Ninalia
by eurofins biomnis

Information and Consent Form

Non-invasive Prenatal Testing (NIPT) for trisomies 21, 18 and 13

Three copies of this document should be drawn up (patient, prescribing physician, Eurofins Biomnis Laboratory).

This genetic test to screen for trisomies 21, 18 and 13 is based on the study of fœtal DNA circulating in the mother's blood. This test is indicated in pregnant women situated in a high-risk group of giving birth to a fœtus with Trisomy 21,18 or 13.
Performed thanks to new generation sequencing technology, this screening test using free, circulating DNA only requires a simple blood test without any risk to the fœtus. The test can be performed **as of week 8 of pregnancy (= 10 weeks of amenorrhea), after the ultrasound examination.** In case of ultrasound abnormalities, a diagnosis should be performed.
It is essential that all positive results are confirmed by an invasive test to confirm the diagnosis. This test falls within the scope of prenatal screening and the pregnant woman should receive accurate and full information (L2131-1 of the Public Health Code).

TEST RECOMMENDATIONS

This genetic test is proposed for patients in an at-risk group according to the following recommendations:

- **Patients in an at-risk group after evaluation of maternal serum markers: risk higher than or equal to 1/1000 without increased nuchal translucency or other ultrasound abnormality.**
  - Combined screening in the first trimester
  - Screening in the second trimester for serum markers alone
- **History of pregnancy with trisomy 21, 18 or 13**
- **Couple where one of the members carries a Robertsonian translocation involving chromosomes 13 or 21**
- **Twin pregnancy without increased nuchal translucency or other ultrasound abnormality.**

Observation:

- The first trimester ultrasound remains essential to:
  - date the pregnancy;
  - detect multiple pregnancies;
  - detect congenital abnormalities other than nuchal translucency;
  - measure of nuchal translucency;
  - detect vanishing twin.

INTERPRETATION (data from the supplier Illumina Inc., April 2019)

- **Monofetal pregnancy:**

  For Trisomy 21, the sensitivity of this test is 98.9% and the specificity is > 99.9%.

  For Trisomy 18, the sensitivity of this test is 90% and the specificity is 99.9%.

  For Trisomy 13, the sensitivity of this test is > 99% and the specificity is 99.9%.

  Nonetheless, a negative result does not fully exclude the existence of specifically tested or other abnormalities.

  Consequently, it is essential to follow up rigorously with morphological ultrasounds.

- A positive result does not necessarily mean that the fœtus carries trisomy 21, 18 or 13. It is essential that all positive results are confirmed by an invasive test. The fœtal karyotype is the only examination which enables the confirmation of a Trisomy 21, 18 or 13 diagnosis.

- **Twin pregnancy:**

  For Trisomy 21, the sensitivity of this test is 97.1% and the specificity is 99.9%.

  For Trisomy 18, the sensitivity of this test is 95.8% and the specificity is > 99.9%.

  For Trisomy 13, the sensitivity of this test is 95.1% and the specificity is > 99.9%.

  Nonetheless, a negative result does not fully exclude the existence of specifically tested or other abnormalities.

  Consequently, it is essential to follow up rigorously with morphological ultrasounds.

- A positive result does not necessarily mean that the fœtus carries trisomy 21, 18 or 13. It is essential that all positive results are confirmed by an invasive test. The fœtal karyotype is the only examination which enables the confirmation of a Trisomy 21, 18 or 13 diagnosis.

LIMITATIONS

This test does not detect:

- unbalanced translocations, microdeletions, microduplications;
- mutations causing other diseases;
- neural tube abnormalities;
- cases of triploidy

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PATIENT INFORMATION AND CONSENT FORM

Information and consent of pregnant woman for the performance of an analysis on cell-free foetal DNA in maternal blood.

I undersigned ..... ▸ **Hereby certify that I have received, from the doctor**

***(name, surname)*: .....**

In accordance with the article L.2131-1 of the Public Health Code, during a medical consultation dated:
D D M M Y Y

Information in regard to:

- The characteristics of trisomies 13, 18 and 21 and the risk to the child of being born with a condition of particular severity, in particular trisomy 13, 18 or 21
- The follow-up of patient whose baby is affected by trisomy 13, 18 and 21
- The fact that this test is a screening test. The foetal karyotypes is the only examination that enables confirmation of the diagnosis of trisomy 13, 18 and 21
- A blood test is performed as of week 8 of pregnancy (= 10 weeks of amenorrhea)

Moreover, I have received the following information on Non-invasive prenatal testing for trisomies 13, 18 and 21:

- This test detects trisomies 13, 18 and 21.
- Optional: this test can also detect sex chromosomes aneuploidies[1] and gender
- If DNA coming from chromosome 21 (or chromosome 13 or 18) is in abnormal quantity, it means there is a strong likelihood that the foetus is affected by trisomy 21 (or 13, or 18)
- The result is either positive or negative but do not in itself enable a diagnosis
- The result will be sent to me and explained by the prescribing physician or any other practitioner experienced in prenatal screening
- A negative result indicates an extremely low risk but does not completely rule out the presence of anomalies being investigated.
- Consequently, it is essential to follow up rigorously with morphological ultrasounds for the second and third semesters.
- A positive result indicates a strong suspicion that the foetus is affected by one of the anomalies being investigated. The result must be confirmed by an invasive sample with the aim of performing foetal karyotype testing, the only examination that can confirm the diagnosis of trisomy 13, 18 and 21
- Sometimes, a failed result is possible. A second draw will be required to perform the test on cell-free foetal DNA in maternal blood.
- In very rare cases, the exam may provide no result. My clinician will then explain to me the different options available to me.
- Any conditions other than those specifically tested initially could be revealed by the examination.

I hereby consent to the performing of non-invasive Prenatal testing of trisomies 13,18 and 21 through cell-free foetal DNA in maternal blood.
The screening will be performed by Eurofins Biomnis laboratory, a medical biology laboratory authorized by the French Regional Public Health Authorities to perform prenatal diagnosis.
The original copy of this document will be sent to me. The second copy will be sent to Eurofins Biomnis Laboratory, which will perform the test. They will store the document under the same conditions as the examination report.

Date: D D M M Y Y

Prescribing clinician's signature	**Patient's signature**

[1] There is limited data on sex chromosomes aneuploisies (monosomy X, XXX, XXY, XYY) and additional information is not currently available

This document was drawn up based on recommendations from:
- the American College of Obstetricians and Gynecologists (ACOG), Sept 2015
- Decree 2014-32 of 14 January 2014
- HAS, May 2017 (French Health Authorities)

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