



# MEDICAL GUIDELINES FOR THE INTERNATIONAL TEAM COACH

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## INTRODUCTION

Sailing today is one of the most complex sports around – if not the most complex. High level sailors need the ability to understand and solve complicated problems: campaign, regatta, rules and technicalities of the boat. They need to develop great subtlety in the way they pick up clues from the boat and its surroundings which enable them to control it on the water. In such a complex sport with very narrow margin of advantage against competitors using or alleviating different influences to the performance, including environmental ones, becomes a vital part of success.

There is no doubt that travel is an integral part of sportsmen's' life and the sailing season is organized as a national or international string of events that requires weekly or biweekly travel to matches. By the nature of their sport, the sailors' racing field environment can differ much from their home one and can have a decisive influence on the final success in the competition. One day a racing field can be tropical one and the next week it can be in a very cold climate. Such a major environmental change can strongly influence not only their fitness abilities, but also their health. Modern top level competing sailors travel frequently and must be able to deal with environmental problems and also with problems related to mode of transportation, major time zone changes, different foods, housing and different approaches and levels of medical care at the new sailing destination. Fatigue connected with travel can influence their fitness capabilities and unexpected events abroad can ruin months of dedicated training.

The purpose of these simple guidelines is to highlight knowledge on travel and sport medicine, formed in ten recommendations that could be useful in protecting a sailor's health abroad and therefore enhancing their competitive edge in racing.

Subjects include pre-competition/pre-travel consultation, acclimatization, nutrition, re-hydration, first aid, overtraining, diarrhoea treatment and prevention, antibiotic of choice, personal protection, security precautions and risk behaviour.

## I. CONSULT WITH YOUR TEAM PHYSICIANS

Sports travel medicine is developed to assist and solve the problems of the travelling sportsman, including those caused by training and competing in different environments in sailing events. Many of the travel and sport related diseases and ailments that can affect sailors are well known, have effective treatments and are largely preventable. Using preventive measures during training, competition and travel will decrease the chance of a risk to sailor's health and abilities. Sportsmen travel widely, usually by air, and often become lax about taking precautions regarding their health. Having travelled numerous times without major health upsets and focused on the forthcoming sailing competition, they may neglect to check that they are up to date with vaccinations or take necessary precautions against minor but potentially debilitating health conditions. Such neglect could easily cost them the medal at the big event. As the teams often travel without an accompanying doctor's support, it is the coach's duty to ensure athletes follow simple precautionary measures and ensure that nothing stops his team on the road to success. A team doctor can plan the health protection but it is the coach who is the closest to the sportsman, has the most influence and is the one that sportsman will follow all the way.



The First thing to do in any prevention project is to assess the risk. In pre travel planning your team doctor who is regularly checking and treating sailor can easily assess the risk of the individual sailor, including the potential environmental risks that may be encountered because of their itinerary, the risks of the racing field, past medical history, problem list and lifestyle. It is a big advantage if your team doctor is able to plan for continuity of care before, during and after competition. Once this initial assessment has been made, the doctor can schedule the pre competition protection “package” needed by your team in the context of the ongoing care.

It is ideal to start the process 4 to 8 weeks before the trip but in a competition program where the season is crowded with regattas, the decision on participation is often made at short notice. Planning should start about 3 weeks before departure to countries with different environmental conditions, but even in the “last-minute visits” to your team doctor, it is possible to deliver a good pre travel and pre competition “package” which should consist of:

#### A. Preparation for Travel:

- Dental care or other minor ailments
- Supply of necessary medications
- Letter regarding any current illness and get a TUE if necessary
- Medic Alert Tag
- Pre travel advice
- Eye glasses if necessary: extra pair, prescription sunglasses

#### B. Immunization:

A cornerstone of *travel medicine* is the prevention of infectious diseases through proper vaccination, including up-to-date routine immunization, specific vaccines that will be required by any of the countries visited, and vaccines, which will be needed based on expected exposure. Either inactive or live vaccines or a combination of types can be given simultaneously, without loss of either efficiency or safety.

Your team should receive information not only about required vaccines on border crossing (yellow fever is the only one at the moment) but also about recommended vaccines for that area too. Your federation or team doctor should provide you with that information. Vaccinations are administered according to the health risk, which the travelling sportsman is likely to incur. Short-term travellers, for instance participating in sailing event that lasts only 4 – 5 days and staying in first class hotels in urban centres, need less protection than those staying for prolonged periods and touching ports in the developing world.

#### Immunizations according to risk:

<b>Childhood immunization?</b>	No →	TB, polio, MMR, varicella, tetanus, diptheria
↓ Yes	Yes	
<b>Border crossing?</b>	→	yellow fever, (meningococcus, polio)
↓ No		
<b>Food/water risk?</b>	Yes →	hepatitis A, typhoid
↓ No		
<b>Long-term stay?</b>	Yes →	hepatitis B, rabies, Tuberculin skin test
↓ No		
<b>Special risk?</b>	Yes →	Japanese e., hepatitis B, rabies, cholera, influenza
↓ No	Yes	
<b>Sportsman at big events</b>	→	meningococcus, influenza

Travel vaccines:			
Class	Vaccine	Booster (yr)	Indication
<b>a. Routine</b>	Tetanus	10 (5)	All travellers
	Diphtheria	10	All travellers
	Pertussis	1-6	All travellers
	Poliomyelitis (oral)	once	All travellers
	Poliomyelitis (inj.)	10	All travellers
	Human papilloma virus <sup>1</sup>	none	All travellers
	MMR	once	All travellers
	Hepatitis B	none	All travellers
	Influenza <sup>2</sup>	annually	All travellers
	Rotavirus <sup>1</sup>	none	All travellers
	Tuberculosis (BCG) <sup>3</sup>	none	All travellers
	Varicella <sup>1</sup>	none	All travellers
<b>b. Required (International borders)</b>	Yellow fever	10	South America and Africa
	Meningococcal disease and polio	3-5	Hajj (S. Arabia)
<b>c. Recommended</b>	Cholera	2	Some travellers to remote areas
	Hepatitis A <sup>4</sup>	none	Travellers to risk areas
	Japanese encephalitis <sup>4</sup>	1 (or none depending on the type of the vaccine)	Rural Asia, S.E. Asia, long stay in transmission areas
	Meningococcal disease <sup>4</sup>	3-5	Sub-Saharan Africa, group accommodation on big sport events (sport camps, sport villages)
	Rabies	titre<0,5 IU/ml	
	Typhoid fever (inj.)	3 (5 or 7)	Indian subcontinent or prolonged stay /more than a month.
	Typhoid fever (oral)	7	
	Yellow fever <sup>4</sup>	none (10 if re-certification needed)	South America, Africa

1. So far, introduced into the routine immunization programme of a limited number of countries

2. Routine vaccination for certain age groups and for individuals potentially exposed to certain risk factors.

3. No longer routine in most industrialized countries.

4. These vaccines are also included in the routine immunization programme in several high-risk countries.

## C. Medicine

Pre travel planning in the team doctor's office should include oral and written instructions concerning the hazards in the countries to be visited, preventive measures, and also advice and prescription of necessary medicines.

If your team doctor is not accompanying you, he should be able to provide you with the proper "travel kit". These kits should contain first aid materials, such as bandages, cold preparations, sunscreen, antidiarrheals, insect repellent, iodine or bleach. If necessary, extra prescription eyeglasses and any other routinely used medicines or supplies can be a part of its contents too. A signed prescription form should accompany all prescription drugs carried by the members of your team, with proper labelling on the drug container:

- Antidiarrheal (loperamide/cipro/nor/levo/ofloxacin)
- Antiemetic (dimenhydrinate)
- Analgesic (NSAR)
- Antihistamine (hydroxyzine, terfenadine)
- Antipyrexial (tylenol, ASA)

To avoid suspicion and misunderstanding regarding medicines that could be considered unnecessary in some countries, all the kits must have the list of original contents provided by the manufacturer or prescription and accompanying letter from your team doctor, including TUE documentation if needed.

Concept of the antibiotic for all reasons is especially appealing to the travelling environment where drugs are often prescribed by non-medical persons. For the sailing environment the obvious choice is quinolone antibiotic or azithromycin

AN ANTIBIOTIC FOR ALL REASONS				
	Bowel	Bladder	Respiratory	Skin
Ciprofloxacin	+++	+++	+	+
Ofloxacin	+++	+++	++	++
Levofloxacin	+++	+++	+++	++
Cotrimoxazole	++	+++	++	++
Cephalexin	---	++	++	+++
Cefuroxime	---	+	+++	+++
Clarithromycin	---	---	+++	+++
Azithromycin	++	+	+++	+++
Clavulin	---	---	+++	+++

#### D. HIV infection and International Travel

Advice on prevention of STD's should also be part of the pre-travel planning, at least in the form of pamphlets. All sailors should be aware of the risks of STD, they should be taught about the dangers, constantly reminded, and should be advised to take condoms with them.

Do's and Don'ts re: HIV	
DO NOT	DO

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>• Engage in unsafe sex</li><li>• Pierce ears</li><li>• Accept acupuncture, tattoo or injections (reused needles)</li><li>• Receive transfusion</li><li>• Use illicit injectable drugs</li></ul> | <ul style="list-style-type: none"><li>• Use latex condoms</li><li>• Associate socially</li><li>• Share food, hug etc.</li></ul> |
|---|---|

#### *HIV Screening of International Travellers*

Some countries in Eastern Europe, the Middle East and Asia now have policies to screen international travellers. For the most part, screening requirements apply only to long-term travellers (e.g. foreign students and workers). It is important to note that some countries will not accept the results of HIV testing abroad and will insist on testing for HIV soon after arrival. The list of HIV testing requirements for entry into foreign countries changes frequently and therefore your team doctor or MNA should obtain that up-to-date information, from the embassy or consulate of the countries on the team's itinerary.

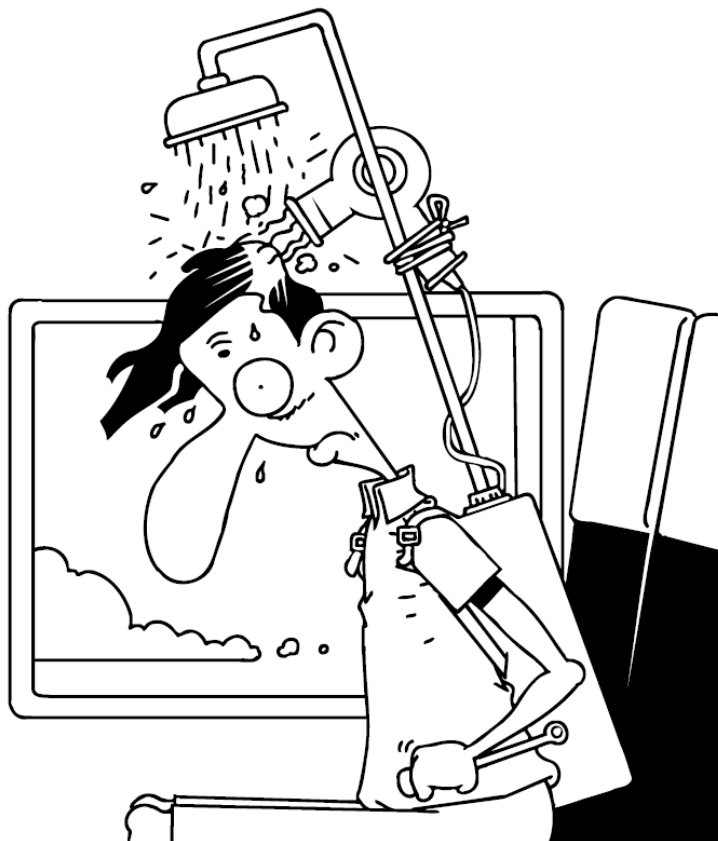
#### **E. Malaria Prevention (Chemoprophylaxis)**

Malaria, viral hemorrhagic fevers, various rickettsial diseases and African sleeping sickness are vector borne diseases that cannot be prevented by vaccine and for which limited protection by other means is available. In pre travel counselling your sailors should be given this advice, with special emphasis on the importance of compliance to chemoprophylaxis in malaria prevention if sailing in malaria risk zone.

## II. ACCLIMATIZE YOUR TEAM

### Exposure and adaptation to heat

The sailing season can require travel and competing in very hot environments with different climatic zones. While the conditions of the wind and sea on the racing field are actually the essential part of sailing, in situations where unavoidable environmental factors such as heat is exceeding physiological accepted limits; its influence can become detrimental to sports results and even endanger a sailor's health.



Our body tends to keep its own core temperature between certain boundaries. To achieve that, it uses several efficient physiological mechanisms and in normal conditions manages to reduce core temperature by:

- Radiation 5%
- Convection 15%
- Sweat evaporation 80%

Those mechanisms have several physiological consequences, some of which although physiologically necessary, can influence final sportsman's capabilities to perform at a high level. Acute effects of that adaptation to health are sweat production and an increase in skin blood flow. Increased sweating leads to decrease in blood volume and consequent decrease in cardiac blood flow. As a result of those physiological changes blood-shift to core organs increases cardiac blood flow demand.



Such a change can negatively influence sailors:

- Aerobic capacity
- Cognitive ability
- Recovery

In conditions of heat, sports performance is directly influenced by the level of the physical reserve deterioration and this deterioration is:

- Individual
- Specific to every sportsman
- Not linked to the skill level

Luckily, wind is a natural cooling mechanism on board but long breaks in between or before races, while waiting for proper wind conditions on unprotected decks, can expose sailors to dangerous hyperthermia. In climates with a high humidity the body's cooling mechanisms can become ineffective. In hot weather with light wind, perspiration is the only way to release heat from our body while exercising (because it lowers body temperature by evaporation). If air humidity rises over 70%, evaporation is impaired, and our body increases perspiration in the effort to keep its temperature low. This may lead to dehydration and heat stroke. It is stated that dehydration decreases performance: a loss of fluids of 2 <% of the body weight may result in a 15% decrease of the athletic performance!

Keeping thermal balance on board and preventing dehydration is of utmost importance to sailor's health and his sport performance.

## Acclimatization

Our body not only immediately reacts to high environmental temperature but also tries in the long term to adapt to it. By prolonged exposure to such an environment the sportsman's body adapts to these conditions and despite the necessary physiological reactions to the heat, starts to function more efficiently and again reaches top level of performance. The problem is that today, athletes are travelling fast and there is no time for complete acclimatization. Not only does their performance suffer, un-acclimatized sailors in hot climates are prone to heat exhaustion, heat cramps and heat stroke. Acclimatization to high temperatures is achieved in a process that lasts 1-3 weeks but the systems of the body are adapting to heat exposure at varying rates. It is important to know that during the acclimatization period physical efficiency suffers so if you want your team to be at its peak, acclimatization should be completed before the race.

The best results are achieved by training in hot conditions but that can be a problem for the teams from cold climate zones. They can use **heat acclimatization protocol in saunas:**

**Two days a week, three exposures of 6 - 9 minutes on the temperature of 90 – 100 °C with relative air humidity of 10 – 20%.**

Besides acclimatization procedures there are some other recommendations to consider:

- In a very hot environment reduce physical activity to sailing and swimming during daylight hours. Use indoor gyms and swimming pools to train avoiding the heat.
- Before the race avoid working or staying too long in an overheated container, even if it's the only shadow available.

- Staying in the Athlete's Lounge or restaurant may help your sailors to keep their body temperature at the right level and therefore allowing them to compete better. However, entering a cooled room coming directly from outside may cause a few problems: don't forget to put on dry and warm clothes when entering a cooled room; be careful not to let them enter these places with wet clothes or wetsuits!
- Pre cooling (such as staying in a cool room, cool water bathing, ice cube application over the wrists, or dipping feet in cooled water) may help to keep the body temperature low. These techniques should be discussed with and approved by your team doctor.
- Encourage your sailors to use "cooling vests" before and in between races. These vests are functioning as "heat sinks" and can maintain the core body temperature, even in very unfavourable heat conditions.
- Sailors should wear light and light-coloured clothes with UV protection. They should always wear a cap, sunglasses and sunscreen cream. Sunscreen preparations should be applied several times a day.
- Make sure they have enough fluids during exercise (600 – 800 cc/ hour, drink small amounts at least every 15 minutes) but remember: **Hydration can prevent dehydration but cannot decrease core blood temperature!**
- Extra-dietary salt and adequate rest.
- Consistent daily monitoring of fluid/electrolyte balance is required

Simple advice about proper fluid intake can save a lot of problems, especially in very humid weather, but excess dietary water and electrolytes **do not speed up the process of heat acclimatization**. Also, don't forget that the sailing season is long and **heat acclimatization adaptation may vanish after only few days or weeks!**

### Exposure and adaptation to different time zone

Every natural process within the body shows some variation in pattern between night and day. For instance, speed of reaction time and muscle strength peak consistently in the early evening and it is well known that world records are usually broken by athletes competing in the late afternoon / early evening hours. Basic components of performance have rhythmic ups and downs follow in a circadian pattern. Rapid air travel across several time zones outstrips the ability of the body to re-synchronize these rhythms forcing sportsman to compete at unfavourable periods of their biorhythms when their capabilities are not at their peak. The resulting physiological de-synchronization causes symptoms such as weakness, gastrointestinal disturbance, loss of appetite, and tiredness during the day, disorientation, memory impairment and reduced mental performance that every traveller recognizes only too readily as *Jet lag*.

**Jet lag** (Circadian dysrhythmia) can significantly influence sailor's physical and especially cognitive capabilities to perform at a high level. Often teams are coming on racing fields by airplane, from another part of the world and from different time zones immediately being engaged in competition. The team leader, who is responsible for organization of the team's itinerary, should know the basics of biorhythm de-synchronization problem so that he could organize the transport that best corresponds with sailors' biorhythm, allows proper rest and secures adequate time for adaptation on arrival.

Adaptation procedures to new time zone:

- a. *sleep/wake time shift*.  
 Westbound: (Pre departures) go to bed later and waken later.  
 Eastbound: (Pre departures) go to bed earlier and waken earlier

b. *light-exposure alteration:*

Eastbound: (On arrival)  $\leq 6$  time zones: ⬆ a.m. light  
(On arrival) 7-12 time zones: ⬆ p.m. light  
Westbound: (On arrival) reverse of eastbound

c. *Melatonin: 3 mg*

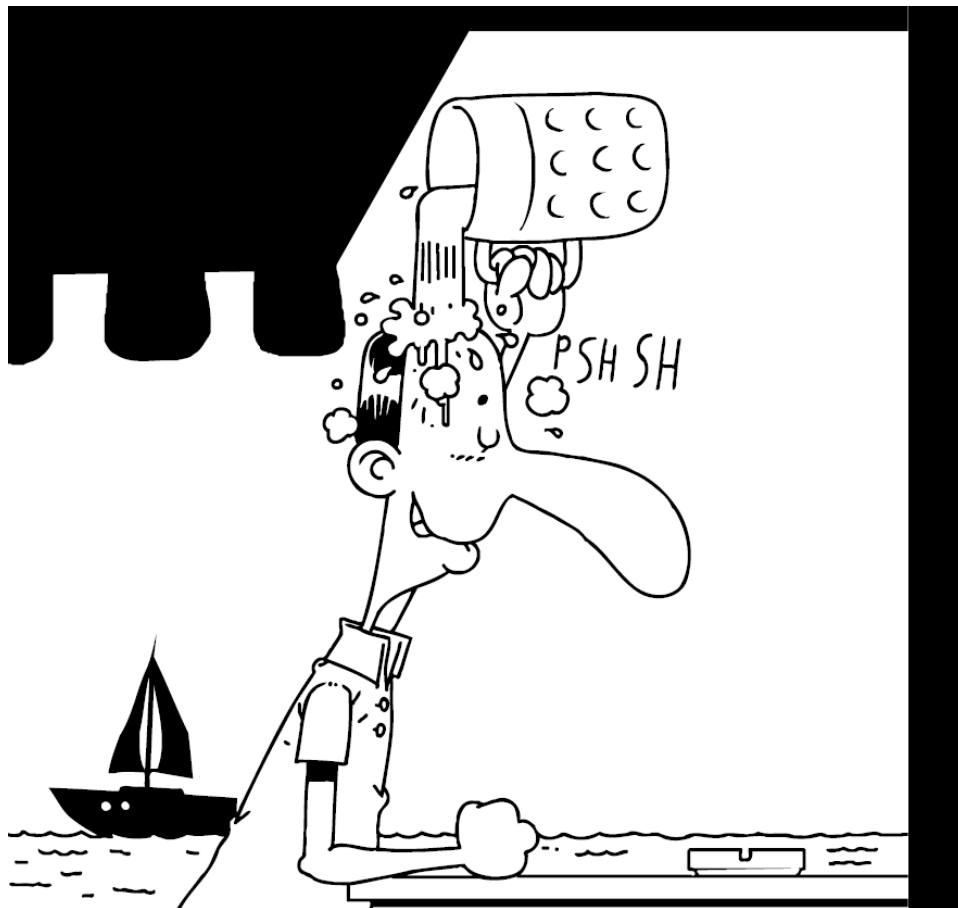
Eastbound: (Pre departures) at 2-3 a.m. "destination time" for 3 days;  
(On arrival) at bedtime for 4 days.  
Westbound: (On arrival) at bedtime for 4 days.

### III. PROTECT YOUR TEAM FROM SUN AND COLD

The climatic environment can have an extraordinary influence on the outcome of the sailing competition because sailing is a sport practiced in open, with only limited means of environmental protection, which is normally personal gear and equipment.

#### Exposure to UV radiation from the Sun

Besides infrared rays that we feel as a heat, the sun is also radiating much more damaging ultra-violet (UV) rays that are causing serious damage to our skin which includes skin cancer. Sailing has an added inconvenience: the UV radiation damage is greater on the sea than on the land. Reflection of UV from the sea surface increases the UV-index, which is an important thing to remember when protecting skin. The UV-index shows us how strong the UV-rays are. Before travel, always obtain the UV-index data at the sailing destination. It is as important as the weather, wind and temperature forecast!



The risk must be reduced by using the right skin protection.

To avoid some of the consequences of sailing in countries with a high UV index (higher than 5) you should:

- When training, avoid the sun between central times of the day: 11.00hrs and 16.00hrs.

- On the water encourage the use of special UV-textile equipment; wraparound sunglasses with appropriate UV filters and caps with rim or flaps for a better head, neck and ear protection.
- Make sure that sailors are regularly covering the remaining parts of their bodies, with sunscreen preparations
- Use the appropriate sunscreen:
  - **SPF 25 or greater**
- Advise them to apply appropriate quantity of sunscreen

An adult sailor, if wearing short sleeves shirt and shorts, needs approximately 2mg of sunscreen preparation per cm<sup>2</sup> of the skin. This means that most sailors will need about 15-20ml each time. This is 1/6 of a 100 ml bottle to cover the exposed parts of the body. The reality is that the majority of people apply just ¼ up to 1/3 of the quantity needed! This means they will have a protection of just about ¼ or 1/3 of the indicated SPF on the sunscreen bottle: for example, using a SPF 25 sunscreen, they will just have a SPF approximately of 6-7, which will probably not be enough to protect their skin during the race that can last several hours, sometimes with long periods of waiting exposed to sun in between the races.

## Exposure to cold

A cold climate is unavoidable in sailing. Even in temperate areas a combination of water spray, wind, wet clothes, fatigue, dehydration and interval work periods on board can dangerously lower the body temperature and influence the performance of your sailors.

All sailors must learn to deal with the cold in two different circumstances:

- A foolhardy approach to the cold while sailing on the water decreases comfort and negatively impacts performance. Although the lives of sailors are not directly in danger, this may decrease performance and certainly may have an untoward consequence to the result of the race. When skin temperatures fall below 15°C there is also a decline in the strength of handgrip and manual dexterity.
- If a sailor is in the water, one is engaged in a battle for survival!

In either case, you have no excuse for not knowing how to keep your sailors warm or how to help them in the case of capsizing in cold waters. You have to be especially careful with children as they have a large body surface-to-volume ratio, making them prone to hypothermia. In the water, if it is not possible to hold on to the capsized boat or re-enter into it, sailors should keep the **HELP (heat escape lessening posture) position**, with legs up and arms around bent knees. This will reduce the heat loss due to direct contact with cold water. **Make sure that all of your sailors know that!**

In a cold environment efficiency suffers. This results from the effect of the cold on the muscles, nerves and even brain if hypothermia is present. In a cold environment our body reacts to cold by trying to keep its core warm, leaving behind the thick “shell” to fight a rearguard action with the elements. Warm blood from the core is diverted from the surface, the temperature of the skin falls and less heat is lost. If the increase in size of “shell” fails to keep the core temperature, the body turns to its second line of defence; an increase in heat production either by shivering or by exercise. This can increase heat production up to 10 times. For the sportsman, exercise is the perfect solution, however problems can arise. If the heat loss is modest then exercise may produce enough of a net gain in heat to keep the sailor warm but if the heat loss is rapid the chances are that exercise will be counterproductive. Whilst racing sailors need their strength and endurance to win the race so using the energy to heat the body can endanger the final result of the race.

Keeping thermal balance on board the boat is of utmost importance. Overdressing can actually overheat the body and this should be avoided! Overheating, besides putting unnecessary burden on the cardiovascular system, can result in build up of sweat on the body and internal layers of clothing. As water conducts heat at a much higher rate than the air, in parts of the race when less strain is needed, like sailing down the wind, sailors' bodies will cool at much higher speed and consequently produce an undesired heat loss.

Aside from using suitable clothes, there are some recommendations for the coach to consider:

- Wear a cap – the head is responsible for one-third of the body's heat loss
- Clothing is crucial to prevent hypothermia
- Wear multiple layers of high tech clothing
- Avoid sweating and wear layers such as polypropylene so as to draw the sweat away from the skin and allow evaporation
- Test the clothing in an appropriate environment
- Everything under 30 °C is considered 'cold water' and can cause hypothermia
- Always be prepared to intervene and recognize the signs of hypothermia
- Always remembers "The Rule of 50": Chances to swim 50 yards (45 m) in the water of 50 F (11 °C) are just 50%.
- Personal floating device on board is mandatory

### **Pre-competition warm up in cold environment**

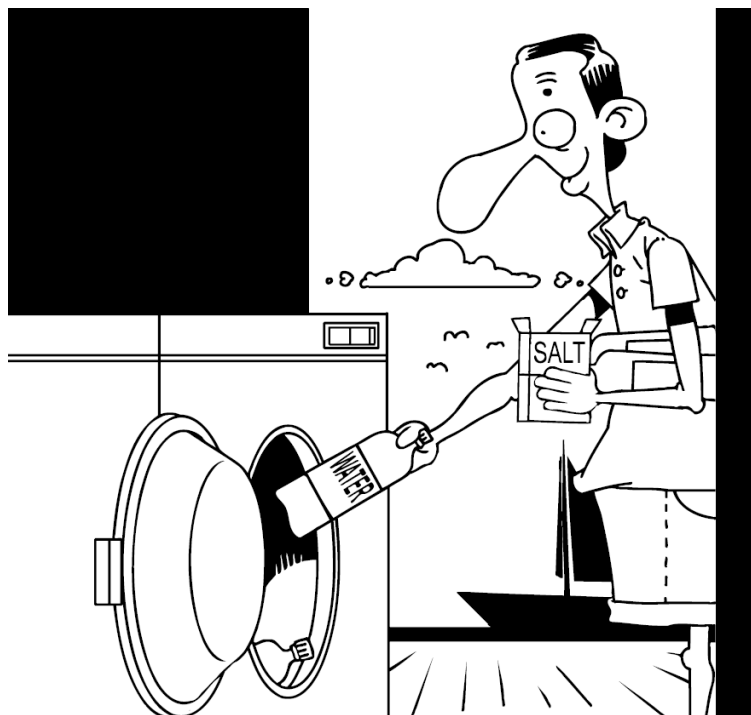
When sailing in cold conditions or in cold water, pre-competition warm-up or training warm-up is particularly important. Prior to carrying out any medium or high-intensity exercise, it is very important that the muscles that will be used have received the necessary oxygenation for the work they are going to do. This means carrying out wide and progressive low-intensity movements to open up the greatest number of capillaries ensuring that the blood goes to the highest number of muscular fibres.

- Under cold conditions - start the warm up session on shore.
- Session must last between 15 and 20 minutes.
- It must include all muscles, but particularly those that are going to be used more when sailing.
- The warm-up must continue for at least a further 15 minutes on the water
- Sailors should carry out wide and low-intensity movements and manoeuvres specifically using the muscles used for the boat they are sailing (tacking, gybing, pumping with the spinnaker, etc)
- Do not forget to keep your sailors warm in between the races.
- If possible, during breaks, hand over additional clothing for them to wear until the next race starts.
- If breaks are long – sailors should repeat the warm-up procedure of low-intensity movements from warm up sessions

#### IV. CHOOSE THE RIGHT DRINK

Careful choice / treatment of water – whether for drinking, washing, preparing food, or swimming – is one of the most important precautions a travelling sportsman can take. Water is critical for exercise performance and is the nutrient most neglected by sailors. Regattas may be run for several hours at a time, over a number of days and during the summer months, typically during the hottest part of the day. There is the very real possibility that hydration may be compromised during regattas. During exercise, fluid losses are primarily due to sweating and breathing. In sailing this is emphasized with unavoidable sun and wind exposure and impermeable sailing suits. Uneven body cooling when sailing up and down the wind puts an additional burden on physiological mechanisms of the body's cooling which needs adequate fluid balance to function properly. If fluid losses are not replaced, performance will deteriorate and dehydration can have devastating consequences to the sailing performance.

Fluid and food intake tends to be hampered by unpredictable time intervals between the races, so support teams must secure adequate hydration on shore and during competition, taking into consideration regulations and boat space limits for the amount of fluid competitors can carry. Adequate storage space for sports drinks must be secured on support boats to give to sailors in-between races.



Use the proper procedures of hydration:

- Let your team doctor or nutritionist to do the planning
- Organize lectures for sailors to explain the importance of hydration
- Make hydration the habit of your athletes
- A protocol of hydration should be established before the sailing event
- Sports drink should be chosen before the sailing event
- Educate on the hydration protocol before the sailing event
- During the sailing event, hydration protocol should be laid down and followed strictly
- Always weigh your athletes before and after the race.
- Daily estimate the body: water balance by measuring urine specific weight

In the developed world, the availability of safe water is taken for granted but even there, bad sanitation is real possibility. In the developing world, water-related diseases remain a major problem. Many important infectious diseases are transmitted by contaminated water but by following some simple rules, that risk can be minimized:

***A. Recommendations on shore when abroad:***

- First-class hotels are no guarantee of adequate water purification.
- Use bottled water only
- Canned or bottled “carbonated” drinks and beverages made from boiled water are safe.
- Ice should be made from purified water.

***B. Recommendations while on water:***

- Drink only originally packed sports drinks or those prepared with bottled water.
- Carry enough fluids on your boat and hand it over to sailors during breaks
- Store the fluids in an appropriate cool box
- Follow the established protocol of hydration



## V. FEED YOUR TEAM WITH THE RIGHT FOOD

Whether at home or abroad; performance of your sailors can be substantially affected by the amount, composition and timing of food intake. Good nutritional practices will help athletes to train hard and recover quickly from the strains of training, travel and competition. Properly structured meals should consist of 55% complex carbohydrates, 20% proteins and 25% fats.

Due to specific timing of sailing training and competitions, main meals are in the morning and after return from the sea, usually structured as:

- Breakfast 1000 Cal
- Lunch on the water 500 - 1000 Cal
- Dinner 1500 Cal

Your team should adopt specific nutritional strategies before and during competition. Those protocols should be developed and designed with the help of a sports nutritionist and you should make sure that they are followed strictly, especially during competition events.

Always use the proper procedures of sport nutritional practice:

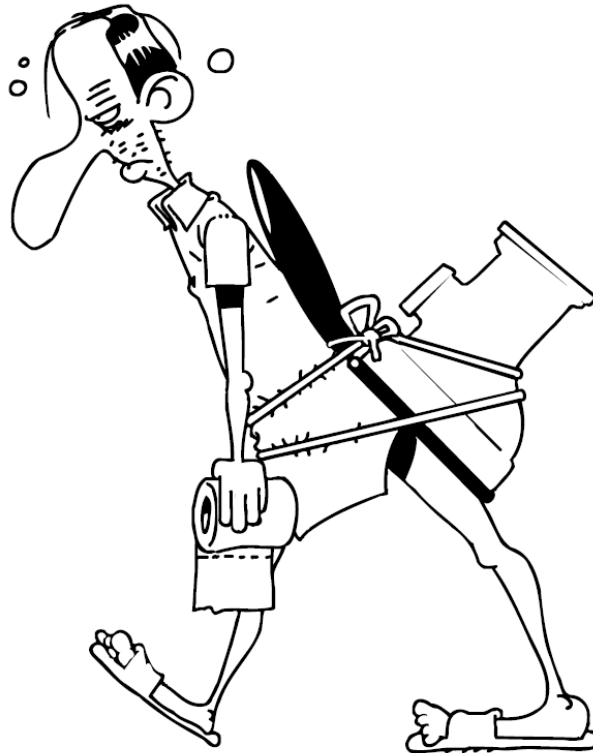
- Let your team doctor or nutritionist to do the job
- Organize lectures for sailors explaining the importance of proper sports nutrition
- Involve families in the program of sailors nutrition
- Make proper nutrition a habit of your sportsman
- Aim to achieve carbohydrate intake that meets their fuel requirements
- Warn them against uncontrolled use of dietary supplements
- Do not let sailors improvise with "natural products" that are supposed to enhance their capabilities. They don't work and can contain prohibited substances

At sport events:

- Investigate food availability at your destination before you leave home
- Contact the catering organizer at your destination to let them know your needs
- Take missing food supplies with you
- A nutritional protocol should be established before the sailing event and followed strictly
- Test the protocol before the event so that sailors can get used to the recipes
- Take care that sailors are not tempted by the food on the offer in self service restaurants at big events

### Travellers' diarrhoea

*Travellers' diarrhoea* is an illness associated with contaminated food or water that occurs during or shortly after travel. Depending on the length of stay it may affect up to 80% of travellers. It may be accompanied by nausea, vomiting, abdominal cramps and fever and can seriously endanger the sportsman's success in competition. Food spoils rapidly in a hot climate, especially meat, poultry and dairy products. With high humidity and temperature, food becomes an excellent culture media for bacterial growth. Therefore, even light contamination can lead to dangerous bacterial levels within a few hours. In high-risk environments stick to food produced in good hotels or in well-known restaurants. Keep to the eating plan that is normally used at home and avoid the temptation to have an "Authentic cultural experience".



#### A. Prevention of diarrhoea: (short-term travel, up to 3 weeks)

When abroad your team should obey to the rule: **Cook it, peel it or leave it!** Therefore, your sailors should eat only fruit and vegetables, which they can peel and wash themselves. Eat only hot, cooked food.

##### 1. Avoid:

- Using leftovers
- Blown tins or “swells” with canned food
- Un-pasteurized milk and milk products
- Raw shellfish
- Food from street vendors
- Leaving hot food to stand and cool before serving.
- Cold meats in restaurants

##### 2. Do:

- Eat all food hot and cooked through (especially meat and seafood)
- Peel, wash or soak fruit and vegetables before eating (in sodium hypochlorite or some mild disinfectant).

Elite athletes competing in the special events, the Olympic Sailing Competition, for example, cannot afford to get ill. In potentially risky situations preventive use of antibiotics can be considered. This is also necessary for sailors with underlying medical problems. Travel to the tropics causes a lowering of gastric acidity and makes sailors prone to intestinal infections. Weighing the risks of the side effects against the risk of not competing is subjective and is best accomplished in consultation amongst the sailors and the team doctor.

Antibiotics	
Ofloxacin	300 mg daily
Norfloxacin	400 mg daily
Ciprofloxacin	500 mg daily
Levofloxacin	500 mg daily
Rifaximin	400 mg daily

Travellers for whom preventive use of antibiotics might be considered:

- Poor 'track-record' travellers
- Very Important Travellers
  - Athletes
- Low gastric acid
  - Antacids or H-2 blockers, proton pump inhibitors
  - Gastric surgery
- Underlying medical problems
  - Diabetes mellitus

## B. Management of diarrhoea:

Estimated rates of *travellers' diarrhoea* during short-term travel (in our case – sport events) range from 20 – 50 percent per trip meaning that you could find yourself in a fight for the medals with 50% of your team having diarrhoea and being dehydrated. Your team should be reminded of specific ways to avoid *traveller's diarrhoea*.

Unfortunately, if the problem happens you cannot improvise. If your team doctor is with you, he will handle the case but if you are alone, you should obey to the rules of treatment:

### 1. Fluid Replacement:

- Discontinue milk products
- Drink commercially prepared medical electrolyte/glucose mixture (e.g. *Gastrolyte*) or some sport rehydration drink
- Do-it-yourself:
  - #1. drink eight ounces of fruit juice (orange juice should be diluted) 1/2 tsp. honey, sugar or corn syrup, pinch of salt; then
  - #2. 8 oz. water, 1/4 tsp. baking soda.
  - Alternate the above.
- or:
  - 4 tbsp sugar
  - ½ tsp salt
  - 1 L water
  -

### 2. Antimotility Agents:

Loperamide (Imodium)

Use antimotility agents alone for mild diarrhoea (tolerable) or with an antibiotic in case of moderate (distressing) to severe (incapacitating) illness.

**Note:** Do not use antimotility agents alone in case of severe illness and always try to consult with your team's doctor.

### 3. Antibiotics:

Levofloxacin	500 mg single dose
Ciprofloxacin	500 mg single dose
Norfloxacin	400 mg 2 x daily x 3 days
Ofloxacin	400 mg 2 x daily x 1-3 days
Gatifloxacin	400 mg 2 x daily x 1-3 days
Azithromycin	1000 mg single dose
Rifaximin	200 mg 2 x daily x 3 days

If you are confronted with several cases of diarrhoea among members of your team you should immediately start with the **procedures of epidemic control**:

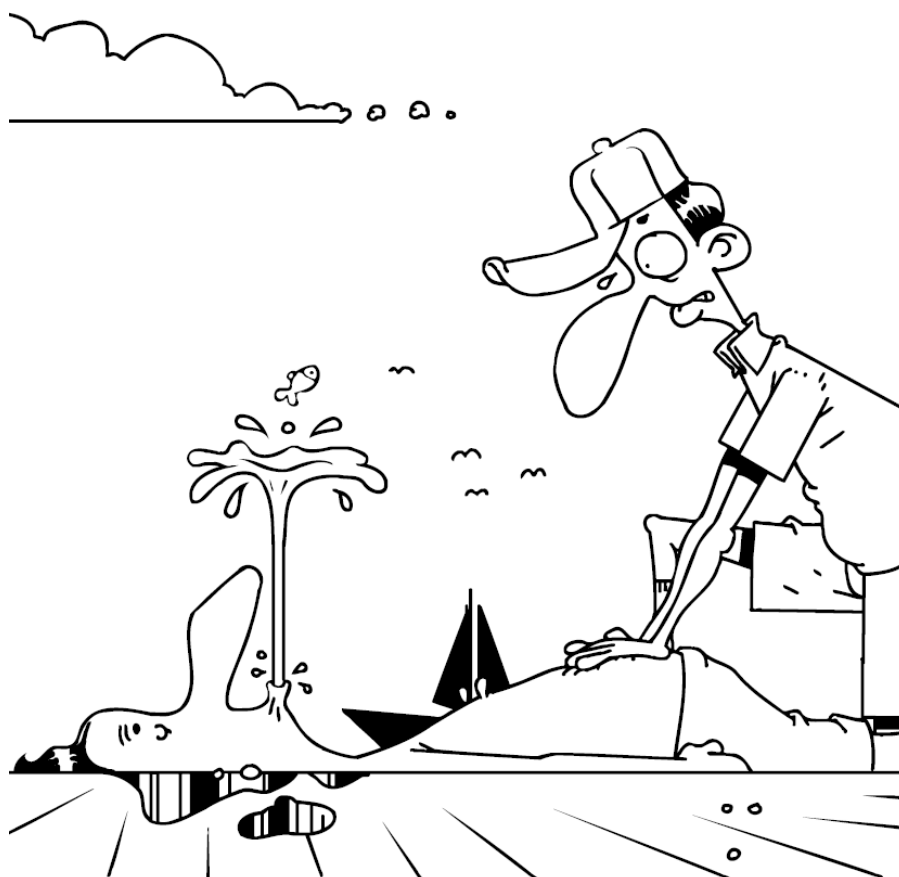
Isolate the sick and ensure that other members of the team cannot be infected. These procedures should be in place before your arrival at the new destination and should be designed by your medical support team. Some procedures, like regular wiping of the doorknobs with disinfectant, can be applied as preventive measure if your team doctor assesses the new destination as a risky one. You should also carry enough disinfectant that can be used if this should happen.

## VI. LEARN THE FIRST AID

In sailing events, organizers are obliged to ensure an adequate chain of medical help that will give prompt and effective assistance in the event of an incident, See the ISAF Website ([http://www.sailing.org/tools/documents/MedicalGuidelines\\_0307-\[5174\].pdf](http://www.sailing.org/tools/documents/MedicalGuidelines_0307-[5174].pdf)). This should be provided during the event and for pre-event training or in the training camps. However it is possible that you will not have any pre-organized medical support and you will therefore have to rely on your own abilities and the efficiency of the local medical system. Before departing your medical team should provide you with the basic information about the local medical system and at least with local emergency phone numbers. In any case, if an incident happens you will be the one who will have to provide first aid to the casualty until adequate medical help becomes available.

The aim of first aid in sports is to save and preserve life, to prevent further damage and to relieve pain. The injured should be prepared to be transported so that complete medical attention can be offered at the nearest onshore hospital or until professional aid arrives. Unfortunately when you are out at sea it is difficult to receive medical aid immediately so it is necessary to allow for time until it does eventually come.

First aid should be carried out within the borders of the suggestions offered in this instruction.



### Action in emergency

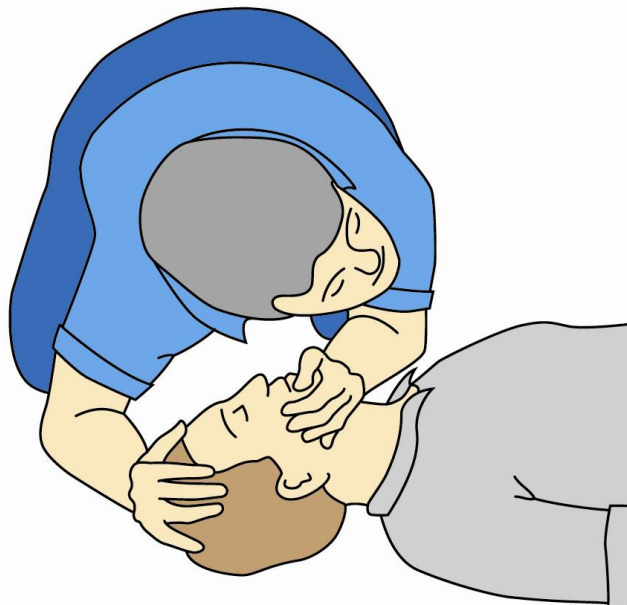
To avoid mistakes and hesitation in dealing with the casualty we have put forward procedures that you **should not digress from**.

Before any intervention, assess the overall situation and examine the casualty quickly and thoroughly.

1. **Assess situation** quickly and calmly and protect yourself and the casualty from danger. If possible ask for help from others. You should approach injuries on board / out at the sea carefully, making sure the boat is secured so that you and the casualty are safe. After you have established that you can proceed safely:
2. **Check the casualty** quickly - check if he is visibly conscious?
  - *If yes* – check for other conditions and treat as necessary
  - *If not:*
3. **Check response** - does he respond to your voice or to gentle shaking and tapping?
  - *If yes* – check for other conditions and treat as necessary
  - *If not:* **Call** (or ask someone to call) for medical help before proceeding

*And:*

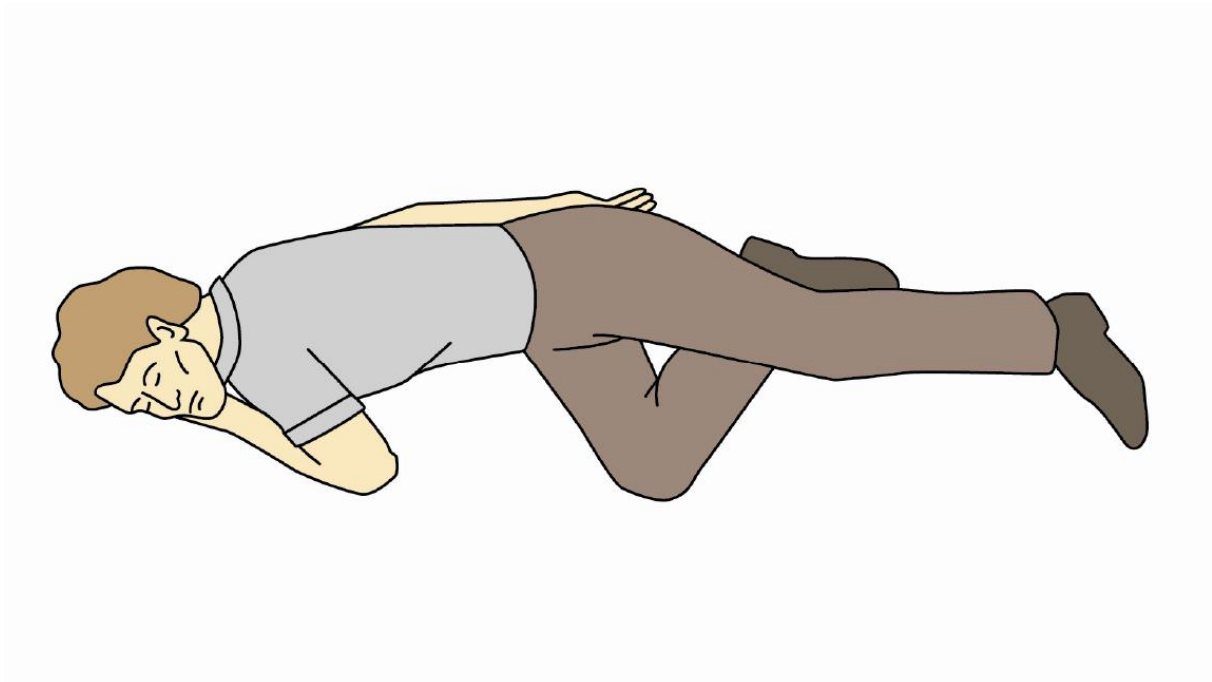
4. **Check the vital signs** - open airway and check breathing
  - *A = airway* (check if airways are open or obstructed – e.g. are the airways blocked by the tongue in unconscious patients, or are there any objects in the mouth
    - Lay the casualty face upwards, clean the mouth from foreign objects with your fingers
    - Head hyperextension (tilt casualty's head, chin upwards, head backwards ): this will keep casualty's airways open



- *B = breathing* (check if unprompted breathing is present)
  - Look, listen and feel ( kneel beside the casualty, bend on him so your cheek and ear are close to his/her face, look for chest movement, breathing, warm exhaled air on your face)



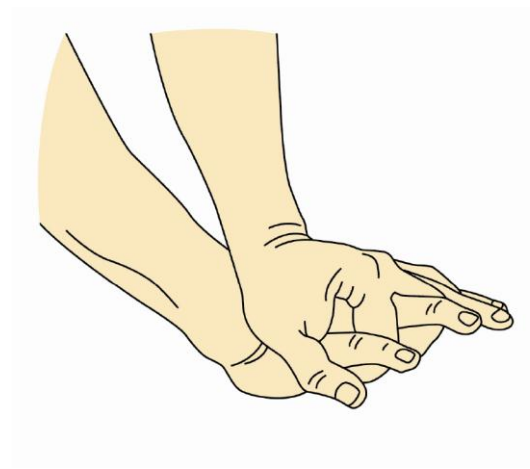
- *If breathing is present* - turn the casualty into **RECOVERY POSITION**



- *If breathing is absent:*

## 5. Commence chest compressions

- Locate the lower half of the breastbone; place the heel of one hand on it, the other on top of the first hand and interlock your fingers, making sure the fingers are not in contact with the casualty's ribs



- Start pushing downwards, lowering breastbone 4 – 5 cm, at a rate of 100 compressions/ minute



- Complete **30 compressions**

*And:*

## 6. Commence rescue breaths

- Kneeling beside the casualty, keep his/her head tilted back, take a long and deep breath, apply your mouth over the casualty's mouth, keeping his/her nose closed with your fingers
- Blow into casualty's lungs, watching for chest expansion (further head hyperextension may be needed if chest does not expand)
- Remove your mouth and let casualty's chest release





- give **2 rescue breaths** (if the casualty has drowned give 5 rescue breaths)

*And:*

## **7. Continue resuscitation (CPR)**

**Alternate 30 chest compressions with 2 rescue breaths until help arrives or the casualty starts breathing normally or you are too exhausted to continue**

*Note – some medical authorities no longer recommend rescue breathing but suggest that cardiac compressions alone are sufficient to cause air exchange.*

Resuscitation (CPR) includes all procedures which are artificially administered for breathing and blood circulation of the casualty that is seen as (clinically) dead.

If heart activity and breathing stop, brain damage (due to lack of oxygen) starts in minutes, and becomes irreversible after ten minutes. During the first minutes after the heart stops, the blood oxygen level remains high so chest compressions are more important than rescue breaths in the initial phase of resuscitation. After about five minutes the oxygen level falls and rescue breathing becomes important. (in view of new American Heart Association guidelines)

Resuscitation techniques and manoeuvres are quite easy to perform, but they must be learnt correctly and refreshed periodically. We suggest you: attend a practical first aid course to learn to perform resuscitation on special mannequins. Once you have correctly learnt resuscitation, you only have to retrain a couple of hours every year to keep your skills fresh.

## **Automatic external defibrillators**

Chest compressions can maintain casualty's circulation until professional help arrives but cannot converse dangerous irregularities in heart rhythm (fibrillation). Use of Automatic external defibrillators (AED) by a layperson makes it possible to defibrillate many minutes

before professional help arrives thus improving casualty's chances for survival. An AED is a portable electronic device that automatically diagnoses the potentially life threatening irregularities in heart rhythm and is able to treat them through *defibrillation* (the application of electrical therapy which stops the arrhythmia), allowing the heart to re-establish an effective rhythm.

AEDs are designed to be used by laypersons who ideally should have received AED training, so it is wise to invest in such training. AEDs are generally either held by trained personnel who will attend events (trainers) or are public access units which can be found in places such as sports fields.

### **Sequence for the treatment of adult choking**

A foreign object that is stuck in the back of the throat may obstruct the airway.

- If the casualty is breathing and shows signs of mild airway obstruction:
  - Encourage him to continue coughing, but do nothing else
- If the casualty shows signs of severe airway obstruction and is conscious give up to five back blows:
  - Stand to the side and slightly behind the casualty
  - Support the chest with one hand and lean the casualty well forwards
  - Give up to five sharp blows between the shoulder blades with the heel of your other hand
- If five back blows fail to relieve the airway obstruction give up to five abdominal thrusts:
  - Stand behind the casualty and put both arms round the upper part of his abdomen
  - Lean the casualty forwards
  - Clench your fist and place it between the navel and the bottom end of the breastbone
  - Grasp this hand with your other hand and pull sharply inwards and upwards
  - Repeat up to five times



- If the obstruction is still not relieved, continue alternating five back blows with five abdominal thrusts
- If the casualty becomes unconscious:
  - Support the casualty carefully to the ground
  - Call an ambulance immediately
  - Begin CPR

#### Four dangers imminent to loss of life

- |   |
|---|
| <ol style="list-style-type: none"> <li>1. Breathing and heart beat have stopped. If one of these functions fails immediately start CPR</li> <li>2. Heavy bleeding should be stopped immediately</li> <li>3. Shock should be recognised and taken into consideration</li> <li>4. Unconsciousness is dangerous because of possible suffocation either by swallowing, the tongue or inhalation of vomit</li> </ol> |
|---|

Only after considering these four dangers can you proceed to protect wounds from infection, immobilising and laying the casualty in the correct position for transport. Do not undress the casualty any more than is necessary and this should be done very carefully. The clothes should be torn at the seams and always removed from uninjured limbs first.

#### Injuries

There are different kinds of injuries that can occur during sailing. They may affect the skin and the underlying tissue (abrasions, wounds, contusions, bruises), bones and joints (fractures, sprains, dislocations), or/and muscles (muscle elongations or tears).

Be aware that head injuries, caused by the boom are frequent in sailing, can cause unconsciousness and can even endanger lives of your sailors. Especially for young sailors - consider wearing helmets!

General principles of emergency treatment apply almost to all kind of injuries and can be completed by anyone, waiting for a medical team to come:

- Check the environment and assess safety, before helping the casualty
- Don't use any unknown procedure you are not familiar with: they can cause further harm. If in doubt, don't waste time, and call immediately for urgent medical help
- Reassure the casualty, protect him/her from the environment (eg from the cold)
- Keep onlookers away

First thing to do in case of sprains, contusions, dislocations or fractures of a limb is **R.I.C.E.**

- **R - Rest**
- **I - Ice** - put an ice bag over the injury
- **C - Compression** - put a bandage around the injured limb to prevent swelling
- **E - Elevation** - elevate limb

This will reduce pain and give the casualty some relief; it's easy to do (you can use ready-to-use ice-bags, or just a plastic bag filled with ice-cubes. Ice bags are far better than cold

sprays (these can harm the skin if sprayed too close to the skin, and their cooling action is short lasting).

## Bruises

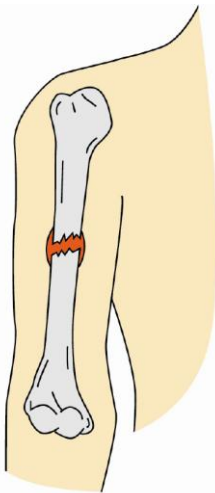
Injuries to the soft tissue may be subcutaneous (just underneath the skin), intramuscular (within the underlying muscles) or peri-osteal (related to bone). Symptoms are pain, swelling and bluish or reddish discoloration

### Emergency treatment:

- No bandage is required if there are no wounds
- Apply ice bag for 20-30 minutes , then reapply after other 30 minutes
- Do not apply ice directly on skin, it can harm the skin

## Fractures

Fractures are breaks in bones or cartilage where an external force applies directly, bends or twist the bone until it breaks. They are very painful; the casualty cannot move the injured part that appears swollen and bruised. The bone shape may appear deformed when the fracture is complete and the two parts of the bone are dislocated.



*Closed fractures* - when the bone fracture is not accompanied by an external wound;



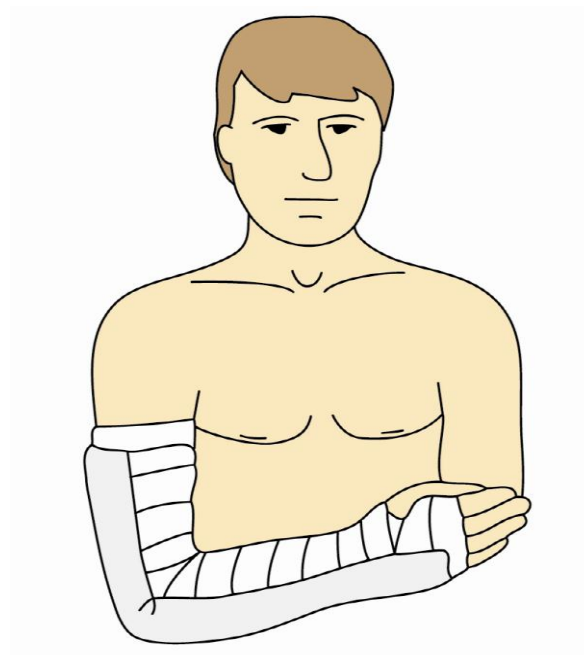
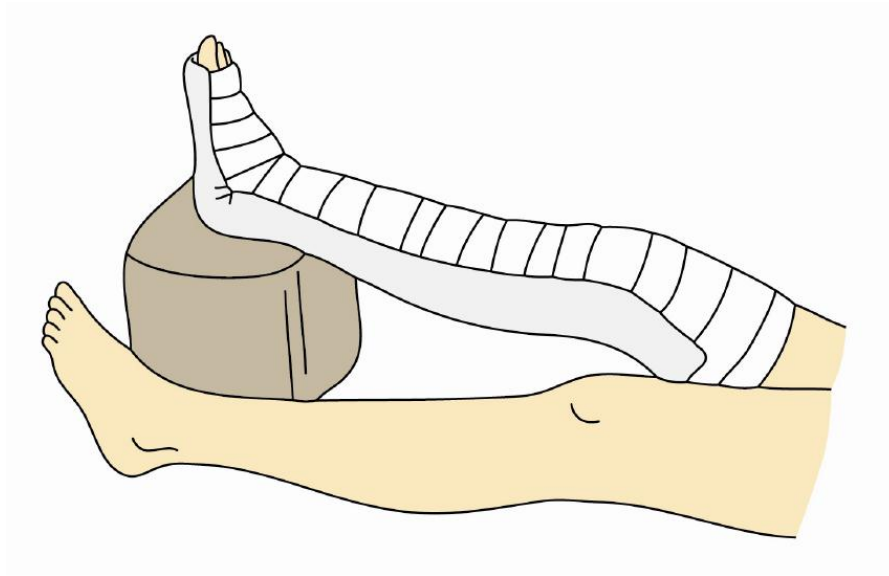
*Compound (open) fractures* - when an external wound occurs (the broken bone tears the skin); there is high risk of infection.

*Comminuted fractures* - when the bone is chipped or squeezed into little pieces.

Pain and bleeding associated with fractures can cause shock (put the casualty in recovery position, if possible, and ask for medical help). The broken bone can harm, tear or cut blood vessels and nerves (bleeding, paralysis), always check if the extremities are pale, cold or if sensation is impaired. The risk of bacterial infection is very high in open fractures, which need to be treated in emergency as wounds.

Emergency treatment:

- Immobilization of the limb with rolled up newspapers, improvised splint, bandages
- Put ice bag over the fracture
- If the casualty is in shock place in the recovery position



**Never try to reduce (re-locate the bone parts) fractures!**

Fracture must be reduced in hospital, after X-rays, by skilled medical personnel, sometimes under general anaesthesia. A wrong attempt to reduce a fracture may be very painful, and result in blood vessels or nerve damage (this can lead to paralysis)

- Seek urgent help to carry the casualty to hospital

**Dislocations**

They occur when a bone is forced out of its socket and the articular surfaces of a joint lose their contact; they can be extremely painful. The joint is locked in an abnormal position and its shape may change while movement of the joint is impossible

Emergency treatment:

- Immobilization to reduce pain
- Put ice bag over the injured joint
- Place the injured person in a comfortable position and reassure them
- Seek medical help and get the casualty to hospital

**Don't try to reduce dislocation!**

As for fractures: it may cause severe nerve or vascular injuries! Only practised medical staff can do this!

**Muscle injuries**

They are common in sports practice. An overstretching or overexertion of the muscle causes a rupture of the muscle fibres. Pain may be felt during exercise (severe injuries) or immediately after it (mild injuries). Muscle contraction may be painful, or impossible. The limb may appear swollen or bruise.

Emergency treatment:

- R.I.C.E.

**Cramps**

Cramps are not muscle injuries, but involuntary muscle spasms often caused by exercise in hot weather, dehydration or lack of mineral salts.

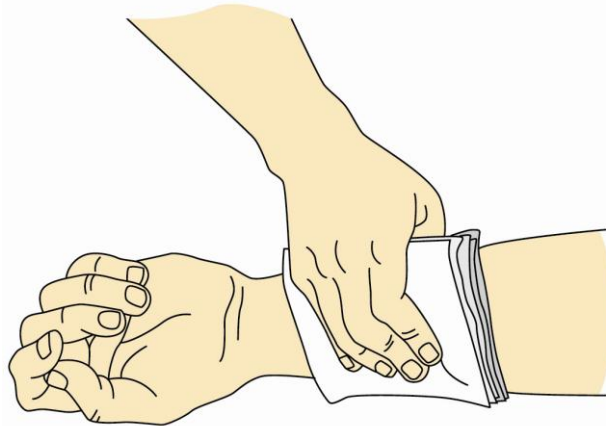
Emergency treatment:

- Stop exercise
- Rest and cool down
- Drink water and electrolyte (sports drink)
- Gentle stretching of the muscle

**Wounds**

Wounds are quite common in sports practice: in sailing you can get hurt while cutting a rope with a knife or scissors, or when the boom hits your head during a tackle or gybe. Wounds can be more or less deep, but they always cause bleeding. Bleeding should be stopped

immediately by applying direct pressure over the wound with your fingers or your palm preferably over a sterile dressing or clean pad. Skin is a protection against bacteria, when



skin is cut or broken an infection may develop.

#### Emergency treatment:

- Wash with soap and water, hydrogen peroxide or surface active agents. Do not use alcohol - it hurts and it delays the healing of the wound
- Remove dirt, fibreglass / carbon debris or other foreign objects from the wound. Clean the wound from the centre outward. In the case of a penetrating neck wound, do NOT remove a visible foreign body which may have torn the jugular vein
- Apply continuous pressure with dressing pads; if bleeding doesn't stop, add further dressing pads without removing those already soaked
- Small clean cuts can be closed with adhesive strips
- Deep cuts need surgical treatment and antibiotic therapy (ask for medical help)
- Dirty wounds or wounds containing dead tissue must be left open. Clean as well as possible and apply dressing
- Abrasions occur when the first layer of skin is damaged and scraped away. They are not severe, but very painful, and must be cleaned and washed to avoid bacterial infection
- Elevate if bleeding is from a limb
- Treatment for shock is necessary in case of paleness, weakness and fainting.
  - Lay the casualty down with raised legs, cover him/her with blankets or coats and call for medical help
  - Do not leave casualty unattended and monitor the vital signs: level of response, pulse and breathing

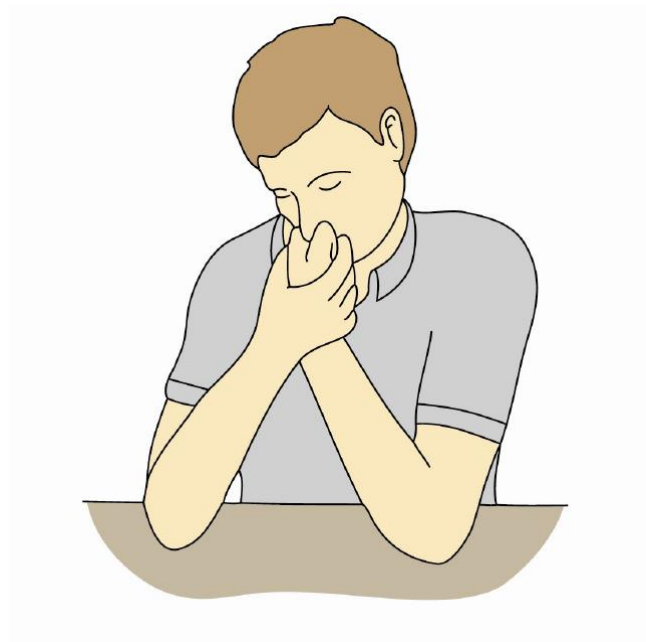


## Nosebleed

Nosebleed can be caused by injuries of the face/nose. It's quite common in children, and usually it does not require medical treatment.

### Emergency treatment:

- Lean the head forward
- Pinch the soft part of the nose with two fingers for 10 minutes; this will cause the blood to clot
- Don't blow the nose. **Don't put cotton swabs or anything else into the nose!** (This can only be done by medical personnel)
- Ask for medical help if nosebleed doesn't stop after half an hour



## Fainting

Fainting is a temporary loss of consciousness with quick recovery, caused by a lack of oxygen to brain.

It may be due to low blood pressure, neurological reactions to pain or emotional distress. Skipping a meal, standing up too fast, standing for a long time in a crowd, high temperature (flu), dehydration, diarrhoea and vomiting can cause fainting. Symptoms include nausea, giddiness, excessive sweating, dim vision, palpitations, weakness (the casualty can fall)

### Emergency treatment:

- Lay the person down, elevate feet above head level - they should return to normal within a minute
- If not, seek urgent medical help - it may be also due to illnesses as diabetes, arrhythmia, heart attack (CPR may be necessary – see relevant section) or shock

If the person seems about to faint (such as in shock, heatstroke), or if they have already fainted, place them in the RECOVERY POSITION - this position keeps the airways open even if the person is unconscious, it also prevents the person from suffocating by vomiting.



Always check the presence of pulse and breathing (see relevant section)

### **Heatstroke**

Heat stroke is caused by prolonged exposure to Sun thermal radiation.

Symptoms are: headache, confusion, hot dry skin, rapid heartbeat, lack of consciousness, irritability, and high body temperature.

#### Emergency treatment:

**The aim is to lower the casualty's body temperature as quickly as possible!!!**

- Remove the person to a shady place ( recovery position if unconscious )
- Cool the person with wet towels until body temperature falls to 38 °C (100F)
- Monitor vital signs and if their temperature starts to rise again, repeat the cooling process
- Seek urgent medical help (**it could be life threatening**)!

### **Heat exhaustion**

Heat exhaustion occurs in very humid and hot weather, even without exposure to direct sunlight (it can even occur indoors). In these conditions perspiration does not take heat away from the body (it doesn't evaporate, due to high amount of water in the air).

Symptoms: headache, weakness, vomiting, dizziness when standing from a sitting position, **normal or moderately** high temperature, normal mental state, weakness

#### Emergency treatment:

- Remove the person to a cool place (shade)
- Get them to lay down with raised legs
- Cool the person with wet towels
- Administer oral re-hydrating solution

### **Drowning and near drowning**

A drowning casualty must be treated as explained in RESUSCITATION (CPR). Other manoeuvres to drain water from the lungs are actually not effective. Most likely, a drowning casualty will vomit, in this case just roll him/her on his/her side, and sweep vomit from the mouth before starting rescue breathing again. All drowning casualties must be taken to hospital for medical checks and antibiotic therapy.

### **Hypothermia**

Immersion in cold water or wet suit (with exposure to wind) on board may cause hypothermia (condition when the body temperature decreases to a dangerous level). It's very important to assess hypothermia symptoms quickly:

*Mild hypothermia:* shivering, weakness, slightly blurred speech and uncoordinated movements

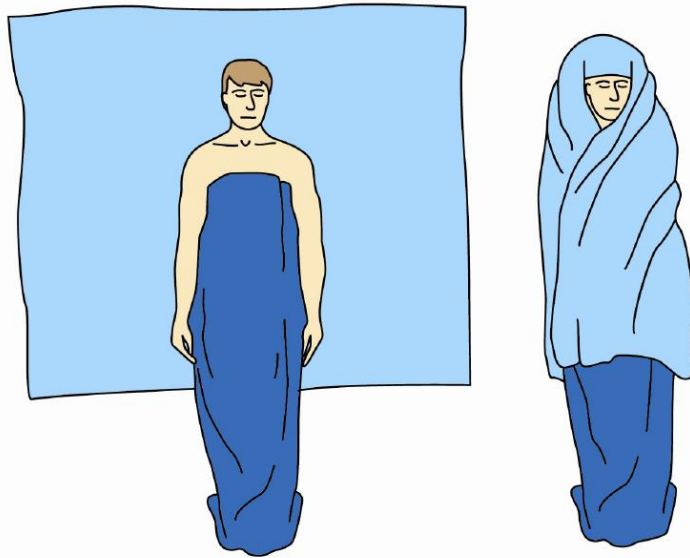
#### Emergency treatment:

- Remove wet garments and put on dry ones, keep the person under blankets
- Administer warm fluids and food.

*Severe Hypothermia:* weakness, confusion, uncoordinated (unable to perform simple tasks), bizarre or unusual behaviour, lethargy, coma.

Emergency treatment:

- If possible take the casualty to a sheltered place (e.g. cabin)
- If sheltered remove wet clothes and insulate them with dry clothing or blankets
- If on board, wrap them in blankets or thermal plastic foil to protect them from the wind.
- If the casualty is conscious and if available, give them hot drinks
- Do not administer fluids if the casualty is unconscious or uncoordinated!
- Seek immediate medical help (there is a risk of heart failure).
- The casualty should be transferred on a stretcher with minimal movement



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**Handle the casualty gently - do not massage or rub arms and legs, it may push cold blood to the heart, further lowering body temperature.**

After giving emergency treatment, it's always better to re-warm hypothermia cases in hospital where infusions of warm electrolyte solutions and other warming methods can be applied.

## VII. DO NOT OVERSTRAIN YOUR SAILORS

Just like all other top-level athletes, sailors competing today must undertake high demands of physical training to achieve the necessary level of physical competence to endure the strains of competition. In such a competitive environment it is easy to overlook the necessity for rest and some physiological changes during training sessions that can endanger the health of your sailors.



Moderate and high intensity exercise can cause a temporary decrease in immunoglobulins (IgA and IgM) in mucosal secretions. Recovery to pre-exercise status usually occurs within 24 hours, but after high intensity exercise the levels may remain lower for longer, increasing the possibility of infection. Intense exercise can be associated with an increased risk of respiratory illness.

Crowded transport like aeroplanes or dormitories at big sports events, where large groups of people remain in close contact for a long time, together with a lower resistance to respiratory infection create a higher probability of transmission of respiratory diseases. A simple bout of flu at new destination can ruin months of dedicated training.

During sailing other health problems may occur which are caused by the poor health of the sailor. Never send your sailors out on the water if they are not well or recovering from flu, cold, diarrhoea or other infectious diseases. Wait a few days until they are fully recovered, then you can continue safely with the planned activities.

Some simple things may reduce health problems on board:

- Restrain from going out if the conditions are too heavy, or the sailors are not perfectly well
- Avoid overstraining your sailors with intensive training two days before the trip
- When organizing the trip, include at least one day of rest after arrival

Training is supposed to make your sailors perform better but exercise can potentially be dangerous because of injury from overdoing the training or by having an accident. Every trainer plans his training program carefully but special care must be taken when training young sailors.

Children are not miniature adults. Their mental and musculoskeletal systems are developing from childhood into adolescence and during this period each child's body has a different level of maturity and capacity to endure the strains put on them by training. In contemporary sailing they are exposed very early on to the highest demands of training targeted for various classes of dinghy boats, each of them with different physical demands in relation to the sailor's height, weight, muscular strength and endurance. It is a fact that a sailor's performance relates directly to their capacity to overcome the external forces imposed on the boat. Anthropometric parameters for creating the highest hiking moment force are well known and in some classes weight margins are very narrow, actually requesting young sailors to sail in them in order to fulfil the weight requirements of the boat. The problem is that today it is not unusual for sailors of less than 19 years old to possess the requested anthropometric parameters while nevertheless, size and weight are not always related with their bone maturation.

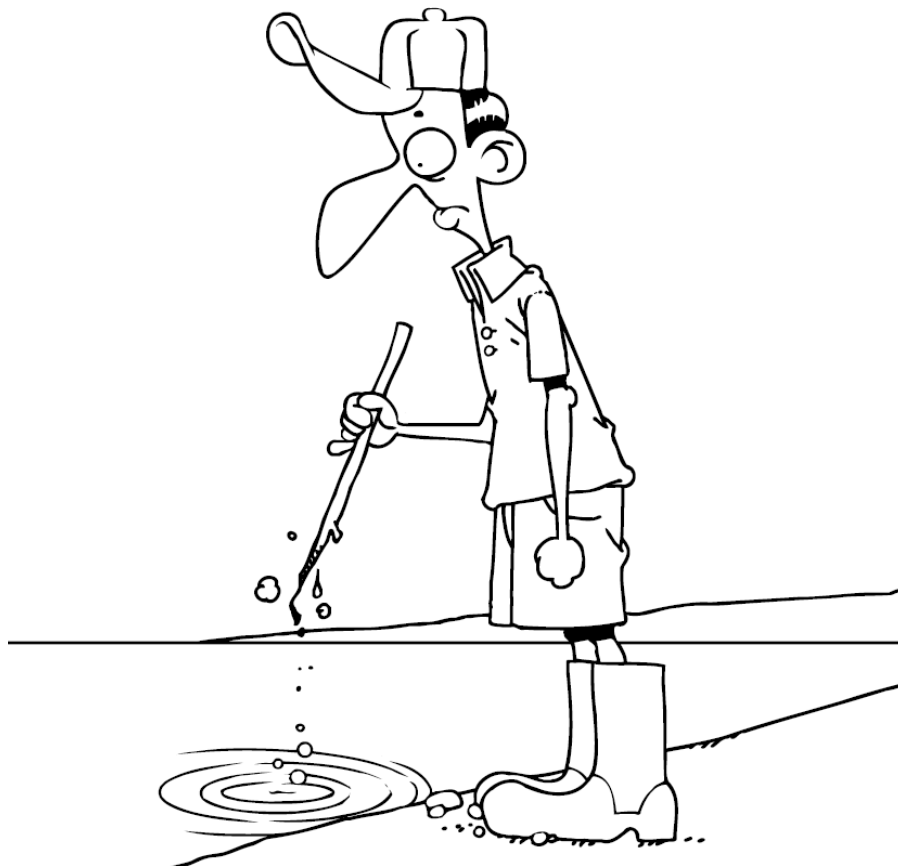
A 19 year old sailor can appear as an adult athlete, although his growth has not finished. The long bones of the body do not grow from the centre outward. Instead, growth occurs at each end of the bone around the growth plate. The growth plate is the last portion of the bone to harden, which leaves it very fragile, sensitive and vulnerable to physical compression and stretching. Any damage to those areas will definitely affect the growth. Also, because muscles and bones develop at different speeds, child's bones may be weaker than the surrounding connective tissues (ligaments). Although all children who are still growing are at risk, girls and boys near the end of their growth period are especially vulnerable.

Trainers should always remember:

- Children have fragile growth plates at the ends of their long bones whereas adults do not
- The chosen boat class for each child must be appropriate for the child's age and its training age
- An early transition to a more demanding class can result in injury and de-motivation.
- Threshold growth plate stress is an individual parameter, directly influenced by the growing up stage
- Consult with your team doctor before make a decision on transition to a more demanding class

## VIII. PROTECT YOUR TEAM FROM POLLUTED WATER

Unfortunately pollution is our reality and sailing events are often held on racing fields in front of the major urban areas, not always with appropriate sewage water plants. Near major towns one should expect a high level of *coli bacteria* and potentially harmful chemicals in the water. Infection may result from ingestion or inhalation, or contact with harmful micro-organisms which may be naturally present, that can be carried by people or animals using the water, or present as a result of faecal contamination. The most common consequences are diarrhoeal disease, acute febrile respiratory disease, ear infections and infection of the skin lesions. Waters in some sailing areas can also hide potentially dangerous algae and other harmful sea organisms like jelly fish.



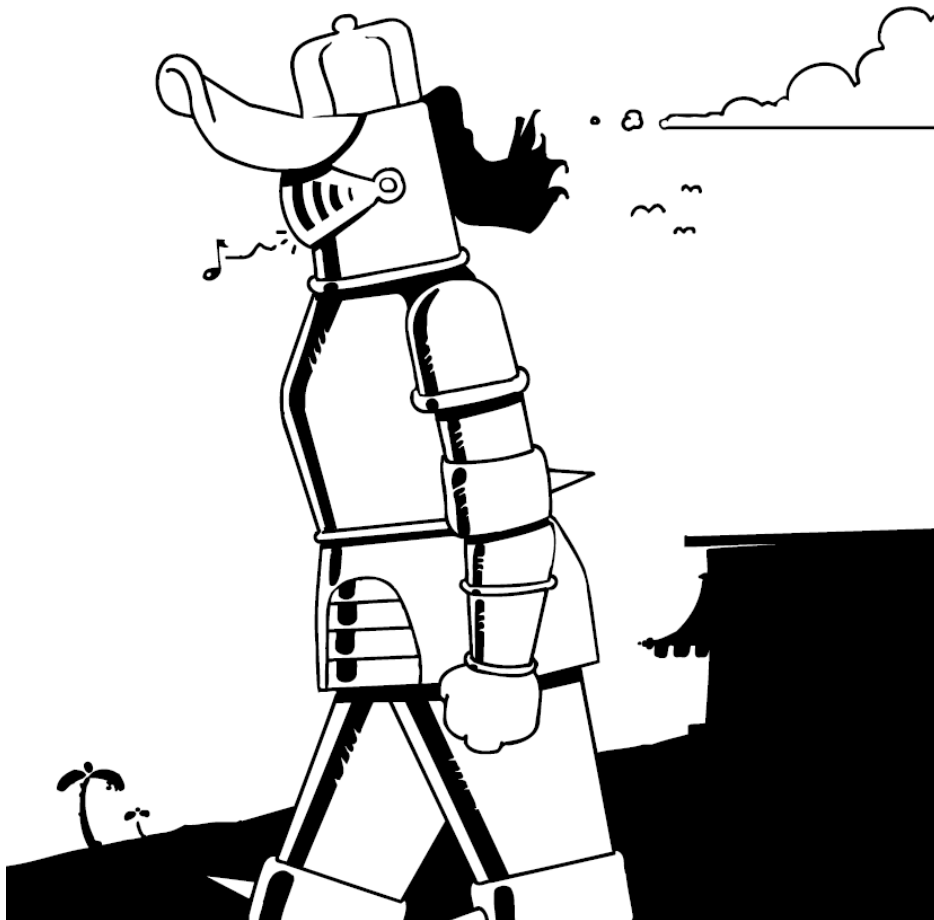
Instruct your sailors to:

- Try not to swallow water if capsized
- Wash their eyes and face with available water when on board
- Take a shower immediately on return
- Apply antiseptic to cuts and abrasions after washing on return to land
- Take antibiotics if inflammation develops
- Take care to avoid contact with water by wearing adequate sailing garment if sailing on slow moving, fresh water lakes, rivers or streams in areas where schistosomiasis is known to occur. If fresh water contact is unavoidable, dry off quickly to prevent the parasite from penetrating the skin.

- Wear proper footwear – it can protect the sailor from injury (cuts, bites), insects (sand fleas, ticks), and parasites (hookworms, strongyloides), which are found in the sand and soil on some beaches, especially on riverbanks and muddy terrain
- obtain local advice on the possible presence of dangerous aquatic animals in the area

## IX. BE WARY OF ATHLETES SECURITY

Of the 500,000 homicides each year, more than 90% occur in developing countries and interpersonal violence is a significant risk in many developed countries too. Pre travel advice to your team should include not only information about risks of acquiring disease in the places that will be visited but also the information about climate, quality of food and water, and if possible, security information. That type of advice can be obtained from government agencies, Departments of foreign affairs or private agencies that are providing such a service.

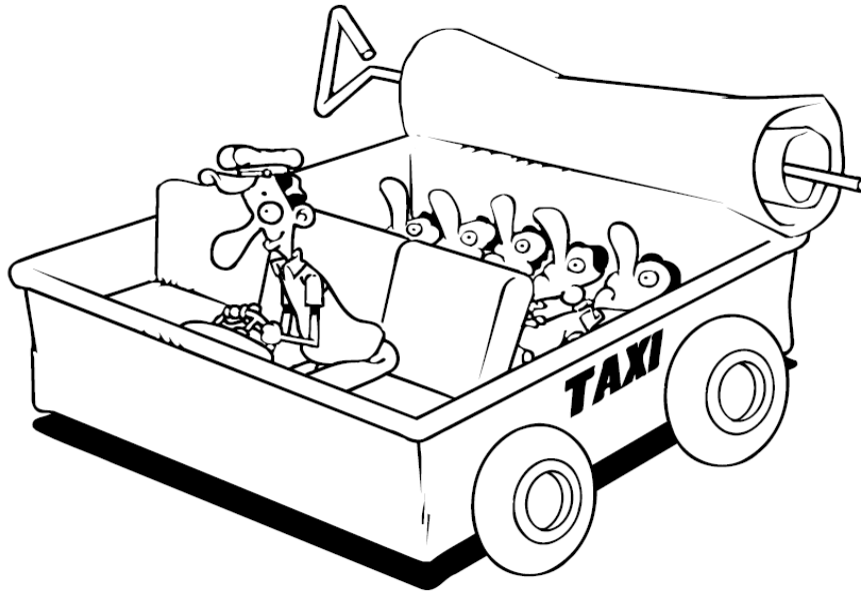


One has to:

- Dress inconspicuously (your team colours in some countries can make you a target!)
- Leave expensive jewellery and watches at home
- Avoid night or solo travel
- Do not to flash money
- Use alcohol in moderation
- Leave the scene if feeling threatened by the mood and tone set by other people's behaviour
- Use taxis from authorised ranks only

## X. BE WARY OF ATHLETES TRANSPORTATION

Motor vehicle accidents are the leading cause of accidental deaths of long-term travellers living in the third world. A significant portion of those deaths can be attributed to accidents involving motorcycles. The possibility for being injured in a car accident while in foreign towns is the most reason of injury to all travellers abroad, including sportsman. This has to be stressed. Simply learning how to say “slow down” to the taxi driver can save a life.



In countries where “rules of the road” are not enforced or are non-existent and where blood transfusions and injections may carry potentially deadly viruses (HIV, Hepatitis B), there are several common-sense recommendations which should be followed:

- Avoid over-crowded public vehicles
- Avoid rural travel by road after dark
- Avoid riding on motorcycles
- When renting a car, check for seatbelts, good tires and brakes
- Hire a large vehicle if possible
- Secure reliable local transport before arrival

Although developed to provide medical care to the general population, the approach, the systems and the doctrine of *travel medicine*, can help your team to solve some of its health problems. This simple approach in the form of these Medical Guidelines can be effectively used in the training of sailors in the form of health manuals and easily administered as a part of pre-competition service given to the sailors in training camps.

***It is the truth that nobody will win the race thanks to these Medical Guidelines but it is the truth that many races were lost because of not following them.***

***ISAF Medical Commission***



***Disclaimer About Medical Information:***

*The information and reference materials contained here are intended solely for the general information of the reader. **It is not to be used for treatment purposes, but rather for discussion with the patient's own physician.** The information presented here is not intended to diagnose health problems or to take the place of professional medical care. The information contained herein is neither intended to dictate what constitutes reasonable, appropriate or best care for any given health issue, nor is it intended to be used as a substitute for the independent judgement of a physician for any given health issue. The major limitation of informational resources like ISAF Medical Guidelines for the International Team Coach is the inability to take into account the unique circumstances that define the health issues of the patient. **If you have persistent health problems or if you have further questions, YOU MUST consult your health care provider. Failure to consult your health care provider may result in serious permanent harm or death.** All readers of these Medical Guidelines for the International Team Coach agree to read and abide by the complete terms of this DISCLAIMER.*