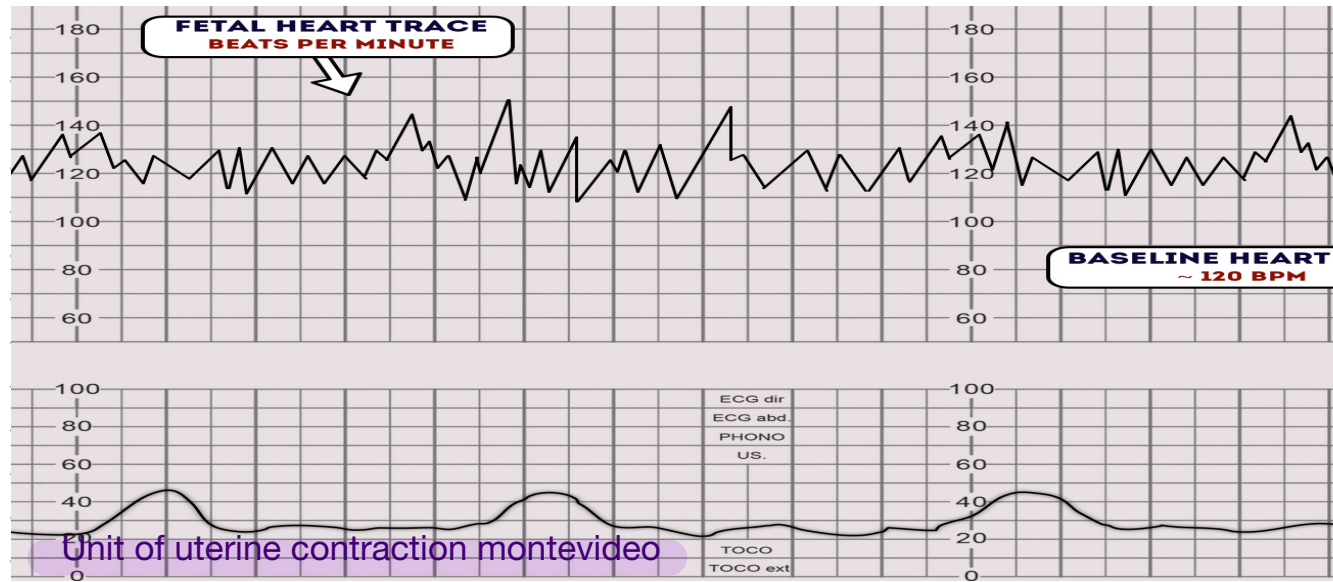


## How to interpret CTG



### How to read a CTG

Name of the patient  
**DR C BRaVADO**

Define patient details, GA, date, time

Risk (lugar, pet, previous still birth, meconium, fever, GDM, Dm)

Contraction ( frequency, duration, strength of contraction )

Baseline rate 110-160

Variability 5-25

Acceleration

Deceleration early late variable prolonged

Overall picture ( reassuring, suspicious, pathological )

Baseline

Fetal heart rate (FHR) monitoring can be done by:

- Structured Intermittent Auscultation
- Continuous Electronic Fetal Monitoring (EFM)

- 1) External
- 2) Internal

The FHR should be assessed at least every 30 minutes in the first stage of labor and every 15 minutes in the second stage.

If abnormal, continuous EFM is recommended.

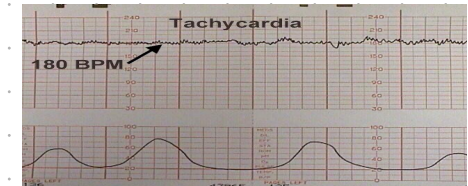
### Contraction

- Resting tone 5-10 mm Hg, raise to 10-15 during labor
- During labor uterine contraction pressure reach 25-100
- 200 mvu is considered adequate for labor
- Number of contraction is calculated in 10 minutes
- Number of contraction in labor 3-5 in 10 minutes
- Hyper stimulation is mire than 5 contraction in 10 minutes
- Hyper stimulation lead to hypoxia, acidosis

Normal 110-160

Tachycardia > 160 causes:

- 1) Maternal pyrexia infection; chorioamnionitis)
- 2) Fetal hypoxia
- 3) Fetal arrhythmia SVT; Afib; Atrial flutter )
- 4) Fetal or maternal anemia
- 5) hyperthyroidism
- 6) prematurity
- 7) Medications (beta agonist, terbutaline, mgso4,

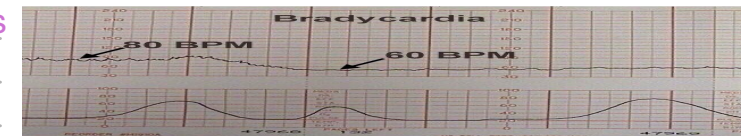


Bradycardia < 110 < 100

Between 100-110 could be normal in post-date pregnancy

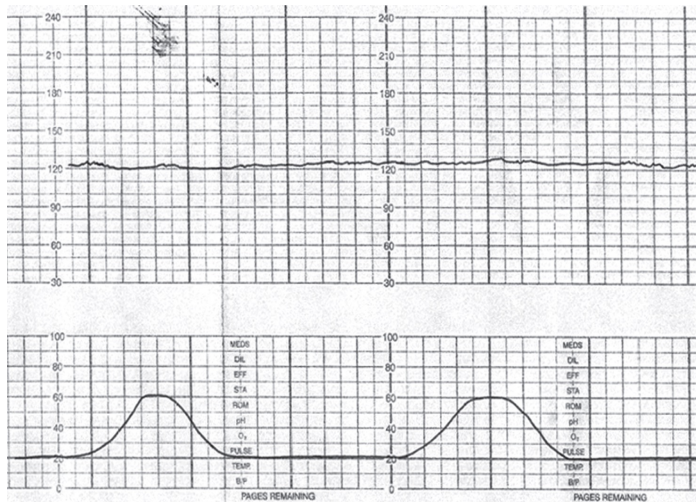
Causes: 1) hypotension, hypoglycemia, hypothermia

- 2) beta blocker
- 3) anti-Ro positive pregnancy, SLE, Shogren (heart block)
- 4) Fetal metabolic acidosis
- 5) Fetal arrhythmia



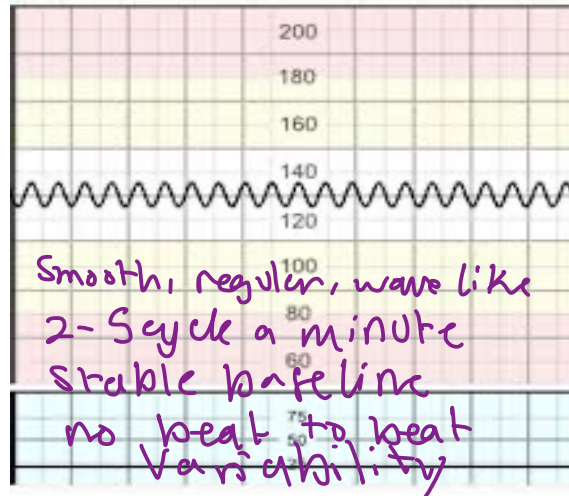
## Variability

### Decreased variability



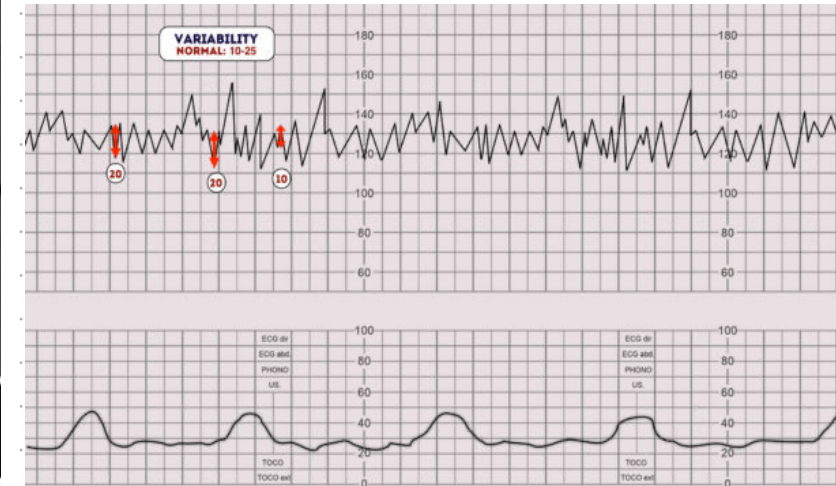
- 1) sleeping cycle up to 40 minutes
- 2) fetal hypoxia or acidosis
- 3) fetal tachycardia
- 4) medications (opioid, betamethasone, methyl dopa, mgso4, benzodiazepines)
- 5) prematurity
- 6) congenital heart disease

### Sinusoidal

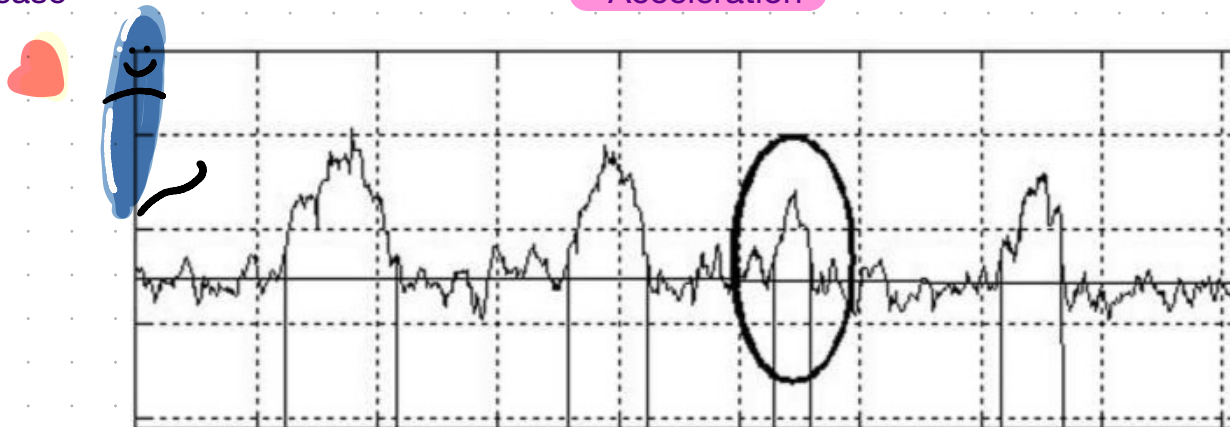


Severe fetal hypoxia, acidosis  
Severe fetal anemia  
Fetal maternal hemorrhage  
Ruptured vasa previa

### Normal



### Acceleration

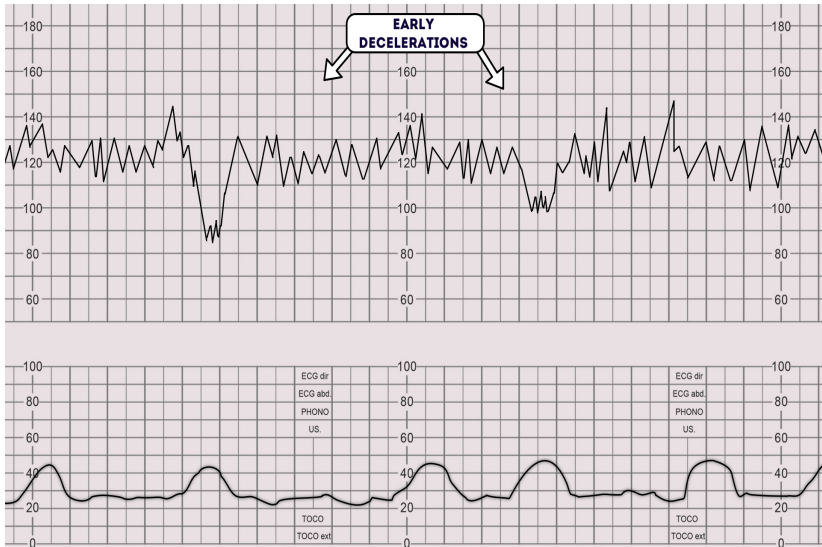


Acceleration is reassuring sign.  
Absence is of undetermined significance  
Acceleration mean  
>32 week increase 15 or more beat for 15 second or more  
<32 week increase 10 beat or more for 15 second or more

## Deceleration

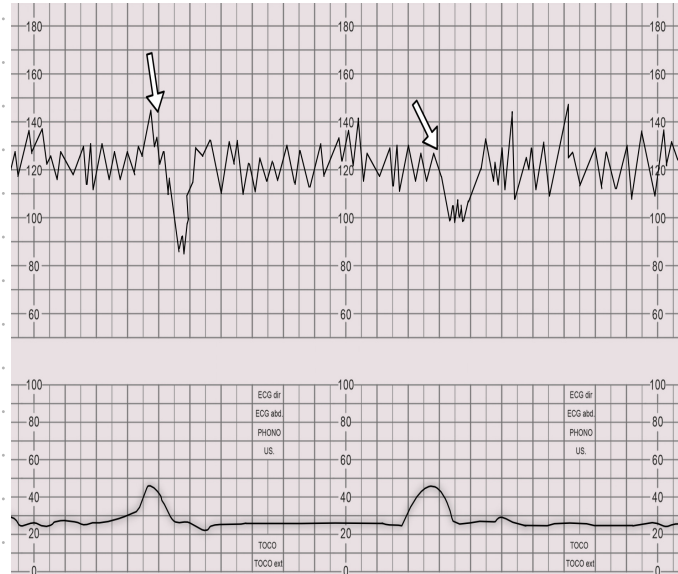
Decrease fetal heart 15 bpm or more for 15 second or more

### Early deceleration



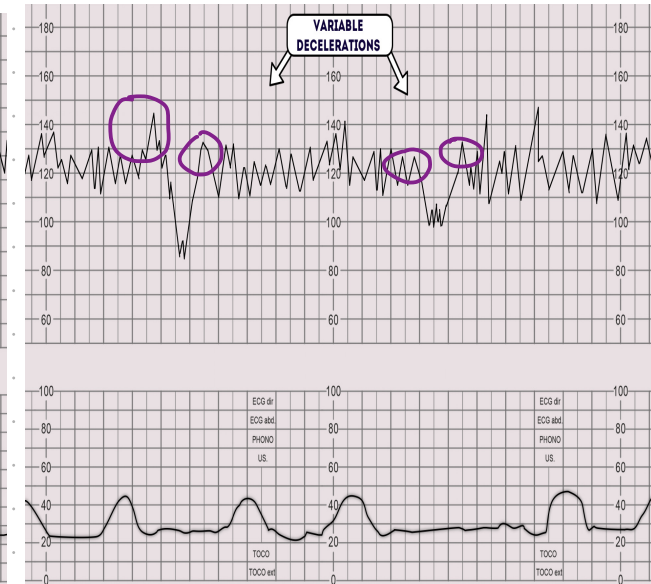
Head compression  
Reassuring

### Late deceleration



Uteroplacental insufficiency which may be caused by  
Uterine hyper stimulation or tachysystole  
Maternal hypotension  
Epidural or spinal  
IUGR  
Placental abruption  
Intrauterine infection  
Severe repeat repetitive late deceleration indicate fetal acidosis

### Variable deceleration



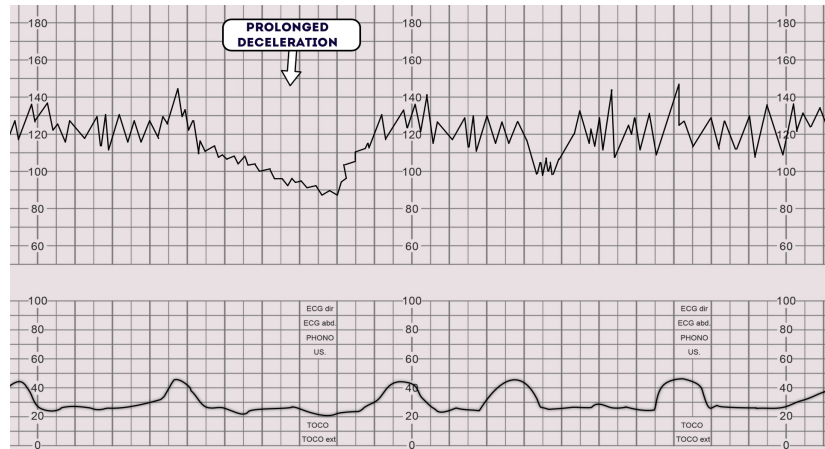
### Cord compression

Acceleration before and after variable deceleration called shouldering is a reassuring sign.

Sign of non reassuring feature of variable deceleration:

More than 60 second  
Reduced variability within deceleration  
Loss shouldering  
Slow return to baseline

## Prolonged deceleration



Hypotension  
Epidural, spinal  
Acidosis  
Abruption  
Cord prolapse

If not recovered then baby should be delivered

## What to do in cases of fetal distrss

### Conservative measures

Left lateral

IV fluids

Stop oxytocin

Pv if not contraindicated

Consider tocolytic if hyperstimulated Uterus

# CTG 1

