# **Sidestepping essential functions**





SYPASS ---->

## **Circulation city**

The highway driver must enter the city and travel its streets — hopefully stopping along the way to do business. Similarly,

arteries feed into beds of tiny capillaries, which then link back to veins. The pulmonary system uses capillaries to exchange oxygen and carbon dioxide for the body.

### **Starvation city**

This city's bypass might shortchange the local economy if too many travelers use it to sidestep the business district. A circulatory system bypass — a direct artery-to-vein connection called an arteriovenous malformation (AVM) — likewise has consequences. For example, blood traveling through an AVM in a lung is unable to exchange oxygen and carbon dioxide. And, since the AVM is weaker than a normal vessel, it can rupture, spilling blood.



## Embolotherapy procedure

This treatment stimulates natural clotting to plug the malformed blood vessel. A specialized team inserts and releases a metallic coil wrapped in synthetic fibers. This occlusion will seal off the problem area and prevent unwanted material from traveling through the AVM.

## **Troubles throughout the body**

For many, the disease is very manageable, whereas others have disabling health problems.

hemorrhagic strokes at a young age

nosebleeds (often daily and profuse)

### upture of the malformed blood vessels

blood leaking into lungs or chest cavity

gastrointestinal tract: loss of blood and anemia

#### **External signs**

Small red spots caused by dilated blood vessels on the face, hands or tongue.





#### brain abscesses

spinal vessel AVMs can cause back pain and loss of function in arms or legs

arteriovenous malformations in the liver can cause heart failure because blood passes too rapidly back to the heart, overloading it

breathing difficulties due to AVMs in the lungs





