

Trauma 411: Prolonged surgery should be avoided in certain cases

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Trauma patients who sustain multiple fractures are often in serious condition when they arrive at the emergency department. A review article published in the September 2009 issue of the *Journal of the American Academy of Orthopaedic Surgeons (JAAOS)* explains that trauma patients who have several orthopaedic injuries and are considered to be in unstable condition should only have a few hours of surgery when first arriving at the hospital. This principle is known as 'damage control'.

The benefits of initially limiting time in the operating room for patients with life-threatening injuries include:

- less blood loss during surgery;
- fewer complications in the intensive care unit;
- less stimulation to the immune system; and
- higher patient survival rates.

According to lead author Hans-Christoph Pape, MD, Chairman of Orthopaedic/Trauma Surgery at the University of Aachen in Aachen, Germany, data shows that too many surgeries and blood loss can weaken the immune system and can lead to a higher likelihood of experiencing complications after surgery."

"If a patient has just a couple of fractures it is of course useful to operate right away," says Dr. Pape. "However, if a patient has life-threatening injuries for example, more than three fractures and perhaps a lacerated liver, it is often too dangerous to do all the surgery right away."

In [trauma patients](#) with life-threatening injuries, Dr. Pape and his colleagues found:

- It often is best to use an external fixator (where pins in the bone are connected by an external bar) to stabilize an orthopaedic injury to stop initial pain and bleeding.
- Two or three days later, once the patient is stable, data suggests this period to be a more ideal time to begin other more invasive and time-consuming operations.

Pape and his colleagues analyzed data from several trauma registries in Germany. They compared patient outcomes in about 21,000 trauma patients with the amount of hours each patient had spent in the operating room.

"We found that patients with life-threatening injuries, such as chest contusions or liver lacerations in association to multiple bone fractures, and who have surgery for six or more hours do not always do as well," says Dr. Pape. "If you limit the amount of time in the [operating room](#) to less than three hours, patients appear to do better."

In the more severe cases, study authors say it is ideal to taper the amount of surgery. It is important to monitor blood pressure, pulmonary function and immune function to see if patients are stable enough to undergo further surgery.

The benefit of scheduling [surgery](#) to repair fractures over the span of several days is that it allows the trauma patient to recover from every surgical procedure before moving forward with the next one.

Timing is key in patients with life-threatening injuries. "There needs to be close communication between the orthopaedic surgeon, the general surgeon and ICU staff," says Dr. Pape. "All members of the care team need to re-evaluate the patient throughout the process to see if it is safe to fix the next fracture."

Source: American Academy of Orthopaedic Surgeons ([news](#) : [web](#))

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