1. Appendix

**Table A** Initial insulin dosing guidelines during pregnancy

<table>
<thead>
<tr>
<th>Gestation term</th>
<th>Constant</th>
<th>Equation to derive total daily insulin (Big “I”)</th>
<th>1, 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>First trimester</td>
<td>0.7</td>
<td>( I = (0.7)(\text{weight in kg}) )</td>
<td></td>
</tr>
<tr>
<td>Second trimester</td>
<td>0.8</td>
<td>( I = (0.8)(\text{weight in kg}) )</td>
<td></td>
</tr>
<tr>
<td>Third trimester</td>
<td>0.9</td>
<td>( I = (0.9)(\text{weight in kg}) )</td>
<td></td>
</tr>
<tr>
<td>Full term</td>
<td>1</td>
<td>( I = (1.0)(\text{weight in kg}) )</td>
<td></td>
</tr>
</tbody>
</table>

Data are derived from Jovanovic et al, Feasibility of maintaining normal glucose profiles in insulin-dependent pregnant diabetic women; American Journal of Medicine, January 1980.

1basal Insulin (insulin NPH) = \( 1/2 \) of Big “I” which is then divided into 3 separate doses to be injected subcutaneously every 8 hours (3 injections/24 hours).

2bolus Insulin (insulin glulisine or insulin lispro): \( 1/2 \) of Big “I” which is then divided into 3 pre-meal doses which are injected subcutaneously before each meal (breakfast, lunch and dinner).

**Figure A** Insulin titration regimen for gestational diabetes.

<table>
<thead>
<tr>
<th>Circle One: Gestational weeks</th>
<th>0-12</th>
<th>13-28</th>
<th>29-34</th>
<th>35-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>( k )</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Calculate desired units of insulin from above line.

\( \text{“Big I”} = \frac{k}{(k \text{ units} \times \text{weight in kg})} \times 24 \text{ hours} \) (Basal = \( 1/2 \) “Big I,” Bolus = \( 1/2 \) “Big I”)

**Basal:** Divide so that 1/6 of “Big I” is NPH given before breakfast, 1/6 of “Big I” is NPH given before dinner, and 1/6 of “Big I” is NPH given before bedtime.

**Bolus:** Divide so that 1/6 of “Big I” is rapid-acting insulin given before breakfast, 1/6 of “Big I” is rapid-acting insulin given before lunch, and 1/6 of “Big I” is rapid-acting insulin given before dinner. The rapid-acting insulin is then titrated based on the blood glucose.

7 AM Pre-Breakfast NPH (1/6 “Big I” or current dose): ___________ to be adjusted according to the following scale:

- Calculate 3-day average pre-breakfast SMBG ___________ mg/dL.
- If average pre-dinner BS < 60, then decrease pre-breakfast NPH by 2 units.
- If average pre-dinner BS 61-90, then no change in pre-breakfast NPH.
- If average pre-dinner BS > 91, then increase pre-breakfast NPH by 2 units.

New 7 AM Pre-Breakfast NPH dose: ___________ units.

Pre-Breakfast Rapid-Acting Insulin (1/6 “Big I” or current dose): ___________ to be adjusted according to the following scale:

- Calculate 3-day average Breakfast post-prandial SMBG ___________ mg/dL.
- If average 1-hour post-prandial SMBG is < 70 mg/dL, then decrease pre-breakfast rapid insulin by 2 units.
- If average 1-hour post-prandial SMBG is 70-119 mg/dL, then no change in pre-breakfast rapid insulin.
- If average 1-hour post-prandial SMBG is ≥ 120 mg/dL, then increase pre-breakfast insulin by 2 units.

New Pre-Breakfast Rapid-Acting Insulin dose: ___________ units.

Pre-Lunch Rapid-Acting Insulin (1/6 “Big I” or current dose): ___________ to be adjusted according to the following scale:

- Calculate 3-day average Lunch post-prandial SMBG ___________ mg/dL.
- If average 1-hour post-prandial SMBG is < 70 mg/dL, then decrease pre-lunch rapid insulin by 2 units.
- If average 1-hour post-prandial SMBG is 70-119 mg/dL, then no change in pre-lunch rapid insulin.
- If average 1-hour post-prandial SMBG is ≥ 120 mg/dL, then increase pre-lunch rapid insulin by 2 units.

New Pre-Lunch Rapid-Acting Insulin dose: ___________ units.

4 PM - Afternoon Insulin NPH (1/6 “Big I” or current dose): ___________ to be adjusted according to the following scale:

- Calculate 3-day average pre-bedtime SMBG ___________ mg/dL.
- If average pre-bedtime SMBG < 60 mg/dL, then decrease afternoon NPH by 2 units.
- If average pre-bedtime SMBG 61-90 mg/dL, then do not change afternoon NPH.
- If average pre-bedtime SMBG > 91, then increase afternoon NPH by 2 units.

New 4 PM Afternoon Insulin NPH dose: ___________ units.
**Pre-dinner Rapid-Acting Insulin (1/6 “Big I” or current dose)____________ to be adjusted according to the following scale:**

- Calculate 3-day average Lunch post-prandial SMBG________ mg/dL.
  - If average 1-hour post-prandial SMBG is < 70 mg/dL, then decrease pre-dinner rapid insulin by 2 units.
  - If average 1-hour post-prandial SMBG is 70 – 119 mg/dL, then no change in pre-dinner rapid insulin.
  - If average 1-hour post-prandial SMBG is ≥ 120 mg/dL, then increase pre-dinner rapid insulin by 2 units.

**New Pre-Dinner Rapid-Acting Insulin dose:________ units.**

**11 PM Bedtime Insulin NPH (1/6 “Big I” or current dose)____________ to be adjusted according to the scale:**

- Calculate 3-day average Lunch post-prandial SMBG________ mg/dL.
  - If average pre-breakfast SMBG is < 60 mg/dL, then decrease bedtime NPH by 2 units.
  - If average pre-breakfast SMBG is 61-90 mg/dL, then no change in bedtime NPH dose.
  - If average pre-breakfast SMBG is > 91 mg/dL, then check the 3 AM BS and, if it is < 70 mg/dL (regardless of pre-breakfast SMBG), decrease today’s bedtime NPH by 2 units.
  - If average pre-breakfast SMBG is > 91 mg/dL, and the 3 AM BS > 70 mg/dL, increase bedtime NPH by 2 units.

**New 11 PM Bedtime Insulin NPH dose:________ units.**