**Continuous Glucose Monitoring (CGM) Dexcom Trend Arrows**

*Preventing high and low glucose readings by adjusting mmol/L (REGULAR)*

CGM devices show current glucose readings and trend arrows. These arrows give information on how your glucose level will change in the next 15 to 30 minutes. You can use this information to help prevent high or low glucose levels. This handout reviews one method: adding or subtracting mmol/L to your sensor’s glucose reading. Talk with your educator about other methods.

- “Up Arrows” at meal time means you **ADD** mmol/L to your sensor reading BEFORE calculating insulin.
- “Down Arrows” at meal time means you **SUBTRACT** mmol/L from your sensor reading BEFORE calculating insulin.

<table>
<thead>
<tr>
<th>DEXCOM ARROW</th>
<th>GLUCOSE CHANGE expected in 15 minutes</th>
<th>WHAT TO DO: Sensor Reading +/- Arrow Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>____________</td>
<td>_______________________________</td>
<td>________________________________</td>
</tr>
<tr>
<td>↑↑</td>
<td>Rise of 2.5 mmol/L or more in 15 minutes</td>
<td>Add 6 mmol/L to your glucose reading</td>
</tr>
<tr>
<td>↑</td>
<td>Rise of 2.5 mmol/L in 15 minutes</td>
<td>Add 4 mmol/L to your glucose reading</td>
</tr>
<tr>
<td>↑</td>
<td>Rise of 1.7 mmol/L in 15 minutes</td>
<td>Add 2 mmol/L to your glucose reading</td>
</tr>
<tr>
<td>→</td>
<td>No significant change in glucose</td>
<td>No adjustment</td>
</tr>
<tr>
<td>____________</td>
<td>_______________________________</td>
<td>________________________________</td>
</tr>
<tr>
<td>←</td>
<td>Drop by 1.7 mmol/L in 15 minutes</td>
<td>Subtract 2 mmol/L from your glucose reading. See notes above*</td>
</tr>
<tr>
<td>↓</td>
<td>Drop by 2.5 mmol/L in 15 minutes</td>
<td>Subtract 4 mmol/L from your glucose reading. See notes above*</td>
</tr>
<tr>
<td>↓↓</td>
<td>Drop by 2.5 mmol/L or more in 15 minutes</td>
<td>Subtract 6 mmol/L from your glucose reading. See notes above*</td>
</tr>
</tbody>
</table>

*Notes: If you have any down arrows and are 5.5 mmol/L or less before eating, consider if you need to:*
  - do a fingerstick test. You may already be low and need glucose.
  - eat 15g glucose (or more if you have insulin on board or ↓↓).
  - confirm with fingerstick check every 15 minutes if sensor reading continues dropping or hasn’t responded as you’d expect.
Before Meal Example (Regular):

Here’s how Susan planned for supper insulin on two occasions. In each case, she waited 15 minutes to see if her Dexcom trend arrows changed. They did not. She did not have exercise planned after these supper meals. Susan has an insulin sensitivity factor (ISF) of 2 and an insulin-to-carbohydrate ratio of 1 unit for 10 grams. Her target glucose of 7 mmol/L.

### Before Meal Example:

**Friday Supper**

- **Dexcom reading:** 11.0 mmol/L ↑
- **Arrow Adjustment:** + 6.0 mmol/L
- **Subtract target:** - 7.0 mmol/L
- **Divide by ISF:** ÷ 2
- **Units for correction:** 5 units

**Sunday Supper**

- **Dexcom reading:** 11.0 mmol/L ↓
- **Arrow Adjustment:** - 6.0 mmol/L
- **Subtract target:** 5.0 mmol/L

### Before Meal Calculations:

1. **Decide on correction dose by ADDING mmol/L for arrow adjustment**
   - Susan gives 5 units for correction on Friday and 5 units on Sunday.

2. **Decides on bolus insulin as usual**
   - 50 grams of carbohydrate ÷ 10 (insulin to carb ratio) = 5 units for her meal carbohydrate

3. **Gives correction plus bolus insulin**
   - Susan gives 5 units for correction + 5 units for carbohydrate = 10 units

### Your Turn Before Meals: Sensor Reading +/- Arrow Adjustment

1. **Before lunch**, your glucose reading is 10.0 mmol/L ↓↓. According to the chart on page one, you would subtract _____ mmol/L from your 10.0 mmol/L reading. You would now do your usual calculations for meal and correction insulin using the glucose reading of _____ mmol/L (not 10.0 mmol/L).

2. **Before breakfast**, your glucose level is 10.0 mmol/L →. You can expect your glucose to stay stable as you don’t plan to exercise. According to the chart above, would you add or subtract any mmol/L to your reading? How would you calculate your meal bolus?

3. **Before supper**, your glucose level is 5.0 mmol/L ↑. You don’t plan on exercising. How would you calculate your supper insulin?

4. **Before supper**, your glucose level is 5.0 mmol/L ↓↓. What would you do?
After Meal Suggestions (2-4 hours after a meal):

### Hyperglycemia Prevention Using Trend Arrows 2-4 hours After Meal

Avoid corrections the first 2 hours after a meal bolus to prevent insulin stacking.

<table>
<thead>
<tr>
<th>Glucose reading 2-4 hours after eating</th>
<th>WHAT TO DO: If arrow ↑ or ↑↑</th>
</tr>
</thead>
</table>
| 8.3 - 13.9 mmol/L                     | • Take your usual correction dose. Do not add mmol/L for arrow adjustment  
• Consider correcting to 10.0 mmol/L if it’s only 2 hr after eating.  
• Avoid correcting again for at least another 2 hours. |
| 14.0 mmol/L and greater               | • Confirm with fingerstick test.  
• Check for ketones if 14.0 mmol or higher. If ketones are present, follow guidelines for preventing DKA.  
• Take correction dose. Do not add mmol/L to your reading.  
• If ↑↑ one hour after this correction  
  o Confirm with fingerstick  
  o Follow guidelines for preventing DKA if ketones are present  
  o Take additional correction insulin. Do not add mmol/L to your reading.  
  o Change infusion site if on an insulin pump. |

### Hypoglycemia Prevention Using Trend Arrows 2-4 hours After Meal

<table>
<thead>
<tr>
<th>Glucose reading 2-4 hours after eating</th>
<th>WHAT TO DO: If arrow: ↓ or ↓ or ↓↓</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near 8.3 mmol/L</td>
<td>• Recheck in 15 minutes</td>
</tr>
</tbody>
</table>
| Near 5.5 mmol/L or lower              | • Take 15 g fast-acting carbohydrate (30 g if ↓↓)  
• Check glucose level again in 15 minutes. If CGM reading is less than 4.0 mmol with arrows down, confirm with fingerstick blood glucose test and take another 15 g glucose.  
• Check CGM every 15 minutes. If CGM continues to show arrows down, confirm with fingerstick blood glucose test. |

After meal (2-4 hours) examples:
1. Your blood sugar 2 hours after eating is 13.5 mmol/L ↑↑. What could you do?
2. Your blood sugar 3 hours after eating is 5.2 mmol/L →. Do you need to add a snack?
3. Your blood sugar 2 hours after eating is 5.2 mmol/L ↓↓. Do you need glucose?

Adapted from:
1. Dexcom G5 Treatment Decisions: Advanced arrow adjustment 2018