

NICHD Fetal Monitoring Terminology

From the National Institute of Child Health and Human Development Research Planning Workshop: Electronic fetal heart rate monitoring: Research guidelines for interpretation. *American Journal of Obstetrics and Gynecology* (1997) 177(6), 1385-1390 and *Journal of Obstetric, Gynecologic and Neonatal Nursing* (1997), 26(6) 635-640 and 2008 National Institute of Child Health and Human Development Workshop Report on Electronic Fetal Monitoring: Update on Definitions, Interpretation, and Research Guidelines. *Obstetrics and Gynecology* (2008) 112(3), 661-666 and *Journal of Obstetric, Gynecologic and Neonatal Nursing* (2008) 37 (5), 510-515.

Baseline: approximate mean FHR rounded to increments of 5 beats per minute during a 10 minute segment, excluding:

- Periodic or episodic changes
- Periods of marked FHR variability
- Segments of baseline that differ by more than 25 bpm

Must be at least 2 minutes of 10 minute period; if not, BL indeterminate or refer to previous 10 minute segment for determination of BL.

Tachycardia: baseline FHR greater than 160 bpm

Bradycardia: baseline FHR less than 110 bpm

Baseline Variability: fluctuations in the baseline FHR of two cycles per minute or greater; are irregular in amplitude & frequency; are visually quantified as amplitude of peak to trough in bpm:

Absent = undetectable

Minimal = detectable to ≤ 5 bpm

Moderate = 6 to 25 bpm

Marked = > 25 bpm

Accelerations: visually apparent abrupt increase (onset to peak in less than 30 seconds) in the FHR from the most recently calculated baseline; time from the initial change in FHR from the baseline to the return of the FHR to the baseline

- 32 wks or greater - acme 15 bpm or more above BL, duration 15 seconds or more but less than 2 minutes from onset to return to BL
- Less than 32 weeks - acme 10 bpm or more above BL, duration 10 seconds or more but less than 2 minutes from onset to return to BL

Early Deceleration: in association with uterine contraction, a visually apparent, gradual decrease (onset to nadir 30 seconds or more) in FHR with return to baseline;

- Decrease from most recently calculated BL
- Nadir of deceleration occurs at same time as peak of contraction (coincident timing)
- Usually, onset, nadir and recovery of decel occurs with onset, peak and ending of contraction respectively

Late Deceleration: in association with uterine contraction, a visually apparent, gradual decrease (onset to nadir 30 seconds or more) in FHR with return to baseline;

- Decrease from most recently calculated BL
- Nadir of the decel occurs after peak of contraction (delayed timing)
- Usually, onset, nadir & recovery usually occur after the onset, peak & end of contraction respectively

Variable Deceleration: visually apparent abrupt decrease (onset to nadir less than 30 seconds), in the FHR below the baseline;

- Decrease from most recently calculated BL
- Decrease of 15 bpm or more, with a duration of 15 seconds or more but less than 2 minutes from onset to return to BL
- If occur with contractions, onset, depth & duration vary

Prolonged Deceleration: visually apparent decrease in the FHR below the baseline;

- Decrease from most recently calculated BL
- Deceleration of 15 bpm or more
- Duration of 2 minutes or more but less than 10 minutes from onset to return to baseline

Sinusoidal Pattern: pattern with visually apparent, smooth, sine wave-like undulating pattern in FHR baseline with 3-5 cycles per minute that persists for at least 20 minutes.

Periodic Pattern: patterns associated with uterine contractions

Episodic Pattern: patterns not associated with uterine contractions

Tachysystole Contraction Pattern: greater than 5 contractions in 10 minutes, averaged over 30 minutes.

Three-Tier Fetal Heart Rate Interpretation System

Category I

Category I fetal heart rate (FHR) tracings include all of the following:

- Baseline rate: 110-160 beats per minute (bpm)
- Baseline FHR variability: moderate
- Late or variable decelerations: absent
- Early decelerations: present or absent
- Accelerations: present or absent

Category II

Category II FHR tracings include all FHR tracings not categorized as Category I or Category III. Category II tracings may represent an appreciable fraction of those encountered in clinical care. Examples of Category II FHR tracings include any of the following:

Baseline rate

- Bradycardia not accompanied by absent baseline variability
- Tachycardia

Baseline FHR variability

- Minimal baseline variability
- Absent baseline variability not accompanied by recurrent decelerations
- Marked baseline variability

Accelerations

- Absence of induced accelerations after fetal stimulation

Periodic or episodic decelerations

- Recurrent variable decelerations accompanied by minimal or moderate baseline variability
- Prolonged deceleration \geq 2 minutes but \leq 10 minutes
- Recurrent late decelerations with moderate baseline variability
- Variable decelerations with other characteristics, such as slow return to baseline, "overshoots," or "shoulders"

Category III

Category III FHR tracings include either:

- Absent baseline FHR variability and any of the following:
 - Recurrent late decelerations
 - Recurrent variable decelerations
 - Bradycardia
- Sinusoidal pattern

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