Trial to Reduce IDDM in the Genetically at Risk

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TRIGR Family News

Editor's corner

Dear Study families,

Professor Dorothy Becker has been involved with TRIGR from the very beginning. She tells us her experiences of diabetes research and the interesting history and current situation of our great TRIGR Study.

We are waiting eagerly for the first study results to be published early next autumn. The study will in any case continue until February 2017. We wish to thank you for your commitment to the study and your consent to follow-up for 4 more years. I hope that all the families that have not yet decided whether to take part in the extended follow-up will do so to assure the best possible study outcome.

Matti Koski, Chief Editor

Land Mark Year for TRIGR

I am writing this as we prepare to analyze the first outcome results of the international TRIGR study i.e. the evaluation of the development of islet autoantibodies amongst our TRIGR research participants. This is a very exciting time for all of us who participate in this trial, especially those who were in it from the beginning. My own involvement started in the late 1980's when I was very young and the initiator and original Principal Investigator of TRIGR, Professor Hans Åkerblom of Helsinki Finland, invited some colleagues to his home where one of the many discussion topics was the feasibility of a feeding intervention trial in newborn babies. His friend Professor Julio Martin from Toronto Canada, who was also there, had shown that avoidance of intact cow milk delayed and prevented diabetes in diabetes prone rats. I remember thinking that it was very important to translate the findings from rodents to humans. I was a little discouraged by the later controversial epidemiologic association studies, some of which showed that early introduction of cow milk formula was a risk factor for type 1 diabetes and others unable to confirm this. These reports resulted in many arguments, despite the fact that in another Toronto rodent study Professor Michael Dosch (a TRIGR investigator), confirmed the effectiveness of a hydrolyzed formula in diabetes prone mice. It became clear to me that the only way to answer the very important question was to do a controlled double blind intervention trial which is today's TRIGR. I was therefore delighted when Professors Åkerblom, Knip and their colleagues in Finland paved the way by doing 2 pilot studies which were the foundation of our successful research grant applications to US, Canadian and European funding institutions.

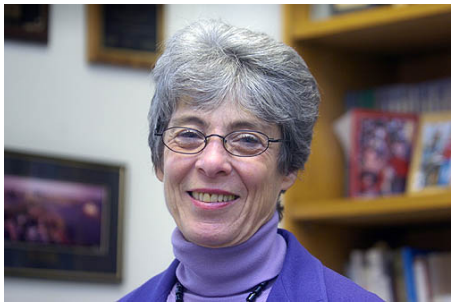
Now, more than 2 decades later we are able to evaluate the autoantibody data because the youngest TRIGR baby turned 6 years old in February of this year. As I write this, we do not know whether there will be a difference in the development or the number of autoantibodies between our regular cow milk formula and hydrolyzed cow milk formula study arms. However whatever the outcome, the result will be extremely important in setting us on the path of understanding the cause or causes of type 1 diabetes.

We all need to remember that whether or not there is a difference between the 2 groups, this does not tell us whether or not there will be a difference in the development of clinical diabetes in 4 years time, when the youngest subject reached 10 years of age. Thus the final outcome of our trial will not be known until 2017. That is why we all need to "hang in there" [this is an American expression for our non-US TRIGR participants] until we get the final answers. That means every single one of our original TRIGR babies is important and we need to be able to follow the original study participants up to the age of 10 years. To ensure that after all this hard work and money spent we do get an answer to our questions we cannot and must not lose touch with a single one.

As I get older and have been involved with diabetes research in children for close to 40 years, my friends and family ask me why I keep going. The answer is that it is because our research is important. We do it because we would like to wipe type 1 diabetes off the map in the future. I personally do not believe that this will be achievable with any single intervention and that there will be a lot of different things that will help delay or even prevent type 1 diabetes. Formula type may be one of those, but it also may not. One of my colleagues came up with a quote that I think really explains why researchers spend so much of their time and effort in trying to get new information and why research subjects join studies. We can change a famous quote by the newly elected John Kennedy as President of the United States when he said "Ask not what your country can do for you; ask what you can do for your country". What we should say is 'ask not what research can do for you, but what can we all do for research to prevent type 1 diabetes. This means to me that we keep going to meet the study goals to the best of our ability, providing every possible contribution that we and our families are able to make.

Is it worth it? Absolutely yes! I am old enough to see how type 1 diabetes has changed dramatically over 40 years, so that children with diabetes can now live a normal life span. However I am the first to say that it is a disorder that is intrusive into the life of the person with diabetes, the families of children with diabetes and very hard work for patients as well as the dedicated doctors, nurses and dieticians who help care for the children. But this hard work is worth it. We are definitely seeing less complications of type 1 diabetes than before so that I cannot teach young physicians what happens to the eyes and kidneys in poorly controlled diabetes anymore –we rarely see these complications in children in Pittsburgh. The reason that we have been able to delay and possibly prevent diabetes is because of research into new therapies, new types of insulins and avoidance of contributing risks such as smoking etc. Can the same happen with prevention of type 1 diabetes? I for one firmly believe it can, but we have some ways to go in order to understand whether 1 or more things stop the autoimmune process and affect its progression over time. Trials like TRIGR will help answer those questions, as it is very possible that the intervention may be important in some subjects and not others. For example, some people may have certain genes that make them more susceptible to diabetes and also the intact protein found in regular cow milk formula. Avoidance would be important for them, but may not have any effect in those with different genes. That is why we have started collecting more blood from our participants in the past year, so that we can expand the genetic analyses looking for the many new genes that recent research has discovered. Therefore there will be a lot of subanalyses of the TRIGR data looking at whether genetic, geographic or dietary influences are important in, not only the development of islet autoantibodies, but also the progression from this to clinical diabetes. It is really important to remember that there is wide variability in the progression from having autoantibodies to clinical disease, with some people getting diabetes quite quickly and others not for 15 or 20 years and others not at all.

Thus there is a lot that we need to still accomplish together over the next 4 years. Our TRIGR family is very unique as we have been able to maintain connection with well over 80% of the babies originally included in the trial around the world. There are few other studies that have achieved this and I sincerely hope that we all put every effort into maintaining our TRIGR family until we get a final result. I therefore look forward to 2017 with great excitement. The result will have major implications for infant feeding around the world irrespective of the actual outcome.



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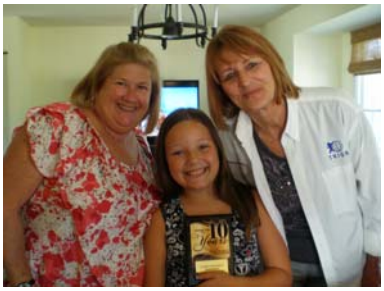
Last spring in Pittsburgh, the first child to be enrolled at this site and the first eligible TRIGR child turned 10 years of age. To mark this special occasion, a plaque was presented to each child to thank them for their dedication to diabetes research.

Brandon and Mom. First mom to enroll at the Pittsburgh site.



Lauren and TRIGR Staff. First eligible child at the Pittsburgh site.

Kid's corner

Aleksi at his 10-year visit in Finland

Aleksi is 10-year old boy from Finland, who comes with pleasure to his annual TRIGR visits to the University Children's Hospital in Helsinki. Aleksi had some questions before his 10-year OGTT and he wrote these questions down at home. Please read below how our study nurse Heli and study doctor Anna answered his questions.

Why do you need my blood?

First of all we want to know your blood glucose. When people have diabetes, their blood sugar is too high We also want to check how your immune cells are working and watch to see if they are making any special proteins called antibodies.

Why is my blood so interesting?

We can measure many things from the blood samples, for example how your immune cells are working. Immune cells are the cells that protect us from bacteria and viruses. Sometimes these cells don't work properly; this occurs in type 1 diabetes. In the TRIGR study we are trying to figure out why these cells aren't working and how we can prevent this from happening. To do this we need blood samples from all the children in the TRIGR study. Every blood sample for the study is very important and it is like being part of a big science project.

Why does it hurt to take blood samples?

Having a blood test can be scary so. You may ask to have a special cream to numb your skin so you don't feel the pain. It is important to remain immobile still when the blood test is obtained.

Why am I not allowed to eat in the morning?

We want to know what your blood sugar level is in the morning when you have not had any breakfast.

Why do you need two samples?

First we check your blood sugar when you have not eaten. Then we give you a sugary drink and we wait for two hours before we take the other sample. We watch to see what happens to your blood sugar level after you have a sugary drink.

Why do I feel nervous?

It can be scary to come to the hospital and to have a blood test done. It's ok to be nervous; all of us feel nervous sometimes. Being scared or nervous forces us to be careful when it might be dangerous, (for example when climbing trees) or when we are safe but experience something that may make us uncomfortable (like having a blood test). You might feel better if you think how great you will feel when it is all done and you know you have helped out in a big science project. Your parents and the TRIGR nurse can help you to feel more relaxed.

Sophia from United States likes animals

My name is Sophia and I am six-year-old. I am in the first grade and live in Charleston, West Virginia with my mom and dad and my dog Lulu. I also have two African Dwarf Frogs and I really want a guinea pig! My mom says that I will have to wait until I am older to have one so I am trying to be patient. My mom has type 1 diabetes and she said she has had it since she was seven-year-old. She said that back then she had to take shots every day but now she can use an insulin pump and that it is much better. My family told me that I am in the TRIGR study to try to help doctors understand why kids get diabetes. The arm sticks hurt a little but it's ok.

The last time Peggy came to my house to do the test and brought me a present and a great t-shirt. The TRIGR people are really nice and they always remember my birthday. I don't mind the study because I want to help and maybe someday people like my mom will get better. Plus my mom lets me get a treat after the tests. I LOVE SWEETS. My mom says they are ok "in moderation" which means just sometimes. I told her that I didn't have a sweet tooth. I have sweet TEETH!

My mom and dad have taught me a lot about eating healthy and getting lots of exercise. My dad is a really great cook and makes good food for us every day. I love to exercise because it makes me healthy and I want to be fit and strong! I have been taking horseback riding lessons since I was four and I also started Aikido this year and I love it. It makes me feel strong and I will be getting my yellow belt soon. I am really excited about it. I will also be moving out of the little kids "lead line" at our horse shows next spring and will get to ride alone in the ring. I love horses and I think riding is really fun. I love my family very much and I know that they love me too because they tell me every day that they do so and that they are proud of me. I think that we make a great team.

Noah from Australia at breakfast after OGTT

This is Noah enjoying his breakfast after his 6-year oral glucose tolerance test. Breakfast is considered a very important meal and it helps improve a child's concentration.

Typical foods Australians eat for breakfast include: wholegrain cereal and milk and fruit, fresh fruit smoothies, wholegrain toast/ muffins/ crumpets with spread, fruit and yoghurt; and for those on the run a quick and easy breakfast drink with added vitamins, minerals and fibre.

Noah is one of TRIGR children having their oral glucose tolerance test this year in Australia. He lives in Grafton, one of Australia's most beautiful provincial cities. Grafton is renowned for its Jacaranda trees, graceful old buildings, sporting and cultural facilities, and its location on the banks of the Clarence River. Grafton is 620 km north of Sydney, and it takes about 6 to 7 hours by car. The world-renowned Jacaranda Festival is held yearly in Grafton, Northern Rivers New South Wales, from the last weekend in October to the first weekend in November. Inaugurated in 1934, this was the first of Australia's folk festivals and is based upon the magnificent spectacle of the hundreds of lilac-blossomed trees which grow in Grafton's broad tree lined avenues. It expresses the people's thanksgiving for the generosity with which nature blesses this part of the globe.