Fetal Surveillance Guidelines

The antepartum fetal surveillance protocols noted below should be used as a guideline for management. In the presence of additional risk factors, earlier and/or more frequent surveillance may be required. Additional risk factors include but are not limited to tobacco use, assisted reproductive technology, inherited thrombophilias, obesity, abnormal serum markers, race, nulliparity, low educational attainment and a previous growth restricted infant. In the absence of data from high-quality randomized trials, care of the patient should remain individualized.

### Diabetes

<table>
<thead>
<tr>
<th>Indication</th>
<th>Initiate Surveillance</th>
<th>Testing Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestational diabetes, A1&lt;sup&gt;15,12,16&lt;/sup&gt;</td>
<td>may consider at 36 weeks</td>
<td>BPP 1x/wk or NST/AFI 1x/wk</td>
</tr>
<tr>
<td>Gestational diabetes, A2&lt;sup&gt;5,15&lt;/sup&gt; or</td>
<td>28 weeks 0 days</td>
<td>BPP 1-2x/wk</td>
</tr>
<tr>
<td>Pregestational diabetes&lt;sup&gt;2,7&lt;/sup&gt;</td>
<td>32 weeks 0 days</td>
<td>NST/AFI 1-2x/wk</td>
</tr>
<tr>
<td>Diabetes, poor control</td>
<td>At diagnosis</td>
<td>BPP 1-2x/wk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NST/AFI 1-2x/wk</td>
</tr>
</tbody>
</table>

### Hypertension in Pregnancy

<table>
<thead>
<tr>
<th>Indication</th>
<th>Initiate Surveillance</th>
<th>Testing Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic hypertension&lt;sup&gt;7,9,12,18,19,24&lt;/sup&gt;</td>
<td>32 weeks 0 days</td>
<td>BPP 1x/wk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NST/AFI 1x/wk</td>
</tr>
<tr>
<td>Gestational hypertension&lt;sup&gt;1,7&lt;/sup&gt;</td>
<td>At diagnosis</td>
<td>BPP 1-2x/wk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NST/AFI 1-2x/wk</td>
</tr>
<tr>
<td>Preeclampsia without severe features&lt;sup&gt;7,12,18&lt;/sup&gt;</td>
<td>At diagnosis</td>
<td>BPP 2x/wk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NST/AFI 2x/wk</td>
</tr>
<tr>
<td>Superimposed preeclampsia without severe features&lt;sup&gt;1&lt;/sup&gt;</td>
<td>At diagnosis</td>
<td>BPP 2x/wk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NST/AFI 2x/wk</td>
</tr>
<tr>
<td><em>Preeclampsia with severe features&lt;sup&gt;1,7,12&lt;/sup&gt;</em></td>
<td>At diagnosis</td>
<td>BPP daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NST/AFI daily</td>
</tr>
<tr>
<td><em>Superimposed preeclampsia with severe features</em></td>
<td>At diagnosis</td>
<td>BPP daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NST/AFI daily</td>
</tr>
<tr>
<td><em>Inpatient management</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Multiple Gestation

<table>
<thead>
<tr>
<th>Indication</th>
<th>Initiate Surveillance</th>
<th>Testing Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichorionic, diamniotic twins&lt;sup&gt;3,12&lt;/sup&gt;</td>
<td>32 weeks 0 days</td>
<td>BPP 1x/wk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NST/AFI 1x/wk</td>
</tr>
<tr>
<td>Monochorionic, diamniotic</td>
<td>16 weeks 0 days</td>
<td>Every 2 weeks screening</td>
</tr>
</tbody>
</table>
| Twins | 28 weeks 0 days | for TTTS
BPP 1-2x/wk
NST/AFI 1-2x/wk
Monochorionic, monoamniotic twins | At viability | BPP 2x/wk
NST/AFI 2x/wk
*BPP daily
*NST/AFI daily
Triplets and higher order multiples | 28 weeks 0 days | BPP 1-2x/wk
NST/AFI 1-2x/wk

*Inpatient management

<table>
<thead>
<tr>
<th>Indication</th>
<th>Initiate Surveillance</th>
<th>Testing Method</th>
</tr>
</thead>
</table>
| Antiphospholipid syndrome | 28 weeks 0 days | BPP 1-2x/wk
NST/AFI 1-2x/wk |
| Chronic kidney disease | 28 weeks 0 days | BPP 1-2x/wk
NST/AFI 1-2x/wk |
| Cyanotic heart disease | 28 weeks 0 days | BPP 1-2x/wk
NST/AFI 1-2x/wk |
| Decreased fetal movement | Once at time of complaint | BPP 1x |
| Fetal growth restriction | At diagnosis | BPP 2x/wk
NST/AFI 2x/wk
Dopplers weekly |
| Hemoglobinopathies | 32 weeks 0 days | BPP 1x/wk
NST/AFI 1x/wk |
| Intrahepatic cholestasis of pregnancy | At diagnosis | BPP 1-2x/wk
NST/AFI 1-2x/wk |
| Isoimmunization | 18 weeks 0 days to 28 weeks 0 days | BPP 1-2x/wk
NST/AFI 1-2x/wk
MCA Dopplers weekly to biweekly |
| Late Term | 41 weeks 0 days | BPP 2x/wk
NST/AFI 2x/wk |
| Maternal age ≥ 40 | 32 weeks 0 days | BPP 1x/wk
NST/AFI 1x/wk |
| Oligohydramnios | At diagnosis | BPP 2x/wk
NST/AFI 2x/wk
*BPP daily
*NST/AFI daily |
| Polyhydramnios | At diagnosis | BPP 1x/wk
NST/AFI 1x/wk |
| *Preterm premature rupture of membranes | At viability | BPP daily
NST/AFI daily |
| Previous IUFD | 32 weeks 0 days or 1 week prior to previous stillbirth | BPP 1x/wk
NST/AFI 1x/wk |
| Systemic lupus erythematosus | 28 weeks 0 days | BPP 1-2x/wk
NST/AFI 1-2x/wk |
| Thyroid disease, poorly controlled | 32 weeks 0 days | BPP 1x/wk
NST/AFI 1x/wk |

*Inpatient management
Possible Indications for daily biophysical profile:
- Abnormal Doppler velocimetry
- Fetal growth restriction, severe
- Fetal hydrops
- Hypertension in pregnancy
- Indeterminate fetal heart rate tracing
- Maternal cardiovascular or pulmonary disease, severe
- Maternal diabetes, poor control
- Multiple gestations
- Oligohydramnios, severe
- Placental abruption
- Preterm premature rupture of membranes
- Twin-Twin Transfusion syndrome

Possible indications for daily non-stress testing:
- Abnormal Doppler velocimetry
- Fetal growth restriction, severe
- Fetal hydrops
- Hypertension in pregnancy
- Indeterminate fetal heart rate tracing
- Maternal cardiovascular or pulmonary disease, severe
- Maternal diabetes, poor control
- Multiple gestations
- Oligohydramnios, severe
- Placental abruption
- Preterm premature rupture of membranes
- Twin-Twin Transfusion syndrome

Possible indications for continuous fetal monitoring:
- Abnormal antepartum fetal surveillance (BPP, CST, MBPP, etc.)
- Abnormal Doppler velocimetry
- Fetal growth restriction, severe
- Hypertension in pregnancy
- Indeterminate fetal heart rate tracing
- Labor
- Maternal fever or sepsis
- Maternal hypoxia
- New admission evaluation
- Oligohydramnios, severe
- Placental abruption
- Tocolysis

References:


