Using the Bolus Wizard® Calculator
Objective

Describe the features and benefits of the Bolus Wizard® Calculator

Key Points

The Bolus Wizard:

• Estimates high blood glucose corrections using the science of insulin dynamics
• Its benefits extend to both patient and HCP
• Easy to program and use
Insulin Action Is Not Linear

Active insulin remains over time

Active insulin curve

Insulin remaining (%) vs. Time (hours)

Active insulin time ~ 4 hours

Active insulin remains over time
Benefits of Using Bolus Wizard® Calculator

• More accurate dosing
• Tracks active insulin – Safety feature
• Prevents stacking of insulin does
• Reduces hypoglycemia due to stacking
• Records data for therapy evaluation

Bolus Wizard® Calculator benefits extend to both patient and HCP
Bolus Wizard® is the Solution to Insulin Stacking

The most common errors that can lead to Insulin Stacking are:

Patients under estimate their carbohydrates

Postprandial hyperglycemia

Correct the high (without taking active insulin into account)

This causes insulin stacking which can lead to hypoglycemia

*Insulin stacking:* When the correction dose “stacks” on the insulin that is still active in the body from a previous dose
Bolus Wizard® Calculator Estimates the Bolus for Food and/or High Blood Glucose Levels

- **Bolus Insulin (insulin dose ‘on demand’)**
  - **Meal Bolus**
    - To support food intake
  - **Correction Bolus**
    - To correct high BG

- Recommends a bolus based on patient’s settings, food intake and active insulin
- Ensures bolus is closely matched to patient’s needs
- Tracks both the meal bolus and correction bolus as ‘active insulin’ but it does NOT track basal insulin as ‘active insulin’
Parameters in the Bolus Wizard® Calculator

These variables are set by HCP

Carb ratio (500/Pump Total Daily Dose TDD): The number of carbohydrate grams covered by one unit of insulin

Insulin Sensitivity Factor (1700/TDD): The number of mg/dL one unit of insulin lowers BG.

BG Target: The BG value that is targeted to achieve when a correction dose is given. The target may vary depending on type of meals.

Active insulin time: The length of time set for the BW to track active insulin. Default = 6hr, Range 2-8 hours.

Bolus Insulin = Meal bolus (food) + (Correction bolus – Active Insulin)
Example 1 – BG on Target with NO Active Insulin

<table>
<thead>
<tr>
<th>Glucose target</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulin Sensitivity Factor</td>
<td>50</td>
</tr>
<tr>
<td>Insulin to Carbohydrate ratio</td>
<td>1:10</td>
</tr>
<tr>
<td>Current Blood glucose</td>
<td>100*</td>
</tr>
</tbody>
</table>

**Estimate Details**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Est. total:</td>
<td>6.0 U</td>
</tr>
<tr>
<td>Food intake:</td>
<td>60 gr.</td>
</tr>
<tr>
<td>BG:</td>
<td>100</td>
</tr>
<tr>
<td>Food:</td>
<td>6.0 U</td>
</tr>
<tr>
<td>Correction:</td>
<td>0 U</td>
</tr>
<tr>
<td>Active ins:</td>
<td>0</td>
</tr>
<tr>
<td>ACT to proceed</td>
<td></td>
</tr>
<tr>
<td>ESC to back up</td>
<td></td>
</tr>
</tbody>
</table>

*Bolus Insulin = Meal bolus (food) + (Correction bolus – Active Insulin)*

*If BG < 70mg/dL, the wizard will NOT allow patient to bolus*
Example 2 – BG Above Target with NO Active Insulin

<table>
<thead>
<tr>
<th>Glucose target</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulin Sensitivity Factor</td>
<td>50</td>
</tr>
<tr>
<td>Insulin to Carbohydrate ratio</td>
<td>1:10</td>
</tr>
<tr>
<td>Current Blood glucose</td>
<td>200</td>
</tr>
</tbody>
</table>

**Estimate Details**

- Est. total: **8.0 U**
- Food intake: 60 gr.
- BG: 200 U
- Food: **6.0 U**
- Correction: **2.0 U**
- Active ins: 0

**Bolus Insulin =** Meal bolus (food) + (Correction bolus – Active Insulin)

**Est. total:**

- 6U + 2U - 0 = 8U

**ICR = 1U:10 gr.**

- 60gr/10gr = 6U

**200 – 100 = 2.0U**

**50 (ISF)**
Example 3 – BG Below Target with NO Active Insulin

<table>
<thead>
<tr>
<th>Glucose target</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulin Sensitivity Factor</td>
<td>50</td>
</tr>
<tr>
<td>Insulin to Carbohydrate ratio</td>
<td>1:10</td>
</tr>
<tr>
<td>Current Blood glucose</td>
<td>70</td>
</tr>
</tbody>
</table>

**Estimate Details**

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Est. total:</td>
<td><strong>5.4 U</strong></td>
</tr>
<tr>
<td>Food intake:</td>
<td>60 gr.</td>
</tr>
<tr>
<td>BG:</td>
<td>70</td>
</tr>
<tr>
<td>Food:</td>
<td><strong>6.0 U</strong></td>
</tr>
<tr>
<td>Correction:</td>
<td><strong>0.6 U</strong></td>
</tr>
<tr>
<td>Active ins:</td>
<td>0</td>
</tr>
<tr>
<td>ACT to proceed</td>
<td></td>
</tr>
<tr>
<td>ESC to back up</td>
<td></td>
</tr>
</tbody>
</table>

**Bolus Insulin = Meal bolus (food) + (Correction bolus – Active Insulin)**

Est. total: $6U + (\cdot 0.6)U - 0 = 5.4U$

ICR = 1U:10 gr.
60gr/10gr = 6U

70 - 100 = -0.6U
50 (ISF)
Example 4 – BG Above Target WITH Active Insulin

<table>
<thead>
<tr>
<th>Glucose target</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulin Sensitivity Factor</td>
<td>50</td>
</tr>
<tr>
<td>Insulin to Carbohydrate ratio</td>
<td>1:10</td>
</tr>
<tr>
<td>Current Blood glucose</td>
<td>200</td>
</tr>
</tbody>
</table>

**Estimate Details**

- **Est. total:** 7.0 U
- **Food intake:** 60 gr.
- **BG:** 200
- **Food:** 6.0 U
- **Correction:** 2.0 U
- **Active ins:** 1.0 U

**Estimate Details**

- **Est. total:** 6U + 2U - 1U = 7U
- **ICR = 1U:10 gr.** 60gr/10gr = 6U
- **200 – 100 = 2.0U**
- **50 (ISF)**
- Active insulin is subtracted from correction

**Bolus Insulin = Meal bolus (food) + (Correction bolus – Active Insulin)**

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Conclusion: Bolus Wizard® Calculator Does It All

Bolus Wizard® calculator estimates high blood glucose corrections using the science of insulin dynamics

- Tracks active insulin
- Helps prevent insulin stacking
- Reduces hypoglycemia
- Provides comprehensive therapy management through software download
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