Patient Information
Patient Name:
Date of Birth:
Maternal Age at EDD:
Gestational Age:
Maternal Weight:
Collection Kit:
Reference ID:
Case File ID:

Test Information
Ordering Physician:
Clinic Information:

Additional Reports:
Report Date:
Samples Collected:
Samples Received:

natera™ | Panorama™ Next-generation NIPT

ABOUT THIS SCREEN: Panorama ™ is a screening test, not diagnostic. It evaluates genetic information in the maternal blood, which is a mixture of maternal and placental DNA, to determine the chance for specific chromosome abnormalities. The test does NOT tell with certainty if a fetus is affected, and only tests for the conditions ordered by the healthcare provider. A low risk result does not guarantee an unaffected fetus.

FINAL RESULTS SUMMARY

Result
HIGH RISK for Trisomy 21

Fetal Sex
Male

Fetal Fraction(s)
10.1%

This is a screening test only. Genetic counseling and diagnostic testing should be offered to further evaluate these findings.

Panorama analyzes DNA from the placenta. In some cases placental DNA can differ from that of the fetus; therefore, no irreversible decisions should be made based upon results of this screening test alone.

RESULT DETAILS: ANEUPLOIDIES

Condition Tested [1]	*Result*	*Risk Before Test* [2]	*Risk After Test* [3]
Trisomy 21	**High Risk**	1/108	**95/100**
Trisomy 18	Low Risk	1/218	<1/10,000
Trisomy 13	Low Risk	1/696	<1/10,000
Monosomy X	Low Risk	1/255	<1/10,000
Triploidy	Low Risk		

RESULT DETAILS: MICRODELETIONS

Condition Tested [1]	*Result*	*Risk Before Test* [2]	*Risk After Test* [4]
22q11.2 deletion syndrome	Low Risk	1/2,000	1/12,000
1p36 deletion syndrome	Low Risk	1/5,000	1/12,400
Angelman syndrome	Low Risk	1/12,000	1/16,600
Cri-du-chat syndrome	Low Risk	1/20,000	1/57,100
Prader-Willi syndrome	Low Risk	1/10,000	1/13,800

1. Excludes cases with evidence of fetal and/or placental mosaicism. 2. Based on maternal age, gestational age, and/or general population, as applicable. References available upon request. 3. Risk after test for aneuploidy incorporates results from the Panorama algorithm and data from a published population study of over 1 million women [DiNonno et al.J.Clin.Med.2019.Aug 26; 8(9):1311.doi:10.3390/jcm8091311] and are reported as PPVs (high risk) and NPVs (low risk). Maternal age and fetal fraction are utilized in this calculation; however, the "risk after test" may not reflect the actual PPVs for this patient, as additional risk factors, including but not limited to: results of other screening, ultrasound findings, and personal/family history, are not included in the risk assessment. 4. Risk after test for microdeletion(s) incorporates results from the Panorama algorithm and data from multiple studies [Dar P et al. Cell-free DNA screening for prenatal detection of 22q11.2 deletion syndrome, American Journal of Obstetrics and Gynecology (2022), https://doi.org/10.1016/j.ajog.2022.01.002; Martin et al. Clin Genetics. 2017 Jul 11, Wapner R J et al. Am J Obstst Gynecol. 2015 Mar;212 (3):332 .e1-9] and are reported as PPVs (high risk) and NPVs (low risk). Risks for microdeletions are independent of maternal age and fetal fraction is utilized in this calculation; however, the "risk after test" may not reflect the actual PPV for this patient, as additional risk factors, including but not limited to: results of other screening, ultrasound findings, personal/family history, are not included in the risk assessment.

Patient Information
Patient Name:
Date of Birth:
Maternal Age at EDD:
Gestational Age:
Maternal Weight:
Collection Kit:
Reference ID:
Case File ID:

Test Information
Ordering Physician:
Clinic Information:

Additional Reports:
Report Date:
Samples Collected:
Samples Received:

natera™ | Panorama™ Next-generation NIPT

ABOUT THIS SCREEN: Panorama ™ is a screening test, not diagnostic. It evaluates genetic information in the maternal blood, which is a mixture of maternal and placental DNA, to determine the chance for specific chromosome abnormalities. The test does NOT tell with certainty if a fetus is affected, and only tests for the conditions ordered by the healthcare provider. A low risk result does not guarantee an unaffected fetus.

Testing Methodology: DNA isolated from maternal blood, which contains placental DNA, is amplified at specific loci using a targeted PCR assay and is sequenced using a high-throughput sequencer. Fetal fraction is determined using a proprietary algorithm incorporating data from single nucleotide polymorphism-based (SNP-based) next-generation sequencing [Pergament E et al. Obstet Gynecol. 2014 Aug;124(2 Pt 1):210-8]. If there is sufficient fetal fraction, sequencing data is analyzed using a proprietary SNP-based algorithm to determine the fetal copy number for chromosomes 13, 18, 21, X and Y. If ordered, specific microdeletions will be evaluated using similar methodology [Wapner RJ et al. Am J Obstet Gynecol. 2015 Mar;212(3):332.e1-9]. If the fetal fraction is insufficient, fetal signal enhancement and/or an additional algorithm to determine whether there is an increased risk for triploidy, trisomy 18, and trisomy 13 may be utilized [McKanna et al. Ultrasound Obstet Gynecol 2019; 53:73-79]. However, some samples will not produce a result due to failure to meet the necessary quality thresholds.

This test has been validated on women with a singleton, twin or egg donor pregnancy of at least nine weeks gestation. A result will not be available for higher order multiples and multiple gestation pregnancies with an egg donor or surrogate, or bone marrow transplant recipients. Complete test panel is not available for twin gestations and pregnancies achieved with an egg donor or surrogate. For twin pregnancies with a fetal fraction value below the threshold for analysis, a sum of the fetal fractions for both twins will be reported. As this assay is a screening test and not diagnostic, false positives and false negatives can occur. High risk test results need diagnostic confirmation by alternative testing methods. Low risk results do not fully exclude the diagnosis of any of the syndromes nor do they exclude the possibility of other chromosomal abnormalities or birth defects, which are not a part of this test. Potential sources of inaccurate results include, but are not limited to, mosaicism, low fetal fraction, limitations of current diagnostic techniques, or misidentification of samples. This test will not identify all deletions associated with each microdeletion syndrome. This test has been validated for deletions ≥0.5 Mb within the 22q11.2 A-D region. This test has been validated on full region deletions only for 1p36 deletion syndrome, Cri-du-chat syndrome, Prader Willi syndrome and Angelman syndrome and may be unable to detect smaller deletions. Microdeletion risk score may be dependent upon fetal fraction, as deletions on the maternally inherited copy are difficult to identify at lower fetal fractions. Test results should always be interpreted by a clinician in the context of clinical and familial data with the availability of genetic counseling when appropriate.

Reviewed By: Wenbo Xu, M.D., Ph.D., FACMG, Senior Laboratory Director

CLIA Laboratory Director: J. Dianne Keen-Kim, Ph.D., FACMG

IF THE ORDERING PROVIDER HAS QUESTIONS OR WISHES TO DISCUSS THE RESULTS, PLEASE CONTACT US AT 844-778-4700, option 2. Ask for the NIPT genetic counselor on call.

Patient Information
Patient Name:
Date of Birth:
Maternal Age at EDD:
Gestational Age:
Maternal Weight:
Collection Kit:
Reference ID:
Case File ID:

Test Information
Ordering Physician:
Clinic Information:

Additional Reports:
Report Date:
Samples Collected:
Samples Received:

natera™ | Panorama™ Next-generation NIPT

ABOUT THIS SCREEN: Panorama ™ is a screening test, not diagnostic. It evaluates genetic information in the maternal blood, which is a mixture of maternal and placental DNA, to determine the chance for specific chromosome abnormalities. The test does NOT tell with certainty if a fetus is affected, and only tests for the conditions ordered by the healthcare provider. A low risk result does not guarantee an unaffected fetus.

OVERALL TEST SPECIFICATIONS FOR PANORAMA

The information in the table below relates to the general performance of the test.

Sensitivity is the ability to correctly identify a truly high risk case as high risk. For example, in a group of Trisomy 21 cases, Panorama will correctly identify more than 99% of those cases.

Specificity is the ability to correctly identify an unaffected case as low risk.

Positive Predictive Value (PPV) is the likelihood the result says high-risk and the fetus is actually affected. For example, when Panorama shows a high-risk result for Trisomy 21, there is a 95% chance that the fetus is affected by Trisomy 21. In other words, 5% of the time, you may get a high-risk result when the fetus is not affected by Trisomy 21.

Negative Predictive Value (NPV) is the likelihood the result says low-risk and the fetus is truly not affected.

Condition	*Sensitivity (95% CI)*	*Specificity (95% CI)*	*PPV*	*NPV*
Trisomy 21 [1,2]	99.0% (CI 97.1-100)	>99% (CI 99.93-99.99)	95%	>99.99% *
Trisomy 18 [1,2]	94.1% (CI 82.9-100)	>99% (CI 99.96-100)	91%	>99.99% *
Trisomy 13 [1,2]	>99% (CI 73.5-100)	>99% (CI 99.6-100)	68%	>99.99% *
Monosomy X [2,3]	94.7% (CI 74.0-99.9)	>99% (CI 99.7-100)	78%	>99.99% *
Triploidy [4,5]	>99% (CI 66.4-100)	>99% (CI 99.5-100)	7.5%	>99.99% *
XXX, XXY, XYY [6] **	73.1% (CI 61.0-85.1)	99.9% (CI 99.90-99.99)	86.4%	99.87%
22q11.2 deletion syndrome [7]	83.3% (CI 51.6-97.9)	>99% (CI 99.91-99.98)	53%	99.9% (CI 99.9-100) ***
1p36 deletion syndrome [8,9]	>99% (CI 2.5-100)	>99% (CI 99.1-100)	7-17% ***	99.98-99.99% ***
Angelman syndrome [8,9]	95.5% (CI 77.2-99.9)	>99% (CI 99.1-100)	10%	>99.99%
Cri-du-chat syndrome [8,9]	>99% (CI 85.8-100)	>99% (CI 99.1-100)	2-5% ***	>99.99%
Prader-Willi syndrome [8,9]	93.8% (CI 69.8-99.8)	>99% (CI 99.1-100)	5%	>99.99%
Female	>99.9% (CI 99.4-100)	>99.9% (CI 99.5-100)		
Male	>99.9% (CI 99.5-100)	>99.9% (CI 99.4-100)		

1 Dar P et al. Am J Obstet Gynecol. 2022. doi: https://doi.org/10.1016/j.ajog.2022.01.019
2 DiNonno W et al. J Clin Med. 2019. 26;8(9):1311. doi: https://doi.org/10.3390/jcm8091311
3 Martin et al. ISUOG World Congress 2022: September, 2022
4 Nicolaides KH et al. Fetal Diagn Ther. 2014. 35;(3):212-7. doi: https://doi.org/10.1159/000355655
5 Kantor et al. Prenat Diagn. 2022. 42;(8): 994-999. Doi: 10.1002/pd.6169
6 Martin K et al. ISPD 25th International Conference: June, 2021
7 Dar P et al. Am J Obstet Gynecol. 2022. doi: https://doi.org/10.1016/j.ajog.2022.01.002
8 Martin K et al. Clin Genet. 2018. 93(2):293-300. doi: https://doi.org/10.1111/cge.13098
9 Wapner RJ et al. Am J Obstet Gynecol. 2015. 212(3):332.e1-9. doi: https://doi.org/10.1016/j.ajog.2014.11.041

* Ongoing clinical follow-up is performed to ensure the NPV does not fall below the quoted value but follow up is not obtained for all low risk calls.

** Sex chromosome trisomies are only reported when clearly identified. At lower fetal fractions, identification of sex chromosome trisomies may not be possible.

*** Dependent upon fetal fraction. For 22q11.2 deletion syndrome, only the paternal allele is evaluated at FF ≤6.5%. For 1p36 deletion syndrome and Cri-du-chat syndrome, only the paternal allele is evaluated at FF <7%. For Angelman syndrome, no risk assessment is reported at FF<7%. For Prader-Willi syndrome, no risk assessment is reported at FF≤2.8%.

Test specifications above are applicable to singleton and monozygotic twin pregnancies only. For additional information, please visit: ***www.natera.com/panorama-test/test-specs***

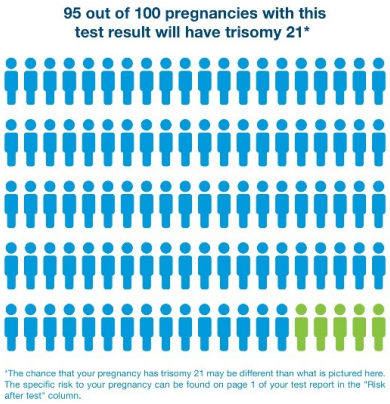
natera™ | Panorama™ Next-generation NIPT

Understanding Your Results

High risk for trisomy 21

What do my results mean?

Your results show that your pregnancy has a high risk for trisomy 21 (also known as Down syndrome). **This result *does not* mean that your baby has Down syndrome.** The specific chance that your baby has Down syndrome can be found on page 1 of your test report under "Risk after test." To know for sure whether your baby has Down syndrome, you would need to have additional testing. You should not make decisions about your pregnancy based only on this Panorama result, as it is not certain that your baby has Down syndrome.

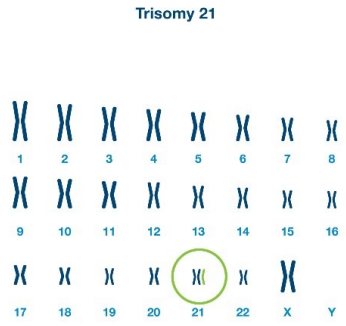


What is trisomy 21 (Down syndrome)?

Trisomy 21 is a genetic condition that about 1 in 700 people are born with.[1] People with trisomy 21 have intellectual disability that is usually in the mild to moderate range. They can also have heart defects, low muscle tone, and can be shorter than their family members. Some people with trisomy 21 can live independently as adults, while others will need to live with family or in a group home. People with trisomy 21 can also have other health problems and learning differences. Many people with trisomy 21 are healthy. Each person with trisomy 21 is unique.

What causes trisomy 21?

Trisomy 21 usually happens by chance. Parents cannot cause trisomy 21 to happen by anything they do before or during a pregnancy. Trisomy 21 happens when a person has an extra copy of chromosome 21. Chromosomes are tiny structures inside our cells that hold our genes and genetic material. Most people have 46 chromosomes that come in 23 pairs in every cell of their bodies. People with trisomy 21 have three copies of chromosome 21 instead of the two copies that most people have.



What can I do next?

You should talk to your healthcare provider about these results. They usually will refer you to a genetic counselor and/or a maternal-fetal medicine specialist to talk about your options for further testing.

If you want to find out if your baby has trisomy 21 during pregnancy, you can have a test called a CVS (chorionic villus sampling) or an amniocentesis. These tests are diagnostic and will tell you for sure if your baby has trisomy 21 or not. Both tests have a small risk of miscarriage.

If you do not want these tests during pregnancy, the baby can be tested after birth using blood from the umbilical cord. This testing is also diagnostic and will tell you for sure if your baby has trisomy 21.

It is important to have diagnostic testing either during pregnancy or when the baby is born to know for sure if the baby has trisomy 21. Changes to medical care and early intervention services can often improve the health and development of a child with trisomy 21.

Where can I find more information?

- March of Dimes marchofdimes.org/find-support/topics/planning-baby/down-syndrome
- National Down Syndrome Society ndss.org/about
- MedlinePlus medlineplus.gov/genetics/condition/down-syndrome
- CVS marchofdimes.org/find-support/topics/planning-baby/chorionic-villus-sampling
- Amniocentesis marchofdimes.org/find-support/topics/planning-baby/amniocentesis

NEVA* is always available to help you learn about your results. You can connect with Natera's Educational Virtual Assistant (NEVA) by logging into the patient portal at my.natera.com.

*NEVA is available only in the United States.

If you would like to discuss your results with a Natera genetic counselor, you can schedule a free information session at naterasession.com, by texting SESSION to 636363*, or by calling +1.877.476.4743. Please select **Panorama Non-Invasive Prenatal Chromosome Screening Post-Test** as the appointment type.

You can find a local genetic counselor through the National Society of Genetic Counselors at findageneticcounselor.nsgc.org.

*Text scheduling is available only in the United States.

1. MedlinePlus [Internet]. Bethesda (MD): National Library of Medicine (US); [updated 2022 Jan 19]. Down syndrome; [updated 2020 Sept 8; reviewed 2020 Jun 01; cited 2022 Jan 20]; [about 5 p.]. Available from: medlineplus.gov/genetics/condition/down-syndrome.

13011 McCallen Pass, Building A Suite 100 | Austin, TX 78753 | natera.com