Rebecka’s research focuses on the potential use of beta-blocker therapy in the context of surgical and traumatic injury as a means of reducing the magnitude of physiological stress reactions. Severe traumatic injury is still associated with high mortality and poor psychological outcomes. There is little research into how beta-blocker therapy might be used to prevent the development of post-traumatic depression in this patient group. This thesis outlines two studies (Papers I and II) that explore the association between pre-injury beta-blocker therapy and the risk of post-traumatic depression in the year after injury. Additionally, despite advances in perioperative care in recent years, major surgery for colorectal cancer is still associated with high morbidity and mortality. This thesis also presents three studies (Papers III-V) evaluating the relationship between pre-operative beta-blocker therapy and post-operative mortality and morbidity.