



VISION2030
LIVE BETTER THROUGH SPORTS

Partners in Sports



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Sports Safety

Safe Dragon Boating Guide

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A Sports Safe Singapore

The Singapore Sports Council (SSC) recognises that safety must be a fundamental component of a sporting culture and a pre-requisite for every healthy lifestyle. Therefore, SSC has set a corporate goal of zero incidents, in the belief that all accidents are preventable. Emphasising the need for personal accountability, SSC also urges people to be responsible for the safety of others. SSC's first Sports Safety Division was formed in 2006 directly under the purview of the CEO's office. It is tasked to promote safety throughout Singapore's sporting community and to inculcate a safety-first mentality in the minds of every stakeholder. For more information, please visit: www.sportssafety.ssc.gov.sg

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INTRODUCTION

Dragon boating is a sport that has its roots in ancient Chinese and its history has been traced back to more than 2000 years. Today, the sport is popular around the world and especially in Asia.

Highly valued as a team-building sport, dragon boating requires solid teamwork, mental and physical strength and good communication between team members to achieve optimum synchrony and speed.

Each dragon boat team is made up of 12 or 22 crew members, consisting of 10 or 20 paddlers, a drummer who sets the pace and a steersperson who helms the boat.

The next few sections provide some basic dragon boating safety information and tips that can help you stay safe while competing or training.



SAFETY GUIDELINES

It is important to ensure that the dragon boat crew is allowed to enjoy the sport without risk of injury. This section provides some essential guidelines:

Swimming ability – Every crew member should be able to swim at least 50m while wearing light clothing with or without a Personal Floatation Device (PFD).

Personal protection – Every crew member must don a PFD that is appropriately sized when out in the water. Participants should also apply sunscreen, wear sun protection gear and be well hydrated to protect against the sun and heat.

Equipment – Ensure that the dragon boat and all necessary equipment such as PFD and paddles are available and in good condition before starting the dragon boat activity.

Weather and water conditions – Check the weather forecast prior to the dragon boating activity and be prepared to postpone the activity in the likely event of extreme weather and/or rough water conditions. If there is lightning, seek proper shelter immediately.



THE PHYSICAL ACTIVITY READINESS QUESTIONNAIRE (PAR-Q)*

Is designed to help you assess your level of readiness for physical activity. It is simple and it only takes a fraction of your time to complete.

Regular physical activity is fun and healthy. Increasingly, more people are starting to become more active every day. Being more active is very safe for most people. However, some people should check with their doctors before they start becoming more physically active.

If you are planning to become more physically active than you are now, start by answering the seven questions in the box below. If you are between the age of 15 and 69, the PAR-Q will tell you if you should check with your doctor before you start. If you are above 69 years of age, and you are not used to being very active, check with your doctor.

In the past month, have you had chest pains when you were not doing physical activity?

Common sense is your best guide when you answer these questions.

Please read the questions carefully and answer each one honestly: **check YES or NO.**

YES

NO

Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?

Do you feel pain in your chest when you do physical activity?

Do you have a bone or joint problem (for example, back, knee or hip) that could be made worse by a change in your physical activity?

Do you lose your balance because of dizziness or do you ever lose consciousness?

Is your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart conditions?

In the past month, have you had chest pain when you were not doing physical activity?

If you answered YES to one or more questions:

Consult your doctor by phone or in person BEFORE you start becoming much more physically active or BEFORE you have a fitness appraisal. Tell your doctor about the PAR-Q and which questions you have answered YES.

- You may be able to do any activity you want – as long as you start slowly and build up gradually. Or you may need to restrict your activities to those which are safe for you. Consult your doctor about the kinds of activities you wish to participate in and follow his/her advice.
- Find out which community programmes are safe and helpful for you.



Personal Safety

- Listen to your body. Know when to stop, bearing in mind that not all of us have the same level of physical abilities
- Have adequate rest and water before you exercise
- Warm-up before exercising and cool down after the activity
- Wear attire that is appropriate for the sports
- Do not overlook safety gear. If unsure, please check with the relevant people

If you answered NO honestly to all PAR-Q questions, you can be reasonably sure to:

- Start becoming much more physically active. Starting slowly and building up gradually is the safest and easiest way to go.
- Take part in a fitness appraisal. This is excellent for determining your basic fitness so as to plan the best way to live actively. Evaluating your blood pressure is also strongly recommended. For readings above 144/94, consult your doctor before you become more physically active.

Delay becoming much more active:

- If you are not feeling well because of a temporary illness such as a cold or a fever – wait until you feel better, or;
- If you are or may be pregnant – consult your doctor before you start becoming more active.

Please note:

Download PAR-Q in Chinese, English, Malay or Tamil from www.ssc.gov.sg. For more information, please call 6500 5431.

* Source: Canadian Society for Exercise Physiology

INJURY PREVENTION

Dragon boat paddling is a demanding sport which involves:

- High repetition of the same body movement
- Massive amount of muscular forces

that can be strenuous to both the cardiovascular and musculoskeletal system. Lack of proper conditioning of the body for the sport can lead to injuries to the muscles, ligaments and joints. Common signs of a musculoskeletal injury include sharp, intense pain, swelling or bruising. When this occurs, rest the affected area and apply ice compression. Seek medical attention immediately if symptoms worsen.

Dragon boat paddling demands power endurance from the trunk (lower back), shoulders, arms and legs. A proper technique will not only improve stroke efficiency, but also minimise the risk of injury. The following are some areas to pay attention to:

Trunk (Lower Back)

Provides the main driving force of a stroke. Inappropriate engagement of the trunk (such as arching the back) will lead to injuries. Paddlers should focus on engaging the leg support for more power and adopt good trunk rotation movement by stretching forward from the hip in each stroke to minimise the risk of lower back injury.

Shoulder and forearms

The continuous paddling action can cause the upper limbs to fatigue easily. It is advisable to stretch your muscles when there is a break in between the training session.

Breathing technique

Improper breathing can cause circulatory and body system to dysfunction which includes symptoms like dizziness, numbness, anxiety and even body pain. Adopting a consistent breathing pattern while paddling can minimise such occurrence. Therefore, it is important to watch how you breathe while rowing as it affects the amount of oxygen supply to your muscles to function optimally. Improper breathing techniques can also impair one's speed and performance especially at a competitive level.

Typically, paddlers focus their paddling on one side of the boat. Such practice, if prolonged, can lead to disproportionate development of the muscles on one side of the body. Paddlers should therefore work out on their contralateral (opposite) side of the body with appropriate weights training. If possible, they can also opt to paddle on alternate sides or even take up canoeing.

ADEQUATE HYDRATION

Dehydration and heat stress affect performance

Avoid heat stress and poor performance by ensuring adequate fluid replacement during your sport or activity participation

- Exercising in hot or humid weather will result in additional fluid loss and increase the risk of dehydration
- Even a small degree of dehydration will cause a decrease in exercise performance
- Dehydration contributes to fatigue and may make you susceptible to cramps, heat stress and/or heat stroke

Rules for training and competition

- Achieve a high level of physical fitness before exercising strenuously in competition, or in warm weather
- Exercise at moderate intensity in hot or humid conditions
- Do not undertake hard exercise, or exercise in hot or humid weather if you feel unwell or are recovering from a recent illness
- Drink water before and during exercise
- Stop exercising if you feel unwell in hot or humid weather
- Advise other sports participants to stop exercising if they appear unwell, confused or show loss of skill and coordination



WARM-UP, STRETCHING AND COOL-DOWN

The following table provides estimates of risk related to the weather and also guidelines to managing activities in order to minimise heat stress.

Ambient temperature

Ambient temperature °C	Relative humidity	Risk of heat illness	Recommended management for sports activities
26 – 30	Exceeds 60%	Moderate – high	Moderate early pre-season training Reduce intensity and duration of play/training Take more breaks
31 – 35	Exceeds 50%	High – very high	Uncomfortable for most people Limit intensity, take more breaks Limit duration to less than 60 minutes
36 and above	Exceeds 30%	Extreme	Very stressful for most people Postpone to cooler conditions (or cooler part of the day) or cancel

How to treat heat stress

- Lay the individual showing signs of heat stress down in a cool place
- Raise both legs and pelvis to improve blood pressure
- Remove excess clothing
- Cool the body by wetting his/her skin liberally and fan them vigorously (evaporative cooling)
- Apply ice packs to the groin area, armpits and neck
- Give cool water if conscious

Remember, sports heat illness can occur with high intensity exercise in cool conditions and with well-hydrated individuals.

Individual tolerance to heat stress varies widely. Discomfort is the best personal indication of heat stress. Therefore, individuals should pace themselves according to their personal feelings of stress. If you feel uncomfortably hot in warm weather, reduce your exercise intensity. In humid conditions, sweat may not evaporate sufficiently for effective cooling. If your skin is dripping wet all over with sweat, reduce your exercise intensity.

Warm-up and Stretches

Warm-up is essential before vigorous activity. A proper warm-up prepares the mind and body for the activity. This will help to maximise training gains and prevent injury. Avoid warming up too early as the benefits may be lost.

Begin the warm-up with activities such as jogging or jumping jacks. These activities involve the major muscle groups and help to increase the core temperature, heart rate and breathing rate. Starting with a light run is always recommended.

After this, static stretching of the essential muscle groups can be performed. Stretches are done to increase flexibility of the muscles and joints. Stretch adequately to the point where muscular tension can be felt. Avoid over-stretching as this can actually impair performance and lead to injuries. Do not bounce during the stretch.

Paddlers can also opt to perform dynamic stretching where muscles are activated to work through a range of motion (rather than being held in a fixed position during static stretching). Examples of dynamic exercises include arm swings, twisting of the torso and lunges. Rehearsing the paddling motion while on land is also a form of dynamic stretching.

Cool-down

A proper cool-down is essential after a period of intense paddling. This allows the heart rate to return to its resting level gradually, and the body can remove waste products (such as lactic acid) that are generated during intense physical activity.

Begin the cool-down regime with deep breathing exercises to regulate respiratory rate. After this, perform stretches of the muscles to relax them and to return them to the resting state. The stretches can be similar to the ones used during the warm up.

The following is an example of a warm-up and stretching routine that a paddler can perform before recreational dragon boating:

- a. Perform jogging or jumping jacks for a few minutes to warm-up the body.
- b. Stretch the different parts of the body. The following are some of the common stretches for the arms and upper body. Additional stretches can be incorporated to cover other parts of the body as required. Hold each stretch for about 10-20 seconds.

Chest – Open your arms wide, expanding the chest and keeping your arms parallel to the ground.



Side – Extend your left arm and bend your upper body towards the right. Repeat on the other side.



Back – Bend forward gently with hands reaching out as close as possible to the ground.



Triceps – Pull elbow across and behind the head. Do on both sides.



Deltoids – Keep elbow parallel to ground and pull close to the chest. Do on both sides.



Shoulder – Hold hands together, straighten up arms and keep them above head.



- c. Stimulating rowing movements for 30 to 50 reps on land by pretending to hold your paddle. Start with slow pace to warm-up your muscles and gradually increase the stroke rate.

Air Paddling

Swing your arms forward to your optimum length and back to the hips and back, using your torso. Chest facing to the side.



Air Swing

Stretch out the rowing arm forward. Pull through to the hips by swinging the rowing arm backwards while the top arm drives downwards.



ROLES AND RESPONSIBILITIES OF CREW

The following are some of the responsibilities of the crew:

Steersperson

- Is in charge of the boat and responsible for its condition and safe operation at all times
- Is the only person that can issue paddling commands that control the boat. The coach can give commands to the paddlers, but when it comes to controlling the boat, the steersperson makes these calls
- Is responsible for the safety of the crew and knows the special conditions that may apply to an individual paddler
- Conducts head counts and appoint a second-in-charge before training
- Ensures crew members understand the buddy system
- Must be certified by Singapore Dragon Boat Association
- Ensures crew wear Personal Floatation Devices (PFD)
- Knows approved safety procedures and what to do in the event of a capsized boat or an emergency. Ensures the boat carries a mobile phone and has at least one person who is certified in Cardio Pulmonary Resuscitation (CPR) and Automated External Defibrillator (AED)
- Knows the rules related to proper navigation of a boat on the water and the use of the water spaces

Paddler

- Listen to and follow steersperson's instructions quickly
- Responsible for personal safety and well-being
- Understand the buddy system and how to use it
- Maintain stability on the boat. Embark and disembark from the boat one person at a time and do not change seats without first informing the steersperson

Drummer

- Assists the steersperson in the departure and return of the boat to the dock
- Responsible for the safety of the crew from the sides and back
- Remains seated at all times while the boat is underway

EMBARKATION & DISEMBARKATION



- Use safe lifting techniques when lifting or carrying boat. Bend at the knees and not at the back
- Ensure that enough participants carry a dragon boat
- Decide seating positions prior to entering the boat
- When embarking and disembarking from the dragon boat, do it one at a time, starting from the front. The front pairs (stroke pairs) and drummer will get in last but will get out first
- A head count is carried out before leaving the embarkation pontoon
- Before setting out, all paddlers and the drummer must be seated

CAPSIZE DRILLS



It is important for all crew to be familiar with the capsize drills so that there is no confusion or panic when a boat is capsized.

If the boat capsizes, remain calm and follow these steps:

- Get your head above water. If you come up under the boat, swim under and to the side of the boat, then surface
- Watch out for your buddy. Call out to him as he might be on the other side of the boat. If you cannot find your buddy, alert the people around you, and then search for your buddy
- Distribute yourselves around the boat and hold onto it to stop it from rolling over. Do not swim under the boat to get to the other side but swim around it
- The steersperson or second-in-charge will do a head count twice. If people are missing, search for them. Avoid putting your head under water but use your legs to sweep under the boat to locate any missing paddlers instead
- If possible, carefully turn the boat right side up and bring it to the nearest shore. The whole team should move with the boat
- If it is not possible to right the boat, abandon it and with the instruction of the leader, swim to the nearest shore. The whole team should move together. The leader will be the last to leave
- Upon reaching the shore, do another headcount. Call for the emergency services if anyone is missing

NAVIGATING THE BOAT

Boating is all about having fun and enjoying our waterways but it is also the responsibility for all to keep a proper lookout at all times for other boats, swimmers, floating debris and white water that indicates submerged reefs and rocks. It is important for boaters to be familiar with the basic navigation rules.

Always keep to the right

Always keep to the right, especially when entering a narrow passage or a sharp bend.



Be aware of surrounding water

Monitor other boats in the water, especially kayaks, canoes and sailboats, to avoid collision. Always keep clear of each other at a distance away. Maintain look-out for swimmers, floating debris and submerged reefs and rocks.

Do not create a dangerous situation by forcing your right of way

Always keep a safe distance off other vessels so the vessel can be stopped or manoeuvred to avoid any sudden danger.

Alteration of course

Make your intentions clear to others as early as possible.

BASIC CARDIAC LIFE SUPPORT (BCLS)

Basic Cardiac Life Support (BCLS) refers to the recognition of sudden cardiac arrest, call for help, maintaining airway patency, supporting breathing and circulation without the use of equipment other than personal protective devices. This is also commonly referred to as cardiopulmonary resuscitation (CPR). This skill could be used by the layperson and healthcare provider in both the out-of-hospital and in-hospital settings.

The majority of sudden cardiac arrests occur in the community (out-of hospital). The success of the chain of survival depends on the layperson. Rescuers who are unwilling or unable to do mouth-to-mouth ventilations must at least do continuous chest compressions.

Chain of Survival



Refer to SDBA official website (<http://www.sdba.org.sg/>) for more information.

- D** CHECK FOR **D**ANGER
- ↓
- R** CHECK FOR **R**ESPONSIVENESS
 - Tap shoulders firmly.
 - Ask loudly "Are you ok?"
- If unresponsive, **S**HOUT
 - "Help! Call 995 for ambulance."
 - "Get AED!"
- ↓
- A** OPEN **A**IRWAY
 - Tilt head up, lift the chin
- ↓
- B** CHECK FOR **N**ORMAL **B**REATHING
 - Look, listen, and feel for up to 10 seconds
- ↓
- If no breathing detected, **B**EGIN 30 **C**HEST **C**OMPRESSIONS
 - Position heel of palm on centre of chest / lower half of sternum
 - Maintain depth of at least 5cm
 - Rate of at least 100 per min
 - Allow complete chest recoil
- ↓
- C**
 - OPEN AIRWAY
 - Tilt head up, lift the chin
 - ↓
 - GIVE 2 BREATHS
 - 1 second per breath
 - Tidal volume 400-600 ml till chest just rises
 - ↓
 - CONTINUE UNTIL
 - Patient wakes up
 - AED arrives, analysing heart rhythm
 - Emergency team takes over CPR

**If an AED is available at incident, place pads immediately.