



# Drowning / Near Drowning Trauma

**Austin County**  
EMS Protocol & Guideline

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**Overview:** Submersion in water, regardless of its depth, can result in a drowning or near drowning incident. When approaching and assessing these patients consider: possible history of trauma (diving board), duration of immersion, temperature of water (hypothermia), and the degree of water contamination.

**Definition:** Drowning: cardiopulmonary arrest as a result from submersion in and inhalation of water.  
Near Drowning: survival after suffocation caused by submersion in water or other fluid.

## EMT

- Immediately **Remove** patient from the water
  - **Remove** wet clothing and dry/warm patient
  - **C-spine Immobilization**
  - Place patient on the **Cardiac Monitor**
  - Obtain **12 Lead EKG**
  - **CPR & AED** as appropriate to patient presentation
  - **Oxygen** administration as appropriate to the patient presentation
  - **Airway Adjuncts** (Supraglottic Airway, OPA, NP), EtCO<sub>2</sub> monitoring appropriate to patient presentation
  - Obtain **BGL**
  - **Evaluate and Identify** possible injuries
  - **Conscious near Drowning with Diffuse Crackles**
  - **USE CPAP or BVM** with PEEP as appropriate to patient presentation
- Drowning**
- **Follow** the appropriate **CPR** protocol

## AEMT

- Establish **IV** or **IO** access with **normal saline** at **20 ml/kg** (without the presence of pulmonary edema),
- **Intubate** as appropriate to patient presentation

## Paramedic

- **RSI Procedure (If needed)**

### PEARLS

- Ensure scene safety. Drowning is a leading cause of death among would-be rescuers. Allow appropriately-trained and certified rescuers to remove victims from areas of danger whenever possible.
- External rewarming should be utilized on all near drowning and drowning patients in cases of submersion in cold water.
- Resuscitate all patients who have been submerged in cold water (less than 70 degrees F) unless there are signs clearly incompatible with life. Cold water drownings require the patient to be rewarmed to an internal temperature between 86 and 93 degrees F. This is essential before discontinuing resuscitative measures. Patients have been revived as long as an hour after cold water submersion because of the multifactorial influences the hypothermic state entails (mammalian diving reflex).
  - Blood shunts to the heart and brain
  - Heart rate lowers
  - Metabolism drastically decreases, conserving energy and oxygen
- Take note of fluid patient was submersed in with consideration that salt water pools have become more popular, and that young children can drown in buckets that may contain chemicals or other fluids.
- Transport should be encouraged to all patients who have had a near drowning incident, even if they are asymptomatic. Observation is required for these patients in order to identify and treat “dry drowning” or “delayed drowning” that may develop after the incident. These can occur because:
  - Small amount of water can remain in the lungs and causes edema 1-24 hours after the incident
  - Inhaled pool water can cause chemical pneumonitis
  - Salt water is hypertonic to the ion concentration in lung cells, so water from the bloodstream enters the lungs to compensate for the concentration difference causing edema