Maternal Marker

What is Maternal Serum Screening?

Maternal serum screening is designed to identify pregnant women who could benefit from prenatal testing for Down syndrome (Trisomy21), Patau Syndrome (Trisomy 13), Edwards Syndrome (Trisomy18), Open Neural tube Defects (e.g. Spina Bifida). These tests are done on a blood sample and pose no risk to the developing baby.

Maternal Screening Approaches: 1st & 2nd Trimester:

S.No.	Test	Markers	Ideal Time
1	Dual test	Free Beta- hCG, PAPP-A	Ideal time for combined risk assessment 11-13 weeks
2	Triple Test	AFP, Unconjugated Estriol (uE3), β- HCG	Offered Time 14- 22 weeks Ideal Time- 15-20 weeks
3	Quadruple Test	AFP, Unconjugated Estriol (uE3), β- HCG, Inhibin A	Offered Time 14- 22 weeks Ideal Time- 15-20 weeks

Clinical Utilities:

Double Marker Test by CLIA (First Trimester):

1. A non-invasive blood tests.
2. Prenatal Screening for Down syndrome (Trisomy21), Patau Syndrome (Trisomy 13), Edwards Syndrome (Trisomy18).
3. Increased total HCG levels are associated with an increased risk for Down Syndrome.

4. Comprehensive reporting with graphs for better understanding.
5. Negative results can reduce maternal anxiety earlier in pregnancy.
6. Low PAPP-A levels before the 14th week of gestation are associated with an increased risk for Down Syndrome (Trisomy 21) and Edwards Syndrome (Trisomy 18).
7. The NT (Nuchal Translucency), an ultrasound marker is important component for combined trisomy 21 risk assessment.

1st trimester markers in various disorders:

Type of Disorder	HCG (Human chorionic gonadotropin) MoM	PAPP-A (Pregnancy-associated plasma protein) MoM	NT (Nuchal Translucency) MoM
Down syndrome (Trisomy 21)	High	Low	High
Edwards Syndrome (Trisomy 18)	Low	Low	High
Patau Syndrome (Trisomy 13)	Unknown	Low	High
Fetal demise	Unknown	Low	High

Triple Marker Test & Quadruple Marker Test by CLIA (Second Trimester):

1. Prenatal Screening for Downs Syndrome, Trisomy 18, and Neural Tube Defects.
2. Elevated AFP is associated with NTD (Neural Tube Defects).
3. Low AFP is associated with an increased risk for Down Syndrome (Trisomy21) and Edwards Syndrome (Trisomy 18).
4. Decreased Unconjugated Estriol (uE3) has been shown to be a marker for Down Syndrome (Trisomy21) and Edwards Syndrome (Trisomy 18).

2nd trimester markers in various disorders:

Type of Disorder	AFP (Alpha-fetoprotein) MoM	hCG (Human Chorionic Gonadotropin) MoM	uE3 (Unconjugated Estriol) MoM	DIA (Dimeric inhibin A) MoM
Open spina bifida	High	Normal	Normal	Normal
Anencephaly	High, very high	Normal	Very low	Normal
Down syndrome (Trisomy 21)	Low	High	Low	High
Edwards Syndrome (Trisomy 18)	Low	Low	Low	Low normal

Test Details:

S. No.	Test Name	Test Code	MRP	Technique	Specimen	TAT / Reported on
1	Dual Test (1st Trimester)	RIM10114	2150	Chemiluminescence Immunoassay (CLIA)	3 ml. (2 ml. Minimum) Serum from 1 SST (Gel Barrier Tube) .Valid between 10 – 13 wks.(Ideal 11-13 wks.).For Combined Risk assessment [Biochemical risk + Nuchal Translucency].Kindly enclose USG report between 11-13 weeks gestation	3rd Working Day by 7:00 p.m.

					including CRL,NT &Nasal bone.	
2	Triple Test (2nd Trimester)	RIM10115	2420		3 ml. (2 ml. Minimum) Serum from 1 SST (Gel Barrier Tube). Valid between 14 -22 wks. (Ideal 15-20 wks.)	
3	Quadruple Test	RIM10116	3500		3 ml. (2 ml. Minimum) Serum from 1 SST (Gel barrier tube) Valid between 14 -22 wks (Ideal 15-20 wks)	4th Working Day by 7:00 p.m.