

# Breath-Holding Policy – Background Info

## Scope

This document defines the user rules for activities involving breath-holding in the recreation and sports facilities of the Christchurch City Council .

Breathing control techniques as part of normal swimming activities and teaching, tutoring or coaching of breathing control are considered *normal swimming practices* and are **not covered** under these guidelines.

These guidelines **do not apply** to the use of underwater swimming or breathing using self-contained breathing apparatus (SCUBA) and/or associated equipment.

These guidelines should be read in conjunction with the current version of the Recreation & Sports Unit Aquatic Facilities Normal Operating Procedures.

## Definitions

### **Breath-holding (Apnea)**

*Breath-holding (or Apnea)* is defined as a temporary cessation of respiratory movements.

### **Static and Dynamic Apnea**

*Static apnea* is a practice and competitive sport in which enthusiasts attempt to increase the time spent breath holding underwater in a static or motionless position. The sport is practiced in pools and/or seawater, usually lying or sitting on the bottom and may include the use of weights. *Dynamic apnea* is a breath-holding practice whereby participants travel in a horizontal position underwater without aid for the maximum possible distance achievable<sup>1</sup>.

### **Breath-holding activity**

The definition *breath-holding activity* applies, but is not limited to, the following aquatic activities: static apnea; dynamic apnea; training or practice for activities related to freediving; practice or training in preparation for swimming distances underwater; competitive sports and/or recreational games which require underwater breath-holding; any other activity in which a person holds their breath for a period of time greater than is reasonably required necessary for normal swimming activity.

### **Hypoxia**

*Hypoxia* is defined as a deficiency in the amount of oxygen reaching body tissues or a condition in which tissues of the body are being starved of oxygen. A subnormal concentration of oxygen, the extreme being anoxia.

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<sup>1</sup> Currently two international associations, AIDA and CMAS, govern the sport of static and dynamic apnea as well as other competitive freediving sports including underwater depth and distance swimming with and without the use of fins and/or weights.

## **Anoxia**

*Anoxia* is a condition characterised by an absence of oxygen supply to an organ or a tissue, sometimes used loosely as a synonym for hypoxia. Anoxia results when oxygen is not being delivered to a part of the body.

## **Hyperventilation**

*Hyperventilation* is defined as an excessive rate and depth of respiration leading to abnormal decrease of carbon dioxide (CO<sub>2</sub>) from the blood (a condition called *hypocapnia*). Swimmers may induce this condition by executing a series of deep breaths followed by forced exhalations prior to breath-holding. As CO<sub>2</sub> is responsible for triggering the need to breathe, with less CO<sub>2</sub> a swimmer will not feel the need to take a breath as quickly, however, oxygen levels are still being depleted. Hyperventilating is performed in an attempt to remain underwater for a longer period of time by reducing the need to breathe.

## **Shallow Water Blackout**

*Shallow Water Blackout* is a sudden loss of consciousness caused by oxygen starvation of body tissues towards the end of a breath-hold dive, when the swimmer does not necessarily experience an urgent need to breathe and has no other obvious medical condition that might have caused it. Oxygen levels can be depleted more quickly if the swimmer is moving or swimming rather than remaining stationary.

If oxygen levels in the blood drop sufficiently before the body's CO<sub>2</sub> levels trigger the need to breathe, the swimmer may become unconscious. Water may enter into the lungs of unconscious swimmers and they will require immediate rescue and appropriate resuscitation.

The depth of water has no real relevance to shallow water blackout, it may occur in shallow water.

## Introduction

Some amount of breath-holding is inherent in any swimming activity. However, it is important to differentiate between *breathing control* and *breath-holding* activities in the water.

In both swim instruction and competitive swimming, breathing control is an essential element of proper technique in the water. Rhythmic breathing techniques are routinely taught early in swimming lessons in order to build confidence in the water and in order to improve swimmer technique and reduce torso rotation during the stroke. Competitive swimmers also engage in anaerobic exercise which involves limited breath-holding

Breath-holding (including hypoxic training) differs from breathing control. In breath-holding, the swimmer purposefully attempts to hold his/her breath for as long as he/she is able, either motionless or whilst swimming distances underwater. This practice can be potentially dangerous as it can starve the brain and body tissues of oxygen causing hypoxia.

Hyperventilating prior to breath-holding can reduce carbon dioxide in the body to levels which fail to trigger the body's natural response to breathe.

## Considerations for Pool Staff

- Repetitive breath holders and hypoxic trainers can contribute to difficulties for professional lifeguards as they may not fit the profile of a typical 'at risk' swimmer. Being mainly

competitive swimmers, divers, free divers and high-performing athletes, lifeguards may be less likely to consider these individuals as potentially 'at risk'.

- Lifeguards are trained to regard anyone who is submerged or face down and motionless as a passive drowning victim and they are required to check on the victim's condition immediately. It is difficult, therefore, for lifeguards to know when a breath holder (static apneist) requires assistance due to the very nature of the sport.
- When lifeguards are required to supervise breath-holding activities in a facility it may adversely decrease the level of attention required for other persons using the pool.
- It may be more difficult for lifeguards to detect a breath-holding problem event as the scenario may develop inconspicuously at the bottom of the pool, rather than at the water surface<sup>2</sup>.
- Unless specific training has been provided, lifeguards may not appreciate the potential risks of breath-holding swimming activities. All lifeguards should be aware and trained to recognise the signs and symptoms of hypoxia and be competent to offer the appropriate first aid in an emergency.
- Staff should monitor activities to ensure the prevention of accidental hyperventilation, for example, users performing strenuous exercise prior to entering the pool.

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<sup>2</sup> Anecdotal evidence exists to suggest lifeguards who have missed victims on the bottom thought the body was a blemish, or "smudge" or even a towel, not a swimmer requiring assistance.

## Guidelines

Recognising that the primary role of Christchurch City Council's aquatic facilities is to offer recreational swimming and leisure activities to the local community and with the safety of all facility users being paramount, it is important to recognise that any breath-holding activity can be potentially dangerous and therefore its use is restricted.

The Unit Manager or his/her nominated representative shall make any final decision regarding activities under these guidelines.

### Prohibited activities:

The following activities are **prohibited**:

1. The practice of, or training for, or competition involving, any breath-holding activities involving static apnea.
2. Hyperventilation in a deliberate attempt to increase the time spent underwater or otherwise.
3. Any breath-holding activity being performed within swimming areas that have not been pre-approved.
4. Any activity not satisfying the requirements detailed under 'Management of permissible breath-holding activities' (below)

### Permissible breath-holding activities:

Breath-holding activities which are **permitted**, subject to the requirements detailed under 'Management of permissible breath-holding activities' (below), include, but are not limited to:

1. Dynamic apnea (purposely breath-holding whilst swimming underwater distances)
2. Competition and/or recreational games which involve some requirement to breath-hold.
3. Breath-holding during training, coaching or supervision involving diving from a board (board diving) or platform.
4. Breath-holding during training, coaching or practice involving water craft such as kayaks or canoes.
5. Breath-holding activities during practice or training or assessment of personnel including, but not limited to, lifeguards, rescue workers and safety officers.
6. Breath-holding during training, coaching or supervision involving synchronised swimming activities.

## Management of permissible breath-holding activities

### During normal recreation swimming periods

Breath-holding activities during normal recreation periods or as part of public recreational swimming times are prohibited and must be pre-booked (refer to 'Facility booking requests by an external user/body').

### During swimming programmes

Breath-holding activities as part of teaching, tutoring or learn to swim programmes, on behalf of the Christchurch City Council, are permitted under these guidelines, providing that the activity:

- forms part of an approved teaching programme or series of planned lessons.
- is supervised by an appropriately trained and competent employee or other authorised person.
- adopts approved emergency procedures.
- adheres to all other Christchurch City Council policies and procedures.

### Facility booking requests by an external user/body

External individuals, groups or organisations may request the use of Christchurch City Council's aquatic facilities to partake in activities which include breath-holding. All requests are subject to the following conditions:

- All breath-holding activities must be pre-approved by the host facility subject to the requirements of the facility.
- All breath-holding activities shall be performed in a designated roped lane or other pre-approved area of the facility, which is free from other users not involved in the activity.
- Prior to any breath-holding activity commencing, the Unit Manager, or other authorised person, shall agree and be satisfied that acceptable emergency plans and procedures are able to be implemented and that all participants are aware of these procedures and the appropriate action to be taken in an emergency including the use of any specialised rescue equipment.
- All permitted breath-holding activities shall have a nominated person in charge appointed and this person shall be responsible for ensuring that:
  - i. the on-duty Pool Supervisor is notified of the start and completion of all breath-holding activities.
  - ii. all participants shall adhere to pool rules and facility terms & conditions.
  - iii. all participants involved in approved breath-holding activities shall be over 16 years of age or provide parental/guardian approval in writing prior to participation in any breath-holding activity.
  - iv. all participants involved in any permitted breath-holding activity are aware that breath-holding activities can be potentially dangerous.
  - v. users adhere to all reasonable directions and/or instruction of any on-duty qualified lifeguard at all times.
  - vi. all participants are reasonably fit and healthy to partake in the activity.
  - vii. appropriate levels of supervision are allocated at all times.
- All participants involved in approved dynamic apnea training, practice or activity shall have a nominated person to act as a safety swimmer ('buddy'). The buddy shall remain in the immediate vicinity of the breath hold swimmer at all times so as to offer immediate assistance if required.
- The Pool Supervisor has the authority to prevent any activity at any time if he/she believes safety is being or about to be compromised.