

A COMPARATIVE ANALYSIS OF STORAGE MEDIA FOR AVULSED TEETH

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STORAGE SOLUTION	PROS	CONS
Hanks Balanced Salt Solution ¹ (HBSS)	Most tested storage medium Stores and preserves avulsed teeth for at least 24 hours Needs no refrigeration	Only available in Save-A-Tooth systems ADA Seal of Acceptance FDA Approval
Eagle's Medium	Stores and preserves teeth for 2 weeks	Must be refrigerated Not available except in research labs
ViaSpan	Best preservation of all solutions, up to 72 hours	Must be refrigerated Very expensive Not available in small containers
0.9% Normal Sterile saline	Has compatible osmolality with PDL cells	Doesn't contain metabolites necessary for PDL cell metabolism
Milk	Has compatible osmolality with PDL cells Available to general public	Needs to be fresh and cold Doesn't replace depleted cell metabolites Doesn't facilitate cell mitosis Only effective for 2-3 hours Must be kept cold during transport and storage
Antibiotic-free protective medium	Found in a commercially-available device called EMT Toothsaver	Doesn't have ADA seal of acceptance No research testing of Antibiotic-free protective medium has ever been completed No FDA approval for sale
Enfamil	Available to the general public Some compatibility with PDL cells	Does not preserve PDL cells well Must be kept cold during transport Only viable for short term storage
Water	Available at most accident scenes	Incompatible, harmful osmolality that causes cell destruction
Gatorade	Available at some sporting events	Incompatible, harmful osmolality that causes cell destruction
Contact lens solution	Available to general public	Incompatible, harmful osmolality that causes cell destruction
Saliva	Available at every accident scene	Incompatible, harmful osmolality that causes cell destruction Bacteria found in saliva can cause infection of PDL cells

¹ It is important to note that Hank's Balanced Salt Solution is NOT a saltwater solution. Some organizations recommend using water with a pinch of salt to store avulsed teeth. This is very damaging to the PDL cells.