Avoid volume overload in **Septic patients** with the **100% noninvasive STARLING™ SV**

Quickly obtain dynamic fluid assessments for Septic patients with the Starling SV™

The Starling SV is a 100% non-invasive measure of stroke volume, a left ventricular function, enabling confident and precise volume management decisions.

**Approximately 50%** of hemodynamically unstable patients will not respond to fluids.¹

**Studies involving over 1000 patients** indicate CVP is not reliable for determining fluid responsiveness.²

**Excess fluids can lead to** increased length of stay, increased mortality and increased complications.⁴-⁶
Patients with sepsis and septic shock have unique and continuously changing fluid requirements and complications can occur from both under and over-resuscitation.

### Relevant clinical studies regarding volume overload in Sepsis

- **Kelm et al (2015)** — “Fluid overload in patients with severe sepsis and septic shock treated with early goal-directed therapy is associated with increased need for fluid-related medical interventions and hospital death.”
  - n=405, Fluid overload in 67% day 1, 48% day 3; Mortality OR 2.27 day 1, 1.92 day 3
  - Patient volume status and day 3 weights increased compared to day 1, suggesting that patients may continue to receive fluid administration well out of EGDT window

  - More positive fluid balance both early in resuscitation and cumulatively over 4 days is associated with increased 28-day mortality

- **Vincent et al (2006)** — Sepsis in European ICU: Results of the SOAP Study
  - Positive balance is a strong predictor for mortality (cumulative fluid balance per liter increase 1.1 OR 1.0-1.1, p=0.001)
  - Positive fluid balance second most important prognostic factor even when adjusting for severity illness

### References


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