Shallow Water Black Out

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What is Shallow Water Black Out?

SWB is loss of consciousness caused by oxygen starvation to the brain in water less than 5 meters deep.

Can also be called cerebral hypoxia or hyperventilation proceeding extended breath-holding.

Thought to be the number one cause of drowning in experienced swimmers, specifically young adults.

Unlike a regular drowning where there may be 6-8 minutes before brain damage and death, there are only 2.5 minutes before brain damage and death in shallow water black out due to the reduction in the oxygen to the brain BEFORE the black out.

In many cases the swimmer hyperventilates, swims underwater for a relatively short distance, and dies silently after black out.
The Role of Hyperventilation

Over breathing involves faster or deeper than normal breathing with the MISTAKEN belief that this increases body oxygen (O2) saturation.

Hyperventilation effectively drives DOWN the carbon dioxide level with as few as 4-5 breaths (HYPOCAPNIA).

The urge to breathe or exhale is triggered by RISING CO2 in the bloodstream.

Under water the low CO2 levels rise very slowly and the starting point is so low that there is a delay in the respiratory drive to breath causing the swimmer to be susceptible to a blackout from hypoxia.

In many cases the loss of consciousness triggers a deep breath under water flooding the lungs with water.
How can we reduce the risk?

- Education ... swimmers, parents, coaches, lifeguards
- NEVER swim or train alone
- Before diving take a minute to relax and re-equilibrate oxygen and carbon dioxide levels
- Do not encourage prolonged breath holding or hypoxic training
- Do not encourage hyperventilation...it does not improve oxygen capacity
How can we reduce the risk?

Teach swimmers to recognize the urge to breath.

Do not allow swimmers to practice breath holding while floating face down or while sitting on the bottom of the pool, the increased relaxation increases the risk of black out.

Recognize that repeated hyperventilation during the course of training sessions increases the risk of black out.

Recognize that increased exertion under water increases the risk by driving the oxygen level down faster.
Develop a Safety Plan

USA Swimming has already instituted safety courses for coaches and background checks for coaches and other adults who have contact with our swimmers... Make sure all USA Swimming required safety regulations are up to date.

Insurance ... Look at all insurance policies for your facility as well as for your board of directors if applicable.

Think about specifics about your team and the day to day operation.

Post reminders on the walls of the pool.

Educate your swimmers about daily safety protocol.
NBAC Safe Practices and Procedures

We ask for total support from all parents at our opening team meeting.

We set up a plan for 20 minutes BEFORE practice and 20 minutes AFTER practice:

- Arrival and departure from each facility
- Upon arrival at the facility
- During practice
- Post-Practice
- During Dryland
- During time in the locker room

Hold team day activities throughout the year to educate parents.

Coach in service training and meetings.