

Effects of Preoperative Exercise on Perioperative and Postoperative Outcomes

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Introduction - Physical fitness is a factor that appears to affect a patient's chances for perioperative success. The authors sought to determine if an exercise intervention program administered in the weeks before surgery could improve perioperative or postoperative outcomes.

Methods - The literature was reviewed for 1965 to 2005.

Results - Studies show that two measures of exercise capacity heart rate recovery after exercise (HRR) and maximum metabolic equivalents (METs) are both valid predictors of all-cause mortality, and that HRR may be superior. Also, exercise capacity (expressed in METs) is a good prognostic indicator of perioperative and postoperative complications. In addition, exercise training programs can improve HRR in a given population. However, the literature on the use of preoperative exercise interventions as a way of improving perioperative or postoperative outcomes is limited. One study did show that perioperative exercise can accelerate functional recovery and may even delay the immediate need for surgery.

Discussion - Thus far, many studies have shown that physical fitness is a strong and independent predictor of the risk of perioperative complications. Others have shown a correlation between higher physical fitness and reduced all-cause mortality rate. In addition, specific exercise programs can increase exercise capacity and improve HRR. From all the available data, it seems logical to believe that specific exercise programs aimed at increasing exercise tolerance before surgery can decrease morbidity and mortality postoperatively and ultimately improve survival. Because no study to date has specifically investigated this issue, the authors propose their own study design for investigation of this matter.