

# Valsalva maneuver

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## Performance of the maneuver

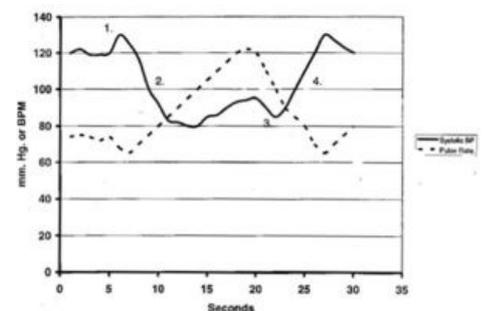
- The best way to perform Valsalva maneuver is to prompt the patient to blow into a syringe of a 10 ml volume. The syringe creates ideal pressure of about 40 mm Hg. If syringes of smaller volumes are used, then it is more difficult to move the piston.
- Other method, which is more frequently used, but is less precise, is to ask the patient to push strongly as if trying to evacuate stools, or we push with our fist on the patient's epigastrium and ask him or her to resist the force with his or hers abdominal muscles.
- After the termination of the maneuver, the patient should exhale calmly and continue to breathe slowly and silently with mouth open.
- The result is a successive cumulation of blood in the systemic veins, decrease of blood flow through the heart and decrease of transmural pressure in all cardiac cavities.
- During the maneuver the intracardial pressures and flows decrease and cause the intensity of all murmurs with the exception of the murmur accompanying hypertrophic obstructive cardiomyopathy and the murmur of mitral valve prolapse (here the intensity **increases**).

## Mechanism

A brief first phase happens, due to the increase of intrathoracic pressure, where the blood is forced from the lungs into the left heart and therefore an increase of preload and blood pressure occurs.

Then, in a longer phase, the increased intrathoracic pressure causes a decrease in venous return into the right heart. This decreases the blood pressure and cardiac output. The baroreflex increases the sympathetic tone, which manifests itself firstly as an increase in the heart frequency and later by an increase in BP.

Immediately after the termination of the maneuver the BP drops, because the lungs are again being filled with blood, which in turn decreases the preload. Although right after the lungs are filled, the triggered sympathetic NS is dominant, which quickly raises the BP due to cardioacceleration and vasoconstriction in the periphery. The baroreflex reacts to this increase by increasing the vagal tone until the BP normalizes.



Graphical depiction of blood pressure and pulse during the maneuver

## Indications

This maneuver can be useful especially for differentiating diastolic regurgitant murmurs (aortal/pulmonary insufficiency), which are similar by auscultation, because murmurs of the right heart increase significantly in the first and second contraction after the end of the maneuver. Murmurs of the left heart have a distinct delay.

### This article is a stub.



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## Links

### External links

- Valsalvův manévr pro pokročilé (<http://kardiologie.blogspot.com/2012/07/tipy-triky-valsalvuv-manevr.html>)

### Used Literature

- CHROBÁK, Ladislav. *Propedeutika vnitřního lékařství*. 1. edition. Grada, 1997. ISBN 80-7169-274-3.