




PATIENT DEMOGRAPHICS

| | | | |
|------------------|-----------------------------|--------------------------|----------------|
| Patient Name: | Niran Test | LMP: | 2022-10-10 |
| Date of birth: | 2000-01-10 | Sample collection date: | 2022-11-22 |
| Email: | nirantestjuno+406@gmail.com | GA at sample collection: | 6 weeks/1 days |
| Report date: | 2022-11-24 | | |
| Study performed: | Hazel™ NIPS Plus | | |

About Juno Hazel™ Plus Non-Invasive Prenatal Screening:

Juno Diagnostics' Hazel™ laboratory-developed test (LDT) is a screening evaluation which analyzes circulating cell-free DNA from a maternal blood sample for chromosomal and subchromosomal representations of the fetus and gestational carrier. The screen is indicated for use in human pregnancies for the screening of fetal chromosomal aberrations. Validation data on multiple pregnancies, such as twins, is limited and the ability of this screen to detect aneuploidy in a triplet pregnancy has not yet been validated.





FINAL RESULTS SUMMARY

| Result | Fetal Sex | Fetal Fraction |
|---|---|---|
| Increased Risk: Trisomy 21 and XXY syndrome | Male | 14.50% |
|  |  |  |

POSITIVE PREDICTIVE VALUE

| | |
|------|--|
| Age: | |
| GA: | Positive predictive value (PPV) is the chance that your screen positive result accurately predicts a chromosome condition in your pregnancy. The higher the PPV, the higher the chance for your pregnancy to have the chromosome condition. JunoDx calculates this value using the prevalence of a chromosome condition based on maternal age and gestational age, the sensitivity and specificity of the screen for that condition, and the sample's Z-score for the chromosome. Additional clinical information, such as suggestive fetal ultrasound findings, may influence the PPV of this screen. |

CONDITIONS EVALUATED

| | Post-test risk | Interpretation | |
|---------------------------|------------------------|-------------------------|--|
| Trisomy 21 | Approximately 9 in 10 | Aneuploidy Detected |  21 |
| Trisomy 18 | Fewer than 1 in 5,000 | Aneuploidy Not Detected |  18 |
| Trisomy 13 | Fewer than 1 in 10,000 | Aneuploidy Not Detected |  13 |
| Sex chromosome aneuploidy | Increased | Aneuploidy Detected |  X Y |

WHAT DOES THIS RESULT MEAN?

This result is consistent with a male fetus at increased risk for trisomy 21 and Klinefelter syndrome, but a low risk for Edwards syndrome and Patau syndrome or other sex chromosome aneuploidies.. Genetic counseling and prenatal diagnosis are recommended.. Approximately 9 out of every 10 people with this result will have a baby with Down syndrome.

LAB DIRECTOR COMMENTS

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Juan-Sebastian Saldivar

2022-11-29

Date

SCREENING METHODS

Circulating cell-free DNA (ccfDNA) is purified from the plasma component of maternal blood. The extracted DNA is then converted into a whole genome DNA library for sequencing-based analysis of chromosomes 21, 18, and 13.

SCREENING PERFORMANCE

Juno's Hazel™ laboratory developed test has been evaluated for clinical performance in multiple studies, inclusive of >1600 total venous and capillary samples. Based on this data, expected performance with at-home self-collection is as follows:

| | SENSITIVITY (95% CI) | SPECIFICITY (95% CI) |
|---------------------------|----------------------|----------------------|
| Trisomy 21 | >99% (95%-100%) | >99.9% (99%-100%) |
| Trisomy 18 | >99% (94%-100%) | >99.9% (99%-100%) |
| Trisomy 13 | >99% (79%-100%) | >99.9% (99%-100%) |
| Sex chromosome aneuploidy | Performance Data TBD | Performance Data TBD |

SCREENING LIMITATIONS

This screen is for screening purposes only, and is not diagnostic. While the results of these screens are highly accurate, discordant results, including inaccurate fetal sex prediction, may occur due to placental, maternal, or fetal mosaicism or neoplasm; vanishing twin; prior maternal organ transplant; or other causes. Sex chromosomal aneuploidies are not reportable for known multiple gestations.

The screen does not replace the accuracy and precision of prenatal diagnosis with CVS or amniocentesis. A patient with a positive screening result should receive genetic counseling and be offered invasive prenatal diagnosis for confirmation of test results. A negative result does not ensure an unaffected pregnancy nor does it exclude the possibility of other chromosomal abnormalities or birth defects which are not a part of this screening evaluation. An uninformative result may be reported, the causes of which may include but are not limited to insufficient sequencing coverage, noise or artifacts in the region, amplification or sequencing bias, or insufficient fetal representation. The ability to report results may be impacted by maternal BMI, maternal weight and maternal autoimmune disorders.

Screening for whole chromosome abnormalities (including sex chromosomes) and for sub-chromosomal abnormalities could lead to the potential discovery of both fetal and maternal genomic abnormalities that could have major, minor, or no, clinical significance. Evaluating the significance of a positive or a non-reportable result may involve both diagnostic testing and additional studies on the pregnant person. Such investigations may lead to a diagnosis of maternal chromosomal or sub-chromosomal abnormalities, which on occasion may be associated with benign or malignant maternal neoplasms.

This screen may not accurately identify fetal triploidy, balanced rearrangements, or the precise location of sub-chromosomal duplications or deletions; these may be detected by prenatal diagnosis with karyotype and SNP-microarray. Cell-free DNA screening is not intended to identify pregnancies at risk for neural tube defects or ventral wall defects; these may be detected by prenatal ultrasound evaluation.

The results of this screening, including the benefits and limitations, should be discussed with a qualified healthcare provider. Pregnancy management decisions, including termination of the pregnancy, should not be based on the results of these screens alone. The healthcare provider is responsible for the use of this information in the management of their patient.

REFERENCES

- Palomaki GE, Deciu C, Kloza EM, et al. DNA sequencing of maternal plasma reliably identifies trisomy 18 and trisomy 13 as well as Down syndrome: an international collaborative study. *Genet Med.* 2012;14(3):296-305. doi:10.1038/gim.2011.73
- Mazloom AR, Džakula Ž, Oeth P, et al. Noninvasive prenatal detection of sex chromosomal aneuploidies by sequencing circulating cell-free DNA from maternal plasma. *Prenat Diagn.* 2013;33(6):591-597. doi:10.1002/pd.4127
- Ehrich M, Tynan J, Mazloom A, et al. Genome-wide cfDNA screening: clinical laboratory experience with the first 10,000 cases. *Genet Med.* 2017;19(12):1332-1337. doi:10.1038/gim.2017.56
- American College of Obstetricians and Gynecologists Committee on Genetics. Committee Opinion No. 545: Noninvasive prenatal testing for fetal aneuploidy. *Obstet Gynecol.* 2012;120(6):1532-1534. doi:10.1097/01.AOG.0000423819.85283.14
- Gregg AR, Skotko BG, Benkendorf JL, et al. Noninvasive prenatal screening for fetal aneuploidy, 2016 update: a position statement of the American College of Medical Genetics and Genomics. *Genet Med.* 2016;18(10):1056-1065. doi:10.1038/gim.2016.97
- American College of Obstetricians and Gynecologists' Committee on Practice Bulletins—Obstetrics; Committee on Genetics; Society for Maternal-Fetal Medicine. Screening for Fetal Chromosomal Abnormalities: ACOG Practice Bulletin, Number 226. *Obstet Gynecol.* 2020;136(4):e48-e69. doi:10.1097/AOG.0000000000004084
- Kim SK, Hannum G, Geis J, et al. Determination of fetal DNA fraction from the plasma of pregnant women using sequence read counts. *Prenat Diagn.* 2015;35(8):810-815. doi:10.1002/pd.4615
- Dharajiya NG, Grosu DS, Farkas DH, et al. Incidental Detection of Maternal Neoplasia in Noninvasive Prenatal Testing. *Clin Chem.* 2018;64(2):329-335. doi:10.1373/clinchem.2017.277517

Disclaimer: This laboratory study was developed and its performance characteristics determined by Juno Diagnostics. Juno's laboratory is certified under the Clinical Laboratory Improvement Amendments (CLIA) as qualified to perform high complexity clinical laboratory testing. The screen has not been cleared or approved by the Food and Drug Administration. Clinical use of high complexity LDTs is regulated by the Center for Medicare and Medicaid Services (CMS) under CLIA.