

Patient Name : Ms.ARPITA AGARWAL	Visit No : CHA250040373
Age/Gender : 28 Y/F	Registration ON : 06/Mar/2025 11:22AM
Lab No : 10137668	Sample Collected ON : 06/Mar/2025 12:56PM
Referred By : Dr.ESIC HOSPITAL LUCKNOW	Sample Received ON : 06/Mar/2025 01:21PM
Refer Lab/Hosp : ESIC HOSPITAL LUCKNOW	Report Generated ON : 06/Mar/2025 03:39PM
Doctor Advice : DUAL MARKER,NT,NB SCAN	



Test Name	Result	Unit	Bio. Ref. Range	Method
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DUAL MARKER

Date of Birth	26/02/97
AGE AT TERM	28.5 years
MATERNAL WEIGHT	59.0 kg
GESTATIONAL AGE	12 WEEKS 4 DAYS
USG SCAN DATE	06/03/25
PREVIOUS TRISOMY PREGNANCY	NO SINGLE
DIABETES MELITUS	NO
SMOKING	NO
IVF	NO
RESULT OF MEASURED VALUE,RISK VALUE	
MOM PAPP-A	1.09
MOM HCG	0.72
Mom Nuchal Translucency	0.81
RISK FACTOR	
AGE RISK AR TERM	1:1120
TRISOMY 21 RISK WITH NT	<1:50000
TRISOMY 13/18 RISK WITH NT	1:99000
Result	Negative

Cut off levels in various disorders and detection rate

ABNORMALITY	CUT OFF	DETECTION RATE	FALSE POSITIVE
TRISOMY 21	1:250	Approximately 85%	5-10%
TRISOMY 13/18	1:100	Approximately 85%	5-10%

Useful For

Prenatal screening for Down syndrome (nuchal translucency, pregnancy-associated plasma protein A, human chorionic gonadotropin) and trisomy 18 (nuchal translucency, pregnancy-associated plasma protein A, human chorionic gonadotropin).
Clinical Information

Multiple marker serum screening has become a standard tool used in obstetric care to identify pregnancies that may have an increased risk for certain birth defects such as Down syndrome and trisomy 13. Second-trimester multiple marker screening has been well established for over a decade.

During Z002 through 2006, First trimester screening has been established as an alternative option of equal or better performance compared with the best second trimester screening programs.

The first-trimester screen is performed by measuring analytes in maternal serum that are produced by the fetus and the placenta. Additionally, the nuchal translucency (NT) measurement is a sonographic marker shown to be effective in screening fetuses for



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DR. NISHANT SHARMA
PATHOLOGIST

DR. SHADAB
PATHOLOGIST

Dr. Aditi D Agarwal
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Down syndrome. A mathematical model is used to calculate a risk estimate by combining the analyte values, NT measurement, and maternal demographic information. The laboratory establishes a specific cutoff for each condition, which classifies each screen as either screen-positive or screen-negative. A screen-positive result indicates that the value obtained exceeds the established cutoff. A positive screen does not provide a diagnosis, but indicates that further evaluation should be considered.

Serum Analytes

Human chorionic gonadotropin (total/free beta-hCG):

hCG is a glycoprotein consisting of alpha and beta subunits. hCG is synthesized by placental cells starting very early in pregnancy and serves to maintain the corpus luteum and, hence, progesterone production during the first trimester. Thereafter, the concentration of hCG begins to fall as the placenta begins to produce steroid hormones and the role of the corpus luteum in maintaining pregnancy diminishes. Increased total /free hCG levels are associated with an increased risk for Down syndrome.

Pregnancy-associated plasma protein A (PAPP-A):

PAPP-A is a 187 kDA protein comprised of 4 subunits: 2 PAPP-A subunits and 2 pro-major basic protein (proMBP) subunits. PAPP-A is a metalloproteinase that cleaves insulin-like growth factor-binding protein-4 [IGFBP-4], dramatically reducing IGFBP-4 affinity for IGF1 and IGF2, thereby regulating the availability of these growth factors at the tissue level. PAPP-A is highly expressed in first-trimester trophoblasts, participating in regulation of fetal growth. Levels in maternal serum increase throughout pregnancy. Low PAPP-A levels before the 14th week of gestation are associated with an increased risk for Down syndrome and trisomy 18.

Nuchal translucency [NT]:

The NT measurement, an ultrasound marker, is obtained by measuring the fluid-filled space within the nuchal region [back of the neck) of the fetus. While fetal NT measurements obtained by ultrasonography increase in normal pregnancies with advancing gestational age. Down syndrome fetuses have larger NT measurements than gestational age-matched normal fetuses. Increased fetal NT measurements can therefore serve as an indicator of an increased risk for Down syndrome.

Interpretation

Screen-Negative:

A screen-negative result indicates that the calculated screen risk is below the established cutoff of 1/250 for Down syndrome and 1/100 for trisomy 18. A negative screen does not guarantee the absence of trisomy 18 or Down syndrome. Screen-negative results typically do not warrant further evaluation

Screen-Positive:

When a Down syndrome risk cutoff of 1/250 is used for follow-up, the combination of maternal age, pregnancy-associated plasma protein A, human chorionic gonadotropin, and nuchal translucency has an overall detection rate of approximately 85% with a false-positive rate of 5% to 10%. In practice, both the detection rate and false-positive rate increase with age, thus detection and positive rates will vary depending on the age distribution of the screening population.

Cautions:

Upon receiving maternal Serum screening results, all information used in the risk calculation should be reviewed for accuracy [eg. maternal date of birth, demographics, sonographic information). If any information is incorrect, the laboratory should be contacted for a recalculation of the estimated risks. This test does not screen for neural tube defects

Variables Affecting Marker Levels:

1. All serum marker multiple of medians are adjusted for maternal weight [to account for dilution effects in heavier mothers). The estimated risk calculations and screen results are dependent on accurate information for gestation, maternal age, and weight,



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inaccurate information can lead to significant alterations in the estimated risk.

2. A screen-negative result does not guarantee the absence of fetal defects. A screen-positive result does not provide a diagnosis, but indicates that further diagnostic testing should be considered [an unaffected fetus may have screen-positive result for unknown reasons). In fact, given the low prevalence of Down syndrome, the majority of women with a positive screen will not have a Down syndrome fetus.

3. In twin pregnancies, the risk for Down syndrome is approximated, using twin-adjusted medians. A specific risk for trisomy 18 cannot be calculated; therefore, results for trisomy 18 are reported as either screen-negative or screen-positive. Risks for triplets and higher multiples cannot be calculated.

Note : A positive screen must be followed with triple/quadruple screen, NIPT (non-invasive prenatal testing) or an amniocentesis test along with imaging studies.

*** End Of Report ***

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PR.



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ULTRASOUND STUDY OF OBSTETRICS WITH NT/NB SCAN

- LMP is 09/12/2024 EGA by LMP is 12 weeks + 3 days.
- Single gestation sac with single live foetus is seen in uterine cavity.
- **CRL** measures 62mm corresponding to POG of 12 weeks + 5 days.
- Foetal heart rate is 150/minute.
- **Nuchal translucency** measures approx. 1.3mm.
- Nasal bone is seen.
- **Placenta is developing fundo-posteriorly.**
- Ductus venosus shows normal waveform.Butterfly sign and stomach bubble seen.
- Cervical length and width is normal.
- Bilateral uterine artery shows normal waveform (mean PI: 0.8). Left uterine artery PI is 0.8. Right uterine artery PI is 0.8.
- No adnexal mass lesion is seen.
- EDD is approximately on 13/09/2025.

IMPRESSION:

- **SINGLE LIVE INTRAUTERINE PREGNANCY OF 12 WEEKS + 5 DAYS (±7 DAYS).**
- **NORMAL BILATERAL UTERINE ARTERY DOPPLER INDICES.**

ADV: DOUBLE MARKER.

Note:- I Dr. Atima Srivastava, declare that while conducting ultrasound study of Mrs. Arptia Agarwal, I have neither detected nor disclosed the sex of her foetus to any body in any manner. All congenital anomalies can't be excluded on ultrasound.

Clinical correlation is necessary.

**[DR. ATIMA SRIVASTAVA]
[MBBS, DNB (OBSTETRICS AND GYNAECOLOGY)]
[PDCC MATERNAL AND FETAL MEDICINE (SGPGIMS LUCKNOW)]**

Transcribed By: Purvi

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