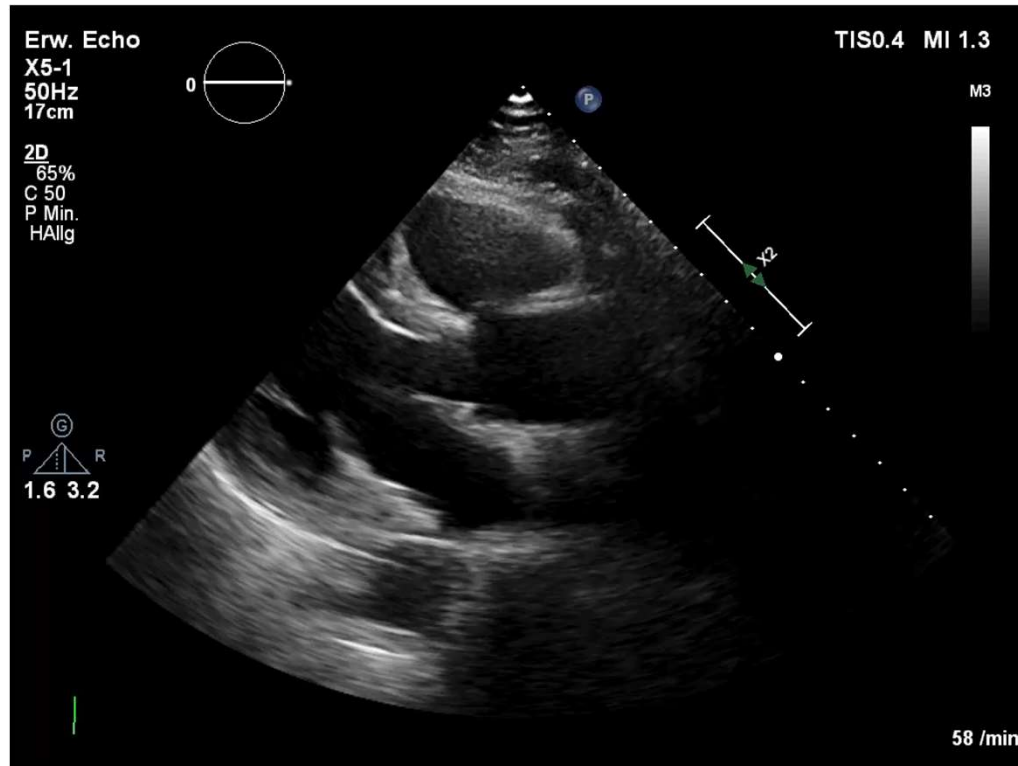


Bildeinstellung - Tiefe

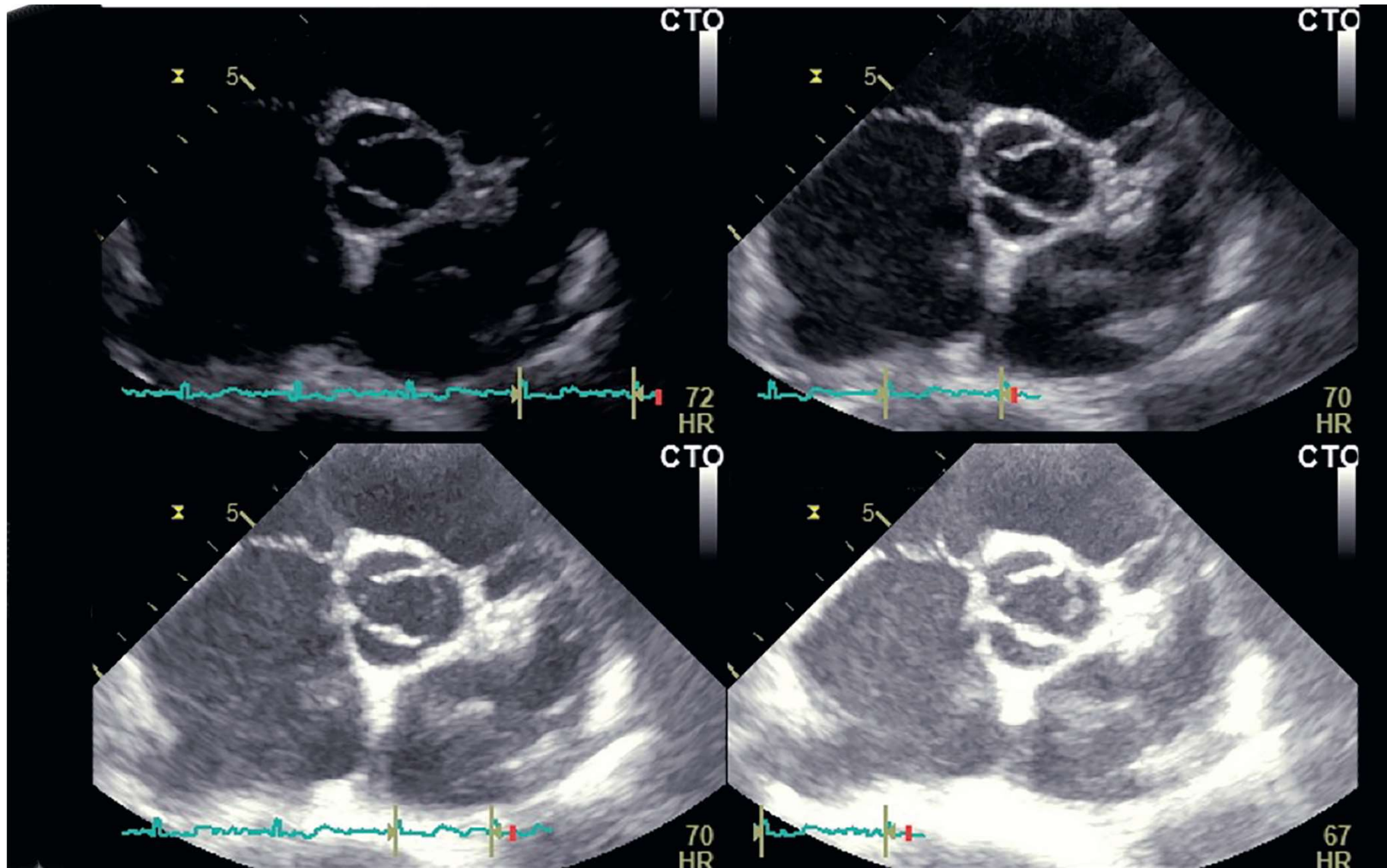




Bildeinstellung - Sektorbreite

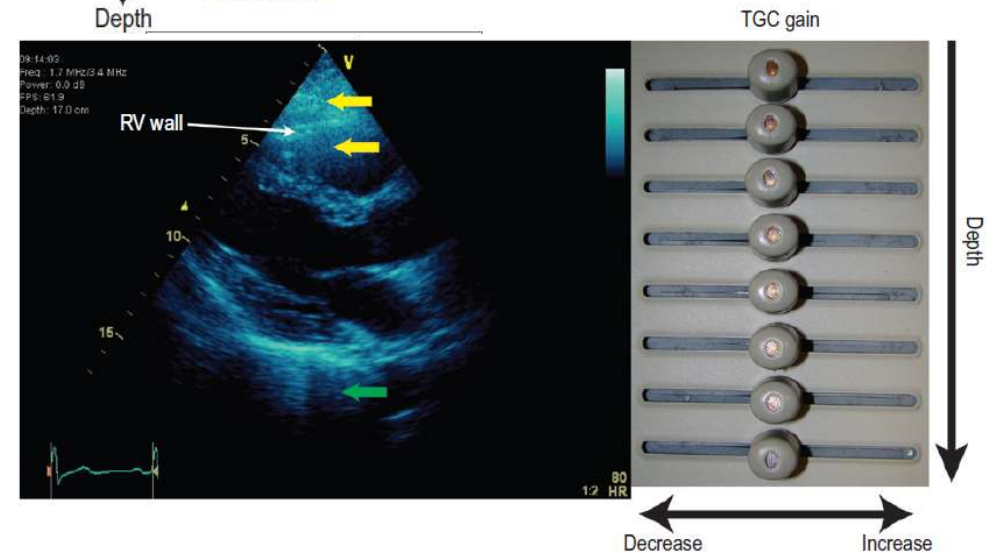
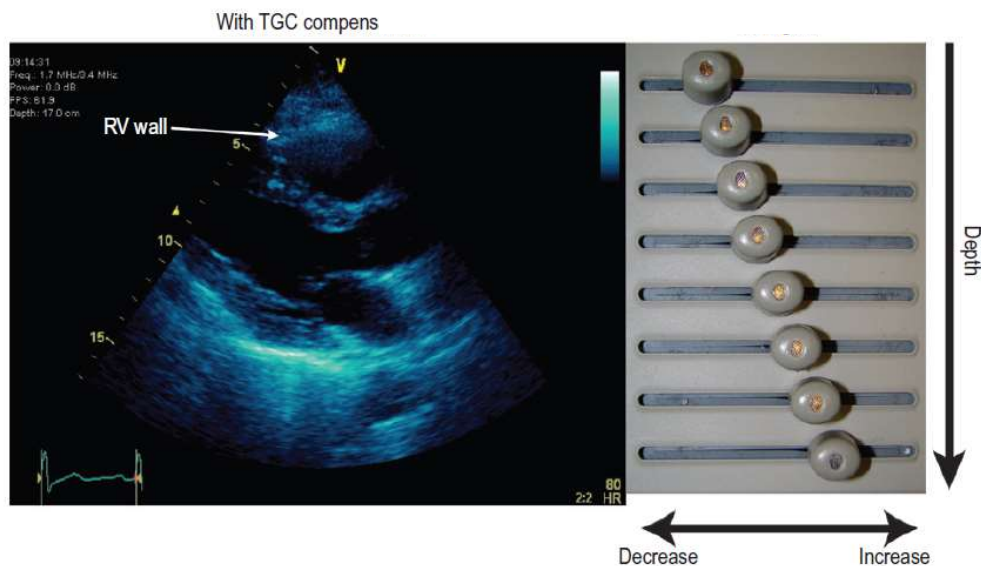
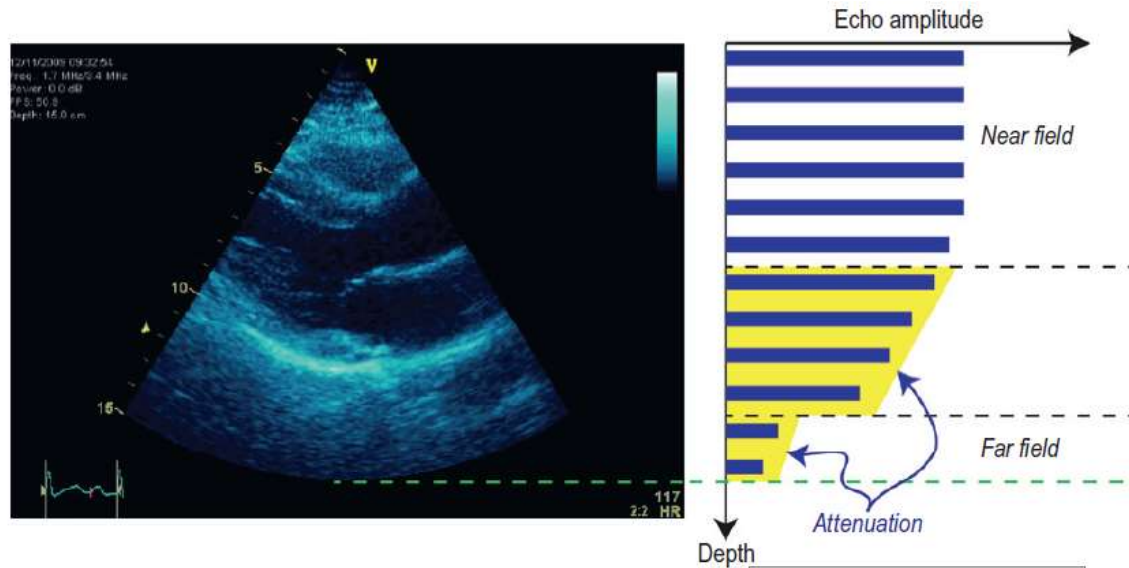


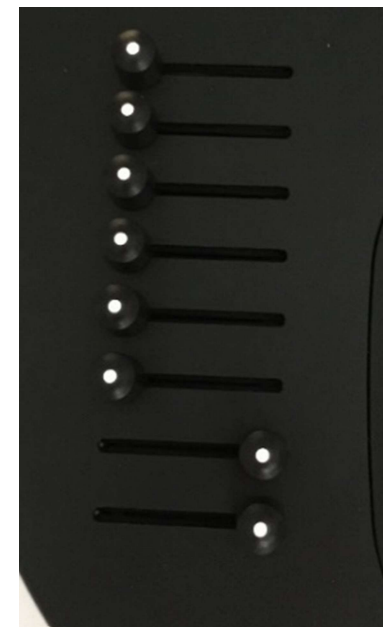
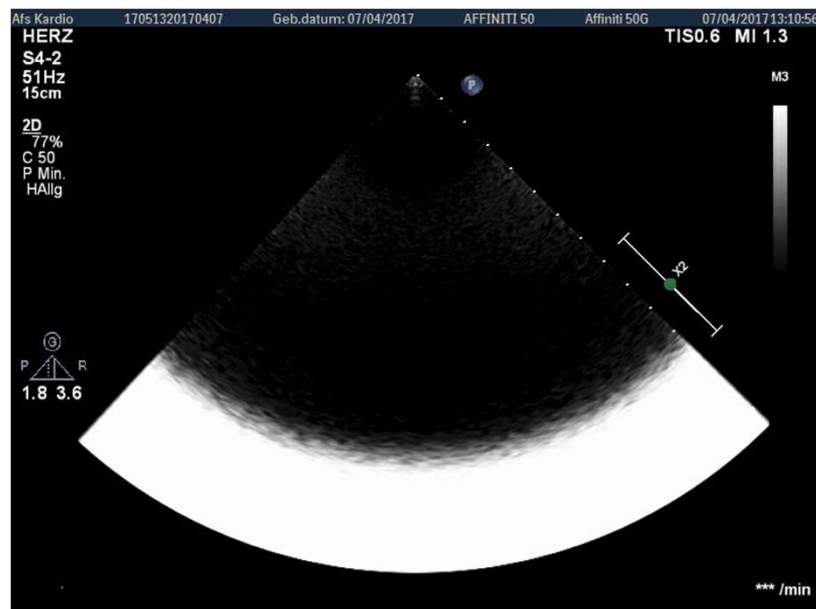
Bildeinstellung – Verstärkung / Gain

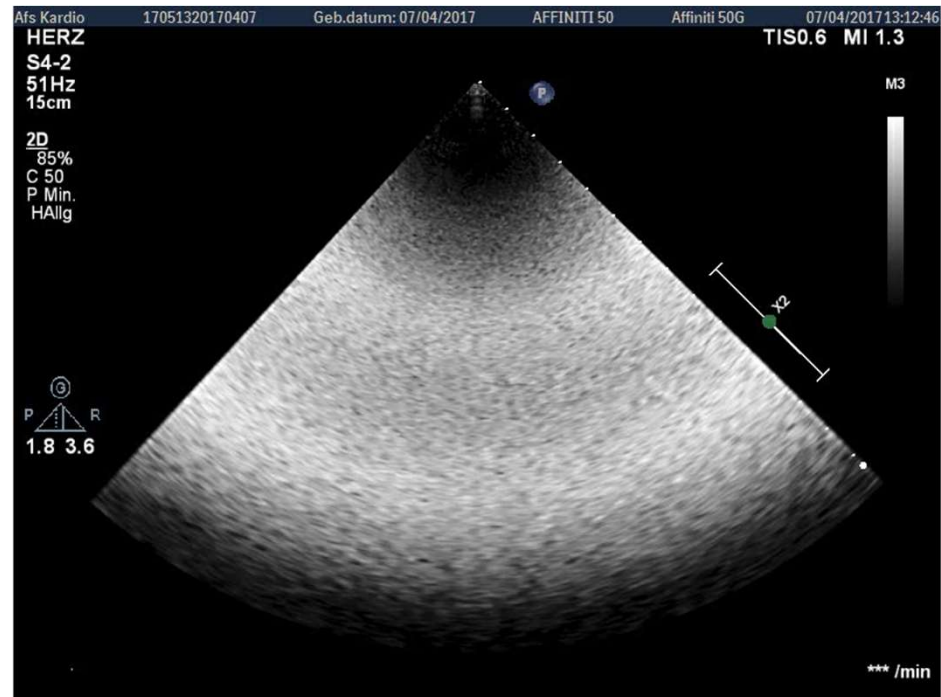


Bildeinstellung - TIME GAIN COMPENSATION

Laufzeitabhängige Verstärkung

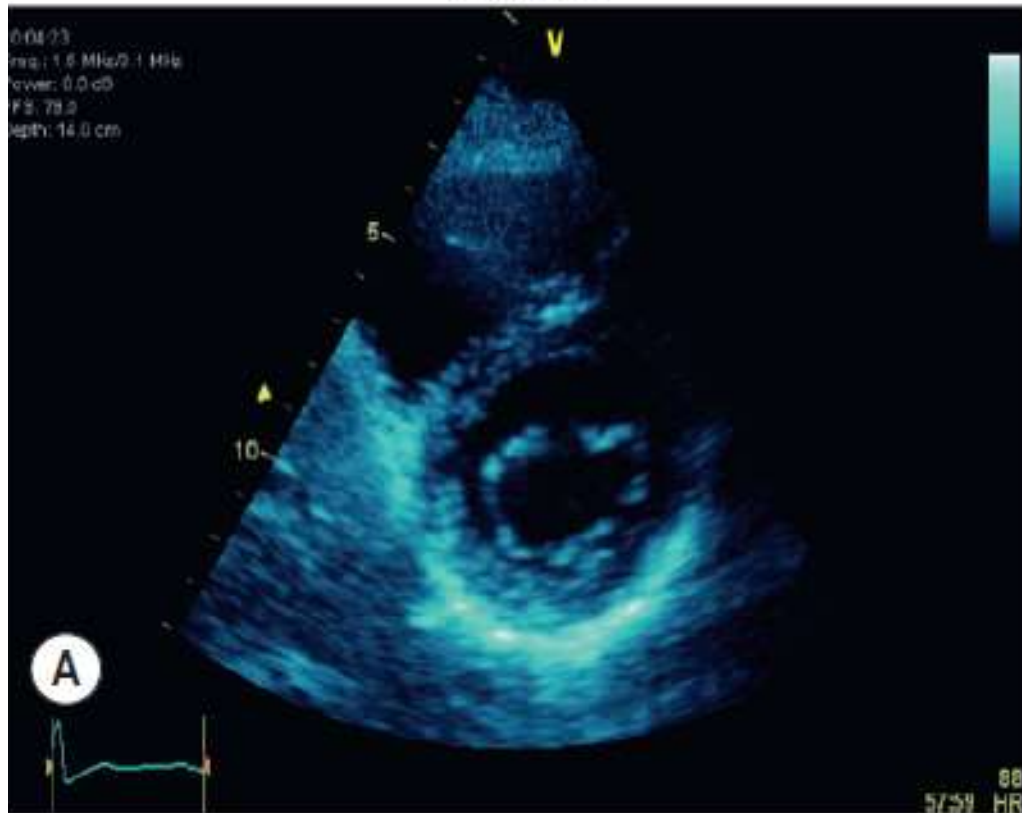




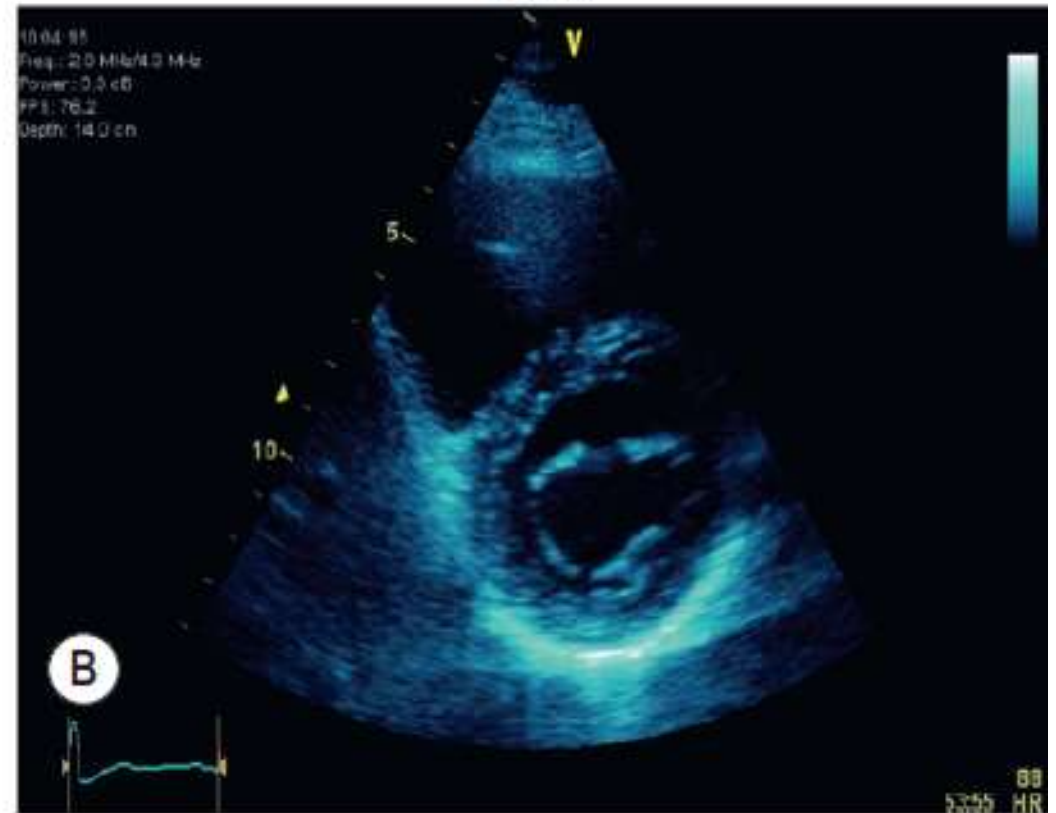


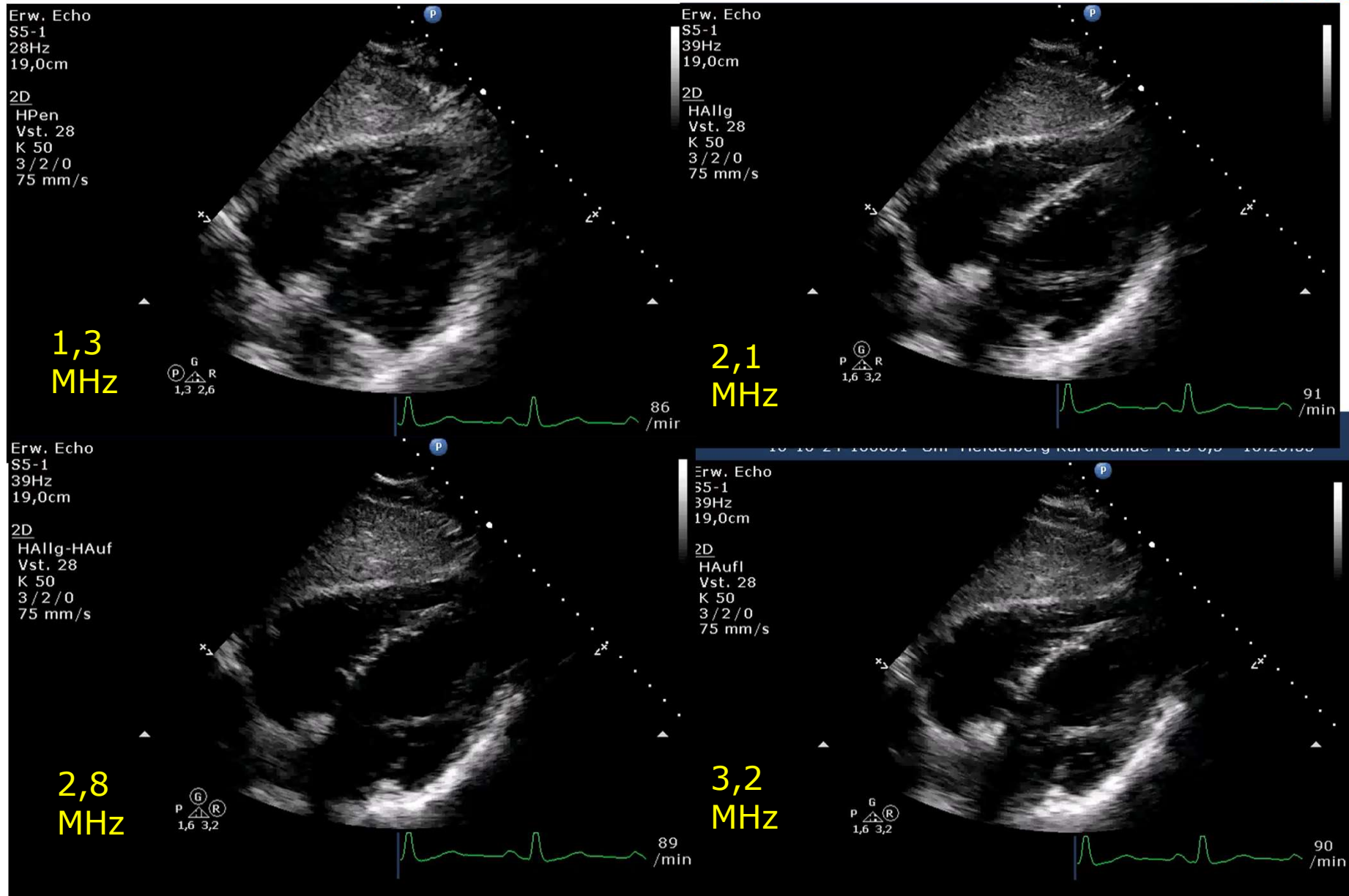
Bildeinstellung - Frequenz

1.5 MHz

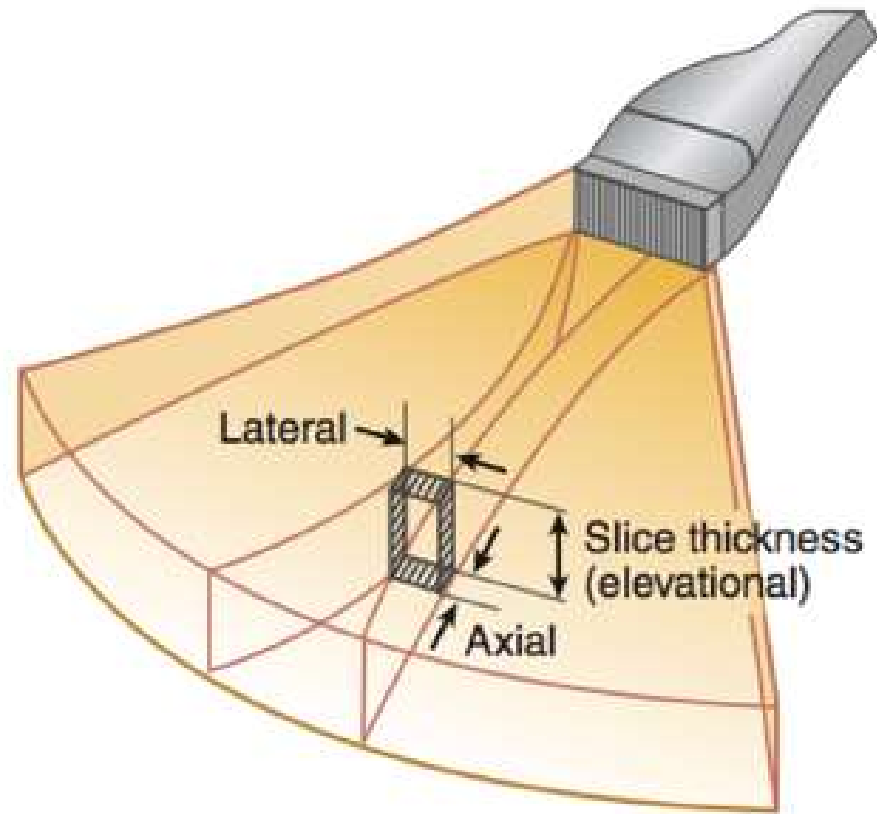
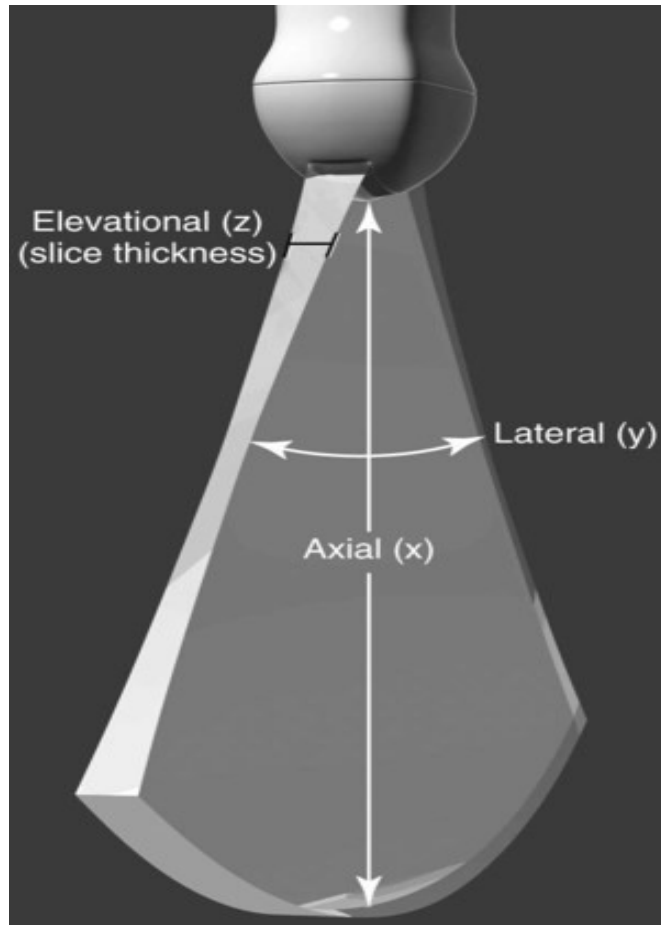


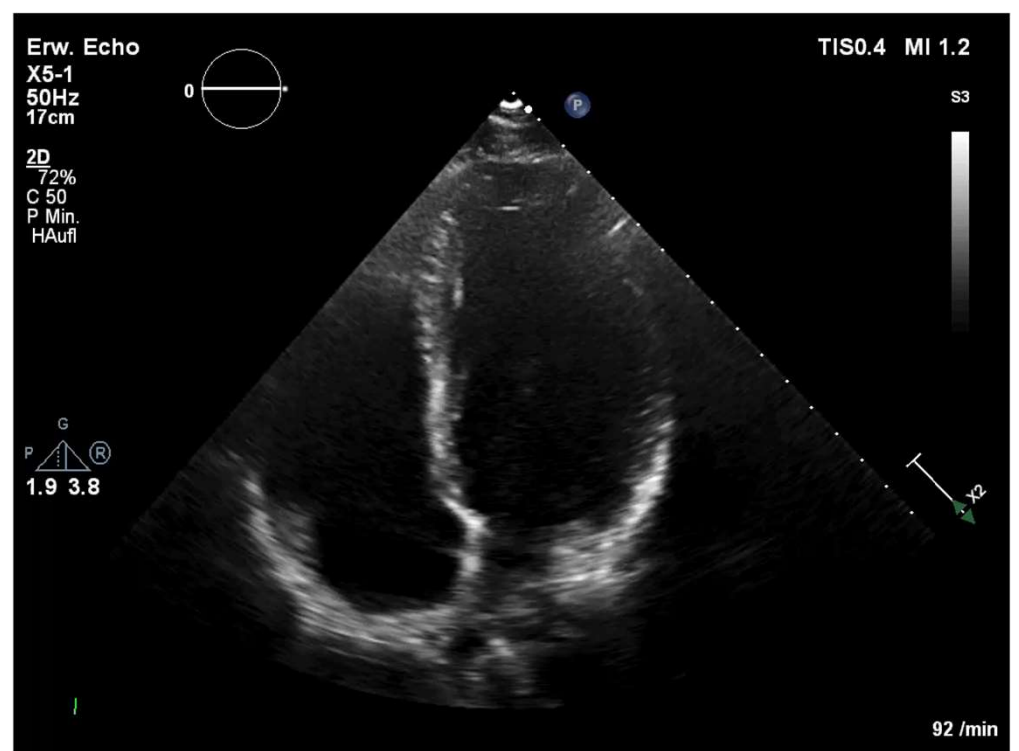
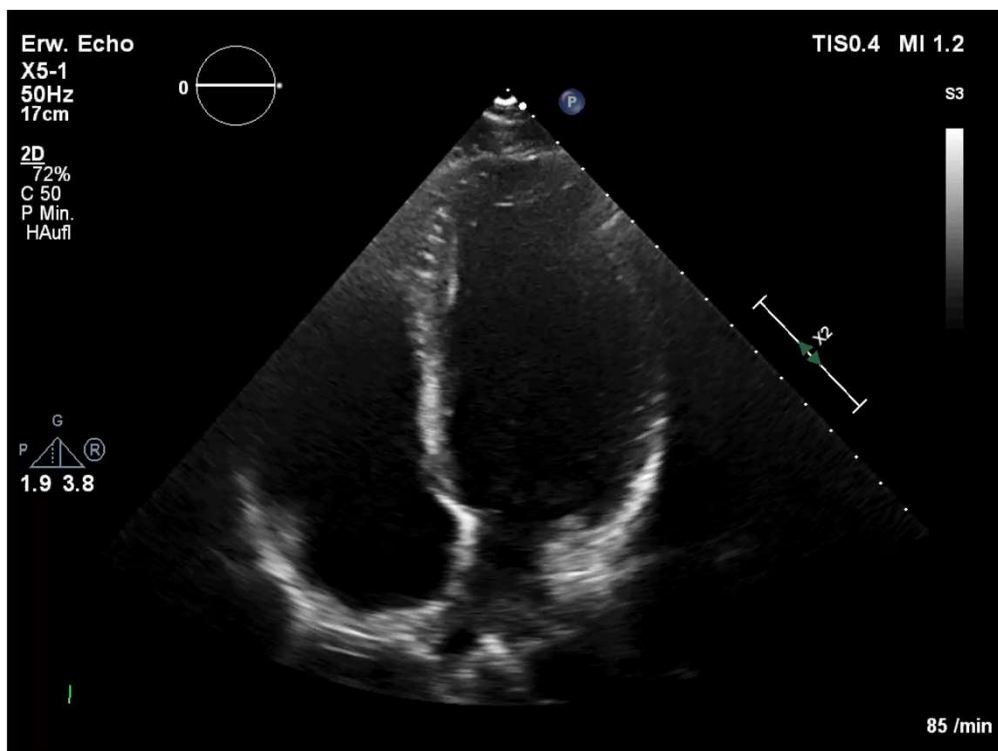
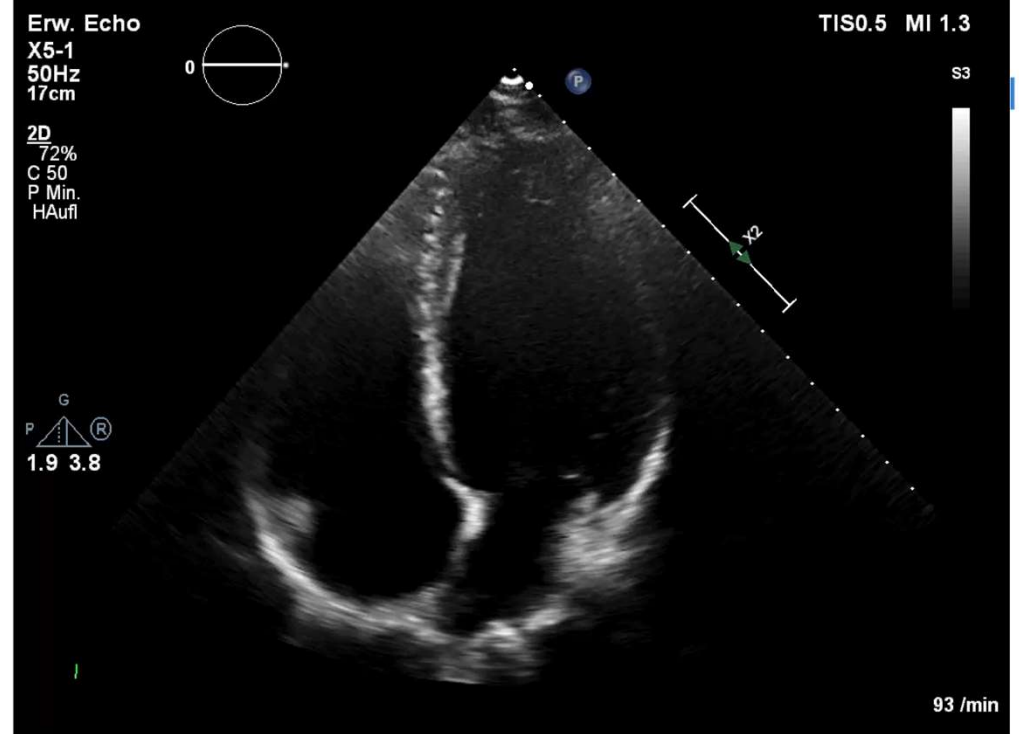
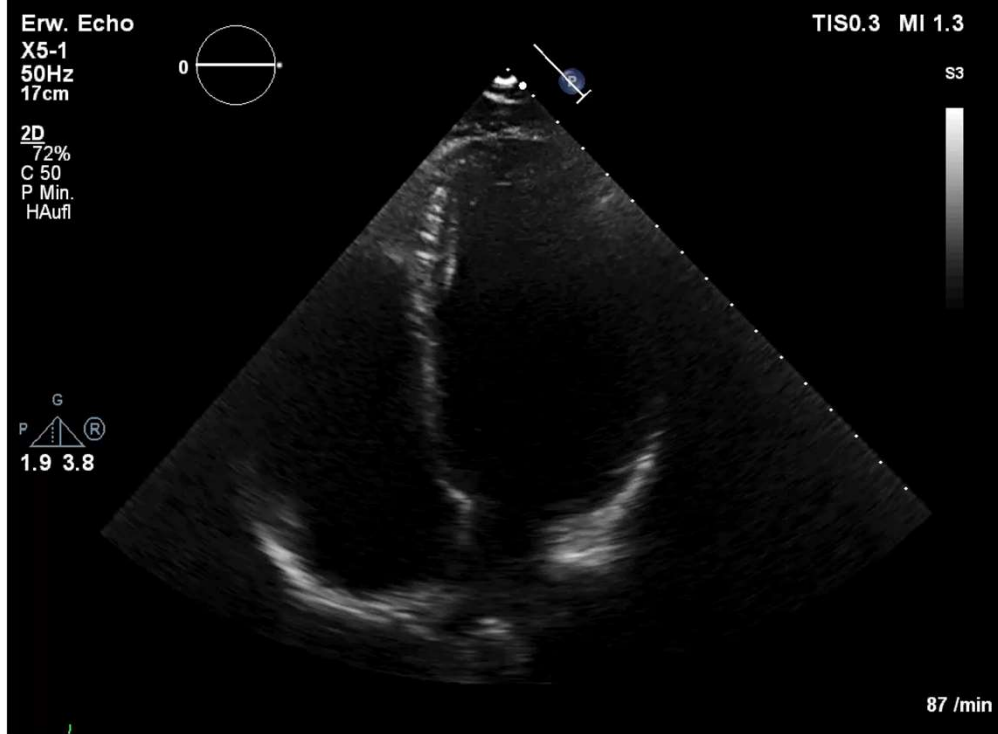
2 MHz





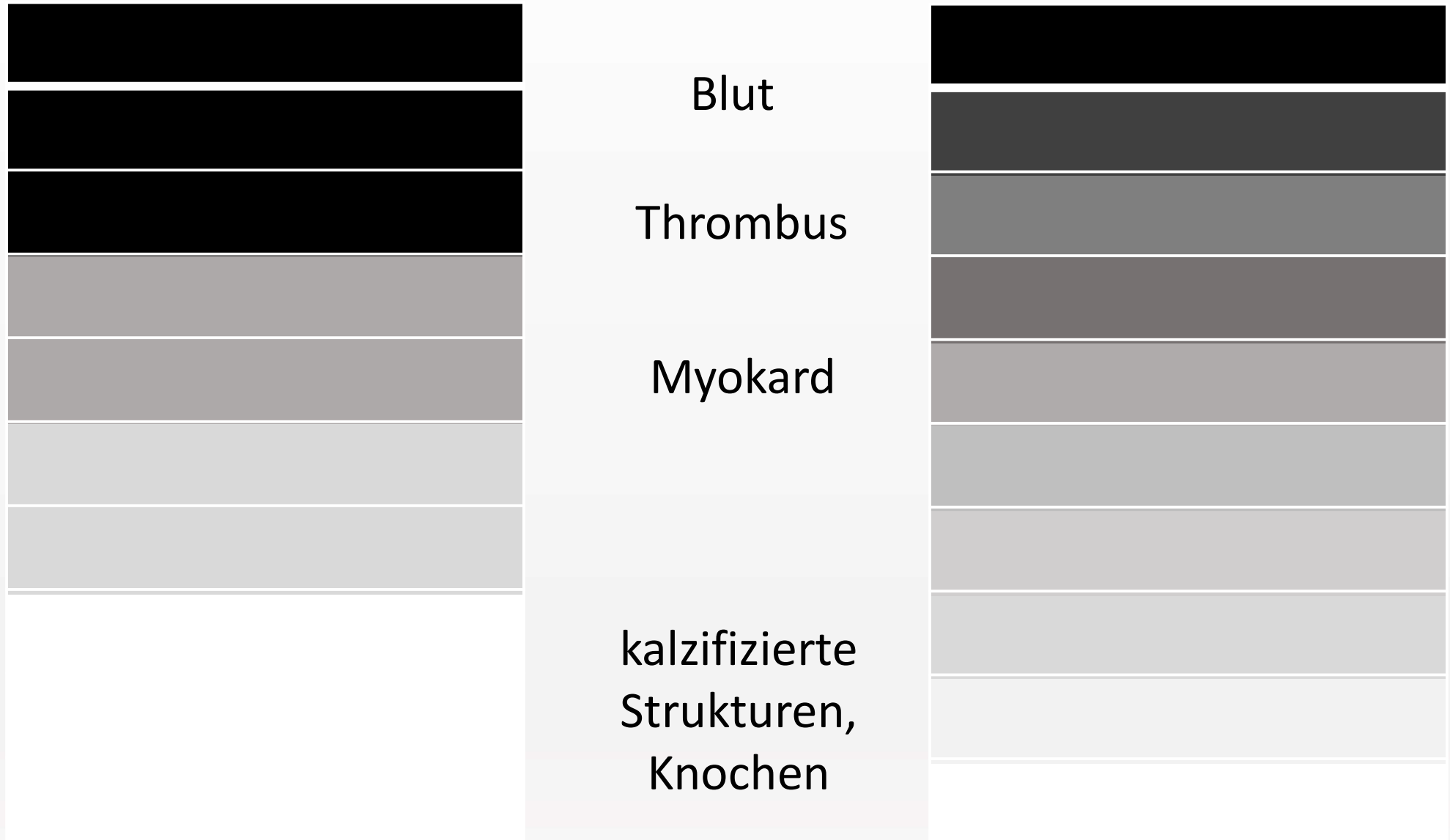
Bildeinstellung - Fokus

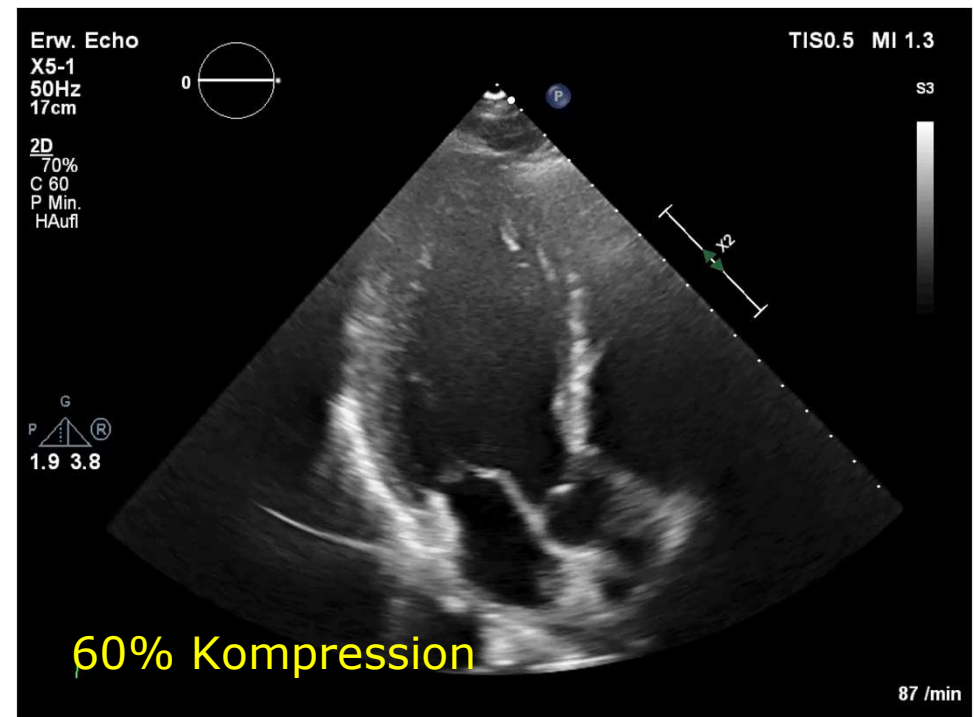
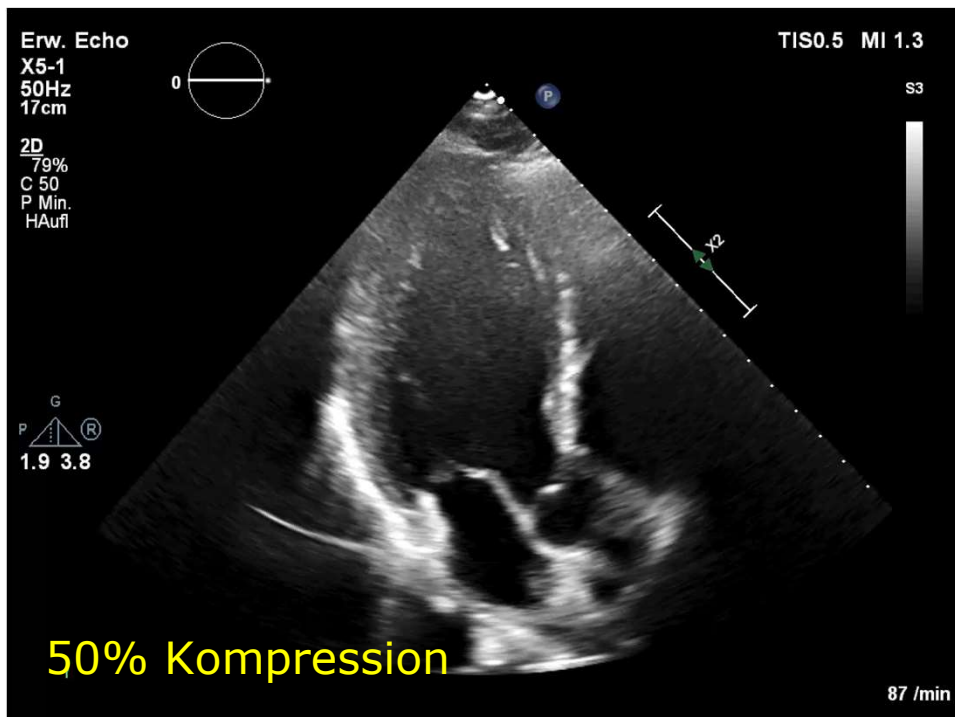
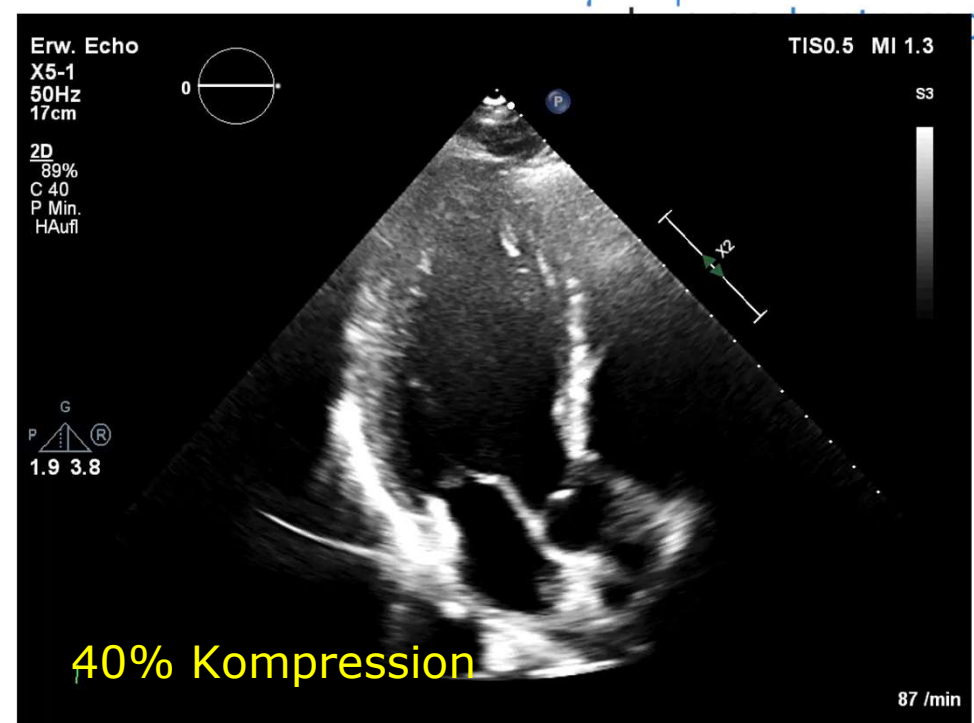
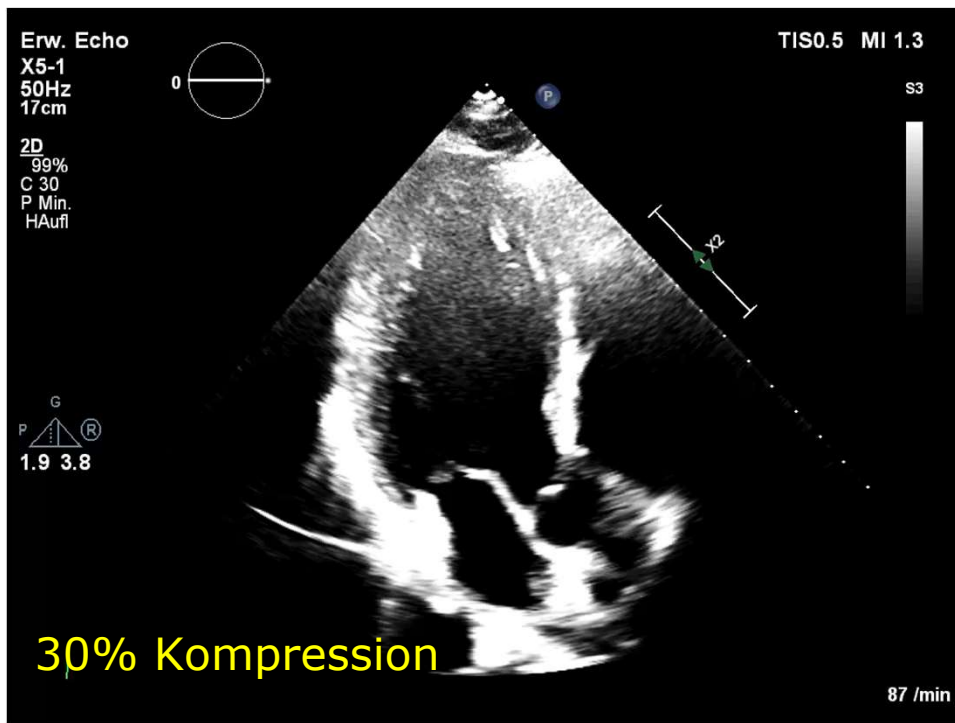




Kompression (dynamic range)

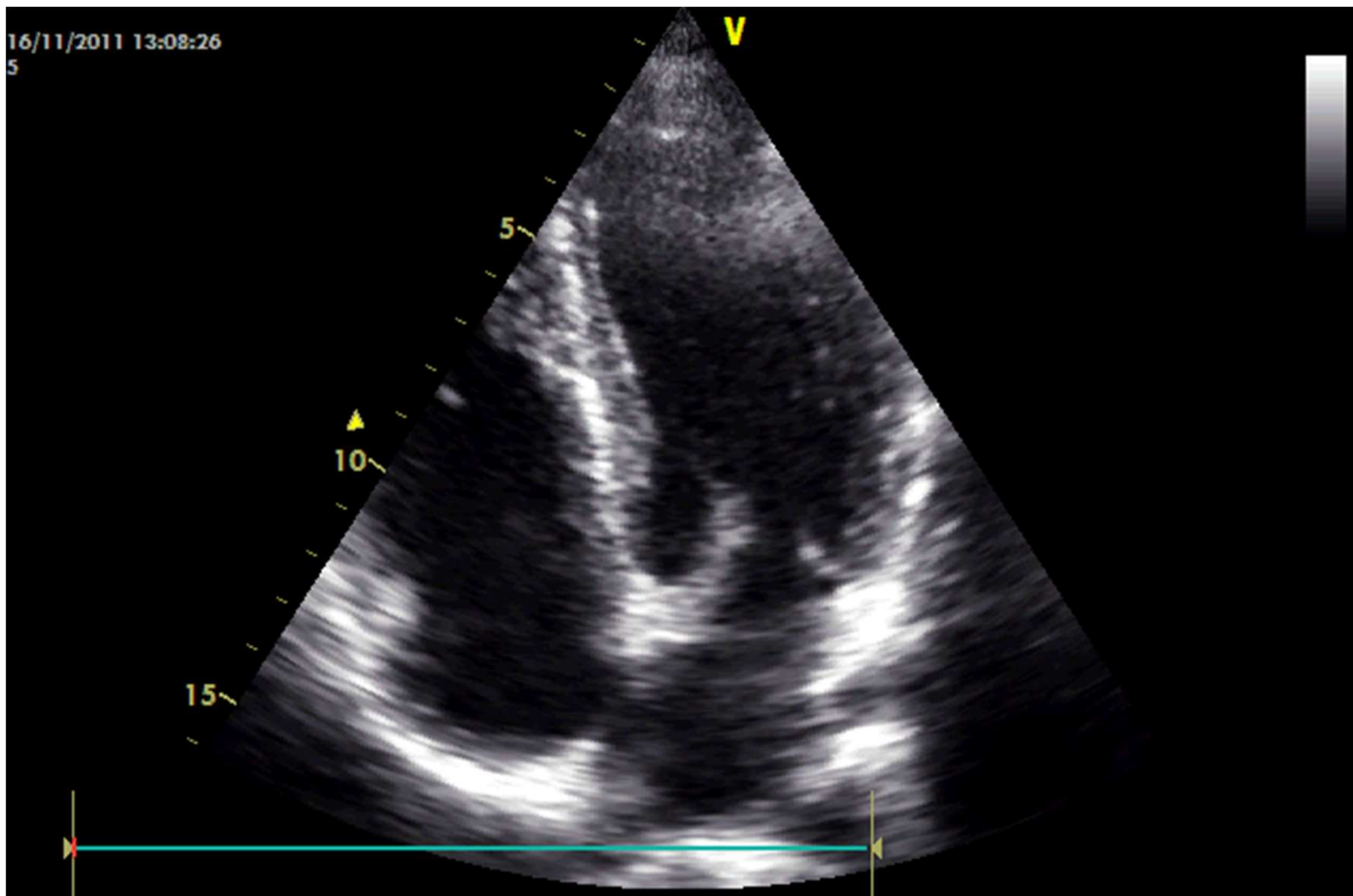
Einstellung von Grautöne

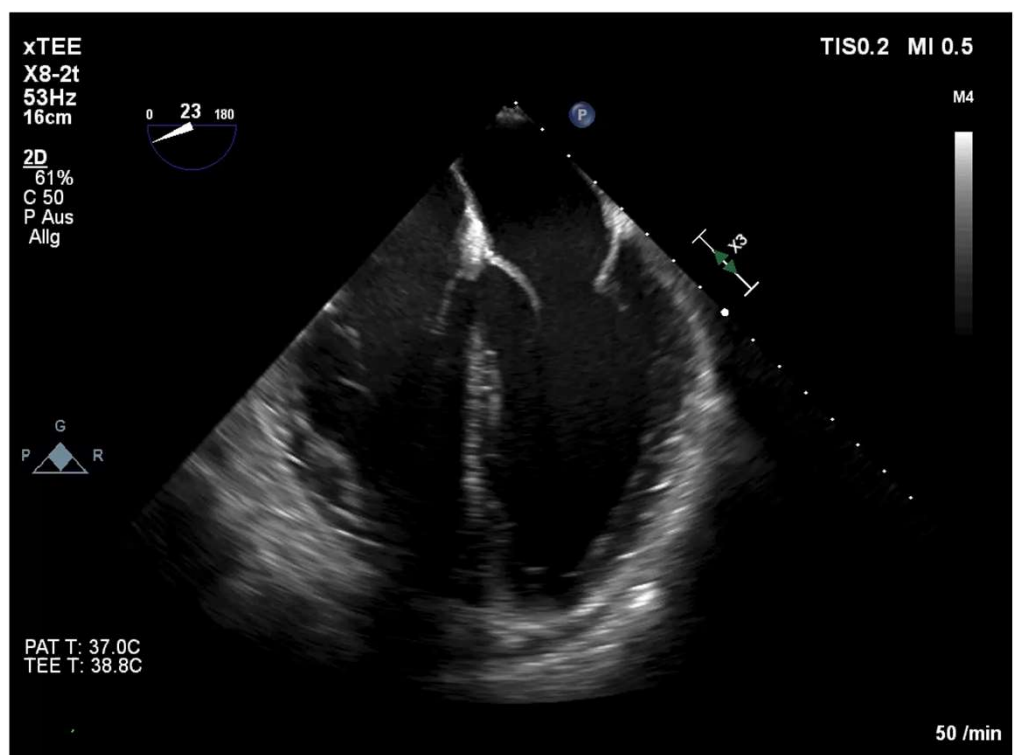
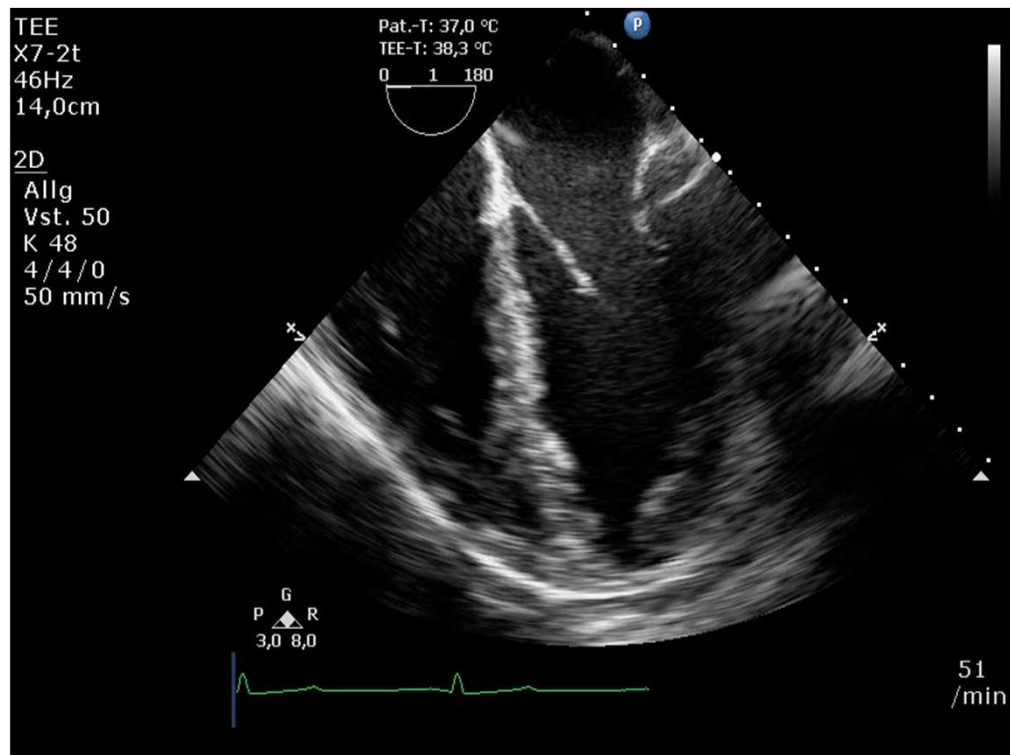
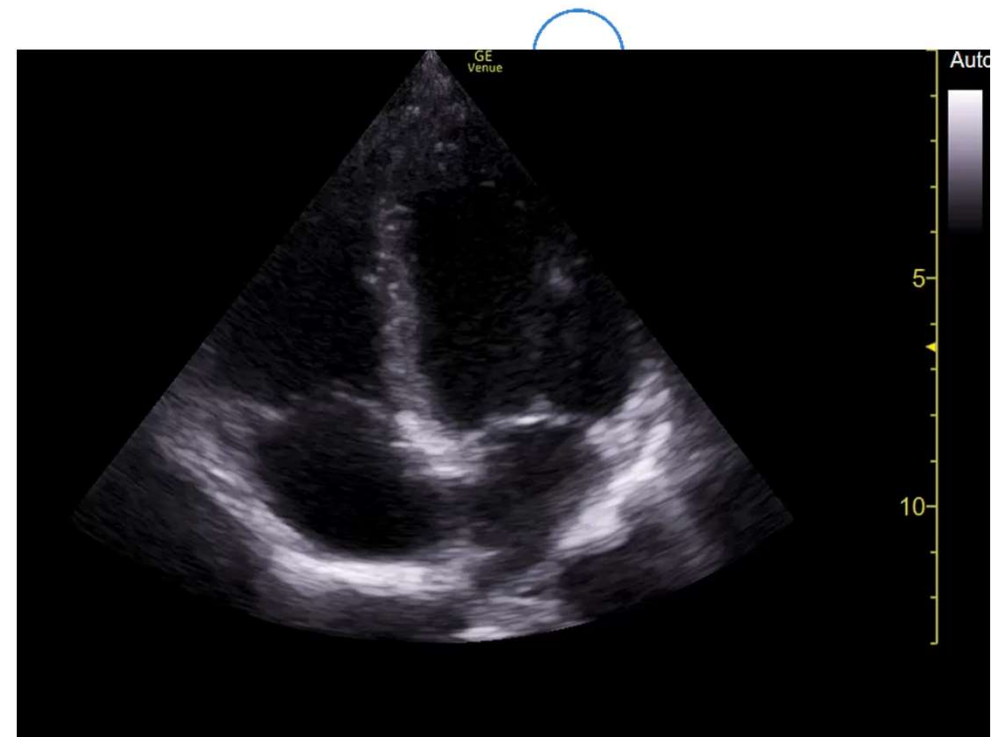
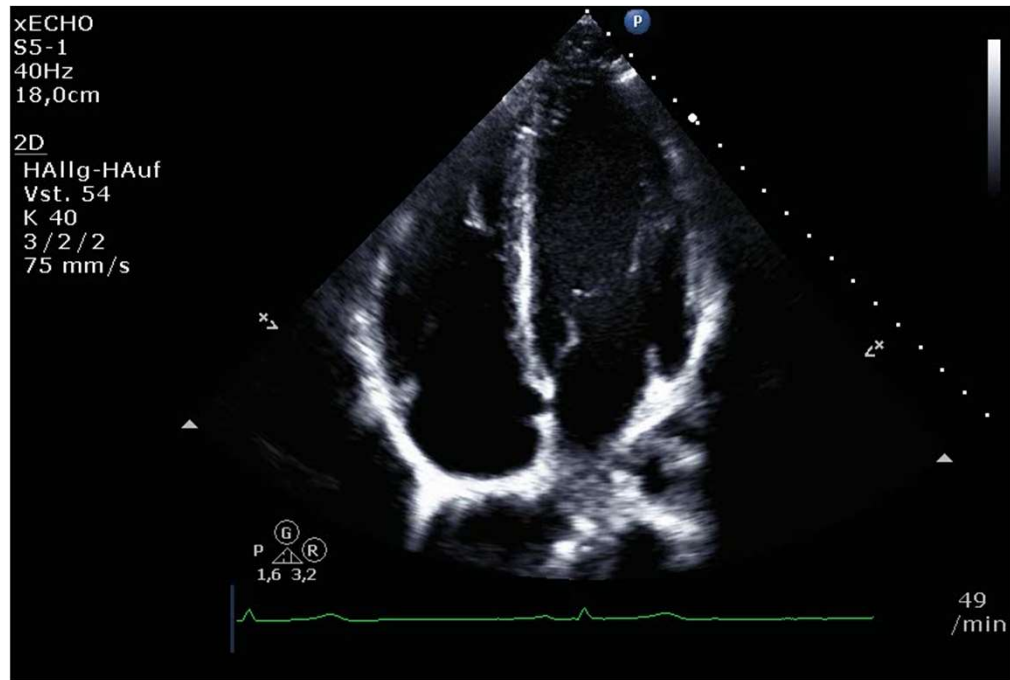




B-Mode

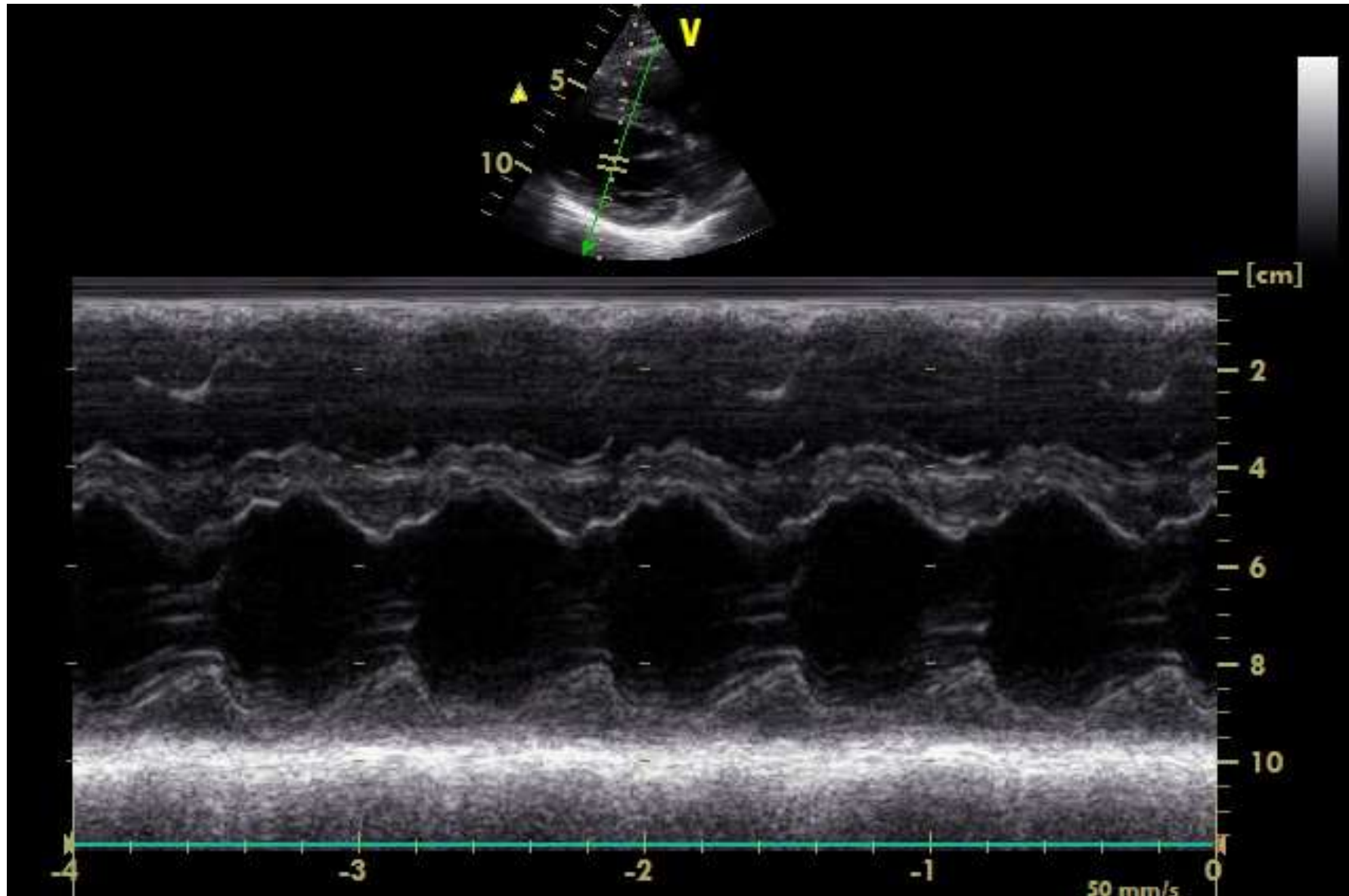
bewegtes 2D-Bild einer bestimmten Schnittebene
geeignet zur Beurteilung der Morphologie und Kinetik
von Epi-, Myo- und Endokard, sowie der Herzklappen



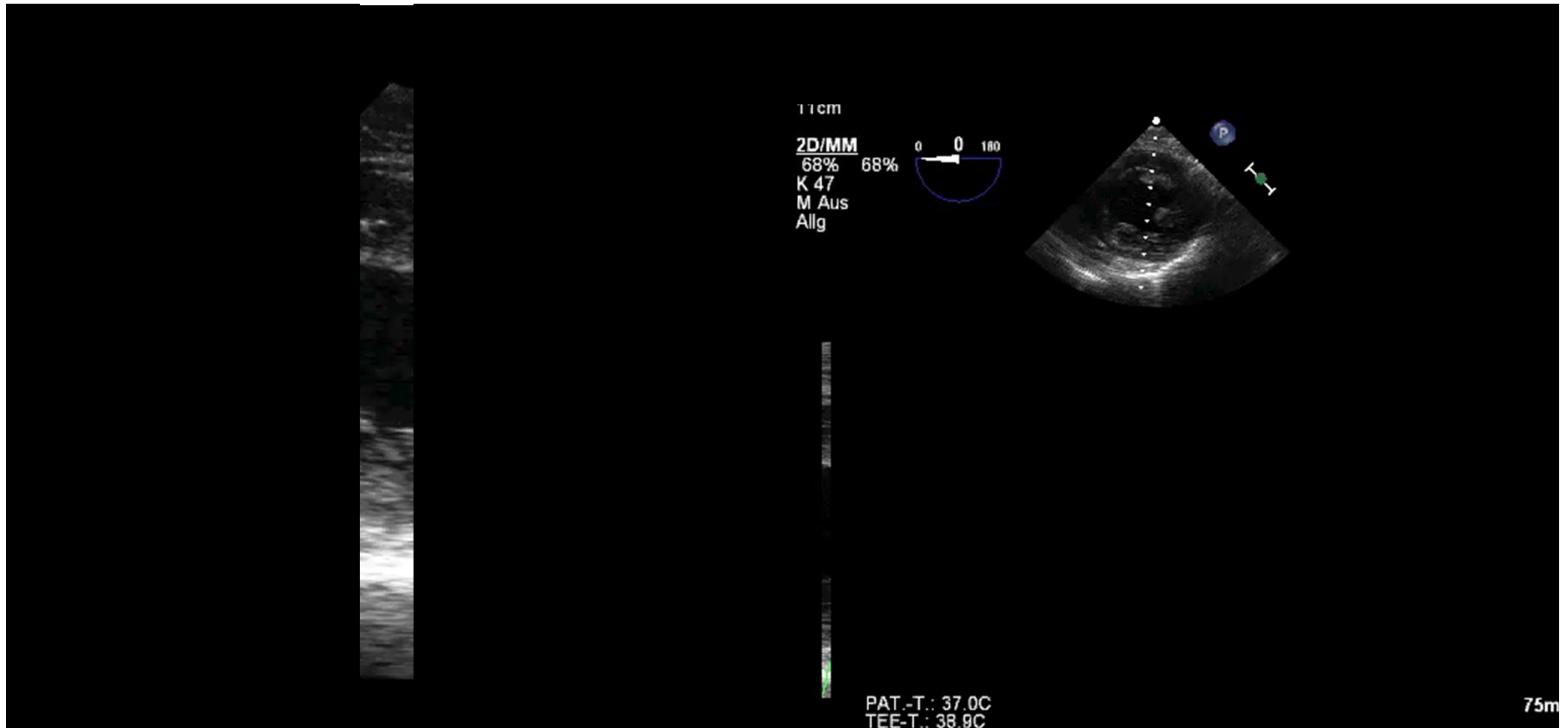


M-Mode

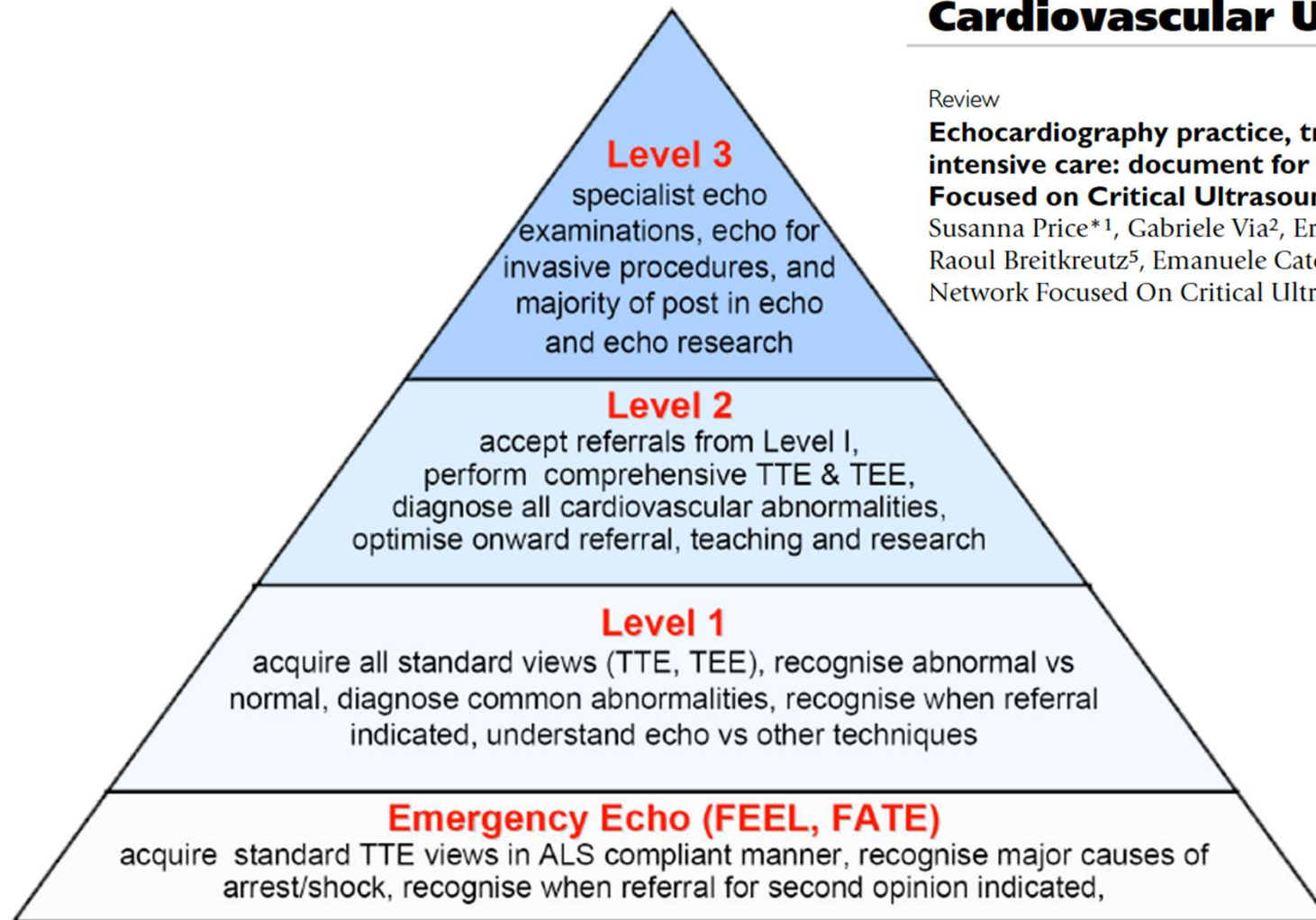
Darstellung von Strukturen entlang eines Schallstrahles und deren Bewegung im zeitlichen Verlauf



M-Mode



Warum fokussierte TTE auf der ICU?



Cardiovascular Ultrasound

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BioMed Central

Review

Open Access

Echocardiography practice, training and accreditation in the intensive care: document for the World Interactive Network Focused on Critical Ultrasound (WINFOCUS)

Susanna Price*¹, Gabriele Via², Erik Sloth³, Fabio Guarracino⁴, Raoul Breitzkreutz⁵, Emanuele Catena⁶, Daniel Talmor⁷ and World Interactive Network Focused On Critical UltraSound ECHO-ICU Group⁸

Ziele der POCUS TTE

Evaluation des Patienten mit hämodynamischer Instabilität

1. LV Funktion
2. RV Funktion
3. Volumenreagibilität
4. Perikarderguss
5. Klappenpathologien

Echofit für..

Differenzialdiagnostik
im Schock

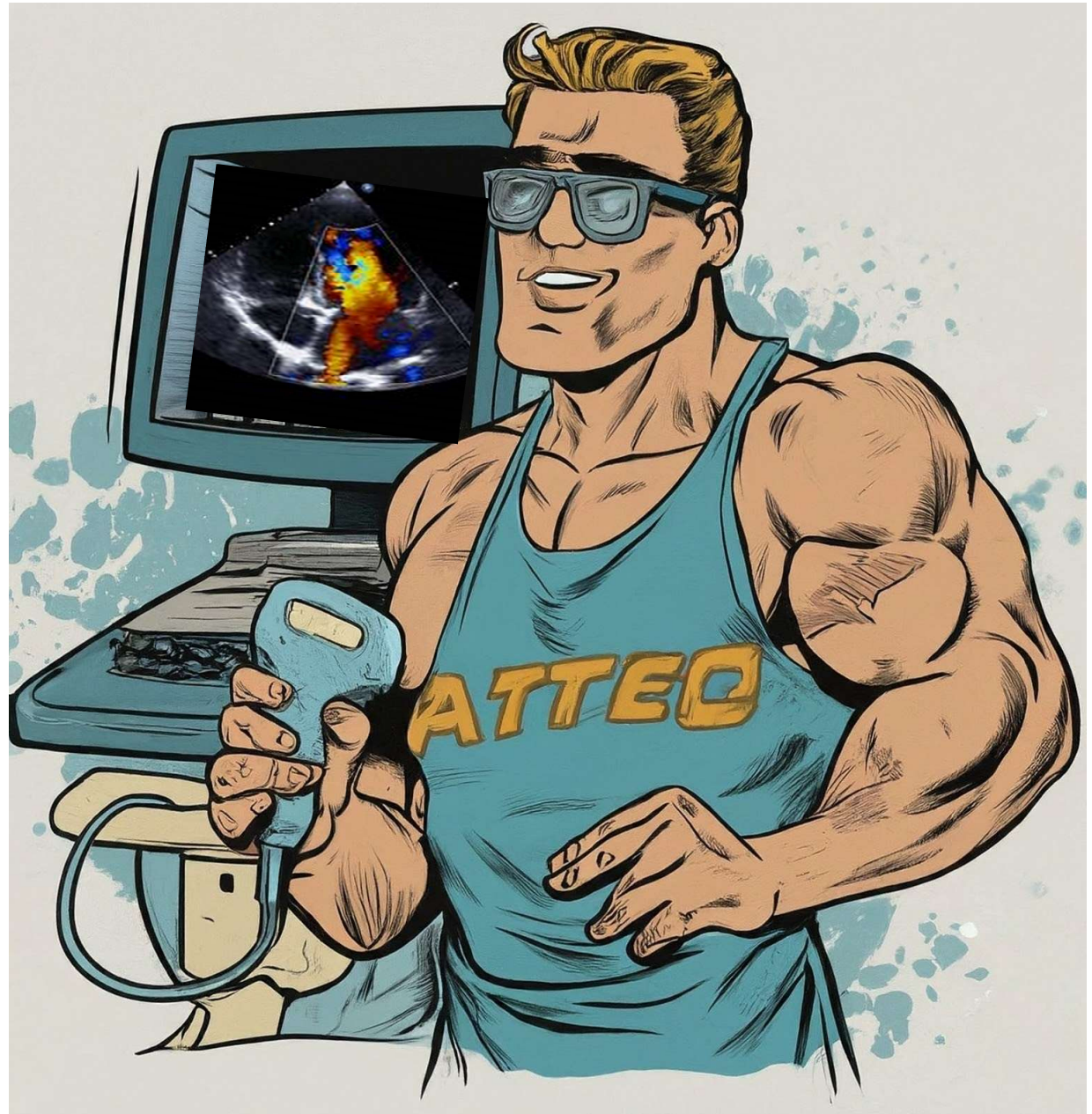
Therapieauswahl:

- Medikamenten
- Flüssigkeit
- Intervention

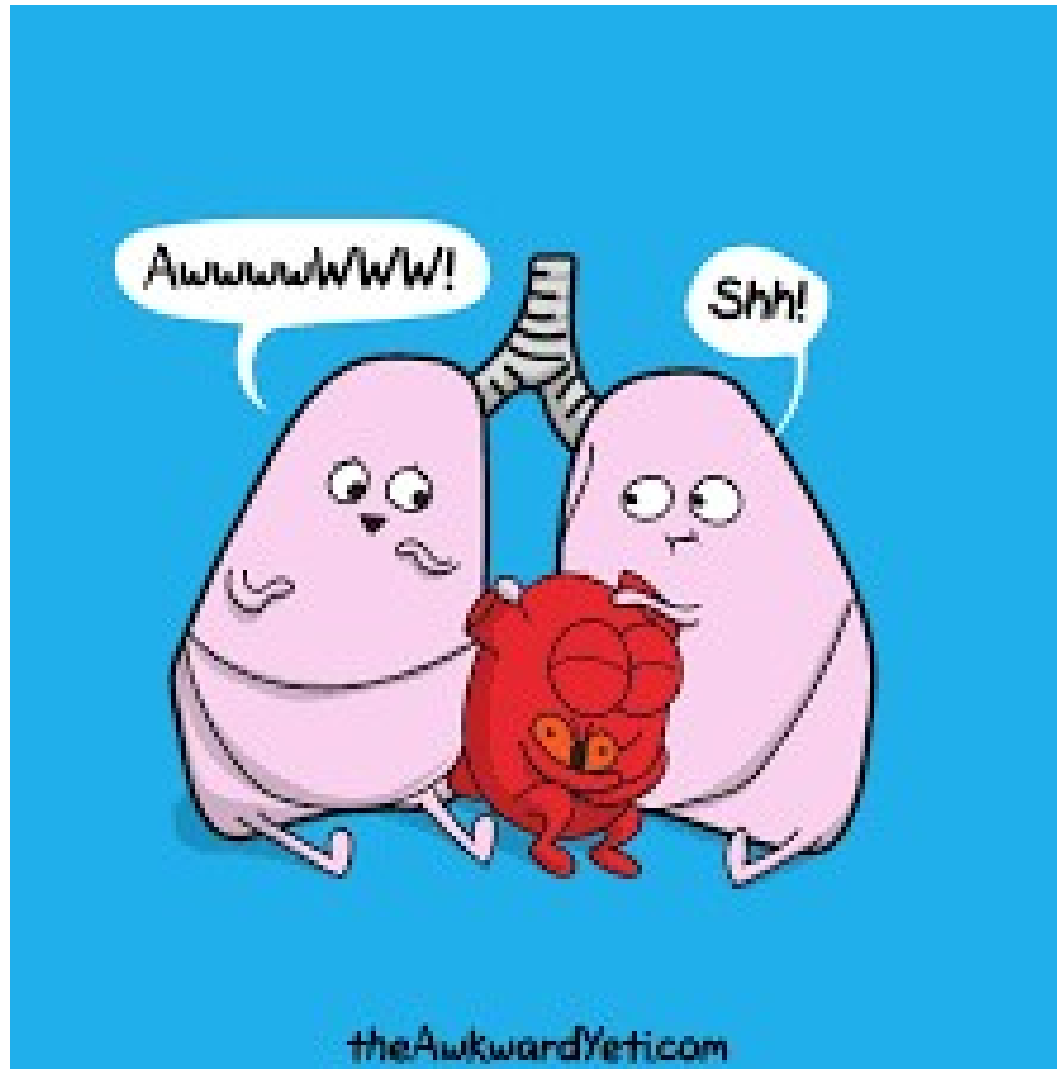
Steuerung der Therapie

Weitere Diagnostik

Präoperative Abklärung



Nur Herz?



POCUS Lungenultraschall

POCUS Herz

Interaktion LUS/TTE

US Algorithmen in
Notfallsituationen

Fallbeispiele für klinische
Entscheidungen

Echo Sicherheit für den klinischen
Alltag

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