



## Effective Health Care

### Effective Treatments for Acute Compartment Syndrome Nomination Summary Document

#### Results of Topic Selection Process & Next Steps

- The topic, *Effective Treatments for Acute Compartment Syndrome (ACS)*, was found to be addressed by two systematic reviews, including one titled, *Fasciotomy Wounds Associated with Acute Compartment Syndrome: A Systematic Review of Effective Treatments*, and another titled, *Acute Traumatic Compartment Syndrome: A Systematic Review of Results of Fasciotomy*. Given that the existing systematic reviews cover this nomination, no further activity will be undertaken on this topic.
  1. Walker M, Kralik D, Porritt K. Fasciotomy wounds associated with acute compartment syndrome: A systematic review of effective treatment. 2014 2014-02-14 2014; 12.
  2. Hayakawa H, Aldington DJ, Moore RA. Acute traumatic compartment syndrome: A systematic review of results of fasciotomy. *Trauma* 2009; 11(1): 5-35.

#### Topic Description

**Nominator(s):** Individual  
**Nomination Summary:** The nominator asserts that acute compartment syndrome can result in serious pain and disability, and that little is understood about the effective treatment of compartment syndrome and outcomes associated with this condition. The nominator believes that a systematic review could provide a clear understanding of both effective treatments and outcomes associated with these treatments.

##### Staff-Generated PICO

**Population(s):** Adults with non-abdominal ACS

**Intervention(s):** Early fasciotomy, different surgical techniques, and/or other medical or surgical approaches to treating and managing ACS

**Comparator(s):** Late fasciotomy (>12 hours), conservative treatment and management

**Outcome(s):** Soft tissue necrosis, peripheral nerve damage, pain, length of recovery, permanent disability, functional status, amputation, mortality.

**Key Questions from Nominator:**

1. What are the long term impacts and known complications of ACS?
2. What are effective treatments for ACS?

#### Considerations

- Acute compartment syndrome (ACS) is a painful condition that can result in serious long term morbidity and disability. While urgent surgical intervention (fasciotomy) is the standard of care, there is clinical uncertainty about timing, surgical approach, and subsequent wound management.
- Topic was found to be addressed by systematic reviews, including one published in 2014 titled, *Fasciotomy Wounds Associated with Acute Compartment Syndrome: A Systematic Review of Effective Treatments*, which examined the effectiveness of treatment options for managing fasciotomy wounds acquired during the treatment of ACS. The authors found limited evidence on which to base practice decisions, but recommended the vessel loop shoelace technique, which resulted in faster wound closure and less need for split thickness skin grafts than a negative pressure wound treatment system.
- Another systematic review, published in 2009, titled, *Acute Traumatic Compartment Syndrome: A Systematic Review of Results of Fasciotomy*, found that delayed fasciotomy (beyond 12 hours) was associated with higher rates of amputation and death.