Course 6

On-field emergencies

Recognition, protocols and first aid procedures

Learning objectives of the course

Upon completion of this course, the student will be able to:

- Recognise the main life-threatening emergencies on the field (cardiac arrest, heat stroke, hypoglycaemia, exercise-induced asthma, severe dehydration, seizure).
- Apply immediate management for each situation.
- Master the chain of survival and the use of an automated external defibrillator (AED).
- Alert emergency services effectively (SAMU / 15 / 112).

Introduction: the coach, the first link in emergency response

On the field, you are often the first witness to a collapse or accident. The minutes that follow are critical. Rapid and appropriate management can save a life.

The aim of this course is not to train emergency physicians, but to give every future sports professional the essential reflexes to:

- Avoid worsening the situation.
- Recognise a life-threatening emergency.
- Act within your scope of practice (first aid, alert, AED).
- Know how to wait for emergency services.

1. General principles of emergency management

1.1 The chain of survival (for cardiac arrest – also applicable to any emergency)

Link	Action
1. Prevention	Avoid risk factors, pre-participation screening
2. Recognition	Identify the emergency (unconsciousness, respiratory arrest, etc.)
3. Alert	Call emergency services
4. First actions	CPR, recovery position, scene safety, AED
5. Medical care	Transport by EMS, hospital treatment

1.2 General procedure (whatever the collapse)

"S-A-C" protocol (Safety – Alert – Care):

- **Safety**: secure the area (remove dangers, protect the victim from cold/heat).
- **Alert**: call emergency services (see below).
- **Care**: perform appropriate first aid.

1.3 How to alert emergency services effectively

Information to give	Example
Exact location	Municipal stadium, football pitch, street, city
Nature of the problem	"A 20-year-old player is not breathing"
Number of victims	"Only one"
Victim's condition	Unconscious, breathing or not, bleeding, etc.
Actions already taken	"I have started chest compressions"

Never hang up first: the dispatcher will guide you.

2. Description of specific emergencies and management

2.1 Cardiac arrest (CA)

Recognition (three signs):

- Unconsciousness (does not respond).
- No normal breathing (agonal gasps do not count as normal breathing).
- Sometimes no carotid pulse (but do not waste time checking).

Immediate sequence:

- Lay the victim flat on a hard surface.
- Call or have someone call EMS.
- **Start CPR**: chest compressions (100-120/min, 5-6 cm depth, hands on sternum) – 30 compressions / 2 ventilations (mouth-to-mouth with a pocket mask if available).
- Get an AED as quickly as possible.
- As soon as the AED arrives: turn it on, apply electrodes, follow instructions.
- Continue until the victim regains consciousness or EMS arrives.
- If the cause is violent trauma (impact), immobilise the cervical spine before turning the victim.

2.2 Collapse (brief loss of consciousness, syncope)

Possible causes: vasovagal (after exercise, heat), hypoglycaemia, cardiac arrest, heat stroke, etc.

Management:

- If the victim is unconscious but breathing normally → recovery position (lateral safety position).
- If they regain consciousness quickly (2-3 min) but remain pale, nauseous → lay them down with legs elevated (if no trauma).
- Always have an exertional syncope checked by a physician.

2.3 Heat stroke (exertional hyperthermia)

Recognition (absolute emergency):

- Core temperature > 40 °C (hyperthermia).
- Altered consciousness (confusion, coma, seizures) – sign of severity.
- Hot, red, dry (or moist) skin.
- Tachycardia, hyperventilation.

Management:

- Immediate active cooling: cold water bath (or ice, shower, wet cloths + fan).
- Remove clothing.
- Alert EMS.
- If unconscious, recovery position.
- Do not give fluids orally (risk of aspiration if consciousness impaired).
- Do not confuse with simple vasovagal faint or dehydration. The key difference = temperature > 40 °C + neurological symptoms.

2.4 Hypoglycaemia (diabetics or prolonged fasting)

Recognition: sweating, trembling, pallor, fatigue, sometimes confusion or loss of consciousness.

Management (if conscious):

- Give rapid-acting sugar: sweet drink, soda, sugar cubes, glucose gel.
- Improvement occurs within 5-10 minutes.
- If unconscious: do not give anything by mouth, alert EMS, recovery position. Glucagon injection by a trained bystander may be given.

Prevention: for diabetic athletes, always have a source of sugar available.

2.5 Exercise-induced asthma

Recognition: expiratory wheezing, cough, chest tightness, severe breathlessness.

Management:

- Sit the victim down, reassure.
- Administer their bronchodilator (ventolin), usually 2 puffs.
- If no improvement after 5-10 min, give another 2 puffs.
- If worsening or respiratory distress → EMS.

2.6 Severe dehydration (distinguish from heat stroke)

Recognition: intense thirst, cramps, weakness, dizziness, sometimes confusion. Normal or moderately elevated temperature.

Management:

- Stop exercise, rest in the shade.
- Oral rehydration (water + salt, rehydration solution).
- If vomiting or altered consciousness → EMS, intravenous fluids.

2.7 Seizure (epilepsy or other causes)

Recognition: loss of consciousness with involuntary muscle contractions, sometimes a fall.

Management (ABC protocol):

- Protect the head (cushion, clothing) and remove dangerous objects.
- Do not put anything in the mouth (risk of airway obstruction, dental injury).
- Do not restrain movements.
- After the seizure (<5 min) → recovery position, monitor breathing.
- If seizure prolonged (>5 min) or first seizure → EMS.

2.8 Severe trauma (haemorrhage, open fracture, suspected spinal injury)

External bleeding: direct compression (with gauze, clean hand) + bandage + elevation if possible + EMS.

Open fracture: do not push the bone back in, cover with sterile dressing, immobilise. Suspected spinal injury: do not move, maintain head in neutral position, wait for EMS.

3. Using the automated external defibrillator (AED)

The AED is easy to use, even without medical training. It analyses the heart rhythm and delivers a shock only if needed (ventricular fibrillation or ventricular tachycardia).

Steps (summary):

- Turn on the device (voice prompts).
- Expose the victim's bare chest.
- Apply electrodes: one under the right collarbone, one on the left side (diagram on electrodes).
- Do not touch the victim during analysis (the AED will tell you).
- If shock advised: announce "clear everyone", press the shock button.
- Resume CPR immediately for 2 minutes, then the AED re-analyses.
- Continue until EMS arrives or the victim regains consciousness.

The AED cannot harm; it never delivers a shock if the rhythm is non-shockable (asystole, pulseless electrical activity). Always use the AED as soon as available.

4. Prevention of emergencies

The coach has a major preventive role:

- Progressive warm-up and cool-down.
- Regular hydration before thirst.
- Adjust intensity for heat, altitude.
- Know the athletes' medical history (epilepsy, asthma, diabetes, heart disease).
- Have an AED accessible at training venues (legal requirement in some facilities).
- Train staff in first aid.

Key points to remember

- Life-threatening emergency: unconsciousness + no normal breathing = cardiac arrest → CPR + AED immediately.
- Any loss of consciousness on the field requires checking breathing. If breathing present → recovery position.
- Heat stroke: hyperthermia >40 °C + neurological symptoms → active cooling while waiting for EMS.
- Conscious hypoglycaemic diabetic: oral rapid-acting sugar.
- Exercise-induced asthma: bronchodilator, call EMS if ineffective.
- Seizure: protect the head, nothing in the mouth, recovery position after.
- The AED is safe – it will not shock unnecessarily. Use it without fear.
- Prevention: know medical history, hydration, environmental adaptation.

Appendix 1: Reflex card – Emergency management (to laminate and keep on the field)

Situation	Action
Unconscious, not breathing	CPR (30:2) + AED + EMS
Unconscious, breathing	Recovery position, EMS if cause unknown
Chest pain + malaise	Rest, oxygen if available, EMS
Heat stroke (hyperthermia + confusion)	Active cooling, EMS
Conscious hypoglycaemia	Oral sugar (soda, sugar cubes)
Seizure	Protect head, nothing in mouth, recovery position after, EMS if >5 min or first seizure
Severe asthma	Ventolin ×2, repeat, EMS if ineffective

Appendix 2: Recovery position – reminder

- ✓ Remove glasses, bulky objects.
- ✓ Place the arm nearest to you at a right angle (upwards).
- ✓ Bring the other arm across the chest.
- ✓ Bend the opposite leg.
- ✓ Roll the victim toward you by pulling on the bent leg.
- ✓ Slightly open the mouth (chin lift) to keep the tongue clear.
- ✓ Monitor breathing until EMS arrives.