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MAIN STUDY RECONSENT: Cognitively Intact 18-21 year old child

STUDY INFORMATION:

Study Title: TeleKidSeq: Incorporating Telehealth into the Clinical Care of Diverse NYC Children Undergoing Whole Genome Sequencing

Principal Investigator (Head Researcher): Eimear Kenny, PhD

Physical Address: Icahn School of Medicine at Mount Sinai, 1468 Madison Avenue, Annenberg 18th Floor, Room 18-80D

Mailing Address: Icahn School of Medicine at Mount Sinai, One Gustave L. Levy Pl., Box 1003, New York, NY 10029

Phone: 212-241-8288

SUMMARY OF THIS RESEARCH STUDY:

In medicine there are many unanswered questions. A "research study" is when scientists try to answer a question about something that we don't know enough about. Participation in a research study may or may not directly help you or others. Participation is entirely voluntary. It is completely up to you whether or not you take part. You can also change your mind at any time and it will not affect your ability to get medical care within the Mount Sinai Health System or elsewhere.

The purpose of this research study that you and your parent/legal guardian(s) have been a part of is to learn how genomic testing can help children and young adults with rare diseases. Genomic testing is a way for scientists to study your DNA (genetic material inherited from their parents that at least in part determines your features like eye color, height, and risk of many diseases). Sometimes, genes have changes, or "variants," that cause them to not function correctly, resulting in disease. These variants can be inherited from parents or can occur randomly. One type of genomic testing is called whole genome sequencing (WGS), which reads through all of a person's DNA.

In this study, we used WGS to try to learn if there was a genetic cause for your condition. We performed this test in a clinically certified laboratory, and the results were shared with you/your parent/legal guardian(s) and your physician. Your parent/legal guardian(s) previously signed a consent form for that. That part of the study is complete. This consent form only focuses on use of your data and/or specimens.

You were asked to participate in this study because you have epilepsy, developmental delays, heart disease, or a low immune system, and your physician at Mount Sinai or elsewhere thought there might be a genetic cause for this condition.

A major goal of this study is to learn the best way to communicate these complicated genomic results back to families like yours, by having parents answer a series of surveys. Everyone in the study must

have a least one parent available to answer these surveys. *Your parent(s) signed a consent form focused only on the surveys.* As part of this study, all visits were conducted using "telehealth," a way of delivering health services using communication technology, like video conferencing. Studying the use of telehealth for genetic testing will help healthcare providers understand how to improve patients' experiences in using communication technology. Additionally, we hope to help scientists and healthcare systems learn how to offer and perform genomic testing to more people from diverse backgrounds and cultures.

The main risks to you if you choose to participate are risks related to loss of confidentiality or privacy. Loss of privacy means having your personal information shared with someone who is not on the study team and was not supposed to see or know about your information. The study team plans to protect your privacy – see the Confidentiality section later in this consent form for details.

You may also benefit from participation in this research if WGS identifies a genetic diagnosis for you. This information can inform your care and treatment and can be used for reproductive decision-making. In addition, understanding genetic diversity can help all people benefit from genomic medicine. Helping healthcare providers and scientists learn how we can best communicate information about WGS may help individuals who choose to have WGS in the future.

If you are interested in learning more about this study, please continue to read below.

PARTICIPATION IN THIS RESEARCH STUDY:

This research study will be fully explained to you by a member of the study team. Feel free to ask all the questions you want before you make a decision about whether or not to participate. Any new information that develops during this research study that might make you change your mind about participating will be given to you promptly.

You qualified to take part in this research study because you are age 0-21 years and currently have undiagnosed, likely genetic* cause of neurologic, immunologic, or cardiac disorder(s).

Funds for conducting this research are provided by National Human Genome Research Institute (NHGRI) and the National Institute on Minority Health and Health Disparities (NIHMD) of the National Institutes of Health (NIH).

LENGTH OF TIME AND NUMBER OF PEOPLE EXPECTED TO PARTICIPATE:

Your participation in this research study is expected to last until 2022, when the study ends.

The number of people expected to take part in this research study at Mount Sinai Health System is approximately 250 children and 375 parents, with another 250 children and 375 parents participating at the Montefiore Medical Center for a total of 1,250 participants.

DESCRIPTION OF WHAT'S INVOLVED:

If you agree to participate in this research study, the following information describes what may be involved.

You and your parent(s) have already completed all of the study visits. However, we are constantly learning how to understand DNA changes. Researchers can use data and specimens (like blood, saliva, or cheek swab) to do future research studies related to genetics and in other areas. You can choose below whether or not you would like your data and/or specimens to be used for future research and if you would like to be contacted in the future to provide additional samples or to discuss possible participation in other research studies. You can choose how much or how little these data and/or specimens are shared with other researchers.

USE OF YOUR DATA AND/OR SPECIMENS:

Storage and use of your leftover blood sample and data within TeleKidSeq

By signing this consent form, you voluntarily agree that your blood and sequencing information can be stored indefinitely by the research study, including TeleKidSeq research teams at New York Genome Center, Einstein Montefiore, and Mount Sinai. Samples may be used for either research or for clinical purposes if additional testing is needed. Your identifiable data may be used by the TeleKidSeq research team for reasons related to, and for reasons unrelated to, the current research project. If you decide that you do not want the TeleKidSeq research teams to keep your biological samples, you may withdraw your consent to storage and to use of your samples at any time by contacting Dr. Eimear Kenny (contact information on first page of consent), in which case we will promptly destroy the sample(s) or the portions thereof that have not already been used. However, your sample may have already been distributed to other researchers within TeleKidSeq before you ask us to destroy it, so we may not be able to retrieve it and stop future research.

To protect your privacy, Mount Sinai has policies and procedures in place that are overseen and monitored by Institutional Review Board. Mount Sinai Health System requires its staff who may use or have access to your sample or data to receive training on its privacy and data security policies, and to follow those policies with care.

Sharing your leftover sample and data with researchers outside of TeleKidSeq

We would like to ask your permission to store and share your blood, saliva and DNA samples, and sequencing information (data), which will be stripped of identifiers to protect your confidentiality, with other researchers (i.e. those who are not associated with TeleKidSeq, Einstein Montefiore, NYGC, Mount Sinai). These biological samples and the sequencing data may be used in future research, including in future genetic testing, to learn about, prevent, or treat health problems.

You must initial your choice. By initialing you are consenting to the following: TeleKidSeq has my permission to store my leftover sample and to share my de-identified data and/or sample with researchers outside of TeleKidSeq.

_____(Initial) Proband

If you would prefer not to share your sample, do not initial. However, please note that if your sample was shared earlier in the study, it will not be possible to un-share it.

Public Sharing of your genome data

One purpose of this study is to help researchers around the world learn about the genomes of people from diverse populations. They do this by putting it into one or more scientific databases, where it is stored along with information from other studies. Researchers can then study the combined information to learn even more about health and disease.

If you agree to share de-identified data in secure, public research databases, some of your genetic and related health information will be entered into one or more scientific databases available to other researchers inside and outside of Einstein-Montefiore, Mount Sinai and the New York Genome Center. For example, the National Institutes of Health (an agency of the federal government) maintains a database called The Database of Genes and Phenotypes ("dbGAP"). A researcher who wants to study the information must apply to the database. Different databases may have different ways of reviewing such requests.

However, only researchers who apply and are approved can access restricted databases, like dbGAP, dbVar and other databases. The TeleKidSeq program will limit sharing of individual data to only those restricted databases, which require approval to access.

Please note that identifying information about yourself, such as your name, address, telephone number, or social security number, will NOT be put into these scientific databases. However, because your genetic information is unique to you, there is a chance that it could be traced back to you. The risk of this happening is very small and is explained in the Risks section of this consent form. Researchers will always have a duty to protect your privacy and to keep your information confidential.

You must initial your choice. By initialing you are consenting to the following: TeleKidSeq has my permission to store and deposit my de-identified clinical information and sequencing data in secure, public research databases.

_____ (Initial) Proband

If you would prefer not to share your sample, do not initial. However, please note that if your sample was shared earlier in the study, it will not be possible to un-share it.

Participating in future research studies

As new research opportunities are identified, or new research findings made, the researchers may wish to contact you to ask if you would be willing to donate fresh samples for additional testing, or to share information about research progress with you, or to invite you to enroll in new studies. However, this is

not a requirement to take part in this study. A separate consent will be obtained if you wish to take part in future research.

If the researchers are aware of a research project that might be relevant to you, do you give them permission to contact you in the future to collect additional information about your child, share information with you, or to discuss possible participation in another research project?

You must initial your choice:

_____(Initial) I consent to be contacted in the future to learn about new research studies that I may wish to join or new research findings.

_____(Initial) I consent to be contacted in the future if the researchers would like additional samples from me.

(Initial) I do NOT want to be contacted by researchers seeking to collect or share additional information or to discuss another research project.

YOUR RESPONSIBILITIES IF YOU TAKE PART IN THIS RESEARCH:

If you decide to take part in this research study you will choose how researchers may use your data and/or specimens for future research.

COSTS OR PAYMENTS THAT MAY RESULT FROM PARTICIPATION:

Your family has already received payment for participating in this research study. Being in this research study will not lead to extra costs to you.

Some researchers may develop tests, treatments or products that are worth money. You will not receive payment of any kind for your specimens and information or for any tests, treatments, products or other things of value that may result from the research.

You should also know that it is possible that products may someday be developed with the help of your specimens and data, and there are no plans to share any profits from such products with you, regardless of whether your identifiable information is removed.

POSSIBLE BENEFITS:

It is important to know that you may not get any benefit from taking part in this research. Others may not benefit either. However, possible benefits may be learning about your secondary findings, such as identifying future conditions that can be treated by your physician. Understanding genetic diversity can help all people benefit from genomic medicine. Helping us learn how we can best communicate information about WGS may help individuals who might choose to have WGS in the future.

REASONABLY FORESEEABLE RISKS AND DISCOMFORTS:

There are risks, discomforts, and inconveniences associated with any research study. These deserve careful thought. In addition to what is described below, there may be unforeseeable risks that occur as a result of genome sequencing and its clinical interpretation.

- **Risks of loss of private information:** this risk always exists, but there are procedures in place to minimize the risk.
- **Risks related to learning genetic information:** There is a chance that you may learn that you carry a genetic change that may increase the risk for a specific medical condition. If that is the case, we may suggest that other members of the family get tested for the same genetic change, and you may learn that a family member is at risk to develop certain medical conditions or diseases. This knowledge might be upsetting and may cause you to have anxiety or psychological distress. As described above, some of these conditions may have treatment or screening options available, while others may not. You will be asked to think about if you want this information long before the data is available. However, even if you decide you would like this information, it can be upsetting. You may also learn that your ancestry or parentage is different than you thought. This may also cause some psychological distress. If you are found to carry a pathogenic variant in a gene, this may affect your reproductive decisions. You will have the opportunity to discuss this with the study's genetic counselor, and will be offered additional genetic counseling resources for your future use.
- **Risks associated with genomic testing:** These tests may not generate accurate results in instances that cannot be predicted. Such instances include but are not limited to: incomplete medical and/or family history, unavailability of critical family members for help with interpretation, inaccurate reporting of family relationships, or technical problems. The results of this test may have significant medical, psychological, and social implications for you and your family. You and your family members may experience anxiety before, during, and after testing.
- **Risks related to privacy:** Your privacy is very important to us, and we will use many safety measures to protect it. However, in spite of all of these protections, there is the possibility that the genome sequence data derived may, even when presented without other identifying factors, allow you to be re-identified. Because your genetic information is unique to you, there is a small chance that someone could trace it back to you. Therefore, this research study cannot promise anonymity, particularly if you choose to publish or share your genome sequence data. The risk of this happening is very small, but may grow in the future. If there is a break in security with the dbGaP database, it may also pose a potential risk to blood relatives. For example, it could be used to make it harder for you (or a relative) to get or keep a job or insurance. If your private information was misused it is possible you would also experience other harms, such as stress, anxiety, stigmatization, or embarrassment from revealing information about your or his/her family relationships, ethnic heritage, or health conditions. Specific illnesses and known genetic problems may be found by examining DNA. In the future, insurance companies may use this information to determine if someone is able

to be insured by their company. The genetic results from this study will become part of your medical record. Insurance companies routinely have access to such records.

- **Group Risks:** Although we will not give researchers your name, we will give them basic information such as your race, ethnic group, and sex. This information helps researchers learn whether the factors that lead to health problems are the same in different groups of people. It is possible that such findings could one day help people of the same race, ethnic group, or sex as you. However, they could also be used to support harmful stereotypes or even promote discrimination.
- **Risks related to insurance:** There is a Federal law called the Genetic Information Nondiscrimination Act (GINA). In general, this law makes it illegal for health insurance companies, group health plans, and most employers of over 15 people to discriminate against you based on your genetic information. However, it does not protect you against discrimination by companies that sell life insurance, disability insurance, or long-term care insurance.

OTHER POSSIBLE OPTIONS TO CONSIDER:

You may decide not to take part in this research study without any penalty. The choice is totally up to you.

IN CASE OF INJURY DURING THIS RESEARCH STUDY:

If you believe that you suffered an injury related to this research as a participant in this study, you should contact the Principal Investigator.

ENDING PARTICIPATION IN THE RESEARCH STUDY:

You may stop taking part in this research study at any time without any penalty. This will not affect your ability to receive medical care at any of the Mount Sinai Health System hospitals or elsewhere, or to receive any benefits to which you are otherwise entitled.

If you decide to stop being in the research study, please contact the Principal Investigator or the research staff.

If you decide you don't want your samples and/or data to be used for research anymore, you can contact the researcher and ask to have your samples and/or data removed from future use. You must do so in writing to the Principal Investigator at the address on the first page. If any samples or data have already been shared without your identity, it won't be possible to retrieve them because no one will know who you are. Samples and data that have already been used will not be affected by your decision. Any samples and/or data that are still linked to your identity by a code the researcher has will be withdrawn so that no future sharing of your samples and/or data will take place. If your samples

have already been deposited in an external repository, the study team will request that your samples be removed.

Even if you withdraw your authorization, the Principal Investigator for the research study may still use the information that was already collected if that information is necessary to complete the research study. Your health information may still be used or shared after you withdraw your authorization if you have an adverse event (a bad effect) from participating in the research study.

Withdrawal without your consent: The study doctor, the sponsor or the institution may stop your involvement in this research study at any time without your consent. This may be because the research study is being stopped, the instructions of the study team have not been followed, the investigator believes it is in your best interest, or for any other reason. If specimens or data have been stored as part of the research study, they too can be destroyed without your consent.

CONTACT INFORMATION:

If you have any questions, concerns, or complaints at any time about this research, or you think the research has harmed you, please contact the office of the research team and/or the Principal Investigator at phone number (212) 241-8288.

This research has been reviewed and approved by an Institutional Review Board. You may reach a representative of the Program for Protection of Human Subjects at the Icahn School of Medicine at Mount Sinai at telephone number (212) 824-8200 during standard work hours for any of the reasons listed below. This office will direct your call to the right person within the Mount Sinai Health System:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You are not comfortable talking to the research team.
- You have questions about your rights as a research subject.
- You want to get information or provide input about this research.

DISCLOSURE OF FINANCIAL INTERESTS:

Sometimes, physicians/researchers receive payments for consulting or similar work performed for industry. Effective September 2014 Mount Sinai reviews only payments to an individual totaling more than $5,000 a year per entity when determining potential conflicts of interest. If you have questions regarding industry relationships, we encourage you to talk your physician/researcher or visit our website at http://icahn.mssm.edu/ where Mount Sinai publicly discloses the industry relationships of our faculty.

MAINTAINING CONFIDENTIALITY – HIPAA AUTHORIZATION:

As you take part in this research project it will be necessary for the research team and others to use and share some of your private protected health information. Consistent with the federal Health Insurance Portability and Accountability Act (HIPAA), we are asking your permission to receive, use and share that information.

What protected health information is collected and used in this study, and might also be shared with others?
As part of this research project, the research team at the hospital(s) involved in the research will collect your name and telephone numbers, date of birth, and medical record number.

The researchers will also get information from your medical record.

During the study the researchers will gather information by:

- taking a medical history (includes current and past medications or therapies, illnesses, conditions or symptoms, family medical history, allergies, etc.)
- completing the tests, procedures, questionnaires and interviews explained in the description section of this consent.
- reviewing genetic tests

Why is your protected health information being used?
Your personal contact information is important to be able to contact you during the study. Your health information and the results of any tests and procedures being collected as part of this research study will be used for the purpose of this study as explained earlier in this consent form. The results of this study could be published or presented at scientific meetings, lectures, or other events, but would not include any information that would let others know who you are, unless you give separate permission to do so.

The research team and other authorized members of The Mount Sinai Health System ("Mount Sinai") workforce may use and share your information to ensure that the research meets legal, institutional or accreditation requirements. For example, the School's Program for the Protection of Human Subjects is responsible for overseeing research on human subjects, and may need to see your information. If you receive any payments for taking part in this study, the Mount Sinai Finance Department may need your name, address, social security number, payment amount, and related information for tax reporting purposes. I*f the research team uncovers abuse, neglect, or reportable diseases, this information may be disclosed to appropriate authorities.*

Who, outside Mount Sinai, might receive your protected health information?
As part of the study, the Principal Investigator, study team and others in the Mount Sinai workforce may disclose your protected health information, including the results of the research study tests and procedures, to the following people or organizations: (It is possible that there may be changes to the list during this research study; you may request an up-to-date list at any time by contacting the Principal Investigator.)

- Other collaborating research center(s) and their associated research/clinical staff who are working with the investigators on this project: The National Institutes of Health, the Clinical Sequencing Evidence-Generating Research Consortium, and Albert Einstein College of Medicine/Montefiore Medical Center
- Research data coordinating office and/or their representative(s) who will be responsible for collecting results and findings from all the centers: the Clinical Sequencing Evidence-Generating Research Consortium
- Outside laboratory who will be performing laboratory analysis for all the research centers involved in this project: The New York Genome Center
- The sponsoring government agency and/or their representative who need to confirm the accuracy of the results submitted to the government or the use of government funds; National Human Genome Research Institute (NHGRI) and the National Institutes of Health (NIH).
- The United States Department of Health and Human Services and the Office of Human Research Protection.

In almost all disclosures outside of Mount Sinai, you will not be identified by name, social security number, address, telephone number, or any other direct personal identifier. Some records and information disclosed may be identified with a unique code number. The Principal Investigator will ensure that the key to the code will be kept in a locked file, or will be securely stored electronically. The code will not be used to link the information back to you without your permission, unless the Institutional Review Board allows it after determining that there would be minimal risk to your privacy. The Certificate of Confidentiality obtained from the Department of Health and Human Services will not be used to prevent disclosure to local authorities of child abuse and neglect, or harm to self or others. It is possible that a sponsor or their representatives, a data coordinating office, or a contract research organization, will come to inspect your records. Even if those records are identifiable when inspected, the information leaving the institution will be stripped of direct identifiers. Additionally, *the Office of Human Subjects Protection (OHRP) of the Department of Health and Human Services as well as the Food and Drug Administration (FDA) will be granted direct access to your medical records for verification of the research procedures and data. They are authorized to remove information with identifiers if necessary to complete their task. By signing this document you are authorizing this access.* We may publish the results of this research. However, we will keep your name and other identifying information confidential.

For how long will Mount Sinai be able to use or disclose your protected health information? Your authorization for use of your protected health information for this specific study does not expire.

Will you be able to access your records?
During your participation in this study, you will have access to your medical record and any study information that is part of that record. The investigator is not required to release to you research information that is not part of your medical record.

Do you need to give us permission to obtain, use or share your health information?

NO! If you decide not to let us obtain, use or share your health information you should not sign this form, and you will not be allowed to volunteer in the research study. If you do not sign, it will not affect your treatment, payment or enrollment in any health plans or affect your eligibility for benefits.

Can you change your mind?
You may withdraw your permission for the use and disclosure of any of your protected information for research, but you must do so in writing to the Principal Investigator at the address on the first page. Even if you withdraw your permission, the Principal Investigator for the research study may still use your protected information that was already collected if that information is necessary to complete the study. Your health information may still be used or shared after you withdraw your authorization if you should have an adverse event (a bad effect) from being in the study. If you withdraw your permission to use your protected health information for research that means you will also be withdrawn from the research study, but standard medical care and any other benefits to which you are entitled will not be affected. You can also tell us you want to withdraw from the research study at any time without canceling the Authorization to use your data.

If you have not already received it, you will also be given The Hospital's Notice of Privacy Practices that contains more information about how The Hospital uses and discloses your protected health information.

It is important for you to understand that once information is disclosed to others outside Mount Sinai, the information may be re-disclosed and will no longer be covered by the federal privacy protection regulations. However, even if your information will no longer be protected by federal regulations, where possible, Mount Sinai has entered into agreements with those who will receive your information to continue to protect your confidentiality.

If as part of this research project your medical records are being reviewed, or a medical history is being taken, it is possible that HIV-related information may be revealed to the researchers. If that is the case, the following information concerns you. If this research does not involve any review of medical records or questions about your medical history or conditions, then the following section may be ignored.

Notice Concerning HIV-Related Information

If you are authorizing the release of HIV-related information, you should be aware that the recipient(s) is (are) prohibited from re-disclosing any HIV-related information without your authorization unless permitted to do so under federal or state law. You also have a right to request a list of people who may receive or use your HIV-related information without authorization. If you experience discrimination because of the release or disclosure of HIV-related information, you may contact the New York State Division of Human Rights at (888) 392-3644 or the New York City Commission on Human Rights at (212) 306-5070. These agencies are responsible for protecting your rights.

Certificate of Confidentiality:

To further protect your privacy, the researchers have obtained a Certificate of Confidentiality from the Department of Health and Human Services. This is intended to ensure that your identity as a participant in this research study will not have to be disclosed as a result from a subpoena, for the purpose of identifying you in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings other than to the FDA or OHRP as identified above.
The research staff will not share any of your research information or biospecimens with anyone who is not a member of the research team, including any family members or friends, other than to those identified above. However, you should know that if we learn that you or someone else is threatened with serious harm, such as a child or an elderly person being abused, the investigators may notify the appropriate authorities if necessary to protect you or others. A Certificate of Confidentiality does not prevent you or a member of your family from voluntarily releasing information about yourself or your involvement in this research. This means that you and your family must also actively protect your own privacy. If an insurer or employer learns about your research participation, and you agree that they can have your research information, then the researchers may not use the Certificate of Confidentiality to keep this information from them.

ADULT PARTICIPANT:

Your signature below documents your permission to take part in this research and to the use and disclosure of your protected health information. A signed and dated copy will be given to you.

_____	_____	_____	_____
Signature of subject	Printed Name of Subject	Date	Time

PERSON EXPLAINING STUDY AND OBTAINING CONSENT:

_____	_____	_____	_____
Signature of consent delegate	Printed Name of consent delegate	Date	Time

WITNESS SECTION:

When a witness is required to observe the consent process, it should be documented below (for example, when subject is illiterate, visually impaired, or this document accompanies a short form consent).

My signature below documents that the information in the consent document and any other written information was accurately explained to, and apparently understood by, the subject, and that consent was freely given by the subject.

_____	_____	_____	_____
Signature of Witness	Printed Name of Witness	Date	Time