Early spontaneous abortions occur in 6-20% of all pregnancies; however, the exact mechanisms involved in these losses remain unclear. In this context, several 2D ultrasonographic parameters have been tested as predictors of early gestational losses including the shape and diameter of the yolk sac, and embryonic heart rate. The mean gestational sac diameter has also been correlated with gestational age and fetal growth.

There have been first trimester studies on the volumetric examination of the gestational sac, amniotic fluid, placenta and yolk sac. This dissertation will focus on early pregnancy loss and the investigation of its etiology. Conventional ultrasonographic methods will be reviewed and compared with novel, more sophisticated methods in order to evaluate if scientific research as come closer to the etiology and early diagnosis of miscarriage. Special focus will be put on the predictive value of gestational sac shape and volume.