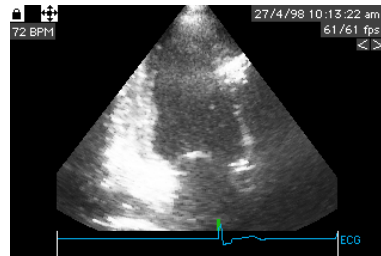


Regional venstre ventrikkelfunksjon

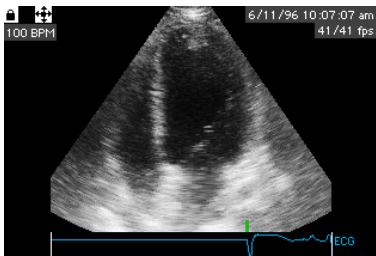
Asbjørn Støylen

<http://folk.ntnu.no/stoylen/lectures/#student>
<http://www.asecho.org/Guidelines.php>

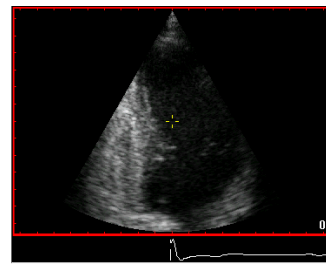
Regional funksjon – hvorfor?



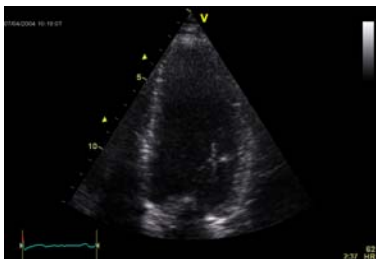
Regional funksjon – hvorfor?



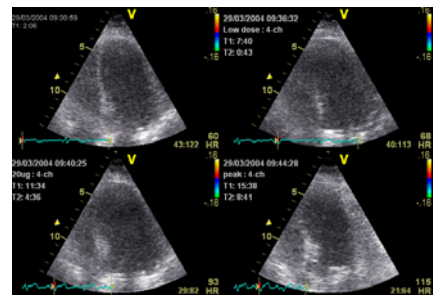
Regional funksjon – hvorfor?



Regional funksjon – hvorfor?



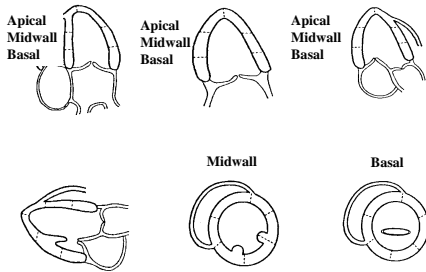
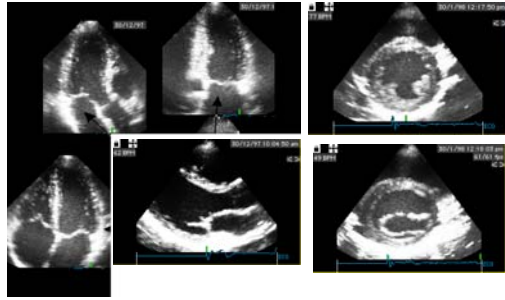
Regional funksjon – hvorfor?



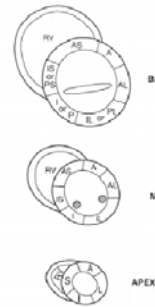
Regional dysfunksjon:

- Hvor?
- Hvor utbredt?
- Hvor uttalt?

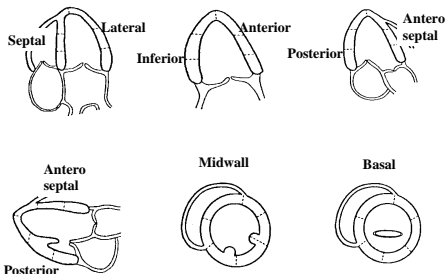
Snittplan / projeksjoner



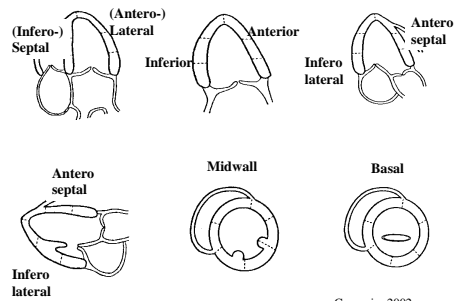
ASE 1982



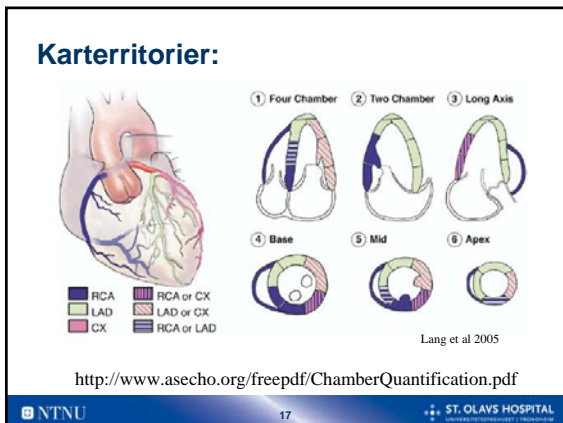
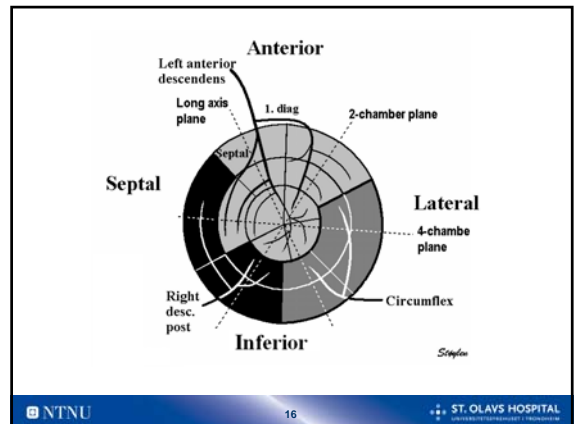
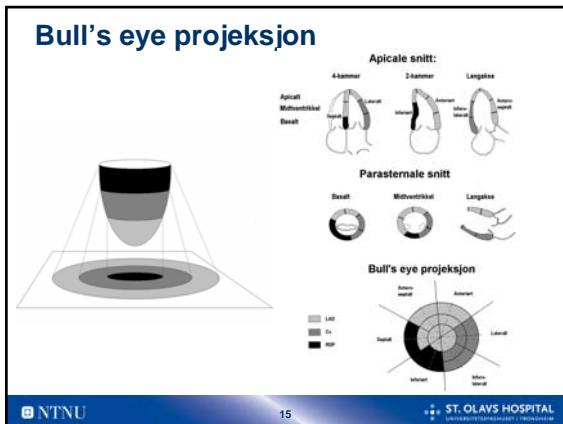
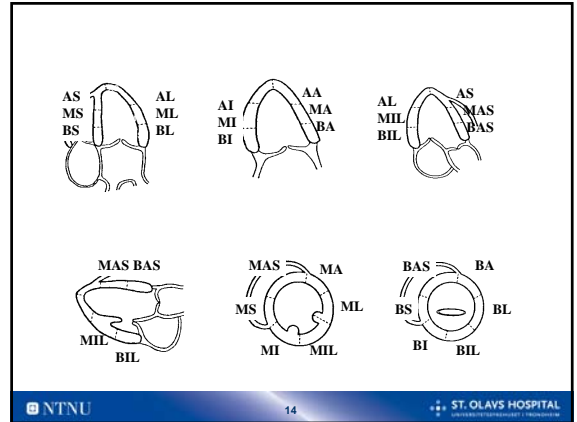
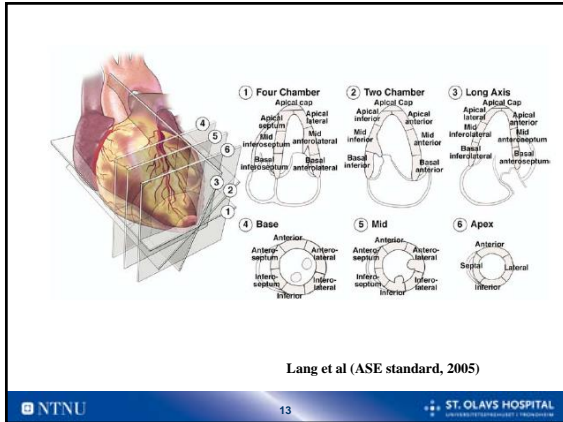
Schiller 1989



Feigenbaum 1994

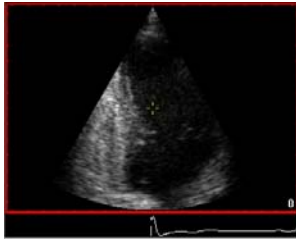


Cerqueira 2002



Veggfortykning:

- Endokardekskurisjon
 - Viser bevegelse av veggen
 - Akinetiske segmenter kan ha bevegelse ved at de trekkes av andre segmenter tethering
- Veggfortykning
 - Kun kontraherende segmenter fortykkes

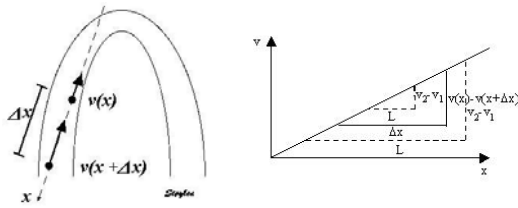


Korrelasjon WMSI og EF 0.85 - 0.90

Hvis det er regional dysfunksjon, ellers er metoden ubrukelig

Støylen et al 1999

Strain rate:

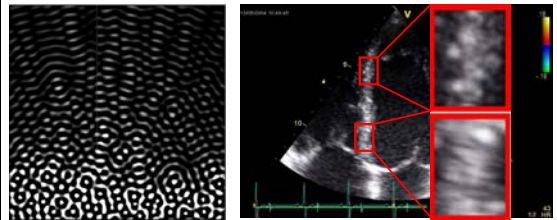


Heimdal, støylen et al 1998

Fleming et al 1994

$$SR = \frac{v(x) - v(x + \Delta x)}{\Delta x} = \frac{\Delta v}{\Delta x} = \frac{v1 - v2}{r} = VG$$

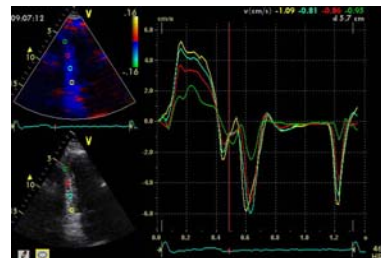
Speckle tracking:



Example: inferior infarct:

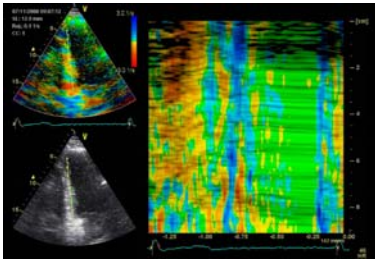


1: Assess velocity curves



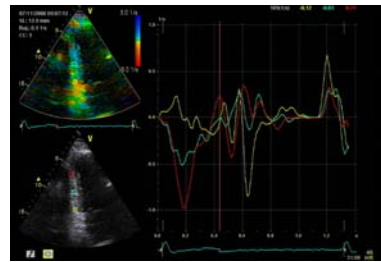
Normal distribution?

2: Assess Curved M-mode

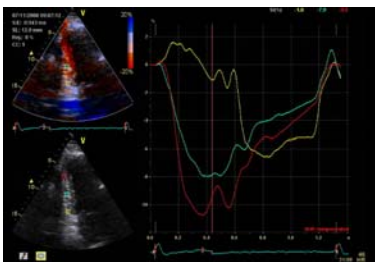


Extent of pathology

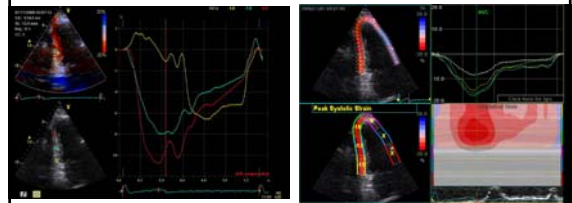
3: Assess both strain rate



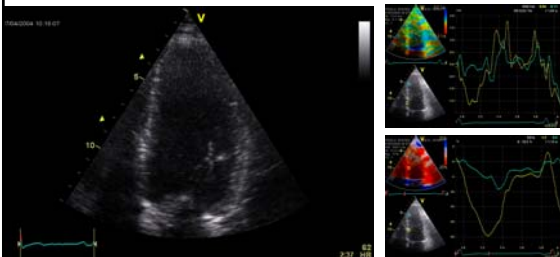
3: And strain



Smoothing:



A case of doubt:

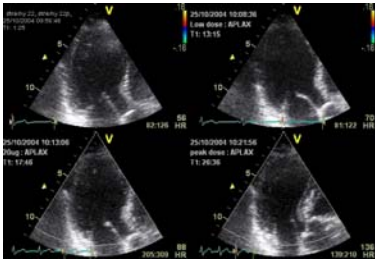


Coronary angiography:

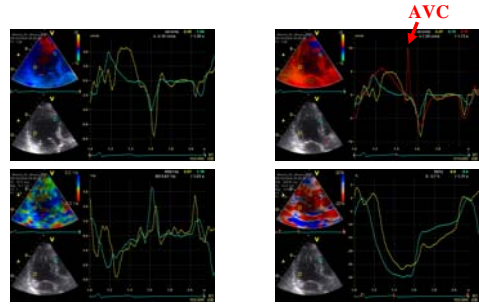


Before
After
PCI with stent delivery

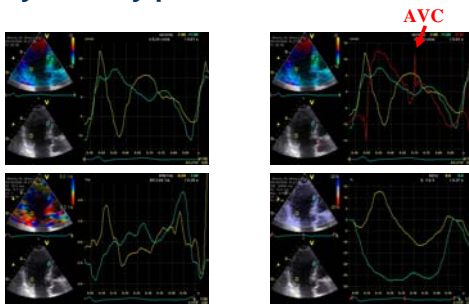
In stress echo:



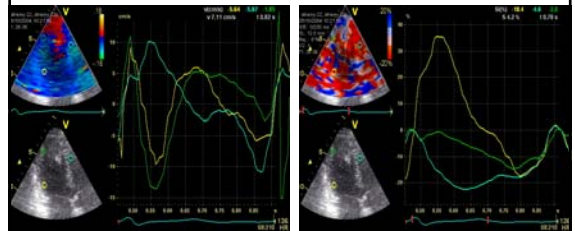
Asynchrony baseline:



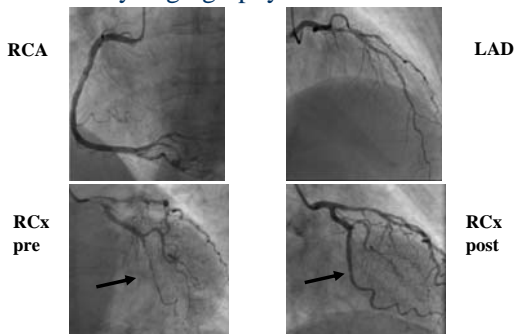
Asynchrony peak:



Velocity vs Strain:



Coronary angiography:



Hvordan bruke regional funksjonsmåling?

- For tilleggsdata og usikkerhet:
 - TVI. Utelukkelse
 - Verifisering
- For lokalisasjon av patologi
 - Strain rate / Strain
 - MED KRITISK BLIKK

www.ntnu.no/~stoylen/strainrate