Snorkel Guidelines

EMR Snorkel Guidelines information for participants

The Experiencing Marine Reserves (EMR) programme is exactly what the name implies. It is about experiencing, first hand, the difference between local beaches and fully protected marine reserve areas. Snorkelling enables an insight into the marine world. Even standing in waist deep water looking about with a mask on is an experience!

EMR Snorkelling Objectives*:*

- Experience marine life first hand
- Build water safety & confidence in the real environment
- Encourage snorkelling as a recreational and fun activity
- Instil caring attitudes and passion for the conservation of the ocean
- Encourage emotional connection to marine environment

Outline

The first part of the EMR programme is learning about the marine environment in the classroom (dependant on extent of EMR programme participation). If possible, it is encouraged to practice snorkelling in the school pool with an EMR snorkel leader/coordinator, confident teacher or New Zealand Underwater Minidippers trainer. The third stage is an introductory snorkel in shallow water at the local beach (dependant on extent of EMR programme participation). Your EMR coordinator will have already snorkelled at your local beach (or have previous experiences or confidence in the area) and will have identified any hazards or risks. After your local investigation or snorkel, you will then experience a marine reserve (dependant on extent of EMR programme participation).

The EMR Team

EMR is delivered by a team of passionate coordinators nationwide. EMR coordinators/snorkel leaders offer guidance, direction and coordination of classroom exercises and field trips to the ocean. We also provide snorkel equipment, instruction, resources and snorkel risk management.

To find out more about our team of regional coordinators visit http://www.emr.org.nz/information.php?info_id=94

Health and Safety

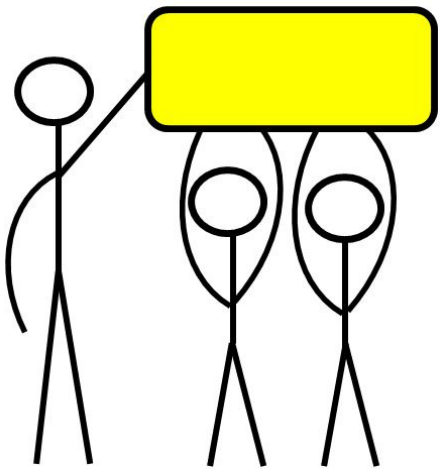
Experiencing Marine Reserves (EMR) is a programme of the Mountains to Sea Conservation Trust. We are a registered adventure activity. Regulation 6(1) of the Health and Safety in Employment (Adventure Activities) Regulations 2011 (the Regulations). For confirmation of our registration go to www.worksafe.govt.nz

TRAINING THE SNORKS – some background information for snorkellers

Equipment

Wetsuits are essential for your safety and warmth. Please take care when fitting wetsuits, and ease the suit on – do not pull. Your mask should feel comfortable and water-tight. A good test is to place the mask on your face (without straps) and inhale gently through your nose. If the mask fits well it will cling to your face. Your snorkel allows you to breathe while you are swimming on top of the water. A mask places a layer of air between your eyes and the water and allows you to see clearly. When using a mask objects appear to be larger and closer. Snorkels have a soft mouthpiece with tags called spriggots for you to grip with your teeth while breathing. The fins help us to propel ourselves through the water. Never walk with your fins on land, as this is a recipe for disaster. Remember to use de-fog rather than spit (unless it is your own mask) to stop your mask fogging up before entering the water. Toothpaste should be used to clean off chemical residue on new masks before use. Your own gear should be maintained by rinsing in freshwater after use. ***For EMR gear refer to the EMR gear care and sanitisation policy on our website*** *www.emr.org.nz*

Body boards are used by EMR as buoyancy aids and for additional visibility. There should be 1 body board per buddy group. Staff running any activity have the authority to cease an activity for any safety reason.



Sound

Sound travels much faster underwater than on land (4 times faster), and this increased speed makes the direction of the sound difficult to determine. This means that the snorkeler must be very aware of boats. Use of a dive flag helps your buddy group to be visible to boats.

Movement

The best way to move through the water while snorkelling is to float face-down while breathing through your snorkel. Fin kicks should be slow, steady and even. Try not to thrash around, as you may scare the fish! Your hands are best by your side to conserve energy.

Temperature

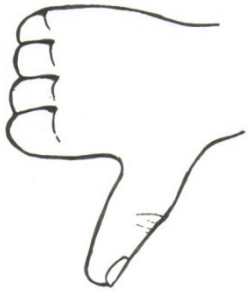
An hour in the water is like a day in air of the same temperature! As we lose heat much faster in the water, it is very important to get out of the water if you begin to shiver.

Communication – hand signals!

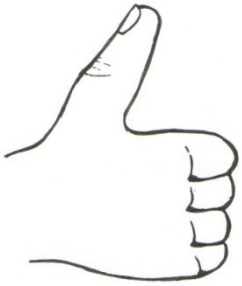
OK on Surface or from distance

OK (checking your buddy)

Distress Signal



Going Down



Going Up

Buoyancy

When objects are placed in the water, they will usually sink or float. When a snorkeler is placed in water, the snorkeler will displace a volume of water equal to the volume of the person immersed. The upthrust is the force pushing us up. When the upthrust is greater than the mass of the object it will float and be positively buoyant (e.g., a wetsuit makes more volume and displaces more water). When equal to the mass of the object, it will just float on the surface and will have neutral buoyancy (e.g., when a snorkel diver has no wetsuit). When less than the weight of the object, the snorkeler is said to have negative buoyancy and sinks (e.g. a snorkeler with no wetsuit and a weight belt). When we wear a wetsuit, it makes us positively buoyant. Weight belts can be used to counter this effect (e.g., you put on a wetsuit in air on the surface and weigh 61 kg and when immersed in water you displace 64 litres of water, the volume and the mass of water displaced (upthrust) would be 64kg, so the snorkeler would float. To counter this we add 3 kg of weight to make up the difference in air (61kg) and water (64kg), this would theoretically make the snorkeler neutrally buoyant. By using a wetsuit with a weight belt snorkelers are able to stay warm whilst enabling diving underwater to look around.

Wetsuits also protect us from abrasions and the sun. We aim to have neutral or slightly positive buoyancy so we can stay on the surface with minimal energy while also allowing you to snorkel dive easily. When buoyancy is neutral, the diver should float on the surface when the lungs are full of air, then slowly sink as they exhale. We must always check ourselves for neutral buoyancy upon entering the water and adjust our weight belt accordingly.

- If you notice a diver struggling to reach the surface, the first thing to do is remove their weight belt.
- When teaching students or novices, we must ensure they are positively buoyant so they will tend to float rather than sink, making them much safer. We do this by getting them to wear a wetsuit but ***NO*** weight belt, unless specific training is delivered in the pool prior to open water for year 8's and below or if the weight belt belongs to the student and they are supervised by their parent

Buddy System

When snorkelling, we must always go with a buddy. The EMR programme recommends a ratio of 1:2 (one adult supervisor to two students) for year 8's and below. You must stay one arm's length from your student and adult buddies. In your buddy group, your adult supervisor will have a buoyancy device (body board), this allows you to hang over the front and get used to seeing and breathing through your mask and snorkel. The body board can be used for resting on or holding on to keep your group together. The use of body boards also makes EMR buddy groups identifiable.

Snorkel Diving

Indicate to your buddy that you are going down using the signals, take a deep breath, duck dive underwater (head first), kick your legs into the air and use your legs and body weight to force you down. Equalise on your way down and point your hand up on return on the way up to avoid collisions. The best way to clear your snorkel is to use the blast method when you reach the surface. To do this you must hold your tongue over the mouthpiece while duck diving and then take your tongue out of the mouthpiece and blow! Always take a cautious breath after clearing your snorkel, in case you did not clear all the water.

If you have water in your mask this can be cleared without taking it off. By using the top of the mask as a hinge and the bottom as a door, tilt your head back and open the door to let water out while exhaling at the same time.

Buddy Cooperation

When snorkelling with your buddy, it is important for you to watch out for each other. While one duck dives down the other keeps watch from the surface and vice versa. This is called the 'one up one down' rule. Practise you're going down hand signal with each other. Make sure you stay together - within one arm's length. Inform your adult buddy if one of you is getting cold. If one person needs to go back to the beach, then the whole buddy group must go back. Never snorkel alone!

TREATMENT OF INCIDENTS IN RELATION TO SNORKEL DIVING

All EMR coordinators are qualified First Aiders. *The most recent information from First Aid trainers should apply to the information below.*

*Priority action plans include SRABCS – Safety, Response, Airway, Breathing, Circulation, and Severe Bleeding**.***

Pressure related injuries or Barotraumas

When diving down under the water the pressure increases, which in turn increase pressure on the ear drum. Air in the middle ear is trapped and can expand and contract inside the ear, causing pain in your ear drum. Therefore, we must 'equalise' the pressure. You can equalise by pinching your nose

and gently blowing. Pressure can also cause a face mask 'squeeze'. Blowing gently into your mask will also equalise the air space between your eyes and the water. Never snorkel with swim goggles, as these cannot be equalised and can cause serious damage to your eyes. Equalisation can also be achieved by swallowing or wriggling your jaw or moving your neck.

Tilting the head back, yawning and moving the jaw around may also help as it will open the Eustachian tube more making equalizing easier. Chewing menthol gum before a dive can help as it also opens the Eustachian tube.

If pain persists when you dive down, then you should stay on the surface of the water. It is also important not to dive under if you have a cold, as this blocks the ear and makes equalisation difficult. Always equalise on your way down gently – never blow hard and do not equalise on your way back up.

First aid treatment for barotraumas involves keeping passages unblocked. If ear bleeding occurs, lay patient down, cover the ears (but do not plug), help the patient to relax and call for medical assistance.

Hypothermia

Hypothermia results when the core body temperature drops to a level it cannot recover from (below 35°C). If exposed for an extended period, cold water temperatures can cause hypothermia while snorkelling. Symptoms include: intense shivering, numbness, slurring of words, loss of coordination, stumbling, clumsiness and changes in behaviour – anxious, irritable, and irrational. While snorkelling, the chances of hypothermia are much reduced by wearing a suitable wetsuit for the water temperature. Typically 7% of our body heat is released from the head, a hood can increase time spent in the water. On land sufficient warm clothes should be worn.

If a person starts to feel cold or begins to shiver, they should exit the water immediately. Later more serious signs are when shivering stops and unconsciousness occurs. When the body drops below 26°C death occurs.

To treat hypothermia move patient to a dry, sheltered area and change them out of wet clothing into warm, dry clothes. Give victim warm sweet liquids to drink if they can (not tea, coffee or alcohol). Avoid warming too quickly, swaddle the patients head. Keep the person lying down and warm with blankets. If symptoms persist and patient shivering decreases or stops, contact emergency services. Severe hypothermia is a medical emergency. Monitor vital signs, CPR may be required. *SRABCS – Safety, Response, Airway, Breathing, Circulation, Severe Bleeding.*

Hyperthermia

Hyperthermia is the opposite of hypothermia and results when the body produces or absorbs more heat than it dissipates. It is caused by excessive exposure to heat. Body temperatures above 40°C can be life threatening and while serious hyperthermia can come on quickly, it usually follows a period of heat exhaustion. Symptoms of hyperthermia initially include sweating profusely but serious hyperthermia occurs when the body is no longer able to sweat due to dehydration. Patients with hyperthermia often become confused or hostile and experience headaches. Blood pressure often drops which can lead to dizziness and fainting. In serious cases, patients may encounter chills and trembling and children may suffer convulsions. Hyperthermia can be prevented by drinking plenty of liquids and keeping out of direct sunlight during the hottest parts of the day. Wetsuits should only be worn just before you enter the water, not for extended periods of time on land. *SRABCS – Safety, Response, Airway, Breathing, Circulation, Severe Bleeding.*

Treatment for hyperthermia revolves around lowering the body temperature and rehydrating the patient. Moving the victim to a cool place and removing clothing can help, but in serious cases immersing the patient in cold water is necessary. Once in a cool area, place the victim in the recovery position and contact emergency services.

Hyperventilation and shallow water blackout

Hyperventilation is sometimes used during breath-hold diving to expel carbon dioxide from the body, reducing the urge to breathe and allowing a diver to stay underwater for longer periods of time. This method is dangerous and can cause shallow water black out where a diver loses consciousness when the body does not get enough oxygen. Shallow water blackouts are avoided by *not* hyperventilating and allowing the body to accurately signal the need to breath. Relaxing at the surface and breathing constantly also reduces the chances of shallow water blackouts. You should always take turns at diving under so if your buddy blacks out you will see this happen.

Unconscious snorkeler - Notify your snorkel leader. Respond by bringing diver back to the surface (if required), achieving positive buoyancy for you and the diver (by dropping weights if wearing a belt and using buoyancy device). In-water resuscitation may improve survival of victims who are in the initial stages of the drowning sequence but delays time to full assessment and CPR .Remove the victim from the water as soon as possible, and only begin in water rescue breathing if immediate removal from the water is delayed or impossible. Rescue breathing in deep water requires an appropriately trained rescuer and floatation aid such as a rescue board, tube or buoyancy vest. In water, chest compressions are ineffective and should not be attempted.

If consciousness not returned, once on shore, remove the diver from the water, commence CPR and call for emergency services.

Near drowning

Near drowning occurs when water enters the lungs. If someone has nearly drowned, it is likely they will be struggling to breathe if breathing hasn't already stopped. They may be frothing at the mouth and show little or no response. Make sure buoyancy is achieved and remove the victim from the water as soon as possible, and only begin in water rescue breathing if immediate removal from the water is delayed or impossible (as explained above). Call emergency services. Apply SBRACS. Perform CPR as required. If patient conscious, keep them sitting up (on their side may also be appropriate) warm and reassured. A near drowning casualty must be seen by a doctor as they may have water in their lungs which can cause secondary drowning. Call 111, for anyone with pale/bluish skin, especially around mouth, increased effort of breathing or persistent cough.

Minor aquatic injuries

Cuts and abrasions are common in a marine environment where there are many sharp rocks and marine life. Most minor aquatic injuries can be treated with your first aid kit for bumps, scrapes and stings. To treat a minor injury, get patient safely out of the water. Keep the person warm and comfortable and monitor their condition.

Flush wound with fresh water or saline and cover with a sterile dressing. Kina spikes are often difficult to remove use a splinter probe and tweezers. If there is any doubt about the persons condition, seek medical assistance. Any large objects embedded in the skin such as a stingray barb or stake should be treated for bleeding, but left in place for medical professional to remove.

Jellyfish Stings (refer to Bites and Stings on our website)

In New Zealand, jellyfish stings are not usually life-threatening but may result in localised pain. Rarely, jellyfish stings may result in an allergic reaction. If the patient is stung by a bluebottle jellyfish, the sting should be washed in warm water. Rubbing can trigger the stinging cells, so do not rub. Use tweezers to remove tentacles. Do not touch with bare hands. To de-activate the stings, use warm water (not boiling). If stinging is severe treat for shock, apply SRABCS and if necessary call for emergency services.

Cramps

A cramp is a painful muscle contraction often caused by cold temperatures or physical exertion. The affected muscle can be stretched and massaged to relieve the pain; your buddy may be able to help with this. You may require assistance getting back to shore (notify your snorkel instructor).

A good calf muscle stretch is to pull the end of your fin towards you gently while massaging the muscle with your other hand. Once on shore, drink plenty of water as dehydration is one of the main causes of cramps. Drinking water before swimming and stretching muscles first can prevent cramps.

Exhaustion

Exhaustion often occurs due to excessive loss of body fluids and body salts. The person may suffer from headache, dizziness, rapid breathing, feeling sick, muscle cramps, tired and restless. Assist the patient out of the water using a flotation device. Get patient warm and dry but keep them out of direct sunlight. Give patient energy food and liquid and allow them to rest until they recover. If condition doesn't improve, seek medical assistance

Information for treatment of snorkel incidents compiled by Samara Nicholas and EMR regional coordinators.

Last Advice

Before entering the water – remember:

LOOK – be aware of the environment around you

LISTEN – for instructions and any emergencies

FEEL – if you are getting cold

Remember 'Tiakina Tangaroa'
(Care for the Ocean and Seas)

Karakia ki te Moana

(Prayer to the ocean)

E karakia ana ki a Io Matua Kore kia tau mai ōna manakitanga ki a mātou katoa

(We ask for the blessings of the creator to embrace us all)

Kia tiākina ē mātou ngā uri ō Tangaroa i nga wā katoa

(So that we will care for Tangaroa's children at all times)

Amine

(Amen)

Karakia

E te Atua
(dear lord)

Manaakitia mai mātou i tenei ra
(Bless us this day)

E harikoa ana mātou ki te haere mai ki konei
(We are pleased to be here)

Tukuna mai ki a mātou he wheako pai, ki te ata titiro i nga mea ataahua o te Moana. Kia kore mātou i te takahi i nga uri o Tangaroa i tenei rā

(We are wishing for a safe experience in the ocean today We hope to see many amazing things and will not hurt any of Tangaroa's children).

Amine
(Amen)