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Dr Anita Kaul, Head and Coordinator, Fetal Medicine and Therapy

# ENHANCED FIRST TRIMESTER SCREENING

| Test FTS | | | |
|---|---|---|---|
| Date of birth: | 09 September 2002 | **Examination date:** | **15 January 2026** |
| **Referring doctor:** | **Dr Kesari Kapoor Asawari** | Hospital no: | 1212121212 |
| | | Visit no: | 2 |

## History

Ethnic origin: **South Asian (Indian, Pakistani, Bangladeshi).**
Parity: 1;  Spontaneous deliveries between 16-30 weeks: 0;  31-36 weeks: 0;  Deliveries at or after 37 weeks: 1.
Maternal Blood Group: A; Rhesus: positive; Maternal BMI: 27.4; Maternal weight: 76.9 kg;  Height: 167.6 cm.
Smoking in this pregnancy: no;  Diabetes Mellitus: no;  Chronic hypertension: no;  Systemic lupus erythematosus: no;
Antiphospholipid syndrome: no;  PE in a previous pregnancy: no;  Previous small baby: no.
Conception: spontaneous;
**last period:**  20 October 2025

| | Gestational age | EDD |
|---|---|---|
| **last period** | 12 weeks + 3 day(s) | 27 July 2026 |
| **US** | **13 weeks + 2 day(s)** from CRL | **21 July 2026** |

## First Trimester Ultrasound

US system: Voluson Swift. View: satisfactory.

| Findings | alive fetus | |
|---|---|---|
| Fetal heart activity | visualised | |
| FHR | 156 bpm | |
| **Crown-rump length (CRL)** | 70.7 mm | |
| **Nuchal translucency (NT)** | 1.60 mm | |
| Biparietal diameter (BPD) | 25.8 mm | |
| Head circumference (HC) | 92.1 mm | |
| Abdominal circumference (AC) | 65.3 mm | |
| Femur length (FL) | 8.6 mm | |
| Intracranial translucency | present, 2.1 mm | |
| Ductus Venosus PI | 1.24 | |
| Placenta | anterior | |
| Amniotic fluid | normal | |
| Cord | 3 vessels | |

## Chromosomal markers:

Nasal bone: present;  Tricuspid Doppler: normal.

| | | |
|---|---|---|
| **Uterine artery mean PI:** | 2.385 | **equivalent to 1.551 MoM** |
| **Mean Arterial Pressure:** | 84.500 mmHg | **equivalent to 0.9769 MoM** |
| **Endocervical length:** | 33.1 mm | |

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## Fetal Anatomy

| | |
|---|---|
| **Skull/brain:** | appears normal |
| **Spine:** | suboptimal views |
| **Heart** | |
| **Abdomen:** | appears normal |
| **Stomach:** | visible |
| **Bladder / Kidneys:** | visible |
| **Hands:** | both visible |
| **Feet:** | both visible |

## Maternal Serum Biochemistry

Sample taken on: 15 January 2026.

| | | | | | |
|---|---|---|---|---|---|
| Free ß-hCG | 26.30 IU/l | Roche | equivalent to | 1.164 MoM |
| PAPP-A | 2.868 IU/l | Roche | equivalent to | 0.826 MoM |
| PlGF | 52.500 pg/ml | Roche | equivalent to | 0.815 MoM |

### Risk calculation
Patient counselled and consent given.

**FMF Operator: Tina Ann Varghese, FMF Id: 281983**

| Condition | Background risk | Adjusted risk |
|---|---|---|
| Trisomy 21 | 1 in 1433 | <1 in 20000 |
| Trisomy 18 | 1 in 16916 | <1 in 20000 |
| Trisomy 13 | <1 in 20000 | <1 in 20000 |

| | |
|---|---|
| Preeclampsia before 37 weeks | 1 in 411 |
| Fetal growth restriction before 37 weeks | 1 in 433 |
| Spontaneous delivery before 34 weeks | 1 in 386 |

The background risk for aneuploidies is based on maternal age (23 years). The adjusted risk is the risk at term, calculated on the basis of the background risk, ultrasound factors (fetal nuchal translucency thickness, nasal bone, tricuspid Doppler, ductus venosus Doppler, fetal heart rate) and maternal serum biochemistry (PAPP-A, free beta-hCG, PlGF).

Risks for preeclampsia and fetal growth restriction are based on maternal demographic characteristics, medical and obstetric history, mean arterial pressure (MAP), uterine artery Doppler, serum PlGF and serum PAPP-A.  The risk of spontaneous delivery before 34 weeks is based on maternal characteristics, obstetric history and cervical length.

Biophysical and biochemical marker medians used to calculate MoMs are corrected as necessary according to several maternal characteristics including racial origin, weight, height, smoking, method of conception and parity.

The estimated risk is calculated by the FMF-2018 software (version 4.8) and is based on findings from extensive research coordinated by the Fetal Medicine Foundation (UK Registered charity 1037116). The risk is only valid if the ultrasound scan was performed by a sonographer who has been accredited by the Fetal Medicine Foundation and has submitted results for regular audit (see www.fetalmedicine.org).

### Crown-rump length



mm vs GA (weeks)
Robinson et al. BJOG 1975; 82: 702-710

### Nuchal translucency



mm vs CRL (mm)

### 1st trimester risk of trisomy 21



% vs Maternal age

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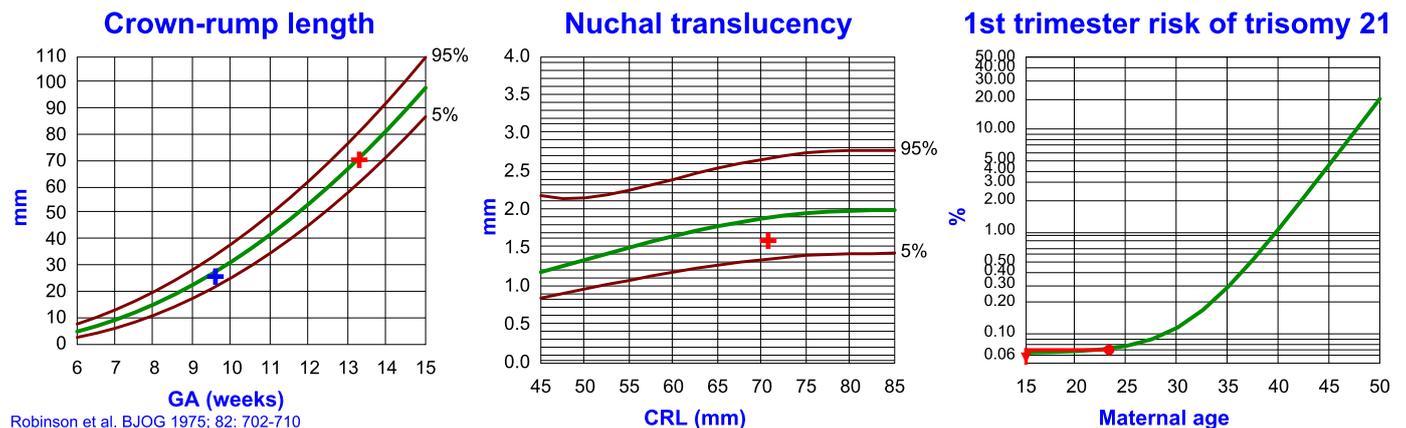
**Recommendations:** Routine Anomaly scan at 19-20 weeks

**Comments**

*Thank you for referring your patient **Test FTS**, date of birth 09/09/2002.*

*This is Patient's routine first trimester screening in our unit today. This is her second pregnancy, conceived in lactational amenorrhea (previous baby 16 months old, born at term via emergency LSCS).*

*The pregnancy has been dated by today's CRL(irregular cycles,conceived in lactational amenorrhea)*

***On scan today, the adjusted risk for Down Syndrome combining the nuchal translucency, nasal bone, tricuspid and DV Dopplers, free ßhCG, PAPP- A is reduced compared to the age-related risk.***

*We discussed the options of the further management :*
*1) Sending maternal blood for a screening test called the Cell free  DNA (cfDNA)/ NIPT/ NIPS which has a Detection Rate and Specificity of 99% for T21 if the Fetal Fraction is greater than 7%.*
*3)They can also opt for a Diagnostic test called the Needle test by invasive testing (CVS or Amniocentesis) but this has a risk of miscarriage 0.5/0.2% respectively)*

***We shall like to call her back for a routine anomaly scan at 19-20 weeks.***

### Detailed First Trimester  Examination
### HEAD and BRAIN
*Intact cranium/ normal shape: seen*
*Midline falx: seen*
*Choroid plexus/ lateral ventricles: seen*

### FACE and NECK
*Retronasal triangle:seen*
*Orbits with lenses:seen*

### THORAX
*Thorax shape with lung fields:seen*

### HEART
*Heart intathoracic with regular rhythm:seen*
*Cardiac size and axis:seen*
*Four chamber view:seen*

### ABDOMEN
*Stomach filled:seen*
*Bladder filled (Length < 7MM):seen*
*Intact abdominal wall:seen*
*Two umblical arteries:seen*
*Kidneys:seen*

### LIMBS
*Upper limbs with three segments:seen*
*Lower limbs with three segments:seen*

***SPINE:** seen in sub-optimal views*
*Ultrasound Obstet Gynecol 2023; 61: 127–143.*

*Please do not hesitate to contact us if you have any further questions or go to www.fetalmedicineindia.in*
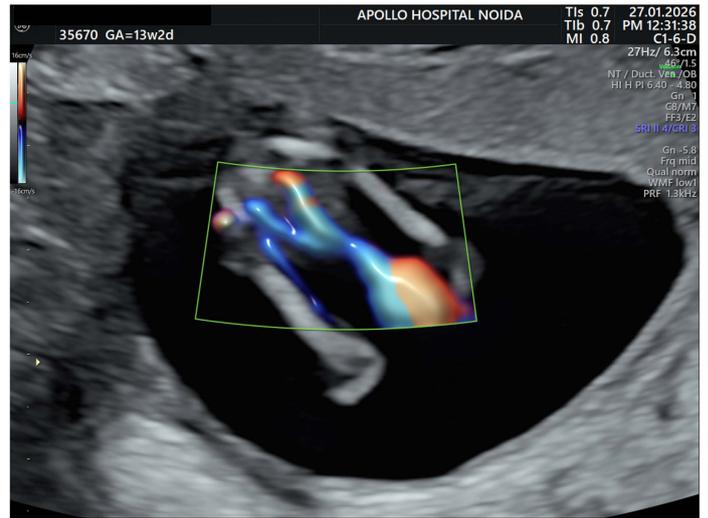
Please do not hesitate to contact me in case of any queries.

I the undersigned declare that while conducting the ultrasound on Mrs  FTS  Test I have neither detected nor disclosed the sex of the fetus to anyone in any manner.
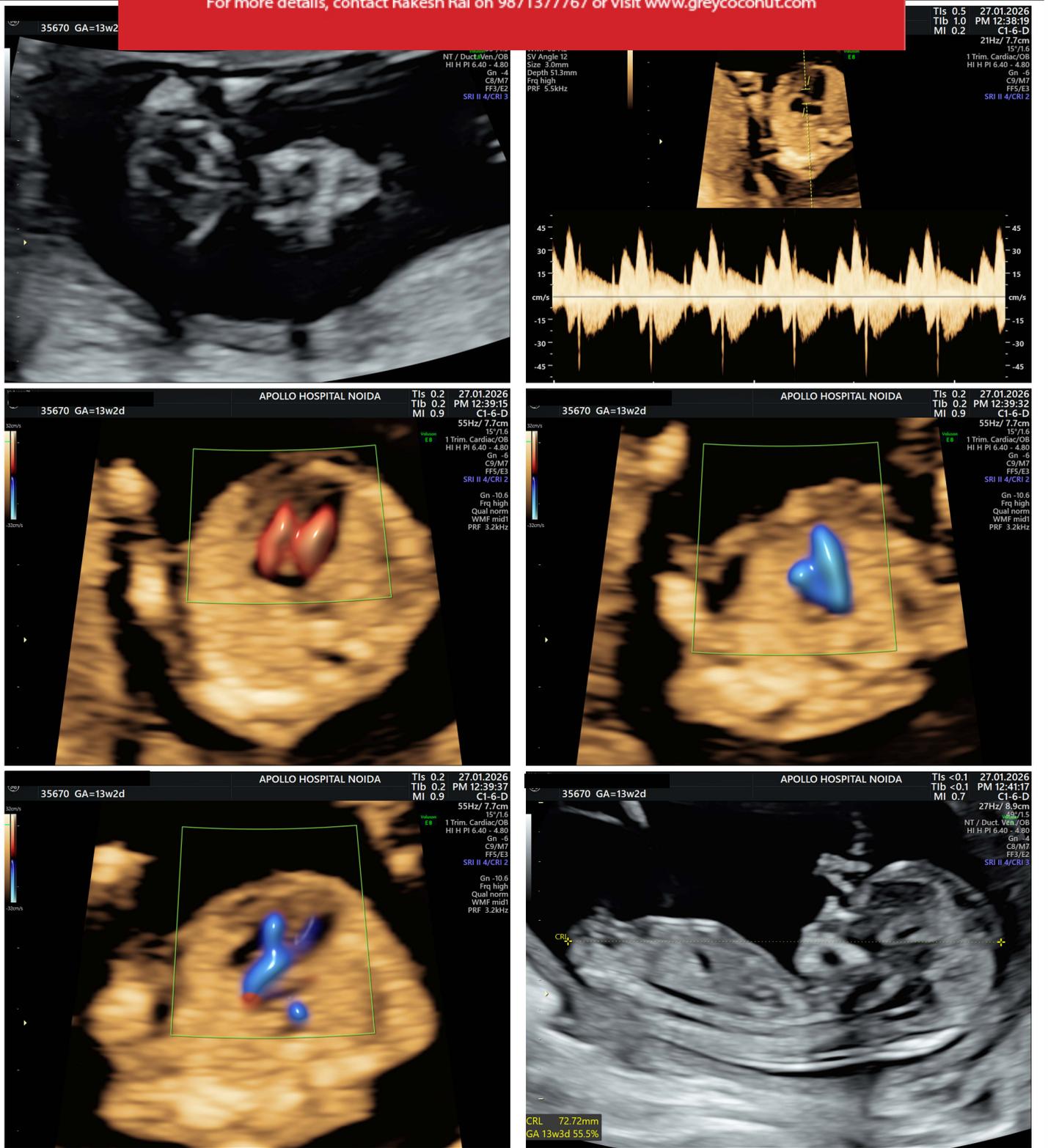
Best wishes

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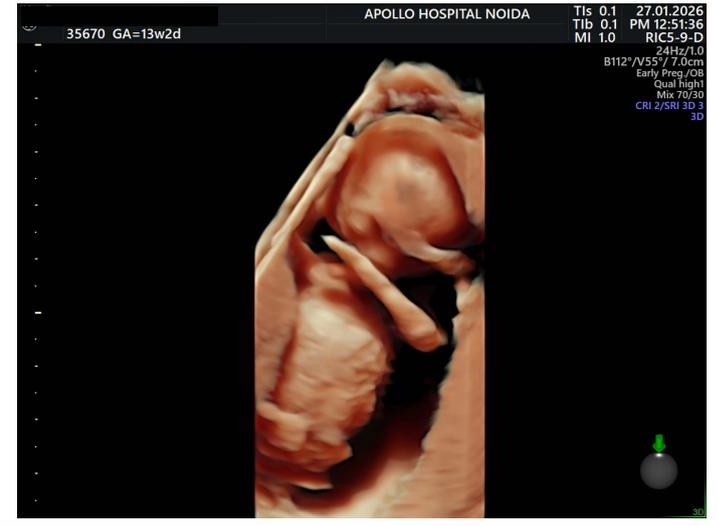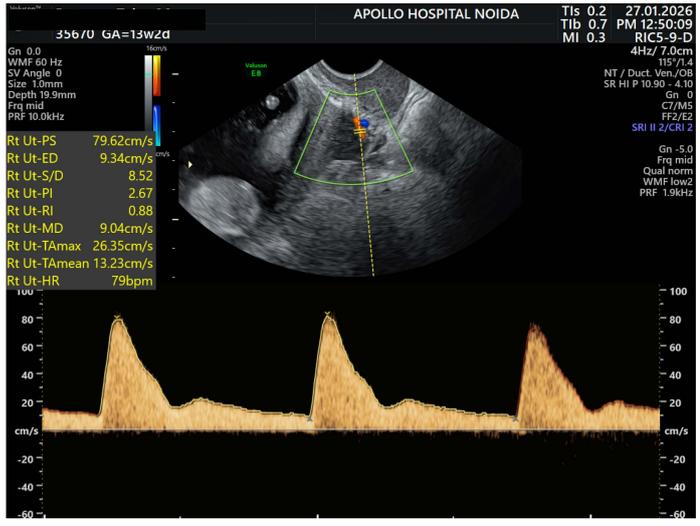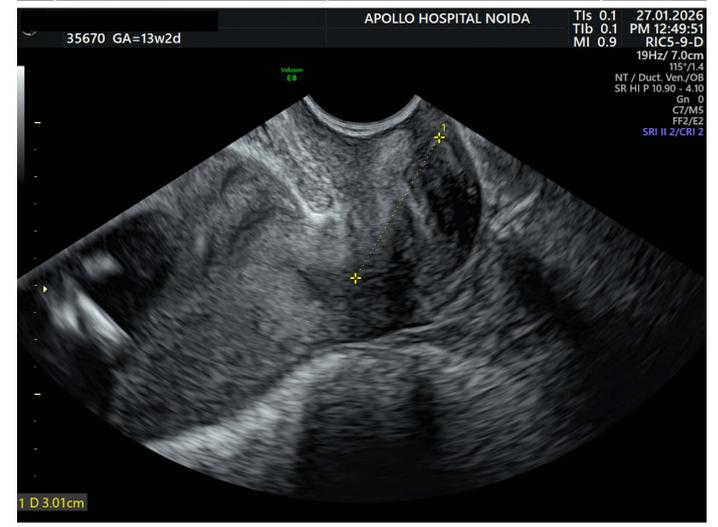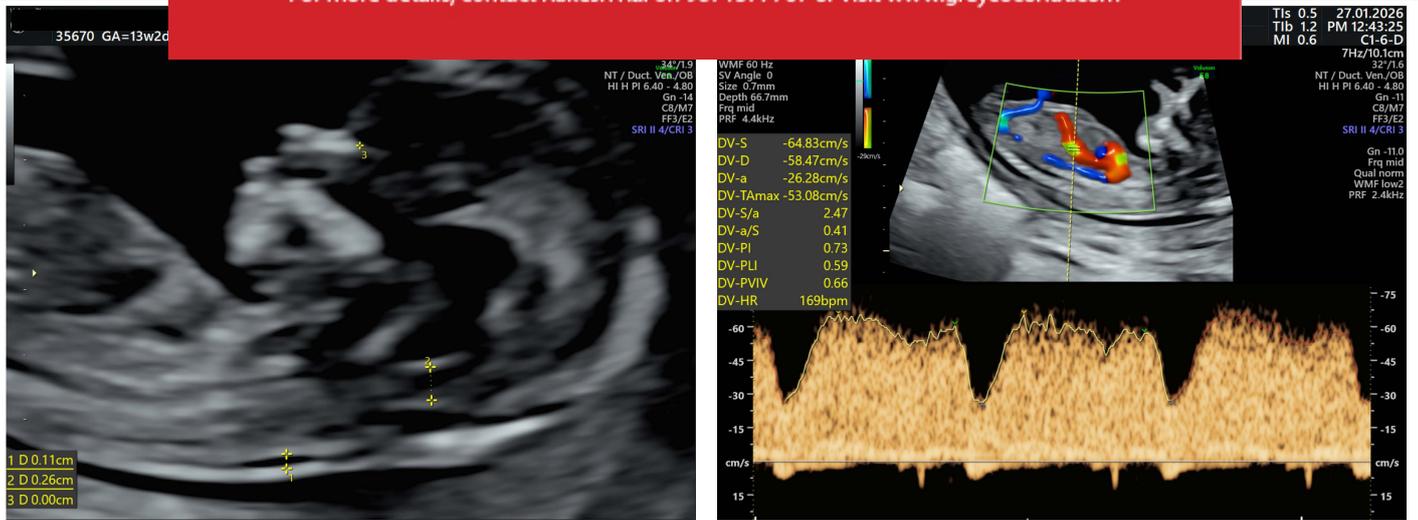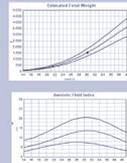
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*astraia.software*

# Your benefits at a glance

> Monitor and document the entire pregnancy from early assessment through to birth outcome with well structured screen for fetal and maternal structures, growth scans, doppler ultrasound, placenta evaluation, cervical assessments and other examinations

> Latest FMF risk algorithm to calculate risks for 21, 18, 13 Trisomies, intrauterine growth restriction, preterm delivery in the first trimester, as well as the risk for pre-eclampsia in all three trimesters.

> Both fetalecho and fetalneuro module have been designed by and for specialists in order to provide an expert tool to systematically assess the fetal heart and brain.
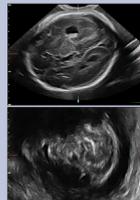
**Growth Bars**

| | |
|---|---|
| 54.0 | mm |
| 194.8 | mm |
| 22.0 | mm |
| 54.0 | mm |
| 160.0 | mm |
| 33.0 | mm |
| 0.77 | |
| 1.64 | |
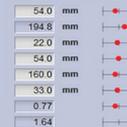
**Reference Charts**

**Images, Clips, 3D Volumes**

## Integrated tools, functions and features

### Up-to-date charts and formulas from peer-reviewed articles

Over 400 charts from peer-reviewed articles are currently integrated in astraia to graphically represent your biometry and doppler measurements.

### Well-structured patient reports

Generate well-structured reports using predefined templates for all major exam types The reports are customizable with images, charts, drawings and other data.

**2,000+ installations**    **70+ countries**

### References

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