

SUPPLEMENT



American
Red Cross



Safety Training for Swim Coaches





**American
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American Red Cross Safety Training for Swim Coaches

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INTRODUCTION

This supplement along with the *American Red Cross Swimming and Water Safety* manual is required material for the American Red Cross Safety Training for Swim Coaches course. Successful completion of the Safety Training for Swim Coaches course meets the water safety requirement of the [USA Swimming Coaches Safety curriculum](#).

The information in this supplement centers on possible life-threatening or hazardous situations in and around the water and the techniques and skills for preventing and dealing with them.

For information on athlete development, training and workout design, visit the [USA Swimming](#) and the [American Swimming Coaches Association \(ASCA\)](#) Web sites. Both of these organizations provide extensive educational resources and materials for coaches.

This supplement includes workout and warm-up procedures, racing starts, event safety, emergency planning, electrical safety, weather and environmental conditions and handling of medical conditions and injuries. The material presented in this supplement may be adapted to meet the individual needs of each aquatic facility or swim club. Throughout this supplement there are Internet hyperlinks to publications, resources and sample forms for use by swim coaches. When viewing this supplement online, click on the hyperlink to access the information.

Also, terms common to swimming are used throughout. The terms or phrases that may be unfamiliar to new coaches are set in bold face type and are underlined. When viewing this supplement online, scroll over the term or phrase to display the definition. These terms are also defined in the glossary.



Responsible Coaching

GUIDELINES FOR RESPONSIBLE COACHING

*Coach Brown feels that she is a good judge of talent. Recently Jennifer, a 9-year-old swimmer, joined her program. Coach Brown was very excited to start coaching Jennifer. After only a few weeks of practice, Coach Brown moved Jennifer into a training group composed mainly of 12 to 14 year olds who practice six days a week. Jennifer did not seem very happy to leave her friends and told her parents that swimming with the older kids was not fun. Coach Brown continued to push Jennifer very hard and was very critical of any poor performances, demanding only the best from Jennifer. In a year, Coach Brown began to enter 10-year-old Jennifer in **Senior** events. Now Jennifer is no longer winning all of the events she swims and often cries a lot after her races. She has developed shoulder and back pain and can barely complete a workout. After a few months, Jennifer's parents tell Coach Brown that they are taking Jennifer to a different club. Coach Brown is stunned and hurt. Has Coach Brown been a responsible coach for Jennifer?*

In the scenario above, Coach Brown was so excited about Jennifer's talent that she apparently lost sight of the fact that Jennifer was only 9 years old and just starting out in swimming. She had Jennifer training with much older swimmers and was critical and demanding. Jennifer's physical ailments may have been caused or aggravated by the rapid increase in training load.

Responsible coaching is a major factor in preventing injuries and providing a safe, enjoyable environment (Fig. 1-1). To provide a safe and enjoyable environment, you should follow these general guidelines:

1. Remember what motivates athletes, particularly children, to play their sport. Their goal is seldom to win or



Fig. 1-2

excel. Young athletes give the following as their primary reasons for being involved in athletics:

- Have fun and enjoy the excitement of competition
- Improve skills, face challenges and learn new skills
- Get exercise and stay in shape
- Enjoy teamwork (Fig. 1-2)

- 2.** Know the rules of the sport and insist that athletes also know and follow them. Teach athletes to play fair. Conduct training and competition within the rules.
- 3.** Understand the basics of skill development and training methods appropriate for the level of the athletes. Learn and stay informed about coaching based on the principles of growth and development. [USA Swimming's "Successful Sport Parenting" CD-ROM](#) has extensive material on athlete growth and development.
- 4.** Follow the safety guidelines of USA Swimming and its **Local Swimming Committees (LSCs)** or other national governing body, facility and individual club.
- 5.** Teach sportsmanship by example. Make sure swimmers feel good about doing their best, regardless of winning or losing. Never ridicule or shout at athletes for making mistakes or losing.
- 6.** Balance constructive criticism with support and praise (Fig. 1-3).



Fig. 1-1



Fig. 1-3

7. Ensure that equipment and the facility are safe.
8. Educate athletes about the dangers of **nutritional and substance abuse**.

What exactly do these guidelines mean for a swim coach in practical terms? Obviously there is more involved than designing swim sets and teaching stroke work. Here are some of the things you must keep in mind on a day-to-day basis:

1. Plan for swimmers' long-term skills development. All instruction should be tailored to the needs, skills and abilities of the swimmers.
2. Direct and supervise (**Fig. 1-4**). Ensure that swimmers are supervised by certified coaches—including yourself and other assisting coaches.
3. Inspect the aquatic facility. Regularly check the swimming facility and equipment for deficiency or need of repairs, document the findings in writing and report them to the facility management (see the Sample Facility Safety Checklist in the [USA Swimming Safety/Loss Control Manual](#)). Keep a copy of the report. Advise USA Swimming, or the applicable national governing body, of any items



Fig. 1-4

reported to the facility that have not been corrected within a reasonable time frame.

4. Warn of inherent risks. Notify swimmers and the parents of minors of risk factors, such as possible injury in the sport. Swimmers can get injured!
5. Be aware of swimmers' medical conditions. Suggest preseason medical examinations. Establish a procedure to be made aware of any preexisting or acute medical conditions. A **Medical History Questionnaire** is helpful.
6. Provide training and competitive opportunities. Ensure fair practice and swim meet experiences that relate to each athlete's ability and experience.
7. Know and understand emergency procedures. Be aware of the facility's **emergency action plans (EAPs)** and be knowledgeable about appropriate first aid and emergency response procedures. Coaches must also know their roles in any EAP.
8. Be a safety role model. Swimmers will adopt and model safe behaviors.

Common Accident Areas

According to USA Swimming accident report statistics, the most common areas where accidents occur during practice or meets are—

- In the water (over 40 percent) where swimmers may injure themselves during turns or finishes, collisions with other swimmers or when entering or leaving the water.
- On the pool deck (over 20 percent) where swimmers may slip on the deck surface or trip over pool or training equipment.
- Other areas within the aquatic facility, such as locker rooms, bleachers or hallways.

Many accidents may be minimized or eliminated by the safety-trained swim coach who is alert and aware of potential hazards in and around practice and swim meet areas. The *Safety Training for Swim Coaches Supplement* provides information for the swim coach to use in conducting an enjoyable, competitive and safe swimming program.

9. Be able to say “no.” Coaches are sometimes so motivated to see kids move, play and have fun that they neglect potential hazards.
10. Review safety procedures and rules. Review frequently with the athletes.

PROFESSIONAL CONDUCT AND LEGAL RESPONSIBILITIES

Coach Smith works several jobs. He sometimes arrives at the pool after his athletes are already there. He often finds them playing around on the pool deck. Although he has told them not to get in the water until he gets there, on hot days they are sometimes in the pool. He has told them to “start some dryland” until he arrives and he leaves the medicine balls, stretch cords and hand weights unlocked so that the swimmers can get them out. The athletes range in age from 11 to 17. He has asked the older athletes to teach and instruct the younger ones and expects them to be responsible until he arrives. Coach Smith often brags about how reliable and responsible his athletes are. He has told his coaching buddies that it does not matter if he arrives late because the swimmers can take care of themselves. Is Coach Smith doing anything that may be considered negligent?

Coaching is an honorable profession and many beginning coaches view coaching as a possible career choice. The desire to be treated as a professional carries the responsibility to act professionally at all times. There are legal responsibilities and duties that go well beyond teaching swimming strokes. A coach has a legal duty to protect young people and safeguard their development when participating in sport. There is a growing trend toward formalized duties for coaches through written job descriptions and contracts. Once formalized, these duties may be treated as legal responsibilities. Briefly stated, courts have determined that coaches are held to a standard of conduct expected of an ordinary reasonable person under like circumstances. Failure to meet that standard can be considered negligence. Negligence is the failure to do what a reasonable and prudent person would do in the same or similar circumstances or doing something that a reasonable and prudent person would not have done. It is a coach’s responsibility to always act reasonably under the circumstances.

In the scenario above, Coach Smith made several mistakes that a court likely would have considered negligent. Athletes should not be on the pool deck or in the pool unsupervised. They should not be doing dryland training without direct supervision of a coach. Older swimmers should not be made responsible for supervising younger swimmers.

Legal duties for coaches have been established, on specific facts, through various court cases. In specific circumstances, courts have held these duties to include:

- Duty to properly instruct an athlete
- Duty to properly supervise an activity
- Duty to warn of inherent dangers in a sport
- Duty to provide a safe environment and equipment
- Duty to properly condition an athlete
- Duty to provide care in an emergency
- Duty to enforce rules and regulations
- Duty to fairly classify and group participants for competition according to skill level, age, experience, etc.

In addition, there are best practices that can help prevent injury. These include—

- Reasonable planning to anticipate potentially dangerous circumstances and situations. As a professional, a coach should reasonably plan for all foreseeable hazards.
- Safety through organization and planning. Well-organized, planned activities and workouts are more likely to be safe than chaotic, disorganized situations.
- Recordkeeping. All injuries and accidents should be reported as determined by the national governing body. For example, USA Swimming requires that all accidents be documented on [Report of Occurrence](#) forms. Coaches should also keep records of safety hazards that have been documented and reported.

SEXUAL MISCONDUCT AND ABUSE

Coach Thomas, a young male coach, has a great group of teenage female athletes. They joke around a lot with each other and generally have a great time. Coach Thomas sometimes tells slightly “off color” jokes to the girls but they know it is all just in fun. At meets they hang out together, often in the coach’s room where they have shaving parties. If one of the girls is upset about anything, she knows that she can always go to Coach Thomas. Often he drives a girl home from practice, takes her to get something to eat or has a girl come to his hotel room when at meets so that they can talk privately. A coaching colleague told Coach Thomas that some of the things he does with “his girls” may look inappropriate to an outsider, but Coach Thomas laughed it off. He said he shares everything, including e-mails from the girls, with his wife. Do you see any reason for concern?

Unfortunately, there have been occasional headlines concerning coaches accused of improper sexual conduct with athletes. Regardless of guilt or innocence, the accusation can ruin a career. Never put yourself in a situation

where there is even a hint of impropriety! Conduct yourself professionally at all times and remember that you are the coach and your behavior is constantly being watched and judged. Ignorance and immaturity are no defense! Do not put yourself in jeopardy.

In the scenario, Coach Thomas is acting inappropriately. While most of the swimmers may laugh at his “off color” jokes, one may consider the behavior embarrassing or harassing. Additionally, inviting a girl individually into his hotel room or having shaving parties in his room is highly inappropriate. Taking a girl out to eat and driving her home are additional behaviors that can be misinterpreted. Coach Thomas needs to clean up his jokes, stay away from the shaving parties and have all of his meetings with individual swimmers in public rather than behind closed doors.

The code of conduct in the *USA Swimming Rules and Regulation* book states that “any sexual contact or advance or other inappropriate sexually oriented behavior or action directed towards an athlete by a coach, official,

trainer, or other person who, in the context of swimming, is in a position of authority over that athlete” is a violation of the code of conduct.

Reporting Sexual Abuse

State laws mandate that certain persons engaged in a professional capacity or activity who learn of facts that give reason to suspect that a child has suffered an incident of child abuse are legally obligated to report the suspicion. Coaches may be included as such professionals required to report any suspected abuse. The failure of a coach to make a timely report of suspected abuse may result in criminal charges being brought against the coach. Coaches should educate themselves regarding the specific state laws applicable to them.

There is a lot more to coaching than developing workouts and going to swim meets. Always keep the guidelines and legal responsibilities discussed in this chapter foremost in your mind. Avoid jeopardizing your athletes and yourself.

Safety Awareness in Competitive Swimming

TRAINING PLANS AND ATHLETE FITNESS

Coach Roberts has decided that he wants his swimmers to train at a higher intensity level this season. He decides to skip his normal introductory weeks spent on stroke technique and low-intensity training and “get right to work.” His athletes had a brief break—they were only out of the water for two weeks. After warm-up on the first day, he announces a long training set that the swimmers had done midseason the previous year. The swimmers are slightly stunned, but he tells the swimmers he just wants to see how they do. The workout concludes with sprints and a session of dryland training. After a few days, many of the swimmers are reporting injuries, muscle soreness and pain. Coach Roberts thinks they just need to “get tough.” Do you see anything wrong with his training plan?

As a coach, one of your major areas of responsibility is to train athletes to get them ready for competition. Training methods, as well as the type, frequency, duration and intensity of workouts should vary among athletes depending on the athlete’s age, physical conditioning, mental state and goals. Judging athlete fitness and skill levels are important determining factors when developing a training plan. There was nothing wrong with Coach Roberts’ desire to increase the level of intensity for his swimmers, but he cannot accomplish this on the first day of practice. He needed to develop a plan to gradually increase the intensity during the season. The following points can help guide you in developing a training plan:

- Teach correct technique. Focusing on correct technique helps prevent chronic and overuse injury. Incorporate drills and skill development that develop correct technique into your training plan. Both USA Swimming and ASCA provide resources, such as publications and videos, to help coaches teach stroke technique. Check with USA Swimming and ASCA on how to obtain these materials.
- Incorporate warm-up and cool-down as structured segments of the workout. Require all swimmers to participate in a proper warm-up and cool-down.
- Balance fitness conditioning and skill development. For example, include both technique instruction and aerobic training.
- Increase training intensity, distances and training time gradually. A rule of thumb is to increase 10 percent weekly for inexperienced athletes or athletes returning from injury. Experienced swimmers can progress more quickly. See the [Season Plan Designer](#) available on the USA Swimming Web site.
- Instruct and supervise strength and dryland training appropriate to the level of the athlete.

- Encourage athletes to report injuries. Many athletes do not want to say when they are injured. Create an atmosphere that encourages openness.
- Provide adequate rest and recovery.

SWIM PRACTICE SAFETY

Coach Peterson is preparing for a team practice. One of her best 10-year-old swimmers excitedly introduces his cousin to her. He asks if his cousin can practice with the team. The young coach, in her haste to begin practice, tells the swimmer “yes” and turns her attention to laying out equipment in preparation for practice.

The swimmer jumps into the pool and yells for his cousin to follow him in the circle path of the warm-up. Not wanting to be shown up by his cousin, the boy hesitantly jumps into the 7-foot-deep pool. He begins to struggle immediately because he cannot swim, much less participate in a swimming practice. Coach Peterson stepped away from the pool to get some kickboards. While coming back from the supply room, she sees the struggling boy near the pool edge, drops the kickboards and rushes to the boy’s aid. She is able to reach out with her arm and grasp the victim to pull him to safety. What should Coach Peterson have done differently to avoid this situation?

In the above scenario, Coach Peterson may have planned a great practice, but she ignored some basic safety precautions. She allowed a swimmer into the practice who was not a member. She knew nothing about the child that she was allowing to join her practice session. She did not find out if he was a member of the applicable governing body, such as USA Swimming, or even if he knew how to swim. Also, she was busy preparing equipment rather than supervising and instructing the athletes. Fortunately, a tragedy was avoided, but the visiting cousin never should have been in the water.

You are responsible for organizing training sessions that maximize the personal safety of each swimmer. This can be a challenging task, especially when training large groups in small pools or in only a few lanes. In addition, you should assume responsibility not only for the actual training session in the pool, but also for the periods immediately preceding and following each training session. Responsibility extends into the locker room as well as onto the pool deck. You should not leave athletes unattended. Supervisory responsibility varies with facility demands and needs, parental involvement and the transportation needs of the athletes. Be sure that you are aware of where your swimmers go when they leave the pool deck and the locker room.

IMPORTANT SAFETY CONSIDERATIONS

The coach is responsible for ensuring that water and workout activities are conducted safely. As in other aspects of coaching, remember that you are a role model. Your attitude and insistence on a safe workout environment translate into safety conscious swimmers. Nobody wants to see swimmers get hurt. You have a professional stake in your athletes' development. Remember that injury time is lost training time. That is a huge incentive to provide a safe environment!

Consider your planned workout and facility circumstances and work in collaboration with the facility management. Make sure there is always at least one individual present who is properly trained to handle emergency situations. Some facilities require a lifeguard to be on surveillance whenever swimmers are in the water, while others do not (**Fig. 2-1**). Be sure to follow facility rules and state and local laws and regulations. In addition, follow these safety considerations:

- A certified coach must be on deck before any swimmers enter the water.
- A certified coach must remain on deck until all swimmers leave the pool deck. After all of the swimmers are out of the water, check the swimming area for possible stragglers and then secure the area.
- Make sure that basic equipment, such as backstroke flags or starting blocks, are in place at the facility (**Fig. 2-2, 2-3**). Make sure there are no unusual obstacles or hazards on the deck. Alert the facility staff if anything unusual or dangerous is noticed and instruct the swimmers accordingly.
- Establish team policies governing each swimmer's actions before, during and after each training session and meet.
- Ensure that athletes are supervised or safely exiting the facility within a reasonable amount of time after the conclusion of the swim practice.



Fig. 2-1



Fig. 2-2



Fig. 2-3

- Ensure that swimmers understand the use of training equipment. Make swimmers aware of the potential for accidents that may occur from use of equipment, such as hand paddles, rubber tubing and kickboards.
- Prohibit swimmers from using the pool's diving facilities during the training session. Swimmers are not permitted to use diving facilities during swim practice. USA Swimming insurance does not cover the use of diving boards or diving towers at any time under any circumstance.
- Choose swim practice water games carefully. Be sure to explain games thoroughly to the swimmers and identify all risks. Supervise water games closely to maintain order and minimize the potential for injury.
- Establish warm-up procedures to be followed at all practices and meets. By using the same procedures at practice, safe entry into the pool becomes a habit. Always enforce—
 - A feet-first entry into the water. (**Note:** At swim meet warm-ups, racing starts are only allowed when indicated by meet marshals and under the marshals' supervision. At swim practice warm-ups, racing starts are only allowed when instructed and supervised by a certified coach.)
 - That swimmers look before entering the water.
 - That starting blocks are used only under supervision.
 - **Circle swimming.**

ORGANIZING YOUR SWIM PRACTICE

Coach Jones gets a call from her **Age Group** assistant saying that he will not be able to be at practice today. To make matters worse, when Coach Jones arrives at the pool, the pool manager apologetically tells her that, due to a scheduling error, she will not have use of all eight lanes tonight. Instead, she will have to consolidate her swimmers into five lanes. Coach Jones normally has a Senior group of 25 swimmers in five lanes, while the Age Group assistant has another 20 swimmers in the other three lanes. Now Coach Jones will have 45 swimmers, both Age Group and Senior, in five lanes. Coach Jones has planned a long and difficult freestyle set for her Senior Group tonight and is determined to stick to her workout plan. She decides to put a few of the Age Group swimmers in each lane and let them do the Senior workout to “see how they do.” Is she creating an unsafe situation? What else could she have done?

Facility circumstances may demand some flexibility on your part. In the scenario above, Coach Jones was not flexible to the situation. She needed to readjust her workout plan due to the changed conditions. The younger swimmers are at risk in crowded lanes with older swimmers. She could have grouped the swimmers by age and ability in compatible lanes. She probably needed to adjust her workout plan for the Senior Group, or at the very least, devise a separate workout for the younger swimmers in their own lanes.

Consider the following when you plan a swim practice:

- The number of swimmers
- Age and abilities of the swimmers
- Length of the pool (e.g., 50-meters or 25-yards)
- The number of lanes
- Lane width
- Water depth
- The level of direction and instruction needed by swimmers

Circle Swimming Guidelines

Circle swimming during practice is the safest way for more than two people to swim in each lane. Teach and enforce safe circle swimming. The most common procedure is to have swimmers swim counterclockwise in all lanes—keeping to the right at all times (Fig. 2-4). In very narrow lanes, alternating clockwise with counterclockwise lanes can reduce the incidence of swimmers hitting the hands of swimmers in adjacent lanes.

There is potential for accidents during circle swimming. Be wary of creating unsafe conditions by overloading the lane with too many swimmers. The width of a lane can vary from swimming pool to swimming pool. The narrower the lane and the more swimmers in it, the greater is the risk of collision.

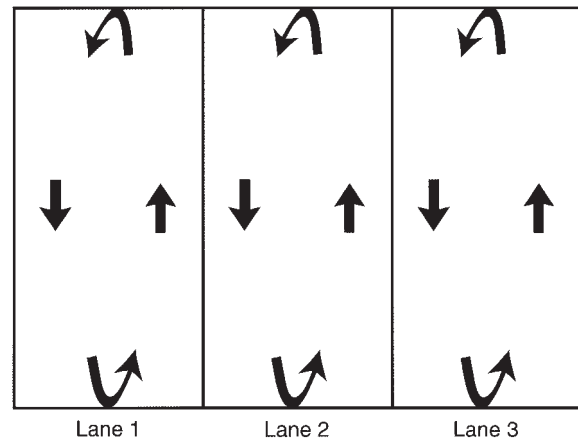


Fig. 2-4

The interval between swimmers and the number of swimmers per lane are critical factors in establishing smooth traffic in each lane. A typical interval between swimmers is 5 seconds. This allows each swimmer to clear the starting area before the next swimmer begins. This timeframe should provide swimmers with enough open water in front of and behind them to swim without interference. An interval of more than 5 seconds may be even safer as long as there is adequate lane space. Also, be aware of the number of swimmers in the lane and set intervals accordingly. Be sure that the first swimmer does not come around to turn before the last swimmer departs the wall. An interval less than 5 seconds can create insufficient space between swimmers and congestion at the ends of the pool. This can lead to collisions between swimmers, especially when they are entering a turn or pushing off the wall after finishing a turn. Discourage swimmers from beginning a **repeat** before their send-off interval, since leaving early can lead to crowding and congestion in the lane.

Be sure to consider safety aspects of circle swimming as well as the practical aspects. Establish rules for passing, waiting for send-offs and keeping walls open for turns. Adjust send-offs and regulate racing starts on short repeat sets, where swimmers who go first in a lane may be finishing or turning when swimmers who go last get their send-off. Once again, consider the age and experience of the swimmers when instructing. Young swimmers do not instinctively understand circle swimming and **send-off intervals**. It is your responsibility to teach swimmers how to safely swim in a circle. With young or novice swimmers, you must spend time at the very beginning of the season explaining and then practicing circle swimming and send-off intervals. Young swimmers do not understand how to group themselves in the lane. They may not realize that a faster person should go ahead of a slower person. They may not even recognize that there

are faster and slower swimmers! Establish rules and carefully monitor the swimmers. Review the procedures frequently. With older or more experienced swimmers, it is still important to clarify expectations about safe circle swimming and lane etiquette. If at any time you observe unsafe conditions, stop the swimmers. You may need to reorganize the lane assignments, the send-off intervals or the entire activity.

As a coach, it is your responsibility to establish and enforce the rules of safety. Be consistent in enforcement of the rules and model safe behavior. A safe workout environment often is as simple as using common sense and common courtesy in the pool, in the locker room and on the pool deck. However, it is crucial that this behavior is consistently reinforced and becomes everyday habit.

HYPOXIC TRAINING AND HYPERVENTILATION

Coach Johnson's swimmers love contests. Their favorite is to see who can swim the farthest underwater. Recently, Michael swam about 40 yards underwater before surfacing. Coach Johnson keeps teasing Michael about "quitting" 10 yards from the end and telling Michael that he can make the entire 50 yards. Michael and some other boys are ready to try it. Coach Johnson tells Michael to take "a lot" of deep breaths before diving in so that he can "build up the oxygen in his blood." Michael inhales deeply about 10 times. He feels a little dizzy, but dives in and starts to swim underwater. He turns and starts back. Suddenly Coach Johnson notices that Michael is just lying on the bottom, not moving. He jumps in and pulls Michael to the surface. What did Coach Johnson do that was dangerous?

Coach Johnson thought he was engaging his swimmers in a fun and challenging activity, but actually he was endangering them. Teaching the swimmers to hyperventilate before submerging was particularly risky. Contests to see who can swim underwater the farthest are very dangerous and should never take place.

Hyperventilation (rapid, deep breathing) before prolonged underwater swimming is a dangerous practice that may result in drowning. Hyperventilation does not increase the amount of oxygen or allow the swimmer to hold his or her breath longer; it lowers the carbon dioxide level in the body. This is risky because the drive to breathe is controlled by the amount of carbon dioxide in the blood. When a person hyperventilates and then swims underwater, the carbon dioxide level in the blood can drop to a point where the swimmer passes out before the brain signals that it is time to breathe. Then, when the person finally does take a breath instinctively, water rushes in and the drowning process begins.

There is a difference, however, between having swimmers hold their breath while swimming underwater versus an extended breathing pattern while swimming on the surface. There is no evidence that swimming without oxygen necessarily trains the anaerobic system; however, extending the breathing pattern while swimming on the surface may improve oxygen management capacity. This training technique of extending the breathing pattern should be monitored carefully and swimmers should be instructed to breathe when necessary. To prevent hyperventilation, have swimmers take only one, or at the most, two deep breaths before beginning hypoxic training. Hypoxic training (breathing on a restricted schedule) may be used safely in a training program of experienced swimmers in good physical condition with proper supervision and instruction. The number of repeats of hypoxic swimming should be limited. Adequate time for recovery will vary from swimmer to swimmer.

Information on additional practice methods, procedures and games for swimming practice is available at professional clinics held yearly by USA Swimming and ASCA. A listing of these clinics can be found on their Web sites.

TURNS

Coach Nelson has a group of novice-level swimmers. He thinks they should all be doing flip turns in practice. He remembers his coach telling him to "just swim into the wall and do a somersault," so that is what he tells his swimmers. Chaos ensues with some kids missing the walls entirely while others hit their heads or heels on the walls. Coach Nelson keeps yelling "Just do a somersault!"

The ends of the pool are common accident areas, where swimmers may injure themselves during turns or finishes. Swimmers must be instructed in the technique of executing turns in all four strokes and the individual medley. For swimmers to gauge the distance from the wall, backstroke flags must be used when performing backstroke turns. In the scenario above, Coach Nelson seemed to think that a brief verbal instruction was enough to teach flip turns. He needed to stop the practice, get the kids grouped for instruction and then explain and demonstrate the technique. All of the swimmers needed to practice the turns before they could be expected to execute the turns in a workout situation.

It is important that coaches instruct swimmers in the safe execution of turns and make swimmers aware of the potential risks. Spacing swimmers adequately, using backstroke flags and instructing the swimmers to pass

each other safely can minimize accidents. Other potential situations for injury may occur when swimmers—

- Misjudge the distance and get hurt by swimming into the wall.
- Hit the heels or ankles on the wall during a flip turn.
- Push off at the wrong angle, which is especially dangerous in shallow water.
- Push off the wall in the center of the lane and collide with another swimmer.

For more information on how to teach turning techniques for all four competitive strokes, see pages 132–138 of the *American Red Cross Swimming and Water Safety* manual.

HEAD-FIRST ENTRIES AND RACING START SAFETY

Coach Irving has a group of novice swimmers who will be competing in their first meet. He decides that he needs to be sure that they all know how to do a racing start off of the starting blocks. He lines them up and instructs them on the starting commands. He reminds them not to fool around on the blocks or try to abort the entry once they have left the block. Then, one by one, he has them do a start off of the starting block. Several are afraid to go off of the block, a couple “belly flop” or just jump into the water. Coach Irving is very frustrated and concerned that his swimmers will not be able to perform a start off the blocks at the meet. What should he have done differently?

Coach Irving should not have the swimmers going off the starting block without even knowing if they are able to safely enter the water head-first! Other than instructing them on starting commands and some basic safety considerations, he has not provided adequate instruction in safety nor followed a progression in teaching head-first entry skills. He needs to reconsider if his swimmers are ready for competition since he has not yet taught them critical skills for safely entering the water.

Make sure your swimmers have good training and supervision when learning or practicing racing start skills. Swimmers must be physically and psychologically ready to do a skill. *Do not force a swimmer to do a skill if he or she is not ready.* Swimmers who seem very fearful about doing a step should practice the preceding step until they gain confidence.

To ensure that swimmers learn and practice starts safely, follow these guidelines:

- Be sure swimmers can demonstrate correct hand, arm and head position before performing a head-first entry.
- Review body position and stability on dryland. Practice tight streamlining with the arms overhead while standing or by lying on the back on the deck.
- Be sure swimmers can jump feet first into deep water, swim to the surface, turn around, level off and swim 10 feet.

- Swimmers should be able to demonstrate body alignment skills, such as torpedoing, porpoising and streamlined push-offs, as well as deep-water skills including surface dives, bobbing and sculling.
- Swimmers must be able to hold their arms over their heads and in line with the body on a forceful push and glide underwater.
- Always require swimmers to hold their arms fully extended overhead when entering the water head first.
- Do not let swimmers do head-first entries or racing starts over stationary objects, such as starting blocks or lane lines, or other devices, such as poles, ropes or kickboards.*
- Caution swimmers that the pool deck is slippery. If swimmers slip during drills, check their foot positions for correct push-off. You can put a wet towel on the deck and hang it over the pool edge to give better traction, especially on tile decks.
- Be sure starting blocks are secured tightly to the deck and meet the regulations of the applicable governing body as to size and height from the water and required pool depth for instruction. Check the rules book of the governing body for these regulations.
- Be sure swimmers are familiar with water depth and the equipment they are using, especially starting blocks. The design of starting blocks may vary from one aquatic facility to another, but proper training techniques and safe practice can help competitive swimmers adjust to differences.

* *Coaches with additional training and experience might use advanced training techniques to improve racing starts of experienced swimmers. These advanced techniques, which may include practicing racing starts over a soft object, such as a foam noodle, should only be practiced by experienced swimmers in water at least 12-feet deep under the supervision of an experienced coach.*

Head-First Entry Progressions

Improper head-first entries can be dangerous for experienced as well as inexperienced swimmers. The American Red Cross outlines a progression for the teaching of a head-first entry in the water. Detailed skill instruction can be found in the *American Red Cross Swimming and Water Safety* manual pages 125–128 as well as in the *American Red Cross Swimming and Diving Skills* and *Teaching Swimming and Water Safety* DVDs. Coaches should instruct swimmers in this step-by-step progression before attempting to have them use the starting blocks. Swimmers must be able to enter the water with control at each step before moving on to the next. The steps are:

Step 1: Sitting Position (Fig. 2-5)

Step 2: Kneeling Position (Fig. 2-6)

Step 3: Compact Position (Fig. 2-7)

Step 4: Stride Position (Fig. 2-8)

Step 5: Shallow-Angle Dive (Fig. 2-9)



Fig. 2-5



Fig. 2-7



Fig. 2-6

Racing Starts from Starting Blocks

Water entries from starting blocks present an additional area of concern. Starting blocks should only be used by trained swimmers during controlled practice, supervised

warm-up or meet conditions. Knowing how to properly enter the water is the key to knowing how to control how shallow or deep an entry is into the water. Trained swimmers of all ages can adjust the depth of their entries when they are aware of the depth or when told of the water depth. It is important that coaches verbally provide the direction to dive shallower when swimmers are performing racing starts in shallower water. Swimmers must learn how to enter the water with control in order to manage safely.

Swimmers who are unable to control the depth of their entries should not be directed to perform racing starts from the pool deck as a "safer" alternative to using starting blocks. Studies indicate that swimmers who are unable to control the depth of their entries from regulation starting blocks also cannot control their entries from the pool deck. They go just as deep in the water from the pool deck as from starting blocks. This means that swimmers who are unable to control their entries at any step in the learning progression are not ready for racing starts.

Once these skills are learned, they should be performed only with proper supervision and in water depths that conform with the rules of the concerned regulating body, such as USA Swimming, the [National Collegiate Athletic Association \(NCAA\)](#), the [Amateur Athletic Union \(AAU\)](#), the [National Federation of State High School Associations \(NFHS\)](#), [YMCA of the USA](#) and the [international swimming federation \(FINA\)](#). Higher



Fig. 2-8

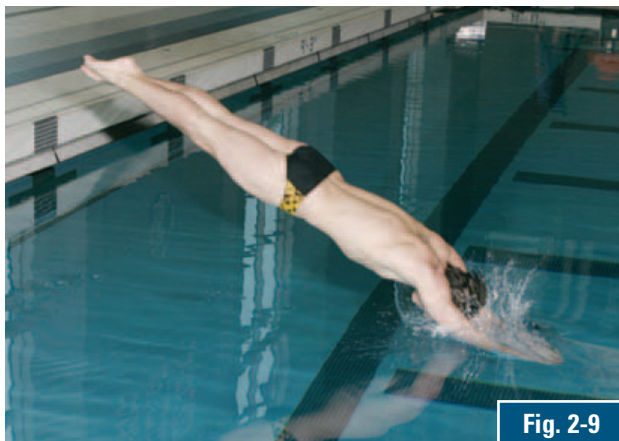


Fig. 2-9

standards, established by local and state bathing codes, supersede any regulations and recommendations established by competitive organizations.

The best protection against possible injuries is an informed, safety-conscious swimmer. Almost all injuries occur with poorly prepared or distracted athletes. Teach swimmers the following important safety rules:

- Be aware of water depth before entering the water at both competition and practice pools. If a swimmer

does not know how deep the water is, enter feet-first the first time. Point out depth markers. Be aware of and remind swimmers of USA Swimming's depth requirement for racing starts and also that most pools require "No Diving" signs for depths less than 5 feet. Be aware that state, local or facility rules may be stricter than USA Swimming's requirement and that other regulating bodies may have different requirements. Swimmers should also be aware of the location of slopes or other depth variations.

- Look before jumping or executing a head-first entry into the water.
- Always use a feet-first entry during warm-up and enter from the designated starting end.
- Only use starting blocks and head-first entries when given permission to do so by a marshal at a swim meet or by the coach at practice.
- Never start a water entry until the preceding swimmer has come to the surface and has moved away from the entry area. This is especially important in practice situations and in the sprint lanes during warm-ups for swimming meets.
- Enter the water straight ahead from the deck or starting block.
- Never perform a head-first entry into pool water that is cloudy or murky.
- Do not engage in horseplay or fool around on the starting blocks or the edge of the pool.
- Always do a shallow-angle start when performing a racing start either from the deck or a starting block and only enter with arms fully extended overhead.
- When practicing racing starts, never attempt to abort a poor racing start while it is in progress. Doing a somersault, pulling up quickly or rolling to one side is dangerous. The entry should be completed, and the swimmer's technique then corrected by the coach.
- During a false start at a swim meet, never attempt to abort a poor racing start while it is in progress.
- When entering the pool for backstroke practice or a backstroke event during a meet, enter feet-first and stay close to the end of the pool.
- Do not attempt a somersault or flip entry into a competition pool.

Review these safety rules and behaviors with swimmers often. Always strictly enforce these rules.

DRYLAND TRAINING

Coach Walker has decided to add dryland training to his workout plan for his swimmers. He finds some old stretch cords and barbells in a closet and decides they

can be used on the pool deck prior to practice. He divides his athletes into three groups—one to work with the stretch cords, one with the barbells and one group to go on a run. He gives a brief period of verbal instruction and then tells the athletes to get started. Immediately, one of the stretch cords snaps. Next, a swimmer cuts himself on the rusty edge of a barbell. Eventually, the swimmers who left on the run come straggling back saying that one of the boys fell in a hole and twisted his ankle. What did Coach Walker do wrong here?

Many coaches use dryland training to supplement water training. There are many benefits to dryland training. It can extend training time when pool time is limited, provide variety in the workout and complement water workouts by enhancing fitness, strength, flexibility and endurance. Dryland training may be scheduled before or after water practice and may take place on the pool deck, in a gym or even outside. In the scenario above, Coach Walker overlooked basic safety practices in his workout plan. He did not inspect the equipment for safety, he gave very limited instruction, and worst of all, he sent a group of athletes on an unsupervised run. He had a good idea, but he did not properly plan and organize the activity.

When adding dryland training to your workout plan, consider the following:

- Athletes must be under the direct supervision of a certified coach.
- Athletes must be instructed in the proper and safe use of equipment.
- Coaches should check equipment for safety before use by athletes.
- Activities must be age and ability appropriate.
- Increase the intensity and duration gradually, about 10 percent per week.
- Encourage athletes to report any injuries.
- Athletes must adhere to established rules.
- Monitor safety and stop any activity if it becomes unsafe or chaotic.

EVENT SAFETY

Coach Whitney's athletes arrive at a swim meet and are very confused. Coach Whitney is not there and they do not know where to go. Finally, one of the parents tells them that they should get started with their warm-up rather than just standing around waiting for Coach Whitney. They go to lane one, get up on the starting block and dive in. One swimmer lands on another who is coming in to turn. When the marshal tells one of Coach Whitney's swimmers to get out of the

pool, she ignores him and continues swimming. Is Coach Whitney responsible for this situation? What should she have done?

In the scenario above, Coach Whitney is responsible for the situation her swimmers faced at the meet. First of all, Coach Whitney should have been present in time for warm-up or made arrangements for another certified coach to monitor her swimmers. She should have instructed the swimmers as to where to meet prior to warm-up. (Without a coach present or responsible for the swimmers, the swimmers should report to the marshal for an assignment to another coach.) Coach Whitney evidently did not instruct her swimmers about the safety rules of warm-up, such as feet-first entry and waiting for a clear space to enter the lane. Her swimmers were also not aware that they needed to follow the instructions of the marshal. Coach Whitney may have prepared her swimmers to swim fast, but she did not prepare them for the situations they would face during warm-up. She created an unsafe situation for the athletes and did not act prudently.

Warm-Up

USA Swimming, in its efforts to promote safety among its members, has given local swimming committees (LSCs) suggested guidelines for swim meet warm-ups. These can be modified to meet practice and facility limitations. It is suggested that warm-up procedures before a practice are similar to those before a meet so that swimmers are familiar with the procedures.

Warm-up procedures should include—

- Performing feet-first entries into the water.
- Looking carefully for other swimmers before entering the water.
- Using starting blocks only under supervision.
- Circle swimming only.
- Warming up under the direct supervision of coaches.
- Following directions of marshals assigned to the pool deck.

Swim Meets and Facility Safety

Common sense and observation will go far toward developing a swim meet safety plan. Walk through and note areas of concern, then focus on specifics. Ask questions such as, "How can we route traffic around this area?" Note common problems at meets, such as overcrowding behind the starting blocks, unsafe conditions in a warm-down pool or potentially unsupervised rest or staging areas. After the initial inspection, write a checklist that can be used before the meet begins. Write an action plan to ensure that such areas will be properly marked with appropriate signs or will be adequately secured and/or supervised.

USA Swimming Warm-up Guidelines

- I. General Warm-up Period in Small Pools (4–6 lanes)
 - A. In effect except for 60 minutes prior to the meet.
 - B. There should be no racing starts or diving off the blocks or off the edge of the pool at this time. Athletes should slide into the pool feet-first (3-point entry).
 - C. Outside lanes—kicking only.
 - D. Inside lane—swimming and pulling only, no paddles.
 - E. No sprinting or pace work.
 - F. In large pools (8–10 lanes) pace work may be conducted in the outside lanes.
- II. Specific Warm-up Period
 - A. Last 60 minutes of pre-meet warm-up period.
 - B. Suggestions for 8-lane pool: each lane scheduled as follows:
 1. Push off one or two lengths and back, beginning at starting end of pool. Circle swimming only. No racing starts or diving.
 2. Racing start only. Swim one length only. All swimmers begin at starting end of pool.
 3. General warm-up only (as above). No racing starts or diving.
 4. General warm-up only (as above). No racing starts or diving.
 5. General warm-up only (as above). No racing starts or diving.
 6. General warm-up only (as above). No racing starts or diving.
 7. Racing start only. Swim one length only. All swimmers begin at starting end of pool.
 8. Push off one or two lengths and back, beginning at starting end of pool. Circle swimming only. No racing starts or diving.
 - C. Suggestion for 6-lane pool: each lane scheduled as follows:
 1. Push off one or two lengths and back, beginning at starting end of pool. Circle swimming only. No racing starts or diving.
 2. Racing start only. Swim one length only. All swimmers begin at starting end of pool.
 3. General warm-up only (as above). No racing starts or diving.
 4. General warm-up only (as above). No racing starts or diving.
 5. Racing start only. Swim one length only. All swimmers begin at starting end of pool.
 6. Push off one or two lengths and back, beginning at starting end of pool.
 - D. Circle swimming only. No racing starts or diving. No racing starts or diving are allowed in the outside lanes so that those who are supervising the warm-up do not have to move away from the pool to avoid getting wet.
 - E. Important points for specific warm-up period.
 1. No racing starts or diving in lanes other than those designated for diving. The blocks should be marked to remind swimmers they should not dive.
 2. Start all swimmers in all lanes at starting end of pool.
 3. Coaches should stand at starting end of pool when verbally starting swimmers on sprint or pace work.
 4. Swimmers should be reminded by coaches that breaststrokers need more lead time than freestyle or butterfly swimmers.
 5. Backstrokers should be reminded of the danger of leaving simultaneously with someone on the block. No one should be allowed on the starting block until the backstroker has executed his or her start.

Continued on next page

F. Additional considerations.

1. The announcer should announce lane changes and/or warm-up changes when warm-up moves from general to specific. The announcer should remind swimmers of the procedure.
2. Coaches should maintain as much contact with their swimmers as possible—verbal and visual—throughout the warm-up period.
3. Coaches are reminded that the responsibility for supervision of their swimmer(s) is the same at the meet as when on deck at practice.
4. Marshals have authority through the meet referee over the warm-up. A swimmer and/or coach may be removed from the deck for interfering with this authority.

OPEN WATER SWIMMING SAFETY

Coach White has decided that his swimmers are bored with traditional pool training. Since they live near a lake, he announces that the next day they will all meet at the lake for an “open water” swim. When the swimmers arrive at the lake, Coach White points to a small island in the middle of the lake and tells the swimmers to swim around the island. He thinks it is about 400 yards to the island. One of the swimmers asks if the water is deep and wonders how he will know where he is going. Coach White says he has no idea how deep it is but “since you will be on top of the water, don’t worry about it. Just swim.” Coach White tells the swimmers to take off and says he will be waiting on the shore with treats when they return. Do you think Coach White planned a safe activity?

Open Water Training

Many new participants in open water swimming, both coaches and athletes, are unfamiliar with the potential risks and hazards (Fig. 2-10). In the scenario above, Coach

White had a great idea, but failed to plan. He does not know the distance or water conditions and has no plan to supervise the athletes. He gave no instruction and he berates a fearful athlete.

The need for efficiently organized safe swims is imperative. The swim, either for training or competition, may follow several different course types:

- Parallel to a shore
- To or around a fixed point or landmark, such as a rock, island or pier
- Around a closed course marked by buoys
- Point to point

Direct supervision, adequate coach-to-swimmer ratio and thorough instruction are key elements in open water swimming. If you are ill-prepared, you could find yourself and your athletes in trouble. Plan how you will account for every swimmer who enters the water. Make sure that you have enough escort water craft with you for the size of your group (Fig. 2-11). For example, you may have three kayaks, one in the lead, one tailing and one to respond to



Fig. 2-10



Fig. 2-11

Using Water Craft during Open Water Swims

Swimmers must never be left unsupervised or unescorted while in the water. Make sure that there are enough water craft to escort the swimmers. Know your water craft and make sure you can handle emergency situations. When using motorized water craft, be sure to always keep your distance, let no one swim from behind the craft and always know where your swimmers are during the swim.

When using water craft for a rescue, follow these basic guidelines:

1. Extend an oar to the swimmer, and pull him or her to the stern (rear) of the craft. It is the most stable area on which to hold.



2. If the swimmer cannot hold the oar or equipment, move the stern close to him or her. Pull the swimmer to the stern by the wrist or hand.



3. Have the swimmer hang onto the stern while moving the water craft to safety.
4. If the swimmer needs to be brought onto the craft because the water is very cold or the swimmer is fatigued, help him or her over the stern.



When using a motorized water craft, follow these steps:

1. Always approach the swimmer from downwind and downstream.
2. Shut off the engine about three boat-lengths from the swimmer, and coast or paddle to the swimmer.
3. Bring the swimmer on board before restarting the engine.

emergencies. If you have to stop for one athlete, you do not want to leave the others unattended. Develop clear signals for athletes to let you know if they need assistance. Also, develop signals to let the athletes know that they should look up or stop.

Be familiar with water conditions, such as temperature, water clarity, waves and currents. Be aware and warn the swimmers of any natural or manmade hazards, such as rocks, piers and submerged objects. Monitor weather conditions for any possible storms or abrupt temperature changes. Be prepared to terminate the swim at the first sign of foul weather.

It is also important that swimmers be prepared and physically able to complete the swim distance. Your athletes might be able to handle the distance going out, but might struggle coming back. Swimmers should complete several short swims in controlled areas before attempting a longer, more challenging swim. Some swimmers may have very real fears of swimming in open water and may need to be gradually encouraged.

In addition, coaches need to be well prepared to deal with potential hypothermia, dehydration and deep water rescue. In spite of the additional risks encountered outside of a pool, open water swimming provides great training and diversion from swimming laps in the pool. Proper planning can reduce or eliminate these risks.

Open Water Meet Safety

- Define the course with a clearly marked start area, turn markers and finish line.
- Design the course to minimize confusion and avoid head-on traffic patterns.
- Eliminate changes in course direction where the course is likely to be congested, such as at the start.
- Seek the advice of local experts such as the beach patrol or parks department, [Red Cross](#), [USA Swimming LSC](#), [Coast Guard](#) and the harbormaster.
- Have a clear emergency action plan (EAP) and medical evacuation plan.
- Set up safety monitor stations with first aid supplies and emergency signaling devices.
- Account for every participant who enters and exits the water.
- Have a public briefing to go over rules and procedures with all participants.
- Line up escort and pilot boats.
- Be prepared to cancel the event in case of inclement weather.

For additional information on open water meet safety, consult the USA Swimming [Open Water Meet Manager's Guide](#).

Emergency Planning and Response

Coaches should be aware of the need to maintain a safe and comfortable environment for their swimmers. As a swim coach, monitoring and maintaining the facility may or may not be your responsibility. This depends on your relationship with the facility and legal certifications. Coaches must be aware of water and air quality issues as well as be familiar with electrical safety and weather and environmental hazards. Coaches also need knowledge of the facility rules and regulations. Coaches play a major role in minimizing risks. In spite of adequate training, planning, instructing and supervising, emergencies still can and do occur. The coach is often the first one on the scene in an emergency. An emergency action plan (EAP) and appropriate emergency responses are crucial.

WATER AND AIR QUALITY

Coach Jones arrives at the pool to find that the pool water looks fine but there is a strong odor of chlorine. The pool staff says the water “tests fine.” He opens the doors and windows to get some fresh air into the pool area. The swimmers arrive and workout begins. Soon the swimmers are complaining of eye irritation and “dry mouth.” Many begin coughing. Coach Jones says that they need to “get tough” because they have work to do. He refuses to modify his plans or cancel the workout. He complains to the lifeguard on duty who shrugs and says he does not know anything about the chemicals. A few swimmers manage to finish the practice. Coach Jones congratulates them on their toughness and berates those who have gotten out early. He hopes the conditions will be better tomorrow because it’s a test set day. Is there anything Coach Jones should have done differently?

Coach Jones obviously knew that the pool conditions were potentially hazardous. He should not have continued the workout. In addition, complaining to the lifeguard was not an adequate response. Coach Jones needed to contact the pool operator or manager to address the issues. Facility management must ensure a safe swimming environment for your swimmers, which includes clarity and the quality of the pool water. If the water is not clear or the quality is poor, you may have to cancel swim practice until the situation is remedied. If maintaining water clarity and quality is part of your job, you or your supervisor should ensure that you have the proper training in pool chemistry and operation by taking a pool operator program offered by state or local governments and national organizations.

Some indicators that the water clarity or quality is poor include the following:

- The water is cloudy. (You should be able to clearly view the pool bottom and easily recognize racing lanes and main drain covers (**Fig. 3-1**.)



Fig. 3-1

- The water is an unusual color.
- Swimmers complain of eye irritation.
- The water or air has an unusual odor.
- Swimmers are severely coughing and/or having difficulty breathing.

If the air has a “chlorine smell,” something may be wrong. That acrid smell sometimes associated with chlorine is usually ammonia. In swimming pool operator terminology, the cause of this odor is chloramines. The odor is created when water chemistry is not properly balanced or the number of swimmers in the pool increases faster than usual. The odor intensifies when swimmers agitate the water when swimming. The odor is worse at water level but can be extremely irritating at deck level or in the viewing area. Chloramines are created when free chlorine combines with ammonia and other nitrogen compounds. This combining process can be accelerated by perspiration, urine, saliva, body oils, lotions, some shampoos and soaps and many industrial or household cleaners. Many times, in addition to odor, eye irritation is experienced. Sometimes the water may be hazy or cloudy, but not always. Often, the water will appear perfectly clear and the water test for free chlorine and pH reads normal. Most of the problems occur in indoor pools. Outdoor pools have plenty of fresh air and sunshine (ultraviolet light) so they are not as susceptible to some of the problems chloramines create.

Significant, severe coughing and eye irritation indicate a problem that should be immediately addressed by the coach. Do not endanger the swimmers by ignoring these conditions. People with asthma are particularly susceptible and often react first to air quality issues. Notify facility management so that corrective action can be taken. For additional information on water and air quality issues see the [Facilities Development Department](#) page on the USA Swimming Web site.

POOL CHEMICALS

Pool chemicals are dangerous and caustic. Accidental exposure can be fatal. All cleaning liquids and pool chemicals in concentrated form are hazardous and poisonous. Keep the chemicals in a separate area away from swimmers and spectators. If you are interested in learning more about pool chemistry and operations, enroll in a pool operator course.

ELECTRICAL SAFETY

Coach Anderson coaches in an old facility. There is an electrical outlet on the wall of the pool where she plugs in her pace clocks. To position clocks at the far end of the pool, she has to string extension cords the length of the pool. She has been doing this for years in this facility and has never had any problems. Do you see any potential issues with this coach's actions?

There is risk in Coach Anderson's actions. Electrical shock is a very real hazard in the operation of swimming pools. Permanent or temporary electrical connections and wires used with the following equipment may come in contact with water:

- Underwater lights
- Tape, CD or DVD players
- Automatic-timing devices
- Pace clocks
- Electronic loudspeakers
- Start systems
- Pool vacuum cleaners (swimmers should not be in the pool when pool vacuums are in use)

Many other types of electrical devices operating on line voltages in the vicinity of the racing course involve wires stretched across the pool deck. These devices should be connected to the power supply only from a ground fault circuit interrupter (GFCI) (Fig. 3-2). Even though GFCIs are required, only battery operated devices are advisable on the pool deck or near the water.

Extreme caution should be taken in laying wires on the pool deck,

Emergency Procedures for Electrical Emergencies

In the case of electrical shock or electrocution, call 9-1-1 or the local emergency number and follow the facility's EAP. Shut off the power source, check the scene and check the victim. Rescue breathing must be started immediately if there is no breathing. Cardiopulmonary resuscitation (CPR) must be started immediately if there are no signs of life or a pulse.

not just for the possibility of electrical shock, but because swimmers and coaches may trip and fall over them. Wires should be strung overhead or securely taped in place and covered by a mat.

In the scenario, Coach Anderson could have minimized the risk by stringing the wires overhead. An even better solution would be to purchase battery operated clocks. All clocks should be placed to minimize tripping hazards.

WEATHER AND ENVIRONMENTAL CONDITIONS

Coach Paul is getting ready for swim practice in an outdoor pool. When the swimmers arrive they tell him that they heard forecasts on the radio of severe thunderstorms. Coach Paul laughs and says "that won't get you out of practice." During practice Coach Paul hears thunder but decides that it is in the distance. He sees a flash of lightning, but the swimmers are having a great set and he does not want to stop them. He does not think it is very close, although he really is not sure. Finally, the swimmers get fearful and get out of the pool and head for the shelter of a picnic pavilion. Soon Coach Paul decides that the storm has passed and orders the swimmers back to the pool. As they step onto the pool deck, there is another flash of lightning. Parents arrive to pick up their swimmers, saying the weather service is forecasting that the storm will continue for another hour. Coach Paul relents but is annoyed that the swimmers leave before completing the workout. He does not think there is any risk since no one has ever been struck by lightning in that area. Is Coach Paul putting his swimmers at risk?



Fig. 3-2

Weather conditions at outdoor aquatic facilities directly affect the safety of the swimmers. These conditions vary greatly in different parts of the country. In the scenario, Coach Paul was putting his swimmers at risk by ignoring the potential danger of the storm. He was not listening to weather reports and he did not get his swimmers out of the water when lightning and thunder were observed. Further, he did not have a safe place for them to go during the storm and he put them back in the water when lightning was still in the area.

Weather affects the safety of swimmers both outdoors and indoors. Coaches should be aware of the weather conditions in their area and know how to act when severe weather occurs. The NOAA Weather Radio All Hazards is a nationwide radio network that provides detailed weather information 24 hours a day to most areas. A special radio receiver is needed to receive the signal and can be set to sound an alarm when a warning is issued for a specific area. These radios have battery back-up in case of power failure. Local up-to-date forecasts and weather warnings are also available from the [National Weather Service at www.nws.noaa.gov](http://www.nws.noaa.gov). In addition, local radio stations, television channels and cable services provide forecasts and emergency weather warnings. The facility's EAP for severe weather conditions should be followed. EAPs are discussed in detail later in this chapter.

If unusual or severe weather conditions make it impossible to conduct or conclude a meet safely, see the appropriate rule book for information on suspension of the meet, delays and rescheduling.

Lightning and Thunderstorms

Lightning and thunderstorms happen more often in the summer. The facility's procedures for clearing swimmers from the water should be followed before an impending storm. Swimmer safety should never be at risk. If a storm or other bad weather is predicted, stay alert for signs of the coming storm, such as thunder and lightning or high winds.

In the event of thunder or lightning—

- Clear everyone from the water at the first sound of thunder or first sight of lightning. Move everyone to a safe, sheltered area. For outdoor facilities, move everyone inside. Large buildings are safer than smaller or open structures, such as picnic shelters or gazebos.
- Keep swimmers out of showers and locker rooms during a thunderstorm. Water and metal can conduct electricity.
- Refrain from using a telephone connected to a landline except in an emergency.
- Keep everyone away from windows and metal objects (e.g., doorframes, lockers).

- Keep watching for more storms and monitor weather reports on a broadcast radio or weather radio.

The [National Lightning Safety Institute](http://www.lightningsafety.com) recommends waiting 30 minutes after the sound of thunder is last heard before resuming activities.

If caught outside in a thunderstorm and there is not enough time to reach a safe building, take the following steps:

- Keep everyone away from structures in open areas, such as picnic shelters.
- Keep away from tall trees standing alone and any tall structures.
- Keep away from water and metal objects, such as metal fences, tanks, rails and pipes.
- Keep as low to the ground as possible: squat or crouch with the knees drawn up, both feet together and hands off the ground.
- Do not lie flat on the ground; minimize ground contact.

Heavy Rain and Hail

Heavy rain and hail can be dangerous. Rain can make it difficult to see the bottom of the pool or beneath the surface. In addition, hail can cause serious physical injury. Swimmers should be cleared from the water and directed to shelter.

Tornadoes

If the aquatic facility's area is prone to tornadoes, you or facility staff should monitor weather forecasts. A **tornado watch** means that tornadoes are possible. A **tornado warning** means that a tornado has been sighted and that everyone should take shelter immediately.

In the event of a tornado—

- Clear the water and surrounding area.
- Move everyone to the location specified in the facility's EAP, such as a basement or an inside area on the lowest level of a building.
- Keep everyone away from windows, doors and outside walls.
- If adequate shelter is unavailable at or near the facility, have everyone lie flat in a ditch or on a low section of ground.
- If a tornado siren warning is heard, keep swimmers in the safe location until the all-clear signal is sounded.

High Wind

High wind may cause waves or turbulence that make it hard to see swimmers in the water. Wind also increases the risk of hypothermia, especially for small children and the elderly. Safety guidelines for high wind include—

- Clearing the pool or waterfront if visibility is impaired by waves or increased turbidity.

- Moving everyone indoors.
- Securing all facility equipment that could be blown and become dangerous, but only if it is possible and safe to do so.

Fog

In some areas, fog can occur at any time of the day or night with changing weather conditions. If the fog limits visibility, the facility may need to be closed.

Weather Conditions and Indoor Facilities

Indoor facilities may be affected by weather conditions. In addition, severe weather can cause a power failure; therefore, the facility should have some type of portable or emergency lighting. In cases of power failure, clear the pool and deck immediately. The facility's EAP for severe weather conditions should be followed.

OTHER FACILITY SAFETY ISSUES AND RECOMMENDATIONS

Coach Henry has an energetic group of age group swimmers. He is trying to improve their starts and has decided to do running starts. He has the swimmers stand by the wall and run across the pool deck and dive in the water. He remembers that this was his favorite drill when he was a swimmer and notes immediate improvement in the swimmers' starts. However, the pool manager tells Coach Henry that he needs to discontinue this activity because it is unsafe and violates the pool rules. Coach Henry argues that the rules do not apply to his swim practice and that it is a supervised activity, not "horseplay." The manager insists that Coach Henry discontinue the running starts or face expulsion from the facility. Is Coach Henry right or wrong?

Pool Rules

Rules should be clearly posted in the facility (**Fig. 3-3**). Common rules such as "No Running; No Diving; No Horseplay; No Glass in the Pool Area," should appear on the signs. As a coach, you need to be sure that your swimmers adhere to the pool rules just like other patrons. Swimmers must be told never to enter a pool that is closed, never to swim unsupervised and never to walk or play on a pool cover. The risk is just as great for swimmers as it is for any other pool patrons. Unfortunately for Coach Henry in the scenario above, he needs to realize that he has his swimmers engaged in an unsafe activity. Coach Henry needs to discontinue the running starts not only because of the potential for injury (such as tripping or slipping) but also because they clearly violate the posted rules.

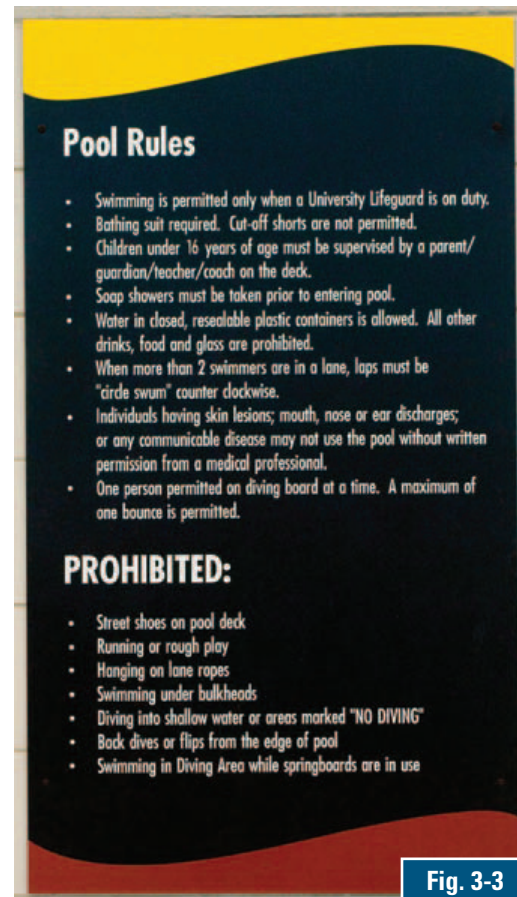


Fig. 3-3

MINIMIZING RISK

Coach Morrison's team rents time at the local recreation center. He has been asked to attend a meeting with the facility management staff to discuss risk management and EAPs for the pool. Coach Morrison declines the invitation because he feels that he does not need to waste his time with a lot of insurance "mumbo jumbo." He goes in 4 hours a day to coach his swimmers and does not feel that he needs to be involved with emergency planning. He thinks it is just a bureaucratic formality anyway. It is nothing that will ever involve his swim team. Is he right?

Accidental injuries in sports result in high dollar litigation, making attention to safety especially important. In the scenario above, Coach Morrison should participate in the risk management and emergency action planning. Accidents do happen at swim practice and Coach Morrison is putting himself at risk by ignoring the possibility. With a plan to minimize risk, a coach can take a proactive approach to minimize risks. A coach's involvement in developing a plan to minimize risk projects an attitude that says—

- I am a knowledgeable professional.
- I am concerned about safety.
- I will do what is necessary to provide a safe environment.

A plan to minimize risk is also extremely important in the event of legal action. A proactive program shows intent and acts as evidence of responsible care. A plan to minimize risk and a loss control program should contain procedures in prevention, safety inspections, safety meetings and emergency action. Common types of emergencies that could occur should be considered when planning for emergencies. A detailed plan should be put in writing and thoroughly reviewed and practiced. The plan should include—

- **Safety Rules and Regulations.** Rules and regulations are designed to minimize the risk of injury. All rules and regulations (including the facility's, USA Swimming's and/or any other governing body's rules and regulations) and the procedures used to enforce them should be reviewed. Appropriate rules and procedures, such as warm-up procedures, should be posted or published. The facility's signage, including directional and warning signs, should also be reviewed to see if it is adequate and meets current state and local regulations.
- **Supervision.** Using only the most qualified leaders and volunteers together with the best standard of care possible provides higher level of supervision. Coaches and meet marshals should be active in enforcing rules and regulations. An appointed club safety coordinator or another coach should act as liaison between the club and facility manager in developing such plans. Continual communication between individuals instills a quality program.
- **Training.** All coaches, including the head coach and assistant coaches, must have the necessary safety certifications including First Aid, CPR and Safety Training for Swim Coaches. These certifications must be current. Facility guidelines for required supervision of aquatic activities by certified personnel must always be followed. Some facilities require certified lifeguards on duty.
- **Safety Inspections.** A key way to actively prevent injuries is to recognize potential hazards. This requires a systematic and routine method of inspecting the swimming facility. This can be done through the development of a series of checklists and by establishing a method of documenting and reporting faulty equipment or facility dangers (see the Sample Facility Safety Checklist in the *USA Swimming Safety/Loss Control Manual*). Any faulty equipment or dangerous areas should be removed or roped off.

EMERGENCY PLANNING

Various types of emergencies can occur at an aquatic facility, even at one that is well supervised. Handling these emergencies is the responsibility of everyone involved,

including lifeguards, coaches and facility management. It is important to note that the coach is often the first one on the scene of an accident. Every facility should have written procedures that are specific to potential accident or emergency situations. Any delay during an emergency situation can cause additional injury or death. In the event of any accident, however minor, USA Swimming requires that a [Report of Occurrence](#) be filed.

Emergency Classifications

Life-Threatening Emergencies

While Coach Julian is busily preparing for his Senior training group, a young swimmer comes running out of the locker room. He tells the coach that a swimmer has had an accident in the locker room. He is lying on the floor and is not moving. What should the coach's course of action be?

Life-threatening emergencies include such situations as a respiratory or cardiac emergency, severe bleeding or chemical poisoning. Examples are a drowning victim, a person who has a severely cut foot or hand or a person who has been exposed to chlorine gas. Each of these situations calls for immediate and positive action to prevent loss of life or some level of permanent injury to the victim. In the scenario above, Coach Julian is presented with a possibly unconscious victim, a life-threatening emergency. Coach Julian needs to activate the facility's EAP and then proceed immediately to help the swimmer. His actions should include having someone to call for help, having the pool cleared or supervised by an assistant and assisting the swimmer in the locker room.

Nonlife-Threatening Emergencies

Coach Holmes has 25 Age Group swimmers training in four lanes. One swimmer is passing another and collides head-on with a swimmer coming in the opposite direction. One swimmer immediately grabs her hand and starts crying that she cannot bend her fingers while the other says her nose hurts. What should Coach Holmes do in this situation?

This kind of emergency may require the action of one or more people, but the danger to the individual is considered minimal. There are two levels of nonlife-threatening emergencies:

- Major, which may include conditions or situations, such as a head, neck or back injury, broken bones, an out-of-water seizure or a swimmer in distress.
- Minor, which may include conditions such as sunburn or minor bleeding from a cut or an abrasion.

A nonlife-threatening emergency may become life threatening if not handled properly or cared for immediately.

In the example, Coach Holmes is presented with a potentially chaotic but nonlife-threatening emergency. She should activate the EAP by designating that someone call for help. She should clear the pool and get help in controlling the other swimmers and then get the injured swimmers out of the pool. Appropriate first aid should then be provided.

Emergency Action Plans

An EAP is a written plan that every program and facility should have to prepare for potential emergencies. Certain types of emergencies, such as natural disasters, are more likely in some locations than in others. Emergencies, however, can occur anywhere. In addition to injuries, emergencies may include illnesses, such as heart attack, seizure or stroke. Emergencies can result from a specific problem, such as fire, power failure, chemical spills, violent winds, tornadoes, lightning, earthquake, mudslides or sudden flooding.

The facility's EAP should address all relevant categories of emergencies. It should be practiced and reviewed on a regular basis to ensure the effectiveness of the plan. Such plans should define the responsibility of everyone who may be involved, covering such areas as the following:

- Facility Layout
 - Facility access for emergency medical services (EMS) personnel
 - Location of rescue and first aid equipment
 - Exits and evacuation routes
 - Location of telephones and emergency numbers
 - Lifeguard stations and areas of responsibility
- Equipment
 - Rescue equipment
 - Personal protective equipment (gloves, mask and footwear)
 - First aid supplies
 - Emergency equipment (flashlights, fire extinguisher, etc.)
 - Communication (radios, whistles, telephones and air horns)
- Support Personnel Roles and Responsibilities
 - Facility personnel (lifeguards, lifeguard supervisor, pool manager, facility manager, etc.)
 - Coaches
 - Athletic trainers
 - Meet director
 - Officials and referees
 - Marshals
 - Athletic director
 - Clerical personnel
 - Maintenance personnel
- External Personnel Roles and Responsibilities
 - EMS personnel

- Police
- Firefighters
- Hazardous materials (HAZMAT) response team
- Power and gas companies
- Chemical suppliers
- Communication
 - When and how to call 9-1-1 or the local emergency number (and how to access an outside phone line)
 - Chain of command
 - Person to contact—family members/parent or guardian of the victim
 - Designated person to deal with media if necessary
- Follow up
 - Complete appropriate documentation (incident report, accident report, USA Swimming Report of Occurrence Form, etc.)
 - Checking and replacing equipment and supplies
 - EAP evaluation
 - Staff debriefing
 - Check on condition of athlete

USA Swimming has additional information on emergency planning in section 3d of the *USA Swimming Safety/Loss Control Manual* and [sample EAPs](#) on the [Safety Issues for Your Club](#) page on the USA Swimming Web site (www.usaswimming.org).

DISTRESSED SWIMMER AND DROWNING SITUATIONS

The Distressed Swimmer

An important skill that coaches must develop is the ability to recognize when a swimmer needs help. Initially, you should not be concerned with the cause of the distress. A swimmer may have suffered a cramp, be exhausted or have swallowed water. The primary concerns are whether the swimmer can support him- or herself in the water, and what type of behavior the coach can expect from the swimmer (**Fig. 3-4**). Usually, the swimmer's



Fig. 3-4

movements will provide you with the information needed. For further information on the behaviors exhibited by a distressed swimmer, see page 45 of the *American Red Cross Swimming and Water Safety* manual.

The Drowning Person

In this situation, a swimmer is unable to call for help or to wave his or her arms. A distress situation may become a drowning situation when the swimmer, for whatever reason, is no longer able to keep afloat. Drowning situations may be classified as active or passive (**Fig. 3-5, 3-6**). For more information on the behaviors exhibited by an active or passive victim, see page 45 of the *American Red Cross Swimming and Water Safety* manual.



Fig. 3-5



Fig. 3-6

HOW THE COACH CAN ASSIST

During swim practice or swim meets, you may be confronted with distressed swimmer situations. A swimmer might be injured in a collision or might be exhausted and unable to continue. A swimmer in practice or a meet could develop debilitating cramps or be unable to handle extreme water temperatures. It is important to teach swimmers that if they feel panicky, they should try to reach the lane lines and use the lines for support.

In a situation where you need to aid a distressed swimmer, use a reaching, throwing or wading assist. While you attempt to make an assist, assign someone in your group to prepare to call 9-1-1 or the local emergency number immediately to attend to the rescued swimmer, if necessary.

You can help a swimmer in trouble only if you are in a safe position yourself and if you maintain control of the situation. Reaching, throwing and wading assists will help keep you safe and in control. Entering the water to aid a distressed swimmer and bringing him or her to safety requires special training. If a coach who has not had appropriate training approaches a distressed swimmer, he or she may be endangering two lives: the coach's and the swimmer's. For more information on how to perform reaching, throwing and wading assists, see pages 55–58 of the *American Red Cross Swimming and Water Safety* manual.

Common Injuries and Medical Conditions

HEAD, NECK AND BACK INJURY

Coach Stevens has taught proper techniques for racing starts to his swimmers. They have practiced the starts many times. However, some swimmers are playing around on the pool deck before practice and one pushes another into the pool. One swimmer enters the water head-first in a nearly vertical position, striking his forehead and nose on the bottom. What should Coach Stevens do?

Many head, neck and back injuries, also known as spinal injuries, at aquatic facilities are the result of improper diving, jumping, falling or being pushed. A head, neck or back injury can occur when the victim's head hits the bottom or side of the pool or some other object, such as another swimmer. Head, neck or back injuries most often happen at the shallow end of the pool, in a corner of the pool or where the bottom drops off to deeper water. At open water facilities, such as lakes or rivers, spinal injuries can occur in areas where water levels vary due to tides or currents, or in areas where there are underwater hazards, such as rocks or tree stumps.

In the scenario above, Coach Stevens should immediately suspect a possible head, neck or back injury and perform the proper procedures to minimize movement of the swimmer's head, neck and back. For more information on how to care for a victim with a head, neck or back injury, see pages 60–61 of the *American Red Cross Swimming and Water Safety* manual.

HYPOTHERMIA

Coach Patrick has a group of swimmers in an outdoor pool. The water temperature registers at 72° F (22° C). Most of the swimmers are fine "as long as they keep moving," but a few swimmers are visibly shivering with chattering teeth and their lips are turning blue. Coach Patrick decides to let those swimmers get out, instructing them to take warm showers and get into warm clothing. The rest of the swimmers stay in the pool. Did Coach Patrick do the right thing or should he have gotten all of the swimmers out of the pool?

Many coaches consider hypothermia to be a threat only in open water swimming. It is true that coaches of open water swimmers must constantly be prepared to recognize signs and symptoms of hypothermia and to provide care for hypothermia. However, hypothermia may also occur in swimmers training in conventional, indoor or outdoor pool situations. Some swimmers, especially younger ones, are more susceptible to hypothermia than others. Therefore, all coaches should be prepared to recognize the signs and symptoms and provide appropriate care.

Hypothermia is low body temperature, specifically a low body-core temperature, which is the temperature of the vital organs. Hypothermia occurs when cold or cool temperatures cause the body to lose heat faster than it can be produced, and the body-core temperature falls below normal. Very thin or lean swimmers may show the affects of cold water faster than other swimmers. Very young swimmers may also be affected earlier. Some swimmers may need to be removed from the water while others are able to continue. In the scenario, Coach Patrick recognized the swimmers who were in jeopardy and did the right thing by getting them out of the water. For more on cold-related emergencies and care of victims, see page 38 of the *American Red Cross Swimming and Water Safety* manual.

HEAT-RELATED EMERGENCIES

Coach Bailey is conducting an outdoor swim practice at midday. It is sunny, hot and humid. The thermometer on the wall registers an air temperature of 103° F (39° C). The swimmers are complaining that the water is "too hot" and several say that they feel nauseated and dizzy. Coach Bailey is wearing a large straw hat and drinking water, but her assistant, who is hatless, is sweating profusely, is flushed and complaining of a headache. Coach Bailey tells the swimmers and her assistant that it will be just as hot and uncomfortable at the championship meet next weekend, so they all had better get used to the conditions. She continues the practice. Do you think this was the right thing for Coach Bailey to do?

Coach Bailey may have been jeopardizing the health and safety of her athletes, her assistant and herself. She needs to recognize the signs and symptoms of heat emergencies to avoid potential heat cramps, heat exhaustion or heat stroke. Strenuous work or exercise in the heat results in fluid loss due to heavy sweating. Swimmers can and do sweat during workout. Coach Bailey must make sure that the swimmers are drinking adequate and appropriate amounts of fluids during workout. She needs to end the workout for the swimmers and the assistant coach who are not feeling well. They need to move to a cool place and drink small amounts of cool water. They should also be monitored. Additionally, Coach Bailey must keep a close eye on the others to decide if she should terminate practice for everyone. She might also look at her reasons for scheduling a midday workout and see if there are other scheduling alternatives. For more on heat-related emergencies and the care of victims, see page 37 of the *American Red Cross Swimming and Water Safety* manual.

MEDICAL CONDITIONS IN SWIMMERS

This supplement cannot discuss all medical conditions that may affect swimmers. However, asthma is a fairly common medical condition among swimmers. Your swimmers may have other medical problems as well. The best way for a coach to be aware of any potential problem is to have every team member complete a [medical history](#) once a year. This information can alert a coach to the need to observe a specific individual carefully.

Asthma

Asthma is an illness in which airways (small tubes in the lungs through which we breathe) have ongoing swelling. They get narrower or blocked when affected by various triggers. This causes a person to have trouble breathing. An asthma attack is the sudden worsening of asthma signals caused by a tightening of muscles around the airways of a person with asthma. The actual number of cases of asthma, in general, is increasing. The reasons are still open for debate, but it is certain that strategies for identifying and diagnosing asthma are better than they were 10 years ago. There is also increased awareness of additional triggering factors, including poor diet, elevated body mass index and dehydration. The environment also plays a major role. In the case of swimmers, pool air quality has been blamed, but the air quality in our general environment has changed. Without professionally designed, effective air handling, the result may be poor air quality. For example, pollution is higher and, in some cases, modern, energy-efficient building design produces [natatoriums](#) that are more tightly sealed than in previous years.

Dealing with Asthmatic Swimmers

Coach Michael has noticed that an increasing number of swimmers in his training group are bringing quick relief inhalers to practice. The inhalers are lying all over the pool deck. He is tired of tripping over them and announces that from now on all inhalers are to be in the swimmers' bags, which are stored in the bleachers during practice. Is this an appropriate way to handle the proliferation of inhalers?

Quick relief inhalers should be readily available and their location individualized ([Fig. 4-1](#)). **Long-term inhalers**, on the other hand, can be left in the locker room, but only if the workout is less than 4 hours long and the main set is less than 1 hour. The proper use of an inhaler usually includes the use of a spacer for effective delivery of medication to the lungs ([Fig. 4-2](#)). An appropriate place for both quick relief and long-term inhalers, as well as the spacer, is in the swimmer's [equipment bag](#) at the end of the lane or at another designated location on deck, such

as on a specific table or pinned to a bulletin board. Regardless of location, every inhaler should be properly labeled with the swimmer's name and prescription. The inhaler should be kept in a plastic bag for protection. Coach Michael may have overreacted to the problem. The inhalers should be in the swimmers' equipment bags on the pool deck. Otherwise, the coach needs to designate a place for the inhalers. Banning them to the swimmers' bags in the bleachers could cause a problem in an emergency situation.

Dosage depends on the individual case and the health-care practitioner's directions. Some asthmatics use a daily controller medication in addition to their pre-exercise inhaler. Two "puffs" of an inhaler is standard, but a health-care provider's directions are always specific to the patient's condition.

Generally speaking, if a swimmer is using an inhaler more than 2 to 4 times per workout, this is a red flag that the swimmer's asthma is not under control and/or the athlete is not using the medication as directed. If you suspect this, be concerned. Ask questions, such as: Did your doctor give you specific directions on how and when to use your inhaler? What are those directions? Consider talking to the parents about your concern. Avoid making medical recommendations to prevent a liability



Fig. 4-1



Fig. 4-2

situation. If you are lucky enough to meet the health-care provider who oversees your asthmatic swimmer, encourage him or her to talk to the swimmer about personal responsibility. If your swimmer needs the quick relief inhaler frequently, make sure he or she meets with the health-care provider and gets a written action plan for dealing with these attacks. Make sure this plan is shared with the coaches responsible for the swimmer on the pool deck.

Your Role in an Asthma Attack

In the event of an asthma attack, know the general set of guidelines to follow. Stay calm, get the swimmer out of the water. Have the swimmer use his or her quick relief inhaler. When in doubt, call 9-1-1 or the local emergency number.

You cannot reliably spot an on-coming attack. Heaving-type breaths and an inability to speak in full sentences are good signs that one is in progress, but at that point there is no stopping it and you should be prepared to manage the situation.

Signs and Symptoms of Asthma (including Silent Chronic Asthma)

- Chest tightness or pain
- Wheezing
- Cough
- Excessive sputum production with exercise
- Shortness of breath, out of proportion to exercise intensity
- Difficulty breathing
- Rapid, shallow breathing
- Sweating
- Fatigue
- Poorer performance than training would predict
- Stomachache
- Sore throat with exercise
- Decreased exercise endurance (feeling out of shape)
- Inability to keep up with peers of similar skill or ability
- Inability to talk without stopping for breath
- Feeling of fear or confusion

Individualized Training Programs

Swimmers who train and compete at the highest levels are often given a warm-up exercise routine before an event to prevent an exercised-induced asthma (EIA) attack. In many cases, stretching, jogging and short sprints will alleviate chest tightness before competition. Programs must be set up for swimmers depending on their individual pattern of developing exercised-induced asthma. There are three main focuses for asthmatic swimmers and their coaches when developing a training program.

1. Develop a baseline of knowledge regarding asthma in general, as well as the swimmer's particular case. No two asthma cases are the same. The more you know about your swimmer's particular case and symptoms, the better they can be managed. The best way to go about this is through a health-care provider. If possible, go with your swimmer to see the health-care provider (with the athlete's and parent's permission). It is not always easy to find the time, but the more you can learn from the health-care provider, the better informed you will be. Understand the importance and purpose of the medications. Learn how weather, chemicals in the pool and allergies may trigger the asthma. The disease of asthma requires a very proactive approach on the part of both the sufferer and the support group of parents and coaches.
2. Organize a plan of action with the swimmer and health-care provider. The plan should include—
 - The health-care provider's instructions. The instructions should include what medicines to take, when to take them and the proper techniques for inhaler use by the swimmer.
 - Swimming-related plans. In many cases, warming up longer before beginning a main set helps the asthmatic swimmer by allowing the lungs to become acclimated to the environment and exercise in general. As a part of this plan, include warm-ups and warm-downs at competitions. It is vital to make sure the swimmer is fully warmed up before he "blasts his lungs" in a race. The more warm-up and warm-down the swimmer receives, the better his or her body will be able to handle the lack of oxygen during a race.
 - Out-of-water influences. The more proactive the approach, the better the swimmer's asthma will be managed. For example, make sure that the swimmer is avoiding anything he or she might be allergic to that might trigger asthma. If the swimmer is allergic to dust, the bedroom should be cleaned thoroughly each week to make sure he or she is not sleeping in dust every night. If the swimmer is allergic to smoke, he or she should

avoid smoking environments. Some of these ideas sound simplistic, but it is important to remember that there is more to treating asthma than taking medication and hoping for the best. The more proactive the approach to the swimmer's daily life, the better treated and managed the asthma will become.

3. Focus on the mental side of asthma. Many swimmers listen to their health-care providers, take all of their medications at the proper time and dosage and even try to avoid the allergies that trigger their asthma. But some never fully believe in themselves and their ability to deal with their disease. An asthmatic swimmer should not feel like a weaker athlete, but rather

should feel empowered by competing against athletes who are not being held back by any medical problem. This is much easier said than done. However, helping an athlete deal with the mental side of asthma will help the swimmer become a stronger athlete and person.

Seizures

A seizure is a loss of body control that occurs when the brain functions are disrupted by injury or illness. Seizure disorders include epilepsy and can be controlled by medication, although the swimmer may still have occasional seizures. The goals for care are to protect the swimmer from injury during the seizure, ensure that the

Personal words from Tom Dolan, 1996 and 2000 Olympic Gold Medalist in the 400 Individual Medley

I have suffered from severe asthma and allergies most of my life. It clearly had a negative impact on the physical aspect of my swimming career. However, as far as my mental outlook on the sport, I don't think there is any doubt that being forced to deal with asthma, I became one of the fiercest competitors in swimming. I was fortunate to have a tremendous support group around me that included my doctor, coaches, family and friends who all helped me through the up and down times that go along with managing asthma. I cannot emphasize enough the importance of an open line of communication with my doctor. I could call him day or night to discuss symptoms or problems I was having. The more information I could provide him, the better he could individualize his treatment of my asthma. However, in looking back, the most important aspect of dealing with my asthma was how hard I worked on my mentality. I turned my disease around so that I ended up using it to my advantage in competition. I would not allow myself to use my asthma as an excuse for losing or not trying my hardest. I not only wanted to beat my fellow competitors but I wanted to beat them knowing that my body was receiving less oxygen than theirs.



Doug Pensinger/Getty Images Sports/Getty Images

airway stays open and call 9-1-1 or the local emergency number when appropriate. If a swimmer has a seizure in the water—

1. Call or have someone else call 9-1-1 or the local emergency number.
2. Support the swimmer with the head above water until the seizure ends.
3. Get the swimmer out of the water as soon as possible after the seizure (since he or she may have inhaled or swallowed water).
4. Place the swimmer face-up on the deck and check for breathing and other injuries. Perform rescue breathing or CPR if needed. If the swimmer vomits, turn the swimmer on his or her side to drain fluids from the mouth. Sweep out the mouth.

COMMON SWIMMING-RELATED INJURIES

A swimmer has told Coach Russell that he is experiencing shoulder pain when he swims. He says that his shoulder hurts at night when he is trying to sleep. Coach Russell has worked with the swimmer on technique, suggesting more body roll and alternate side breathing in freestyle, but the swimmer says the pain persists. He gets out frequently to apply ice to the shoulder during practice. He wants to kick with a kickboard, but Coach Russell fears that extending the arm on a kickboard might aggravate the shoulder even more. Coach Russell decides to remove the swimmer from the pool and call the parents to suggest that the swimmer see a doctor. The swimmer protests that “it’s not that bad” but Coach Russell thinks that continuing to train is counterproductive. Did Coach Russell do the right thing?

As you read through the following section, you will see that Coach Russell followed the recommended protocols for dealing with an injured swimmer.

The Shoulders

Shoulder function, including stability, proper motion and painless function is highly dependent on the coordinated function of many muscle groups. These include the muscles around the shoulder, referred to as the rotator cuff, those that control the scapula or shoulder blade, muscles in the upper and lower back, as well as abdominal and pelvic muscles. The repetitive overhead activity of the swimming stroke can result in fatigue of these muscles. This in turn can lead to distinct changes in the stability and function of the shoulder, resulting in the pain that is commonly known as “swimmer’s shoulder.” The risk of injury and pain is especially true for swimmers who swim with poor technique.

The Groin Area

Groin pain and injury is most common in breaststrokers, who require a balance of flexibility and strength between their pelvic and thigh musculature, as well as a balance of lower abdominal strength. The thigh muscles originate off of the pelvic girdle, which is the center of core stability. A variety of muscles are constantly working against each other during the breaststroke kick. Flexibility is essential in the following muscles: quadriceps, hamstrings, adductors (inner thigh), abductors (outer thigh) and hip rotators. Often there is an imbalance between the strength of the quadriceps over the weaker hamstrings. The hamstrings get overloaded and strained, possibly leading to a groin injury. Preventing groin injuries is possible if the proper balance of flexibility among different muscle groups as well as a balance of flexibility and strength throughout the hip and pelvic muscles is maintained.

The Neck and Back

The anatomy of the neck is very complex due to its function and great mobility. The bony part of the neck is known as the cervical spine and consists of seven vertebrae. The spinal cord runs through the vertebrae, from the brain to the lower back, with offshoots, known as spinal nerves, exiting between the vertebrae. These spinal nerves travel to the muscles, joints and skin of the hands, arms, shoulders, shoulder girdles, superficial muscles of the upper and lower back as well as the structures of the neck. Furthermore, there are many muscles in the neck, several of which span the neck and upper back. This means that pain, tingling, numbness or weakness in any of the areas mentioned above may originate in the neck.

Technique and Injury

In many cases, pain during swimming is related to technique. In some cases, poor technique causes pain, while in other cases, pain forces poor technique. Shoulder pain can be related to dropping the elbow during the recovery phase of freestyle, inadequate body rotation, insufficient kick to support the pull phase or an over-wide swinging recovery.

Signs that a swimmer may be subject to groin and knee pain include an overly wide or overly narrow breaststroke kick and excessive breaststroke swimming or kicking. Neck and back pain may be related to misalignment between the neck and spine, looking ahead instead of down at the bottom of the pool during freestyle, inappropriate body rotation, unilateral rather than bilateral breathing, failing to tuck the chin during flip turns, excessive movement of the head and neck during breaststroke and untimely breathing during butterfly.

Injury During Practice

If you know or suspect that a swimmer is experiencing severe pain during swimming, remove the swimmer from the workout. Notify a parent or guardian as soon as possible and encourage him or her to contact their health-care provider immediately. The health-care provider may refer them to a sports medicine practitioner for an evaluation and diagnosis. Consider attending the appointment (with the athlete's and parent's permission). Also consider inviting the sports medicine practitioner to a workout for an on-site technique evaluation or discussion.

If you know or suspect that a swimmer is experiencing slight to moderate discomfort during swimming, evaluate the stroke immediately and modify it appropriately. If discomfort persists, the swimmer should discontinue that stroke immediately. Again, notify the parent as soon as possible and encourage the parent to contact their health-care provider. In the example, Coach Russell followed all of the advised steps with his swimmer.

Other Causes

Keep in mind that not all pain and injuries in swimmers are directly related to swimming. Some pain, particularly chronic neck pain, may be related to improper ergonomics at school or work. Is the computer screen at eye level? Does the chair offer good back support? Is the keyboard positioned so that the forearms are parallel to the floor, with the shoulders relaxed? Other causes of pain include consistently clamping the telephone between the ear and shoulder, carrying a heavy shoulder bag slung over one shoulder instead of a backpack using both straps, carrying an excessively weighted backpack, bicycling with the head held in constant extension and poor posture.

Prevention

It is well-established that a comprehensive program to develop strength, endurance, balance and flexibility of the muscles is the most effective way to prevent swimming in-

jury and pain. Keeping in mind that no muscle or muscle group acts by itself during swimming, the muscle groups involved in injury prevention exercises should be the same muscle groups involved in the swimming motion.

Resources for injury prevention can be found in the [Coaches' Section of the USA Swimming](#) Web site and the *American Red Cross Sport Safety Training Handbook* (Fig. 4-3). Note that exercises for injury prevention should be performed after practice or several hours before practice. **Do not do these exercises right before the workout.** You do not want to fatigue these muscles before swimming.

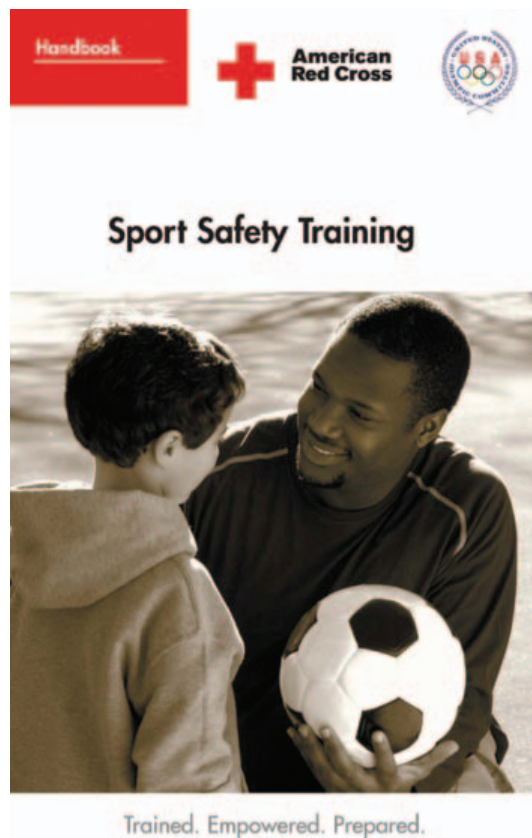


Fig. 4-3

GLOSSARY

Age group: Classification generally applied to swimmers aged 14 and under.

Circle swimming: A technique employed to allow multiple swimmers to swim in the same lane simultaneously. The most common pattern is counterclockwise with all swimmers keeping to the right hand side of the lane.

Emergency action plan (EAP): A written plan detailing how coaches and facility staff are to respond in a specific type of emergency.

Equipment bag: A mesh bag that usually contains a swimmer's training equipment, such as goggles, fins and pull buoys.

Hyperventilation: A dangerous technique in which swimmers try to swim long distances underwater by taking a series of rapid deep breaths in succession and forcefully exhaling in order to increase the amount of oxygen they breathe.

Local swimming committee (LSC): The local governing bodies of USA Swimming. There are 59 LSCs. [Click here for an LSC map.](#)

Long-term inhalers: Inhaled medication that is used to prevent/avoid an asthma attack; designed to be taken prior to exercise.

Natatoriums: Swimming pool(s) that are housed in their own building. Natatoriums are common at colleges and universities.

Quick relief inhalers: Inhaled medication that is used to stop an acute asthma attack.

Repeat: A training swim of a certain distance repeated a prescribed number of times with either a set rest interval or to be completed in a prescribed time which includes the swim and rest period. Example: 10 × 100 yards with 30 seconds rest or 10 × 100 yards @ 1:30 (leaving the wall every 1 minute and 30 seconds).

Send-off intervals: The prescribed time between swimmers' departures from the wall. The most common send-off interval is 5 seconds (i.e., the swimmers leave the wall 5 seconds apart).

Senior: A term generally applied to swimmers aged 15 and over and/or to those who compete at a regional or national level.

Tornado warning: A warning issued by the National Weather Service notifying that a tornado has been sighted.

Tornado watch: A warning issued by the National Weather Service notifying that tornadoes are possible.

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