Early Check
Expanded health screening for your baby

This permission form is from the Early Check website. Mothers must give permission for their baby to take part by going to portal.earlycheck.org to learn about the study and sign up.

COPY of Parental Permission for Early Check Screening

Welcome to Early Check!

Here are some quick facts about Early Check.

Early Check is a research study for babies to get additional newborn screening tests. The goal is to find serious health conditions in babies so they can get help sooner. It is up to parents to decide whether to sign up their baby for Early Check.

- The screening tests are free.
- No appointments are needed for the Early Check screening tests.
- No new blood sample is needed. A blood sample is taken from all babies using a heel prick for standard newborn screening. Early Check uses the same sample to test for more conditions.

What does Early Check Screen For?

Early Check offers screening for around 200 serious rare health conditions and also checks the risk for one faily common condition.

To help you decide, we put these screening tests into three groups:

Group 1

Rare conditions that are *treatable* meaning that early treatment can prevent the most serious symptoms.

Here's a list of genes and conditions included in Group 1.

Optional Group 2

Rare conditions that have *potential treatments* meaning that treatments may not be able to prevent the most serious symptoms or that new treatments are still being studied.

Here's a list of genes and conditions included in Group 2.

Optional Group 3

Risk for Type 1 Diabetes, a common childhood disease that is *treatable*.

(Note: type 1 diabetes is not the same as type 2 diabetes, which is more common in adults.)

All babies who are signed up will be screened for Group 1 conditions. Parents can choose to add Group 2 and Group 3 if they wish. Some parents want these extra results, and some do not.

Parents who sign up learn more about their babies. They also help researchers and doctors understand the best ways to find serious health conditions in babies.

How do I sign up?

Parents can sign up online (at portal.earlycheck.org) before their baby is 4 weeks (31 days) old.

What is Early Check?

Online video script:

Congratulations on your baby! You can sign up your baby for Early Check to learn more about your baby's health. Early Check is a research study to check babies soon after birth for serious health conditions. This is a special opportunity for babies born in North Carolina.

What is Early Check? *The Early Check screening tests are free, and no appointments are needed. Early Check screens for hundreds of health conditions and parents choose the groups of health conditions they want checked in their baby.*

Why join Early Check? *Choosing Early Check gives parents information about the health of their baby. It allows parents to know if their newborn has specific health conditions or has a higher chance of getting health conditions as they get older. Parents who sign up for Early Check learn early about these conditions, often before symptoms start. Knowing early may help babies and their families. Doctors and scientists can learn more about these health conditions and help babies sooner. Parents join by giving permission for their babies to enroll in Early Check by visiting portal.earlycheck.org.*

Key information about Early Check

- Early Check uses screening tests, including a test called DNA sequencing to check the genes for health conditions in babies.
- If your baby doesn't have enough sample left after newborn screening to test or the quality of the sample is poor, Early Check will not be able to do the screening. Early Check will notify you if this happens.
- Most babies with these conditions do not have a family history of the condition, even though the conditions tested are genetic and can run in families,
- Most babies get a normal result. For most parents, once you receive your baby's normal results, your participation in Early Check is over.
- Only a small number of babies will have a result that is not normal. Babies who have these conditions may not have any signs at birth. Symptoms can start later and can be mild or serious.

- For many conditions, early diagnosis and treatment before symptoms start makes a big difference for a baby's health and gives them a better start to life.
- If Early Check finds a serious health condition in a baby, the Early Check team will connect the parents to more information and help them find doctors and support for their child.

Joining Early Check is your choice

- As a parent, taking part in Early Check is up to you. If parents want Early Check screening for their babies, they must sign up on this website.
- You can choose extra groups of health conditions to be screened for your baby.
- Babies in North Carolina have standard newborn screening, even if they don't sign up for Early Check.

Find out here if your baby can join Early Check.

If you are a mother/birthing parent [parent who carried and delivered the baby], you can sign up your baby for Early Check when you had a baby less than 1 month old (31 days) ago.

- Mothers/the birthing parent are usually the ones to sign up. That's because our research team has to connect the sign up to the baby's blood sample using the mother's name. Even though the mother has to give permission, we ask that both parents decide, if possible.
- If you have custody of a baby and you are not the birth mother, that's OK—please contact our research team and we can help you sign up. If you are the parent or guardian of a newborn but are not the mother or birthing parent, click here to find out how to join.
- Mothers/birthing parents can sign up twins, triplets, or any number of multiples for Early Check. You only need to sign up one time for each pregnancy, and each one of your babies will have the same Early Check screening.

If I am not the birthing mother, can I sign up for Early Check?

- Early Check identifies a newborn's blood sample for screening using the birth mother's information.
- If you are the legal guardian and the birth mother does not or will not have custody of the baby, contact us so we can help you sign up.

Parents must have a valid email address and agree to receiving emails from the study in order to sign up for Early Check. Email is the primary way in which Early Check communicates with parents.

Mothers complete a tool on portal.earlycheck.org to answer questions. This will help them figure out if their baby can join.

Important Things to Consider

Is Early Check is the right fit for your family?

- Some parents want to know right away, before most symptoms start, if their baby has a serious health condition. Knowing early may allow earlier and better treatment.
- Other parents may prefer to wait and only test if their baby has symptoms of a health condition.

Here are some important things to consider:

Early Check is a research study.

- If you sign up your baby for Early Check, you are joining a research study. The goal of Early Check is to learn about acceptable ways to find serious health conditions in babies so they can get help sooner.
- Because Early Check is a research study, the screening results are not automatically placed in your child's medical record.
- You can withdraw at any time. If you'd like to withdraw, contact us at any time. If the baby's Early Check screening test has already been done, we'll still contact you if the screening test is not normal.
- Early Check has the right to withdraw participants if needed before the screening tests have been run. If this happens, parents will be notified by email.

Early Check testing is free.

- Early Check is free. Early Check will not charge you or your insurance plan for Early Check screening.
- If your baby gets a result from a screening test that is not normal, Early Check will confirm the result for free.

What costs are covered by Early Check

Costs covered by Early Check include:

- Early Check screening tests,
- help in understanding what results mean,
- an additional test for any baby whose screening test is not normal to confirm the first test.

If the additional test confirms the health problem, Early Check will provide for free:

- genetic counseling and education about the health problem,
- an assessment of the baby's development, and
- help finding doctors and support services.

Costs not covered by Early Check include:

- Early Check will pay for some additional tests, and then may recommend that the baby's doctor or specialist runs other tests that are not covered by the study.
- Early Check does not pay for doctor and specialist office visits or treatments for the baby.

Screening tests are not perfect.

- Early Check screening will not find all health conditions in all babies.

- If Early Check finds a potential health condition in a baby, follow-up testing is done to learn more.
- All babies are different. For babies with the health conditions screened through Early Check, the study team and doctors will not know exactly when their symptoms will start and how severe the symptoms will be.

Early Check is not a substitute for standard newborn screening.

- Early Check is not the same as standard North Carolina newborn screening. Learn more about North Carolina newborn screening below.
- If you choose not to join Early Check, your baby will still have standard North Carolina newborn screening and follow up.
- It would be very rare, but it is possible that a baby could have a health problem found on standard newborn screening and also have an Early Check screening test that was not normal. If this ever happens, the Early Check team will tell the newborn screening professionals and doctors caring for the baby to make sure the baby has coordinated care.
- Early Check uses DNA sequencing to test for many of the conditions that are also tested by standard newborn screening. Because Early Check and standard newborn screening test for these conditions in different ways, it's possible that the results will not match. The Early Check team may ask you to share your child's standard newborn screening results for these conditions with the study team. Finding and explaining those mismatches is one of the research goals. The Early Check team will explain any mismatches to the family.

Differences between standard newborn screening and Early Check

This table shows the differences between standard North Carolina newborn screening and Early Check.

	Early Check	Standard newborn screening
Parents must give permission for their baby to be screened	Yes	No
There are treatments for babies with the health conditions, which can greatly improve their symptoms	Yes, but not for all*	Yes
Type of program	Research	Public Health
Who notifies parents about the results	Study team	Baby's doctor

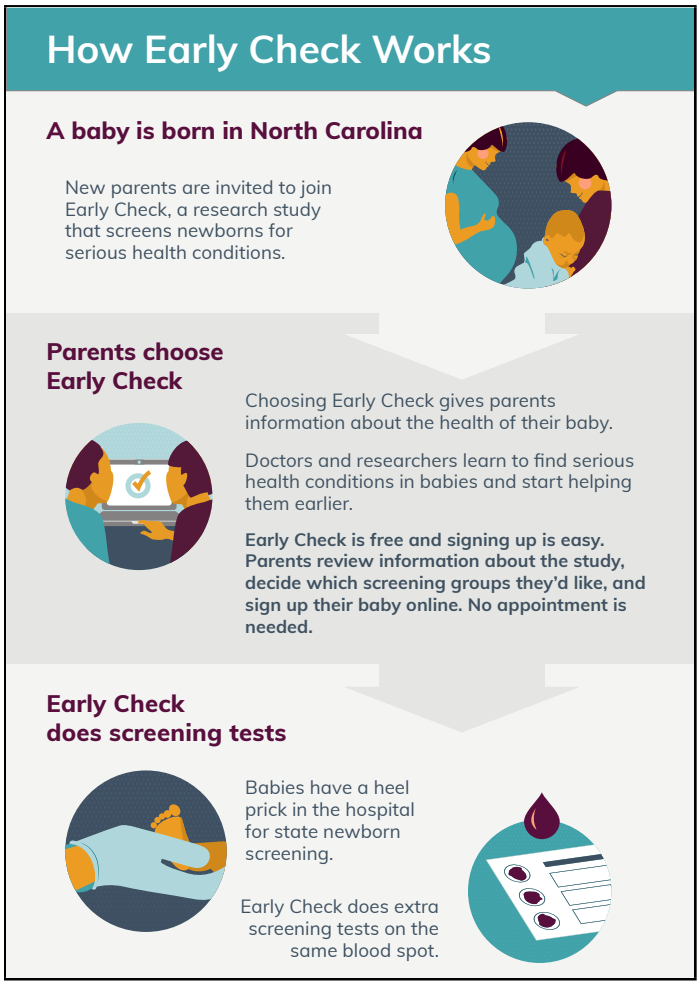
* For most conditions there are treatments that help For some conditions, researchers are looking for better treatments.

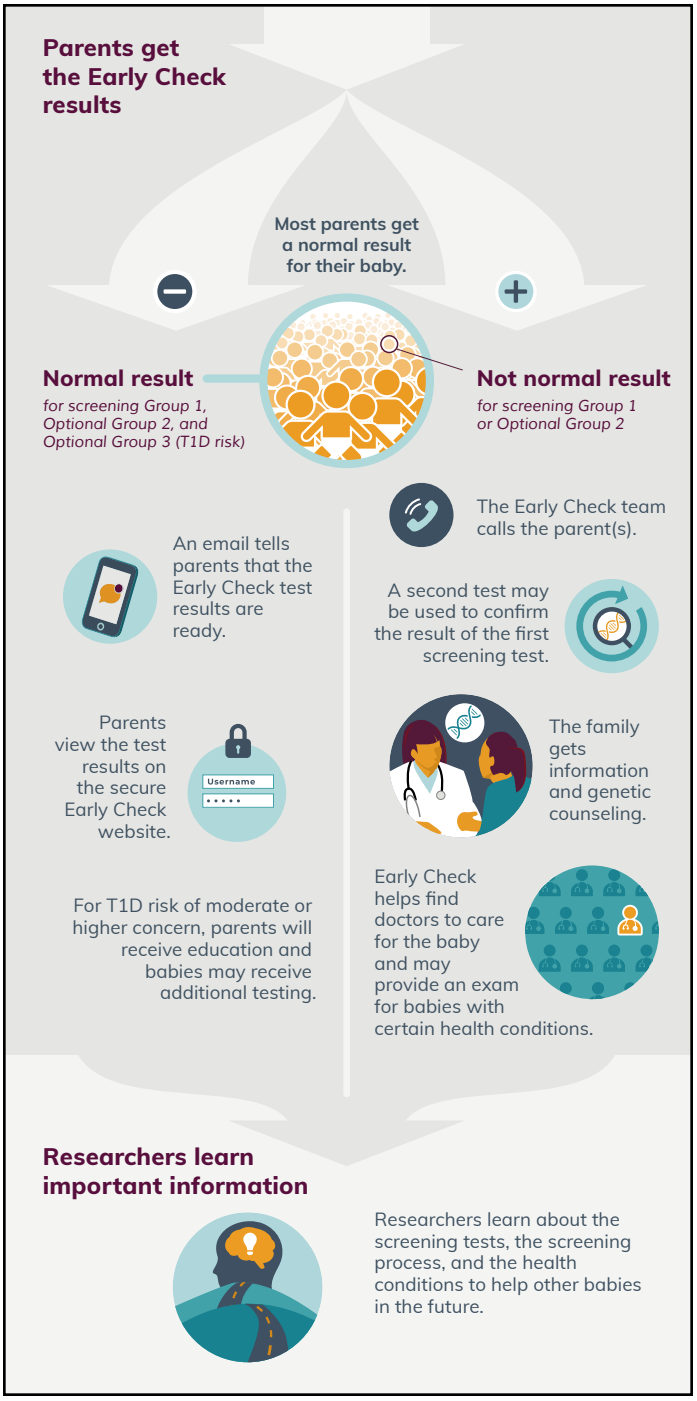
Learn more about North Carolina newborn screening

- North Carolina standard newborn screening is a free program.
- In the hospital or birthing center, a nurse or other healthcare professional will prick the baby's heel with a small needle to collect a few drops of blood. The hospital sends the drops of blood to the North Carolina State Laboratory of Public Health (NCSLPH) in Raleigh for testing. Basic information about the baby, such as date of birth, sex, and birth weight, is also sent.
- This is the same blood sample that will be used for Early Check screening tests. Early Check also uses this basic information about the baby to make sure the screening result is as accurate as possible.
- You can learn more about standard newborn screening in North Carolina here: https://slph.dph.ncdhhs.gov/newborn/default.asp

How does Early Check work?

Here's an overview of how Early Check screening is done and how parents get the results.





What does Early Check screen for?

Early Check offers screening for hundreds of serious rare health conditions and also checks the risk for type 1 diabetes.

Parents can choose which types of health conditions they want screened for their baby. To help you decide, we put these screening tests into three groups.

Here are brief descriptions of the Early Check screening groups:

Group 1 – Treatable Conditions

- Early Check will check your baby's DNA for around 200 rare genetic conditions that can be managed with early treatment.
- These conditions usually cause babies or children to have serious symptoms or die if not treated early.
- All babies who are signed up for Early Check will get tested for Group 1.

What are some examples of conditions in this group?

Examples include some types of childhood cancers, like retinoblastoma; genetic conditions that affect heart rhythm, like Jervell and Lange-Nielsen syndrome; neonatal diabetes; or genetic forms of bleeding disorders, like hemophilia; and many more.

Why is early diagnosis important?

Early diagnosis and treatment prevents or improves most serious symptoms resulting in better health.

Group 2 Optional – Conditions with Potential Treatments

- Early Check will check your baby's DNA for a smaller group of rare genetic conditions that currently have less effective treatments.
- These conditions usually cause babies or children to have serious symptoms that may not be prevented with existing treatments. For some, research studies to improve care for children with these conditions are happening now.

What are some examples of conditions in this group?

Examples include some types of intellectual and developmental disability and some muscle disorders, like Duchenne muscular dystrophy, and many more.

Why is early diagnosis helpful?

Early diagnosis, medicines, and special care may help to give children with these conditions the best possible start and may allow children to take part in studies that could lead to better treatments.

Group 3 Optional – Risk for Type 1 Diabetes (T1D)

- Early Check will check your baby's DNA to learn the genetic risk for type 1 diabetes, a fairly common and treatable health condition.
- T1D is the most common form of diabetes in children. Babies are not born with T1D, but it can show up later in childhood. Testing can provide information about your child's risk for T1D.
- Most children with T1D do not have a close family member with T1D.

- Type 1 diabetes (T1D) causes children to have serious symptoms or die if not treated.

Why is this information important?

Knowing if your baby has a higher risk for T1D helps parents know to watch for signs of the condition. This could lead to earlier diagnosis, treatment, and better health for a child with T1D.

Which screening groups do you want to read more about?

All babies signed up for Early Check get testing for the Treatable Conditions (Group 1).

Conditions with Potential Treatments (Group 2) and ***Risk for Type 1 Diabetes (Group 3)*** are optional screening groups.

You can un-select the optional groups below to read if you do not want to learn more about screening for these health conditions. At the end of this website, you will only be able sign up your baby for the screening groups you read about.

- [x] 1 – Treatable Conditions
- [x] 2 – Conditions with Potential Treatment Group (optional)
- [x] 3 – Risk for Type 1 Diabetes Group (optional)

Why choose screening for this group?

Treatable Conditions

Early diagnosis and early treatment can reduce or prevent symptoms.

Knowing early may save a child's life.

Here's an example of a treatable health condition:

Retinoblastoma is a type of life-threatening eye cancer. Babies with this health problem usually develop eye tumors within the first few years of life. Early diagnosis allows doctors to watch for tiny tumors. Early treatment is available that helps to preserve vision and save a baby's life.

Visit portal.earlycheck.org to see the list of conditions screened by Early Check.

Conditions with Potential Treatments [optional content appears if selected by parent]

Some parents want to know as early as possible if their baby has one of these conditions with potential treatments. Knowing early may:

- allow them to join research studies looking for better medicines or therapies,
- help babies get special care earlier, and
- give parents important information about their baby and help them plan their family.

Here's an example of a health condition with potential treatment in this group:

Duchenne Muscular Dystrophy (DMD) is a rare health condition that usually affects boys. Over time, muscles that control movement, breathing, and heartbeat become weak in people with DMD. Right now, most people with DMD do not live beyond early adulthood. But treatments are getting better and people with DMD are living longer. Even though there is no cure yet, there are therapies and medication that help. There are also research studies involving young children that could lead to new treatments.

Visit portal.earlycheck.org to see the list of conditions screened by Early Check.

Risk for type 1 diabetes (T1D) [optional content appears if selected by parent]

Some parents want to know if their baby has a higher risk for getting T1D in the future.

Knowing the risk for T1D alerts parents and doctors to watch for early signs during childhood.

Early diagnosis and treatment protect a child's health and reduce life-threatening symptoms.

Here's more information about type 1 diabetes (T1D):

It's important to know that T1D is not the same as type 2 diabetes (T2D). T2D is more common in adults who are not able to use insulin, an important natural hormone, properly and can sometimes be managed with diet and exercise.

Children with T1D are not able to make insulin. Without insulin they can't get energy from food and their blood sugar gets too high. This childhood form of diabetes is an *autoimmune disease*. Autoimmune diseases happen when the body's immune system attacks healthy body tissue by mistake.

Early diagnosis and treatment protect a child's health and reduces life-threatening symptoms. Currently, many young children are not diagnosed with T1D until the symptoms are very severe and dangerous. Starting treatment when signs first appear can prevent the most serious symptoms. In some cases, a treatment used before symptoms start can make symptoms start years later than if the child did not have treatment.

What if someone in my family has type 1 diabetes?

If your baby has a close family member with T1D, their risk for getting T1D during their lifetime T1D may actually be higher than the risk reported by the Early Check screening test.

Regardless of whether you decide to participate in Early Check, you should tell your baby's doctor if a parent or close family member(s) has a condition that may be genetic. Early Check may not be the best choice to diagnose a condition that is already known to be in the family.

How does Early Check test for these conditions?

Online video script

How is Early Check screening done? *The Early Check screening tests are done on the newborn screening blood spot. That's the small amount of blood taken from a baby's heel shortly after birth in the hospital or birthing center. We use that same blood to do the Early Check screening. We will not need any more blood for the Early Check screening test.*

Most parents get the initial Early Check results by the time their baby is 3-4 months old.

What happens after the screening?

[Result is normal] *Most parents get a normal or reassuring result for their baby. When the results are ready, we send parents an email telling them to log in to this site to view all normal results and all risk for type 1 diabetes results.*

[Result is not normal] *The Early Check team calls the parent(s) if the screening test is not normal. Then we do a second test to double check.*

The Early Check team gives parents information, genetic counseling, and helps them find medical care for the baby. We connect parents with specialists and give them information about research studies looking for possible new treatments.

How does Early Check help?

Choosing Early Check gives parents information about the health of their baby. Identifying babies with rare health problems early on can help to give babies a better start.

Early Check uses DNA sequencing.

Most of the health conditions will be tested using a highly accurate test called DNA sequencing. This is spelling out and reading the baby's genetic information (DNA).

The DNA sequencing is done by a partner lab called Revitty Omics, Inc. (Revvity) that works with Early Check. Your baby's blood sample would be sent to this lab to do the screening.

What type of results will I get for my baby?

Remember the goal of this screening test is to find serious health conditions in babies so they can get help sooner. There are two possible results reported from this screening:

- Normal result
- Not normal result

Most parents get a normal result for their baby. The Early Check screening tests are not perfect and will not find all health conditions in all babies.

Parents will only find out the results for the health conditions in the screening groups they choose. Parents will not get additional results or genomic data. In rare cases, there can be results that are unexpected. If the study team believes the results may affect the health of the baby, parents will be told about them.

Learn more about how screening is done (for Treatable Conditions group and Conditions with Potential Treatment group)

The DNA sequencing test spells out almost all of the baby's genetic information. This is sometimes called **genome sequencing**. But the lab will only read the baby's genetic information for the health conditions in the screening groups you choose. That means a computer sifts through the baby's genetic information so the lab and the Early Check team will only know results for the health conditions screened for.

Risk for type 1 diabetes (T1D) [optional content appears if selected by parent]

- All babies are different. For babies with the health conditions screened through Early Check, the study team and doctors will not know exactly when their symptoms will start and how severe the symptoms will be.

What type of results will I get for my baby?

Remember, the goal of the screening is to estimate a baby's risk for getting T1D during their lifetime. This is reported as a risk range. One of these three risk ranges will be reported from this screening:

- Low Concern
- Moderate Concern
- Higher Concern

The Early Check screening for T1D **does not** give a yes or no answer about whether the baby will have T1D. This test cannot tell for sure if a baby will get T1D or at what age.

Learn more about how screening is done

The DNA sequencing to predict the risk for T1D is called a **genetic risk score**. The Early Check genetic risk score for T1D comes from the baby's genes, but none of these genes alone cause T1D.

Genetic risk scores are currently most accurate for people who are White. Babies of other ancestries are more likely to be missed by this test (receive a falsely reassuring result)This is because most studies so far have included fewer participants of other races. Studies like Early Check aim to enroll people of all racial and ethnic backgrounds so our results can help everyone.

Early Check screening results and what they mean

What if my baby has a normal result?

How do parents get results?

When the results are ready, parents get an email from Early Check (*support@earlycheck.org*) with a link to login and see the baby's results.

- Parents can choose to download a report to share with doctors.
- They can also contact the Early Check team with any questions via phone or email.

Later on, we will also ask you to share your thoughts and feelings about Early Check. This allows us to make continued improvements to Early Check. It will be your choice whether to do this.

What does a normal result mean?

A normal result means that it is **very unlikely** that your baby has one of the health conditions screened by Early Check.

Since this screening group has health conditions that are rare, most people get a normal result for their baby. More than 95% (95 out of 100) babies screened for health conditions in this group will have a normal test result.

Screening tests aren't perfect. The screening test may miss some babies with the health conditions. This screening result would be called a "false negative." It is important to talk to your baby's doctor about any concerns you may have about your baby's health and development.

Early Check results usually do not tell you whether your baby is a "carrier" of a genetic condition. However, in rare cases, parents will learn this information through Early Check. Carriers of genetic conditions usually have no signs or only very mild symptoms during their whole lives.

What if my baby has a result that is not normal?

How do parents get results?

The Early Check team calls the parents if the screening test is not normal.

What does it mean for my baby if the result isn't normal?

DNA sequencing for these conditions is accurate, but a screening test that is not normal needs a second DNA test to double check. This second test is free.

What happens next? A second DNA test

- Using a soft swab (like a Q-tip) provided by Early Check, parents collect a small sample from inside the baby's cheek.
- To better understand the baby's result, sometimes the same kind of sample is needed from the parents
- **These additional tests are free** through Early Check.

Screening tests aren't perfect.

- Rarely, the second DNA test result is **normal** after the first test was not normal. If this happens and the baby has no signs of the health condition, then the screening result may be called a "false positive."
- A "false positive" result is a result that is **not** confirmed the second DNA test.
- DNA sequencing used by Early Check is very accurate, but false positive results can happen

What does it usually mean if the second DNA tests are also not normal?

- When the second test is also not normal, then it is very likely your baby will develop symptoms of the health condition.
- Sometimes, Early Check will tell parents that a baby is a carrier of a genetic condition, but only if there's a chance this can seriously affect their health. Carriers of genetic conditions usually have no signs or only very mild symptoms during their whole lives.

What happens next?

- When the DNA result is confirmed, Early Check will give parents information, genetic counseling, help in finding special doctors and research studies looking for possible new treatments.
- For some health conditions, more testing is needed to confirm the diagnosis, watch for symptoms, or plan treatment. This might include testing for a marker in the baby's blood, an imaging test like ultrasound, or an exam done by a doctor in a clinic.
- If a baby needs urgent care, these additional tests will be done right away so that care can start sooner.
- Whether additional tests are needed and what type of test depends on the possible health condition.
- Early Check will also contact the baby's healthcare team to share results and information about treatment.
- Before a baby's first birthday, an Early Check child development specialist will check in with the family to see how the baby and parent(s) are doing and to complete a survey about the baby's development and the parents' experience with Early Check.

Every baby is different.

- For babies with the health conditions, Early Check and doctors will not know exactly when their symptoms will start and how severe the symptoms will be.
- Even with two DNA sequencing tests that are not normal, some babies may have only mild signs of the condition. Some will have symptoms later on, and others may never have signs of the condition at all.

Risk for type 1 diabetes (T1D) [optional content appears if selected by parent]

How do parents get results?

When the results in the moderate concern and higher concern ranges are ready, parents get an email from Early Check with a link to login and see the baby's results.

What if my baby has a result in the low concern range for type 1 diabetes?

For babies with a result in the low concern range, less than 2% will get type 1 diabetes (T1D) during their lifetime.

Most babies will have a 'Low Concern' score.

Genetic risk scores for T1D aren't perfect. Some babies with this result will still develop T1D during their lifetime.

What does a ''moderate concern" result mean for the screening group with T1D?

- 2%–5% of babies with a moderate concern result will get T1D during their lifetime.
- This screening test isn't perfect. Many babies with this result will never get T1D, but some will.
- Parents should watch for early signs of T1D.

What happens next?

- Parents will get information on the Early Check website to learn more about their baby's result and about T1D. Here, parents learn the signs and symptoms of T1D to watch for in their child as they grow.
- Some babies with a moderate concern may be offered the same additional testing as those with a higher concern result

What does a ''higher concern" for type 1 diabetes (T1D) mean for a baby?

- A higher concern result means that your baby's risk for getting T1D during their lifetime is much higher than usual. But most babies with this score still do not end up getting T1D.
- 5%–10% or more of babies with this result will develop T1D.
- Early Check recommends and provides additional testing for T1D.

What happens next? Additional testing

- If a baby's risk for type 1 diabetes is in the higher concern range, Early Check recommends a different type of blood test (called an autoantibody test) at 9 months of age. This test checks for very early signs of T1D that can't be seen by looking at a baby. **This test is also free.**
- If this additional test is not normal, it will be repeated when the baby is 12 months old. **This test is also free.**
- If an additional (autoantibody) test at 12 months of age is also not normal, the baby will have a visit with a doctor at UNC-Chapel Hill who specializes in caring for children with diabetes. **This appointment is free,** and there is no charge to insurance.
- Early Check will also contact the baby's healthcare team to share results of these tests and information about testing and treatment for T1D.

Regardless of the risk for type 1 diabetes result, an Early Check child development specialist may check in with the family before the baby's first birthday to see how the baby and parent(s) are doing and to complete a survey about the baby's development and the parents' experience with Early Check.

When does treatment start for these conditions?

When treatment starts depends on the condition.

Treatable Conditions

- Some of the conditions in this group will be treated as soon as a baby is diagnosed.
- For some, the plan is to watch for a serious symptom that can then be treated.

Conditions with Potential Treatments [optional content appears if selected by parent]

- Some of the conditions in this group will be treated as soon as a baby is diagnosed.
- For some, the plan is to watch for a serious symptom that can be treated.
- Unlike the conditions in Group 1 (treatable conditions), conditions with Potential Treatments don't all have proven treatments available yet. Treatments available now either may not prevent the most serious symptoms or may be new and have only been given to a small number of children, so we know less about how well they work.
- Children with one of these rare conditions usually have symptoms by the time they are 2 years old. Some of these conditions are likely to cause early death despite all available treatments.
- But early diagnosis and care may give children with these conditions a better start to life. And research studies (clinical trials) looking for better treatment are happening. Parents may be able to sign up their child.

Risk for type 1 diabetes (T1D) [optional content appears if selected by parent]

When treatment starts depends on when or if a baby is diagnosed with type 1 diabetes (T1D).

If the baby is diagnosed with T1D, the treatments include:

- Taking insulin
- Monitoring their blood sugar several times each day to keep it in a healthy range
- Carefully watching their diet and avoiding certain kinds of foods
- Regular checkups with a doctor who specializes in childhood diabetes

Benefits and Risks

It's OK to decide yes or no to Early Check. Early Check is a research study. All research has benefits and risks. You should make the best decision for your family.

How does Early Check help?

- Choosing Early Check gives parents information that may be important about the health of their baby.
- Early Check is a research study. Enrolling your baby helps researchers and health care providers understand the best ways to find serious health conditions in babies.
- If Early Check finds a serious health condition in a baby, the Early Check team will connect the parents to more information and help them find doctors and support for their child.
- For many conditions, early diagnosis and treatment prevents or improves the most serious symptoms resulting in improved health and a better start to life.

Online video script

Goals of Early Check

The goal of Early Check is to learn how to use new screening tests for health conditions that affect babies so that they can get the best start.

Early Check may diagnose infants with health conditions that have treatments but cannot yet be cured. Some parents want to know about the baby's health as soon as possible. Other parents want to wait and see how their baby develops. Parents should make the best choice for their families.

The main benefits to joining are:

- *Learning more about a baby's health*
- *Receiving early treatment can be life-saving, for some conditions*
- *Learning information that may be important to others in the family*
- *Helping scientists learn the best ways to identify health conditions in babies early*

The main risks to joining are:

- *For a baby whose screening test is not normal, parents may worry and feel uncertain about the baby's future*
- *Babies may also need additional testing not covered by Early Check.*
- *Parents may worry about the privacy of their or their baby's information*

We do our best to make these risks as small as possible.

Take your time and do what feels right. You can contact the Early Check team via phone or email to answer any questions you have. Parents can change their mind and withdraw from Early Check at any time. (But if the baby's Early Check screening test has already been done, we will still contact the mother/ birthing parent if the screening test is not normal.)

Privacy and Your Information

The Early Check team works hard to protect your information and your baby's information. We have many strong measures in place, but it is never possible to guarantee a system that is 100% secure.

How is my information protected?

Strong security tools

- We use security tools like secure networks, encryption, password management policies, and multi-factor authentication.
- Personal information (like your name, address, and birthdate) is stored in a separate area on a secure and private network. This area is held to an even higher security standard known as the Federal Information Processing Standard (FIPS).

Certificates of Confidentiality

- Early Check also has Certificates of Confidentiality, which means researchers cannot be forced to disclose information that may identify you, even by a court subpoena, unless you provide written consent.
- Researchers will use the Certificate to resist any demands for information that would identify you, except as explained below.
- 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.
- If an insurer, employer, or other person obtains your written consent to receive research information, then the researchers may not use the Certificate to withhold that information.

There are a few exceptions:

- If child abuse is suspected, researchers may voluntarily, without your consent, share information that would identify you as a participant.
- The certificate cannot be used to resist a demand for information from personnel of the U.S. Government that is used for auditing or evaluation of federally funded projects or for information that must be disclosed in order to meet the requirements of the federal Food and Drug Administration (FDA).

How is my sample stored?

- Personal information is removed from samples before sending them to partner laboratories for testing. Partner laboratories will not share these samples with anyone else.
- Samples will be destroyed at the end of the study.
- The original newborn dried blood spots (DBS) cards are stored at North Carolina Laboratory of Public Health. Early Check will get the cards and portion of the sample. Early Check will send the sample to the partner laboratory who will process the sample and perform the DNA sequencing. It is expected that the sample will be used up. Any leftover sample will be destroyed at or before the end of the study.

Will Early Check share my information?

- Parents' and babies' names and contact information are never sold to anyone. They are never given to anyone outside of the Early Check team unless you provide your permission to do so.
- Early Check may share information from the study with other researchers and partnering companies, but i**t will not include any personal information.** This means it cannot be traced back to you or your baby. Sharing this information may include presentations at conferences and publications in scientific journals and allows Early Check to help research all over the country.

DNA and Genetic Testing

Are there any risks to privacy or confidentiality?

- Because your genetic information is unique to you, there is a small chance that someone could trace it back to you. The risk of this happening is very small but may grow in the future as technology advances. Researchers will always have a duty to protect your privacy and to keep your information confidential.
- A federal law called the Genetic Information Nondiscrimination Act (GINA) generally makes it illegal for health insurance companies, group health plans, and most employers to discriminate against you based on your genetic information. GINA does not protect you against genetic discrimination by companies that sell life insurance, disability insurance, or long-term care insurance. GINA also does not protect you against discrimination based on an already-diagnosed genetic condition or disease.

Genetic Testing

- Your blood and tissue samples contain genes that are made of DNA unique to you. Early Check tests your baby's DNA for serious health conditions. Only the screening tests described here will be done on your baby's sample. No other tests will be done on your baby's DNA unless your doctor requests it.
- Your doctor may request further DNA testing based on a change in your child's health status. The Early Check research team will consider this request and will only test further if we agree with your doctor's request.

Sharing and Storing Genetic Information

- If you agree to take part in this study, Early Check may share de-identified genetic information with other researchers and partnering companies. De-identified means that the information cannot be traced back to you or your baby. This allows Early Check and our partnering companies to help research and provide better sequencing for people all over the country. We will not share anything that can connect de-identified information to you or your baby.
- Baby's data (individual data) will be stored for at least 5 years and no more than 10 years.
- The Early Check lab partner will store and backup genomic data (cram and vcf) on a HIPAA-compliant cloud-based platform.
- The blood sample will be processed and stored in a certified clinical laboratory according to the Clinical Laboratory Improvement Amendments (CLIA) regulatory guidelines. Leftover samples may be used for quality control and to try to improve future lab tests. It is possible that these uses could indirectly lead to commercial profit which participants would not share.

Early Check Lab Partners:

- **Revvity Omics, Inc. (Revvity):** Revvity is a genetic testing company and a leader in delivering improved health outcomes through genetic testing. In partnership with Early Check, Revitty will provide DNA sequencing, analysis, and interpretation of the results. Revitty does not provide the risk calculation for type 1 diabetes; this is calculated by Early Check.

Scientific Databases

- To do more powerful research, it is helpful for researchers to share information they get from studying human samples. 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.
- Researchers who have access to a scientific database may be able to see and use your de-identified information, along with information from many other people. Your name and other information that could directly identify you, like address or social security number, will never be placed into a scientific database.
- There are many types of scientific databases. Some are maintained by this institution. Some are maintained by the federal government or private companies.
- For example, the National Institutes of Health (NIH, an agency of the federal government) maintains a database called "dbGaP." A researcher who wants to study information in dbGaP must apply to the database. Different databases have different ways of reviewing such requests. Another database is called ClinVar. ClinVar is a freely accessible, public archive of reports of the relationships among human variation and phenotype evidence.

Let's review

It's our job to explain Early Check to you.

Let's review to see how we are doing.

Which is true about the Early Check screening test?

a. No extra blood sample is needed to do the Early Check DNA sequencing.

b. It may not find every single baby with the health conditions.

c. It will check for every kind of health condition in newborns.

d. If the screening result is not normal, the baby definitely has the health condition.

Answer

Item a. is true.

A blood sample is taken from all babies using a heel prick for standard newborn screening. Early Check uses that same blood sample to screen for health conditions in the screening groups chosen by parents. Early Check partners use a highly accurate test called DNA sequencing. This is spelling out and reading the baby's genetic information (DNA).

Item b. is true.

Screening tests are not perfect and may miss a small number of babies with the health conditions.

Item c. is false.

Early Check screening will only check for health conditions in the groups chosen by parents.

Item d. is false.

The screening tests are not perfect. For babies with a first result that is not normal, we will use additional testing to confirm the result or to look for early signs of the condition.

Which statements are true about the Early Check screening groups?

a. Early treatment can prevent or reduce the most serious symptoms of health conditions in the Treatable Conditions group.

b. Babies identified with one of the Conditions with Potential Treatments Group may be able to get care early or join a research study. But they may still experience the most serious symptoms of the condition.

c. Screening for Risk of Type 1 diabetes Group can tell parents if their baby has a higher risk for type 1 diabetes so that parents and doctors can watch for signs and start treatment early if needed.

d. All of the above are true.

Answer

Item a. is true.

Health conditions in the Treatable Conditions group include rare genetic conditions that have treatments already. Early diagnosis and treatment can prevent or improve the most serious symptoms of the health condition and may even save a baby's life.

Item b. is true.

These conditions usually cause babies or children to have serious symptoms that may not be prevented with existing treatments. For some conditions, research studies are happening now.

Item c. is true.

Parents who choose this screening group will learn if their baby is at a higher risk to have type 1 diabetes later. Watching for signs can help a child get diagnosed and treated early.

Which of the statements about Early Check are false?

a. Early Check is the exactly the same as the standard newborn screening that babies have shortly after birth.

b. It is up to parents to decide whether to sign up their baby for Early Check.

c. For babies with the health conditions, no one can predict exactly when their symptoms will start and how severe the symptoms will be.

d. All of the above are false.

Answers:

Item a. is false.

Early Check is **not** the same as newborn screening. Early Check is a research study for babies born in North Carolina. To take part, parents need to review the information on this site and complete the form at the end to give their permission. Standard newborn screening is a public health program and does not require a parent's permission.

Item b. is true.

Parents decide whether to sign up their baby for Early Check.

Item c is true.

Some babies may have only mild signs of the condition. Some will have symptoms until later on or may never have signs of the condition.

Are you ready to sign your baby up for Early Check?

Here are some questions you can ask yourself as you think about whether Early Check is right for you and your family.

❏ [Treatable conditions Group] Would I want to know if my newborn has one of the health conditions with proven treatments that prevent or reduce serious symptoms or even save their life?

❏ [Conditions with potential treatments Optional Group 2] Would I want to know if my baby has a health condition before symptoms start—even though right now treatments may not be able to prevent the most serious symptoms?

❏ [Risk of T1D Optional Group 3] Would I want to know if my baby has a higher risk for getting type 1 diabetes even though the Early Check test will not tell me for sure they will have it or not?

❏ Do I feel comfortable having the Early Check research study test my baby's DNA from their leftover newborn screening blood sample?

❏ If my baby has a screening test that is not normal, am I okay with more testing?

❏ Do I feel ready to learn my baby's screening results?

❏ Do I have the information I need to make the decision?

❏ Do I feel ready to sign up for the Early Check screening groups?

If you checked most of these questions, you may be ready to sign up your baby.

If you did not check most of these questions, you may need some time to think about it or Early Check may not be the right decision for you.

You can contact the Early Check team for any additional information you may need to decide.

Would you like to join Early Check?

Mothers must sign up on portal.earlycheck.org to give permission for their infant to participate.

I would like to sign up a child, but I am not the birthing mother/birthing parent

- In most cases the mother or birthing parent must sign up. Early Check cannot connect the father's/non-birthing parent's information to the newborn's blood spot for screening.
- If you are you the legal guardian or have custody of a child you want to sign up for Early Check but you are not the birthing mother, please contact Early Check at +1 (866) 881-2715 or support@earlycheck.org to ensure we have the information we need to screen your baby.

The Early Check study has been approved by the University of North Carolina at Chapel Hill Institutional Review Board (IRB). An IRB is a committee that reviews research to protect the rights and welfare of participants. If you have questions about your rights as a research participant, you may contact the IRB at (919) 966-3113.

This research study is funded by Breakthrough T1D (with support from Janssen Pharmaceuticals), The Leona M. and Harry B. Helmsley Charitable Trust, Sanofi, Travere Therapeutics, Orchard Therapeutics and Ionis. This means that the research team is being paid by the sponsors for doing the study. The researchers do not, however, have a direct financial interest with the sponsors or in the final results of the study. In addition, Jennifer Law, a co-investigator on this study, has received money from Sanofi US for work that is not part of this study. These activities may include consulting, service on advisory boards, giving speeches, or writing reports. If you would like more information, please contact Early Check at +1 (866) 881-2715 or support@earlycheck.org.

Have questions about Early Check?

Contact us by phone or email

- Email: support@earlycheck.org
- Phone (toll-free): 866-881-2715

Members of the Early Check team are available 9am–5pm EST Monday–Friday. A member of the Early Check team will respond within the next business day.

Early Check
Expanded health screening for your baby

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES
Division of Public Health
State Laboratory of Public Health

THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

RTI INTERNATIONAL