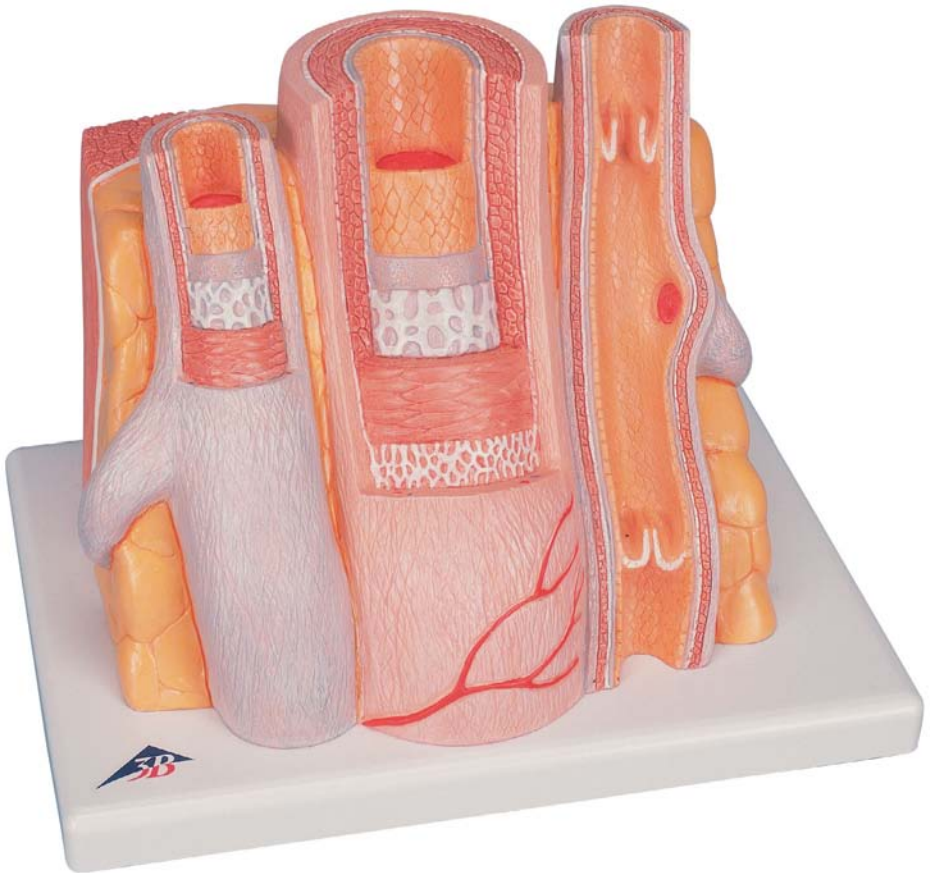


G42



**A Vena****Tunica intima**

- 1 Endothelium
- 2 Textus connectivus subendothelialis et membrana basalis
- 3 Lamina elastica interna

**4 Tunica media****5 Tunica externa et vasa vasorum**

- 6 Valva

**B Arteria****Tunica intima**

- 7 Endothelium
- 8 Textus connectivus subendothelialis et membrana basalis
- 9 Lamina elastica interna

**10 Tunica media****Tunica externa**

- 11 Lamina elastica externa
- 12 Textus connectivus cum fibrae elasticae et vasa vasorum
- 13 Corpus adiposum
- 14 Musculus
- 15 Sectional view of a vein with physiological valve function
- 16 Sectional view of a vein with insufficient valve function (varicose vein)

The model shows a medium-sized muscular artery with two adjacent veins from the antebrachial area with adjoining fat tissue and muscle enlarged 14 times. The model illustrates the reciprocal anatomical relationship of artery and vein and the basic functional techniques of the venous valves (“valve function” and “muscle pump”).

The left vein and the middle artery are fenestrated in the upper anterior segment, revealing the various layers of the wall structure in a cross and longitudinal section and in top view.

The thickness of the wall layers depends on the local particularities.

The individual wall layers of the **vein** are structured as follows from the interior to the exterior:

- **The tunica intima** consists of an endothelium, a subendothelial layer of connective tissue and an internal elastic lamina.
- **The tunica media** contains both smooth muscle cells and loose connective tissue fibers.
- **The tunica externa (or tunica adventitia)** consists of loose connective tissue, smooth muscle cells and vasa vasorum.

The individual wall layers of the **artery** are structured as follows from the interior to the exterior:

- **The tunica intima** consists of an endothelium, the subendothelial layer of connective tissue and the internal elastic lamina.
- **The adjacent tunica media** consists almost mainly of circularly arranged smooth muscle cells and connective tissue fibers.
- **The tunica externa (or tunica adventitia)** consists of the lamina elastica externa, an elastic fibrous layer, connective tissue and vasa vasorum.

The right vein is opened throughout in the anterior segment, revealing the orifice of a feeder vein and two venous valves, i.e. “flap valves” formed by a duplication of the tunica intima.

On the rear of the model, the relief of two veins is shown to illustrate the functional aspect of the venous valves. The left vein, with one opened and one closed venous valve, illustrates the physiological (proper) valve function. In comparison, the two venous valves of the right vein function insufficiently and the vessel as a whole is dilated, as seen in a varicose vein.

**A Vein****Tunica intima**

- 1 Endothelium
- 2 Subendothelial layer of connective tissue and basal lamina
- 3 Internal elastic lamina

**4 Tunica media****5 Tunica externa and vasa vasorum**

- 6 Venous valve

**B Arteria****Tunica intima**

- 7 Endothelium
- 8 Subendothelial layer of connective tissue and basal lamina
- 9 Internal elastic lamina

**10 Tunica media****Tunica externa**

- 11 External elastic lamina
- 12 Connective tissue with layer of elastic fibers and vasa vasorum
- 13 Fat pad
- 14 Muscle
- 15 Sectional view of a vein with physiological valve function
- 16 Sectional view of a vein with insufficient valve function (varicose vein)

