

Cheetah Medical™ Education presents — FAST FLUID FACTS



WHO IS A CHEETAH PATIENT?

Understanding whether or not a patient will benefit from fluid is a challenge clinicians face every day.

Because each patient presents with unique and constantly changing hemodynamic needs, and fluid imbalance can lead to serious consequences, the Cheetah patient is identifiable if you're asking this *simple* question:

“Will additional IV fluid help my patient?”

In other words, “Will additional IV fluid increase cardiac output and improve perfusion?”

One of the ways to determine if a patient will increase their perfusion in response to further fluid, is to perform a dynamic assessment. A simple passive leg raise or a rapid IV fluid bolus can help you determine if fluid will increase your patient's cardiac output or not.

PATIENT SELECTION TOOL CHEETAH NICOM & STARLING SV

Patient Type
<ul style="list-style-type: none"> • Shock States/Low Blood Pressure: Sepsis, Low Vascular Tone, Low Cardiac Output, Hypovolemia, Neurogenic Shock¹
<ul style="list-style-type: none"> • Patients treated with Inotropes, Vasopressors or Vasodilators.³
<ul style="list-style-type: none"> • Surgical Patients: Perioperative Volume Management, Goal Directed Therapy, Enhanced Recovery After Surgery (ERAS)²
<ul style="list-style-type: none"> • Emergency/Trauma Patients⁴
<ul style="list-style-type: none"> • Other Critical Care Conditions: Acute Respiratory Distress (ARDS);⁵ Sub-Arachnoid Hemorrhage (SAH);⁶ Acute Kidney Injury (AKI);⁷ and Congestive Heart Failure (CHF)⁸
<ul style="list-style-type: none"> • Patients undergoing Continuous Renal Replacement Therapy (CRRT) or patients undergoing hemodialysis⁹

ONLY ~50% OF HEMODYNAMICALLY UNSTABLE PATIENTS WILL RESPOND TO FLUID BY INCREASING CARDIAC OUTPUT AND PERFUSION.

References: 1. Mark P et al. The use of bioreactance and carotid Doppler to determine volume responsiveness and blood flow redistribution following passive leg raising in hemodynamically unstable patients. *Chest* 2013; 143:364-370. 2. Waldron N et al. A prospective comparison of a noninvasive cardiac output monitor versus esophageal Doppler monitor for goal directed fluid therapy in colorectal surgery patients. *Anesth Analg* 2014; 118:966-75. 3. Dunham, CM et al. Emergency department noninvasive (NICOM) cardiac outputs are associated with trauma activation, patient injury severity and host conditions and mortality. *J Trauma Acute Care Surg*. 2017; 73:479-85. 4. National Heart, Lung, and Blood Institute. Acute Respiratory Distress Syndrome (ARDS) Clinical Trials Network. Comparison of two fluid management strategies in acute lung injury. *New Engl J Med* 2006; 254:2564-2575. 5. Mittal N et al. Management of catecholamine-induced stunned myocardium—a case report. *J Clin Anesth* 2005; 27:527-30. 6. Grams ME et al. Fluid balance, diuretic use, and mortality in acute kidney injury. *Clin J Am Soc Nephrol* 2011; 6:966-973. 7. Maurer MM et al. A multicenter study of noninvasive cardiac output by bio-reactance during symptom-limited exercise. *J Card Fail* 2009; 15:689-99. 8. Kassab N et al. Bio-reactance: a new tool for cardiac output and thoracic fluid content monitoring during hemodialysis. *Hemodial Int* 2009; 13:512-7. 9. Michard F and Teboul JL. Predicting Fluid Responsiveness in ICU patients: a critical analysis of the evidence. *Chest*. 2002; 121:2000-2008.

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Studies show that only ~50% of hemodynamically unstable patients will respond to fluids.¹

If your patient is not fluid responsive, this should raise questions about the value of further fluid for that patient.

1. Bentzer et al. Will This Hemodynamically Unstable Patient Respond to a Bolus of Intravenous Fluids? *JAMA* 2016; 316:1298-1309.

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