

INFORMATION ABOUT FETAL NEUROSONOGRAPHY

What is an ultrasound scan?

Ultrasound scanning is an imaging technique allowing the visualization of parts of the body by using high-frequency sound waves (ultrasound, not audible by human ear) able to go through the tissues. When the sound waves reach the fetus, echoes are produced and transformed into images on the ultrasound machine screen.

What is fetal neurosonography?

It is a diagnostic ultrasound examination performed to obtain a detailed evaluation of the fetal central nervous system (CNS). This scan allows to evaluate all the brain and spine structures in order to define a normal CNS anatomy or to diagnose a CNS abnormality.

When should it be done?

The main indication to fetal neurosonography is the suspicion of a brain or spine abnormality during the II trimester screening examination. However, there are also indications pre-existing to the pregnancy, such as some maternal conditions or a CNS abnormality in previous pregnancies, leading to an increased risk for brain or spine anomalies in the current pregnancy.

How is the exam performed?

It depends on fetal position in the uterus. When the fetus is in a cephalic presentation (head down), transvaginal approach is the best way to perform this exam. If the fetus is breech, with the head up, transabdominal sonography is the technique of choice.

At which gestational age should a fetal neurosonography be performed?

The appropriate gestational age for a fetal neurosonography is 20-22 weeks of gestation, even if it could be also performed at earlier gestational ages. In such cases, the exam should be repeated at 20-22 weeks, due to the lower diagnostic accuracy at earlier stages. Moreover, in case of specific risk for late-onset or evolving CNS defects, it may be appropriate to perform a further examination in the III trimester of pregnancy.

However, the best gestational age to perform neurosonography depends on many factors, including the referral indication and when the congenital CNS defect is suspected.

Does fetal neurosonography have diagnostic limits?

Although the exam is performed by an experienced operator, it is not possible to diagnose all the CNS abnormalities. The diagnostic accuracy of neurosonography is also related to the gestational age, as many cerebral anomalies are evolving or late-onset, becoming visible and detectable only in the III trimester of pregnancy or after birth.

What happens if a brain or spine anomaly are detected?

If a congenital defect is diagnosed during fetal neurosonography the couple should receive detailed information on the pathological condition detected, and counseled about management options, including further investigations for a better definition of the fetal prognosis. Moreover, a

multidisciplinary counseling should be also provided. It is a patient's right to seek for a second opinion and the Referral Center should be supportive and collaborative.

Is the fetal neurosonography safe for the fetus?

Ultrasound has been used in obstetric practice for over thirty years and no harmful effects on the fetus, including long term, have been reported. For this reason, with the current procedures, the diagnostic use of ultrasound is considered safe during pregnancy.

INFORMED CONSENT TO FETAL NEUROSONOGRAPHY

I hereby (name, surname) _____ declare that:

- I have been correctly informed about fetal neurosonography and understood the contents of this information.
- I had the opportunity of clarifying my doubts with a doctor and all my questions were satisfactorily answered.
- I am aware that this examination is suggested but not mandatory and I would like to undergo the examination aware that fetal neurosonography might identify fetal anomalies requiring further diagnostic examinations.

Date

Patient's signature