



# 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)
- Fetal sex (optional)

### Twin pregnancies

- Zygosity
- Trisomies 21, 18, 13
- Fetal 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

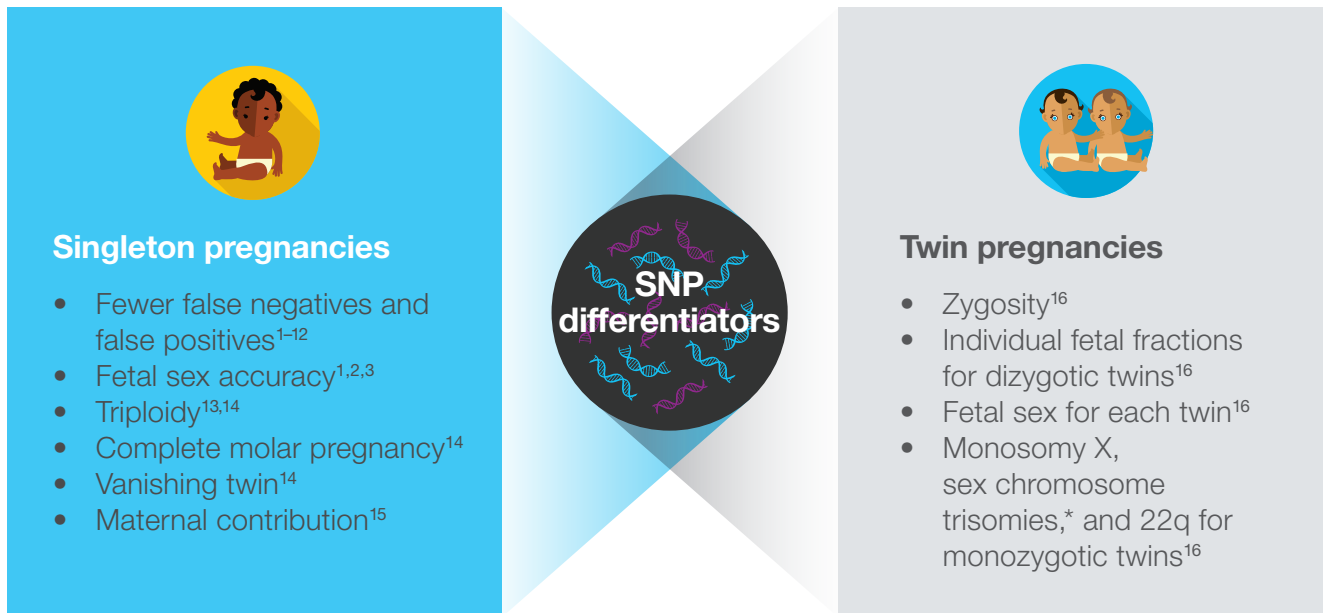
(Singleton pregnancies only)

- Trisomies 21, 18, 13
- Fetal sex (optional)

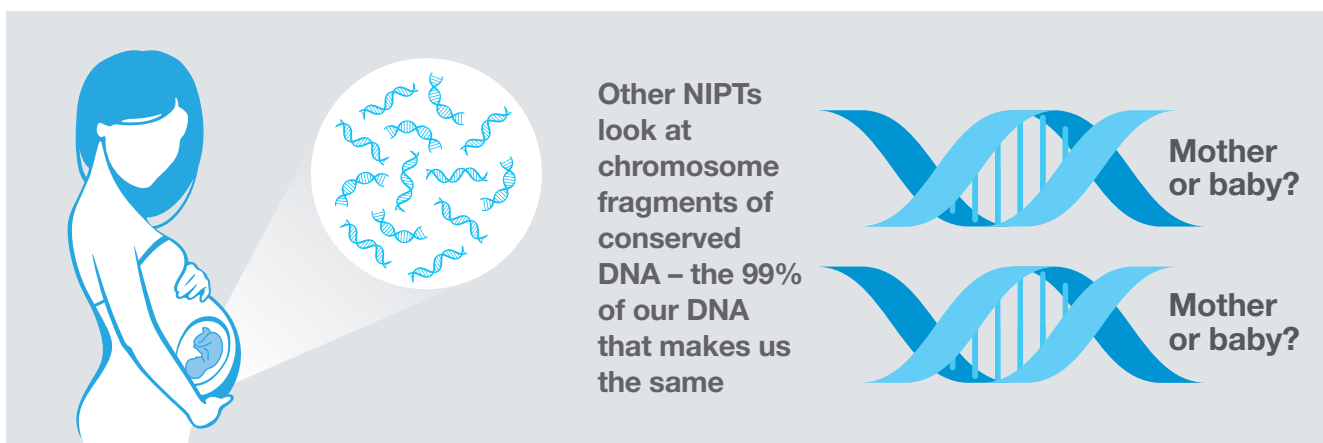
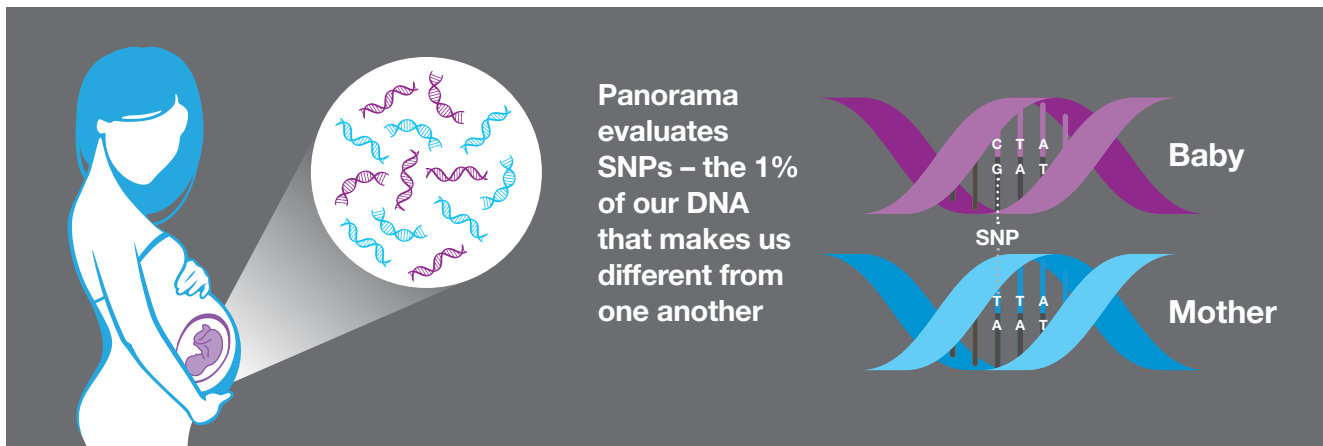
\*Reported when suspected

**Non-invasive prenatal screen**

Panorama's unique SNP-based technology enables more comprehensive screening with greater accuracy in validation<sup>1-16</sup>

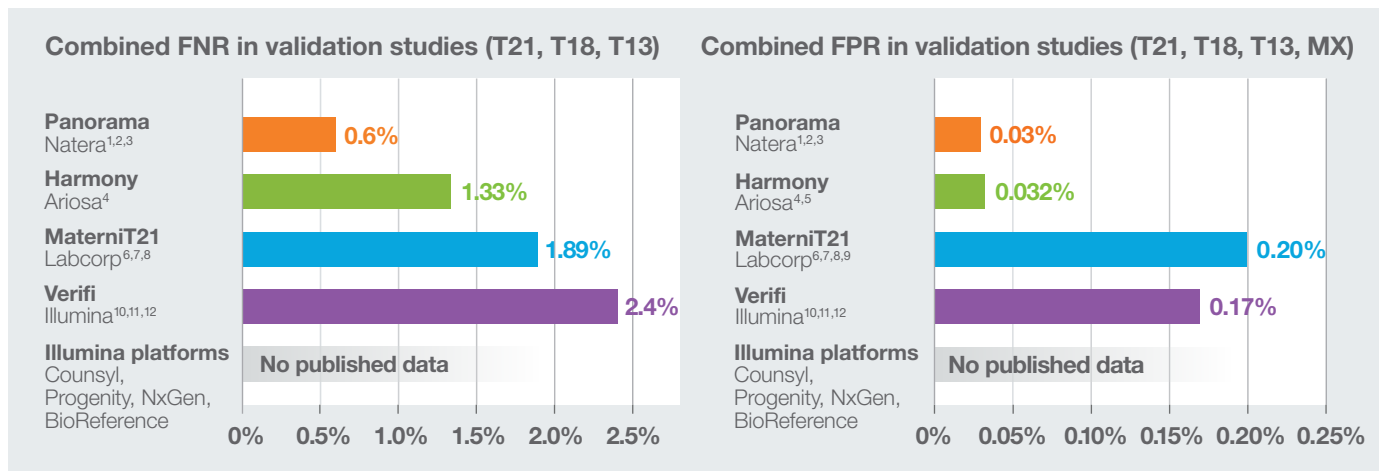


**Only Panorama distinguishes between maternal and fetal (placental) DNA**



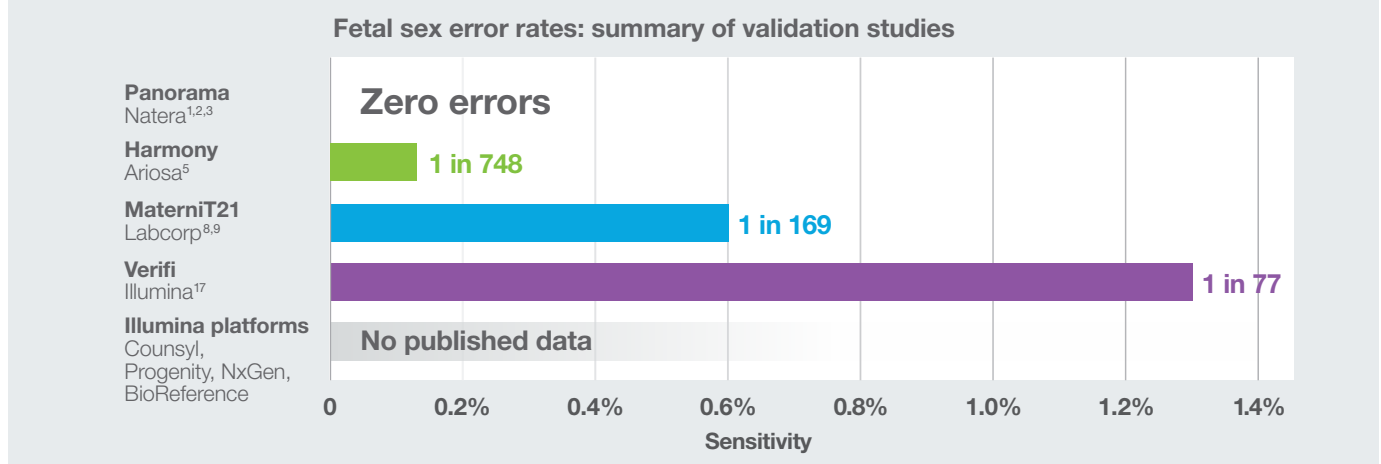
\*Reported when suspected

## Panorama reduces both false negative rates (FNR) and false positive rates (FPR) compared to other NIPTs



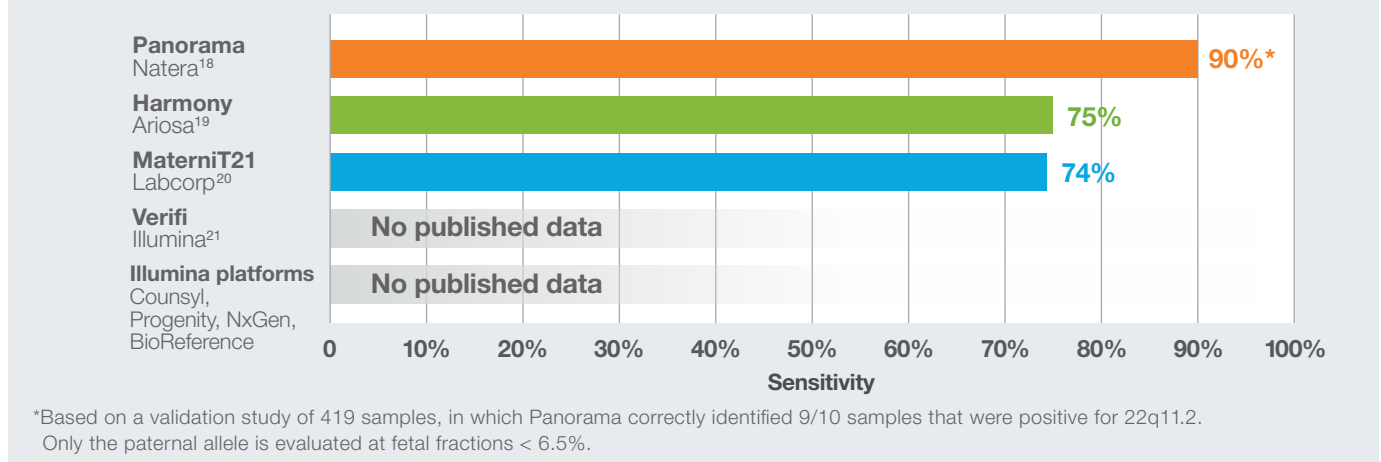
## Panorama's SNP-based technology results in the highest fetal sex accuracy of any NIPT in validation studies

Other NIPTs may report incorrect gender for as many as 1 in 77 cases. A wrong call can lead to unnecessary clinical work-up and create anxiety for the patient.



## Panorama's SNP-based approach yields the highest commercially available sensitivity for the most common ~3Mb 22q11.2 deletion

For small deletions like 22q11.2, Panorama's ability to evaluate unique DNA sequences within the region of interest enables better detection.



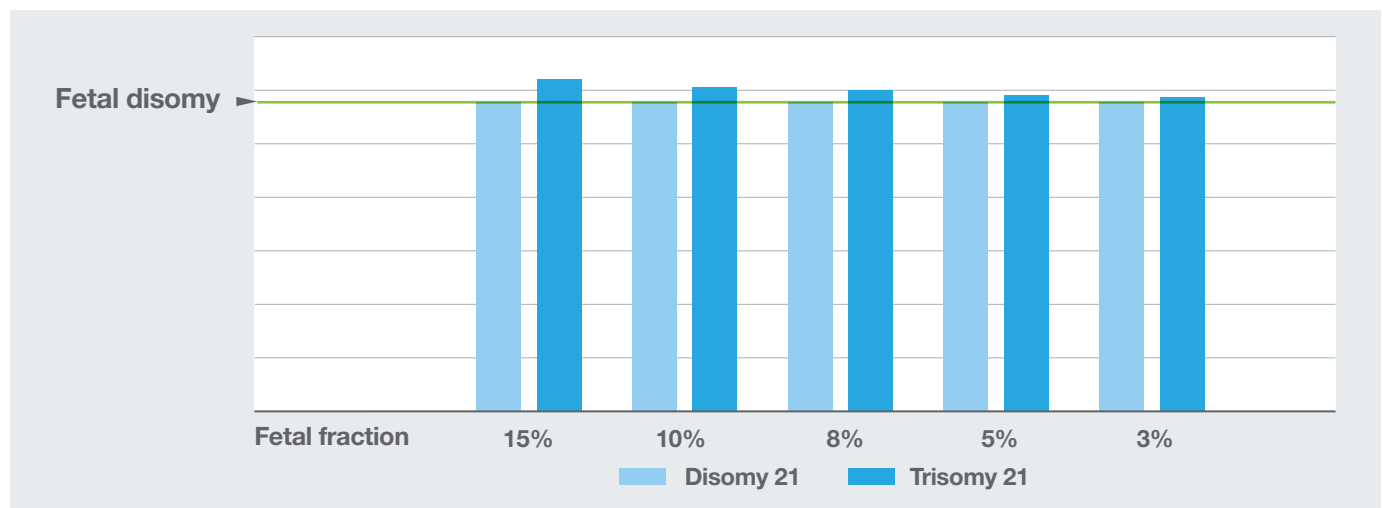
# Accurate fetal fraction measurement is essential for accurate results<sup>22</sup>

**Panorama is the only NIPT that has always measured and reported fetal fraction**

Panorama's SNP-based method is a gold standard in fetal fraction measurement

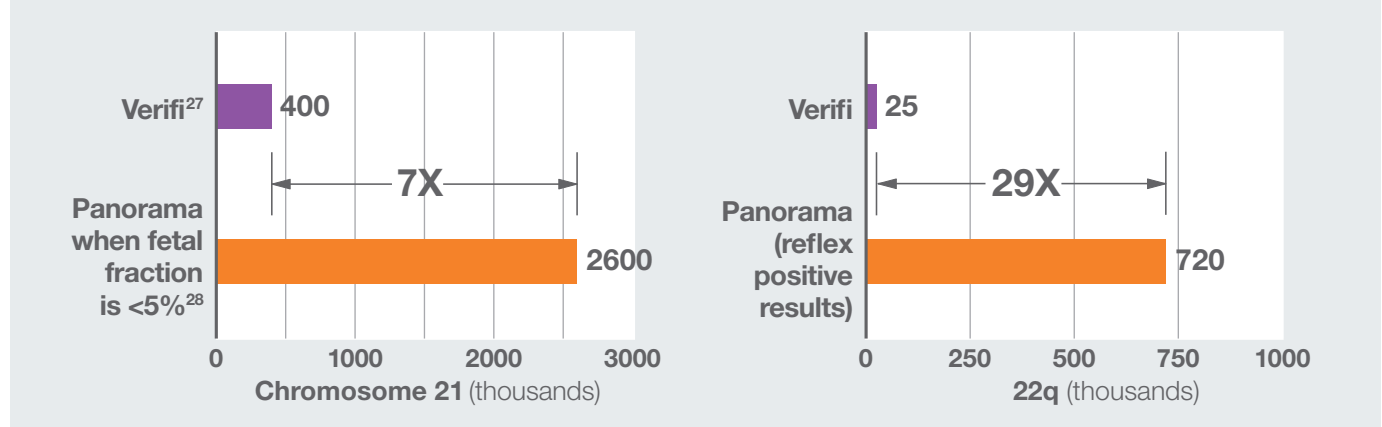
	Panorama <sup>1,2,3</sup>	Harmony <sup>4,23</sup>	MaterniT21 <sup>5,6,7,24</sup>	Verifi <sup>10,11,12</sup>	Illumina platforms
Method of fetal fraction measurement	13,392 SNPs	576 SNPs	Distribution of short (<150 bp) cfDNA	No data available on methodology or performance	No data available on methodology or performance
Combined false negative rate in validation studies (trisomies 21, 18, 13)	0.60%	1.33%	1.89%	2.40%	No published data

Counting methodologies' ability to detect abnormalities decreases below 8% fetal fraction, which may increase false negative results<sup>25,26</sup>



Deeper sequencing on chromosomal regions of interest enables Panorama to maintain high-quality results at lower fetal fractions

Panorama's proprietary algorithm incorporates fetal fraction measurement and reflexes samples with lower fetal fraction to a higher depth of read.






# Panorama for twin pregnancies

Only Panorama reports zygosity, individual fetal fractions for dizygotic twins, and fetal sex for each twin<sup>16</sup>

	Panorama <sup>16</sup>	Harmony <sup>29,30</sup>	MaterniT21 <sup>31</sup>	Verifi <sup>32</sup>	Illumina platforms <sup>33,34,35,36</sup>
Zygosity	✓	✗	✗	✗	✗
Individual fetal fractions	✓	✗	✗	✗	✗
Fetal sex for each twin	✓	✗	✗	✗	✗
Trisomies 21, 18, 13	✓	✓	✓	✓	✓
Monosomy X*	✓*	✗	✗	✗	✗
22q11.2 deletion syndrome*	✓*	✗	✓	✗	✗

\*Available for monozygotic twins only

**FINAL RESULTS SUMMARY: TWINS**

<i>Result</i> <b>LOW RISK</b> 	<i>Zygosity</i> <b>Dizygotic</b> <i>FRATERNAL TWINS</i>	<i>Fetal Sex</i>  <b>Male</b>  <b>Female</b>	<i>Fetal Fraction(s)</i> <b>8.3%, 8.4%</b>
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Notes by the clinical reviewer, if any, will be shown here.

## Panorama allows clinicians to align their ultrasound findings with early and accurate zygosity information

Chorionicity is the strongest predictor for pregnancy complications in twins.<sup>37</sup> Studies have shown that up to 19% of monozygotic pregnancies are incorrectly classified as dichorionic using ultrasound.<sup>38</sup>



### Monozygotic

- Higher risk for twin-twin transfusion syndrome (TTTS), birth defects, etc. if monozygotic
- Consider early MFM referral to confirm chorionicity
- Develop tailored care plan for pregnancy



### Dizygotic

- All dizygotic pregnancies are dichorionic
- Low risk for TTTS
- Continue standard care for pregnancy

## Fetal fraction measurement and reporting in twins is important for reliable NIPT results



Fetal fraction is, on average, 30% higher in twin pregnancies, but fetal fraction per twin is lower compared to singleton pregnancies.<sup>28</sup>

# Provider support



**Proactive billing outreach and price transparency**



**Complimentary mobile phlebotomy services and in-office phlebotomist for our testing\***



**Direct support from board-certified genetic counselors; call 650.249.9090 or email [niptgc@natera.com](mailto:niptgc@natera.com) for:**

- Clinical questions
- Consultations on high-risk results
- Regional medical education and support



**Our Natera Connect provider portal can be accessed online at [connect.natera.com](http://connect.natera.com) to:**

- Order and track tests electronically
- Release low-risk results to patients (optional)

\*Where permitted by state law

# Patient support



**Patients can learn about testing, book services, and track test results through our patient portal at [my.natera.com](http://my.natera.com)**



**Complimentary mobile phlebotomy services can be scheduled by calling 855.271.1502 and pressing option 1**



**Complimentary pre- and post-test genetic information sessions with a board certified genetic counselor can be scheduled by calling 855.271.1502 and pressing option 2**



**Flexible payment plans, including assistance for financial hardship, are available**

## POWERED BY NATERA



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The tests described have been developed and their performance characteristics determined by the CLIA-certified laboratory performing the tests. These tests have not been cleared or approved by the U.S. Food and Drug Administration (FDA). Although FDA does not currently clear or approve laboratory-developed tests in the U.S., certification of the laboratory is required under CLIA to ensure the quality and validity of the tests. © 2018 Natera, Inc. All Rights Reserved. PAN\_MD\_BR\_2018\_02\_12\_NAT-801513



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