

Fetal Doppler sonography

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Check of this article is requested.

Suggested reviewer: Carmeljcaruana

Introduction

Fetal Doppler Sonography is used in prenatal care to measure the blood flow velocity inside the blood vessels of a pregnant woman and her baby or to listen to the fetal heartbeat. Therefore ultrasound waves with frequencies from 2-3 MHz are sent inside the maternal body, which are directed at certain vessels. Inside these vessels, the blood cells circulate and if the ultrasound wave hits them, the wave gets reflected and undergoes a change in its frequency. This method is used to diagnose several anomalies like a restricted blood flow or blood clots which can harm the unborn child because of the bad blood supply which often leads to an impaired development of the fetus.



Fetal Doppler Sonography in general

For this examination, a handheld device, a transducer or a probe is used, which sends out short pulsed ultrasound waves into the patient's womb. When the ultrasound waves hit a vessel or the baby's beating heart, they get reflected and their frequency changes. The change in the frequency is measured by the Ultrasound machine and the blood flow velocity or the fetal heartbeat can be calculated. A positive aspect is that this method can point out upcoming diseases two to three weeks before other symptoms appear so the physician can e.g. initiate a lifesaving medication.

Different Fetal Doppler Ultrasound tests

This list contains all the points where the blood flow velocity can be measured. Some of them belong to the maternal blood circuit and some to the fetal blood circuit. It is important to supervise both of them because during pregnancy the mother supplies the fetus. A good example for an artery which is essential for the fetal supply is the umbilical artery.



A. renalis, Aorta fetalis, Vena cava, Ductus venosus, A. arcuate, A. umbicalis, A. uterine, A. cerebri media

Conclusion

Fetal Doppler Sonography is relatively inexpensive, fast, non-invasive and harmless for the fetus and the pregnant woman. Hence it is a great method to supervise the health of the fetus in prenatal care, especially if it concerns high-risk pregnancies. There are even Fetal Doppler Sonography devices for home use that make the fetal heartbeat audible.

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