

## Frail patients are at increased risk of death following surgery

As a busy surgeon it is sometimes very difficult to predict which patients will do poorly after surgery. Current preoperative measurements have proven to be inaccurate. This may lead to patients undergoing surgery and having bad outcomes. Conversely, some patients may be denied potentially life-saving surgery if they are wrongly deemed “unfit” by current assessments. For example, advanced age is often used a surrogate marker for not being ‘fit’ for surgery. Yet, some octogenarians run marathons, and should not be denied surgery! Paradoxically, there is a burgeoning population of young frail patients. The ‘young frail’ are usually the patients who seem well, but have a poor postoperative course. On retrospective analysis, these patients were actually quite frail. As such, building on the work of several other investigators we decided to investigate the association of “frailty” and risk of death following surgery. Specifically, we wanted to test whether frail patients were at an increased risk of death one year following a major surgical procedure. Frailty can be defined several different ways. However, frailty is essentially one’s physiologic reserve which determines the ability to respond to stressors such as surgery.

In this study frailty was assessed using the Fried Frailty Score. This score measures 5 components including:

- Shrinking (weight loss in last year greater than ten pounds)
- Weakness (determined by measuring hand grip strength)
- Exhaustion (questions about effort and motivation)
- Low activity (questions about leisure time activities)
- Slow walking speed (timed walking)

Based on these 5 components a “frailty score” was calculated and patients were classified as not frail, intermediately frail, or frail. 189 patients scheduled for a major abdominal surgery were enrolled in this study. Frailty was measured in these patients prior to surgery. One year following surgery we then determined who had died and correlated frailty status and mortality.

The major finding in this study was that frailty was highly predictive of which patients were alive versus dead one year following surgery. When adjusted for other possible variables, frail patients were found to have a 360% greater risk of death compared to nonfrail patients. Additionally, compared to other predictors of one year mortality, frailty was found to be the strongest factor in predicting mortality. Finally, when frailty was used in combination with current preoperative measurements its ability to predict one year mortality was even greater.

We believe the assessment of frailty prior to surgery to be very important for several reasons. First, it may identify patients who deserve more attention in the postoperative period, which may include a higher level of care or more frequent postoperative office visits. Second, it is a tool to improve patient counseling of risks to facilitate better shared decision making. Finally, and perhaps most importantly, intervention prior to surgery for frail patients could improve a patient’s fitness for

surgery.

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## **Publication**

[Frailty and one-year mortality in major intra-abdominal operations.](#)

Li JL, Henderson MA, Revenig LM, Sweeney JF, Kooby DA, Maithel SK, Master VA, Ogan K  
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