

DROWNING MANAGEMENT

Mitigate hypothermia by huddling together or climbing onto an object



WATER RESCUE

- Call for help
- Rescuer safety
 - Throw a flotation device
 - Row out to victim if needed
 - Tow victim back to shore
 - Go into water as last resort
- No routine C-spine precautions
- No in-water chest compressions
- In-water rescue breaths only if delay in extraction
- Hypothermia → Dysrhythmias

ED CARE

- Repeat A, B, C, D, E
- CXR /ECG/ Labs/ hemodynamic monitor
- CT head and neck if persistently unconscious
- Grade 1 & 2 → observe 4-6 hours
- Grade 3-6 → ICU admission

Drowning Severity Grades

Grade	Clinical	Mortality
1	Cough	0%
2	Rales	1%
3	Pulmonary edema	4-5%
4	Pulmonary edema + shock	18-22%
5	Apnea +pulse	31-44%
6	Apnea ∅ pulse	88-93%

ADVANCED PREHOSPITAL CARE

Airway/Breathing

- Early intubation (↓ emesis)
- No supraglottic airways
- 5 rescue breaths
- 100% FIO2 → sats 92-96%
- PEEP when available

Circulation BLS/ACLS protocols

- < 6% shockable rhythm (∅AED)
- No meds via ETT
- Anti arrhythmic ineffective in hypothermia
- Warmed IV fluid if possible

Disability

- Record GCS
- Concern for arterial gas embolism → STAT to hyperbaric chamber
- Glucose 80-140 mg/dl
- No ICP lowering measures

Environment

- Dry/insulate victim
- Measure core temp
- Mild hypothermia (>34°C/93.2°F)
 - Passive rewarming
- Moderate hypothermia 30-34°C/ 86-93.2°F
 - Active external rewarming
- Severe hypothermia < 30°C/86°F
 - Active internal warming"

Disposition

- Gastric decompression
- Evacuate

Evacuate\Discontinue efforts if:

- Submerged >60 mins
- CPR > 30 min if normothermic
- CPR > 20 min after rewarming to > 30°C if hypothermic

LAND RESCUE

- Call for help
- ABCs
 - 5 rescue breaths
 - 30:2 CPR
 - Ventilate with available equipment
- Risk of emesis
 - 65% rescues
 - 88% if chest compressions
- No Heimlich → Recovery position ASAP
- No abd thrusts
- Transport all rescues to hospital

ICU CARE

- O2 sat >92%/MAP >65mmHg
- Control shivering
- No targeted temp management
- No permissive hyperthermia
- Lung protective strategy with FIO2/PEEP
- Bronchoscopy
- Continue intubation x48hrs (surfactant)
- No bicarb
- Blood glucose (110-180 mg/dl)
- No prophylactic antibiotics



- No supraglottic airway (emesis)
- Active external re warming (86-93° F)
- No prophylactic antibiotics
- Active internal rewarming (<86° F)
- Intubate x 48hrs (surfactant)



Clinical tips based on the Drowning Management Clinical Practice Guideline published by the Joint Trauma System.

[HTTPS://JTS.HEALTH.MIL/INDEX.CFM/PI_CPGS/CPGS](https://jts.health.mil/index.cfm/pi_cpgs/cpgs)