

OBZOR RADIOGRAPHY OF THE CHEST

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Research objective: Chest X-ray is a diagnostic method that allows you to take an image of the chest organs using X-rays. Different tissues of the body, depending on their density, conduct X-rays in different ways, that is, they are displayed differently in the picture (X-ray). classical projection radiography used to diagnose pathological changes in the chest, chest organs and nearby anatomical structures. Chest X-ray is one of the most common X-ray studies. Like other radiological Studies, a type of ionizing radiation — X-ray radiation-is used to obtain a chest X-ray. In chest film radiography, the patient's average individual radiation dose is 0.3 millisievert (MSV); in digital radiography — 0.03 MSV.

Research materials and methods: chest X-ray does not require special training. Before the study, you will be asked to remove clothes with jewelry, glasses, metal elements. It is undesirable to carry out a study during pregnancy, but if necessary, the radiologist will take all measures to minimize radiation exposure to the fetus. Usually, the study is carried out in a standing position, but in an emergency, when this is not possible, the patient is placed on the active table of the X-ray apparatus. The process — from positioning to taking an image and evaluating the result-usually takes 10-15 minutes. Control studies are carried out to assess the effectiveness of treatment and the dynamics of the disease. The procedure is carried out in a separate X-ray room. The study and preparation of the result is carried out by a radiologist. After a year, there are practically no differences in chest X-rays for newborns, babies and children, only parents keep children in their hands. In some cases, to ensure inactivity, young patients are placed on a special stand equipped with straps that hold the child's head, arms and legs in the desired position. Older children and adolescents can stand or Sit while filming. The course of the process is standard. The period with the beginning of the study, the doctor explains the algorithm of actions to parents and the patient, asks to remove chains, crosses and other accessories from the neck and chest (girls need to fasten long hair on the head so that it does not fall below the level of the chin). The child sits or is placed in the desired place, the areas of the body that cannot be scanned are closed with lead aprons (the same protection is offered for adults accompanying the patient). The doctor turns on the device, asks the child to hold his breath for a few seconds if the child is already able to do this, and takes a series of pictures. To get the most informative images during the study, the doctor will ask the child to the side, may ask to turn to the back or change its position in another projection. Over time, chest X-rays take no more than 3 minutes. Immediately after the end of the procedure, the child can go home. In chest X-ray, the patient is placed between the X-ray tube and the film (detector). Usually flat (front and back) and lateral (left or right) projections are used. When examined in the front direct projection, the patient is placed

facing the detector (film), when examined in the rear direct projection-the opposite. If necessary, additional studies are carried out: in the position of the patient lying on his side (to determine the hydrothorax that moves when the position of the body changes), leaning back (lordotic radiography, for better vision of the ends of the lungs, for example, excluding the Pancoast tumor), exhalation (for a better diagnosis of pneumothorax), oblique projections. Examination radiography is an informative study, on the basis of which various diseases are identified, including tuberculosis, pneumonia, lung cancer, etc. pictures allow you to see such dangerous conditions as rupture of the pulmonary pleura, atelectasis, which allows timely measures to maintain respiratory function and protect organs from possible threats.

Research results: after taking the pictures, the radiologist will examine them and draw conclusions. It will take 20-60 minutes to prepare the description and give the result of the survey. not a diagnosis-do not interpret them yourself. Consult a pulmonologist for advice and diagnosis. If there are clear indications, there are no age restrictions for performing the procedure. If X-rays can be replaced with other, no less informative diagnostic methods, experts advise children under 4 years of age to avoid radiation. Most importantly, how often it is possible to conduct an examination using an X-ray machine. It all depends on the dose of radiation that the child receives during the procedure. Modern X-ray devices carry a minimum radiation load, with small patients only 0.01 to 0.06 millisieverts (MSV) per session, with a maximum annual dose of 1 MSV. Therefore, a child per year can undergo 2-3 X-rays without harm to his health. It is advisable to have a gap of several months between them. In emergency cases, repeated sessions with a minimum break are allowed, when there are no other ways to obtain the necessary information about the condition of the chest.

Conclusion: the time of exposure of rays to the body of children during filming is less than 1 second. But even when the dose is exceeded, such a minimum amount can harm the child. The main danger is the high risk of structural cell changes, which can lead to dangerous processes. Since active cell division occurs in childhood, pathological changes are more likely. The risk to children's health is minimal, following the safety rules during permissible radiation doses and X-rays. It is very important to listen to the doctor's recommendations and clearly follow his instructions.

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