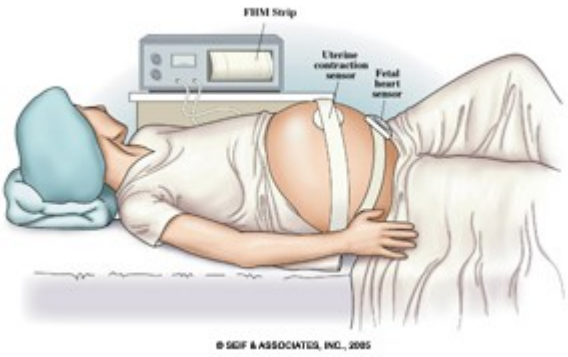
Fetal Monitoring - Contraction Stress Testing
(How Your Baby Is Doing)

A contraction stress test (CST) is done by monitoring the baby's heart rate during a contraction of the uterus. It can identify and prevent problems in advance when possible, including fetal loss. Some pregnancies are complicated by the mother's medical problems. Some of these problems are type 1 diabetes mellitus, high blood pressure and other chronic medical illnesses. This is why it is important to monitor the baby before birth.



OTHER TECHNIQUES OF MONITORING YOUR BABY PRIOR TO BIRTH

Several fetal observation tests are used. These include:

- **Fetal movement assessment (FMA**). This is done by the pregnant woman herself by counting and recording the baby's movements over a certain time period.
- **Nonstress test (NST)**. This test monitors the baby's heart rate when the baby moves.
- **Fetal biophysical profile (BPP)**. This measures and evaluates 5 observations of the baby:
  - The nonstress test.
  - The baby's breathing.
  - The baby's movements.
  - The baby's muscle tone.
  - The amount of the amniotic fluid.
- **Modified fetal BPP**. This measures the volume of fluid in different areas of the amniotic sac (*amniotic fluid index*) and the results of the nonstress test.
- **Umbilical artery doppler velocimetry**. This evaluates the blood flow through the umbilical cord.

There are several very serious problems that cannot be predicted or detected with any of the fetal monitoring procedures. These problems include separation (*abruption*) of the placenta or when the fetus chokes on the umbilical cord (*umbilical cord accident*).

Your caregiver will help you understand these tests and what they mean for you and your baby. It is your responsibility to obtain the results of your test.

PREPARATION FOR THE TEST

- **Do not** take medications that may increase or decrease the baby's heart rate and/or movements.
- Have a full meal at least 2 hours before the test.
- **Do not** smoke if you are pregnant. If you smoke, stop at least 2 days before the test. It is best not to smoke at all, especially if you are pregnant.

LET YOUR CAREGIVER KNOW ABOUT:

- Any medications you are taking including prescription and over-the-counter drugs, herbs, eye drops and creams.
- If you have a fever.
- If you have an infection.
- If you are sick.

RISKS AND COMPLICATIONS

There is a possibility that labor will start. However, there is very little risk to the mother or fetus.

CONTRACTION STRESS TEST PROCEDURE:

The patient lies down on her left side. An external monitor is placed on her abdomen over the uterus. This monitor follows the fetal heart rate during and after a contraction of the uterus. If the uterus contracts 3 times for 40 seconds within 10 minutes, no stimulation of the uterus is necessary. If the uterus needs to be stimulated to get contractions, it may be done by stimulating the nipple of the breasts or by using very small and dilute amounts of a drug that starts or improves contractions. This drug is given through the vein (*intravenously*).

RESULTS OF THE CONTRACTION STRESS TEST

The CST is based on the fetal heart rate responding to uterine contractions. It relies on the idea that the amount of oxygen your baby is getting will be less when the womb (*uterus*) contracts. During this time, the fetus may not get enough oxygen. This leads to the heart slowing down. Uterine contractions also may start a pattern of up-and-down decelerations caused by umbilical cord compression. The results of the CST can be:

- Negative - no abnormal fetal heart rate, dropping of the heart rate (*decelerations*).
- Positive - abnormal fetal heart rate (decelerations following a contraction 50% or more of the time).
- Equivocal-suspicious - intermittent decelerations after a contraction or significant variable decelerations.
- Equivocal-hyperstimulation - fetal heart rate decelerations that occur with a contraction more often than every 2 minutes and last longer than 90 seconds.
- Unsatisfactory - fewer than 3 contractions in 10 minutes or the tracing is unreadable.

REASONS **NOT** TO PERFORM THIS TEST INCLUDE:

- Preterm labor or patients at high risk of preterm labor.
- Rupture of the membranes before 37 weeks (*preterm membrane rupture*).
- History of uterine surgery or classical cesarean delivery.
- The placenta has grown low or covers the opening of the cervix in the uterus (*placenta previa*).

AFTER THE PROCEDURE

You may go home and resume your usual activities, or as directed by your caregiver.

HOME CARE INSTRUCTIONS

- Follow your caregiver's advice and recommendations.
- Be aware of your baby's movements. Are they normal, less than normal or more than normal?
- Make and keep the rest of your prenatal appointments.

SEEK MEDICAL CARE IF:

- You develop a temperature of 100º F (37.9º C) or higher.
- You have a bloody mucus discharge from the vagina (a *bloody show*).

SEEK IMMEDIATE MEDICAL CARE IF:

- You do not feel the baby move.
- You think the baby's movements have been too little or too many.
- You have contractions.
- You have belly (*abdominal*) pain.
- You have vaginal bleeding.
- You have leaking or a gush of fluid from the vagina.

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