In loving memory, Jack MacMillan
11.10.00 ~ 29.01.13

Our mission is to help prevent avoidable drowning deaths from shallow water blackout through awareness and education.

www.shallowwaterblackout.org

To learn more, please visit; BREATHE to LIVE

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As seen on

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Shallow Water Blackout Australia
Drowning Awareness & Prevention

Are YOU aware of the RISKS & DANGERS of breath-holding in water ??

BREATHE to LIVE

www.shallowwaterblackout.org

Brochures proudly supplied by:
Underwater breath-holding is not well known because when Coroners rule drowning with water in the mouth, they frequently dismiss it as an act of “passing out” due to lack of oxygen. People who hold their breath while swimming or practicing breath-holding underwater in pools are at risk of “passing out” due to lack of oxygen.

**WHAT**
When oxygen levels fall to a critically low level, blackout/fainting is instantaneous and frequently occurs without warning. Carbon dioxide levels in the blood are primarily responsible for triggering the swimmer’s urgent desire to breathe. When the level of carbon dioxide in the blood is driven to artificially low levels as a result of hyperventilation or excessive breath-holding activities, the urgent desire to breathe trigger is diminished. This artificial method of “fooling the body into thinking it does not need oxygen is deadly, as it lures the breath-holder into believing he/she can hold their breath longer than they safely can.

**WHEN**
It frequently occurs WITHOUT ANY WARNING of its onset. In fact, because of the hypoxia one often feels euphoric and empowered to continue breath-holding. Unlike regular drowning where there can be 6-8 minutes before brain damage and death, there is ONLY about 2 minutes before BRAIN DAMAGE and or DEATH occurs with SWB.

**WHO**
Even the best swimmers can succumb to SWB. Shallow Water Blackout affects the physically-fit swimmer, but can affect anyone breath-holding underwater. Unsupervised breath-holding drills conducted in swimming pools are often disregarded and currently misdiagnosed as accidental drownings.

**WHERE**
It can occur in any body of water when breath-holding, with or without lifeguards present. Shallow Water Blackout is hard to detect from above the water.

**WHY**
Shallow Water Blackout deaths occur because of LACK OF EDUCATION and UNDERSTANDING of the dangers of breath-holding. Lack of safety training for swimmers, freedivers, snorkelers, and spearfishermen also contribute to the frequency of Shallow Water Blackout drownings.

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### NORMAL DIVE

<table>
<thead>
<tr>
<th>normal breathing</th>
<th>dive</th>
<th>urgent need to breathe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>high CO₂ triggers breathing</th>
</tr>
</thead>
<tbody>
<tr>
<td>O₂ blackout zone</td>
</tr>
</tbody>
</table>

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### SWB DIVE

<table>
<thead>
<tr>
<th>hyperventilation</th>
<th>dive</th>
<th>trigger not reached, blackout kicks in</th>
<th>urgent need to breathe</th>
</tr>
</thead>
<tbody>
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</table>

| O₂ blackout zone |

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#### THE FACTS ABOUT SHALLOW WATER BLACKOUT (SWB)
- Underwater breath-holding and underwater swimming have been proudly practiced for decades.
- Coaches and military trainers teach hypoxic training and breath-holding, which can be deadly.
- Lifeguards and parents routinely accept and admire breath-holding drills conducted in swimming pools.
- Swimmers, freedivers, and spearfishermen, not safety trained, practice hyperventilation routinely.
- Internet sites promote and encourage breath-holding contests, games, and records.
- Because of their false sense of safety, swimming pools are often the sites of SWB, however SWB can occur in any body of water.
- Hypoxic training, breath-holding, and underwater swimming that lead to drowning and sudden deaths, are often disregarded and currently misdiagnosed as accidental drownings.
- SWB is not well known because when Coroners rule “drowning” it masks the real problem: hyperventilation combined with competitive, repetitive breath-holding, leads to SWB.
- Intentional hyperventilation does not have to occur for SWB to happen.
- Unsupervised breath-holders, go undiagnosed due to not being aware of the breath-holding activity.
- Cause of death may be ruled drowning with water in lungs, but lungs may also be dry from laryngospasm and asphyxiation.
- SWB often precipitates other unknown and underlying medical causes like Long Q-T, RyR2, seizures, etc.
- Even the best swimmers CAN succumb to SWB.
- It is our hope and aim, to have hypoxic training and prolonged underwater swimming practices, banned in Australia to help prevent avoidable drowning deaths.

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