

Kent Imaging

The Next Wave of Medical Imaging Technology

After three decades of building his credibility through various leadership positions in the high-tech world of imaging, Pierre Lemire, a technology commercialization expert, joined Kent Imaging (Kent), which was founded by a serial entrepreneur, Don Chapman. At the helm as the CEO, Lemire boasts a keen interest in technology and perfectly complements Chapman's penchant for innovation to deliver exceptional value. While the field of medical imaging has been a fixer-upper's dream, Chapman, Lemire and their team at Kent Imaging are up for the challenge. Guiding Kent Imaging's corporate strategy and vision, Lemire has seized the opportunity to deliver breakthrough near infrared multispectral imaging solutions that assess tissue oxygen saturation, a key indicator of tissue health. The company successfully made a giant stride in tissue oxygenation imaging by devising a completely non-invasive, low-cost and easy-to-use imaging device that eliminates the need for patient contact or injectable dyes required by other technologies.

"In the past, wound care professionals relied on their visual assessment to gauge the condition of a wound. Touching the wound can contaminate it and make things worse. With our non-invasive imaging, one can instantly capture diagnostic insight into the availability of oxygenated blood in tissue within and around the wound. The same applies in the area of plastic surgery. One can take an oxygenation image of tissue to see if the reconstruction is well suited to heal. This real-time diagnostic information supports improved decision making throughout the dynamic treatment pathway. It boosts the confidence of the surgeon

that the tissue will go on to heal so that reconstruction will be successful. This is better for the patient, the physician and the medical system," notes Lemire.

Kent Imaging is a pioneer in portable and digitally advanced multispectral oxygenation imaging technology and is dedicated to redefining how oxygenation imaging helps doctors drive better outcome in surgery and wound care. Kent's Snapshot_{NIR} is a non-invasive diagnostic imaging device that provides insight into the availability of oxygenated blood to the imaged tissue, enabling improved decision-making throughout wound care, plastic surgery, colorectal surgery, trauma, and cardiac specialties. Chapman, the Executive Chairman of Kent Imaging, licensed this advanced medical imaging technology from the National Research Council of Canada. He worked extensively with the council's team to commercialize the innovative imaging technology and make it applicable in day-to-day wound care activities by physicians. Today, the company holds multiple patents in medical technology that power its solution portfolio for assessing tissue oxygen saturation.

Revolutionizing Medical Imaging

Distilling the core challenges in the field of medical imaging devices, Lemire points out that most traditional medical imaging devices are fitted with a large stand, are cumbersome to move around the hospital



Pierre Lemire

and are expensive to acquire and use. When looking into the broader history of wound care technology, he says, earlier physicians used an invasive device focused on a dye called ICG (Indocyanine green) to identify blood flow near a wound. Rising to these challenges, Kent's Snapshot_{NIR} handheld solution is making a remarkable impact. Snapshot_{NIR}'s portable, flexible features make it easy to be used at all points of care, including the examination room, operating room, clinics and private practices. To track treatment effectiveness, Kent's non-invasive multispectral imaging solution allows for unlimited imaging by the physician. These images can be stored to the device or downloaded to a USB drive. "With Kent's technology, medical imaging no longer requires a dye, and as a result, images of oxygen saturation can be captured anytime, and as often as required," explains Lemire. Technically, Kent's imaging solution shows the approximate value of oxygen saturation and hemoglobin level in superficial tissue. Snapshot_{NIR}'s light harmlessly passes through the skin and is then reflected off the blood supplying the tissue. The wavelength dependent light absorption of hemoglobin differs if it is carrying oxygen from when it is not.

This helps to gather a comprehensive picture of tissue health and the healing capacity of wounds or tissue transplants. The device provides percentage values and a colorized image representing oxygen levels for rapid assessment. "Orange to red indicates good oxygen in the tissue, whereas blue indicates some conjunction or abnormally low oxygen levels. This enables the physicians to perform adjustments to the therapy to provide the best possible outcome," notes Lemire.

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Though initially developed for wound care, Kent's technology today has evolved to many other areas of medical diagnostics. For instance, in the case of breast cancer, after mastectomy, a plastic surgeon reconstructs the breast tissue using various medical techniques. Ensuring proper oxygenation in the flap is a critical factor for healing. If a large amount of skin is removed during mastectomy, the plastic surgeon may place a tissue expander between the skin and chest muscle.

The expander will allow breast tissues to gradually stretch up to a point where it can sustain a permanent implant. The advanced imaging capability plays a significant role in supporting surgical decision making (e.g. implant or expander) by providing insights into tissue health.

Improving Patient Outcomes

Surgeons around the country are widely adopting the solution for improving the healing processes and decision making in surgery, wound care, and cardiac specialties. Dr. Glyn Jones, MD, a plastic surgeon with Illinois Cosmetic and Plastic Surgery and affiliated with multiple hospitals in the area, including OSF Healthcare, St. Francis Medical Center and UnityPoint Health-Peoria, has been a supporter, advisor and well-wisher of Kent's solutions. Having used ICG-based techniques for many years, Jones is also one of the early adopters of Kent's imaging device. "Knowing the type of implant after mastectomy is a key decision that a surgeon needs to make, and Kent's imaging solution plays a critical role in helping our decision making," adds Dr. Jones.

The uniqueness of Snapshot_{NIR} stems from the portability and reliability

in imaging it brings to the table. Having worked in the medical field as a plastic surgeon for a lengthy period, Jones explains Kent's value proposition in contrast to traditional solutions. Prior to the advent of Snapshot_{NIR} surgeons, including Jones, were using laser-induced fluorescence or ICGs, and extremely expensive imaging machines. The machines also needed intravenous access, and their complicated results made it truly difficult to understand the interpretations. Kent Imaging's Snapshot_{NIR} device is handheld, portable, and comparatively inexpensive while providing straightforward data interpretation. "It's an extremely intuitive device using a menu-driven touch screen interface with a minimum learning curve. It gives an instantaneous reading which is immediately understandable and correlates very well with a patient's clinical outcome," he notes. "We are looking forward to expanding its utilization in other areas of services such as for reconstruction after bowel surgery. It can also be used to assess blood and tissue oxygenation levels in vascular surgery."

Today, a large number of leading medical practices and plastic surgeons are harnessing the potential of Kent Imaging's advanced medical imaging solution. "Our goal in the coming years is to expand our reach in the North American market and increase adoption of the technology. We are also looking to penetrate global markets. We look forward to improving the usability and simplicity of the product through our proactive customer feedback mechanism," concludes Lemire. 

