**Hypertonic saline ( Example 7% saline).**

Hypertonic saline causes a very rapid expansion of the intravascular compartment after administration. It creates a huge osmotic gradient and draws water into the vascular space from the interstitial compartment and from endothelial cells (lining the blood vessel walls) and red blood cells. A “Shock dose” of 4-7ml/kg of 7% hypertonic saline over 20 minutes is suggested.

*Benefits of Hypertonic Saline –*

Very small volumes of hypertonic saline are needed to perform fluid resuscitation.

Improvements may also be seen in cardiovascular function with better myocardial contraction, some peripheral vasodilation and improved peripheral blood flow.

Hypertonic saline may also help normalize cell function to recover from the hypoxic events of Circulatory Shock. It may be of extra benefit in those patients who present with brain trauma injuries and penetrating wounds.

*Potential Problems with Hypertonic Saline –*

Hypertonic Saline is short acting if used alone with benefits lasting less than 1 hour. The administration of Hypertonic Saline may result in bradycardia and arrhythmias (abnormal heart rhythms). It CANNOT be used if the patient is dehydrated as it pulls water from the interstitial and intracellular sites. Hypertonic saline should not be used if the patient has marked electrolyte disturbances due to its high sodium and chloride levels.