

# Teaching Starts Using Backstroke Ledges

**B**eginning with the start of the 2025-26 school year, state association adoption may permit the use of backstroke ledges during swimming competitions. Minimum water depth is 6 feet (1.84 meters) measured at the starting end extending out 16 feet, 5 inches (5 meters) from the starting end wall. Associations that adopt the use of backstroke starting ledges in competition must clearly articulate the importance of a teaching protocol implementation for their high school competitors to minimize risk. The implementation of backstroke ledges requires clear, structured education protocols, which are outlined below. This practice allows swimmers to understand the proper technique and familiarize themselves with the adjustments required to achieve an optimal backstroke start. Coaches should ensure that their athletes have sufficient training time with the ledge to minimize any performance disruptions during actual competition. By following these guidelines and maintaining a clear focus on skill progression, safety, and controlled environment practices, the use of backstroke ledges can be safely integrated into swimming training sessions and competition.

## General Instructions – before you teach, ensure:

1. Swimmers can step in feet first into deep water, surface, turn around, level off and swim 10 feet.
2. Swimmers can demonstrate correct hand, arm, and head position. Practice a tight streamline on dryland.
3. Swimmers can maintain a tight streamline on a forceful push-off and glide underwater on their back.
4. The coach and the swimmers know the water depth (minimum 6 feet).
5. Starting blocks are tightly secured to the pool deck and are of size and height regulations.
6. Swimmers enter the water feet first with one hand on the deck. Swimmers should not grasp backstroke start bar or starting block while entering the pool.

7. The lane is clear of other nearby swimmers.

8. Starts utilizing backstroke ledges may take place as long as the water depth is at least 6 feet deep from the end wall and the depth is maintained 16 feet, 5 inches from the starting end wall.

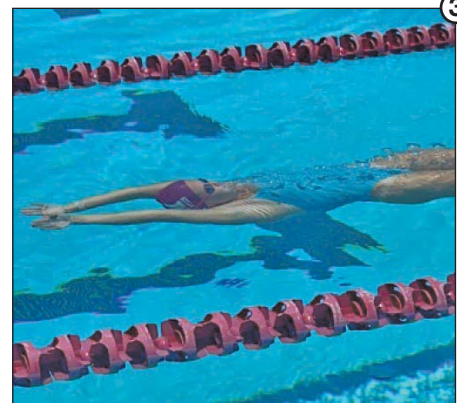
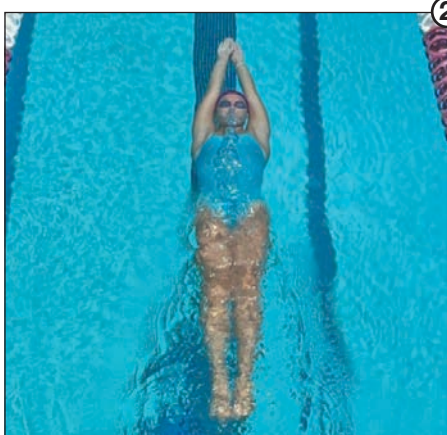
**Note:** Confirm with your state association for any conflicting depth regulations.

## Teaching Backstroke Starts Without the Ledge:

1. Instruct swimmers in the step-by-step progression BEFORE using the backstroke ledge.

**Prerequisite:** Swimmer can hold their arms in a tight streamline on a forceful push from the side and glide underwater on their back before adjusting their hands to come to the

### Tight Streamline Push To Shallow Angle



surface at an angle.

### Progression Recommendations:

Swimmer gets into position with the hands grasping either the gutter or the lower bar on the blocks, whichever is closest to the water surface. For foot position, at least one toe of each foot must be in contact with the end wall or face of the touchpad. The swimmer performs a shallow backstroke racing start following the steps listed in the Teaching Backstroke Starts (Detailed Protocol).

Once mastered, coach may teach swimmer to use the lower bar on the block, if in the coach's opinion the athlete is tall and strong enough to handle this skill safely.

2. Always have swimmers hold arms fully extended overhead during entry in a tight streamline.

3. Do not perform entries over

### Ready Position Without Ledge



**Take Your Marks Position Without Ledge**



stationary objects like poles, lane lines or kickboards.

## Teaching Backstroke Starts With the Ledge:

1. Instruct swimmers in the step-by-step progression BEFORE using the backstroke ledge and the starting blocks.

**Prerequisite:** Swimmer has mastered backstroke starts without the ledge.

**Progression Recommendations:** The swimmer gets into position with the hands grasping either the gutter, the lowest bar or handgrips on the block, whichever is closest to the water surface. For foot position, the front balls of the feet are on the ledge with at least one toe of each foot in contact with the end wall or face of the touchpad. The swimmer performs a shallow backstroke racing start following the steps listed in Teaching Backstroke Starts (Detailed Protocol).

Once mastered, the coach may teach swimmer to use the lowest bar on the blocks, if in the coach's opinion the athlete is tall and strong enough to handle this skill safely.

**Note:** Research has shown that older, larger and stronger swimmers can generate more height. Consequently, the risk of reaching greater depths with the ledge is more pronounced with these athletes.

2. Always have swimmers hold

**Ready Position With Ledge**



**Take Your Marks Position With Ledge**



arms fully extended overhead during entry in a tight streamline.

3. Do not perform entries with arms at sides.

## Teaching Backstroke Starts (Detailed Protocol):

1. Have the swimmer grasp the pool edge at water level with both hands and place their feet on the wall, either

parallel or slightly staggered. Arms should be straight and relaxed, eyes looking forward at the wall. Swimmers who are older, larger or stronger, and are comfortable reaching a bar on the starting block, can do so. Have the athlete keep their feet placed near the surface of the water.

2. On the command "Take your marks," the swimmer should bend their arms and legs to pull their body up and closer to the wall. Swimmers learning the start should pull up slightly to a level their strength can handle. Swimmers who are comfortable and strong enough to grip the bar can pull up more, with the hips at the surface of the water or just above.

The swimmer should adjust the angle of their back so their body is ideally positioned to jump off the wall while not slipping. With their back perpendicular to the water, they may be less likely to slip but their legs may be too tightly bent to get the best jump. To get into this position, have the swimmer bend their legs more to bring the hips closer to the wall or bend their arms less. Alternatively, with their back leaning towards the wall, they may be more likely to slip, but it may be easier to extend their legs to push away from the wall. To do this, have the swimmer bend their legs less so their hips are further from the wall or have them bend their arms more. This position may be better suited with a ledge.

The backstroke start position should be individual to each athlete, their strengths and comfort. Try experimenting with different combinations of knee bend, arm bend and back angle to find the best position for them.

3. On the starting signal, the swimmer should throw their head back to a neutral position, which is generally in line with the spine. Simultaneously, they should throw their hands from the edge or starting block straight back over their head. They should push forcefully with their legs to jump upward and away from the wall while arching their back and driving their body, hands first, up over the water. The swimmer should kick their feet up to ensure they get over the water and into full streamline.

4. The athlete should tip their head back and get into a streamlined

position. The goal is to have a clean entry and maximize forward speed by not going too deep. Their hands should enter before their back, and their back should enter before their legs. To improve their entry position and depth, athletes should adjust how high and away they jump off the wall while also working on kicking their feet up. A higher jump may lead to a cleaner entry but may also be deeper, which is not preferred.

5. Once in the water, athletes should adjust the angle of their hands and/or head for a horizontal streamlined glide. They should straighten their back to avoid going excessively deep.

### Teach Your Swimmers the "Do's" and "Do Not's" for Starts:

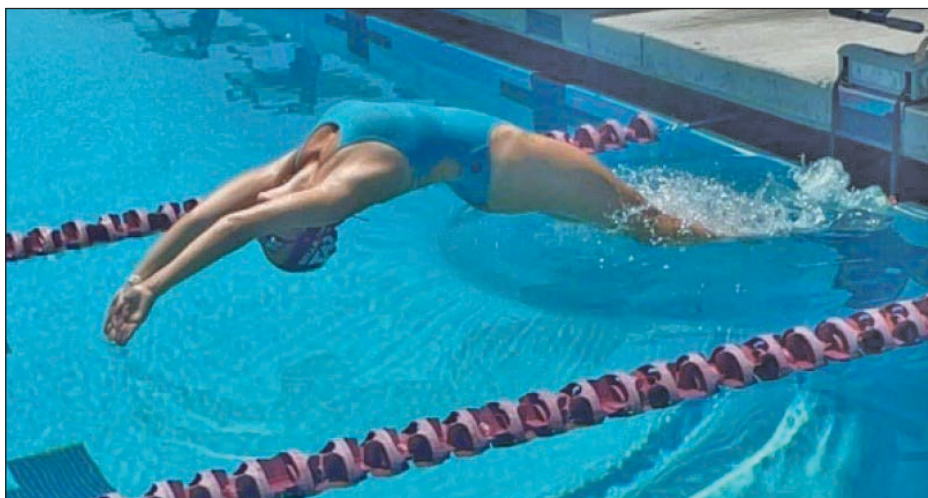
#### Do:

1. Use starting blocks and backstroke ledges only during controlled swim practice, instruction, supervised warm-up or competition.
2. Know the water depth and location of pool floor slopes. Use feet first entry.
3. Use feet first entry in warm-up and always enter at the starting end of the pool.
4. Look to make sure the lane is clear of other nearby swimmers before entering the pool.
5. Enter the water only with permission of the coach or meet official.
6. Use a shallow angle entry and hold arms fully extended overhead.
7. For backstroke start practice, have the swimmers slip into the water feet first with one hand on the deck.

#### Do Not:

1. Start a water entry until the preceding swimmer has come to the surface and moved away from the entry area.
2. Make a headfirst entry into cloudy water.
3. Play around on the starting blocks or the pool edge.
4. Attempt to abort a poor start or a false start by somersaulting, pulling up quickly or rolling to the side.
5. Attempt a somersault or flip entry into a competition pool.
6. Enter headfirst with the arms at the side.
7. Grasp backstroke start bar while entering the pool for backstroke start practice. ■

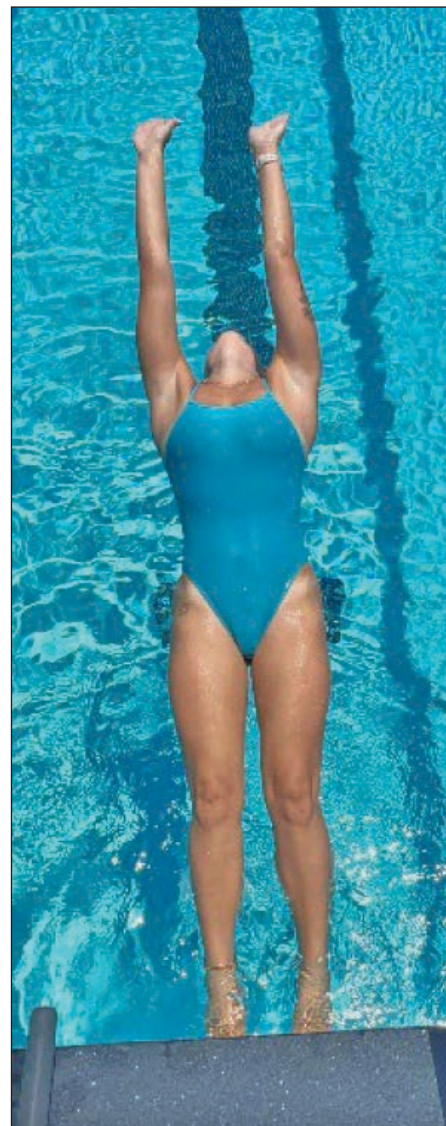
Head in Neutral Position



Starting Position: Perpendicular



Hands Straight Back



Starting Position: Leaning Forward



# Backstroke Ledges: Best Practices and Education Prior to Competition

## Introduction

The change to NFHS Swimming and Diving Rule 2-7-3, which was adopted by the NFHS Swimming and Diving Rules Committee in March 2025, represents an important milestone in high school swimming by authorizing the first new piece of equipment to be approved in many years. The rule itself takes a minimalist approach to something that, for better or for worse, has complex manifestations.

The issues about the use of the backstroke starting ledge begin with concerns for athlete safety but definitely do not end once that concern has been properly addressed. Requirements for safe use, and sanctions for misuse, must also be addressed. Most of that task is placed, by the new rule, in the hands of the individual State Associations that comprise the NFHS, which are mandated to create a state association policy for use of the ledges once certain parameters are met.

## Due Diligence

For a number of years, NFHS rules have specifically prohibited use of ledges for backstroke starts due principally to lack of sufficient information to assure the devices are safe for high school swimmers. Several studies involving the use of the ledges had been performed, beginning in 2017. The first research project, conducted by lead researcher Dr. Joel Stager at Indiana University, provided some information useful to rules makers, and it also pointed out glaring omissions in the knowledge base related to the ledges.

Most recently, the NFHS specifically developed study parameters that addressed the unique environment of high school swimming competition. This second research project led by Dr. Brian Wright at DePauw University, completed in early 2025, was the result of generous financial support from the Southern Section office of the California Interscholastic Federation, a member of the NFHS. Completed in early 2025, this research provided reliable information

concerning such matters as necessary water depth, pool configuration, starting rules requirements, and other aspects related to the backstroke start. Based upon the data provided to the committee, the new rule was developed and adopted.

## State Association Policy

The new rule mandates that the use of ledges is only permitted in high school swimming within the framework of a specific policy of the State Association (hereafter SA) for that purpose. There are a number of considerations that can be included in such a policy. The following list of topics is neither exhaustive nor absolutely essential; rather, it is a comprehensive

suggestion of things the state association may wish to consider as the framework guiding the potential adoption of this new equipment.

**The Equipment:** While the rule provides specifications, a variety of commercial options are available across a wide price spectrum. Will the state association specify that the devices to be used must be provided by a particular manufacturer or group of suppliers? Will the state association permit the use of “homemade” devices that meet rule specifications? State association policy should highlight that identical devices must be provided for all lanes, and ledges must be properly attached to the end wall or starting platforms.

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**Approved Pools:** The state association may wish to develop a list of facilities within its jurisdiction that meet rule requirements and are approved for high school competition, including all meets up to and including the state championship. Such a list should include collegiate and non-education-related facilities that might be used for high school competition.

**Athletes' Preparation:** What specific training must an athlete receive before using the ledge OR will athletes be permitted to use the device without any specific training? Can the ledges be used if athletes participating in the competition at that facility have not been trained?

**Coaches' Training:** What requirements must coaches meet to be considered qualified to train athletes in the safe and effective use of ledges? How will preparation and training of coaches be monitored?

**Officials' Training:** While an official's role in implementing the use of ledges under the new rule is minimal, officials will need instruction in patiently dealing with athletes. Further, any state association expectations contained within its policy must be effectively communicated to all officials overseeing high school swimming competition conducted under the aegis of the state association.

**Discretionary Use:** To what extent will local meet hosts have discretion over whether to use the ledges, if their facility meets rule requirements? Please note that the backstroke starting ledge is NOT a required piece of equipment within the framework of the NFHS

rules code. State Associations will need to determine the level of expectation for use of ledges for all levels of competition: dual meets, invitationals and championships. Of note, individual swimmers may choose not to use a ledge, with no sanction imposed.

**Practical Concerns:** Again, a few suggestions but not an exhaustive list...

- If a device malfunctions, what are the consequences for the outcome of that race? Are sanctions imposed?

- Removal of the devices: When is the device to be removed in the context of the event (medley relay, 100 back)? Who is responsible for removal? What consequences evolve if the device is not removed and it interferes with a swimmer's performance or with electronic data? Are sanctions imposed?

- What happens if a single device is unusable at the start of an event? Will all devices be removed? Will the swimmer in that lane be relocated?

### Athlete Preparation

In collaboration with USA Swimming, various training materials are being made available to NFHS member associations to assist in the essential process of instructing athletes in the safe and effective use of backstroke starting ledges. From these materials, athletes, coaches, parents and others will receive information on the specific knowledge swimmers must have. These materials are available on the NFHS website [www.nfhs.org](http://www.nfhs.org), on the Swimming and Diving page.

### Coaches' Training

Providing athletes with proper instruction for using ledges requires a conscious and intentional effort by coaches. To assist coaches in establishing their own athlete training curriculum, NFHS is collaborating with USA Swimming to provide the necessary materials. We are hopeful that NISCA will assist in this process to infuse/enhance/enrich these materials with the values of education-based athletics. Safe and effective use of this new equipment will require focused effort by coaches, supported by what we can provide to them.

### Officials' Training

While the new rule does not require significant officiating involvement, oversight of the use of the equipment definitely requires additional information for officials. The state association may wish to devise a training curriculum for its officials' organizations to assure that relevant matters are built into officials' training as they prepare for each high school season. Of special concern is the need that officials be well-versed in how to be useful collaborators with athletes in the use of this equipment.

Some other matters to be considered: Will officials be expected to assess whether ledges in use meet rule specifications? Under what conditions may/should officials prohibit use of ledges? What is the official's role in overseeing the removal of ledges after the start?

### The Need For Patience

For all parties involved in the use of this new equipment - athletes, coaches, officials, meet administrators - a vital element will be an increased level of patience as we all learn how to use this equipment safely and effectively in the high school swimming environment. In the medley relay and 100 backstroke events, ledges will need to be installed (and then removed quickly) FOR EACH HEAT. Based upon observation of and experience with collegiate swimming competition, such installation can easily add 1-5 minutes PER HEAT to meet duration. Officials will need to contribute a considerable level of patience in this context. They should be given significant training in how best to collaborate with athletes during the installation process.

### Conclusion

This essay was prepared from materials written and/or reviewed by several individuals in preparation for the NFHS rules committee discussion of the proposed changes to Rule 2-7-3 and related rules. Major contributors include Sandy Searcy (NFHS), Brian Wright (DePauw University), Rod Garman (NFHS Rules Committee Chair), Linda Simons and Doug Glaeser (Southern California Aquatics Federation). ■

## QUICK TIP

**Take care of yourself before you take care of a meet. Like the athletes themselves, officials should work to get a good night's sleep and proper nutrition prior to an event. Eating a protein-packed breakfast and consuming plenty of fluids will help you perform your duties.**