

Updates

Fall 2013



MASSACHUSETTS
GENERAL HOSPITAL



HARVARD
MEDICAL SCHOOL

from the Faustman Laboratory at Massachusetts General Hospital

A Note from Dr. Faustman

I hope everyone has enjoyed the summer! As we enter the fall, we are looking forward to seeing many of you who are scheduled for blood donations at the laboratory. We are also moving closer to participant enrollment for the Phase II clinical trial of BCG in long-term diabetics.

Several things still need to be done before we get to that point. One of the most important steps is completing ongoing research in our laboratory that will give us information about how to design the trial -- specifically, how to define subgroups among long-term diabetics.

A clinical trial subgroup is a group of subjects that all have a similar characteristic. We want to look at that characteristic—such as “less than 10 years living with diabetes”—to see if it influences how participants who have the characteristic respond to treatment compared to others.

Using this example, we might examine how “subjects living with diabetes for less than 10 years” (subgroup 1) compare to “subjects with 10 or more years of diabetes” (subgroup 2).

In the upcoming Phase II clinical study, we would like to see if there are any trends among people with different durations of type 1 diabetes and different rates of C-peptide decay (the protein that is a marker of insulin secretion from the pancreas). Therefore, in the laboratory, we are currently looking at how rates of C-peptide decay and biological variation in C-peptide secretion might differ in individual participants, as well as in subgroups of participants who had the same age of diabetes onset. This is extremely important because it will allow us to define the overall number of study groups for the Phase II trial, in addition to the size of these various groups and the duration



that we should study each subgroup.

We are also excited to be conducting follow-up studies of participants from the Phase I trial who received BCG vaccinations to identify any long-term effects. I hope to provide you an update on that data in the coming months.

Thank you all for your continued support!

Sincerely,

Denise L. Faustman, MD, PhD

Meeting in London to Bring Together Experts on BCG, TNF and Autoimmunity

Dr. Faustman has planned a meeting this October that will bring together researchers from around the world who are investigating the effects of BCG in autoimmunity and the TNF pathway in autoimmune diseases. (BCG is the inexpensive generic drug we are using in our type 1 diabetes trials to help recipients boost production of their bodies' TNF, since we think TNF is beneficial for eliminating the altered immune response in type 1 diabetes, and probably other autoimmune diseases).

This is the first time these international researchers will meet to share background and updates on animal data, human data and best practices across different geographies and autoimmune conditions. They will discuss the future of BCG and TNF in autoimmune disorders such as type 1 diabetes, multiple sclerosis, Sjögren's syndrome and celiac disease, as well as how collaboration could benefit ongoing research and subjects affected by these diseases. The meeting, "BCG and TNF Signalling in the Treatment and Prevention of Autoimmune Diseases – 2013," is being philanthropically sponsored and will take place in London. A book based on the meeting will be published by the scientific publisher Elsevier.

Approaching Our Goal

We now have nearly \$17.2 million raised for the Phase II clinical trial.

We are pushing to meet our goal of \$25.2 million by the end of 2014.

Thank you to everyone who has helped us get where we are today, and to all of those who are working hard to help us reach this goal!

For information on how you can help support this research, please see the back page, "How You Can Help."

Confirmatory Data at the ADA Meeting

In 2012, the Faustman Laboratory's paper, "Persistence of Prolonged C-peptide Production in Type 1 Diabetes as Measured with an Ultrasensitive C-peptide Assay," was published in *Diabetes Care*. In it, we shared our data showing that the decline of insulin-production (measured with C-peptide) occurs much more slowly than scientists have traditionally thought. Using an ultrasensitive blood test, we found that C-peptide production can persist for decades after type 1 diabetes onset and remain responsive to blood sugar levels. Indeed, C-peptide was detected in 10% of patients in our study who had been living with the disease for 31-40 years.

This year, we were excited to see data presented at the American Diabetes Association's scientific meeting that further confirm our findings. "The Majority of Patients with Over 5 Years of Type 1 Diabetes Are Insulin Microsecretors and Have Functioning Beta-Cells" (Poster 1836-P) was shared by a team from the UK, who also found enduring, low-level insulin production in the majority of patients with type 1 diabetes. This was also confirmed by a multicenter study performed in the U.S. ("Residual C-Peptide in Patients 3-81 Years from Diagnosis of T1D: A T1D Exchange Study," Poster 1616-P).

Together, these findings are good news for people who have been living with diabetes for many years, showing that they may have the chance to recover insulin secretion. Overall, there may be a longer period in which we may be able to intervene in type 1 diabetes, for instance, by stopping the disease from progressing or by regenerating the insulin-producing cells to reverse the disease—even in people who have been living with the disease for decades.

Stephen Schwartz Hosts Evening for MGH Diabetes on Broadway

On June 11th, musical theater lyricist and composer Stephen Schwartz hosted a private dinner for 100 type 1 diabetes advocates and donors to the Faustman Laboratory at Massachusetts General Hospital. The dinner was at legendary theater district restaurant Sardi's in New York City. Guests followed Stephen to the Music Box Theater for a performance of his multiple Tony award-winning show, Pippin. After the show, guests enjoyed cocktails with the cast. Funds raised by the event went to support the Faustman Laboratory's type 1 diabetes program at Massachusetts General Hospital.

Guests included (and pictured right): Ben Vereen (Tony Winner for the original Pippin and Roots star), Dr. Denise Faustman (Harvard/ MGH), Stephen Schwartz (Composer of Music and Lyrics for Pippin, Godspell and Wicked) and Megan Hilty (Wicked, Smash).



Frequently Asked Questions

Am I currently registered for potential participation in the trial or registered to be informed of updates?

Please email diabetestrial@partners.org with your name, updated mailing address, phone number, and email. We find that people's contact information changes frequently; by emailing us you can ensure you are in our database. The clinical trial coordinators will email you back to confirm that you are registered in our database or will send you the forms to register if this has not yet happened.

What are you doing right now to prepare for the Phase II trial?

We currently have clinical research in progress that is looking at long-term diabetics who have various durations of type 1 diabetes and various ages of onset. In these participants, we are seeking to define precisely the rates of C-peptide decay over decades and the biological variation in C-peptide secretion in the same participant followed over time. This is extremely important because it will allow us to define the overall number of study groups (based on homogeneous characteristics related to rate of C-peptide decline, age of onset, etc.), the size of various Phase II study groups, and the duration we will study each of these groups.

We are currently screening subjects every day in the laboratory to look at these specific immune system parameters and remaining pancreas function in preparation for the Phase II study. Please email diabetestrial@partners.org or call 617-726-4084 if you wish to make an appointment.

How will candidates be chosen to participate in the Phase II trial?

Participant eligibility will be decided in consultation with our clinical advisors and the FDA. We ask interested parties to register their information or schedule to come for a visit us so we can do detailed T cell work on your blood. This will help us formulate study groups when we launch the trial. For more information on how to participate, please email us at diabetestrial@partners.org.

About the Type 1 Diabetes Reversal Trials at MGH

Led by Dr. Denise Faustman at Massachusetts General Hospital (MGH), the BCG Human Clinical Trial Program is testing Bacillus Calmette-Guérin (BCG), an inexpensive generic drug, as a treatment for advanced type 1 diabetes. In the Phase I human study, BCG was administered to adults who had been living with type 1 diabetes for an average of 15 years. This treatment not only helped eliminate the defective T cells that mistakenly attack and destroy the insulin-producing cells of the pancreas, it also temporarily restored the ability of the pancreas to produce small amounts of insulin. The next step, a Phase II study, is currently being planned, with the goal of identifying the drug dose and schedule that will put advanced type 1 diabetes into remission.

Our Inspiration



Thanks to all of our participants and supporters of this research! Do you have any pictures you'd like us to have? Email or send them in and we will post them on our visit board. We would love to have them!

Looking for more information about this type 1 diabetes research?
Please visit www.faustmanlab.org.

Have questions about participating in future studies?
Please email: DiabetesTrial@partners.org.

How You Can Help

Please consider making a tax-deductible donation today to sustain the momentum of this type 1 diabetes research program. Every gift makes a difference for patients ... today and tomorrow.

1. To make a secure online donation, please visit www.faustmanlab.org and click on "Support."
2. You may make a gift by check (**payable to "Massachusetts General Hospital"**) and mail your check to:

*Diabetes Clinical Trial
c/o Dr. Denise Faustman
Immunobiology Laboratory
Massachusetts General
Hospital-East
Building 149, 13th Street, CNY-3601
Charlestown, MA 02129*

On the memo line of your check, please write: "Type 1 diabetes research."

Thank you for joining us in the fight against diabetes!

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