

Health Coaching Before Surgery May Improve Outcomes

Personalized coaching on nutrition, exercise and more may improve patients' immune response and reduce complications after surgery.

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An upcoming surgery can cause stress and worry for patients. Stress and worry can increase inflammation. This, in turn, can raise the risk of complications after surgery.

Many patients need some type of rehabilitation after surgery to promote healing. Prehabilitation, in contrast, aims to improve mental and physical health before surgery. But the effectiveness of this approach has been unclear. This is due in part to variation in prehabilitation programs. In addition, the impact of prehabilitation at the cell and molecular level is poorly understood.

A research team led by Dr. Brice Gaudillière at Stanford University hypothesized that a personalized prehabilitation program would be more effective than a standard “one-size-fits-all” approach. To test this, they studied how both types of programs affected patients' immune responses before surgery. They also looked at each program's effects on physical and cognitive functions and postoperative complications. Their findings appeared in [JAMA Surgery](#) on November 12, 2025.

The clinical trial included 54 adults scheduled for major elective surgery. They were randomly assigned to either a standard or personalized prehabilitation program for 2 to 6 weeks before surgery. Both programs offered information on exercise, healthy eating, stress reduction, and cognitive training.

The standard program provided guidance in a printed booklet. In contrast, the personalized program involved one-on-one remote coaching sessions twice a week. Sessions addressed each person's progress and abilities. This group also had access to an online platform with daily meditations and detailed exercise programs. They received daily meal suggestions and reminders to do cognitive training. The personalized program also let users record any concerns. These were then discussed during one-on-one coaching sessions.

The researchers found that patients adhered better to the personalized program than to the standard program. The personalized program also led to improvements in several measures of physical and cognitive function. Of the 27 people in this group, only four experienced moderate to

severe complications after surgery.

In contrast, of the 27 people in the standard group, 11 experienced moderate to severe complications after surgery. This group saw improvement in only one measure of physical function after surgery. No benefits were seen in cognitive function.

Personalized prehabilitation also led to significant changes in patients' immune cells. These were consistent with a decline in inflammation. The standard program led to no such changes.

The results suggest that properly tailored prehabilitation could improve physical, cognitive, and immune functions. This could lead to fewer post-surgery complications and improved outcomes for patients.

"You can think of prehab as a way to train—not just your physical resilience, but also your immunological, neurocognitive, and psychological state—to really prepare for this major trauma of surgery," Gaudillière says.

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