Human vs Analogue Insulin for Youth with Type 1 Diabetes in Low-Resource Settings: A Randomized Controlled Trial (HumAn-1)

University of Pittsburgh School of Medicine
Division of General Internal Medicine

CONSENT TO ACT AS A SUBJECT IN A RESEARCH STUDY

Version: **14 December 2022**

Title: Human vs Analogue Insulin for Youth with Type 1 Diabetes in Low-Resource Settings: A Randomized Controlled Trial (HumAn-1)

Principal Investigator: Jing Luo, MD, MPH
Assistant Professor of Medicine
Division of General Internal Medicine
University of Pittsburgh School of Medicine
3609 Forbes Avenue, 2nd Floor
Pittsburgh, PA 15213
+1(412) 383-0627

Tanzania Investigator:
Prof. Kaushik Ramaiya
Consultant physician, Hindu Mandal Hospital,
Hon. General Secretary,
Tanzania Diabetes Association
P.O. Box 65201,
Makuti B
Muhimbili National Hospital,
Dar Es Salaam

Source of Support: The Leona M. and Harry B. Helmsley Charitable Trust

DESCRIPTION: You are invited to participate in a research study to compare two different types of insulin treatments for children and young adults with type 1 diabetes. One treatment includes insulin glargine, a long-acting insulin *plus* regular human insulin with meals. The other includes the insulin that you are currently using (either NPH *plus* regular insulin or premixed 70/30 human insulin).

Researchers from the University of Pittsburgh have partnered with Tanzania Diabetes Association (TDA) to better understand how well insulin glargine as compared against NPH or premixed 70/30 works for young people with T1D living in lower resourced settings. We plan to include a total of 400 children and young adults living with T1D in our study.

STUDY PROCEDURES: If you decide to participate in the study, you will be followed for a total of 12 months with study measures and have at least 4 routine clinic visits, each lasting less than 1 hour. We will draw about 30 ml of blood to check that your organs are working properly and that you are healthy *during the initial visit*. One every 3 months we will draw about 5 ml of blood to check your HgbA1c which is a blood test that shows what you average blood sugar is. It is a good test of your blood sugar control over time. If these blood tests are available through your usual care, we will use those results, and not draw blood for the study. You may also need to have one X-ray taken of your stomach to look for stones in your pancreas. If you have had one stomach X-ray done before, you will not need a new one for this study.

The decision as to which insulin therapy you receive will be made by chance (like flipping a coin). In either case, you will continue to receive the same care from your current doctor and the same level of education to help you better understand diabetes and manage diabetes. You will continue to receive the same diabetes supplies.

If you are assigned to receive a new insulin called glargine, your doctor will provide you information about how to gradually increase the amount of glargine insulin you receive each day based upon your fasting blood glucose (the first fingerstick glucose measurement of the day, before breakfast). This time of adjusting your insulin will last up to 4 weeks.

At the first study visit, the 3 month study visit, the last study visit and 6 months after being assigned to an insulin therapy, you will be asked to wear a continuous glucose monitor (also called a sensor). This is a small device attached to your skin (usually on the back of the upper arm) that will allow study scientists to keep track of your daily blood sugar changes. It does not affect your daily routine – you may eat and have the same levels of physical activity or sleep as you do with or without the sensor. Each sensor will stay on your body for up to 14 days, so you can bathe with it on. Replacement sensors will be placed on different locations than the one most recently used to reduce skin irritation or discomfort. The study team will answer any questions you have about using it.

You will *not* be able to receive glucose readings from these professional continuous glucose monitor sensors. Only study staff will receive glucose readings from these devices. You should continue to use your own glucose meter to check your daily blood sugars, as recommended by

your doctor.

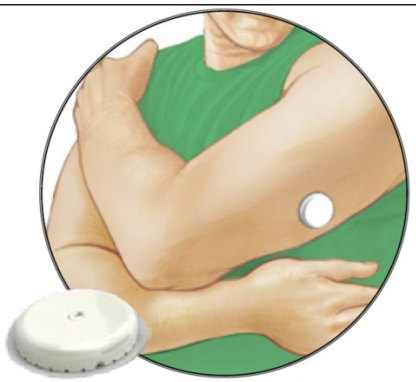

Figure: The continuous glucose monitor sensor is typically placed on the back of the upper arm.

In addition, by taking part in this study you give permission to your clinic, Tanzania Diabetes Association and University of Pittsburg to make your standard care clinical data available for use in our research study, from this, and your next 3 clinic visits. This may include information such as your age, sex, symptoms of hypoglycemia, as well as results from blood tests such as HbA1c (measures your blood sugar control over the past 3 months). These data will be collected from your medical record by trained study staff from Tanzania Diabetes Association (TDA)

Between Visit Contacts:

Three months after being assigned to an insulin therapy, you will wear one continuous glucose monitor for 14 days. Six months after being assigned to an insulin therapy, you will wear two continuous glucose monitor sensors back to back, that is, for a total of 28 days. Trained study staff will visit you at your home every 14 days to replace the previously worn sensor with a new sensor.

RISKS AND BENEFITS: There are some risks involved with your participation in this study. You may find some parts of the procedures are uncomfortable.

Insulin and Glucose monitor

As with all insulin therapies, there is a risk of low blood sugar (hypoglycemia) if the dose for your activity level is too high or the intake of natural sugar content in your food (carbohydrate) is too low. Symptoms of hypoglycemia include shakiness, sweating, weakness, dizziness, confusion, or extreme hunger. Changing your insulin treatment may increase the chances of having a lower or higher blood sugar. We will provide you with nasal spray medication called glucagon to use in case of the unlikely event that you experience blood sugars that are so low that you become comatose or unresponsive. During the first 2 weeks after random insulin assignment, you will also have monitoring phone calls with study staff every 3 days.

You may feel some embarrassment or discomfort from wearing a continuous glucose monitor. Application of the continuous glucose monitor sensor may cause mild skin irritation or discomfort. The study team will work with you to find skin attachment sites that work.

Glucagon
Use of intranasal glucagon is associated with common side effects may include watery eyes and nasal congestion. Infrequent side effects may include nausea and/or headaches.

Blood draws
There is slight, momentary pain with a blood draw. There may is an uncommon risk of bruising and a rare risk of infection or fainting after blood draws.

Questionnaires
You do not have to answer questions or continue to participate in the study if you would rather not. Although we will make every effort to ensure that your information remains confidential, there is a risk of breach of confidentiality. For example, there is the rare chance that someone not authorized will access your medical records. Your confidentiality will remain protected since all data will be stripped of individual identifiers (e.g. your name will be removed and replaced with a random study ID number) and the document linking your name with this study ID number will remain at the local study site.

Stomach x-ray
This will be done for the study only if you haven't had one before. It is to test for a type of diabetes that is uncommon but we want to make sure is not the cause of your diabetes. The risk of an x-ray is that it includes exposure to radiation.
There is no safe amount of radiation but the amount for this x-ray is very low, like the amount we all receive from everyday life.

This study has a potential benefit to you. You may improve your blood sugar control and increase your knowledge of how to take care of your diabetes. However, these benefits are not guaranteed.

COSTS AND PAYMENTS: There are no costs associated with this study. Neither you, nor your insurance provider, will be charged for your participation in this study. You will be charged, in the standard manner, for any procedures performed for your routine medical care.

You will be compensated up to a total of $100 for your participation in the study to cover for transport, meal and communication. You will receive $25 upon completing all baseline study procedures, $25 for completing the continuous glucose monitor monitoring phase 3 months after random assignment, $25 for completing the two continuous glucose monitors starting 6 months after random assignment, and $25 for completing all 12 months of follow-up.

CONFIDENTIALITY: All information gathered from you for this research will be kept as confidential (private) as possible. All records that have to do with your involvement in this study

will be stored in a locked file cabinet or on a secure password protected server. A case number, not your name, will identify you on these records.

Authorized representatives from the University of Pittsburgh Office of Research Protections may review your data for the purpose of monitoring the conduct of this study. In unusual cases, the investigators may be required to release identifiable information (which may include your identifiable medical information) related to your participation in this research study in response to an order from a court of law.

The investigators may continue to use and disclose, for the purposes described above, identifiable information (which may include your identifiable medical information) related to your participation in this research study for a minimum of seven years after final reporting or publication of a project.

RIGHT TO REFUSE OR END PARTICIPATION: Your participation in this study is completely voluntary; you are not required to participate in this research. Your care at the clinic or relationship with TDA will not be affected if you choose not to participate in this research. If you decide not to take part in this research study, you will continue your current diabetes management regimen, through the clinic. You will not lose any benefits you currently have if you decide not to participate or if you start in the study and then change your mind.

You may withdraw, at any time, your consent for participation in this research study. Any identifiable research information recorded for, or resulting from, your participation in this research prior to the date that you formally withdrew your consent may continue to be used and disclosed by the investigators for the purposes described above.

To formally withdraw your consent for participation in this research study, you should provide a written and dated notice of this decision Prof. Kaushik Ramaiya at the addresses below.

The study team may withdraw you from the study if you are unable to wear the continuous glucose monitor sensors, if you withdraw permission to use your medical record data or for other reasons where the local team determines it is in your best interest.

CONTACT INFORMATION: If you have any questions concerning the research study, please contact Prof. Kaushik Ramaiya at the by sending correspondence to the address below:

Prof. Kaushik Ramaiya
Consultant physician, Hindu Mandal Hospital,
Hon. General Secretary,
Tanzania Diabetes Association
P.O. Box 65201,
Makuti B
Muhimbili National Hospital,
Dar Es Salaam

****

For Participants 18 years or older who are able to provide informed consent

VOLUNTARY CONSENT

The above information has been explained to me and all of my current questions have been answered. I understand that I am encouraged to ask questions about any aspect of this research study during the course of this study, and that such future questions will be answered by a qualified individual or by the investigator(s) listed on the first page of this consent document at the telephone number(s) given. I understand that I may always request that my questions, concerns or complaints be addressed by a listed investigator.

I understand that I may contact the Chairperson of national Health Research Ethics Committee, National Institute for Medical Research, 3 Barack Obama Drive, 11101, Dar Es Salaam, Phone: +255222121400, Fax: 2552222121360, E-mail: ethics@nimr.or.tz

AND

Human Subjects Protection Advocate of the IRB Office, University of Pittsburgh (1-866-212-2668) to discuss problems, concerns, and questions; obtain information; offer input; or discuss situations that have occurred during my participation.

By signing this form, I agree to participate in this research study and to allow local research staff to access my medical records for this study. A copy of this consent form will be given to me.

_____	_____	_____
Participant's Signature	Printed Name of Participant	Date

For Participants under the age of 18

PARENTAL PERMISSION
The above information has been explained to me and all of my current questions have been answered. I understand that I am encouraged to ask questions about any part of this research study at any time. Any future questions will be answered by a qualified person or by an investigator listed on the first page of this consent document at the telephone number(s) given. I understand that I may always request that my questions, concerns or complaints be answered by a listed investigator.

I understand that I may contact the Chairperson of national Health Research Ethics Committee, National Institute for Medical Research, 3 Barack Obama Drive, 11101, Dar Es Salaam, Phone: +255222121400, Fax: 2552222121360, E-mail: ethics@nimr.or.tz

AND

Human Subjects Protection Advocate of the IRB Office, University of Pittsburgh (1-866-212-2668) to discuss problems, concerns, and questions; obtain information; offer input; or discuss situations in the event that the research team is unavailable. A copy of this consent form will be given to me/my child.

_____
Printed Name of Child-Subject

I understand that, as a minor (age less than 18 years), the above-named child is not permitted to participate in this research study without my consent. Therefore, by signing this form, I give my consent for his/her participation in this research study and provide my authorization for the use of his/her medical records

Parent's or Guardian's Name (Print) _____

Relationship to Participant (Child)_____

Parent or Guardian Signature_____ Date_____

VERIFICATION OF EXPLANATION
I certify that I have carefully explained the purpose and nature of this research to the child participant in age appropriate language. S/he has had an opportunity to discuss it with me in detail. I have answered all his/her questions and s/he provided affirmative agreement (i.e., assent) to participate in this research.

Signature of Person Obtaining Assent_____ Date_____

CERTIFICATION of INFORMED CONSENT

I certify that I have explained the nature and purpose of this research study to the above-named individual(s), and I have discussed the potential benefits and possible risks of study participation. Any questions the individual(s) have about this study have been answered, and we will always be available to address future questions as they arise. I further certify that no research component of this protocol was begun until after this consent form was signed.

Name of Person Obtaining Consent (Print)_____
Role in Research Study_____

Signature of Person Obtaining Consent_____ Date_____

For subjects turning 18 during participation:
CONSENT FOR CONTINUED RESEARCH PARTICIPATION

I understand that I am currently participating in a research study. I further understand that consent for my participation in this research study was initially obtained from my authorized representative since I was unable to provide direct consent at the time that this initial consent was requested. I have now turned age 18 and I am able to provide direct consent for continued participation in this research study.

The above information has been explained to me and all of my current questions have been answered. I understand that I am encouraged to ask questions, voice concerns or complaints about any part of this research study during the course of this study. Future questions, concerns or complaints will be answered by a qualified person or by an investigator listed on the first page of this consent document at the telephone number(s) given.

I understand that I may contact the Chairperson of national Health Research Ethics Committee, National Institute for Medical Research, 3 Barack Obama Drive, 11101, Dar Es Salaam, Phone: +255222121400, Fax: 2552222121360, E-mail: ethics@nimr.or.tz
AND

Human Subjects Protection Advocate of the IRB Office, University of Pittsburgh (1-866-212-2668) to discuss problems, concerns, and questions; obtain information; offer input; or discuss situations in the event that the research team is unavailable. I agree to participate in this research study and provide my authorization for the use of my medical records.

By signing below, I agree to continue my participation in this research study. A copy of this consent form will be given to me.

Participant's Signature_____ Date_____

CERTIFICATION of INFORMED CONSENT

I certify that I have explained the nature and purpose of this research study to the above-named individual(s), and I have discussed the potential benefits and possible risks of study participation. Any questions the individual(s) have about this study have been answered, and we will always be available to address future questions as they arise. I further certify that no research component of this protocol was begun until after this consent form was signed.

Name of Person Obtaining Consent (Print) _____

Role in Research Study_____

Signature of Person Obtaining Consent_____

Date_____