Sema4 Natalis Informed Consent for Children

This informed consent describes the benefits, risks, and limitations of undergoing DNA testing on your child for certain genetic conditions with Sema4 Natalis. **Your child's DNA will not be analyzed by Sema4 unless you confirm that you have read and understood the contents of this form.**

This is a voluntary test that you are choosing for your child. You may wish to seek additional, independent genetic counseling on your child's behalf prior to agreeing to this form. If you have any questions about your medical care, you should seek the advice of your physician or other qualified healthcare provider. Never disregard professional medical advice or delay seeking it.

What is this test?

This has two components, and tests whether your child is affected or at risk to be affected with one of the genetic conditions included on Natalis and, if ordered, will also test for genes that predict your child's drug response variability to certain medications.

The screening component of this test looks at your child's genetic material for evidence of disease-related changes in 193 different genes. These genes are for diseases that occur in infancy or early childhood and for which there is treatment or medical management that, when administered early in an infant or child's life, may significantly improve their clinical outcome. This test will only report back genetic changes that indicate a child is affected with the disease, but it will not report back whether your child is merely a "carrier" of the variation associated with a disease. The test will also not report changes that have not been classified as "pathogenic" or "likely pathogenic", which means that they are known to cause a disease, according to the laboratory standards and guidelines published by The American College of Genetics and Genomics.

If ordered, this test also looks at an additional ten genes that are implicated in drug response variability—referred to as "pharmacogenetic" or PGx genes—for a subset of 30 medications that may be prescribed during childhood. For these genes, we will only report those genetic changes that are clinically relevant and that have therapy recommendations affiliated with them. Please note that these genetic changes are much more common than the disease-causing changes included in the screening component of this test, and most people carry at least one genetic change in these ten pharmacogenetic genes.

A complete list of the genes and corresponding conditions screened for by the screening and the PGx components of the test may be found at sema4.com/Natalis/conditions. This test does not screen for any other genetic conditions, and Sema4 will not perform any other analysis on your child's sample without your consent.

Is genetic counseling included?

Board Eligible/Certified Genetic Counselors are available to support your physician in the event that there are any positive results. Genetic Counselors are available to explain any positive pharmacogenetic results to you directly.

Because our Genetic Counselors conduct focused sessions via telephone and/or video, it is strongly recommended that all positive disease-related results.be discussed in the setting of a formal evaluation by a clinical geneticist (or similar provider).

What are the possible benefits of this test?

Your child's screening results may help you identify a previously undiagnosed genetic disease that has a specific treatment or medical management plan that could improve clinical outcome in your child and aid in

reproductive planning for future pregnancies. Further, the pharmacogenetic component of this test may help guide your child's physician when selecting appropriate medications.

What are the limitations and risks of this test?

This test is designed to detect gene variants associated with only certain genetic diseases. It cannot detect every variant associated with each disease, nor does it look for all known genetic diseases that could affect your child. This test only provides information about the specific conditions and PGx genes tested.

Negative results do not guarantee that you or your children will be healthy. No single genetic test can detect all of the possible gene variants that could cause a disease. This test only reports changes (variants) that are pathogenic or likely pathogenic and will not report a variant that is of uncertain significance. This means that, even if your child tests negative, there is a chance that he or she may still develop one of the genetic conditions on this test. In addition, it is possible that your child may receive a positive result for a disease that he/she might not be significantly affected with due to incomplete penetrance. This is because in some disorders, not all individuals who carry genetic variants that have been shown to cause a particular disease will exhibit symptoms of that disease. Please contact your physician or inquire through the genetic counseling services, as this test is not meant to replace medical care from your own physician. It is recommended that you seek the advice of your physician or other appropriate healthcare professional with any questions you may have regarding your results.

Some biological factors, such as a history of bone marrow transplantation or recent blood transfusions, may limit the accuracy of results. As with all medical tests, there is a chance of a "false positive" or a "false negative" result. A false positive result means that a gene variant was detected, but it is not actually there. Similarly, a false negative result means the test did not identify a gene variant that you actually have.

Additionally, you understand that genetic testing may reveal sensitive information about your child's health, your own health, or that of your relatives. Test results may reveal incidental, unsought information, such as discovering an undiagnosed disorder, revealing cases of adoption, or demonstrating that a person is not the father or mother of this child.

De-identified research

Sema4 may de-identify and use my child's data and information to support medical and academic research relating to health, disease prevention, drug development, and other scientific purposes, and I will receive no compensation in connection with such research. Data and information are " de-identified" by removing any information that could be used to identify a specific person, such as a name, email address, or date of birth. Sema4 may also give the de-identified data and information to its research partners and may submit it to research databases for use in scientific and medical research, including scientific databases that are maintained by the federal government, such as a database kept by the National Institutes of Health ("NIH") (an agency of the federal government that funds research). Researchers have to apply to the NIH to see the information in the database.

If I prefer not to have any of my child's de-identified health information used in research consistent with this consent, I may initial here _____Initials_____ or request this by contacting Sema4, including by emailing privacy@sema4.com.

Permission to contact

I understand that Sema4 may wish to contact my child in the future, including for the following reasons: research purposes, the provision of general information about research findings, and/or the provision of information about the results of tests on my child's sample(s). I understand that I may notify Sema4 to opt out of such future contact, including by emailing privacy@sema4.com.

I understand that this testing may yield results that are of unknown clinical significance and that parental or other relative's specimens may also be tested to determine whether a specific finding was inherited. In addition, incidental findings that are not related to the primary diagnosis may be identified in me/my child. An error in the diagnosis may occur if the true biological relationships of the family members involved are not as I have stated and this test may detect non-paternity.

The results of my/my child's test will be explained to me by a genetic counselor or by my physician who will have the opportunity to discuss my results with a geneticist. I have had the opportunity to have all of my questions answered. If I am signing this form on behalf of a minor for whom I am the legal guardian, I am satisfied that I have received enough information to sign on his or her behalf.

I understand that this consent is being obtained in order to protect my right to have all of my questions answered before testing. I understand that the results of this testing will become part of my medical record and may only be disclosed to individuals who have legal access to this record or to individuals who I designate to receive this information.

Child's name	Date of Birth
Name and signature of legal guardian	Date

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