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Personalised recovery after general and gynaecologic surgery

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Over the past decade, attention on post-surgical recovery has increased. Enhanced recovery pathways have been developed that focus on improving clinical outcomes such as complications and length of stay after major abdominal surgery. Despite their effectiveness, these pathways do not extend beyond discharge and sometimes fail to incorporate patient-reported outcome measures.¹ Recovery periods after intermediate-grade abdominal surgical procedures (eg, laparoscopic cholecystectomy) are excluded from these pathways; thus, patients are left to recover from these uncomplicated day-surgery procedures by themselves. Moreover, little evidence is available to guide patients' expectations regarding patient-reported outcome measures (eg, time to return to work)^{2,3}

In *The Lancet*, Eva Van der Meij and colleagues report findings of a multicentre randomised controlled trial in the Netherlands, in which e-health was compared with usual practice in the perioperative care of healthy adult patients undergoing laparoscopic cholecystectomy, laparoscopic adnexal surgery, and laparoscopic or open inguinal hernia repair.⁴ The study provides information not only regarding baseline patient-reported outcome measures after intermediate-grade abdominal surgery but also on the effectiveness of an e-health intervention. Patients randomly allocated to the e-health intervention were provided with access to an interactive website and mobile phone app, with educational videos, access to health consultants, a commercial fitness tracker, and a personalised recovery plan. Patients receiving usual care were provided with access to a website containing basic perioperative information. Both groups were followed up for a 6-month period.

A novel aspect of this trial is the use of a personalised patient-reported outcome measure as the primary outcome measure. The trial required patients to select eight of 29 activities from the Dutch Patient-Reported Outcomes Measurements Information System Physical Function (PROMIS-PF) item bank that best represented their daily activities. Time until return to normal activity was quantified by resumption of all eight preselected activities. Based on the intention-to-treat analysis, patients in the e-health group returned to normal activities 5 days earlier than did participants in the usual care group (21 days [95% CI 17–25] vs 26 days [20–32]; hazard ratio 1.38, 95% CI 1.09–1.73; $p=0.007$).

Overall, this trial was well designed and rigorously conducted. As with other multicomponent interventions that have shown benefit, one challenge is in identifying

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whether all the components are necessary to achieve the desired effect. For example, the fitness tracker in itself might have resulted in increased activity and faster recovery and the other components might have been ineffective. Alternatively, since evidence regarding the effectiveness of fitness trackers in increasing activity levels is conflicting,^{5,6} it is possible that the tracker contributed very little.

Although van der Meij and colleagues have recommended implementation of the e-health intervention into standard perioperative care, several barriers must be overcome. First, although the trial was pragmatic in design, the researchers only enrolled patients who were motivated to participate; 56% (499 of 896) of patients assessed for eligibility declined to participate, limiting real-world generalisability. Second, acceptability of the intervention might be lower among disadvantaged populations. Most participants in the trial were Dutch (98%). Patients from other racial and ethnic groups might be less willing to engage in e-health.⁷ Third, although the intervention had little effect on provider workload, patients were relatively well educated (82% had a medium-to-high education level) and had uncomplicated recoveries (1.5% complications). Thus, we do not know if more complex patient populations would increase provider workload. Finally, the e-health intervention had a higher cost, although the intervention was cost effective depending on the providers' willingness to pay. For hospitals with few resources (eg, safety-net hospitals in the USA), the intervention might not be affordable. Both costs and workflow can be substantial barriers to the success of e-health interventions.⁸

The trial by van der Meij and colleagues shows that there can be synergy between two seemingly contradictory goals—ie, implementation of evidence-based recommendations to a diverse group of patients, and incorporation of patients' desired health outcomes into their management to provide patient-centred care. The results of this trial will allow surgeons to guide patients' expectations regarding return to normal activities and to help patients plan their recovery even before surgery. Furthermore, the intervention empowers and engages patients to track and drive their own recovery with data. The trial also shows the importance of engaging patients as stakeholders early in the research process, including in the development of the intervention.⁹

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