15.1 Hypo Symptoms and When They Occur	
From Stress Hormone Release (at ~65 mg/dL/3.6 mmol/L)	**From Low Glucose in Brain (at ~55 mg/dL/3.1 mmol/L)**
• Sweating • Shaking • Irritability • Stubbornness • Fast heart rate • Hunger • Feeling amped up or nervous • Resisting help • Tingling of the lips or fingers • Nausea • Vomiting	• Confusion • Poor concentration • Mental slowness • Vision blurred or spotty • Sudden tiredness • Silliness • Frequent sighing • Yawning • Inability to form words • Headache • Seizure • Coma

15.2 Lows Are More Likely When You:

1. Give too much insulin.
2. Give a meal bolus but miss or delay a meal.
3. Stack boluses over a short period of time.
4. Increase correction boluses to bring a high glucose down faster.
5. Have a DIA less than 4 hours that hides IOB.
6. Are less than 48 hours from a previous low.
7. Give a bolus without checking glucose and IOB.
8. Drink alcohol.
9. Sleep without eating after increased activity.

15.3 Stop Frequent Lows!

Anytime you have frequent lows, reduce your TDD, usually by 5 or 10 percent. Use this lower TDD to calculate new basal rates and new bolus factors. You'll have fewer lows and fewer highs following these lows. See Chapter 8 and Table 8.1.

15.4 Handy Quick Carbs

Each provides 15 grams of quick carbs that raise the glucose in 10 to 20 min:

- 1 Tablespoon of honey
- 3 BD Glucose Tablets
- 3 Smartie Rolls (in cellophane)
- 4 CanAm Dex4® Glucose Tablets
- 5 Dextrosols Glucose Tablets
- 5 Wacky Wafers®
- 6 Sweet Tarts® (3 tabs/packet)
- 7 Pixy Stix
- 8 Sweet Tarts® (3/4" diam roll)
- 14 Smarties® (3/4"diam roll)

15.5 How Much 1 Gram of Carb Raises Your Glucose

If your weight is:	1 gram will raise you about:
50 lbs (23 kg)	8 mg/dL (0.44 mmol/L)
75 lbs (34 kg)	7 mg/dL (0.39 mmol/L)
90 lbs (41 kg)	6 mg/dL (0.33 mmol/L)
120 lbs (55 kg)	5 mg/dL (0.28 mmol/L)
160 lbs (73 kg)	4 mg/dL (0.22 mmol/L)
200 lbs (91 kg)	3 mg/dL (0.17 mmol/L)

15.6 Get the Right Number of Carbs for Each Low

1. Treat the Low Glucose

Take 1 gram of carb for each 10 lbs (4.5 kgs) of body weight. For example, someone who weighs 150 lb (68 kg) would consume 15 grams, while someone who weighs 220 lb (100 kg) would consume 22 grams for the low glucose. (Use at least 6 grams for a small child.)

2. Cover Excess IOB

If any IOB is present, multiply the units of IOB times your CarbF to find how many EXTRA free carbs you need to cover it.

For example, if someone weighs 130 lbs (59 kg) and has a glucose of 50 mg/dL (2.7 mmol/L) with 2 units of IOB and a CarbF of 1u/11 grams:

a) 130 lbs = 13 grams
b) IOB x CarbF = 2 units x 11 grams/unit = 22 grams
c) 13 g + 22 g = up to 35 grams are needed to treat this low glucose.

Have these carbs and recheck your glucose 20 to 30 min. later. Cover any carbs above this amount with a bolus to avoid going high later.

3. Consider Any Recent Increased Activity

Add extra free carbs to cover any recent or planned increase in activity. (See Chapter 18.)

15.7 Don't Overdo Control

A healthy A1c should never be obtained at the cost of frequent hypoglycemia, unconsciousness or grand mal seizures. Clinicians advise the overly conscientious to use less insulin and select safer targets.

Keep your glucose above 70 mg/dL (3.9 mmol/L). Follow recommended boluses unless valid reasons exist for modifying them. Pay close attention when IOB is greater than the bolus needed for your current glucose.

15.8 How to Stop Hypoglycemia Unawareness

- Check all your pump settings for accuracy and lower your TDD.
- Make sure your DIA time is set to 4 hours or more.
- Before giving a bolus, check that your IOB is less than the units you need to correct your current glucose.
- Wear a CGM and set the low glucose target at 90 or 100 mg/dL and be sure to treat with adequate carbs as soon as a low alert sounds.
- Keep all glucose readings above 80 mg/dL (4.4 mmol/L) for 6 to 18 weeks.
- Treat at the first sign of a low to maintain stress hormone levels.
- Do not increase an AID or BC's recommended dose.
- Raise your target glucose to 120 mg/dL (7.8 mmol/L) or more, and raise the CorrF to prevent lows occurring within 5 hours of treating a high glucose.
- Limit alcohol to one or two standard drinks a day.