



## Anterior Compartment Syndrome

**Definition:** Compartment syndrome is a condition where major nerves and arteries in the lower leg may be pinched by pressure caused from surrounding structures. Anatomical structures in the lower leg are often grouped into compartments.

**Common Terms:** This is most commonly referred to as compartment syndrome, with sub-categories of anterior, posterior and lateral compartment syndromes.

**Typical Mechanism of Injury:** This condition can occur from either a traumatic incident or from an exertional (exercise & effort) standpoint. Compartment syndrome resulting from a traumatic incident usually occurs from a direct blow to the front and/or outside of the tibia (lower leg bone). From an exertional standpoint, compartment syndrome can occur due to the forces from running or other prolonged activities.

**Common Signs and Symptoms:** The "5 P's" are oftentimes associated with compartment syndrome: pain, pallor (pale skin tone), paresthesia (numbness feeling), pulselessness (faint pulse) and paralysis (weakness with movements). Numbness, tingling, or pain may be present in the entire lower leg and foot. Muscle tightness, cramping, swelling and weakness may all be noted and can cause severe pain during stretching type activities. In some cases there is an inability to exercise due to the intense amount of pain during exercise and/or after exercise.

**Common Treatment:** Acute compartment syndromes, especially those that result from traumatic incidents, are medical emergencies. In chronic cases the signs and symptoms usually subside with rest. During exercise, compartmental pressures can be monitored to assist in determining the severity of the condition. Surgery may be required in both acute and chronic cases. The surgery consists of a fasciotomy (removal of compressing surrounding tissue) in order to decrease the pressure in the compartment.

**Prevention:** Although there is not really any specific way to prevent compartment syndromes from developing, knowledge of the signs and symptoms can assist with early intervention. In some cases, the compartment pressures can actually increase from circumstances where a brace or cast is fitted too tightly, or fitted appropriately with subsequent swelling in the area that doesn't allow for expansion.

**Expectations:** If this condition is not treated it may lead to permanent loss of sensation and muscle damage. If treated with surgery the muscles, nerves and blood supply have a good chance of returning to normal.

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