Fetal Fibronectin (fFN) Testing

More than 12.3 percent of all deliveries in the United States occur before 37 weeks gestation (NCHS, 2005). According to Freda and Patterson (2004), the incidence has risen over the last 20 years. The ability to predict both women who are at risk of preterm labor and delivery and women who are likely to deliver at term may make it possible for health care professionals to intervene to prolong pregnancy and prevent preterm birth (see Case 2: Liz Greene). The fetal fibronectin (fFN) test was developed to help meet this goal.

The fFN test may be performed between 24 and 35 weeks when a woman is having contractions or other symptoms of possible preterm labor. It may also be used between 22 and 39 weeks as a screening test for women carrying multiples or with a history of previous preterm delivery.

Fetal fibronectin is a glycoprotein that appears in high concentrations in amniotic fluid. It is normally found in cervical and vaginal secretions before 16 to 20 weeks gestation. Its presence in the cervicovaginal secretion after 20 weeks gestation is abnormal and is a marker for the imminent onset of labor at term (ACOG, 2001a). Researchers have hypothesized that elevated fFN levels reflect mechanical or inflammatory damage to the membranes or placenta. The cutoff for a positive test is $\geq 50$ ng/mL (Fischbach & Dunning, 2004).

According to Honest and colleagues (2002), the fFN test is better at predicting women who will not go into preterm labor, rather than those who will. For all women in their study, the sensitivity of fetal fibronectin testing was highest within 7 to 14 days of delivery (67 to 71 percent). However, negative predictive value was more specific (96 to 97 percent) for asymptomatic women than for women with symptoms of preterm labor (85 to 90 percent). Fetal fibronectin appears to be an especially strong marker for preterm births associated with infection (Honest et al., 2002).

To collect a specimen for fetal fibronectin testing, a Dacron swab is placed in the posterior fornix of the vagina and rotated for 10 seconds. Sexual activity within 24 hours of sample collection, recent cervical examination, and vaginal bleeding may result in false-positive tests (Adeza Biomedical, 2005). For this reason, a specimen should not be collected if the patient has had intercourse within 24 hours, after performance of a digital cervical exam, after measurement of transvaginal cervical length, or after performance of a Pap smear or cervical cultures. If used among women at high risk for preterm birth, fetal fibronectin testing should be confined to those with intact amniotic membranes and cervical dilatation $< 3$ cm. Sampling should be carried out no earlier than 24 weeks and 0 days and no later than 34 weeks and 6 days (ACOG, 2001a).

Fetal fibronectin testing is available either as an enzyme immunoassay with a 24-hour turnaround time or as a bedside test (Rapid Fetal Fibronectin Test,
Adeza Biomedical, Sunnyvale, California) with a turnaround time of one to two hours. (For more information, see the fact sheet on fetal fibronectin on the March of Dimes Web site www.marchofdimes.comprofessionals/14332_1149.asp.)
Please review this update carefully. It summarizes new clinical guidelines regarding best practices in the use of fetal fibronectin (fFN) and weight gain during pregnancy.

**Antepartum assessment and laboratory evaluation: Ongoing care**  
Mary Lee Barron, PhD, APRN, FNP-BC

**Update to fFN testing**  
Revised copy for the first paragraph of the fFN discussion on page 24:

The fFN test may be performed between 24 and 35 weeks when a woman is having contractions or other symptoms of possible preterm labor. It also may be used between 22 and 39 weeks as a screening test for women carrying multiples or with a history of previous preterm delivery. Fetal fibronectin testing has moderate accuracy for predicting preterm birth thereby making its value uncertain.

**Update to weight gain**  
The Institute of Medicine (IOM) (2009) updated its weight gain recommendations based on the revised body mass index (BMI) categories from the World Health Organization (WHO).

Revised text for Table 5:

<table>
<thead>
<tr>
<th>Status</th>
<th>BMI before pregnancy</th>
<th>Total weight gain range (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>18.5</td>
<td>28 to 40</td>
</tr>
<tr>
<td>Average weight</td>
<td>18.5 – 24.9</td>
<td>25 to 35</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.0 – 29.9</td>
<td>15 to 25</td>
</tr>
<tr>
<td>Obese</td>
<td>≥30.0</td>
<td>11 to 20</td>
</tr>
</tbody>
</table>

IOM, 2009

**References**  