

## OVERVIEW OF RESUSCITATIVE FLUID THERAPY

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Fluid Type	Indications	Dosage		Notes
		Dog	Cat	
<b>CRYSTALLOID FLUIDS</b>				
<b>Isotonic crystalloids</b>	Patients with fluid-responsive shock; commonly used as initial fluid therapy	<b>90 mL/kg</b>	<b>50 mL/kg</b>	<ul style="list-style-type: none"> <li>• Examples: 0.9% sodium chloride, lactated Ringer's solution, Normosol-R,* &amp; Plasma-Lyte-A<sup>§</sup></li> <li>• Avoid overzealous use to prevent volume overload and hemodilution of blood constituents</li> </ul>
		Administer 1/4 to 1/3 of dose; then reassess CV parameters prior to further administration		
<b>Hypertonic saline</b>	Patients with traumatic brain injury or when rapid intravascular volume expansion is needed	<b>4–7 mL/kg</b>	<b>3–4 mL/kg</b>	<ul style="list-style-type: none"> <li>• To prolong effect, a hypertonic saline/synthetic colloid mixture can be administered</li> <li>• Contraindicated in patients that are dehydrated, hyperosmolar, or hypokalemic</li> </ul>
		Administer over ≈ 10 min		
<b>SYNTHETIC COLLOIDS</b>				
<b>Hydroxyethyl starches</b>	Patients with low colloid osmotic pressure, increased vascular permeability, or when rapid intravascular volume expansion is needed	<b>20 mL/kg</b>	<b>10 mL/kg</b>	<ul style="list-style-type: none"> <li>• Of the synthetic colloids available, hydroxyethyl starches are the ones most commonly used in veterinary patients</li> <li>• Use may lead to fluid overload, hemodilution, and coagulation abnormalities</li> </ul>
		Administer 1/4 to 1/3 of dose; then reassess CV parameters prior to further administration		
<b>BLOOD PRODUCTS</b>				
<b>Packed red blood cells</b>	Patients with acute anemia & persistent CV instability	<b>10–15 mL/kg</b>		<p><b>All blood products:</b></p> <ul style="list-style-type: none"> <li>• Blood-typing should be performed before any blood product transfusion. A cross match is recommended if animal has previously received transfusion.</li> <li>• Adverse events include immunologic reactions, electrolyte imbalances, &amp; transmission of disease</li> </ul> <p><b>Fresh frozen plasma:</b></p> <ul style="list-style-type: none"> <li>• Replenishes coagulation factors</li> <li>• Despite being a source of albumin, its colloidal effect is limited due to its relatively low oncotic pressure compared to synthetic colloids</li> </ul> <p><b>Fresh whole blood:</b></p> <ul style="list-style-type: none"> <li>• Same benefits as those of packed red blood cells and fresh frozen plasma combined, but also a source of active platelets</li> </ul>
		Infused over 1–4 H to monitor for adverse reactions (if possible)		
<b>Fresh frozen plasma</b>	Patients with prolonged coagulation times	<b>10–15 mL/kg</b>		
		Infused over 1–4 H to monitor for adverse reactions (if possible)		
<b>Fresh whole blood</b>	Patients with TCPE, TCPA-induced bleeding, or massive blood loss/surgical candidates with severe TCPE	<b>20–25 mL/kg</b>		
		Infused over 1–4 H to monitor for adverse reactions (if possible)		

CV = cardiovascular; TCPA = thrombocytopenia; TCPE = thrombocytopenia  
 \* hospira.com  
 § baxter.com

*This table can be downloaded at [todaysveterinarypractice.com](http://todaysveterinarypractice.com) and printed for use in your clinic.*