

# Accuracy of ultrasonography compared to laboratory in fetal screening, which one is more reliable?

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## Abstract

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**Background:** The aim of this study is to compare the efficacy of nuchal translucency (NT) measurement with laboratory screening tests in prenatal diagnosis of Down syndrome (DS) and neonatal outcomes. **Materials and Methods:** In this cross-sectional-descriptive study, data were collected from 260 pregnancy files. Ages of pregnant women were 20–34 year old who referred for prenatal care. NT was measured by ultrasound at 11–13<sup>+</sup><sub>6</sub> and quad marker tests at 15–18 gestational week. Data analysis was performed by SPSS 21 (IBM, USA) that was considered significant with  $P < 0.05$ . **Result:** Two-hundred and twenty-one pregnant women with average age of  $26.6 \pm 4.44$  years were screened. Frequency of negative screening tests for DS was 188 pregnant women (88.7%) and 24 (11.3%) of them positive. Amniocentesis was performed for those who had positive screening test, but their NT measurement was  $<3.5$  mm. All reports of amniocentesis were negative which was consistent with fetal NT ultrasonography reports, and all neonatal outcomes were normal after delivery follow-up. **Conclusion:** NT measurement and quad marker test cannot accurately predict the fetal health in the future; however, NT is more reliable than laboratory screening tests because it is more consistent with the results of amniocentesis. NT is also a safer and cheaper method than amniocentesis. Pregnant women tolerate an unfavorable psychological stress and high cost during amniocentesis. The suggested option is to assess the cell-free fetal DNA in pregnant blood instead of amniocentesis.

**Keywords:** Laboratory, neonatal outcomes, nuchal translucency, screening