

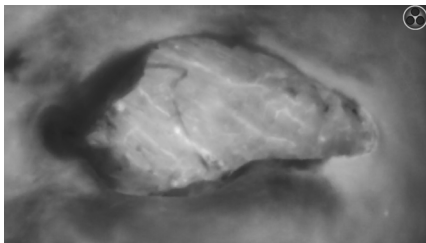
# Shaping the future of breast reconstruction



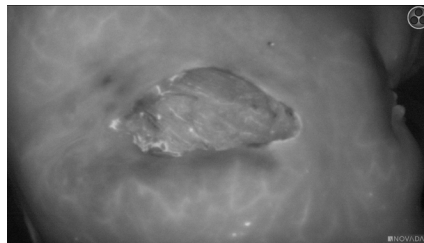
Though advances in breast reconstruction techniques have improved both functional and aesthetic outcomes following mastectomy, research has shown that skin necrosis may still occur in up to 31% of procedures.<sup>1</sup>

Accurate and reliable methods for intraoperative perfusion assessment are critical in helping surgeons prevent complications.<sup>2</sup> In fact, recent studies have recommended the use of SPY technology, particularly in newer techniques, such as nipple sparing mastectomy and immediate prepectoral implant-based breast reconstruction.<sup>3, 4, 5, 6</sup>

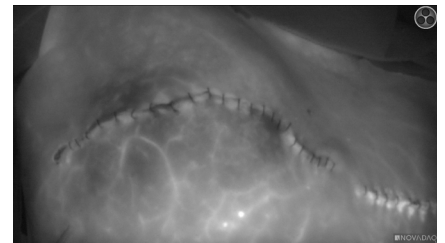
**Stryker is proud to introduce the SPY Portable Handheld Imager. SPY-PHI utilizes SPY Fluorescence Imaging technology and provides surgeons with a convenient, compact solution for real-time perfusion assessment in breast reconstruction and other open surgeries.\***



Intraoperative visualization of ischemic breast tissue



Fluorescence-guided debridement of ischemic breast tissue



Visualization of perfusion to the incision after prepectoral implant placement

Prepectoral implant-based breast reconstruction. Images courtesy of Dr. Charles Kays, Wilmington, NC †

## Brilliant image quality

The 1080p resolution at 60 fps is designed to provide realistic color reproduction and results in a sharp, highly detailed image

## Flexible working distance and wide imaging field

SPY-PHI allows clinicians to assess perfusion using a wide range of viewing distances, allowing for versatility in the operating room

## Multiple visualization modes

Combines enhanced fluorescence signal information with vivid white light images in real-time

## Ambient light immunity

Ensures that the operator is able to work fluidly without disrupting activities around the surgical table

SPY/PHI

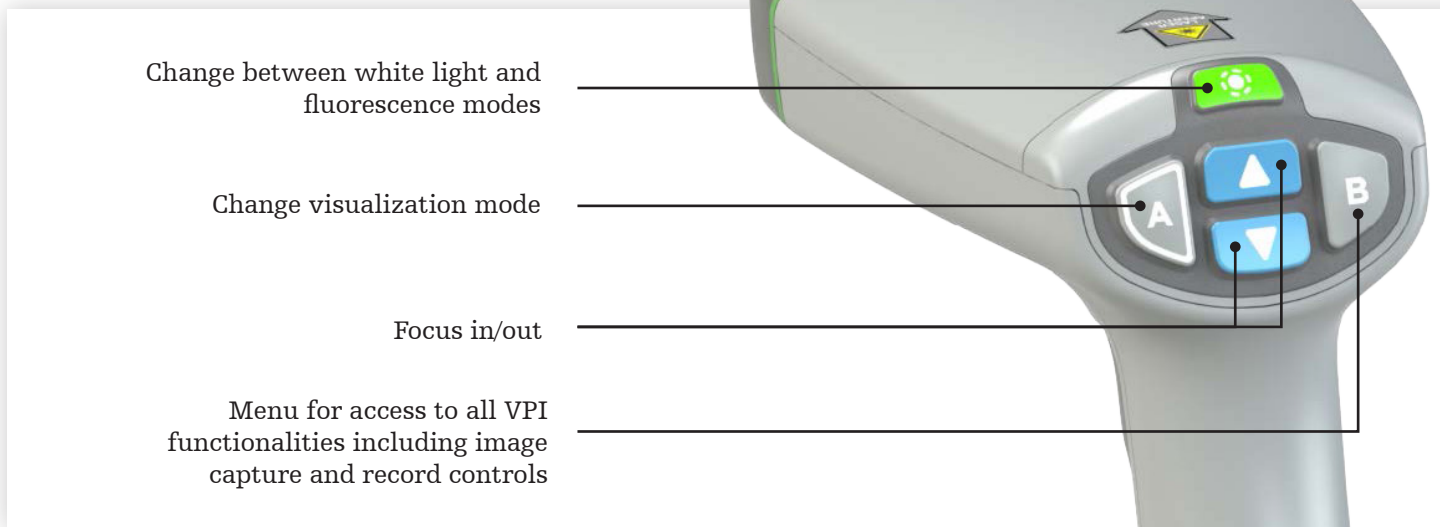
See more. Do more.

# SPY Portable Handheld Imager (SPY-PHI)

## Features and functions

### Intuitive operator controls

- Comfortable single-handed operation
- Durable elastomer buttons
- Backlit illumination



### Indications for use

\*The SPY-PHI Open Field Handheld Fluorescence Imaging System is an imaging system used in capturing and viewing fluorescence images for the visual assessment of blood flow as an adjunctive method for the evaluation of tissue perfusion, and related tissue-transfer circulation in tissue and free flaps used in plastic, micro- and reconstructive surgical procedures.

The SPY-PHI Portable Handheld Fluorescence Imaging System is intended to provide fluorescence images for the visual assessment of blood flow in vessels and related tissue perfusion during gastrointestinal surgical procedures.

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† Dr. Kays is a paid consultant of Stryker

**References**  
1. Gorai K. Prediction of Skin Necrosis after Mastectomy for Breast Cancer Using Indocyanine Green Angiography Imaging. *Plast Reconstr Surg Glob Open*. 2017; 5(4):1321. 2. Sood M "Potential of the SPY intraoperative perfusion assessment system to reduce ischemic complications in immediate postmastectomy." *Annals of Surgical Innovation and Research* 2013, 7:9 breast reconstruction 3. Venturi M "SPY Elite's Ability to Predict Nipple Necrosis in Nipple-Sparing Mastectomy and Immediate Tissue Expander Reconstruction." *FRS GO*, May 2017, doi:10.1097/GOX.0000000000001334. 4. Shitany, H. "Prepectoral Breast Reconstruction: A Safe Alternative To Submuscular Prosthetic Reconstruction Following Nipple Sparing Mastectomy." *Plastic and Reconstructive Surgery*, Sept. 2017, pp. 432-443. doi:10.1097/PRS.0000000000003627. 5. Gurtner, G. "Intraoperative Perfusion Mapping with Laser-Assisted Indocyanine Green Imaging Can Predict and Prevent Complications in Immediate Breast Reconstruction." *FRS Journal*, Oct. 2009. 6. Sigalove, S. "Prepectoral Implant-Based Breast Reconstruction and Postmastectomy Radiotherapy: Short-Term Outcomes." *FRS GO*, vol. 5, no. 12, Dec. 2017.