Improve outcomes for your high-risk surgery patients today, and tomorrow.
The evidence is clear: Patients managed with goal-directed therapy have better outcomes.

An extensive body of clinical study evidence shows that goal-directed hemodynamic optimization of high-risk patients, initiated in the OR and continued in the ICU, not only improves short-term outcomes, but also increases long-term survival1-21 (Figure 1). Randomized, controlled trials showing a benefit in perioperative optimization.

<table>
<thead>
<tr>
<th>Study (Year)</th>
<th>Goal</th>
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<th>Timing</th>
<th>Benefit</th>
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<td>Shoemaker (1988)</td>
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<td>D + A</td>
<td>Complications, mortality</td>
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<td>Cardiac</td>
<td>D</td>
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<td>Sinclair (1997)</td>
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<td>D</td>
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<td>Noblett (2006)</td>
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<td>Complications</td>
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</table>

Abbreviations: DO$_2$I = indexed oxygen delivery, SV = stroke volume, ScvO$_2$ = central venous oxygen saturation, SVV = stroke volume variation, SVI = stroke volume index, D = during surgery, A = after surgery, CI = cardiac index, HLOS = hospital length of stay

Figure 1: Improved Survival for Protocol Patients

![Figure 1: Improved Survival for Protocol Patients](image-url)
Different perioperative optimization strategies have been shown to improve outcomes and be cost effective.

SV Stroke Volume Optimization

Monitoring and optimizing stroke volume (SV) by volume loading during the surgical procedure or in the immediate postoperative period is a key strategy for reducing postoperative complications.

Stroke volume measurement with the FloTrac system enables a personalized approach to administering fluid until SV reaches a plateau value along the Frank-Starling curve to prevent hypovolemia, but also excessive fluid administration.

SVV Stroke Volume Variation Optimization

As an accurate marker of the position on the Frank-Starling curve, mechanically ventilated, induced SVV measured by the FloTrac system can also be used to tailor fluid therapy.

DO₂ Oxygen Delivery Optimization

Cardiac output measured continuously by the FloTrac system can be used (in combination with SaO₂ and hemoglobin) to monitor and optimize DO₂ with fluid (including red blood cells) and inotropic agents.

ScvO₂ Central Venous Oxygen Saturation Optimization

During surgery, as long as oxygen consumption is stable, ScvO₂ can be used as a surrogate for DO₂. The PreSep oximetry catheter provides continuous measurement of ScvO₂. An ScvO₂ value >73% can be targeted using fluid (including red blood cells) and inotropic agents.

Published clinical study results add the FloTrac system to the long history of goal-directed studies, resulting in improved outcomes.

In a randomized, controlled study in high-risk patients undergoing major abdominal surgery, strategies based on the optimization of hemodynamic parameters measured continuously by the FloTrac system improved patient outcomes compared with standard management protocols (Figures 2 & 3).

Figure 2. No. of Patients with Complications

Figure 3. Reduced Total No. of Complications
Bring the advantages of Tailored Perioperative Hemodynamic Optimization with the FloTrac system and the PreSep oximetry catheter to your high-risk surgery patients. The evidence is clear, and the results compelling.

- A 2011 meta-analysis of 29 studies concluded that a preemptive strategy of hemodynamic monitoring and intervention significantly reduces surgical morbidity and mortality.
- Goal-directed therapy results in better outcomes—both short and long term
- SVV, SV, CO and/or DO₂ can be easily monitored and optimized using the FloTrac system
- ScvO₂ can be easily monitored and optimized using the PreSep oximetry catheter
- When used with an intraoperative hemodynamic optimization protocol, the FloTrac system is proven to improve outcomes in high-risk surgery patients.
- The FloTrac system and the PreSep oximetry catheter leverage existing clinical skills and are not operator dependent

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