

## Vascular Injury in Trauma

The vascular system is made up of vessels that carry blood throughout the body. Arteries and veins carry this blood to and from the heart and carry oxygen to all parts of the body.

### Vascular Injury

In this type of injury, there is damage to blood vessels as they are torn or cut by:

- piercing or crushing injuries, such as a gunshot wound or stab wound.
- blunt trauma that results in bone fractures or joint dislocation.

When there is not enough blood supply, the blood vessels, nerves, and muscles can quickly become permanently damaged or die.

### Symptoms

- Bruising, swelling, active bleeding
- Pain
- Numbness, tingling in that arm or leg
- Cannot move the arm or leg
- Cool, pale skin

### How It Is Diagnosed

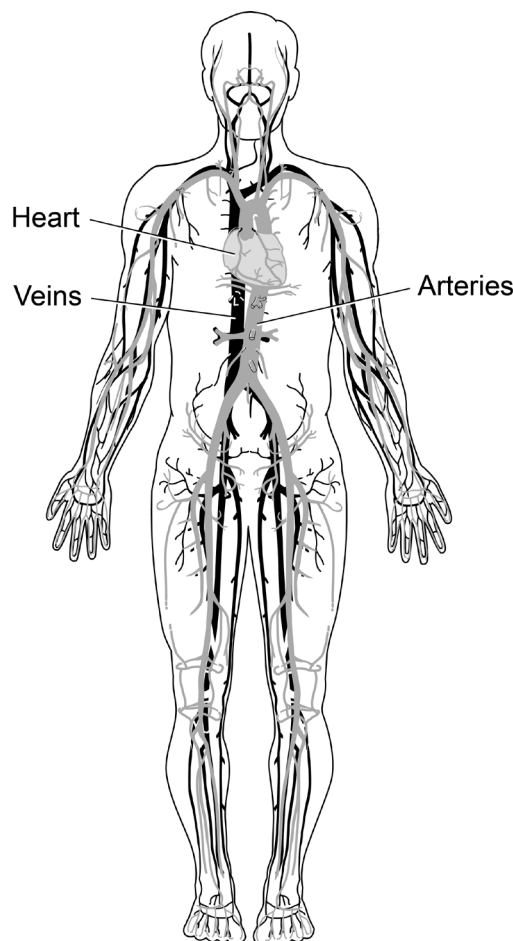
Blood vessel studies such as **arteriogram**, **CT angiogram**, **venogram** are used to find the injury to your arteries or veins. Contrast dye is injected through an IV so the blood vessels can be seen when an X-ray or CT scan is taken.

**Ultrasound** can be done to look at the blood vessels and see how well the blood is flowing through them.

**Ankle/brachial index (ABI) & pulse volume recording (PVR)** are screening tests that assess how much blood is flowing to the legs. They also find out if there are any blockages.

### Treatment

Your injured limb will be closely watched. The limb should be immobilized right away and placed in the correct position by a doctor. Raising the limb can reduce swelling and improve blood flow. If caused by bone fractures, the bone will be aligned to help improve blood flow.



In the hospital you will be given fluids or blood to replace what you lost. You may get antibiotics and a tetanus shot to prevent infection. You may get a blood thinner to prevent a blood clot. You may have surgery to repair any damaged blood vessels. Your fingers or toes will be checked often for color, temperature, feeling, and circulation.

You will start rehab of the limb once it is stabilized. This will prevent loss of muscle tone and strength. You will work with staff from physical and occupational therapy.

### Problems

- **Shock** can occur when too much blood is lost. It may be treated with fluids and blood through an IV.
- You could lose some or all feeling and function if your **nerves have been injured**. This type of injury requires physical therapy, along with a chance of surgery.
- You are at risk for a **blood clot**. Symptoms include swelling, change in temperature, numbness or tingling, and pain in your arm or leg. This can be life threatening if the clot comes loose in the blood vessel and travels to your lungs.
- **Compartment syndrome** is caused by increased pressure inside your arm or leg from bleeding or swelling, or a tight dressing. Your nerves, blood vessels, and muscles can be damaged if the pressure is not released. Your caregivers will closely watch the circulation, feeling, and movement of your arm or leg. Treatment includes raising your arm or leg. You may also have the pressure released by the surgeon making an incision called a **fasciotomy**.

If you are a patient receiving care at UnityPoint – Meriter, Swedish American or a health system outside of UW Health, please use the phone numbers provided in your discharge instructions for any questions or concerns.

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 9/2020. University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#6933.

### When to Call

- Severe or constant pain not relieved by medicine and raising the limb.
- Your hand or foot becomes cold, pale, numb, blue, or cannot move.
- Swelling, weakness, numbness, or tingling in your arm or leg.
- Signs and symptoms of infection from surgery, which include increased pain, swelling, redness, drainage, or foul odor.

### Who to Call

Vascular Clinic at the West Clinic  
**(608) 263-8915**

Orthopedic Clinic  
**(608) 263-7540**

Trauma Clinic  
**(608) 265-5530**

After hours, nights, weekends and holidays, this will give you the paging operator. Ask for the resident on call for your clinic. Leave your name and phone number with the area code. The doctor will call you back.

The toll-free number is **1-800-323-8942**.  
Ask for your clinic.