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## Journal of Robotic Surgery

Editor-in-Chief: D. Albala

- ▶ Tracks the progress of new robotic surgery techniques
- ▶ Reports on innovative equipment and new procedures
- ▶ Explores fine motor control, three-dimensional magnified imaging and articulated instruments

Surgery has traditionally been a specialty within the medical profession that has revolved around invasive procedures to treat various maladies. Initially, trauma induced by the therapeutic procedure was necessary and reasonable to provide benefit to the patient. But now, through the innovation of digital imaging technology, combined with optical engineering and improved video displays, surgeons can operate inside of body cavities for therapeutic intervention without the larger incisions previously necessary to allow a surgeons hands access to the necessary organs. Rather than creating large incisions several inches long to gain access to underlying tissues, minimally invasive surgical techniques typically rely on small half-inch incisions encircling the surgical field in order to insert small scopes and instruments. Minimally invasive surgery has caused a change in the route of access and has significantly and irrevocably changed the surgical treatment of most disease processes. Patients still undergo interventions to treat disease, but minimally invasive surgery makes possible a reduction or complete elimination of the "collateral damage" required to gain access to the organ requiring surgery.

While the benefits of this approach were numerous for the patient, early technology limited the application of minimally invasive surgery to some procedures. Specifically, surgeons using standard minimally invasive techniques lost the value of a natural three dimensional image, depth perception, and articulated movements. Magnification of small structures was often difficult and instruments were rigid and without joints. Robotic surgery has provided the technology to address these limitations and allow the application of minimally invasive surgery to a broader spectrum of patients and their diseases. Surgical robots relieve some of these limitations by providing fine motor control, magnified three dimensional imaging and articulated instruments.

The use of robotics in surgery is now broad-based across multiple surgical specialties and will undoubtedly expand over the next decades as new technical innovations and techniques increase the applicability of its use.

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