

# Basic Disaster First Aid

# **DROWNING**



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# Drowning - Objectives

- Understand definition, significance, and epidemiology
- Describe prevention strategies and tactics
- Be able to recognize and assess drowning
- Describe and/or demonstrate treatment

# Drowning - Definition

- Respiratory impairment due to submersion in liquid
- Not necessarily death
- A continuum from mild symptoms to death
- In past many terms used:  
“near drowning,” “wet” or  
“dry drowning,” “secondary”  
or “delayed drowning,” etc.
- “Drowning” includes all:  
It is a continuum



# Drowning – Epidemiology

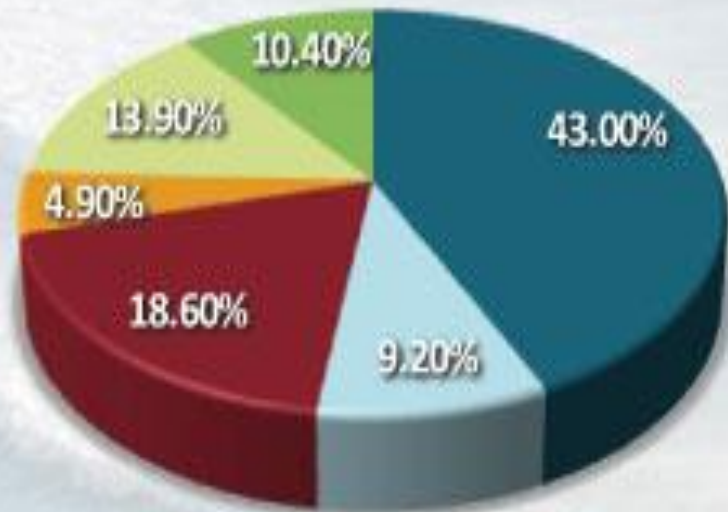
## Non-Fatal Drowning

- Short and/or long term prognosis often not good
- ~50% of patients going to ED need hospitalization or transfer (compared to 6% for all injuries)
- Injuries include memory problems, learning disabilities, loss of physical functioning, etc.

# Drowning - Epidemiology

## Location

### All Unintentional Drowning, 2007



Up to 10% of drownings occur in submerged vehicles

# Drowning - Boat Capsize

- Stay with boat
  - some flotation
  - can get you out of cold water
  - easier to spot
  - survival materials
- Try to get up on top of boat
- Look for, grab any thing floating

# Submerged Vehicle Drownings

- Approximately 10% of fatal drownings in US
- Prevent by conservative driving practices and not entering flooded roadways
- In flooded roads vehicle can float (and be pushed downstream into deeper water) in only 1-2 feet (36-60 cm) of water
- Vehicle sinking in deep water will completely fill within 3-8 minutes

<https://abcnews.go.com/US/30-seconds-save-life/story?id=18776142>



# Response to submerged/flooded vehicle

- Unbuckle seatbelts
- Exit vehicle as quickly as possible via windows
- If windows not working, break (electric windows should work if engaged quickly)
- If children involved, release starting with oldest 1<sup>st</sup>
- Do not delay escape to use cell phone until out of vehicle





# What Drowning Really Looks Like



Many people think that this is what drowning looks like, but thrashing in the water is actually a sign of aquatic distress. The person is in trouble but can still take part in their own rescue by grabbing onto something. After this point the Instinctive Drowning Response sets in. The person's mouth bobs above and below the water and they press down on the water laterally to try to stay above it, and thus they cannot wave or yell for help. So be sure to look for these 10 quieter signs of drowning instead.



Head low in the water,  
mouth at water level



Head tilted back  
with mouth open



Eyes glassy and  
empty, unable to focus



Eyes closed



Hair over forehead  
or eyes



Not using legs -  
Vertical



Hyperventilating  
or gasping



Trying to swim in a  
particular direction  
but not making  
headway



Trying to roll over  
on the back



Appear to be climbing  
an invisible ladder

# WHAT DOES DROWNING LOOK LIKE?

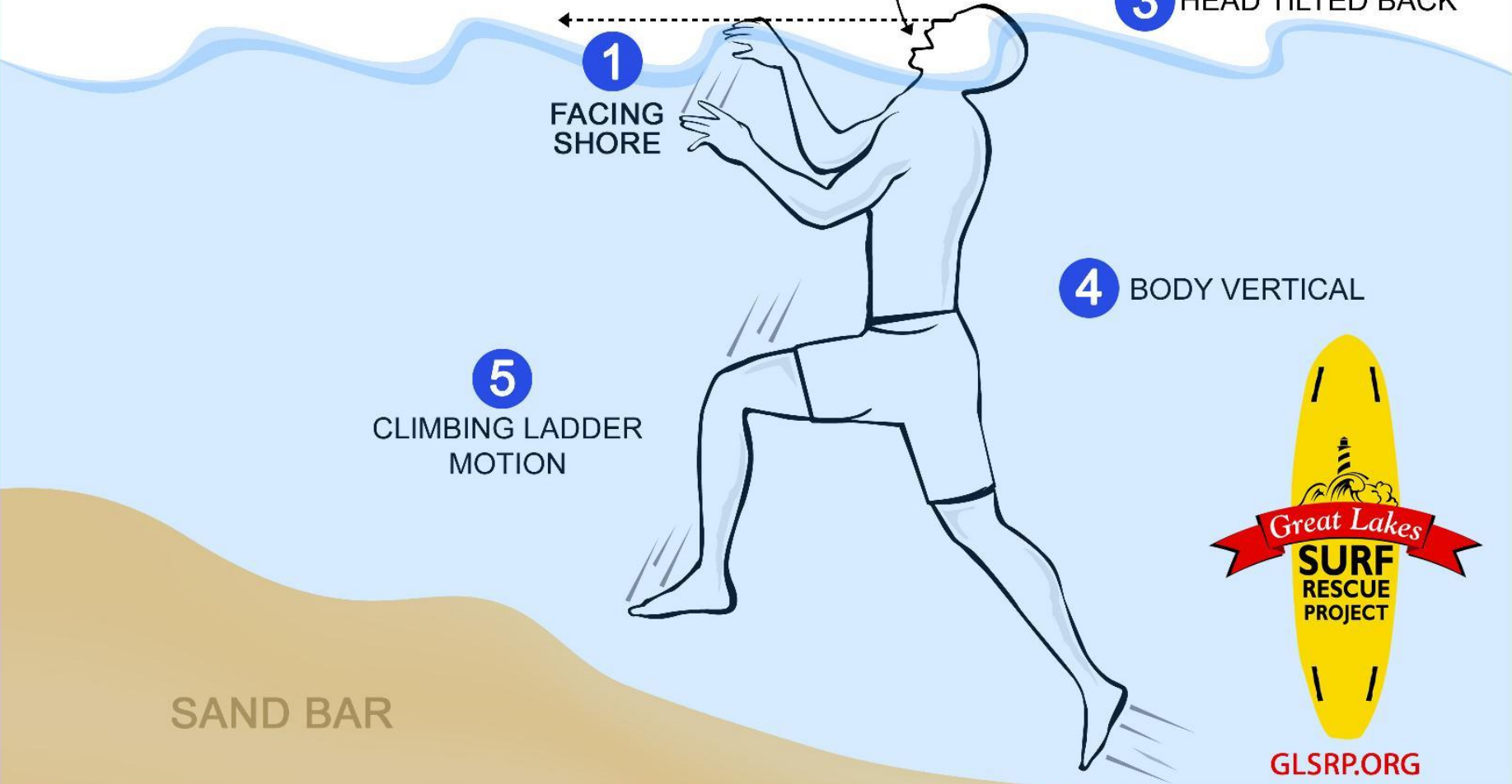
## THE SIGNS OF DROWNING

- 1 FACING SHORE
- 2 MOUTH AT WATER LEVEL
- 3 HEAD TILTED BACK
- 4 BODY VERTICAL
- 5 CLIMBING LADDER MOTION

2 MOUTH AT WATER LEVEL

3 HEAD TILTED BACK

1 FACING SHORE

A diagram illustrating the signs of drowning in a person. The person is shown in profile, facing left, with their mouth at the water level and their head tilted back. Their body is vertical, and they are exhibiting a climbing ladder motion. A dashed line with an arrow points from the person's mouth towards the shore, labeled '1 FACING SHORE'. The water surface is wavy, and the bottom is a sandy bar. The background is light blue, and the bottom is a tan color.

5 CLIMBING LADDER MOTION

4 BODY VERTICAL

SAND BAR



GLSRP.ORG

# Drowning - Rescue

- Scene safety – don't be another victim
- Ideally trained or professional rescuers
- Avoid getting in water if possible - row, throw, deploy, extend
- Improvise - what will float or reach?

If the victim is in deep or dangerous water but there is a dock to stand on, try a reaching assist with a long, sturdy object



# Drowning - Treatment

- Scene safety
- Extrication
- ABCs
- CPR can be critical
- Protect from vomiting (>50% vomit)

# **Drowning – Treatment** (cont)

- Spinal immobilization if appropriate
- Oxygen if available
- Hypothermia
- Transport
- Patients, even those asymptomatic, should be monitored for at least 6 hours

# Drowning Treatment

## What NOT To Do

- Scene safety – don't put rescuers at risk
- No Heimlich Maneuver
- No attempt at lung drainage

# Drowning – Longer Term Considerations

- Ideally transported to definitive medical care
- All symptomatic patients should receive comprehensive medical evaluation/treatment
- Asymptomatic patients may have delayed onset of pulmonary injury; observe them for at least 6 hours



# Documentation

- Mechanism of injury
- Medical etiology or drug involvement
- Length of submersion
- Time to resuscitation
- Water quality
- Initial patient presentation (struggling, submerged, floating)
- Past medical history, medications, allergies



# Drowning – Summary, cont.

- Injury from adverse effects of submersion in liquid; a continuum from mild to death
- Submerged Vehicle – Avoid flooded roadways, escape vehicle ASAP
- Rescue: Scene safety – don't become another victim
  - Stay out of water with struggling victim
  - Row, throw, extend
- Treatment
  - Extricate first and foremost
  - CPR with rescue breaths
  - Transport to definitive care
  - Monitor for at least 6 hours

# Drowning – Questions?



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