

The Women's CPG: Algorithm: Cardiotocograph (CTG) interpretation and action (3 Jan 2008)

Features of Intrapartum Fetal Heart Rate (FHR)

	Reassuring	Non-reassuring	Abnormal
Baseline(bpm)	110-160	100-109 161-170	< 100 > 170
Variability(bpm)	5-25bpm	3-5bpm for >40 minutes (NB: may be a sleep phase) >25bpm for >40minutes	Absent <3bpm Sinusoidal pattern
Decelerations	None Early decelerations	Variable decelerations	Complicated variable decelerations Prolonged decelerations > 3 minutes Late decelerations
Accelerations	2 present in 20 minutes	Do not consider the absence of accelerations in intrapartum interpretation as being abnormal	

Note:
The full clinical picture should always be considered when interpreting Fetal Heart Rate Patterns (CTGs)

Non-reassuring CTG

Factors associated with cord compression or reduced placental perfusion	Inadequate quality CTG	Uterine hypercontractility	Maternal tachycardia/pyrexia	Pharmacological influences
<ol style="list-style-type: none"> 1. What is the woman's position? 2. Is the woman hypotensive? 3. Has the woman just had a vaginal examination? 4. Has the woman just used a bedpan? 5. Has the woman been vomiting or had a vasovagal episode? 6. Has the woman just had an epidural sited or top up? 7. Have the membranes just ruptured? 	<ol style="list-style-type: none"> 1. Poor contact from external transducer? 2. Fetal scalp electrode (FSE) not working or detached? 	<ol style="list-style-type: none"> 1. Is the woman receiving oxytocin? 2. Has the woman recently received vaginal prostaglandins? 	<ol style="list-style-type: none"> 1. Maternal infection? 2. Maternal dehydration? 3. Obstructed labour? 	<ol style="list-style-type: none"> 1. Has the woman just had an opioid? 2. Has the woman just had an epidural sited or top up? 3. Is the woman chemically dependent? 4. Has the woman received drugs which suppress her or the fetal CNS (e.g. MgSO₄)?
<ol style="list-style-type: none"> 1. Change maternal position 2. Check blood pressure, give 500mL crystalloid if hypotensive (maximum 1000mL) 3. Consider vaginal examination as necessary (e.g. for cord prolapse) 	<ol style="list-style-type: none"> 1. Check maternal pulse 2. Reposition transducer/FSE or reapply FSE 	<ol style="list-style-type: none"> 1. Stop or reduce oxytocin infusion 2. Consider tocolysis – Terbutaline 250 micrograms SC or IV if IV access is already available (recommended) OR Slow push diluted IV Salbutamol 100mcg OR Sublingual GTN spray 400mcg 	<ol style="list-style-type: none"> 1. If temperature ≥38°C undertake investigation and treatment 2. Check blood pressure, give 500mL crystalloid if dehydrated (maximum 1000mL) 	

Abnormal CTG

Is Fetal Blood Sampling (FBS) indicated?	Is Fetal Blood Sampling (FBS) contraindicated or not possible? (e.g. cervix <3cm dilated, maternal hep B / C / HIV)
<ol style="list-style-type: none"> 1. Perform FBS to test lactate level via fetal scalp. 	<ol style="list-style-type: none"> 1. Encourage woman to adopt left lateral position. 2. Check blood pressure, give 500mL crystalloid if required 3. Is there a prolonged bradycardia (>9 minutes)?
<p>Lactate <4.0: Repeat FBS in 1 hour if the FHR abnormality persists</p> <p>Lactate 4.0-4.7: Repeat FBS within 30 minutes or consider expediting the birth if rapid rise since last sample</p> <p>Lactate 4.7-5.6: Urgent delivery indicated (Category 2 c/section i.e. within 60 minutes)</p> <p>Lactate ≥5.7: Code green (emergency caesarean section)</p> <p>NB: All lactate estimations should be interpreted taking into account the previous lactate measurement, the rate of progress in labour and the clinical features of the woman and fetus.</p>	<p>Code green (emergency caesarean section):</p> <ul style="list-style-type: none"> ▪ Call obstetrician and anaesthetist, paediatrician ▪ The accepted standard is that this should be accomplished within 30 minutes <p>Following the birth:</p> <ul style="list-style-type: none"> ▪ Obtain arterial and venous umbilical cord blood samples to confirm fetal acid-base status ▪ Ensure placenta is sent for histopathology ▪ Record all results in the woman's notes