

# **Measurement of fetal urine production by three dimensional ultrasound in normal pregnancy**

THESIS

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BY

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## English summary

-Assessment of fetal well being have several methods including assessment of the amniotic fluid volume, fetal breathing, fetal movement, fetal tone and non stress test .Also, the use of the Doppler in the assessment of the umbilical blood flow was also an advancement step in the assessment of the fetal well being and not only the umbilical artery but also the middle cerebral artery and the ductus venosus.

-Introduction of the three dimensional ultrasound produces a great advance in the measurement of the organ volume and that was proved in other studies on the fetal lung ,the placenta ,gestational sac, the fetal thigh volume and the bladder volume as in our study.

-Accuracy and reliability of the organ volume measurement provided by the three dimensional ultrasound measurement enables the researchers to measure the fetal urine production rate that is hoping to be introduced as anew reliable method in assessment of fetal well being and in the diagnosis of the causes of oligohydramnios and poly hydramnios .in our study , Fetal urine production rate shows significant increase in

the fetal urine production rate in uncontrolled gestational diabetes mellitus .

-Further studies needed to assess fetal urine production rate in other diseases.