

Oxford AHSN Cardiotocograph (CTG) Interpretation Tool Definitions.

**Acme:**

The highest point / peak of a contraction.

**Nadir:**

The lowest point, i.e in deceleration, this is the slowest fetal heart rate recorded.

**Positive features:**

Evidence of cycling of variability, accelerations and positive fetal response to scalp stimulation all denote a healthy response by the fetus

**Fetal Heart Rate (FHR) Baseline:**

The approximate mean fetal heart rate assessed over a period of 10 minutes, rounded to increments of 5 bpm. It can fluctuate between 10-20 beats over an hour. Preterm fetuses often display values towards the upper end of the scale and post-term fetuses towards the lower end

**Rising Baseline:** An increase in baseline heart rate by more than 20 bpm over an hour can be a sign of fetal compromise

**Tachycardia:** a baseline rate above 160 bpm for more than 10 minutes, often associated with maternal pyrexia or infection

**Bradycardia:** a baseline rate below 110 lasting more than 10 minutes. Baseline rate of 100 – 110 may occur in normal foetuses especially if postdates

**Accelerations:**

An abrupt increase of at least 15 bpm in fetal heart rate (FHR) above the baseline. Time from the onset to the peak is less than 30s and duration is equal to or more than 15s and less than two minutes from onset to return to baseline. Accelerations lasting 10 mins or more are considered a baseline change.

In pregnancies <32 weeks gestations, accelerations may be an increase of 10 bpm or more above baseline which lasts 10 seconds or more.

Persistent accelerations coinciding with uterine contractions in the second stage of labour may indicate that the maternal heart rate is being recorded as fetal accelerations are unlikely to occur

**Decelerations:**

A drop in heart rate of more than 15 beats, lasting for more than 15 seconds. Most decelerations are variable (V-shaped).

**Early decelerations:** shallow, short-lasting with normal variability within the deceleration and coincide with the contractions

**Variable Decelerations:** an abrupt decrease in fetal heart rate below the baseline (onset to beginning of nadir is less than 30s); good variability within deceleration; rapid recovery to baseline; varying size, shape and relationship to uterine contractions.

**Late Decelerations:** (U-shaped and / or with reduced variability) gradual onset and / or gradual return to the baseline and / or reduced variability within the deceleration. Gradual onset and return occurs when more than 30s elapses between the beginning / end of a deceleration and its nadir. Start more than 20s after the onset of contraction, have a nadir after the acme and a return to the baseline after the end of the contraction.

**Repetitive Decelerations:** occur with more than 50% of contractions. Decelerations that occur less frequently have less clinical significance (unless they are decelerations classified as pathological)

**Prolonged Deceleration:** a decrease in fetal heart rate below the baseline lasting more than 3 mins

**Single Deceleration:** decelerations exceeding 5 min with fetal heart rate maintained at less than 80 bpm and reduced variability within the deceleration are frequently associated with acute fetal hypoxia / acidosis and require emergent intervention.

**Variability:**

Fluctuations in the fetal heart rate (FHR) baseline that are irregular in amplitude and frequency. This can be assessed by selecting a one minute segment of trace, without accelerations or decelerations and measuring the difference between the highest and lowest rate. The difference is the amplitude of variability.

**Sinusoidal Pattern:**

A regular, smooth, undulating signal, resembling a sine wave, with an amplitude of 5-15bpm, and a frequency cycle of 3-5 cycles per minute. This pattern lasts more than 30 minutes and coincides with absent accelerations.

**Pseudosinusoidal Pattern:**

Pattern resembling the sinusoidal pattern but with a more jagged “saw-tooth” appearance rather than the smooth sine-wave form. Its duration seldom exceeds 30 min and it’s characterised by normal patterns before and afterwards.

**Contractions:**

45 -120 second duration, up to 5 in 10 minutes but resting tone of the uterus in-between contractions is significant

**Tachysystole:** referring to the presence of 5 or more contractions in 10 minutes in the absence of changes in the FHR.

**Uterine Hyperstimulation:** referring to the presence of 5 or more contractions in 10 minutes with changes in the FHR.

**Hypertonia / Uterine Hypertonus:** referring to a sustained uterine contraction lasting >60 seconds and has the potential to cause a prolonged deceleration.