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**POC**  
**PRODUCTS OF**  
**CONCEPTION**

A stylized icon of a sperm cell, consisting of a white oval head and a long, wavy tail, positioned to the right of the text "CONCEPTION".

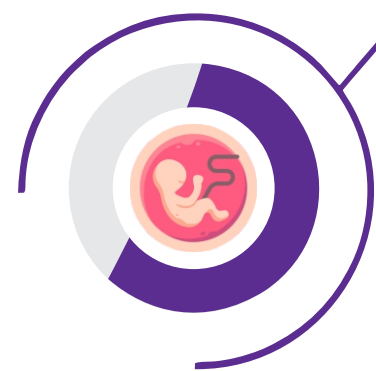


# Next-Generation Sequencing (NGS) to analyze fetal tissues

NCGM is now offering POC analysis via NGS utilizing our vast clinical experience with NGS and molecular genetics.

Depending on maternal age, miscarriages occur in 65% of human pregnancies, therefore analysis of the chromosomes from the products of conception (POC) is indicated. Until now, conventional karyotyping was used to analyze POC specimens, however, this method requires tissue culture and up to 70% of these cultures fail to grow. Tissue culture of POC specimens is also prone to maternal cell contamination which leads to over-reporting of 46,XX (normal female) karyotypes. Our strategy can detect or rule out Maternal Cell Contamination with >99% accuracy.

In couples in which there has been a spontaneous abortion it is crucial to know the cause that led to pregnancy loss. The information from POC testing can be helpful for patients and physicians to understand the cause of miscarriage and to develop a plan to support a future successful pregnancy.



**60%** of first trimester pregnancy losses are due to

**CHROMOSOME ABNORMALITIES**

## Transportation of Sample

The sample should be collected in sterile container with normal saline with 4-5 drops of gentamicin.

## POC aneuploidy screening using Next Generation Sequencing

NGS currently is the most comprehensive technique available worldwide. It detects defects up to 10MB (mega base pairs). NCGM has a very highly trained team, strong IT and Bioinformatics to handle such techniques. This technique has the capability to multiplex thousands of targets and hundreds of samples in a single sequencing run which in turn decreases the cost per sample.

POC testing is commonly done for miscarriages, and by testing the POC sample we can understand the cause of miscarriage and hence develop a plan to support a future successful pregnancy. This test can be performed under the following circumstances: Abnormal screening tests in pregnancy, repeated prior loss of pregnancy or loss of pregnancy.

## Why use NGS for POC testing?

It can detect aneuploidy in all 23 pairs of chromosome in one assay. Moreover we can also detect partial aneuploidies. This highly sensitive technique has the detection rate of 99%. Here we avoid the method of cell culturing which is usually prone to failure in POC samples. Several different regions of the whole genome are targeted, does not require live cells. The sample is also not required to be shipped within 24 hours since we do not require live cells. At last it is also a completely objective method.

## Advantages

- POC testing with NCGM does not require cell culturing, so there is no risk of culture failure.
- Accurate results are obtained in more than 98% of tests performed.
- Multiple dissections will be made to detect or rule out maternal cell contamination (MCC) with >99% accuracy. Results are available in 2 weeks.
- POC testing with NGS technology has greater resolution than the conventional karyotype.



### NOTE:

NGS cannot detect balanced translocation. Also this test is only developed for aneuploidy screening. For mutation analysis/single gene disorders we have separate tests on NGS platform. The report shall be available in 25-30 working days. However we are working on the TAT and will update you all once we have decreased the same.