

GUIDELINES FOR MANAGEMENT OF TRIATHLON RELATED MEDICAL EMERGENCIES

World Triathlon Medical Committee, 29 March 2018

- INTRODUCTION

There is no doubt that travel is an integral part of professional sport life and the triathlon season is organized as a string of national or international events that requires weekly travel to compete. By the nature of their sport, the triathlete's racing field environment can differ much from their home one and can have a decisive influence on their final success in the competition. One day a race venue can be tropical and the next it can be in a very cold climate. Such major environmental changes can strongly influence not only their fitness abilities, but also their health. Modern, top-level competing triathletes travel frequently and must be able to deal with environmental problems and also those related to modes of transportation, major time zone changes, different foods, accommodation and different approaches to - and levels of - medical care at their 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 triathlete's health while travelling abroad and therefore enhancing their competitive edge in racing.

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

1. CONSULT WITH YOUR TEAM PHYSICIANS

Sports travel medicine is developed to assist and solve the problems of the travelling sportspeople, including those caused by training and competing in different environments at triathlon events. Many of the travel and sport-related diseases and ailments that can affect triathletes 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 triathlete's health and abilities. Sportspeople 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 triathlon 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 a 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 the 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 athlete, has the most influence and is the one that the athlete 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 triathletes can easily assess the risk to the individual triathlete, 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 the 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 races, 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 "last-minute visits" to your team doctor, it is possible to deliver a good pre-travel and pre-competition "package" which should consist of:

1.1 Preparation for Travel

- Dental care or other minor ailments
- Supply of necessary medications
- Letter regarding any current illness and a TUE if necessary
- Medic Alert Tag
- Pre-travel advice
- Assessment of the current health status of the athlete

1.2 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 (eg yellow fever) but also about recommended vaccines for that specific area too. Your federation or team doctor should provide that information. Vaccinations are administered according to the health risk, which the travelling athlete is likely to incur. Short-term travellers, for instance, participating in triathlon events that last only 1-2 days and staying in first-class hotels in urban centres need less protection than those staying for prolonged periods in cities in the developing world.

IMMUNIZATIONS ACCORDING TO RISK

Childhood immunization?	No <input type="checkbox"/>	TB, polio, MMR, varicella, tetanus, diphtheria
	Yes <input type="checkbox"/>	
Border crossing?	Yes <input type="checkbox"/>	yellow fever, (meningococcus, polio)
	No <input type="checkbox"/>	
Food/water risks?	Yes <input type="checkbox"/>	hepatitis A, typhoid
	No <input type="checkbox"/>	
Long-term stay?	Yes <input type="checkbox"/>	hepatitis B, rabies, Tuberculin skin test
	No <input type="checkbox"/>	
Special risk?	Yes <input type="checkbox"/>	Japanese e., hepatitis B, rabies, cholera, influenza
	No <input type="checkbox"/>	
athlete at big events	Yes <input type="checkbox"/>	meningococcus, influenza

TRAVEL VACCINES			
Class	Vaccine	Booster (Yr)	Indication
a. Routine	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 (1)	None	All travellers
	MMR (measles, mumps, rubella)	once	All travellers
	Hepatitis B	none	All travellers
	Influenza2	annually	All travellers
	Rotavirus1	none	All travellers
	Tuberculosis (BCG) (3)	none	All travellers
	Varicella1	none	All travellers
b. Required (International borders)	Yellow fever	10	South America and Africa
	Meningococcal disease and polio	3-5	Hajj (S. Arabia)
c. Recommended	Cholera	2	Some
	Hepatitis A (4)	none	Travellers
	Japanese encephalitis (4)	1 (or none depending on the type of the vaccine)	Rural Asia, S.E. Asia, long stay in transmission areas
	Meningococcal disease (4)	3-5	Sub-Saharan Africa, group accommodation
	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 fever4	None (10 if re-certification is 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.

1.3 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, anti-diarrhea, 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:

- Anti Diarrhea (loperamide)
- Antiemetic (dimenhydrinate)
- Analgesic (nonsteroidal anti-inflammatory agents/analgesics)
- Antihistamine (hydroxyzine, terfenadine)
- Antipyrexial (tylenol, acetylsalicylic acid/aspirin)

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 triathlon environment the obvious choice is azithromycin or quinolone antibiotic*

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

(*) Several scientific papers established a link between quinolone antibiotics and tendon ruptures – seek medical advice before using them

1.4 HIV (Human immunodeficiency virus) infection and International Travel

Advice on prevention of sexually transmitted diseases (STDs) should also be part of the pre-travel planning, at least in the form of pamphlets. All triathletes should be aware of the risks of STDs, 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	
Don't	Do
<ul style="list-style-type: none">● Engage in unsafe sex● Pierce ears● Accept acupuncture, tattoo or injections (reused needles)● Receive transfusion● Use illicit injectable drugs	<ul style="list-style-type: none">● Use latex condoms● Associate socially● Share food, hug etc.

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.

1.5 Malaria Prevention (Chemoprophylaxis) and Other Mosquito-borne Diseases

Malaria, viral hemorrhagic fevers, Zika virus disease, chikungunya, dengue, 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 the triathletes should be given this advice, with special emphasis on the importance of compliance to chemoprophylaxis in malaria prevention if competing in a malaria risk zone.

Although the risk for such a vector-borne infection is lower, personal protective measures to prevent the mosquito bites should be taken throughout the whole day.

These include the use of appropriate repellents and wearing of light-coloured long sleeves/pants clothing. Repellents should contain either DEET (diethyltoluamide) 20% or more, or IR 3535, or Picaridin, and may be applied to exposed skin or to clothing (but not under clothing) The percentage of DEET does not increase its mosquito repelling power but rather increases its longevity of action (DEET 30%: 4 - 6 hrs protection; DEET 90%: 8 - 10 hrs. protection). Repeat application is normally needed several times a day.

Any sunscreen should be applied first.

2. ACCLIMATIZE YOUR TEAM

2.1 Exposure and adaptation to heat

The triathlon season can require travel and competing in very hot environments with different climatic zones. While the environment conditions on the racing field are actually the essential part of triathlon, 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 triathlete'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 an athlete'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 triathletes:

- 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 athlete
- Not linked to the skill level

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 results in a 15% decrease of the athletic performance!

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

2.2 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 athlete'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 triathletes 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:

Besides acclimatization procedures there are some other recommendations to consider:

- In a very hot environment reduce physical activity 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 triathletes 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 triathletes to use "cooling vests" before the races. These vests are functioning as "heat sinks" and can maintain the core body temperature, even in very unfavourable heat conditions.
- 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 triathlon season is long and heat acclimatization adaptation may vanish after only a few days or weeks!

2.3 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 followed in a circadian pattern. Rapid air travel across several time zones outstrips the ability of the body to re-synchronize these rhythms forcing athletes 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 very readily as Jet lag.

Jet lag (Circadian dysrhythmia) can significantly influence a triathlete'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 triathletes' biorhythm, allows proper rest and secures adequate time for adaptation on arrival.

Adaptation procedures to new time zone:

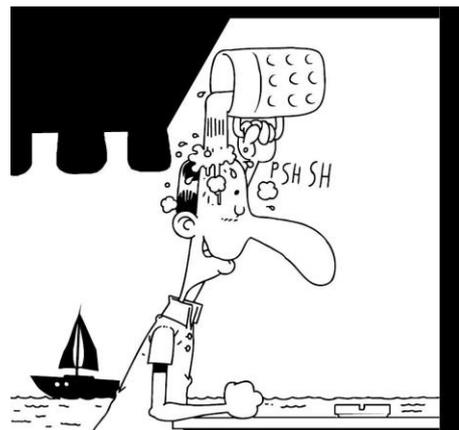
- a. *Sleep/wake time shift:*
Westbound: (Pre departures) go to bed later and waken later.
Eastbound: (Pre departures) go to bed earlier and waken earlier
- b. *Light-exposure alteration:*
Eastbound: (On arrival) < 6 time zones: ☐ a.m. light
(On arrival) 7-12 time zones: ☐ p.m. light
Westbound: (On arrival) 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.

3. PROTECT YOUR TEAM FROM SUN AND COLD

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

3.1 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. Triathletes 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 race 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 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.
- 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.
- Use the appropriate sunscreen: SPF 25 or greater
- Advise them to apply appropriate quantity of sunscreen

3.2 Exposure to cold

A cold climate is unavoidable in triathlon. Even in temperate areas a combination of water spray, wind, wet clothes, fatigue, dehydration and the waiting periods to compete can dangerously lower the body temperature and influence the performance of the triathletes.

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

- A foolhardy approach to the cold while competing decreases comfort and negatively impacts performance. this may decrease performance and certainly may have an untoward consequence to the result of the race. When skin temperatures fall below 15oC there is also a decline in the strength of handgrip and manual dexterity during the bike leg.

In either case, you have no excuse for not knowing how to keep your triathletes 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 enter into the boat, triathletes 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 triathletes 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 athlete, 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 triathlete warm, but if the heat loss is rapid the chances are that exercise will be counterproductive. Whilst racing triathletes 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 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. Remember that water conducts heat at a much higher rate than the air.

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

- Wear a cap in the swim leg – the head is responsible for one-third of the body's heat loss
- Wetsuit is crucial to prevent hypothermia
- Wear multiple layers of high tech clothing during cycling.
- 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
- Always be prepared to intervene and recognize the signs of hypothermia during the swim leg
- Personal floating device on board is mandatory

3.3 Pre-competition warm up in cold environment

When racing 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.

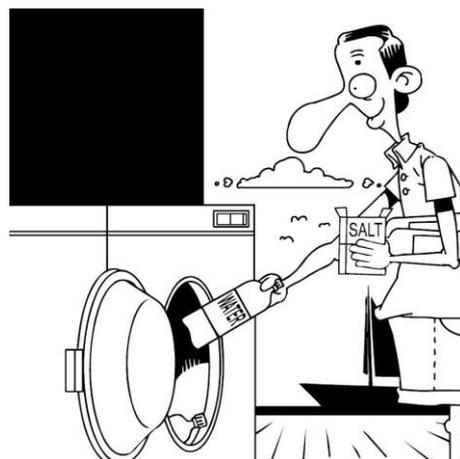
- Under cold conditions - start the warm up session.

- Session must last between 15 and 20 minutes.
- It must include all muscles, but particularly those that are going to be used more when swimming.
- The warm-up must continue for a further minutes on the water
- Do not forget to keep your triathletes warm before the race.
- If possible hand over additional clothing for them to wear until the race starts.
- If the race is rescheduled the triathletes should repeat the warm-up procedure of low-intensity movements from warm up sessions



4. 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 athlete can take. Water is critical for exercise performance and is the nutrient most neglected by triathletes. Triathlon may be run for several hours at a time, 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 the competition. During exercise, fluid losses are primarily due to sweating and breathing. In triathlon this is emphasized with unavoidable sun and wind exposure and the wetsuits. The physiological mechanisms of the body's cooling 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 the field and during competition, taking into consideration regulations.

Use the proper procedures of hydration:

- Let your team doctor or nutritionist to do the planning
- Organize lectures for triathletes to explain the importance of hydration
- Make hydration the habit of your athletes
- A protocol of hydration should be established before the triathlon event
- Sports drink should be chosen before the triathlon event
- Educate on the hydration protocol before the triathlon event
- During the triathlon 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. General Recommendations :

- 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 during training :

- Drink only originally packed sports drinks or those prepared with bottled water.
- Carry enough fluids on your bike.
- Store the fluids in an appropriate cool box.
- Follow the established protocol of hydration.

5. FEED YOUR TEAM WITH THE RIGHT FOOD

Whether at home or on the field the performance of your triathletes 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 triathlon training and competitions, main meals are in the morning and in the evening, usually structured as:

- Breakfast 1000 Cal
- Lunch 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:

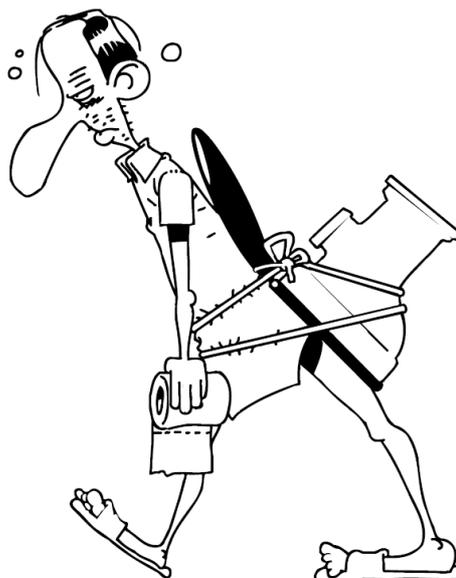
- Let your team doctor or nutritionist to do the job
- Organize lectures for triathletes explaining the importance of proper sports nutrition
- Involve families in the program of nutrition
- Make proper nutrition a habit of your athlete
- Aim to achieve carbohydrate intake that meets their fuel requirements
- Warn them against uncontrolled use of dietary supplements
- Do not let triathletes 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 triathlon event and followed strictly
- Test the protocol before the event so that triathletes can get used to the recipes
- Take care that triathletes are not tempted by the food on the offer in self service restaurants at big events

5.1 Travellers' diarrhoea

Travellers' diarrhea 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 athlete'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 diarrhea: (short-term travel, up to 3 weeks)

When abroad your team should obey the rule: **Cook it, peel it or leave it!** Therefore, the triathletes 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
- Unpasteurized 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 Triathlon Competition, for example, cannot afford to get ill. In potentially risky situations preventive use of antibiotics can be considered. This is also necessary for triathletes with underlying medical problems. Travel to the tropics causes a lowering of gastric acidity and makes triathletes 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 triathlete and the team doctor.

Antibiotics

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' diarrhea 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 diarrhea.

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 200 ml of fruit juice (orange juice should be diluted) 1/2 tsp* (7ml) honey, sugar or corn syrup, pinch of salt; then
 - #2. 200 ml water, 1/4 tsp. (4 ml) baking soda. Alternate the above.
- or:
- 4 tbsp* (60 ml) sugar
 - ½ tbsp (8ml) salt
 - 1 L water
- *tsp: tea spoon = 5 ml
*tbsp: tablespoon = 15 ml

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:

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

* **Note:** Several scientific papers established a link between quinolone antibiotics and tendon ruptures – seek medical advice before using them.

C. Procedures of epidemic control:

If confronted with a case of diarrhea, procedures should be initiated to prevent its spread. 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 a 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. Some of these procedures should be initiated the minute you detect a case or cases of diarrhea among members of your team.

1. Accommodation:

- isolate the sick team member in a separate room
- if several team members become sick, they can stay together in the same room
- if isolation room does not have its own toilet, designate a toilet that will be used only by the sick team member
- supply the room/toilet with disinfectants (e.g. soap and alcohol solution with chlorhexidine)
- all clothes used by the sick team member must be put in a separate bag
- floor and all surfaces should be cleaned according to procedure 3. below.
- floor and all surfaces should be disinfected according to procedure 4. below.

2. Procedure for the regular cleaning of the rooms during sport events.

Area	Frequency	Cleaning agent	Method of administration*
Floors	2 x day	Detergent containing 1,3-dihydroxymethyl-5,5-dimethyl imidazoline-2,4-dione	Prepare the solution as instructed. Soak the mop in the prepared solution. Rinse the mop in another vessel with clean water. Leave to dry
Other surfaces	1 x day		
Walls	1 x week		
Toilets	2 x day	Solution with 6 g benzalkonium chloride + 3.0 g didecyldimethylammonium chloride + 8,0g glutaraldehyde	Spread evenly on the surfaces, after 5 – 10 min rub and rinse with water. Repeat the procedure if needed

*Always check the instructions by the producers of the cleaning agent regarding preparation of solution and modes of use

3. Procedure for the cleaning of the rooms in the case of the risk of infection.

Area	Frequency	Cleaning agent	Method of administration*
Floors	2 x in the morning 2 x in the evening	Detergent containing: 1,3-dihydroxymethyl-5,5-dimethyl imidazoline-2,4-dione	Prepare solution as instructions Soak the mop in the prepared solution. Rinse the mop in another vessel with the clean water Leave to dry
Other surfaces	1 x day		
Walls	1 x week		
Toilets	2 x in the morning 2 x in the evening	e.g. solution with 6 g benzalkonium chloride + 3.0 g didecyldimethylammonium chloride + 8,0g glutaraldehyde	Spread evenly on the surfaces, after 5 – 10 min rub and rinse with the water. Repeat the procedure if needed.

4. Procedure for the disinfection in the case of illness

Area	Frequency	Cleaning agent	Method of administration*
Floors	2 x day	Disinfection solution with 13.2 g benzalkonium chloride + 6.0 g didecyldimethylammonium chloride + 4.5 g formic acid or Solution with 4,5g. didecyldimethylammonium chloride + 1,8g. isopropyl alcohol	Prepare solution as instructions During disinfection soak the mop in the vessel with the solution Wipe the whole surface Mops should be single used Do not rinse
Other surfaces	1 x day		
Walls	1 x week		

Toilets	2 x day and immediately in the case of obvious contamination	Disinfection solution of <i>sodium dichloroisocyanurate</i>	Prepare solution as instructions During disinfection soak the mop in the vessel with the solution Wipe the whole surface Mops should be single used
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5. Team behaviour:

- inform all team members which room the sick team member has been isolated
- restrict contact to as few as possible people
- enter the room only if necessary
- before entering the room, and on exit, wash your hands and rub in alcohol based disinfectant.

6. Sick team member(s) behaviour:

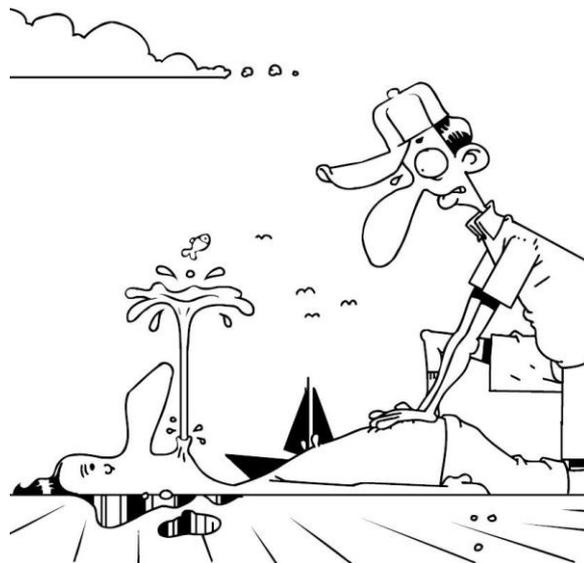
- wash your hands with liquid soap and water for 60sec. and dry them with paper towels
- after washing your hands, disinfect them by rubbing in alcohol based disinfectant. Wait for the hands to dry fully.
- carry out the above steps always after personal hygiene procedures, using the toilet, before taking food, touching anything unclean, etc.
- do not leave the room except for medical intervention.

7. Sick team member appliances (cutlery, shaving kit, etc):

- to be used only by sick team member
 - kept separately in isolation
- all supplies used must be cleaned with disinfecting solution (e.g. 30% 8 g *glutaraldehyde* /3 g *didecyldimethylammonium chloride* /6 g *benzalkonium chloride* solution)

6. LEARN THE FIRST AID

In triathlon 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. 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 training in cycling 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.

6.1 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 the situation** quickly and calmly and protect yourself and the casualty from danger. If possible, ask for help from others. 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**

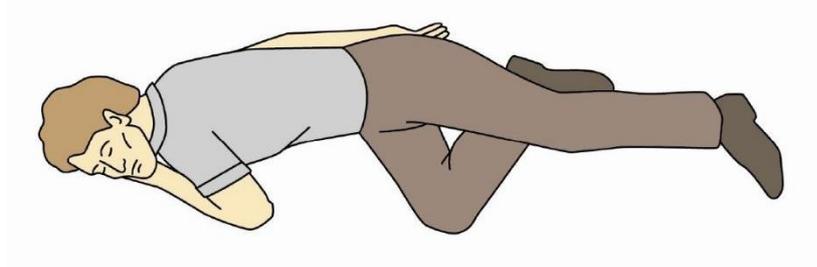
- **A = airway** (check if airways are open or obstructed – e.g. are the airways blocked by the tongue in unconscious patients, or are there any objects in the mouth)
 - Lay the casualty face upwards, clean the mouth from foreign objects with your fingers
 - Head hyperextension (tilt casualty's head, 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)



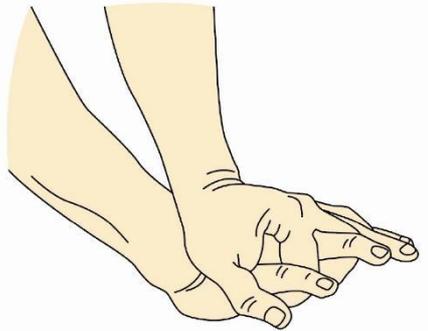
- If breathing is present - turn the casualty into **RECOVERY POSITION**



- If breathing is absent:

6.2 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 about 5 cm, at a rate of 100 - 120 compression/ minute



- Complete **30 compressions**

And:

6.3 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:

6.4 Continue cardiopulmonary resuscitation commonly known as 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.

6.5 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.

6.6 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

6.7 Four dangers imminent to loss of life

1. Breathing and heartbeat have stopped. If one of these functions fails immediately start CPR
2. Heavy bleeding should be stopped immediately
3. Shock should be recognised and taken into consideration
4. Unconsciousness is dangerous because of possible suffocation either by swallowing, the tongue or inhalation of vomit

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.

6.8 Injuries

There are different kinds of injuries that can occur during triathlon. 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 fall during cycling, can cause unconsciousness and can even endanger the lives of your triathletes. Remind your athletes to wear their helmets also during training!

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 (e.g. 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).

6.9 Bruises

Injuries to the soft tissue may be subcutaneous (just underneath the skin), intramuscular (within the underlying muscles) or peri-osseal (related to bone).

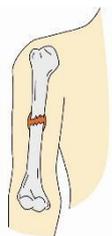
Symptoms are pain, swelling and bluish or reddish discoloration

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

6.10 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.

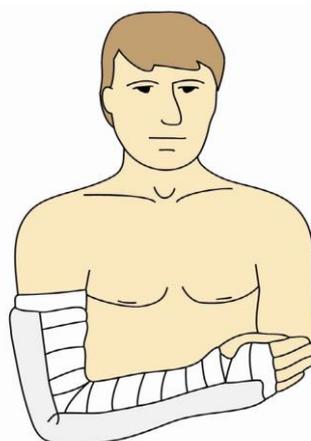
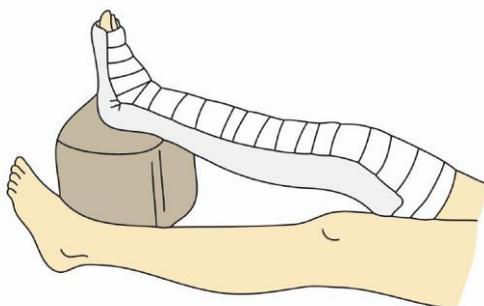
Comminuted fractures - when the bone is chipped or squeezed into little pieces.

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

6.11 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!

6.12 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 bruised.

Emergency treatment:

- R.I.C.E.

6.13 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

6.14 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

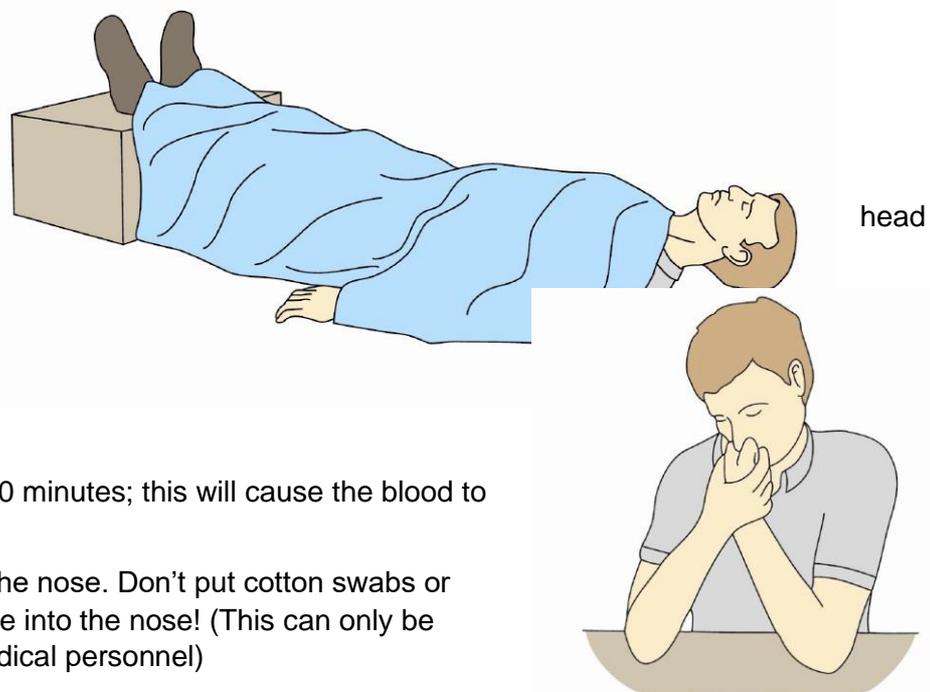
- Remove dirt, fibreglass / carbon debris or other foreign objects from the wound. Clean the wound from the centre outward. In the case of a penetrating neck wound, do NOT remove a visible foreign body which may have torn the jugular vein
- Apply continuous pressure with dressing pads; if bleeding doesn't stop, add further dressing pads without removing those already soaked
- Small clean cuts can be closed with adhesive strips
- Deep cuts needs 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

6.15 Nosebleed

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

Emergency treatment:

- Lean the 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



6.16 Fainting

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

6.17 Exertional heat illness prevention

Heat-related disorders occur when the thermoregulatory mechanism fails to compensate for elevations in core temperature caused by environmental or metabolic heat load. We can have a spectrum of symptoms of varying severity, ranging from heat cramps and dehydration to heat exhaustion and heat stroke : this is a life threatening heat-related disorder and a medical emergency.

The risk of heat related illness is greatest when high-environmental temperatures occur early in the competitive season when participants may be inadequately prepared and have not acquired natural acclimatization to the heat.

The triathletes have the responsibility to be aerobically fit and acclimatised to environmental conditions, hydrate adequately before, during and after the race, and not to compete when they are at added risk for overheating due to recent/current illness.

6.18 Heatstroke

Heat stroke represents thermoregulatory failure, with core temperature elevated, 40° C or higher, reduction or cessation of sweating, rapid pulse, rapid respiration, hypotension, and CNS symptoms predominate : unsteady gait, confusion, reduced consciousness, convulsion and coma. Heat stroke is currently the third leading cause of death in athletes behind cardiac disorders and head neck trauma.

Emergency treatment:

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

- Move the athlete to a cool, shaded area (recovery position if unconscious)
- Lay down with feet elevated
- Loosen or remove clothing
- Fanning and cooling the axillae, neck and groin with towels immersed in ice water
- Monitor vital signs and if their temperature starts to rise again, repeat the cooling process
- Rectal temperature must be taken every 15 minutes until below 38°C
- Seek urgent medical help considering evacuation to hospital, if treatment does not produce a rapid fall in temperature or mental status (it could be life threatening)!

6.19 Heat exhaustion

Heat exhaustion occurs in very humid and hot weather, but hyperthermia can occur even on a cool day. In these conditions perspiration does not take heat away from the body (it doesn't evaporate, due to the 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 athlete with wet towels
- Administer oral re-hydrating solution

6.20 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.

6.21 Hypothermia

Cold ambient conditions can result in hypothermia. Water immersion and exposure to wind are common antecedent factors. Athletes can lose body heat on the cycle and run legs despite

wearing a wetsuit in the swim, particularly the slow long distance triathletes in the run leg. It's very important to assess hypothermia symptoms quickly:

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

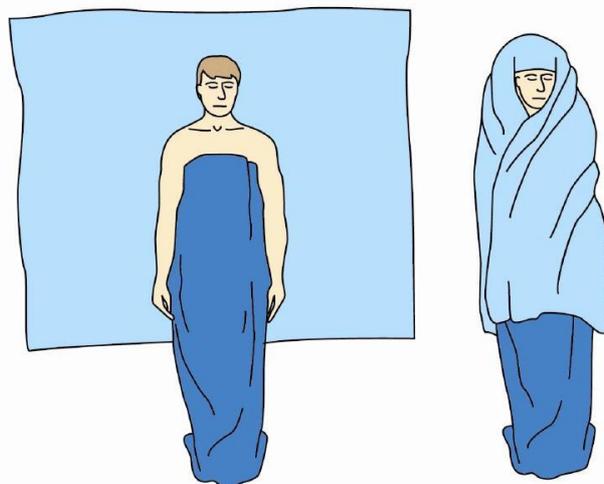
Emergency treatment:

- Wrap the athletes in blankets or thermal plastic foil to protect them from the wind.
- 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 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



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.



7. DO NOT OVERSTRAIN YOUR TRIATHLETES

Just like all other top-level athletes, triathletes 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 athletes.

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 training other health problems may occur which are caused by the poor health of the triathlete. Never send your triathletes to compete or to train 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 :

- Restrain from going out if the conditions are too heavy, or the triathletes are not perfectly well
- Avoid overstraining your triathletes 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 triathletes 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 triathletes.

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 triathlon they are exposed very early on to the highest demands of training targeted for the competition, each of them with different physical demands in relation to the triathlete's height, weight, muscular strength and endurance. It is a fact that a triathlete's performance relates directly to their capacity to overcome the external forces imposed on the athlete and to the team.

A 19 year old triathlete 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, a 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 training for each child must be appropriate for the child's age and its previous training
- An early transition to a more demanding competition can result in injury and demotivation.
- Threshold growth plate stress is an individual parameter, directly influenced by the growing up stage
- Consult with your team doctor before making a decision to train and to compete in more demanding races.

8. PROTECT YOUR TEAM FROM POLLUTED WATER

The World Triathlon Water Quality Statement is followed by all the organizers to have a safe swim leg.

Unfortunately, pollution is our reality and triathlon events are often held on racing fields in front of the major urban areas. 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 triathlon areas can also hide potentially dangerous algae and other harmful sea organisms like jellyfish.



Instruct your athletes to:

- Try not to swallow water if capsized
- Wash their eyes and face with available clean water
- Use mouthwash and hand sanitizing gels before eating or drinking according to the procedure described below
- Take a shower immediately on return according to the procedure described below
- Not to sit in wet clothes after swimming
- Not to wash any scratches or grazes with sea water (use clean fresh water)
- Apply antiseptic to cuts and abrasions after washing on return to land
- Take antibiotics if inflammation develops
- Take care to minimize contact with polluted water by wearing an adequate triathlon garment. Fresh water lakes or rivers may additionally harbour pathogens such as schistosomiasis (blood fluke) and amoeba - keep the mouth closed, wear eye protection, and dry off quickly to minimize the risk of pathogens entering via the skin, mouth, nose or eyes.
- Wear proper footwear – it can protect the triathlete 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
- Clean their triathlon garments regularly
- Obtain local advice on the possible presence of dangerous aquatic animals in the area
- Seek medical advice for:
 - Eye discharge (conjunctivitis)
 - Ear infection
 - Red (inflamed) skin or boils
 - Diarrhoea

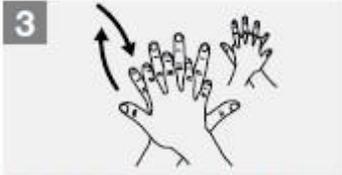
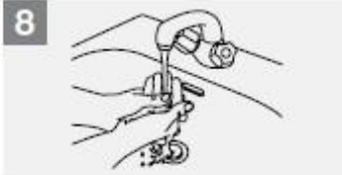
Procedures to reduce infection

- Use the water hose to shower immediately on return from swimming in open water
- Your recovery procedure may require you to drink and eat immediately on arrival on land after swimming. Before you actually do so - wash your hands with liquid soap and water for 60 seconds and dry them with paper towels
- Prior to eating and drinking, rinse your mouth with the mouth wash (containing 0.05% chlorhexidine digluconate or octenidine dihydrochloride phenoxyethanol or other disinfectant)
- Wash your triathlon clothes with soap before storing. If swimming in polluted water, disinfect the triathlon gear by soaking it in disinfecting solution (e.g. 30% 8 g glutaraldehyde /3 g didecyldimethylammonium chloride /6 g benzalkonium chloride solution) for 2 hours, then rinse through thoroughly with water before drying and storing
- Shower thoroughly with liquid soap before changing to dry clothes.



Washing hands properly is the most important measure to avoid the transmission of harmful germs and prevent the infections

🕒 Duration of the entire procedure: 40-60 seconds

0  Wet hands with water;	1  Apply enough soap to cover all hand surfaces;	2  Rub hands palm to palm;
3  Right palm over left dorsum with interlaced fingers and vice versa;	4  Palm to palm with fingers interlaced;	5  Backs of fingers to opposing palms with fingers interlocked;
6  Rotational rubbing of left thumb clasped in right palm and vice versa;	7  Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;	8  Rinse hands with water;
9  Dry hands thoroughly with a single use towel;	10  Use towel to turn off faucet;	11  Your hands are now safe.

9. BE WARY OF ATHLETE SECURITY

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.

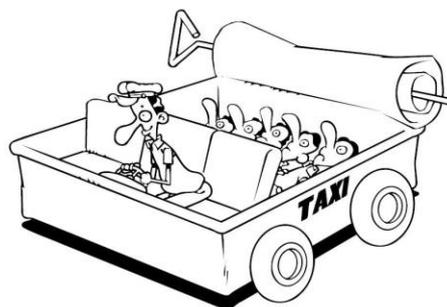
One has to:

- 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



10. BE WARY OF ATHLETES TRANSPORTATION

Motor vehicle accidents are the leading cause of accidental deaths of long-term travellers. A significant portion of those deaths can be attributed to accidents involving motorcycles. The possibility of being injured in a car accident while in foreign towns is the biggest reason for injury to all travellers abroad, including athletes. 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 triathletes in the form of health manuals and easily administered as a part of pre-competition service given to the athletes 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.”

World Triathlon Medical Committee

MANY THANKS TO THE WS MEDICAL COMMISSION AND PARTICULARLY TO DR NEBOJSA NIKOLIC TO SHARE WITH WORLD TRIATHLON THIS GUIDELINES

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 World Triathlon 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 healthcare 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.