## Official Title:

**Pharmacokinetics and Pharmacodynamics of Digoxin in Infants with Single Ventricle Heart Disease**

## NCT:

NCT06613477

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22-Oct-2024

Duke University Health System

# Consent to Participate in a Research Study
# MINOR

**Pharmacokinetics and Pharmacodynamics of Digoxin in Infants with Single Ventricle Heart Disease**

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CONCISE SUMMARY

This is a research study to learn more about how the medication digoxin, which is routinely prescribed to infants and children with heart disease in pediatric cardiac intensive care units is processed by their bodies and how it may help their cardiac function.

If you enroll your child in this study, we will collect blood or will collect blood samples when they are already having bloodwork checked as part of their regular care ("opportunistic"). If we are unable to use clinical blood samples, we will collect no more than two research only samples per week We will also collect information from your medical records.

Being part of this study will not change your child's treatment plan or medications. You and your health care provider make decisions about your child's treatment.

The risks of this study include loss of confidentiality and risks associated with having your blood drawn. The study team will make every effort to minimize these risks.

The study is being funded by the National Institutes of Health (NIH), specifically the National Institute of Child Health and Human Development (NICHD).

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

## WHAT ARE SOME GENERAL THINGS TO KNOW ABOUT RESEARCH STUDIES?

You are being asked to take part in this research study because your child has a diagnosis of single ventricle heart disease and is or will be a patient in an intensive care unit after their stage 1 cardiac surgery (for example a Norwood procedure or a pulmonary artery band).

Research studies are voluntary and include only people who choose to take part. Please read this consent form carefully and take your time making your decision. As your study doctor or study staff discusses this consent form with you, please ask them to explain any words or information that you do not clearly understand. We encourage you to talk with your family and friends before you decide to take part in this research study. The nature of the study, risks, inconveniences, discomforts, and other important information about the study are listed below. Please tell the study doctor or study staff if you are taking part in another research study.

## WHO WILL BE MY DOCTOR ON THIS STUDY?

Dr. Elizabeth Thompson will conduct the study and it is funded by a grant from the National Institutes of Health (NIH) to Duke University. If you decide to participate, Dr. Elizabeth Thompson will be in charge



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of this study and may be in contact with your child's regular health care provider throughout the time that you are in the study and afterwards, if needed.

**WHY IS THIS STUDY BEING DONE?**
The purpose of this study is to learn more about how the medication digoxin is processed by an infant's body and how it may help their cardiac function. This is important because we currently do not have enough information to know if the prescribed doses are safe or effective in infants with single ventricle heart disease. While digoxin is approved by the FDA for use in infants/children with heart failure, it is not specifically approved for infants with single ventricle heart disease. This research study will collect information about how digoxin is processed in infants and will help guide how much and how often we should give the drug to infants.

**HOW MANY PEOPLE WILL TAKE PART IN THIS STUDY?**
Approximately 20 infants will take part in this study at Duke.

**WHAT IS INVOLVED IN THE STUDY?**
If you agree to be in this study, you will be asked to sign and date this consent form. Your child will be in this study for up to 180 days from the date of consent. Because participation is voluntary, you can choose to withdraw your child from the study at any time without penalty or loss of benefits to which you are entitled. Your child will continue to get care from your health care provider and/or this hospital or clinic.

**Pharmacokinetic (PK) and Pharmacodynamic (PD) Sample Collection**
Pharmacokinetic (PK) blood tests are used to measure the amount of drug in body fluids (such as blood, urine, or saliva). Pharmacodynamic (PD) blood tests are used to measure an effect of the drug on the body. The PK and PD information gained from this study will help researchers better understand how digoxin is processed in the bodies of infants and how it may affect their cardiac function. All study participants will have blood samples collected to measure the level of digoxin in their blood as well as the level of a naturally occurring proteins, N-terminal pro-brain natriuretic peptide (NT-proBNP) and Midregional pro-atrial natriuretic peptide (MR-proANP). Digoxin blood level will help us understand how much of the digoxin infants are receiving makes it into their blood. Blood level of NT-proBNP is an indicator of how well their heart works while receiving digoxin. (MR-proANP) is an established biomarker for heart failure, based on its key role in regulating evenness of water balance and blood pressure.

Blood samples may be collected from a heel, finger, hand, or arm stick, or from a line that is already present and used to draw blood. To reduce the number of blood draws or "sticks", we will make every effort to collect study specific blood samples at the same time as your child's routine blood draws; however, this may not always be possible. We will also make every effort to collect



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leftover blood samples when possible. These leftover blood samples would be obtained from routine labwork that has already been collected per standard of care. We will collect up to 12 blood samples from you during the 180 days of participation , but no more than two research only samples in any given week or 3 mL/kg in an 8-week period..

For infants (less than 12 months of age) and neonates (less than 30 days of age), each blood sample will be about $1/10^{th}$ of a teaspoon. The total volume of blood collected over the 180 days of your study participation will be approximately 1.5 teaspoons.

All samples collected for this study will be given a unique code number and will not be labeled with your name or initials, or any other information that could directly identify you. Redacted clinical study reports (CSRs) and de-identified datasets will be submitted to the **NICHD Data and Specimen Hub** (DASH) repository (https://dash.nichd.nih.gov/).

In order to participate in this study, you must agree to have all leftover biological samples shipped to a biorepository (NIH storage facility) designated by the National Institute of Child Health and Human Development (NICHD). Only de-identified **biospecimens, from consented participants**, will be provided for future use in other research. Biospecimens submitted to NIH storage facilities must be labeled only with a unique code with no personally identifiable information. Biospecimens will only be made available to other researchers if the NICHD Data and Specimen Hub (DASH) Data Access Committee approves a request as scientifically and ethically appropriate.

**HOW LONG WILL I BE IN THIS STUDY?**
Your child will be in this study for up to 180 days from the date of consent. You can choose to stop participating at any time without penalty or loss of any benefits to which you are entitled. However, if you decide to stop participating in the study, we encourage you to talk to your child's health care provider first.

If you do not sign this consent form, you will continue to receive care, but not as a part of this study.

**WHAT ARE THE RISKS OF THE STUDY?**
Please note: You are not receiving any medicine as part of this study but may be asked to be in this study because you are already receiving digoxin as part of routine medical care or treatment. Your health care provider will review with you any side effects of the digoxin prescribed to your child.

The potential risks as a result of your participation in this study are outlined below.

**Risks of Drawing Blood:**



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Risks associated with drawing blood include momentary discomfort and/or bruising. Infection, excess bleeding, clotting, or fainting are also possible, although unlikely.

**Potential Risk of Loss of Confidentiality:**

There is the potential risk of loss of confidentiality. Every effort will be made to keep your information confidential; however, this cannot be guaranteed.

**Other Risks:**

We will try to collect blood samples when your health care providers are collecting them for standard medical care and minimize research only collection. We will not collect any additional blood if the clinical or research team determines at that time that this could be harmful to you.

You should discuss these risks with the study doctor and your regular health care provider if you choose.

**ARE THERE BENEFITS TO TAKING PART IN THE STUDY?**

If you agree to take part in this study, there may be no direct medical benefit to you or your child. We hope that in the future the information learned from this study will benefit other children.

**WILL MY INFORMATION BE KEPT CONFIDENTIAL?**

Participation in research involves some loss of privacy. We will do our best to make sure that information about you is kept confidential, but we cannot guarantee total confidentiality. Your personal information may be viewed by individuals involved in this research and may be seen by people including those collaborating, funding, and regulating the study. We will share only the minimum necessary information in order to conduct the research. Your personal information may also be given out if required by law.

We will collect certain tests, x-rays, and/or procedures performed per standard medical care from your medical record.

The Department of Health and Human Services (HHS) has issued a Certificate of Confidentiality to further protect your privacy. With this Certificate, the investigators may not disclose research information that may identify you in any Federal, State, or local civil, criminal, administrative, legislative, or other proceedings, unless you have consented for this use. Research information protected by this Certificate cannot be disclosed to anyone else who is not connected with the research unless:



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1) there is a law that requires disclosure (such as to report child abuse or communicable diseases but not for legal proceedings);
2) you have consented to the disclosure, including for your medical treatment; or
3) the research information is used for other scientific research, as allowed by federal regulations protecting research subjects.

Disclosure is required, however, for audit or program evaluation requested by the agency that is funding this project or for information that is required by the FDA.

You should understand that a Confidentiality Certificate does not prevent you or a member of your family from voluntarily releasing information about yourself or your involvement in this research. If you want your research information released to an insurer, medical care provider, or any other person not connected with the research, you must provide consent to allow the researchers to release it. This means that you and your family must also actively protect your own privacy.

Finally, you should understand that the investigator is not prevented from taking steps, including reporting to authorities, to prevent serious harm to yourself or others.

The study results will be retained in your research record for at least six years after the study is completed or until your child reaches the age of 21, whichever is longer. At that time either the research information not already in your medical record may be destroyed or information identifying you will be removed from such study results at Duke. Any research information in your medical record will be kept indefinitely.

While the information and data resulting from this study may be presented at scientific meetings or published in a scientific journal, your child's name or other personal information will not be revealed.

If this information is disclosed to outside reviewers for audit purposes, it may be further disclosed by them and may not be covered by federal privacy regulations.

Some people or groups who receive your child's health information might not have to follow the same privacy rules. Once your information is shared outside of Duke, we cannot guarantee that it will remain private. If you decide to share private information with anyone not involved in the study, the federal law designed to protect your health information privacy may no longer apply to the information you have shared. Other laws may or may not protect sharing of private health information.

## WHAT ARE THE COSTS TO YOU?

There will be no additional costs to you as a result of being in this study. Any study procedures or study tests will be provided to you free of charge. However, regular medical care for your condition (care you



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will receive whether or not you participate in this study including the medication prescribed by your health care provider) will be charged to you or your insurance company.

**WHAT ABOUT COMPENSATION?**
You will not receive any monetary compensation for your participation in this study.

**WHAT ABOUT RESEARCH RELATED INJURIES?**
Immediate necessary medical care is available at Duke University Health System in the event that you are injured as a result of your participation in this research study. However, there is no commitment by Dr. Elizabeth Thompson, the NIH, Duke University, or Duke University Health System, Inc., to provide monetary compensation or free medical care to you in the event of a study-related injury.

For questions about the study or research-related injury, contact Dr. Elizabeth Thompson via phone at 919-970-9677during regular business hours, after hours, on weekends, and holidays.

**WHAT ABOUT MY RIGHTS TO DECLINE PARTICIPATION OR WITHDRAW FROM THE STUDY?**
You may choose not to be in the study, or, if you agree to be in the study, you may withdraw from the study at any time. If you withdraw from the study, no new data about you will be collected for study purposes other than data needed to keep track of your withdrawal.

Your decision not to participate or to withdraw from the study will not involve any penalty or loss of benefits to which you are entitled and will not affect your access to health care at Duke.

If you do decide to withdraw, we ask that you contact Dr. Elizabeth Thompson in writing and let her know that you are withdrawing from the study. Her mailing address is 2301 Erwin Rd., Suite 5260Y, Durham, NC 27710.

We will tell you about new information that may affect your health, welfare, or willingness to stay in this study.

Your health care provider may decide to take you off this study if your study health care provider determines that it is no longer in your best interest to continue.

Your samples and/or data may be stored and shared for future research without additional informed consent if identifiable private information, such as your name and medical record number, are removed. If your identifying information is removed from your samples or data, we will no longer be able to identify and destroy them.

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The use of your data and samples may result in commercial profit. You will not be compensated for the use of your data and samples other than what is described in this consent form.

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

**WHOM DO I CALL IF I HAVE QUESTIONS OR PROBLEMS?**
For questions about the study or a research-related injury, or if you have problems, concerns, questions or suggestions about the research, contact Dr. Elizabeth Thompson via 919-970-9677.

For questions about your rights as a research participant, or to discuss problems, concerns or suggestions related to the research, or to obtain information or offer input about the research, contact the Duke University Health System Institutional Review Board (IRB) Office at (919) 668-5111.

**Re-contact for future research**

Likewise, you may allow us to re-contact you about future research in which you may be interested. Your initials do not indicate you will participate; it only indicates that you may be contacted. These future studies will request your consent and consent to participate at that time.

_____**YES**, I agree to be re-contacted for future research.

_____**NO**, I DO NOT agree to be re-contacted for future research.

Please initial: _____



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**STATEMENT OF CONSENT**

"The purpose of this study, procedures to be followed, risks and benefits have been explained to me. I have been allowed to ask questions, and my questions have been answered to my satisfaction. I have been told whom to contact if I have questions, to discuss problems, concerns, or suggestions related to the research, or to obtain information or offer input about the research. I have read this consent form and agree for my child to be in this study, with the understanding that I may withdraw my child from study participation at any time. I have been told that I will be given a signed and dated copy of this consent form."

| | | |
|---|---|---|
| Signature of Parent/Legal Guardian (for subjects ages 0-17) | Date | Time |
| Printed Name of Parent/Legal Guardian (for subjects ages 0-17) | Date | Time |
| Signature of Person Obtaining Consent | Date | Time |
| Printed Name of Person Obtaining Consent | Date | Time |



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