Clinical and Economic Benefits

T.Ox can be used during various stages of tissue transfer surgery to positively affect clinical and financial outcomes.

- Reduces take-backs when used for intraoperative flap assessment.1
- Potential reduction in early take-backs avoids cost of OR turnover expense and supplies.1
- Improvement in flap loss rate reduces expenses associated with failed flaps.
- Lowers hospital costs by allowing patients with continuous flap monitoring to recover on a standard surgical floor or through earlier transfer to step down unit.1,4
- Saves staff time via remote access to monitoring and alarm data.

Patient Benefits

- Non-invasive sensor is safer for the patient as there’s no need to remove an invasive implanted device.
- Reduces patient discomfort caused by repeated post-op clinical examination of the flap.
- Patients say they love the T.Ox system because it gives them ownership in their care.
- Physicians have reported that patients feel more engaged in their own recovery and are comforted by having the monitor by their bedside.
- Patients monitored with T.Ox can move to the more familiar environment of a standard floor sooner.

Clinically Validated

- In a study of 208 monitored flaps, five patients exhibited complications that were predicted by T.Ox before clinically evident.1
- Tissue Oxygen Saturation and its drop rate can be combined to indicate possible hypoxia in a flap.1
- All flaps with StO2 less than or equal to 30% and a drop rate greater than or equal to 20% per hour, both sustained more than 30 minutes, were flaps with complications.1

How T.Ox Works

- Non-invasive T.Ox Sensors are placed on the flap during surgery.
- Lasers shine near-infrared light into the tissue, detect and adjust for reflection and absorption.
- Automatically compensates for skin pigmentation.
- Measures red cells in all vascular structures under the sensor: arteries, veins and capillaries.
- Signal Quality lets you know sensor is placed correctly.

3 Lohman, Robert; Djohan, Risal; Langevin, Claude‐Jean; Bernard, Steven; Alam, Daniel; Siemionow M. Methods of Free Flap Monitoring in a Non‐Specialized Unit. Presented at the American Society for Reconstructive Microsurgery, January 2009.
**T.Ox Tissue Oximetry**

The T.Ox System uses near-infrared spectroscopy to provide continuous, real-time tissue oxygen saturation (StO₂) measurements that facilitate identification of flap complications and their causes before clinically evident.¹

The T.Ox System provides clinicians with alerts in two key ways:

1. **Number**: real time StO₂ reading that is updated every four seconds.*

2. **Trending Graphs**: provide insight as to what type of problem exists, its onset, and its duration.

**Two Different Sensors for Versatility**

- T.Ox SP with Adhesive Pad
- T.Ox SS with Silicone Surround

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**Objective Data: StO₂**

- **Venous Congestion**: Local venous outflow obstruction can allow a region of a flap to inflate with fresh arterial blood leading to a transient rise in local oxygen saturation. The StO₂ will then fall to the extent to which the obstruction impairs perfusion, or to the extent to which the flap metabolizes the oxygen over subsequent hours.

- **Arterial Obstruction**: Arterial obstruction can lead to a drop in StO₂ over a period of minutes or hours, depending on the extent of the occlusion.

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**Remote Access...Anywhere, Anytime**

- Wi-Fi transmitter lets you view from any web browser
- Adds convenience and saves time
- Early identification of flap complications improves patient outcomes

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**Post-Op Monitoring**

- Early warning of flap perfusion loss.²
- Identify complications before clinically evident.

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**Intra-Op Assessment**

- Identify tissue with best chance of survival.
- Assists with design, harvest and inset of flaps.²

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**Flap Monitoring Starts in the OR**

- Early warning of flap perfusion loss.²
- Identify complications before clinically evident.
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### Venous Congestion

Local venous outflow obstruction can allow a region of a flap to inflate with fresh arterial blood leading to a transient rise in local oxygen saturation. The StO₂ will then fall to the extent to which the obstruction impairs perfusion, or to the extent to which the flap metabolizes the oxygen over subsequent hours.

### Arterial Obstruction

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### Remote Access...Anywhere, Anytime

- Wi-Fi transmitter lets you view from any web browser
- Adds convenience and saves time
- Early identification of flap complications improves patient outcomes

### Post-Op Monitoring

- Early warning of flap perfusion loss.
- Identify complications before clinically evident.

### Objective Data: StO₂

- **85**
- **36**

### Flap Monitoring Starts in the OR

**Last / First Check of Anastomosis**

**Intra-Op Assessment**

- Identify tissue with best chance of survival.
- Assists with design, harvest and inset of flaps.

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*Single Channel mode updates every 4 seconds, in Dual Channel mode each channel updates every 8 seconds.*
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