23

EVERYONE CAN BE A LIFESAVER

Royal Life Saving

ROYAL LIFE SAVING SOCIETY - AUSTRALIA

FACT SHEET No.23

Shallow Water Blackout

Q. What is Shallow Water Blackout?

A. The term 'Shallow Water Blackout' is commonly used to describe a loss of consciousness under water caused by a lack of oxygen to the brain following breath-holding. Although the term refers to 'shallow water', it can occur at any depth. It occurs because the normal, protective "breakpoint" – the irresistible urge to breath - has not been reached before consciousness is lost. The most common cause is voluntary hyperventilation before submerging. Hyperventilation, or over-breathing, involves breathing faster and/or deeper than the body requires. There are other less common causes, relating to heart abnormalities, which lead to loss of consciousness in the water following hyperventilation.

Q. What is the "breakpoint"?

A. There are two chemical sensors in the body. These detect levels of oxygen and of carbon dioxide (CO_2) in the blood. These protect us from a lack of oxygen. The CO_2 sensor is the most sensitive; and when CO_2 rises to a critical point the breakpoint is reached first. Normally, when a swimmer is trying to stay underwater for as long as possible, the "breakpoint" forces the swimmer to surface and take a breath. If a person is submerged and the "breakpoint" is reached whilst the mouth and nose are still underwater, the irresistible urge to take a breath occurs, and water is inhaled into the lungs.

Q. Why is hyperventilating prior to underwater swimming, or a dive, dangerous?

A. If the swimmer "blows off" too much carbon dioxide before submerging, it will take longer for the carbon dioxide sensor to force the "breakpoint". This prolonged period may not occur before the oxygen sensor comes into play and the drowning person may lose consciousness underwater.

Q. How common is Shallow Water Blackout?

A. Every year, several Australians drown from Shallow Water Blackout due to hyperventilating before they submerge. Drownings have been recorded whilst free diving in the ocean; and at public pools where people train for sports such as underwater hockey or synchronised swimming. There are recorded cases of children or young people hyperventilating or trying to swim long distances underwater and then drowning, even in home swimming pools.

Q. Is it dangerous?

A. Shallow Water Blackout is extremely dangerous. Medical science has not yet established how many breaths it is safe to take prior to attempting endurance underwater swimming. Royal Life Saving condemns the practice of hyperventilation before participating in prolonged underwater swimming.

Q. Is all breath holding dangerous?

A. No. Simply holding one's breath whilst swimming underwater is not dangerous in and of itself. When the carbon dioxide "breakpoint" is reached, the swimmer cannot resist coming to the surface to breathe, and normal oxygen levels result. Breath-holding itself, without hyperventilating, is a completely normal practice and in itself carries limited risk.

ROYAL LIFE SAVING HAS DEVELOPED A NUMBER OF FACT SHEETS ON WATER SAFETY ISSUES IN AUSTRALIA.

Contact Royal Life Saving on: **1300 737 763**
or download them from: **www.keepwatch.com.au**

Checklist:

Victims of Shallow Water Blackout should be treated as you would treat any normal drowning victim, using DRSABCD. See also Fact Sheet 4 – Resuscitation.

- ☐ Check for Danger to self, to bystanders and to victim (DANGER)
- ☐ Shout "Are you ok?" and gently squeeze the victim's shoulder (RESPONSE)
- ☐ Send for help (SEND)
- ☐ Clear and maintain airway (AIRWAY)
- ☐ Look, listen and feel for breathing (BREATHING)
- ☐ If no signs of life, commence CPR (COMPRESSION)
- ☐ If available, grab a defibrillator and follow the prompts (DEFIBRILLATION)

NEVER HYPERVENTILATE BEFORE ENJOYING UNDERWATER AQUATIC ACTIVITIES

Proudly Supported by

Australian Government