



lifeguarding today



St. Louis Baltimore Berlin Boston Cantsbad Chicago London Madrid
Naples New York Philadelphia Sydney Tokyo Toronto

Acknowledgments

Guidance, writing, and review were also provided by members of the American Red Cross Lifeguard Advisory Group:

Michael C. Giles, Sr.
Advisory Group Chair and Aquatics Director and
Risk Manager, Recreation Sports
The University of Southern Mississippi
Hattiesburg, Mississippi

Charles Bittenbring
Division Manager, Fairfax County Park Authority
Fairfax, Virginia

Robert L. Burhans, R.S.
Chief Sanitarian, Bureau of Community Sanitation and
Food Protection
New York State Department of Health
Albany, New York

Molly A. Casey, M.S.
Director, Safety Services
American Red Cross
Metropolitan Atlanta Chapter
Atlanta, Georgia

Gerald DeMers, Ph.D.
Associate Professor and Director, Aquatic Program
Physical Education and Kinesiology Department
California Polytechnic State University
San Luis Obispo, California

Julie J. Good
Leisure Service Department
University of New Mexico
Albuquerque, New Mexico

Jerry J. Huey
Field Representative, Health and Safety Services
American Red Cross
Southeastern Michigan Chapter
Bloomfield Hills, Michigan

Charles Kunsman, M.S.Ed.
Aquatic Manager, Ocacek Natatorium
University of Akron
Akron, Ohio

James P. Morgan
Director of Parks and Recreation
City of Lincoln
Lincoln, Nebraska

Frank Pia
Former Chief Lifeguard

Orchard Beach
Bronx, New York
Former Supervising Chief Lifeguard
Bronx, New York

Judith Sperling
Manager and Aquatics Director
Department of Cultural and Recreational Affairs
University of California Los Angeles
Los Angeles, California

Margaret Sweeney-Fedders
Assistant Director of Safety
American Red Cross
Dayton Area Chapter
Dayton, Ohio

Kim Tyson
Aquatic Safety Lecturer
Department of Kinesiology
University of Texas
Austin, Texas

Thomas C. Werts
Recreation Specialist
Walt Disney World, Co.
Orlando, Florida

External review was provided by the following individuals:

Reginald W. Clarke
Professor of Human Services
Northern Virginia Community College
Alexandria, Virginia

Susan T. Dempf, Ph.D.
Assistant Professor of Physical Education
Wesley College
Dover, Delaware

Tom Griffiths, Ed.D.
Director of Aquatics
The Pennsylvania University
University Park, Pennsylvania

Susan J. Grosse, M.S.
Teacher, Milwaukee Public Schools and
Chair, Aquatic Council AAHPERD
Milwaukee, Wisconsin

Kevin Hannigan
Deputy Sheriff
Los Angeles County
Sheriff's Department
Los Angeles, California

After reading this chapter, you should be able to—

1. Explain the four elements of effective surveillance.
2. Describe four behaviors to watch for that indicate a swimmer is in distress or is drowning.
3. Describe the characteristics of a distressed swimmer.
4. Describe the four characteristics of the instinctive drowning response.
5. Describe the characteristics of a passive drowning victim.
6. List at least four possible causes of passive drowning.
7. Explain how hyperventilation can affect the drowning process.
8. Explain how to prevent hyperthermia.
9. List the three elements of the RID factor as a cause of drowning.
10. Describe four factors that can influence effective scanning.
11. Describe how to relieve a lifeguard at a ground-level station and at an elevated station.
12. Explain total coverage and zone coverage.
13. Explain at least five ways for improving surveillance at competitive events and instructional/therapeutic activities.

Key terms

Active drowning victim: A person exhibiting universal behavior that includes struggling at the surface for 20 to 60 seconds before submerging.

Distressed swimmer: A person capable of staying afloat but likely to need assistance to get to safety.

Hyperthermia: A condition that occurs when a person's inner core temperature rises above its normal temperature of 98.6 degrees F.

Hyperventilation: Taking deep breaths in rapid succession and forcefully exhaling.

Hypothermia: A life-threatening condition in which the body is unable to maintain warmth and the entire body cools.

Instinctive drowning response: The four instinctive characteristics displayed by an active drowning victim. These involve breathing, arm and leg action, body position, and locomotion.

Intrusion: When lifeguards are assigned to perform nonsurveillance duties, thus leaving the pool without proper supervision.

Passive drowning victim: A face-down unconscious victim, submerged at or near the surface.

Patron surveillance: Maintaining a close watch over the people using your facility.

RID factor: Three elements: recognition, intrusion, and distraction; related to drownings at guarded facilities.

Scanning: A visual technique used by lifeguards to properly observe and monitor patrons participating in water activities.

An Incalculable Cost—cont'd

These personal and social consequences create a tremendous economic burden. A report to the U.S. Congress by the Secretary of Health and Human Services estimates that by 1995, the cost of alcohol abuse will reach \$150 billion annually. The bulk of the cost comes in lost employment and reduced productivity.

Health care costs account for \$15 to \$20 billion of alcohol costs, and research documenting the detrimental health effects of alcohol is growing. Doctors now say that moderate drinking by pregnant women increases risks of high blood pressure, cirrhosis of the liver, and decreased motor development for their children. Heavy drinking—more than four drinks a day—causes more serious long-term effects on the health of the drinker, including risk of heart attack, many cancers, stroke, kidney failure, and problems of the nervous system such as shaking and dementia.

Our morgues are filling up with people ravaged by a drug whose use they could not or did not control. In terms of economic cost, lives, and productivity, alcohol abuse outdistances cocaine, heroin, and all other drugs. Avoid alcohol or drink moderately so you won't end up an unfortunate statistic.

1. Centers for Disease Control: Alcohol-related mortality and years of potential life lost—United States, 1987, MMWR 39(11):173, 1990.
2. Associated Press: The New York Times, p. 87, January 31, 1989.
3. National Clearinghouse for Alcohol and Drug Information: The fact is . . . , "OSAP responds to national crisis," Rockville, MD, Summer 1990.

THE RID FACTOR AS A CAUSE OF DROWNING

Most drownings at guarded aquatic facilities happen when neither the lifeguards nor patrons notice the drowning person slip below the surface. A research study of the published accounts of drownings in the United States from 1910 to 1980 (Pia, 1984), indicated that with the exception of passive drownings, swimming-related drownings in areas where lifeguards were on duty resulted from three causes, summarized as the *RID factor*:

- The failure of the lifeguard to Recognize the instinctive drowning response
- The Intrusion of secondary duties on the lifeguard's primary responsibility for patron surveillance
- Distraction from surveillance duties

Drowning may result because of any one element of the RID factor or a combination of them.

Recognition

The ability to recognize that a swimmer is in distress or a person is drowning is one of the most important life-guarding skills. To recognize that someone is in distress or is drowning, you must be able to distinguish their behavior from that of people who are swimming or playing safely in the water. Remember, it is up to you to identify behavior that indicates a person needs to be rescued. Don't expect the drowning person or nearby patrons to call you to make a rescue.

Like most injuries, drowning can be prevented. Good scanning techniques can help you to quickly identify a person in trouble in the water. Even if a person slips under water without a struggle, good scanning techniques can help you see the person lying motionless within seconds.

Intrusion

Intrusion occurs when you are required to perform secondary duties, such as maintenance or recreational functions, when you should be engaged in patron sur-

Figure 5-2 A swimmer's arms and legs work in a coordinated manner.



Figure 5-3 A distressed swimmer can stay afloat and usually call out for help.



Figure 5-4 An active drowning victim struggles to stay afloat and is unable to call out for help.



Distressed swimmer

For a variety of reasons, such as exhaustion, cramp, or sudden illness, a swimmer can become distressed. A *distressed swimmer* makes little or no forward progress and cannot reach safety without a lifeguard's help.

You can recognize distressed swimmers by the way they try to support themselves in the water. They may float or use swimming skills such as sculling or treading water. If a safety line or other floating object is nearby, a distressed swimmer may cling to it for support while waving or calling for help. Depending on the method used for support, the distressed swimmer's body may be horizontal, vertical, or diagonal.

The distressed swimmer usually has enough control of the arms and legs that he or she can keep the face out of the water to continue breathing and call for help. In most cases, a distressed swimmer is also able to wave for help. He or she can use the legs and one arm for support, while raising the other arm to wave for assistance (Fig. 5-3).

As conditions such as fatigue, cold, or sudden illness continue to affect the distressed swimmer, he or she is less and less able to support himself or herself in the water. As this occurs, the victim's mouth moves closer to the surface of the water, and anxiety increases. If a distressed swimmer is not rescued, he or she becomes an active drowning victim.

Active drowning victim

An active drowning victim struggles at the surface in a highly predictable fashion. Because the behavior that an active drowning person exhibits is universal, it has been called the *instinctive drowning response* (Pia, 1974). This instinctive action means that the victim's behavior is predictable. This gives you a distinct advantage in recognizing victims and tells you that the person is drowning and needs help. The instinctive drowning response has four characteristics. A drowning person—

- 1 Struggles to keep the face above water in an effort to breathe. Unable to do this, he or she begins to suffocate.
- 2 Has arms extended to the side, pressing down for support. There is no supporting kick.
- 3 Has a vertical body position in the water.
- 4 Struggles at the surface, unable to move forward, for approximately 20 to 60 seconds before submerging.

An active drowning victim is struggling to breathe. The mouth repeatedly sinks below the surface and reappears. While the mouth is below the surface, the drowning person keeps it closed to avoid swallowing water. When the mouth is above the surface, the drowning person quickly exhales and then attempts to inhale before the mouth starts to go below the surface again.

While the victim is gasping for air, he or she also may take water into the mouth. Some of this water can enter the windpipe (trachea) and produce a spasm of the vocal cords that will block the airway. This is the body's natural response to keep fluid or food out of the airway. Unfortunately, this may result in the victim suffocating and losing consciousness.

Many people believe that an active drowning person can call out for help, but this is not the case. He or she is barely able to take in enough air to breathe, so there is no air left over to call out for help (Fig. 5-4). Our bodies force us to breathe before we can speak.

The active drowning person uses an instinctive arm motion to stay at the surface. The arms are extended out to the side, where they are pressed down against the water to enable the person to raise the mouth out of the water. These arm movements are not under the drowning person's control. In contrast to the distressed swimmer, the active drowning person cannot wave for help. In addition, the active drowning person does not have an effective kick supporting him or her in the water (Fig. 5-5).

The active drowning victim's body is vertical in the water (Fig. 5-6). This allows the mouth to be at the highest point to provide the greatest chance for the person to breathe.

Finally, an active drowning victim does not make any forward progress in the water. All the person's energy is devoted to keeping the mouth above the surface of the water. The active drowning person usually stays at the surface for only 20 to 60 seconds. An adult may struggle for up to 60 seconds, whereas a child may submerge in as little as 20 seconds. The active drowning victim may continue to struggle under water but eventually loses consciousness and stops moving. This victim is now a passive drowning victim.

Figure 5-5 The active drowning victim's arms are extended at the side and pressing down. There is no supporting kick.

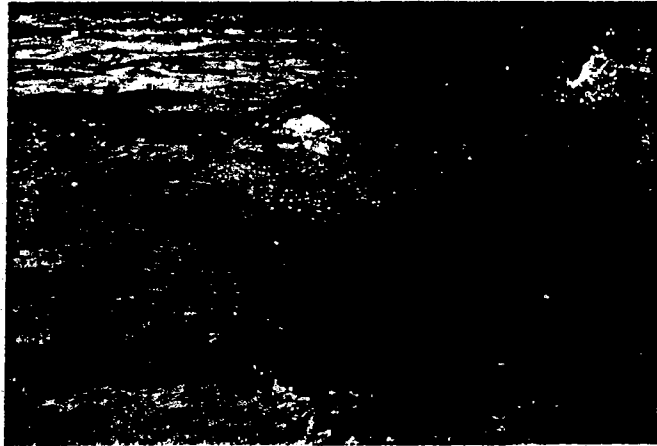


Figure 5-6 An active drowning victim's body is vertical in the water.



Figure 5-7 A passive drowning victim can be found **A**, floating near the surface or **B**, submerged on the bottom of a pool.

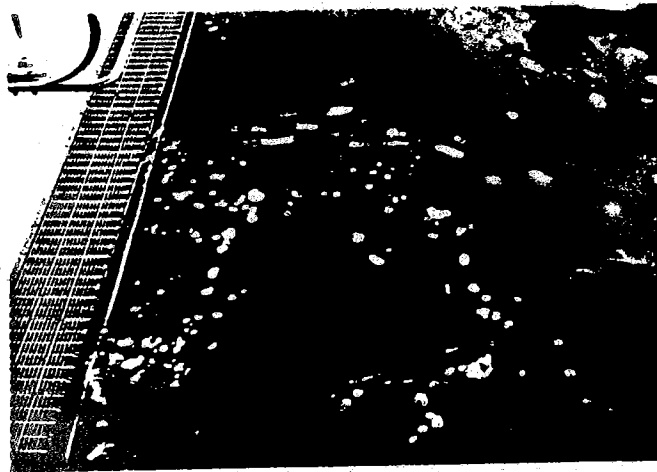
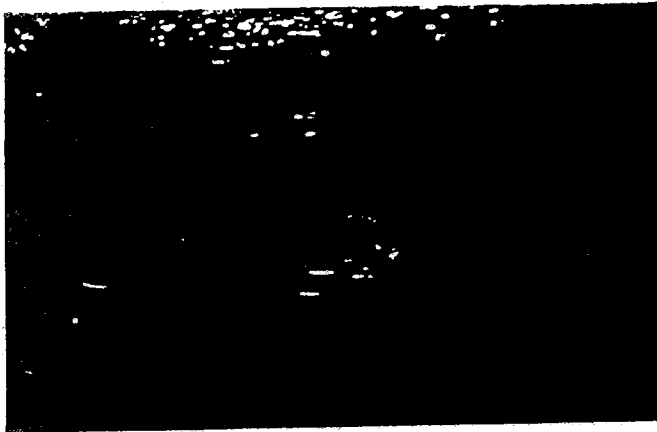


Figure 5-8 Emergency care is best provided once the victim is removed from the water.



Passive drowning victim

Besides knowing the progression from active to passive drowning, be aware that a person may suddenly slip under water without a struggle. The passive drowning victim may float face down at or near the surface, or the body may sink to the bottom (Fig. 5-7, A and B).

A passive drowning can stem from a variety of conditions resulting in a loss of consciousness including—

- A heart attack or stroke.
- A seizure.
- A head injury.
- **Hyperventilation** (taking deep breaths in rapid succession and forcefully exhaling).
- **Hyperthermia** (a condition that occurs when a person's core temperature becomes higher than normal).
- Use of alcohol or other drugs.
- **Hypothermia** (a life-threatening condition in which the body is unable to maintain warmth and the entire body cools (see Chapter 6)).

By using the scanning techniques described later in this chapter, you will be able to detect a passive drowning victim within seconds. When you make the rescue, remove the person from the water immediately so that emergency care can be provided (Fig. 5-8).

You should regard any person who is floating face down and motionless for about 30 seconds as an unconscious victim. Check the person's condition immediately. If the person is conscious and holding his or her breath, explain to the person why he or she should stop doing so. If the person persists in pretending to be a passive drowning victim, notify the head lifeguard or the facility manager.

Heart attack, stroke, seizure, and head injury. A person who has suffered a heart attack, seizure, stroke, or head injury may feel dizzy or faint or be temporarily paralyzed. These conditions cause great difficulty in swimming or even walking in the water. The person may also suddenly stop swimming and become a passive drowning victim.

Hyperventilation. Hyperventilating is a dangerous technique some swimmers have used to try to swim long distances under water. They mistakenly think that by taking a series of deep breaths in rapid succession and forcefully exhaling that they can increase the amount of oxygen they breathe in, allowing them to hold their