

Google Glass shows promising uses in plastic surgery

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The "wearable technology" Google Glass has a wide range of possible applications in plastic surgery—with the potential to enhance surgical training, medical documentation, and patient safety, according to a special paper in the March 2015 issue of *Plastic and Reconstructive Surgery*, the official medical journal of the American Society of Plastic Surgeons (ASPS).

The article by Christopher R. Davis, MD, and ASPS Member Surgeon Lorne K. Rosenfield, MD, of Stanford University includes a report on the first [plastic surgery](#) procedure performed using "Glass." Highlighting the possibilities and challenges of integrating the new technology into surgical practice and education, the researchers note, "Google Glass is an exciting technology, attracting global interest from multiple industries, professions, and individuals."

Google Glass in Plastic Surgery? Review and Initial Experience

The authors systematically review and analyze previous reports on medical and surgical uses of Google Glass, focusing on its potential application in plastic surgery. Introduced on a limited basis in 2013, Glass is a hands-free, computerized eyewear that can present information to the wearer and enable recording and sharing of video. Although Glass is not currently available to the public, the technology is still being developed in several markets, including healthcare.

With the ability to control the device hands-free using voice commands, touch, or head position, Glass is a natural technological addition to the operating room. In their review, Drs. Davis and Rosenfield identify surgical procedures performed using Google Glass from multiple specialties. They also present Dr. Rosenfield's experience in performing the first plastic surgery procedure with Glass—an eyelid surgery ([blepharoplasty](#)) performed in combination with a facelift procedure. (To see an excerpt of streaming video from that procedure, visit <http://drrosenfield.com/google-glass-surgery-video/>).

This experience illustrated some challenges for future refinement, including the limited resolution of the video camera, technical difficulties in streaming, and the need for the surgeon to keep the head in a fixed position. In subsequent procedures, Dr. Rosenfield fashioned a head-mounted extra-wide LED light to improve clarity for video viewers as well as for the surgeon.

Potential Uses in Training, Medical Records, and More

The ability to demonstrate surgical procedures, live or recorded, has obvious applications for training in plastic surgery and other disciplines. Dr. Rosenfield notes that the recordings also have unique value for self-evaluation by the surgeon. In the future, Glass technology may enable surgeons to receive remote consultations and even "virtual assistance" during actual procedures.

Glass may also be useful in providing rapid access to medical documentation—for example, doctors could call up and view necessary medical records, imaging studies, or checklists. This might even reduce the spread of infection from handling pens and paper, computers, and other sources.

Although many challenges remain, Drs. Davis and Rosenfield remain "very bullish" about the potential uses Google Glass in surgery. They also note that "logistical, ethical, and hospital legislative issues" will need to be addressed before Glass can be fully embedded within everyday clinical care.

A forthcoming follow-up article will introduce readers to the rapidly advancing software options and hardware upgrades for Google Glass being developed by multiple third parties. Drs. Davis and Rosenfield comment, "The future of Glass in surgery is very promising and has the potential to make an empowering impact upon the contemporary plastic surgeon not only as a teaching tool for the observer, but for the surgeons themselves."

More information: [Click here](#) to read "Looking at Plastic Surgery through Google Glass: Part 1. Systematic Review of Google Glass Evidence and the First Plastic Surgical Procedures."

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