

4 February 2010

**RE: Government funding for insulin pumps and consumables**

Dear Hon Tony Ryall

I am writing this letter to ask you to consider the incredible health benefits you could bring about for those of us with Type 1 Diabetes by helping to fund insulin pumps and their consumables for the New Zealand population. Below is my story: in my 20 months of running a Type 1 Diabetes blog ([www.beingdiabetic.co.nz](http://www.beingdiabetic.co.nz)) I have heard many more. If you want more information about type 1 diabetes and/or insulin pumps, please see my summary in the appendix on page 3.

**My story.**

I'm a 31 year old woman who has been living with, and managing the condition for 16 years, since being diagnosed at age 16 in 1994.

In early 2008 I began the hard work of getting my blood sugar levels low enough to safely conceive a baby. I was on multiple daily insulin injections at the time and got to the point where I was micro-managing my blood sugars so much I was taking as many as 16 daily blood tests and 8-10 daily injections. However, what I struggled to control the most was my overnight blood sugars. Due to hormonal factors (which are exaggerated in some diabetics, myself included) I was fighting a losing battle. I'd go to bed with perfect blood sugars and wake up seven hours later with impossibly high blood sugars (hyperglycaemia) - which are not only detrimental to my long-term health (leading to kidney disease, heart problems, amputations, blindness etc) but are also a barrier to getting overall blood sugar levels low enough to get medical clearance to conceive a baby. The only way I was going to get around this was to set alarms every two hours in the night to monitor my blood sugars and inject more insulin. Additional to this I was having real problems with blood sugars before and after exercise, which was adding to the overall disappointment in my medical results.

In August 2008 I was lucky enough to be issued with a loan insulin pump from Auckland Hospital, and have using an insulin pump ever since then.

The improvement in my health since starting insulin pump therapy has been significant. In three months alone, I reduced my blood sugar levels enough to conceive. I went from an HbA1c level of 7.8% to 6.2%. A person without diabetes has an HbA1c level of around 6%. (To put this into perspective: reducing an HbA1c from 7.9% to 7% translates into a 25% reduction of circulatory damage leading to eye, kidney and nerve disease; plus makes me 12% less likely to develop diabetes-related complications and 10% less likely to die from diabetes related causes<sup>1</sup> )

Along with the improvement in medical benchmarks from using an insulin pump, my quality of life has significantly improved. The swings from high to low blood sugars are occurring substantially less often. I am able to maintain my blood sugars during and after exercise much more consistently. The overnight hyperglycaemia which I was losing a battle with on multiple daily injections has also been brought under control, because I can program the insulin pump to increase insulin delivery while I am asleep.

However, the biggest benefit of the insulin pump was being able to maintain safe enough blood sugar levels to lower the risk of miscarriage or serious birth defects to a baby, such as those of the brain, spine, and heart. Indeed by using an insulin pump before, and during my pregnancy I was able to give birth to a perfectly healthy baby boy in October 2009.

To sum this up: I simply could not have got my diabetes controlled to this tight level without the insulin pump. It has changed my life, and my health prospects overwhelmingly. Continuing on an insulin pump will allow me to stay healthy while nursing my baby, and keep me on track for low blood sugars when I am ready to conceive and safely carry my second child.

**My request to you.**

Mr Ryall, at present the people of New Zealand with Type 1 Diabetes have only two choices: multiple daily injections (at a low cost), or insulin pump therapy (at an initial outlay cost of \$7,000+ as well as running costs upwards of \$2,000 a year). In some cases, multiple daily injections work perfectly satisfactorily for the patient. I am certain that insulin pump therapy is not for everyone and have heard several medical professionals say the same. However, there are many type 1 diabetics whose health and quality of life are greatly improved by insulin pump therapy.

**I respectfully ask that you re-assess the government's stance on funding (or partial funding) of insulin pumps and insulin pump consumables.**

Yours sincerely

Nicola Reade

## APPENDIX

### About type 1 diabetes.

Type 1 diabetes (sometimes referred to as *diabetes mellitus*) is characterised by loss of the insulin-producing beta cells in the pancreas - leading to a deficiency of insulin. This type of diabetes is caused by an auto-immune response in the body which leads to the body killing off the insulin-producing cells in the pancreas. It has been referred to in past as 'juvenile diabetes' because a very high percentage of patients are diagnosed with it as children or in their teens.

To manage type 1 diabetes, patients must give themselves insulin and monitor their blood sugar levels several times a day. Badly controlled blood sugars heighten the risk of a number of diabetes-related complications such as eye disease (glaucoma; retinopathy; blindness); kidney disease; nerve damage (resulting in amputation); heart attack, stroke or death. Out of control blood sugar during or pre-pregnancy can affect the organs of the baby while they are being formed and cause serious birth defects, such as those of the brain, spine, and heart, or can lead to miscarriage of the developing baby.

### About the insulin pump.



An insulin pump is a small, computerised unit which holds a cartridge of insulin. It delivers minute doses of insulin every three minutes through a tube which goes into the patient's stomach via a needle. The insulin pump is worn 24 hours a day. The pump can also be programmed to deliver a batch of insulin every time the patient eats, which regulates the body's blood sugar, much like a working pancreas would. I've inserted a picture of a pump on the left hand side.

Advantages of an insulin pump over multiple daily injections:

- The alternative basal insulins available for injections, such as the long lasting insulins injected once a day often release their insulin at a very unpredictable rate.
- Insulin pumps also make it possible to deliver more precise amounts of insulin than can be injected using a syringe. This supports tighter control over blood sugar levels, reducing the chance of long-term complications associated with diabetes.
- In-built tools which help patients calculate precise insulin requirements to balance out carbohydrate consumption, current blood sugar levels and other variables such as exercise.
- Insulin pumps can be programmed to be much more dynamic in accounting for fluctuating insulin sensitivity - for example higher need for insulin during menstruation or during hormonal surges.

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<sup>i</sup> UK Prospective Diabetes Study