Information to parents, Harmony NIPT.

Harmony is a non-invasive screening test of fetal DNA in the mother's bloodstream. Harmony analyzes the likelihood that the fetus has Trisomy 13, 18 and 21. Optional analysis of fetal sex and / or sex chromosomal abnormalities in the fetus. Extended analysis for microdeletion 22q11.2 that causes DiGeorge syndrome is possible.

Harmony has a very high sensitivity and specificity, but a high-risk report should always be followed up with amniocentesis or CVB.

	Sensitivity	False positive rate
Trisomy 21	>99 %	<0,1%
Trisomy 18	>97 %	<0,1%
Trisomy 13	>93 %	<0,1%

Reporting:

Low risk

Low risk means that there is very low residual probability for the fetus to have any of the abnormalities being analyzed. Usually less than 1/10 000.

High risk

High risk means more than 50% risk that the fetus has the detected abnormality. The probability depends on the deviation detected. For high-risk report for Trisomi 21, the probability of Harmony being correct is approximately 90%. For high risk report regarding a sex chromosomal anuploidy, the probability of Harmony being correct is approximately 50%.

Retest

In some cases (about 3%), the woman has too low percentage of fetal DNA in the blood at the time of sampling to enable reliable analysis. Retest can be done and the proportion of fetal DNA in the blood usually increase with the pregnancy week. No extra charge.

Not analytical

Rare (<1%) happens that the woman also has too low a percentage of fetal DNA in the blood at the other sampling stage in order for reliable analysis to be performed.

Not conclusive

The sex chromosomes are more difficult to analyze for technical and biological reasons. In a small number of cases (about 1%) the analysis cannot be interpreted for these. This is not to be considered as increased likelihood of sex chromosomal aneuploidy.

Sex

Fetal sex is reported if desired. Gender is determined by the presence of Y-chromosome. Gender is >99% correct but not intended for diagnosis of sexually transmitted disorders. Gender does not exclude sex chromosome aneuploidy. The sex chromosomal aneuploidy panel measures the proportions of X and Y chromosomes.

Microdeletion 22q11.2 DiGeorge syndrome

Optional analysis of microdeletion 22q11.2 can be ordered. This analysis detects about 75% of all cases with 22q11.2 microdeletion and has very few false high-risk results.

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Facts Harmony

Harmony NIPT analyzes the relative proportions of chromosomes to provide a risk assessment for Trisomy 13, 18 and 21 of the fetus. Cell-free DNA is purified from the mother's blood. The proportion of DNA derived from the fetus / placenta is determined by genotype analysis. Harmony is based on targeted analysis of the relative amounts of DNA from the various chromosomes of the Cell-Free DNA. The results of the test also consider the proportion of fetal DNA, the age of the mother (or the age of the egg donor) and the pregnancy week. A probability of 1% or higher classifies the test as high risk.

Harmony is validated for single and twin pregnancies at least week 10 + 0.

Harmony cannot be performed on pregnancies with more than 2 fetuses. Harmony cannot be performed on mothers who have received organs or stem cell transplants. Harmony cannot be used in pregnancies where one fetus has died (Vanishing Twin Syndrome). Harmony should not be used if the mother has a known active cancer disease. Harmony is not intended to detect mosaics or partial trisomies or translocations of the fetus, nor trisomy of the mother. Harmony cannot detect spina bifida.

In twin pregnancies, a high-risk report means that one or both twins have a high risk of trisomy.

Fetal sex analyzes for the presence of Y-chromosome. Probably Girl means that Y-chromosome has not been detected. Probably Boy means that Y-chromosome has been detected. Gender does not exclude sex chromosome aneuploidies. In the case of twin pregnancy, reporting can only be given as probably two girls or probably at least one boy.

Cell-free DNA comes mainly from the placenta. Cell-free DNA analysis does not always correlate with the fetus chromosomal set. All fetuses with trisomies will not be detected and some normal chromosome fetuses will be classified as high risk. Harmony NIPT is not a diagnostic test and the result should be interpreted along with other clinical data. All high-risk results are recommended to be confirmed through fetal karyotype analysis such as amniocentesis.

Analysis of sex chromosome aneuploidies measures the proportions of X and Y chromosomes. A probability of 1% or higher for any gender chromosomal aberration (XO, XXX, XXY, XYY, XXYY) classifies the test as high risk. An XYY or XXYY result indicates two or more Y chromosomes. The sex chromosomal disorder panel cannot be performed on twin pregnancies. The performance of the analysis varies with which gender chromosome aberration is detected. A limited number of cases have been evaluated so far and demonstrated more than 90% sensitivity to Turner's syndrome (XO) with less than 0.1% false positive results.

Fact, analysis of microdeletion 22q11.2 DiGeorge syndrome

The microdeletion analysis results are reported either as "High likelihood of deletion" or "Not detected". Validation studies are ongoing to provide better numbers for the sensitivity of the analysis. In the smaller studies performed, >75% of cases have been detected with <0.5% false positive results. High risk results should be followed up with invasive testing. Microdeletions in the area of 22q11.2 vary in size and location. 85% of patients have a 3 Mb deletion and the rest have smaller deletions (1.5-2Mb) in different places in the same area. Harmony is designed to detect both the most common deletion and the unusual, smaller deletions.

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