

Frailty is a Better Gauge of Surgical Risk than Age



By *Chuck Dinerstein, MD, MBA* — January 12, 2018



Courtesy Wellcome Images [1]

Physicians, especially surgeons, to provide meaningful information to patients continue to look for risk factors associated with complications and death. Everyone has a story of successfully operating on a 90-year-old, “but there were a ‘good’ 90-year-old.” As the population ages, defining a ‘good 90-year-old’ becomes more critical. A meta-analysis in [BMC Medicine](#) [2] suggests, age is too coarse a measure, but dimensions of cognitive and physical impairment are more predictive.

The authors used a literature review of English language articles on risk factors and subsequent complications, deaths, loss of functional abilities and post-discharge care identifying 44 studies involving 12,281 patients over the age of 65 undergoing elective surgery.

- Post-operative complications [1] varied with the type of surgery but were elevated, ranging from 9.46% in heart surgery to 24.73% in abdominal surgery and 33.97% in lung surgery.
- Post-operative complications were more likely as various measures of patients’ ability to get around and care for themselves declined, followed closely by current smoking, cognitive impairment, and frailty which you might think of as a blending of ambulatory and cognitive impairment.
- Measures of nutritional status were not predictive which is surprising given the emphasis on nutrition replenishment and studies demonstrating that significant weight loss is a risk factor for complications and mortality.
- No specific risk factors readily identified patients at risk for dying
- 21% of patients were less able to care for themselves after surgery. Frailty was moderately helpful in identifying those patients. These patients were also more likely to have a prolonged hospitalization or require post-hospital care in a nursing facility.

Can we modify risk?

There is a significant body of literature that smoking cessation, even for 6-12 weeks preoperatively improves outcome. That has sparked hope that other preoperative factors can be modified to make care safer. Frailty is a better measure of biologic or functional age than the year of our birth, but can it be changed, can we make our patients less frail?

The short answer is we do not know. Frailty scores include unintended weight loss, slowness in gait, weakness of muscles, a generalized sense of exhaustion, and perhaps as a result, a low level of activity. A prospective [study](#) [3], cited by this meta-analysis provides some clues as to what we can realistically change. 250 frail and pre-frail patients (based on frailty scores), participated in a heavily supervised, intensive program aimed at nutrition, physical and cognitive training. Patients showed improvements, predominantly in physical muscle strength and physical activity, but these changes took about six months to plateau.

The bottom line is that frailty is hard to undo. We have found a useful marker for complications by assessing frailty, we can better counsel our patients about risk, but we remain unable to use that information to improve care.

[1] Complications in this analysis including surgical complications like bleeding and return to the operating room as well as medical complications like infection or need for prolonged use of a ventilator to assist with breathing and oxygenation.

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Links

[1]

https://upload.wikimedia.org/wikipedia/commons/d/d1/A_frail_and_wounded_soldier_being_saved_from_death_by_the

[2] <https://bmcmmedicine.biomedcentral.com/articles/10.1186/s12916-017-0986-2>

[3] <https://www.ncbi.nlm.nih.gov/pubmed/26159634>