

**LOS ANGELES BIOMEDICAL RESEARCH INSTITUTE  
At Harbor-UCLA Medical Center**

**HUMAN SUBJECTS CONSENT FORM**

Subject's Name: \_\_\_\_\_ Date: \_\_\_\_\_

**1. Purpose of the research:**

Long QT syndrome (LQTS) is a disease of the heart that may cause sudden, life-threatening, irregular heart beats. In most cases the disease is hereditary and is present at birth. The most severe form of LQTS is called Jervell and Lange-Nielsen syndrome, or JLNS. In addition to irregular heart beats, individuals with JLNS have severe hearing loss or deafness since birth. Infants with JLNS have symptoms present very early in life and are at risk for sudden cardiac death if not treated. As a result, it is important to be able to diagnose JLNS as early as possible to start timely, effective therapy that prevents sudden death. The purpose of this study is to determine what proportion of infants with severe hearing loss has JLNS and to evaluate the value of early JLNS diagnosis by electrocardiogram (ECG) in sudden death prevention.

We are asking you to allow your child to take part in this research study because he/she was diagnosed with hearing loss. We are asking you to allow the study doctor and his staff to perform a cardiac screening (described below) on your child to see if he or she might have JLNS.

About 840 subjects will take part in this study at this site and at one other site.

**2. If your child takes part in this research, the following will be done:**

If you allow your child to take part in this research, you and your child will come to the pediatric lab or the General Clinical Research Center at the Los Angeles Biomedical Research Institute. Most subjects will have one visit but a small number of subjects may have up to 4 visits. The cardiac screening will be performed in a quiet, private room. In some cases, study staff may visit your home to perform study procedures on your child.

If you allow your child to take part in this study, the following procedures will be done:

- We will ask you questions about the present and past medical health of your child.
- We will ask you specific questions regarding past and present illnesses, symptoms, and sudden deaths in your family.
- We will perform an electrocardiogram, or ECG test on your child. The ECG test is used to measure the rate and regularity of heartbeats and will be done using the standard ECG machine while your child is lying down. We will place 10 sticky patches on your child's chest and extremities (arms and legs) and these patches will be connected to 10 cables that will record your child's heart beats. Your child may be given a pacifier to calm him/her down before the ECG is recorded. After the ECG has been recorded, we will disconnect the cables and remove the sticky patches from your child.

Your answers to the above mentioned questions and ECG test results will be examined by a pediatric cardiologist within 48 hours of the test taking day, to see if your child is at risk for LQTS. After evaluation of the tests, the pediatric cardiologist will judge if your child is at high risk, intermediate risk, or low risk for LQTS. You will receive written and/or verbal notification of all

results promptly.

If your child experiences any heart related symptoms such as shortness of breath, fast heart beats, or fainting at any time after the initial cardiac screening and before the project ends in September 2011, please contact our project office immediately so that we may perform another ECG test promptly. You may contact us at 310-222-5383. We will contact you at the end of the study to see how your child is doing.

### **Low Risk**

If your child is found to be at low risk for LQTS, you will receive a phone call at the end of the research study to follow-up on the health of your child. If you report that your child has had heart symptoms since his/her initial visit to the test site, your child will be scheduled for a repeat ECG. For the repeat ECG, you and your child will again visit the pediatric lab or General Clinical Research Center at Los Angeles Biomedical Research Institute and an ECG will be done as described above. If you initially had a home visit, study staff will again visit your home to perform an ECG on your child. If, after reviewing the ECG the pediatric cardiologist determines that the test abnormal, a genetic test will be performed on your child to confirm JLNS.

### **Intermediate Risk**

If your child is determined to be at intermediate risk for LQTS, your child will have a repeat ECG in one week. For the repeat ECG, you and your child will again come to the pediatric lab or General Clinical Research Center at Los Angeles Biomedical Research Institute and an ECG will be done as described above. If you initially had a home visit, study staff will visit your home again to perform an ECG on your child. Based on the repeat ECG, the pediatric cardiologist will reassign the risk for LQTS to your child.

If after reviewing the repeat ECG your child is found to be at high risk by the pediatric cardiologist, your child will be moved to the high risk category and you will follow the procedures described below, under high risk.

If your child is found to be at low risk for LQTS by the pediatric cardiologist, you will receive a follow-up phone call at the end of the research study to follow-up on the health of your child. If you report that your child has had heart symptoms since his/her initial visit to the test site, your child will be scheduled for a repeat ECG. For the repeat ECG, you and your child will again visit the Los Angeles Biomedical Research Institute and an ECG will be performed in the manner described above. If you initially had a home visit, study staff will again visit your home to perform an ECG on your child. If after reviewing the ECG the pediatric cardiologist determines that the test abnormal, a genetic test will be performed on your child to confirm JLNS.

### **High Risk**

If your child is found to be at high risk for LQTS, you will be counseled by a genetic specialist about what this means to your child's health and to your family. We will then arrange genetic testing for your child to see if your child has JLNS. The cost of the genetic testing will be covered by the research study and you will be asked whether or not you wish to know the results of the test. If it is found by genetic testing that your child has JLNS, he/she will be referred to a pediatric cardiologist immediately. In addition, because JLNS is a form of hereditary LQTS, you will be offered genetic counseling for your family at no cost to you.

All children who are enrolled in this study and are found to have JLNS by genetic testing will be contacted before the end of the study. We will call you using the phone numbers you provided to

follow-up on the health of your child.

### **Genetic Testing**

Your child will have genetic testing if he/she is in the High Risk category based on history and ECG. Genes are part of the cells in our bodies. Genes are made up of DNA, which determines how our bodies function. Some abnormal genes have been found to cause illnesses. The purpose of this test is to see if your child carries the genes known to cause JLNS.

In order to perform a genetic test, your child will have about 1 teaspoon of blood drawn from a needle placed in a vein in his/her arm. A doctor or a research nurse at the Outpatient General Clinical Research Center (GCRC) at Los Angeles Biomedical Research Institute will draw the blood. Necessary precautions will be taken to minimize pain and infection. Your child's blood samples will be tested through PGx Health, LLC (New Haven, CT) which is a company that specializes in genetic testing for LQTS and JLNS.

**If it is necessary to perform a genetic test on your child, would you like to be informed of the test results?** \_\_\_YES \_\_\_NO

\_\_\_\_\_  
(Signature of Authorized Person)

### **Subject Reimbursement**

You will be compensated for your taking part in this study. If you travel 30 miles or less to the test site, you will receive a \$20 gift card per visit. If you travel more than 30 miles to a test site you will receive \$30 gift card per visit. Mileage will be calculated at your first visit from your home address to the test site using Google Maps software. Compensation will be in the form of a gift card.

3. **The following treatments and procedures are experimental:**

All procedures described above are being done for research and experimental purposes.

4. **You may reasonably expect the following risks and discomforts (including the likely results if the experimental treatment does not work):**

In addition to the above stated risks related to genetic testing below, there is a very small risk of infection or rash related to the procedures involved in ECG testing. Study staff will follow proper procedures to minimize the risk of infection, although infection is very unlikely. Your child may feel some discomfort from the sticky patches that will be placed on and be removed from his/her chest.

Drawing blood may cause some pain, bleeding and/or a bruise where the needle is inserted. Occasionally the area around the vein may swell. Serious complications such as a blood clot or infection may occur, but these are rare. Some people may faint when having blood drawn. A small amount of local anesthetic cream that numbs the skin will be placed on your child's forearm to lessen the amount of pain he or she will feel when the needle is inserted and removed. This medication may cause temporary redness, tingling or lightening of the skin.

In addition to the above stated risks, risks related with genetic testing may involve emotional or social consequences from the test results. You may feel angry, depressed, anxious, or guilty about the tests results. In some cases, genetic testing creates tension within a family because the results can reveal information about other family members in addition to the person who is tested. Also, genetic testing can provide only limited information about an inherited condition. The test often can't determine if your child will show symptoms of a disorder, how severe the symptoms will be, or

whether the disorder will progress over time. In the United States, federal law requires results of genetic tests to be kept confidential. To help you understand the genetic test results, we will arrange genetic counseling by a genetic specialist free of charge to you and your insurance.

Another risk would be if there was a breach in confidentiality and a third party learned of your child's genetic test results. There are no absolute legal protections against discrimination on the basis of genetic information if a third party gains access to it.

The sample of blood collected for the genetic testing may be stored, without any identifying information, by the doctors conducting this study and used for future research studies. If you do not wish to have your child's blood sample stored, you must tell the study doctor (investigator) of your decision and the sample will be destroyed after the tests for this study are performed.

The study doctor will protect your child's confidentiality as much as possible. First, the research laboratory that tests your child's blood will not be given your name. Information gained from this research will only be available to your doctors or other individual researchers with your permission. Furthermore, this information will not be put in your medical records. This makes this information inaccessible (unable to obtain). In order to protect your privacy, information about your child's participation and the results of these tests will be stored in a computer that is password protected and is not connected to the Internet. Genetic information from this research will be stored in separate files and with the highest level of security and identified only by an assigned number, not by name, and will not be linked with the rest of your child's medical record.

5. **You may reasonably expect the following benefits:**

**To your child:** If your child is found not to have JLNS, it would be reassuring to know that he or she does not have a potentially life-threatening disease. If your child has JLNS, early detection of JLNS by the study procedures can lead to timely treatment to prevent sudden death due to irregular heart beats. The genetic testing for LQTS may also help to understand if other members in your family might be at risk for LQTS so that appropriate medical referrals can be made. The insurance companies may not pay for the genetic tests however; genetic testing for your child done as part of this study will be free of charge to you or your insurance.

**To humanity:** This research study may lead to a better understanding of JLNS which can provide important insight for future treatments and research. Fortunately, effective treatments are available, and early diagnosis and treatment of JLNS can prevent sudden death and reduce the chance of brain damage related with cardiac events.

From a public health standpoint, this research study will provide important information about how state hearing screening programs should be structured, and how infants diagnosed with hearing problems should be evaluated and followed. This study will see if routine cardiac screening of all infants with hearing loss has the potential to save lives.

These benefits may not happen and unexpected side effects may also develop.

6. **If you choose not to allow your child to take part in this research, the following alternative procedures might help your child:**

The alternative to taking part in this study is to not take part in it. This study is not for treatment of a medical condition or illness. Your child will continue to receive the care he/she would normally receive regardless of whether your child is part of this study or not.

7. The results of this research may be published to inform other physicians and scientists. Your child's laboratory tests and photographs, if any, may be published. Your child's name or your child's records will not be given out without your consent, unless required by law. Your child's records may also be reviewed and/or photocopied by the Institutional Review Board (IRB) or its staff and the sponsor of this study.  
You will be told if the researcher has any current personal interest, such as any financial interest, related to performing the proposed research.

8. A committee of medical and non-medical people (IRB) will regularly review and approve this research for scientific and ethical merit. You will be told of any new information that may affect your desire to continue your child's participation in this research. Your child may leave this research at any time. If you decide to withdraw your child from this study, it will not affect your child's future medical care. Your questions will be answered at any time.

9. If your child is injured because of this research, emergency medical care will be available. The care will not necessarily be free of charge. Financial compensation for any injury from this research is not available. If your child is injured because of this research, you should first try to contact the principal investigator, who is listed below. If you cannot reach the investigator, you may call the Harbor-UCLA hospital emergency department (pediatrics, 310-222-2317). You can also call the Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center Compliance Office, 310-222-3624, for further information on the availability of medical treatment or compensation, your child's rights as a research subject or if you have questions about the research study.

10. Has your child taken part in any research studies in the last three months?  YES  NO. If "YES", please describe:

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11. Your child's participation in this study is entirely voluntary. Refusal to take part in this study will involve no penalty or loss of benefits to which your child is otherwise entitled. Your child may stop taking part in this study at any time without penalty or loss of benefits to which your child is otherwise entitled. You have fully reviewed the contents of this consent form and had them described to you. You have been given a copy of this consent form and the Human Subject's Bill of Rights.

a) Reason subject is unable to sign: \_\_\_\_\_

b) \_\_\_\_\_ (Date)

\_\_\_\_\_  
(Relationship and Basis of Authorization to Give Consent)

\_\_\_\_\_  
(Witness to Authorized Person's Signature) (Date)



**For the Investigator or Designee:**

12. I certify that I have reviewed the contents of this form with the person signing above, who, in my opinion, understood the explanation. I have explained the known side effects and benefits of the research.

\_\_\_\_\_  
Principal Investigator (or Authorized Representative) (Telephone Number) (Date)

13. I certify that I am the principal investigator and am responsible for this study, for ensuring that the subject is fully informed in accordance with applicable regulations, and for advising the Human Subjects Committee of any adverse reactions that develop from the study.

\_\_\_\_\_  
(Principal Investigator)

\_\_\_\_\_  
(Date)

Principal Investigator: Ruey-Kang Chang, M.D., MPH  
Telephone Number: 310-222-1796