The next generation of non-invasive prenatal screening

Non-invasive prenatal testing (NIPT) analyses cell-free DNA in a pregnant woman’s blood to estimate the risk of foetal chromosomal abnormalities.

Panorama’s unique Single Nucleotide Polymorphism (SNP)-based technology enables more comprehensive screening with greater accuracy in validation.

Only Panorama distinguishes between maternal and foetal (placental) DNA

Panorama has validated performance in both high and average risk pregnancies

<table>
<thead>
<tr>
<th>Validation</th>
<th>High Risk**</th>
<th>Average Risk*</th>
</tr>
</thead>
<tbody>
<tr>
<td>T21, T18, T13 and MX</td>
<td>98.8% (96/100)</td>
<td>&gt; 99% (25/25)</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>99.5% (389/391)</td>
<td>100% (468/468)</td>
</tr>
<tr>
<td>Specificity</td>
<td>82.9% (575/692)</td>
<td>87.2% (82/95)</td>
</tr>
<tr>
<td>(Anxiety Incidence)</td>
<td>(2.4%)</td>
<td>(1.2%)</td>
</tr>
</tbody>
</table>

Other NIPTs look at chromosome fragments of conserved DNA – the 99% of our DNA that makes us the same

Panorama evaluates SNPs – the 1% of our DNA that makes us different from one another

Panorama: the next generation of NIPT

Screens for:
- Singleton pregnancies
  - Trisomies 21, 18, 13
  - Monosomy X
  - Triploidy
  - Sex chromosome trisomies*
  - 22q11.2 deletion syndrome (optional)
- Additional microdeletion syndromes (optional)
- Foetal sex (optional)

Twin pregnancies
- Zygosity
- Trisomies 21, 18, 13
- Foetal sex for each twin (optional)

If screening reveals monozygotic twins, Panorama can additionally screen for:
- Monosomy X
- Sex chromosome trisomies*
- 22q11.2 deletion syndrome (optional)

Egg donor or surrogate pregnancies
- (Singleton pregnancies only)
- Trisomies 21, 18, 13
- Foetal sex (optional)

*Reported when suspected

**For the purposes of calculating PPV, high risk was defined as women ≥ 35 years old at delivery, and average risk was defined as women < 35 years old at delivery.

Support every step of the way

Safety, easy sample collection

Advanced technology

Fast, clear reporting

Clinical Outcomes

T21, T16, T13 and MX

Cozy McNab

Ordering Information

Please contact us for more information, including how to order the Panorama Prenatal Screen.

Contact us on 086 163 3337 (Operating Hours: Mon - Fri 08H00-17h00.) Or email at nsi@lancet.co.za

For Genetic Counselling (pre/post), please contact Dr Karen Milstein, Clinical Geneticist at 086 152 6238 or email: karen.milstein@lancet.co.za.

References:

9. ACOG and SMFM Joint Committee Opinion: Cell-Free DNA Screening for Fetal Aneuploidy, Number 640, Sept 2015.
**Non-invasive method with more informative results**

**Discussing NIPT with your patients, per ACOG guidelines**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Traditional Serum Screen</th>
<th>Panorama (NIPT)</th>
<th>Least Information</th>
<th>Most Information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sensitivity</td>
<td>False Positive Rate</td>
<td>Sensitivity</td>
<td>False Positive Rate</td>
</tr>
<tr>
<td>Down Syndrome</td>
<td>79%</td>
<td>0.5%</td>
<td>&gt; 99%</td>
<td>&gt; 99%</td>
</tr>
<tr>
<td>Edwards Syndrome</td>
<td>80%</td>
<td>0.3%</td>
<td>&gt; 99%</td>
<td>&gt; 99%</td>
</tr>
<tr>
<td>Turner Syndrome</td>
<td>60%</td>
<td>0.3%</td>
<td>&gt; 99%</td>
<td>&gt; 99%</td>
</tr>
<tr>
<td>Monosomy X</td>
<td>Does not screen</td>
<td>94.7%</td>
<td>&lt; 0.1%</td>
<td>99%</td>
</tr>
<tr>
<td>Triploidy</td>
<td>Does not screen</td>
<td>96%</td>
<td>&lt; 0.1%</td>
<td>90%</td>
</tr>
<tr>
<td>Females</td>
<td>Does not screen</td>
<td>&gt; 99.9%</td>
<td>&lt; 0.1%</td>
<td>99.9%</td>
</tr>
<tr>
<td>Male</td>
<td>Does not screen</td>
<td>&gt; 99.9%</td>
<td>&lt; 0.1%</td>
<td>99.9%</td>
</tr>
<tr>
<td>22q11.2 deletion</td>
<td>Does not screen</td>
<td>90.0%</td>
<td>0.07%</td>
<td>99.9%</td>
</tr>
<tr>
<td>Additional microdeletions (Angelman, Di-george, 1p36 deletion &amp; Patau-HS)</td>
<td>Does not screen</td>
<td>93.8 - &gt; 99.9%</td>
<td>0.07%</td>
<td>99.9%</td>
</tr>
</tbody>
</table>

**Benefits**
- No testing for women who may worry about testing
- No difficult decisions in case of abnormal results
- Less anxiety for patients

**Limitations**
- Inability to plan medically, financially & emotionally
- Limited opportunity to engage with specialists & community support resources
- Not diagnostic for all chromosome abnormalities

**Non-invasive testing options are available.**

- If you would like to know the risk of your baby having a chromosome abnormality, you can opt for diagnostic testing.

**Higher positive predictive value (PPV) = Less anxiety for patients**

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**TRADITIONAL SCREENING**

- PPV: 3-4%
- Maternal serum screening would require 265 women to undergo invasive testing to discover 9 true positives.

**NON-INVASIVE PREGNATAL TESTING**

- PPV: 91%
- With NIPT, 10 women will undergo invasive testing to discover 9 true positives.

* Specific to Trisomy 21

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**Non-invasive method with more informative results**

**Discusing NIPT with your patients, per ACOG guidelines**

- "Testing for chromosome abnormalities is optional."
- "If you would like to know the risk of your baby having a chromosome abnormality, screening options are available."
- "If you want to know for sure about chromosome abnormalities you can opt for diagnostic testing."

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**Higher sensitivity for the conditions screened**

**Fewer false positives**
- Fewer unnecessary invasive procedures.

**More conditions included**
- More informative results.