

## Physical examination

**Physical examination** is the basic procedure for examining a patient. Physical examination is performed only with the help of our own senses and relatively simple aids, such as a stethoscope, a spatula or a neurological hammer. Methods that are used in physical examination are:

- **inspection,**
- **palpation,**
- **percussion,**
- **auscultation.**

However, this list is not complete, as a **rectal examination** is sometimes mentioned, to emphasize its importance. **Smell** can sometimes provide important information as well, such as the smell of acetone from the patient's mouth in diabetic ketoacidosis or the so-called foetor hepaticus in liver failure.

### Inspection

The patient's visual examination consists of a careful evaluation of all visible changes. For a quality of this examination, it is necessary to perform this examination under the right conditions, which are in particular:

- right position of the patient and the doctor,
- sufficient lighting that does not distort the color,
- undressing the patient so that some changes do not escape attention.

We evaluate the overall appearance of the patient by **inspection**, we pay more attention to the individually examined areas. Part of the evaluation of the overall appearance is the evaluation of walking and posture, nutritional status and any obvious deviations in behavior, such as agitation or compulsive movements. When examining a specific area, we evaluate the size, configuration, symmetry, skin color and character of the skin adnexa. The scars should not escape attention either, especially for larger scars we are looking for their origin (this will then be part of the personal history). We also evaluate spontaneous movements in a given landscape caused, for example, by respiration or pulsation of superficial arteries. Skin changes (efflorescence) should be described and evaluated.

### Palpation

**Palpation** of the patient is usually performed in two phases. Surface palpation consists of the evaluation of surface structures by mild pressure, during deep palpation, structures lying deeper in the patient's body are evaluated by greater pressure. Warm and dry hands and clipped nails are also important for successful examination, because in addition to tactile sensation, the patient's reaction is also evaluated - the reaction to a cold hand or nail digging can then be incorrectly evaluated as painful palpation.

During the palpation examination, the following is evaluated:

- skin temperature, tension and humidity,
- size, shape, surface, consistency and mobility of subcutaneously deposited formations,
- some intra-abdominal organs,
- presence of pathological units,
- palpation pain.

### Percussion

The character of the tissues placed under the body surface is evaluated by **percussion** examination. It is often used to determine the boundaries of two environments with different properties, but often the nature of the sound itself indicates the nature of the ongoing pathological process. Depending on the the method of execution, there is direct and indirect percussion.

**Direct percussion** means that the examiner taps the patient immediately, eg with his own finger. This is a less common procedure, today it is used only when examining the skull and clavícula, or as tapotement.

**Indirect percussion** means that the examiner inserts another object between the tapping finger and the surface of the body, usually the finger of the other hand. The correct usage of this method is when the examining right-hander places the third finger of the left hand on the examined area and the third finger of the right hand strikes



Palpation of the belly of a small child

the second link of the applied finger vertically. The tap should be short and flexible. When searching for a border, such as a liver border or effusion border, the left hand is placed so that the third finger points parallel to the expected course of the searched border.

The following percussion findings are distinguished:

- **full and clear percussion** - over healthy lung tissue,
- **hypersonic percussion** (box) - above pathologically aerated tissue, typically pneumothorax or pulmonary emphysema, is loud, deep, long
- **tympanic percussion** - eg over stomach or intestines filled with gas,
- **differentiated drum-like percussion** - normal percussion over the whole abdomen, small differences correspond to different presence of gas,
- **dark percussion** - over airless tissue, for example over muscles, liver, heart, effusion,
- **darkened percussion** - between clear and dark sound (in case of inflammatory infiltration of the lungs).

## Auscultation

**Auscultation** is an examination method based on the evaluation of sound phenomena caused by the activity of certain organs, such as the heart, lungs or intestines. Depending on the method of auscultation, there are:

- **direct auscultation** - the ear is applied to the surface of the examined body (practically not used),
- **indirect auscultation** - a stethoscope is used for listening.

## Auscultation of the heart

The listening points of the heart valves do not correspond to their placement, sound phenomena are propagated in places where sound waves travel through a column of blood. Listening places:

- **aortic valve** - 2nd intercostal space parasternally on the right,
- **pulmonary valve** - 2nd intercostal space parasternally to the left,
- **tricuspid valve** - above the lower sternum at the lower left margin,
- **mitral valve** - in heart apex area.

In addition to these places, we also listen to the remaining precordium. The sound depends on the place of origin, but also on the way and to what extent the chamber presses on the chest wall.

## Auscultation of the lungs

## Auscultation of the murmurs over large blood vessels

## Auscultation of the stomach

## Links

## Related articles

- General examination of the patient - position and mobility; stand and walk
- General examination of the patient - physical constitution (habitus), nutritional status
- General examination of the patient - skin adnexa skin
- Physical examination of the abdomen
- Physical examination of the lungs
- Physical examination of the gallbladder

## References

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- CHROBÁK, Ladislav, et al. Propaedeutics of internal medicine. 2. edition. Grada, 2003. 195 s. ISBN 80-247-0609-1.