

Ultrasonography

Ultrasonography uses high-frequency sound (ultrasound) waves to produce images of internal organs and other tissues. A device called a transducer converts electrical current into sound waves, which are sent into the body's tissues. Sound waves bounce off structures in the body and are reflected back to the transducer, which converts the waves into electrical signals. A computer converts the pattern of electrical signals into an image, which is displayed on a monitor and recorded on film, on videotape, or as a digital computer image. No x-rays are used. Ultrasonography is painless, relatively inexpensive, and considered very safe, even during pregnancy.

If the abdomen is being examined, people may be asked to refrain from eating and drinking for several hours before the test. Usually, the examiner places thick gel on the skin over the area to be examined to ensure good sound transmission. A handheld transducer is placed on the skin and moved over the area to be evaluated. To evaluate some body parts, the examiner inserts the transducer into the body—for example, into the vagina to better image the uterus and ovaries or into the anus to image the prostate gland. To evaluate the heart, the examiner sometimes attaches the transducer to a viewing tube called an endoscope and passes it down the throat into the esophagus. Ultrasound images are acquired rapidly enough to show the motion of organs and structures in the body in real time as in a movie. For example, the motion of the beating heart can be seen, even in a fetus.

Ultrasonography is effectively used to check for growths and foreign objects that are close to the body's surface, such as those in the thyroid gland, breasts, and limbs, as well as some lymph nodes. Ultrasonography is effectively used to image internal organs in the abdomen, pelvis, and chest. However, because sound waves are blocked by gas (for example, in the lungs or intestine) and by bone, ultrasonography of internal organs requires special skills. People who have been specifically trained to do ultrasound examinations are called sonographers.

<http://www.merckmanuals.com/home/special-subjects/common-imaging-tests/ultrasonography>

Exercises

I. Read the text and answer the questions.

1. What is ultrasonography?
2. What are the advantages of ultrasonography?
3. Why is it considered very safe?
4. What are some common uses of ultrasonography?
5. Who is most likely to be examined by ultrasonography: a patient with a broken leg or a pregnant patient? Why?
6. What does a sonographer do?
7. What is a transducer and what are its functions?
8. Why is a special gel placed on the skin over the examined area?
9. Can a patient eat and drink before an abdominal ultrasound examination? Why?
10. Why can it be difficult to see some internal organs in ultrasonography?

II. Give Polish equivalents of the following parts of the body:

1. throat
2. esophagus
3. vagina
4. uterus
5. ovaries
6. prostate gland

7. anus
8. lungs
9. intestine
10. lymph nodes
11. thyroid gland
12. breasts
13. pelvis
14. chest
15. abdomen
16. limbs

III. Match the words (1-8) with the definitions (A-H)

1. refrain from
2. fetus
3. endoscope
4. tissue
5. bounce off
6. convert
7. insert
8. evaluate

A. a medical device consisting of a long, thin, flexible (or rigid) tube which has a light and a video camera; images of the inside of the patient's body can be seen on a screen.

- B. to stop oneself from doing something
- C. to hit something and then move away from it again
- D. a prenatal human between its embryonic stage and its birth
- E. to judge or calculate the quality, importance or value of something
- F. a group of connected cells that have similar function and structure
- G. to put into the body
- H. to change into another form

IV. Match the words on the left (1-4) with the ones on the right (a-d) to form collocations that appear in the text and give their Polish translations.

- | | |
|---------------|-----------------------|
| 1. sound | a. image |
| 2. internal | b. current/signals |
| 3. electrical | c. waves/transmission |
| 4. digital | d. organs |

V. Find examples of the passive voice in the text.

- 1.....
- 2.
- 3.
- 4.
- 5.
- 6.

VI. Change the sentences into the passive voice.

1. A transducer converts electrical current into sound waves.

Electrical current.....

2. A sonographer is examining the thyroid gland.

.....

3. Ultrasonography does not use any X-rays.

.....in ultrasonography .

4. You can see the motion of the beating heart on a screen.

The motion.....

5. Your doctor may ask you to refrain from eating and drinking for several hours before the ultrasound examination.

You.....

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