

PROTOCOL #39 - Maternal Fetal Medicine, University of New Mexico

FETAL FIBRONECTIN

Definition—a basement membrane protein produced by the fetal membranes that functions in adhesion of the placenta and membranes to the decidua. This substance is normally present in cervical secretions up to the 20th week of gestation.

Clinical implications—positive results may be an indicator of disruption of the chorioamnion and the underlying decidua. The greatest benefit of this test, however, lies in its negative predictive value (NPV). The NPV of the fetal fibronectin test (fFN), to identify symptomatic women who are actually at low risk for imminent preterm delivery, ranges from 69% to 92% before 37 weeks of gestation. This implies a greater than 95% likelihood of not delivering within 14 days of a negative result.

Criteria in selecting patients for fFN testing:

1. The patient must be considered at high risk of delivering preterm (gestation should be between 24-34 weeks). The test should not be routinely used to screen low-risk, asymptomatic women.
2. Amniotic membranes must be intact.
3. Minimal cervical dilatation must be present (<3 cm).
4. A 24-hour period must exist between the presence of **anything** in the vaginal canal and the time of specimen collection. Therefore, in women who have had intercourse, have douched, have been examined (digitally, ultrasonographically or by speculum), etc. the specimen, if collected, should be discarded.

Strong consideration should be given to testing patients who:

1. have presented to testing and triage two-three times within the previous week with the complaint of contractions and have a negative work-up for infection and no evidence of cervical change.
2. are maternal transports with minimal cervical dilation in whom discharge from the hospital is being contemplated.
3. are outpatients with a history of preterm delivery or at high risk for preterm delivery secondary to multiple gestation **and** who have a cervical length of \leq 25mm or a decreasing cervical length based on serial ultrasounds. Cervical length remains our primary screening tool for these patients. If there is a high index of suspicion by sonographic exam, fFN testing may be considered.
4. Fetal fibronectin testing may be useful in women with symptoms of preterm labor to identify those with negative values and a reduced risk of preterm birth, thereby avoiding unnecessary intervention.

Collection of specimen—prior to examination, a sterile speculum exam should be inserted, the Dacron swab should be lightly rotated across the posterior fornix for ten seconds. The swab should then be removed and immersed in the buffer, breaking the tip off at the top of the tube. The shaft of the swab must be aligned with the cap of the tube to prevent leaking. If the patient is determined to be a candidate for testing, the specimen should then be sent to our laboratory for testing. Specimens not tested within eight hours of collection must be stored in the refrigerator and assayed within three days. The processing of the specimen requires a written order by a physician or midwife.

A positive fFN test should prompt consideration of administration of glucocorticoids to accelerate fetal lung maturation since these drugs are most effective if administered once, at least 48 hours before, but within seven days of, delivery.

CONSULTATION: Twenty-four hour consultation is available by calling the Maternal Fetal Medicine service at the University of New Mexico Hospital.

REFERENCES:

Berghella V, Hayes E, Visintine J, Baxter JK. Fetal fibronectin testing for reducing the risk of preterm birth. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD006843. DOI: 10.1002/14651858.CD006843.pub2.

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Sanchez-Ramos L, Delke I, Zamora J, Kaunitz AM. Fetal fibronectin as a short-term predictor of preterm birth in symptomatic patients: a meta-analysis. *Obstet Gynecol.* 2009 Sep;114(3):631-40.