Despite the many advantages for patients, laparoscopic surgery entails certain ergonomic inconveniences for surgeons, which may result in decreasing the surgeons' performance and musculoskeletal disorders. In this chapter, the current status of ergonomics in laparoscopy, laparoendoscopic single-site surgery (LESS), and robot-assisted surgery will be reviewed. Ergonomic guidelines for laparoscopic surgical practice and methods for ergonomic assessment in surgery will be described. Laparoscopic surgery is now preferred over open surgery for several types of procedures because of its minimally invasive nature and its association with fewer complications. Microlaparoscopy can be performed in the physician's office using smaller laparoscopes. Laparoscopy is commonly used by gynecologists, urologists, and general surgeons for abdominal and pelvic applications.