



ULTRASOUND

- The first trimester screening ultrasound should be performed between 11 weeks and 13 weeks 6 days of gestation.

- It can only be performed with the appropriate software endorsed by the Fetal Medicine Foundation.
- It involves measurement of nuchal translucency, the normal clear area in the fetal neck that lies between the skin and the soft tissues overlying the cervical spine.
- Reasons for the upper limit of 13 weeks 6 days gestation include:
 - The incidence of abnormal accumulation of nuchal fluid in chromosomally abnormal fetuses is lower at 14-18 weeks gestation than at less than 14 weeks. [1-3](#)
 - It provides the option of an earlier and safer form of termination.
 - The fetus is often in the vertical position after 14 weeks gestation and this makes measurement of the nuchal translucency more difficult. [4-5](#)
- Reasons for the lower limit of 11 weeks gestation include: [6](#)
 - Screening requires the availability of a suitable diagnostic test and chorionic villus sampling is performed after ten weeks gestation.
 - The majority of major fetal abnormalities can be detected after this time.
- Measurement of nuchal translucency firstly involves viewing a sagittal section of the fetus in the neutral position.
 - The maximal thickness of subcutaneous translucency between the skin and the soft tissue overlying the cervical spine is measured. [2](#)
 - At least three separate measurements should be obtained and the mean value reported. [7](#)
 - It should only be performed by trained operators with the technique, procedure and criteria being standardised to achieve uniform results.
- The combination of fetal nuchal translucency, maternal serum pregnancy-associated plasma protein-a (PAPP-A), beta human chorionic gonadotrophin (B-HCG) and maternal risk factors identifies approximately 90% of cases of trisomy 13,18 and 21 with an approximate 5% false positive rate. [8-11](#)
- Although not used routinely, the absence of the nasal bone appears to be a sensitive marker of Down syndrome. [12-13](#)
- The first trimester ultrasound can also be used to:
 - determine fetal viability.
 - detect multiple pregnancies.
 - date the pregnancy.
 - identify major anatomical defects.

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