

1 minute test predicts how well a patient may recover after an operation

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CHICAGO (February 25): Frailty has been used to predict how well a patient may recover from a major operation. Because frailty assessments are not routinely utilized in busy surgical practices, surgeons at Emory University School of Medicine in Atlanta have discovered that a short, approximately one-minute assessment can accurately determine how likely a patient is to have complications after an operation.

Their study results are published online as an "article in press" in the *Journal of the American College of Surgeons (JACS)*. The study will appear in a print edition of the journal later this year.

Contrary to what most consumers believe, [frailty](#) is not always connected to old age. "Many people would suspect that frailty only applies to someone in their 80s," said study author Viraj Master, MD, PHD, FACS, associate professor of urology and director of clinical research. "It's startling to think that people in their 30s and 40s could actually be frail, but there is a population of patients who are young but are actually frail."

Measuring frailty before a major operation is important because frail patients, regardless of age, tend to be at a higher risk for postoperative complications. "Frail means they don't have the physiologic reserve to bounce back after the operation, so they start down a path that they may not easily recover from," explained Kenneth Ogan, MD, a study coauthor and associate professor of urology.

The standard test to measure frailty, described by geriatrician Linda P. Fried and colleagues at Johns Hopkins University, includes five criteria:

1. Shrinking: Self-reported unintentional [weight loss](#) of more than 10 pounds in the last year
2. Grip Strength: Measured by having the patient squeeze a hand-held dynamometer adjusted for gender and body mass index (BMI)
3. Exhaustion: Measured by responses to questions about effort and motivation
4. Low Activity: Ascertained by inquiring about leisure time activities
5. Slowed Walking Speed: Measured by the speed at which a patient walks 15 feet adjusted by gender and height

Despite the importance of measuring patient frailty, many surgical practices may skip performing this five-step assessment for two reasons: it may take too long for a busy practice, and it requires a trained professional. The test also introduces bias since patients may overestimate activity levels and underestimate exhaustion.

A one- minute frailty assessment

Dr. Master, Dr. Ogan, and their colleagues set out to find a simpler, quicker, more accurate way to assess frailty. The research team completed the full five-step frailty assessment on 351 patients age 18 or older who were admitted to Emory for major abdominal, urologic, or gastrointestinal operations.

They then looked at medical records and found that 36.7 percent had experienced a complication within 30 days after an operation: 24.5 percent of patients experienced a minor complication, while 14.2 percent experienced a major complication. Examples of complications

included, wound infection, pneumonia, stroke, and death.

The researchers next compared the full frailty test's ability to predict these complications to a more truncated version that only assessed two of the five factors: grip strength and involuntary weight loss. They found that assessing just those two factors was equally as accurate at predicting complications as doing the full five-step test.

They also found that adding two additional factors—American Society of Anesthesiology score (ASA), which measures physical status for anesthesia, and levels of hemoglobin, the protein in red blood cells that carries oxygen—improved the model's ability to predict [postoperative complications](#).

"If you just looked at weight loss and grip strength, those factors were just as good as doing all five steps. And if you add in hemoglobin and ASA scores, the prediction was even better," explained Dr. Master. "The nice thing is that the patient's ASA and hemoglobin are already recorded in the chart before an operation."

The full five-step test normally requires a trained clinician to collect the data, and could take about 10 minutes. "This method—asking one question about weight loss and the grip strength activity—can take less than a minute and can be done by anyone who interacts with the patient," Dr. Master added.

Setting patient expectations

Moving forward, the research team's goal is to increase surgical teams' willingness to perform the frailty test on each patient before an operation, not to reject patients for a procedure but rather as a planning measure. "This step is important for setting expectations for the patient and the family," said Dr. Ogan. "If a patient is found to be frail prior to

surgery, it is critical that the patient is aware that their risk of a postoperative complication is increased. Our data is clear: If you have a weak grip and you're losing weight, you're at risk. We want to be better prepared for any risks after the operation."

For patients who are considered frail, that could mean making lifestyle changes to address weight loss and grip strength. It could also mean planning for a longer hospital stay or arranging for the patient to be discharged to a skilled nursing facility before going home.

The truncated [frailty test](#) will be rolled out to all of Emory's surgical patients this year. Dr. Ogan and Dr. Master are also planning a larger study to assess whether frailty assessments can impact hospital readmissions and mortality post-operatively.

More information: Fried, LP; Tangen, CM; Walston, J; Newman, AB, et al. "Frailty in older adults: evidence for a phenotype." *J Gerontol A Biol Sci Med Sci*. 2001; 56 (3): M146–56.

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