# Jen Alexander

# One-Arming in the Northumberland Strait With Diabetes for 10 hours 42 minutes

- The Day After -

28 August 2013
Official swim time: 10 hours, 42 minutes
Retired due to adverse wind conditions

Average blood sugar: 6.3 (113). High of 10.7 (193), low of 3.8 (68) Total Intake: 500 grams of carbs

This is a really long account of my day. Use created the following headings to make it more skim-able.

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Thank you so much for supporting me, everyone! Thanks also to Abbott Diabetes Care, who has sponsored every single marathon swim of mine, and who could not be more caring or supportive. (I really do believe they make the best blood glucose meter on the market -- if you need a blood glucose meter, you might want to read up on it!)



# 1. Shoulder Problems/Stupid Diabetes

Frozen Shoulder, or adhesive capsulitis, is a bit of a wicked condition. No one knows what causes it, but it's known to affect women more than men, and the risk increases the longer you've had Type 1 (aka *Juvenile*) Diabetes. (Type 1 Diabetes is the autoimmune-ass-kicking kind that has nothing to do with activity levels or diet. I'm celebrating my 25th year with Type 1 Diabetes this year.) Frozen shoulder affects 2% of the population over 50 years of age, but at least 20% of people with diabetes. (Remarkably, one study found no correlation between the previous five years of diabetes control and the diagnosis of frozen shoulder.) I developed frozen shoulder in both shoulders: lefty in April 2009, and righty in June 2010.

Frozen Shoulder has three phases: freezing, frozen, and thawing. In freezing, the shoulder capsule starts contracting. Shoulder range decreases dramatically. When I became fully frozen, I couldn't lift my arms above my shoulder. I applied shampoo to my head using a spatula. I couldn't lift my arms high enough to apply deodorant. I couldn't sleep on either shoulder, and I couldn't even sleep on my back without pillows under my shoulders -- my shoulders didn't even have enough range to touch my bed! I couldn't hug people. I couldn't even bring my bow to my fiddle. Getting dressed and bringing food to my mouth was necessary, excruciating pain. And when I accidentally bumped my arm/shoulder or moved beyond my range, my face would flush purple with pain and I'd want to lie down and stop breathing. The pain was \*exhausting\*. As recently as December 2012, it still hurt to \*walk\* -- just the gentle swaying of my arms as I walked was enough to make me grit my teeth. My threshold for pain is high, but this was prolonged pain beyond reason. These last four and a half years have been fantastically difficult. (Frozen shoulder tends to last 6-12 months in people without diabetes, but can last up to 11 years (!!) in people with diabetes.)

I threw myself into physiotherapy wholeheartedly, completing more than 700 hours. (More than seven hundred appointments. That's crazy.) My physiotherapist joked that we'd seen enough of each other to be common law partners. Progress was agonizingly slow, and treatment needed to be conservative: even stretching a couple of degrees beyond the "ok" range was enough to

flare my shoulders up for weeks (causing more pain and reduced range). I stuck with it, though. If you don't treat frozen shoulder, tendons, ligaments and nerves can become permanently contracted, and then you \*never\* get your range back. I got ALL the alternate opinions: multiple physiotherapists, my family doctor, two chiropractors, a sports medicine doctor, an osteopath, an acupuncturist, and two surgeons. This was the best treatment option for me.

I needed to swim again. Oh yes. Swimming is my church, my mediation, my yoga, my soul, and my freedom all rolled into one. I was willing to do the work.

#### 2. Swimming With One Arm

I realise that the idea of swimming a marathon with one arm sounds crazy to most people. I understand that. But for me, when my left arm had gotten through enough pain, set backs, ice packs, flare ups, and years of physiotherapy to swim again, I felt unstoppable. \*OF COURSE\* I would do a marathon swim with one arm. It was just plain logical to me. Ut meant reclaiming a piece of my soul.

# 3. Picking the Day

Planning a swim depends mostly on the weather, the wind, the tides and currents. The tides/currents in the Northumberland Strait are strong enough to drag you 15km (9.5 miles) from where you started. I knew I'd be substantially slower with one arm, so the tides were more important than usual. Based on the Government of Canada's Department of Fisheries and Oceans data, I determined August 28-September 3 to be my swim window. I had seven days to pull off this swim.

Tuesday afternoon, the wind stopped blowing. The winds were forecast to be "light" (the least possible amount of wind) during the day on Wednesday, increasing to 15 knots in the evening. For the three days following, the forecast called for wind warnings and gale-force winds (30 knots, 56 km/hour, 35 miles/hr). This wind speed causes 5 metre (16 foot) waves in the open ocean. On land, whole trees are in motion (not just the branches), and it takes effort to walk against the wind. I was worried because winds seem to last longer at this time of the year. Additionally, big winds cause the water to cool off more quickly than usual, which makes hypothermia more likely. I knew I'd swim at the first day the weather looked reasonable. We knew the wind would blow from the wrong direction on Wednesday evening, but we expected that, if I was still swimming, we'd be close enough to shore that the wind wouldn't be a problem.

I called my boat captain, and he said the water was like glass. We talked about my speed, and how much slower I'd be, and he suggested that the weather could change, but that it looked good for an early Wednesday start. I am so lucky to have amazing people in my life. I had crew who were ready to spring on a moment's notice, so we hauled up to New Brunswick Tuesday night. (Thank you Brenda, Alyssa, Jane, and Barry! Could not have done this without you!!) We'd make go/no go call at 6am Wednesday morning.

#### 4. The Start of the Swim

We showed up at a very foggy Cape Tormentine wharf at about 5:30am, and the harbour waters were flat like a pancake. The forecast hadn't changed overnight. My boat captain put his boat in the water, and we loaded the boat with the day's supplies. We pulled away from the harbour, and were very quickly navigating through the thick fog. It took longer than expected to navigate to the foot of the Confederation Bridge.

The Confederation Bridge connects New Brunswick (well, mainland Canada, really) with Canada's smallest province: Prince Edward Island (PEI). In the 1960s, this swim was on the International Marathon Swim circuit. The Northumberland Strait is 12.7km (7.9 miles) at its narrowest crossing. We were aiming to complete the swim at the narrowest point of the Strait but accepted that I could land anywhere along the Island. I'd just end of swimming a greater distance.

I checked my sugar -- an ideal 6.2 mmol/L (112 mg/dl) -- drank 30 grams of carbs, applied sunblock and vaseline, and launched myself off the back of the boat. I was relieved to find the water temperature tolerable. At 19.8 degrees Celsius (68 degrees Fahrenheit), the water should have felt as toasty as a blanket, but I've lost some of my acclimation not swimming for four years. I waded out to shore, and walked until there was no water in front of me. My official start time was 6:53am. I waded back into the water until it was deep enough to swim, and then I started to crank.

# 5. Diabetes and The Rules

I swim according to "English Channel Rules": I've never worn a wetsuit. I wear bathing suit in an approved fabric and style, a single bathing cap, and bit of "grease". I also wear a MediaAlert bracelet and an insulin pump, but the Channel Swimming Association approved these deviations to keep me safe and alive. My insulin pump gives me insulin every three minutes. I have to tell it how much to give me, and I end up changing this amount repeatedly over the swim, because exercise changes insulin sensitivity. I need insulin to survive, but I need the \*right amount\* of insulin to swim. Insulin moves glucose from your blood into your cells. Too much insulin would jam my muscles with sugar, but not leave enough sugar in my blood for my brain to function normally. Too little insulin would prevent my cells from receiving enough energy, and cause the sugar level to build up in my blood. At worst, if I stopped taking insulin, I'd be heading into a coma as I swam. The tricky thing about insulin is that it takes 3-5 hours to absorb, and the absorption time can vary by 50% from one place on your body to another! Some days, it feels like you need to be psychic to get the balance right. (My body has stopped making insulin. My immune system waged a bit of a war with my pancreas. That's what Type 1 Diabetes is, and why people with Type 1 Diabetes must inject insulin to stay alive.)

At the beginning of the swim, the wind wasn't even strong enough to create waves. I moved through the water faster than expected, and it was "test time" before I knew it. I test my blood

sugars every 30 minutes while I swim. I need to test this often to swim safely. My boat crew loaded two Freestyle Insulinx meters into a plastic container, along with a lancing device and a face cloth, and threw it to me on a rope. I'd swim up to the container and test my blood sugar while I treaded water. Under English Channel rules, I'm not allowed to get on or touch the boat.

#### 6. Feeling Needy...

I love the Confederation Bridge -- there is something special about it to me -- but it also feels like the world's longest ruler. The 44 main piers are spaced exactly 250 metres (273 yards) apart, and it makes it painfully easy to see how much progress you are (or aren't) making. I got a bit information-needy early in the swim. Whenever I stopped to test/feed, I kept counting the piers to see how far I'd come. I got a bit desperate to confirm I was making progress.

#### 7. Feeling Loved...

The novelty of the swim wore off quickly. Swimmers tend to go through a bit of depression between the third and seventh hours of their swim because the adrenaline from the start has worn off, and the finish is a long way off. The weather challenged me. The fog made everything so grey and cold! The sky was grey, the bridge was grey and the water seemed grey. I felt cold unexpectedly quickly, and longed to see the great big heating lamp in the sky. I was only two and a half hours in, and found myself wondering if I could make it. At one of my test/feed breaks, my first group of harbour porpoises made their appearance, and I was told I had 86 facebook notifications and a bunch of text messages. I felt so loved! It actually warmed me up and gave me hope.

I just kept swimming.

#### 8. Then It Got Rough(er)

I became nauseous pretty early in the swim. Koolaid is my primary fuel source, and I couldn't find a single tub of Koolaid in Halifax! My friend Diana and I drove around the city, hitting Walmart, Superstore Wholesalers, Superstore, Sobey's, Bulk Barn, and even Lawtons Drugstore. The pre-mixed Koolaid Jammers were the wrong concentration (too sugary to absorb well), and the single packs used an artificial sweetener I have trouble with. The closest we could find was a knock off made by Sobey's. I've had trouble with knock offs before (curse, you, No Name brand!) and taking Gatorade in significant quantities makes me puke, but I didn't really have a choice. The Sobeys brand could have been causing me trouble, or it could have been the disorientation from the fog, or it could have been the unceasing undulation... Probably a combination of all three.

Swimming with one arm is a bit disorienting. Swimmers will understand how I do it: it's a slowed-down one-arm fly drill, and I keep my non-working arm by my side instead of extended ahead. (Despite doing it for nearly 11 hours yesterday, I struggle to explain it. 
© See the first

two seconds of this video if you're interested:

http://www.youtube.com/watch?v=2BwpI0glRdU&t=0m06s .) It means, though, that I am tilting in a couple of directions. Picture a seesaw moving up and down which also tips on its side every time one of the ends comes up.

The waves didn't help. Neither did the volume of liquid I was drinking. Carbohydrate solutions absorb best at a concentration of 6-8%. To drink my 30 grams of carbs, I was drinking 450mL (15 fluid ounces, 1.9 cups, or just under a pint) of fluid every 30 minutes. It meant that a lot of liquid was sloshing around in my stomach. I ended up burping \*a lot\*. At first this was really embarrassing, but my crew was so supportive they actually cheered me on, saying things like "Good one!", and, "Way to go!". Heh. They knew the burping reduced my nausea, but you can't ask for support like that! Eventually, we started splitting my half-hourly feeds in half and feeding every 15 minutes to reduce the volume of liquid. It meant more stopping, though.

### 9. Nature's Ultimatum: Tide vs Geography

The swim quickly melted into a blur of swimming, testing, and carbing up. I lost track of the time, and sometimes the 30 minute periods seemed to pass in no time at all. The wind was actually pushing me toward PEI. Excellent. Ut wasn't directly pushing me, but it certainly helped, and it prevented the tide from dragging me too far west of the bridge.

Over time, the wind picked up and changed direction. It stopped pushing me toward PEI blowing me, and started blowing me sideways, further and further from the nearest point of land, and potentially adding 30-50% more kilometres to the length of the swim. The waves were getting bigger, and although we didn't know it at the time, the gale-force winds scheduled for tomorrow were coming early. The tide was running faster than expected, and the slack tide didn't last as long as it should have. We faced a difficult decision: I either had to fight the tide and current (swimming partially "upstream", knowing I wouldn't make as much forward progress) or I had to fight the geography, knowing that the further I got blown down the strait, the longer and longer the swim would get. We chose to fight the tide and current.

The satellite tracking beacon (SPOT) recorded points between hours 5-9 that don't quite mesh with my experience of the swim. It's lobster season in that area of the Strait, so lobster pot buoys were everywhere. (We lost a bit of time navigating around them, and my boat had to leave me for a bit so the propeller wouldn't get tangled in the underwater ropes.) Between hours 5 and 9, we passed buoys. Everyone on my crew emphasized the progress we were making, but it doesn't look like we made much forward progress at all according to the map. I'm not really sure how to understand this.

I certainly made progress in terms of not getting blown down the strait, but forward progress evaded us. That can happen sometimes. Even without wind, there are areas of the Strait where the geography causes currents that hold you in place. I once swam for 15 minutes in the Strait (using both arms) and only moved 10 metres (11 yards). I only started making reasonable

forward progress when the tide changed direction. (The captain joked he could have saved fuel by dropping anchor!)

#### 10. The Dark Shape Beneath Me

The sun spent many hours trying to burn off the fog, and although there were times when you could see the outline of the sun, the sun didn't exactly shine over us during the first half of the swim. I was cold, but the water warmed up to 21 (70) as we got closer to PEI. Eventually, the sun broke through, and burned off the fog.

As delightful as the harbour porpoises were, I wondered why they were there, and why I'd never seen them before. My boat captain commented that he could see mackerel on his sounder, and that the porpoises were probably chasing it. I wondered what other wildlife was in the Strait. I've never seen anything beneath me while I've swum other than thousands of jellyfish, and crabs near shore. There's a lot of plankton in the Strait. Much like tiny water droplets create fog, the millions and millions of tiny organisms create a fog of their own beneath the water. It's hard to see more than 3-4 metres down (10-13 feet). I've felt big creatures (just seals as far as I know) move beneath me (they displace the water, and it pushes you up a bit), but I've never seen them.

As I swam along, I started noticing a dark shape beneath me. It was there, and then not there, reappearing sporadically. It was so far down -- was it changing shape? I couldn't quite make it out. A number of terrifying things crossed through my mind. If it was something big, I'd feel the water move, right? Right?

As the sun burned off the last of the fog, the dark shape stopped disappearing. I then realised that I'd been seeing my shadow. With the sun on my back, I was casting a shadow on the thousands of plankton organisms beneath me. The shadow was changing shape... because I was moving. I had literally been scared by my own shadow. (Even more sadly, this had happened before, but it was years ago, and I'd forgotten about it. Ha.)

#### 11. The Difficulties

I've experienced nausea in the past, and have developed a pretty reliable plan for dealing with it. As I swam along, I became aware that I was inventing reasons for breaks. I slowly realised that my breaks were a chance to be upright, which seemed to give my stomach some relief.

I had some Gravol Ginger Chews, which were very helpful for dealing with the nausea. I switched my feeds to gingerale. Over time, though, my stomach started feeling hard and tight. It got really, really hard to be horizontal and tipping on two axes. My crew posted news of my nausea on facebook, and I received encouragement from two former students of mine. Alyssa told me I'd taught her to take a break and try again later. I tried doing a bit of one-armed backstroke and stretching out my stomach, which helped a lot. Kennedy sent the message that I'd taught her not to give up, not even when things got really hard. I held back the tears. It's very

hard not to be moved hearing your former students explain how you've helped them, and having them support you. Emotionally, at this point in the swim, I was pretty raw.

My brain was slowing down. This can happen after you've swum for a long time, especially when you're cold. I felt like I could think reasonably normally, but I was having trouble articulating myself. It didn't help that my tongue was swelling with the salt water exposure, and it was physically harder to talk. My crew later reported they told the captain I seemed a little disoriented. His response? "Yep." My boat captain had seen me through some really rough swims, and he knew I had a while to go before I hit rock bottom.

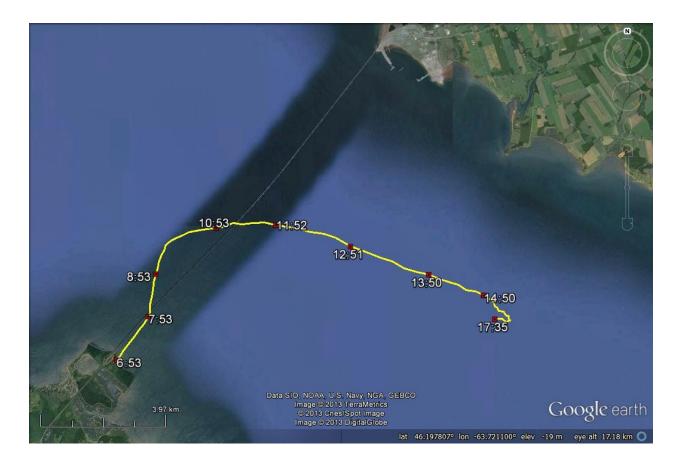
I ended up puking a couple of times. I sort of laugh whenever I puke, because my immediate reaction is always, "Oh my god. How many carbs did I just puke up? Who the heck tries to carb count vomit?" Diabetes is pervasive. If can't take in enough carbs to match your insulin, you have an urgent situation. When I was first diagnosed with diabetes, you were supposed to go straight to the ER if you vomited. Fortunately, diabetes management has advanced enough that it can often be managed without professional intervention... even in during a marathon swim. Untrined my pump off for 30 minutes to decrease the amount of insulin in my body. At this moment, Stacey Van Wart became my hero. She has Type 1 Diabetes as well. Two weeks prior, she finished her swim across the Northumberland after puking for four straight hours, and having her insulin pump fail mid-swim. I tried to summon her inner strength. I had my crew toss me a tiny bottle filled with gingerale, and I started taking tiny, tiny sips every couple of minutes. My stomach settled.

Every time the going got rough (when I was feeling especially down, or when I was feeling particularly ill), the porpoises would appear. Care-taking behaviour has been observed in dolphins (helping struggling swimmers and other animals, protecting swimmers against sharks). I wondered if the porpoises were there to help me.

I started getting desperate, and asked "How much further?" waaaaaay too often. My captain was terrific the entire day, but really shone here. He knows just how to lie to me. Use I cried. We kept going.

#### 12. Almost There?

Eventually my crew reported that they could make out the windows on the houses. I could see the red clay of PEI, and I wanted to get there really, really badly. I wanted to have that magical experience when you think, "Oh my god. Is that the ground? Oh my god. I think that's the ground. Oh my god, oh my god, oh my god! Oh my god, I see rocks. It's getting shallower. Oh, dear god, let me make it before a rogue tsunami yanks me back into the middle of the Strait." I visualised wading ashore and picking up rocks and shells, as is tradition with marathon swimmers. It wasn't meant to be. It was, as marathon swimmers say, a tough day at the office.



The wind changed direction again. It was now pushing me directly away from land. Although the wind had only been scheduled to blow 15 knots, the forecast had changed to blow 30. We would be facing gale-force winds, and we weren't close enough to shore to avoid them. We continued fighting the tide, but it was like running on a treadmill. We continued to fight until I started drifting backward, even when I was sprinting. I lost 200 metres (219 yards) testing my blood sugar. I cried some more, and the porpoises came back. There was nothing more I could do. The porpoises swam all around me and under the boat as the captain helped me climb the ladder.

My crew took amazing care of me after the swim, and helped me get dressed. They truly went above and beyond, and I am so incredibly grateful to them. Marathon swimming is truly a team sport. I couldn't have gotten through the day without them. Folks on who commented on Facebook and sent me text messages: your support was incredible. You'll never know how much you helped me. Your love really did make me feel warm!

I hurt after the swim, but not the way I expected. My non-working arm was the sorest thing on my body! What the heck? It hadn't done anything other than float along all day! I guess the movement irritated it, though. My quads and knees were both pretty shot. My left shoulder is a little tired, but it doesn't hurt anywhere near as much as I expected it to. This alone gives me great hope.

Today, in PEI, the surf is so dangerous that Parks Canada is advising individuals to stay out of the water.

#### 13. Did I Fail?

Hellz no. I didn't fail at all. There's no way failure can feel this good. This has been a four-year journey for me. I swam for 10 hours and 42 minutes, persevering over my diabetes, over the cold, over hours of nausea, and over vomiting, all while swimming with one arm. That's pretty awesome. Under different conditions, I'm sure I would have made it. The longer and more challenging a marathon swim is, the more susceptible it is to tides, weather, and rogue tsunamis. Marathon swimming is all about facing the significant chance of not reaching your goal, surrendering to the day, and letting Mother Nature have her way. That's just how it is. I didn't swim to PEI yesterday. I still won, though.

The game \*really is\* all about finding your porpoises in life.  $^{\textcircled{9}}$ 

#### **14. My Amazing Diabetes Control**

My blood sugars were AMAZING. Amazing enough that you might even be tempted to think it's easy. It's \*not even remotely easy\*. US blood sugar units [mg/dL].

I started off with a regular lancet, but had to switch to deeper, disposable lancet blades during the swim. The cold was making it hard to draw blood.

While I swim, my target range is 5-8 mmol/L [90-144 mg/dL]

| Time of Day | Blood Sugars  |       | Carbohydrate                             | Madigations            | Pump        |  |  |  |
|-------------|---------------|-------|--|------------------------|-------------|--|--|--|
|             | mmol/L        | mg/dL | [grams]                                  | Medications            | [Temp Rate] |  |  |  |
| 06:50       | 6.3           | 113   | 30                                       |                        | 140%        |  |  |  |
| 06:53       | Start of Swim |       |  |                        |             |  |  |  |
| 07:23       | 7.6           | 137   | 1<br>Low-calorie<br>electrolyte solution |                        | 140%        |  |  |  |
| 08:00       | 10.7          | 193   | 0  |                        | 170%        |  |  |  |
| 08:30       | 8.9           | 160   | 8  | Shot of liquid Tylenol | 170%        |  |  |  |
| 09:00       | 3.8           | 68    | 40                                       |                        | 160%        |  |  |  |
| 09:40       | 7.5           | 135   | 30                                       |                        | 160%        |  |  |  |
| 10:10       | 6.7           | 121   | 30                                       |                        | 150%        |  |  |  |
| 10:40       | 5.4           | 97    | 15                                       |                        | 100%        |  |  |  |
| 10:55       | -             | -     | 15                                       |                        |             |  |  |  |
| 11:10       | 5.1           | 92    | 15                                       |                        | 80%         |  |  |  |
| 11:25       | -             | -     | 15                                       |                        |             |  |  |  |
| 11:30       | 5.6           | 101   | 15                                       |                        | 70%         |  |  |  |

| 11:45 | -   | -   | 15                              |                   |                               |
|-------|-----|-----|---------------------------------|-------------------|-------------------------------|
| 12:15 | 6.1 | 110 | 15                              |                   | - 70% - 70% - 70% - 70% - 70% |
| 12:30 | -   | -   | 15                              |                   |                               |
| 12:50 | 6.3 | 113 | 15                              |                   |                               |
| 13:05 | -   | -   | 15                              |                   |                               |
| 13:20 | 5.7 | 103 | 15                              |                   |                               |
| 13:35 | -   | -   | 15                              |                   |                               |
| 13:50 | 5.2 | 94  | 15                              |                   |                               |
| 14:05 | -   | -   | 15                              |                   |                               |
| 14:20 | 6.7 | 121 | 15                              |                   |                               |
| 14:35 | -   | -   | 15                              |                   |                               |
| 15:00 | 5.7 | 103 | 27<br>Gingerale                 | Regurgitated some | 70%                           |
| 15:30 | 5.2 | 94  | 10 Gingerale<br>over 15 minutes |                   | 0% for 30 minutes             |
| 15:45 | 4.5 | 81  | 14                              |                   |                               |
| 16:00 | -   | -   | 14 Gingerale                    |                   | 70%                           |
| 16:20 | 4.8 | 86  | 14                              |                   | 550/                          |
| 16:35 | -   | -   | 14 Gingerale                    |                   | 55%                           |
| 17:00 | 6.6 | 119 | 14                              |                   | 550/                          |
| 17:15 | -   | -   | 14 Gingerale                    |                   | 55%                           |
| 17:30 | 8.0 | 144 | 0                               |                   | 55%                           |
| 17.00 |     |     |                                 |                   |                               |

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