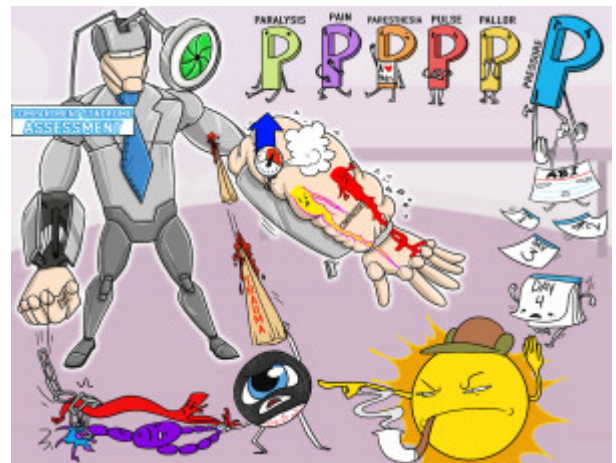


## Compartment Syndrome Assessment

Compartment syndrome can occur in the abdomen or extremities, secondary to fractures, tissue damage, compression injuries, bleeding related to surgery, or edema caused by severe burns. Compression can occur from the outside, as seen in patients with casted extremities, or from the inside due to bleeding or swelling. Patients with this condition may have pain unrelieved by medication, numbness, tingling and loss of function in the extremity, diminished pulses distal to the affected area, coolness/loss of color in the area, and a sensation of increased pressure. Compartment syndrome can happen quickly or over the course of several days. Early detection and treatment is essential to prevent ischemia and permanent damage to muscle, soft tissue, and/or nerves.



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### Mechanism

#### Trauma

##### Trauma-spike

Compartment syndrome can occur in the abdomen or extremities, secondary to fractures, tissue damage, compression injuries, bleeding related to surgery, or edema caused by severe burns.

#### Increased Pressure

##### Up-arrow Pressure-gauge

Increased pressure within a closed space (a compartment) due to edema or bleeding can lead to compromised nerves and blood vessels within that space. If pressure is not relieved, permanent damage can occur.

#### Compressed Nerves and Blood Vessels

##### Compressed Nerves and Blood Vessel

Nerves, blood vessels, or other structures within the compartment can be damaged by the increasing pressure. Compression can occur from the outside, as seen in patients with casted extremities, or from the inside due to bleeding or swelling.

### Assessment

#### 1 or more of 6 P's

##### 6 P's

There are six classic symptoms of compartment syndrome known as the six P's: **pain**, **pressure**, **paresthesia**, **paralysis**, **pulselessness**, and **pallor**. Patients with this condition may have pain unrelieved by medication, numbness, tingling and loss of function in the extremity, diminished pulses distal to the affected area, coolness/loss of color in the area, and a sensation of increased pressure in the area.

#### Ankle-Brachial Index (ABI)

##### Ankle and Brachial Index-card

The measurement of the ankle-brachial index is a noninvasive way to assess for peripheral arterial disease in a large vessel. This is done by comparing the systolic blood pressure in a patient's ankle to the higher of the brachial systolic blood pressure. An ABI is a ratio automated by dividing the higher ankle pressure and the brachial pressure. The ankle pressure should be equal or a little bit higher than the arm. An ABI of less than 0.9 indicates lower extremity arterial disease (LEAD); 1.0 or more indicates normal blood flow.

### Considerations

#### May take Days to develop

##### Several Days from calendar

Compartment syndrome can happen quickly, although it may happen over the course of several days in some instances.

**Early Detection****Early-sun Detective**

Early detection is important, as delayed treatment of this condition may result in permanent damage to the affected area.

**Ischemia****Eye-ski-mask**

Ischemia or loss of blood flow can occur within 4 to 8 hours of the onset of compartment syndrome. Restricted or absent blood flow to an area can cause permanent damage to muscle and soft tissue and nerve ischemia.

**Damage often Irreversible****Damaged Nerves and Blood Vessels locked from Reversing**

Damage caused by compartment syndrome is often permanent, especially damage inflicted on the nerves. If compartment syndrome is suspected, do not elevate the limb above the level of the heart or apply cold compresses, as this may worsen the existing problem.