Let’s put it all together now...

Part 2

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Conflict of Interest Disclosure

Stephen W. Ponder MD, FAAP, CDE has no conflicts of interests to disclose
Look for onset and duration.

Exploring variance: same day, same exact food, no insulin.

Generally similar.
Slow drop

Slow pivot

Managing stress effect
I-chaining tips

• Based on determining your own duration of insulin action
• Dosing is based on pre-empting a rise after a meal/stress that lasts longer than your last rapid-acting insulin dose
• Assuming food intake is complete, then follow up doses are usually smaller (stepped down) than the first.

i-chains are like an insulin “relay race”

• Know your insulin lag time (wait for it)
• Know your range of insulin actions (when to start inflection hunting)
• Be mindful of the basal insulin running in the background
• Consider the amount and type of meal you’ve eaten too.
**i-chaining tips**

1. Know your average insulin duration effect.
2. Helps you to know when to glance for delta wave.
3. I-chaining dose is based on prior dose and meal.
4. Always follow through, carb brake as needed.
5. Dosing higher on wave results in a higher pivot BG.

This is an example of "pre-emptying."
Stacking Insulin vs. Use of I-Chains

**Insulin stackers**
- Are often unaware they stack
- Don't follow up on their actions
- Lack of interest, data, or access to BG checking supplies/tech
- Dosing multiple doses of rapid-acting insulin is overly aggressive and irresponsible

**I-Chainers**
- Proactively overlap insulin doses
- Always follow-up on actions to shape BG results
- Well-calibrated CGM makes this practical to "chain dependent events"
- Are empowered and engaged patients

UNSAFE! SAFE!
What have we learned? I-chaining

1) Taking overlapping (staggered) doses of rapid insulin should not be done without frequent BG checking and fast-acting carbs available to manage an overshoot
2) If no evidence of insulin effect on a steady BG rise after 60 minutes, consider a supplemental dose of rapid acting insulin
3) You MUST be willing to carefully watch the BG level for several hours AFTER any I-chain use
4) This is a VERY ADVANCED move and should not be done by an inexperienced Sugar Surfer
5) This move is useful for slow carb meals
Burger and O-rings

It’s all about matching food and insulin. Remember your “top ten” approach!

Why Sugar Surfers PRACTICE THE “TOP 10” CONCEPT
In and Out Mastered!

In and Out and all over the place (Chaos)

A normal day of Sugar Surfing™
There is much more information here than meets the eye.
Can you see it better now?
Sugar Surfing Visual Quiz

How many key Sugar Surfing elements can you identify in this image?

1. L = insulin lag time
2. 2.5 hours = effective duration of insulin action
3. 2 delta waves, 3 shelves
4. 1 insulin pivot/drop

Wipeout!
Core Sugar Surfing concepts

1. Recognize BG patterns visually and assign significance to them
2. Managing "situations", not just blood sugar, food and insulin
3. “Pre-empting” significant blood sugar changes as they happen
4. Chain dependent insulin dosing (“I-chaining”)
5. Knowing that insulin action is not a constant. Many things change it
6. You are steering a trend, not just reacting to a number
Situation 1

Situation 2

Situation 3

How to Sugar Surf Pizza

Example

Copyright © Sugar Surfing™ 2015-2017
Pork ribs, fries and coleslaw
After Portland workshop

Situation 1
Situation 2
Situation 3

General Tso’s Revenge
Late rise
pivot
What if... no action is taken?

General Tso's Revenge

Panera sandwich and chips

1. 1st dose taken on slow drop, in range.
2. Minimal wait before eating
3. Eat meal and glance at trendline
4. Look for inflection after 1.5-2 hours
5. Dose 50% of 1st dose on inflection
6. Keep glancing at trendline
7. If nothing done at #4
**Dosing on Deltas**

Key points:
1. Slow carb meal w/ fat and protein
2. Dosing rapid insulin while BG still in range – pre-empting delta waves
3. Requires careful glancing
4. An advanced Sugar Surfing skill

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**Tacos al Carbon**

Key points:
1. Slow carb meal w/ fat and protein
2. Premeal dose on delta wave
3. Use rapid insulin to pre-empt delta waves
4. Careful glancing at trendline
5. An advanced Sugar Surfing skill

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**Manicotti surfing In Atlanta**

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Teaching points in this image
1. Learn to dose insulin or carbs on drops and delays
2. Recognize insulin and carbs onsets by 'seeing' inflections/peaks
3. Estimate effective insulin duration by 'seeing' inflections/peaks
4. Appreciate that big meals can outlast injections or single pump bolus. Use combo-bolus or I-chains
**Fried Shrimp**
60 grams carbs

**Teaching points**
- Dosed during meal
- 50% dose (3U) first
- Watched for deltas
- "Preempted" (2U) x 2
- Lowered upper alert
- DIA altered by meal
- MDI: lispro/degludec

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**Late night delta wave**
starting at midnight from
Thai food at 7PM

**Teaching points:**
- Slow rising BG after 4-5 hrs in range
- Basal neutrality
- Time to effective insulin onset (25-30 min)
- Insulin duration (2.5-3.0 hours)

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**Closing Thoughts**
Diabetes care is about **CHOICES**

<table>
<thead>
<tr>
<th>35,000 each day</th>
<th>12,775,000 a year</th>
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<tbody>
<tr>
<td>225 about food each day</td>
<td>82,125 a year</td>
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**S.U.R.F.**

See the patterns

Follow up carefully

Understand their Significance

Respond appropriately

**“Pattern anatomy”**

- **shelf**
- **delta**
- **drop**
- **pivot**
- **inflection**
- **lag**
Determining significance: take C.A.R.E.

Current (what are you doing now)
Anticipated (actions/omissions)
Recent (actions/omissions)
Experience (your own)

Oatmeal Surfing

Where are your favorites?
Practice Safe Surfing

1. Nail down your basal requirements
2. Fewer basal rates work better than more
3. Calibrate your CGM carefully
4. Glance often enough
5. Finesse often works better than brute force
6. Self-experiment to understand how your body works
7. Stop comparing your diabetes to others
8. No shame in hard work. There are no short cuts to excellence.