

Venous return, pressure changes in the venous system

Venous return

Venous return is the term for the rate of blood flow in the veins (ie back towards the heart). It is affected by gravity (negatively), pumping heart (positively) and also by auxiliary mechanisms (positively).

Mechanisms promoting venous return

- **Muscle pump** - contraction of skeletal muscle helps improve blood return. The correct direction of blood flow is ensured thanks to the valves in the veins, which allow blood to flow in only one direction.
- **Breathing**
 - the drop in intrathoracic pressure caused by inspiration leads to the filling of the superior vena cava and the right atrium,
 - the lowering of the diaphragm during inhalation leads to an increase in intra-abdominal pressure and thus helps the venous return from the inferior vena cava (flow direction is again maintained by the valves).
- **Heart suction** - using scalloped valves. Phlebogram.
- **Venous pump** - veins have a circularly arranged muscle, which then helps the venous return by its contraction.
- **Vascular bundle arrangement** - two veins run around one artery. Thanks to this arrangement, the pulse wave in the artery causes pressure on the veins, thereby helping to improve venous return (the direction of flow is again maintained by the valves).

Links

Related Articles

- Central venous pressure
- Blood pressure

References

- TROJAN, Stanislav. *Lékařská fyziologie*. 4th, revised and edit edition. Grada Publishing, a.s, 2003. 772 pp. ISBN 80-247-0512-5.

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