INFORMED CONSENT DOCUMENT

Project Title: Evaluation of Phenotypic and Genetic Properties in Male Subjects Affected By Hypohidrotic Ectodermal Dysplasia: Intrafamilial Variation

Principal Investigator: Dorothy Grange

Research Team Contact: **Dorothy K. Grange, MD**
314-454-6093

This consent form describes the research study and helps you decide if you want to participate. It provides important information about what you will be asked to do during the study, about the risks and benefits of the study, and about your rights as a research participant. By signing this form you are agreeing to participate in this study.

- If you have any questions about anything in this form, you should ask the research team for more information.
- You may also wish to talk to your family or friends about your participation in this study.
- Do not agree to participate in this study unless the research team has answered your questions and you decide that you want to be part of this study.

WHAT IS THE PURPOSE OF THIS STUDY?

This is a research study. We invite you to participate in this research study because you have hypohidrotic ectodermal dysplasia (HED).

The purpose of this research study is to learn more about HED and to help find new HED treatments. In this study, we will evaluate the number of skin sweat glands you have and their ability to produce sweat and your hair characteristics.

DNA is part of what makes up your body and determines different things about you, like hair color, family traits, and health issues. This research study is also being done to determine whether you have a specific change (mutation) in your DNA that is commonly associated with the X-linked type of HED.

WHAT WILL HAPPEN DURING THIS STUDY?

This study will take place at the National Foundation for Ectodermal Dysplasias (NFED) 2011 Family Conference in O'Fallon, IL on July 21-23, 2011.

You will be asked to complete a questionnaire about your medical history and to collect demographic information (age, gender, etc.) to help determine if you are eligible to be in this research study. You have the right to refuse to answer any questions for any reason. However, not answering some questions may disqualify you for this research study.

We will measure the number of sweat glands found in a small area of the palm of your hand. A small round metal disk will be placed on the palm of your hand with an adhesive (like an adhesive bandage).

A special microscope (a microscope with a laser light source) will be attached to this disk and pictures will be taken of your skin. You may feel the microscope move as it takes the pictures, but there should be no pain from this test. The entire test should take about 5 to 10 minutes.

We will measure how much sweat your skin can produce. Two electrodes (objects that electricity goes through) will be placed on either the palm of your hand or on your wrist. Each of these electrodes has a disc that contains a low dose of a substance called pilocarpine, which helps to cause sweating. This equipment is used commonly to induce (make) sweat for testing. The electrodes will deliver a small amount of electricity into your skin. As the electricity moves through you, it will carry with it some of the pilocarpine. You may feel a slight tingling sensation as the electricity moves through you, but this should not be painful. The process will take about 5 minutes. Then, the electrodes will be removed and the surface of your skin will be wiped with alcohol. A small device about the size of a quarter will be placed on your skin over the area where the electrodes were placed to collect the sweat that is coming off the skin. This device rests gently on the skin, is secured in place with a Velcro strap and should not be painful. The process should take about 30 minutes.

Some participants will have 10-20 hairs cut (not pulled) from the back of the scalp for RNA-based hair analysis.

As part of this study, you will have some blood drawn (10 mL or about two teaspoons) for DNA-based testing for changes in the EDA gene (the gene that causes X-linked HED). The blood will be drawn by someone trained in drawing blood. This genetic test will be performed at an approved clinical molecular diagnostic laboratory, and you will be notified of the genetic test results in about 8 weeks by Dr. Grange, the principal investigator (PI) and doctor in charge of this study. You will not need to have the EDA gene testing done if you have a family member in this study that is being tested, or if you or another family member has positive tests results done in the past and can provide them to the study doctors.

The genetic testing can detect an abnormality, called a mutation, in the EDA gene for X-linked HED. The test is more than 99% accurate. In some cases, the DNA test is unable to identify an abnormality, although an abnormality may still exist.

Your blood sample will not be saved (banked) and your sample will not be returned to you.

Your genetic test results will only be reported to you by the PI. Your test results are confidential and will be released by the testing laboratory only to the PI.

Do you agree to have your blood drawn for genetic testing if you are chosen by the study team?

☐ YES ☐ No _____
Initials

Previous Test Results (EDA gene mutation):

If you or an HED family member has had genetic testing in the past on the EDA gene that confirms you have the X-linked type of HED, we can include that test result in this study. You may still choose to be

in this study and not share your previous test results, but you will be asked for a blood sample to document your EDA gene status. The choice to let us use previous test results is up to you.

If you agree to share your previous genetic test results, you will need to provide a copy to Dr. Grange now or you will need to allow Dr. Grange obtain a copy of the results from your doctor. The information that could be used to identify you will be removed from your test result when it is included in this study.

Please check one of the boxes below to tell us if you will allow your test results to be included in the study:

☐ I agree to share my previous genetic testing result.

☐ I do not agree to share my previous genetic testing result. _____ Initials

Previous Dental Records:

If you are affected by HED you may be asked for permission for the PI to contact your dentist and ask for previous dental records including x-rays. The PI will use these dental records to determine which of your teeth were missing as a child or are missing as an adult. You may still choose to be in this study and not share your previous dental records. The choice to let us use your previous dental records is up to you.

☐ I agree to share my previous dental records.

☐ I do not agree to share my previous dental records. _____ Initials

HOW MANY PEOPLE WILL PARTICIPATE?

Approximately 75 people will take part in this study conducted by investigators at Washington University, including 50 boys and men with HED and 25 boys and men who do not have HED and will be the normal controls for the study.

HOW LONG WILL I BE IN THIS STUDY?

If you agree to take part in this study, your involvement will last for up to 1 hour for the questionnaire, sweat gland evaluation, hair cutting and blood drawing. After you complete all of the procedures, your part in this study will be over. However, you will be contacted in about 8 weeks with the results of your genetic testing if you had been selected and chose to have your blood tested.

WHAT ARE THE RISKS OF THIS STUDY?

You may experience one or more of the risks indicated below from being in this study. In addition to these, there may be other unknown risks, or risks that we did not anticipate, associated with being in this study.

Skin Testing
There are no known adverse effects or risks to taking pictures of the skin with the special microscope. Adverse effects from using the adhesive metal disk may include mild discomfort or damage to skin (similar to what may be caused by adhesive bandages) and redness or allergic response to the adhesive.

There is a small risk (about 1 in 50,000 uses) of small skin burns after the use of electrical current for the sweat induction. Trained study personnel will be available at all times during the procedure to look at any skin changes and refer you for follow-up, if needed. You may have some skin redness where the electrodes were placed. This may be a skin reaction to the pilocarpine which should go away within 2 to 3 hours.

Hair sampling

There are no risks to having 10-20 hairs cut.

Blood Drawing
The blood draw may cause bleeding, bruising, or pain. Some people become dizzy or feel faint. There is also a rare risk of infection.

WHAT ARE THE BENEFITS OF THIS STUDY?

You will not benefit from being in this study.

However, we hope that in the future, people with HED might benefit from this study because we will learn more about the number of sweat gland ducts and function of sweat glands.

WILL IT COST ME ANYTHING TO BE IN THIS STUDY?

You will not have any costs for being in this research study.

WILL I BE PAID FOR PARTICIPATING?

All HED-affected subjects that meet entry criteria and complete the study will be reimbursed for a single hotel room accommodation (one room per family, approximately $95 plus applicable taxes per night) for up to 3 nights from funds provided by Edimer. These same subjects will also be eligible for reimbursement of the conference registration fee ($175 per adult and $125 per child).

WHO IS FUNDING THIS STUDY?

Edimer Pharmaceutical Inc. is funding this research study. This means that Washington University is receiving payments from Edimer Pharmaceutical Inc. to support the activities that are required to conduct the study. No one on the research team will receive a direct payment or increase in salary from Edimer Pharmaceutical Inc. for conducting this study.

WHAT IF I AM INJURED AS A RESULT OF THIS STUDY?

Washington University investigators and staff will try to reduce, control, and treat any complications from this research. If you feel you are injured because of the study, please contact the investigator Dorothy K. Grange, MD at (314) 454-6093 and/or the Human Research Protection Office at (314) 633-7400 or 1-(800)-438-0445.

Decisions about payment for medical treatment for injuries relating to your participation in research will be made by Washington University and Edimer Pharmaceutical Inc. If you need to seek medical care for a research-related injury, please notify the investigator as soon as possible.

HOW WILL YOU KEEP MY INFORMATION CONFIDENTIAL?

We will keep your participation in this research study confidential to the extent permitted by law. However, it is possible that other people such as those indicated below may become aware of your participation in this study and may inspect and copy records pertaining to this research. Some of these records could contain information that personally identifies you.

- Government representatives, (including the Office for Human Research Protections) to complete federal or state responsibilities
- Edimer Pharmaceutical Inc.
- Hospital or University representatives, to complete Hospital or University responsibilities
- Washington University's Institutional Review Board (a committee that oversees the conduct of research involving human participants.) The Institutional Review Board has reviewed and approved this study.

The research team will send study results to Edimer Pharmaceutical Inc. Information sent to Edimer Pharmaceutical Inc. will be labeled with a specific study subject code consisting of a subject number and the subject's initials and date of birth. Edimer Pharmaceutical Inc. will use the data collected in this study to determine the number of sweat glands in normal males and in males with HED and compare that to their ability to produce sweat and the type of mutation the HED-affected males have in the gene for XLHED. They will compare the hair characteristics of HED-affected males and normal males. They will also compare the results of the testing between brothers with HED enrolled in the study to see if they are similar or different. The information obtained in this study will help Edimer Pharmaceutical Inc with the development of treatments for XLHED. In the future, Edimer Pharmaceutical Inc. may continue to use your health information that is collected as part of this study. For example, Edimer Pharmaceutical Inc. may combine information from this study with the results of other studies to re-analyze the safety and effectiveness of a study medication, to evaluate other products or therapies, to develop a better understanding of a disease, or to improve the design of future research studies. Edimer Pharmaceutical Inc. may also share information from the study with regulatory agencies in foreign countries.

To help protect your confidentiality, we will label all of the information and data obtained about you, your sweat glands, your hair and your DNA test results with a study code consisting of a number and your initials, and your date of birth. Your name will be not be linked to the data that is shared with Edimer Pharmaceutical Inc. If we write a report or article about this study or share the study data set with others, we will do so in such a way that you cannot be directly identified.

A description of this clinical trial will be available on http://www.ClinicalTrials.gov, as required by U.S. Law. This Web site will not include information that can identify you. At most, the Web site will include a summary of the results. You can search this Web site at any time.

Are there additional protections for my health information?

Protected Health Information (PHI) is health information that identifies you. PHI is protected by federal law under HIPAA (the Health Insurance Portability and Accountability Act). To take part in this research, you must give the research team permission to use and disclose (share) your PHI for the study as explained in this consent form. The research team will follow state and federal laws and may share your health information with the agencies and people listed under the previous section titled, "How will you keep my information confidential?".

Once your health information is shared with someone outside of the research team, it may no longer be protected by HIPAA.

The research team will only use and share your information as talked about in this form. When possible, the research team will make sure information cannot be linked to you (de-identified). Once information is de-identified, it may be used and shared for other purposes not discussed in this consent form. If you have questions or concerns about your privacy and the use of your PHI, please contact the University's Privacy Officer at 866-747-4975.

Although you will not be allowed to see the study information, you may be given access to your health care records by contacting your health care provider.

If you decide not to sign this form, it will not affect

- your treatment or the care given by your health provider.
- your insurance payment or enrollment in any health plans.
- any benefits to which you are entitled.

However, it will not be possible for you to take part in the study.

If you sign this form:

- You authorize the use of your PHI for this research
- Your signature and this form will not expire as long as you wish to participate.
- You may later change your mind and not let the research team use or share your information (you may revoke your authorization).
    - To revoke your authorization, complete the withdrawal letter, found in the Participant section of the Human Research Protection Office website at http://hrpo.wustl.edu (or use the direct link: http://hrpohome.wustl.edu/participants/WithdrawalTemplate.rtf) or you may request that the Investigator send you a copy of the letter.
        - **If you revoke your authorization:**
            - The research team may only use and share information already collected for the study.
            - Your information may still be used and shared if necessary for safety reasons.

- You will not be allowed to continue to participate in the study.

IS BEING IN THIS STUDY VOLUNTARY?

Taking part in this research study is completely voluntary. You may choose not to take part at all. If you decide to be in this study, you may stop participating at any time. If you decide not to be in this study, or if you stop participating at any time, you won't be penalized or lose any benefits for which you otherwise qualify.

What if I decide to withdraw from the study?

You may withdraw by telling the study team you are no longer interested in participating in the study or you may send in a withdrawal letter. A sample withdrawal letter can be found at http://hrpo.wustl.edu under Information for Research Participants.

WHAT IF I HAVE QUESTIONS?

We encourage you to ask questions. If you have any questions about the research study itself, please contact: Dorothy K. Grange, MD at (314) 454-6093. If you experience a research-related injury, please contact: Dorothy K. Grange, MD at (314) 454-6093.

If you have questions, concerns, or complaints about your rights as a research participant, please contact the Human Research Protection Office, 660 South Euclid Avenue, Campus Box 8089, St. Louis, MO 63110, (314) 633-7400, or 1-(800)-438-0445 or email hrpo@wusm.wustl.edu. General information about being a research participant can be found by clicking "Participants" on the Human Research Protection Office web site, http://hrpohome.wustl.edu. To offer input about your experiences as a research subject or to speak to someone other than the research staff, call the Human Research Protection Office at the number above.

This consent form is not a contract. It is a written explanation of what will happen during the study if you decide to participate. You are not waiving any legal rights by agreeing to participate in this study.

Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a signed and dated copy of this form.

Do not sign this form if today's date is after EXPIRATION DATE: 06/18/12.

_____ _____

(Signature of Participant) (Date)

_____

(Participant's name – printed)

Statement of Person Who Obtained Consent

The information in this document has been discussed with the participant or, where appropriate, with the participant's legally authorized representative. The participant has indicated that he or she understands the risks, benefits, and procedures involved with participation in this research study.

_____ _____

(Signature of Person who Obtained Consent) (Date)

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(Name of Person who Obtained Consent - printed)