

## **INFORMATION ABOUT GYNAECOLOGICAL ULTRASOUND**

### ***What is ultrasound?***

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 gynaecological ultrasound?***

It is an ultrasound examination of the internal female genital apparatus (uterus and adnexa, i.e. fallopian tubes and ovaries).

### ***How is it done?***

Gynaecological ultrasound can be performed in three ways:

- 1) Trans-vaginal ultrasound: the examination is performed after emptying the bladder by introducing a probe into the vagina covered by a disposable glove or cover. This is the most appropriate method for most clinical conditions.
- 2) Trans-abdominal ultrasound: the examination is performed after adequate bladder filling by placing the probe on the abdomen, mainly in case of special conditions (e.g. virgo patient, vaginal stenosis) or indications such as the examination of big ovarian cysts, not fully assessable trans-vaginally or trans-rectally.
- 3) Transrectal ultrasound: an examination performed after emptying the bladder by introducing a probe into the anorectal canal covered by a disposable glove or cover. Transrectal ultrasound enables the internal genital apparatus to be assessed with good resolution and is an alternative to the transvaginal approach in the case of specific clinical conditions (virgo patient, vaginal stenosis, previous radiation therapy, etc.).

### ***When is it performed? Is it a painful examination?***

The gynaecological ultrasound examination, in particular the trans-vaginal ultrasound, can be performed at any time during the menstrual cycle or menopause. Sometimes it is appropriate to perform the ultrasound at a particular time of the cycle.

A gynaecological ultrasound scan is generally painless (at most it may cause a little discomfort), it has no side effects and requires no special preparation on the behalf of the patient.

### ***What is trans-vaginal ultrasound for?***

The examination can serve many purposes, such as to identify anatomical/functional pathological conditions of the female internal genitalia, to identify anatomical conditions at risk of cancer, to monitor patients undergoing medical/surgical treatment, to detect possible changes in organs and pelvic structures resulting from pathological processes of the genital apparatus.

***What are the limitations of the examination?***

Gynaecological ultrasound has some limitations: in about 10% of ultrasound examinations the endometrium will not be visible; in post-menopause the visualization of the ovaries could be not possible. The accuracy of gynaecological ultrasound, even when performed at its best, is not 100% as the proper visualization of the endometrium and ovaries could be limited by certain clinical conditions such as obese patient, unfavorable uterine position, significant bowel meteorism or big uterine fibroids.

Although transvaginal ultrasound is an accurate in differential diagnosis between benign and malignant tumors, its use in screening for gynaecological malignancies is currently not supported by robust scientific data.

Screening for ovarian cancer, which is not recommended in the general population, is instead suggested in the high-risk female population (BRCA 1-2 gene mutation and Lynch syndrome) in case of refusal or contraindication to prophylactic surgery.

***Can further investigations be necessary after the examination?***

The doctor might complete the medical examination with a trans-abdominal ultrasound. It may sometimes be useful to repeat the examination in another phase of the menstrual cycle or in a following day, in order to assess the evolution of any detected lesion or to compare the ultrasound findings with those obtained by other imaging methods (CT, MRI, PET, etc.) or laboratory tests (tumor marker assays, hormone assays, inflammatory indices).

***INFORMED CONSENT TO GYNECOLOGICAL ULTRASOUND SCAN***

***I hereby (name, surname) \_\_\_\_\_ declare that:***

- I have been correctly informed about the gynaecological ultrasound scan 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 the gynaecological ultrasound scan might identify fetal conditions requiring further diagnostic examinations.

***Date***

***Patient's signature***