Panorama is a non-invasive prenatal screening test (NIPT) that uses single nucleotide polymorphism (SNP)-based technology to assess cell free DNA fragments and provide pregnancy-specific risk scores for common chromosomal aneuploidies and selected microdeletions. This guide is meant to assist clinicians in interpreting results for aneuploidies. For further assistance, you are welcome to contact a Natera genetic counselor at 650-249-9090 or niptgc@natera.com with any questions.

**Risk score**

Results for aneuploidies are reported as a personalized risk score, a calculated level of accuracy or confidence level of a high or low risk call. The risk calculation combines SNP data analysis from the cell free DNA fragments present in the blood sample with the patient’s maternal and gestational ages (prior risk). The majority of risk scores will be at the maximum level of confidence, reported as ≥99/100 for a high risk call and ≤1/10,000 for a low risk call. Intermediate risk scores represent a reduced confidence call and are reported as a fraction. Low confidence risk calls are not reported given their association with significantly increased false positive and negative rates. For such cases, a redraw may be submitted to complete a more accurate risk assessment (see No Results section).

It is important to note that the DNA analyzed for risk assessment is placental and not fetal in origin. In some cases placental DNA can differ from that of the fetus such as with confined placental mosaicism or CPM. This signifies that even with high risk results, the fetus may be unaffected. Therefore it is strongly suggested that patients with high risk results be referred for comprehensive genetic counseling and offered either invasive diagnostic testing or testing after delivery to confirm NIPT results. A low risk screening result significantly reduces the risk for aneuploidy but does not completely eliminate it.

**No results – Redraw may be considered**

In a small percentage of samples, Panorama cannot obtain sufficient information from the sample to determine a high-confidence result. A redraw may be considered to obtain better data. Certain sample-specific issues may lead to a request for a redraw, including but not limited to low fetal fraction (minimum of 2.8% fetal fraction required), lab processing issues, or other analytic factors that may affect quality of the DNA data. The majority of patients (≥98%) will receive results on either the first or second draw. Please note, when sending a redraw, a paternal buccal swab DNA sample can increase the likelihood of receiving a result.

**No results - Repeat specimen not indicated - DNA pattern that cannot be interpreted by this assay**

In rare cases (<1%) when Panorama cannot issue a result, a second sample is not requested. This is because a small number of individuals have a DNA pattern that cannot be interpreted clearly by this testing assay. Less frequently, this type of result may occur only for a single chromosome leading to partial screening results. A repeat specimen will not give additional information, and another form of screening may be more informative for this patient.

**Results consistent with the presence of triploid/vanishing twin or multiple gestation pregnancy**

Although these results may indicate a triploid fetus, Panorama cannot rule out the possibility of an ongoing unrecognized multiple gestation or vanishing twin pregnancy, as each of these three clinical situations have similar SNP results with Panorama. Review of clinical history along with ultrasound findings and possible diagnostic testing should be considered to fully interpret results.

**Results suggestive of sex chromosome aneuploidy (XXX, XYY, XXY)**

Fetal sex chromosome aneuploidies (SCA) will only be reported when the DNA pattern is suggestive of the finding; however, a specific risk score will not be provided. SCAs will be reported whether or not fetal gender is requested.

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1. Natera Internal Data