

TCS/26/18 - Simple Exercise Test to Predict Heart Injury after Surgery

After surgery, some patients experience heart injury which can be identified using a blood test. People who develop heart injury after surgery have an increased risk of serious complications, including death. Aims We want to find out whether measuring how quickly a person's heart rate slows down after gentle exercise before surgery can predict which patients will go on to develop heart injury after surgery. Methods At a clinic visit, before surgery, we will collect routine data about patients' health, quality of life and take a blood sample. Each participant will then perform a short exercise test, by stepping on and off a low step until their heart rate reaches a target level. Their heart rate will then be measured for one minute after stopping. After surgery whilst the patient is recovering in hospital, we will collect blood samples to look for any heart damage. We will also record whether participants develop any complications such as infections, kidney damage or require an admission to a ward with a higher level of care. Implications We expect patients whose heart rate takes longer to return to normal after exercise are more likely to have signs of heart injury after surgery. If our findings confirm this, we could use this to identify which patients are at higher risk of heart injury, allowing improved decision making and targeting of risk-reducing treatments to these patients. This would be a simple, cheap, and easily repeated test improving safety for surgical patients across Scotland.