

SAVELIFE-GUIDE!

HANDBOOK AND GUIDE

Preparing young people for emergency and civil protection situations



Készült a Save Life! projekt keretében
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Erasmus+

Az Európai Unió Erasmus+
programjának támogatásával

welcome.

**We would like to present
our project that gives new
skills to the youth.**

Foreword.

This handbook was developed as part of the Save Life! Erasmus+ Strategic Partnership project to support youth workers, civil protection trainers, educators and community organizers in raising awareness among young people about safety, preparedness, and self-protection. Today's generation of young people face challenges that require not only physical readiness, but also psychosocial resilience. The aim of the project is to equip individuals aged 14–30 with the practical knowledge and mindset needed to recognize, prevent, and respond to everyday emergencies.

Savelife-guide handbook draws on everyday situations—such as kitchens, bathrooms, gardens, garages, and utility spaces—to present hidden dangers and clear, practical methods to avoid or handle them. Each chapter is structured to cover: a description of potential hazards, preventive tips, and first aid guidelines. Beyond physical safety, this handbook also seeks to foster key soft skills in youth, including teamwork, communication, and decision-making—skills that are essential in both emergency response and everyday social cooperation.

This publication is one of the outcomes of the Save Life! project, carried out between 2023 and 2026 through the cooperation of four countries: Hungary, Austria, Romania, and Italy. The international partnership enriches the content by blending diverse social and cultural perspectives, creating a methodology that is adaptable for youth education across Europe.

The modules in this handbook can be used independently or as part of a complete training programme. It is suitable for use in youth workshops, school-based sessions, or as a component of volunteer preparedness courses. The clear structure, practical tools and exercises included aim to support educators and trainers in their mission to shape the next generation into more conscious, prepared, and responsible citizens.

We would like to thank the many experts, youth participants, and volunteers who contributed to the development of this publication, as well as the Erasmus+ Programme of the European Union, which made this international collaboration possible.

On behalf of the Save Life! project partners
october 2024

APPLICANT



PARTNERS



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ACCIDENT PREVENTION
IN
HOME

I. HAZARDS IN THE KITCHEN

The kitchen is the heart of the home, but it is also one of the most common sources of accidents. This chapter provides information on hazards, preventive measures and first aid methods that teachers can pass on to children and young people.

1.1. Common hazards and preventative measures

1. Cuts

- Sources of danger:
 - Improper handling of knives or sharp tools (e.g. graters, slicers).
 - Broken glasses or plates.
- Prevention:
 - Store knives safely in a knife block or on a magnetic strip!
 - Only use sharp knives; blunt knives are more likely to slip!
 - Remove broken items immediately!
 - Use the ‘claw technique’ when cutting.

2. Burns and scalds

- Sources of danger:
 - Hot hobs, pots or pans.
 - Splashing grease or steam.
- Prevention:
 - Turn the handles of pots and pans inwards!
 - Fit a stove guard for children!
 - Wear heat-resistant gloves or an apron!
 - Never leave cooking unattended!

3. Electricity

- Sources of danger:
 - Faulty appliances or cables.
 - Incorrect use of electrical appliances near water.
- Prevention:
 - Check appliances regularly for damage!
 - Fit child-proof plugs to sockets!
 - Only use appliances with dry hands!

4. Chemicals and cleaning products

- Hazards:
 - Corrosive or toxic substances.
 - Improper storage of chemicals.
- Prevention:
 - Cleaning products must be stored in child-proof cupboards.
 - Ensure rooms are well ventilated when using toxic substances!
 - Inform children of the dangers!

5. Slip hazard

- Sources of danger:
 - Spilled liquids or grease.
 - Slippery shoes on a slippery floor.
- Prevention:
 - Wipe up spilled liquids immediately!
 - Use non-slip mats!



Slip hazard sign

1.2. Emergency response and first aid

1. Cuts

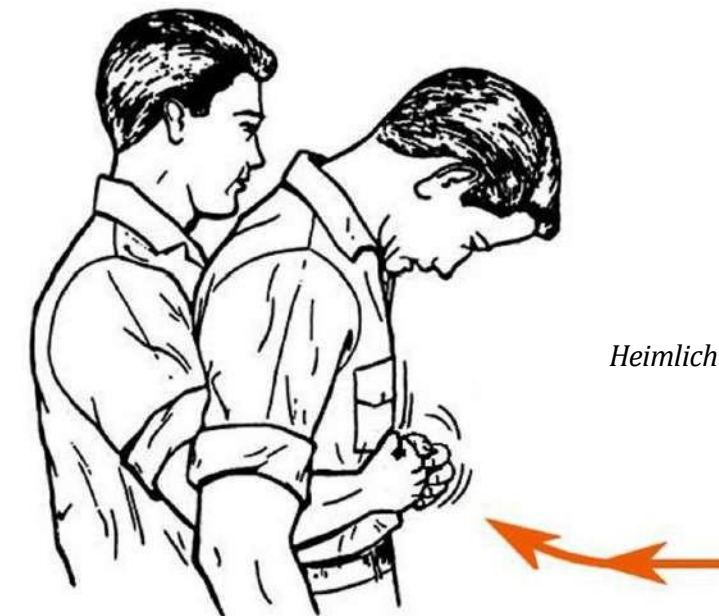
- Minor wounds:
 - Clean the wound with water!
 - Stop the bleeding by applying pressure with a sterile dressing!
- Deep wounds:
 - Stop the bleeding and elevate the wound!
 - Call the emergency number 112!

2. Burns and scalds

- Immediate action:
 - Hold the burnt area under lukewarm water for 10–20 minutes!
 - Do not use ice cubes or grease!
- When should you see a doctor?
 - In the event of blistering or extensive burns.

3. Electrical accidents

- Immediate action:
 - Switch off the power supply!
 - Do not touch the affected person directly!



4. Swallowing of food or foreign objects

- Partial obstruction (coughing possible):
 - Encourage the person to keep coughing!
- Complete obstruction (shortness of breath):
 - Give up to 5 firm blows between the shoulder blades!
 - For adults, perform the **Heimlich manoeuvre** (ILLUSTRATION):
Place your fist just above the navel and apply upward pressure!
 - If the person is unconscious: call the emergency number 112 and start CPR!

1.3. Special protection for children

- Safety precautions:
 - Keep knives, chemicals and electrical appliances away from children!
 - Fit child safety locks to cupboards, drawers and sockets!
 - Show children how to use kitchen appliances safely in a way that is appropriate for their age!
 - Never leave them unsupervised in the kitchen!



Socket covers

- Education:
 - Educating children about kitchen hazards.
 - Let's practise safety-conscious routines together.

Further measures regarding household appliances

1. Regular maintenance:

- Check your appliances and cables for damage!
- Replace old appliances with modern, safer models!

2. Fire safety:

- Keep a fire blanket and a suitable fire extinguisher to hand!
- Install smoke detectors near the kitchen!

3. Correct use:

- Read the instructions for use and use the appliances correctly!
- Never heat fat or oil without supervision!



Handrail

II. HAZARDS IN THE BATHROOM

The bathroom is a room of well-being, but it also harbours numerous hazards. Bathroom accidents are one of the most common household hazards due to the combination of water, electrical appliances and other potentially dangerous substances. This teaching document is designed to help teachers promote safety awareness and teach preventive measures aimed at minimising the risk of injuries and accidents in the bathroom.

2.1. Hazards in the bathroom, falls and slips

Due to the constant dampness, the bathroom is a particularly hazardous place in terms of falls. Wet floors, standing water and soap scum create a slippery surface, which is especially dangerous for the elderly, children and people with reduced mobility.

- Statistics:
Around 80% of accidents in the bathroom are caused by falls.
- At-risk groups:
The elderly and young children are particularly at risk. Among the elderly, falls account for around 70–80% of bathroom accidents, whilst among children, many falls are caused by the incorrect use of bathroom fixtures or a lack of supervision.
- Preventive measures:
 - Non-slip mats in the shower, bath and on the floor.
 - Wipe up any accumulated water immediately!
 - Non-slip stickers in the bath or shower.
 - Grab rails in strategic locations, such as the shower, bath or toilet.

1. Electrical hazards

The bathroom is a room where electrical appliances, such as hairdryers, electric razors or electric toothbrushes, are used regularly. As water is a very good conductor of electricity, this increases the risk of electric shock and electrical accidents.

- Sources of danger:
 - Careless handling of electrical appliances, faulty appliances, wet hands and poorly fitted sockets.



Splash protection

- Preventive measures:
 - Use splash-proof equipment!
 - Never handle appliances with wet hands!
 - Install sockets and RCDs fitted with splash protection (illustration) to immediately switch off the circuit if a fault current occurs!
 - Do not place electrical appliances near water sources (washbasins, baths, showers)!

2. Risk of burns

Water, radiators or heated walls can pose a high risk of burns and scalding. Children and the elderly are particularly at risk due to their sensitive skin.

- Danger:
 - Water that is too hot in the bath or shower.
 - Hot surfaces, such as radiators or walls.
- Preventive measures:
 - Regulate the water temperature in the shower and bath, preferably using thermostatic taps!
 - Fit protective covers to radiators and other hot surfaces in the bathroom, or check them regularly!

3. Risk of poisoning

Bathrooms often contain substances that can be harmful to health if handled or stored incorrectly. Cleaning products and medicines in particular pose a risk of poisoning.

- Danger:
 - Cleaning products, such as toilet cleaners, disinfectants and limescale removers, are often toxic and corrosive.
 - Medicines (painkillers, cough medicines, ointments) may be swallowed by children if used incorrectly.
- Measures to prevent this:
 - Always store medicines and cleaning products in locked, child-proof cupboards!
 - Use child-resistant closures for medicines!
 - Teach adults and children to understand the dangers of chemicals and medicines!

2.2. Specific hazards in the bathroom

1. Carbon monoxide (CO) and CO₂ hazards

Gas-fired appliances, such as boilers or heaters, can produce carbon monoxide, a colourless and odourless gas that is very dangerous if poorly ventilated or incorrectly installed.

- Danger:
 - If ventilation is inadequate, CO levels in the bathroom can rise to dangerous concentrations.
- Preventive measures:
 - Install carbon monoxide detectors (illustration), available from specialist retailers, particularly in bathrooms fitted with gas appliances.
 - Regular maintenance of gas-fired appliances, such as boilers and radiators.
 - Ensure good ventilation by opening windows or using mechanical ventilation!
 - Avoid open flames, such as candles, in poorly ventilated rooms!



2. Accidents caused by electricity and water

The bathroom is one of the most dangerous rooms in the home in terms of electrical accidents.

- Danger:
 - You can suffer an electric shock if you come into contact with water.
- Preventive measures:
 - Use residual current circuit breakers (RCCBs) to cut off the circuit immediately in the event of a fault!
 - Ensure that electrical installations in the bathroom are fault-free and regularly maintained by a qualified electrician.
 - When using electrical appliances, ensure your hands are dry and do not use them near water sources!

3. Risk of drowning in the bath

The risk of drowning accidents is high, particularly for young children, even in very shallow water. Older people are also at risk due to circulatory problems and falls.



- Danger:
 - Drowning in the bath, particularly in the event of loss of consciousness or a seizure.
- Preventive measures:
 - Never leave children unattended in the bath!
 - Use non-slip mats and grab rails for older people or those with health problems!
 - Check the water temperature to avoid thermal shock!
 - Warn and teach children about the dangers of drowning and how to behave safely in the bath!

2.3. Emergency measures and first aid in the bathroom

1. First aid for falls and injuries

- Immediate actions:
 - In the event of a fall, always remain calm and do not move the person unless they are in immediate danger!
 - In the event of serious injuries (e.g. head, back or neck injuries), call the emergency services (112).
 - Minor injuries, such as bruises or cuts, can be treated with cooling or a pressure bandage.

2. First aid for electrical accidents

- Immediate action:
 - Switch off the power (main switch or fuse box).
 - Only disconnect the affected person from the power source using a non-conductive material (e.g. a wooden stick) if the power cannot be switched off!
 - If the person is not breathing or has no pulse, perform CPR until the emergency doctor arrives!

3. First aid for burns and scalds

- Immediate action:
 - To relieve the pain of burns, immediately cool the affected area with cold water (for at least 10 minutes)!
 - Place a sterile dressing over the wound and call a medical professional!

4. First aid for poisoning

- Immediate action:
 - If a toxic substance has been swallowed, do not induce vomiting unless advised to do so by a poison control centre or doctor!
 - If the toxic substance has come into contact with the eyes, rinse with clean water for more than 10 minutes!
 - Call the emergency number 112 and state the nature of the toxic substance!



Anti-slip tape

III. HAZARDS IN THE GARDEN, CELLAR AND GARAGE

3.1 Hazards during gardening work

Common hazards

1. Cuts

Causes: Incorrect use of hedge trimmers, lawnmowers or sharp tools.

- Precautions:
 - Always wear protective gloves!
 - Check tools for damage before use and sharpen them regularly to prevent slipping!
- First aid:
 - Clean and disinfect the wound!
 - Cover with a sterile dressing!
 - Stop heavy bleeding; in the event of deep cuts or unstoppable bleeding, call the emergency services!

2. Falls and slips

Causes: Smooth or uneven surfaces, working on ladders.

- Prevention:
 - Wear non-slip shoes!
 - Regularly clear paths of leaves, debris or water!
 - Always place ladders on a stable surface and secure them!
- First aid:
 - Immobilise the injured area.
 - If you suspect a fracture or severe pain, seek medical attention immediately!

3. Heatstroke and dehydration

Causes: Working in the blazing sun without taking adequate breaks or drinking enough water.

- Prevention:
 - Drink water regularly and take breaks in the shade!
 - Wear light clothing and a hat!
- First aid:
 - Move the person into the shade!
 - Give them water or drinks containing electrolytes!
 - If the person loses consciousness or is severely disoriented, call an ambulance!

4. Insect bites

In the event of a severe allergic reaction or multiple stings.

- Prevention:
 - Wear protective clothing and use insect repellent!
 - Check the work area for bee or wasp nests!
- First aid:
 - Carefully remove the stinger (e.g. from a bee sting)!
 - Cool the sting site!
 - In the event of breathing difficulties, facial swelling or circulatory problems: Use **an adrenaline auto-injector** (ILLUSTRATION) (if available), which reduces the swelling, rash and itching caused by an allergic reaction, then call an ambulance!



Adrenaline auto-injector

5. Poisonous plants and chemicals

Dangerous plants: oleander, yew, rhododendron (ingestion leads to severe poisoning).

- Prevention:
 - Get to know the plants in your garden!
 - Wear gloves and avoid skin contact!
- First aid:
 - In case of skin contact: rinse thoroughly with water immediately!
 - If swallowed: contact a poison control centre
(In Hungary, emergency information service in case of poisoning or suspected poisoning: **+36 80 201 199 (24 hours a day, free of charge)** (calls from Hungary only) +36 1 476 6464 (available 24 hours a day; standard rates apply – calls can be made from abroad). Do not induce vomiting unless advised by a doctor!



Rhododendron – beautiful, but poisonous

3.2. Hazards in the garage

Typical hazards

1. Cuts and puncture wounds

Causes: Improper handling of tools, such as saws and screwdrivers.

- Prevention:
 - Store sharp and pointed tools safely!
 - Wear protective gloves and safety goggles whilst working!
- First aid:
 - Clean, disinfect and cover minor wounds!
 - In the event of deep wounds, contact the emergency services!

2. Machinery accidents

It is dangerous to use a circular saw, sander or drill incorrectly.

- Prevention:
 - Read the machine's instruction manual and wear protective equipment!
 - Wear protective equipment, such as sturdy shoes, safety goggles and ear protection!
- First aid:
 - Bandage the wound and stop the bleeding!
 - Immobilise the affected body part and call an ambulance!

3. Electrical accidents

Causes: Faulty cables, incorrect use of electrical appliances.

- Prevention:
 - Only use tested equipment; do not use makeshift cables!
 - Have a **residual current device (RCD)** fitted by a qualified electrician!

40A - 4P - A



Circuit breaker

- First aid:
 - Switch off the power supply immediately!
 - In the event of cardiac arrest: Perform CPR and call the emergency services!

4. The dangers of exhaust fumes

Never run the engine in a closed garage! Exhaust fumes can lead to carbon monoxide poisoning. Inhaling CO can cause headaches and breathing difficulties, and in large quantities it can even be fatal.



Exhaust fumes are life-threatening

- First aid:
 - The most important task is to remove the poisoned person from the scene of the poisoning as soon as possible and take them into the fresh air; if they are unconscious, clear the mouth, ensure the airways are clear, and begin ventilation. Ventilation with 100% oxygen must be started in all cases, even if the patient is conscious and does not report feeling unwell or have any symptoms; therefore, if gas poisoning is suspected it is always advisable to call an ambulance.

3.3 Boiler room

Main hazards

1. Fire hazard

Cause: Heating systems operate at high temperatures; sparks may ignite highly flammable materials.

- Prevention:
 - Keep a distance of 1 m from flammable materials!
 - Install smoke detectors and fire extinguishers!
- Action to take in the event of a fire:
 - Leave the room and dial the emergency number! (112)
 - Extinguish small fires with a fire extinguisher if it is safe to do so!

2. Carbon monoxide poisoning

Cause: Incomplete combustion in faulty heating systems.

- Prevention:
 - Ensure proper ventilation and install a CO detector!
- First aid:
 - The affected person must be taken to fresh air.
 - If the person is unconscious: perform CPR and call for help.

3. Explosions

Cause: Gas leak or faulty heating oil system.

- Prevention:
 - Check gas pipes regularly; ensure there are no open flames in the boiler room!
- Action:
 - Leave the room, avoid power sources, raise the alarm!

3.4. Safety in the cellar

Risks

1. Cellar fire

Causes: Faulty cables, improper storage of combustible materials.

- Prevention:
 - Install smoke detectors and fire extinguishers!
 - Regular inspections of fire-prone areas.

2. Gas leak

Cause: faulty gas appliances, poor ventilation.

- Prevention:
 - Install carbon monoxide and gas detectors.
 - Have your appliances serviced regularly!

*Fire extinguishers
– available for a
few thousand
forints*



3. Electrical accidents

Cause: water leaks in conjunction with electrical sources.

- Prevention:
 - Use circuit breakers and check electrical appliances regularly!

4. Carbon monoxide poisoning

Carbon dioxide poisoning is a common hazard in wine cellars. Carbon dioxide is a colourless, odourless gas, the presence of which is almost impossible to detect. However, it can easily build up in enclosed spaces and, as it is heavier than air, it begins to accumulate at floor level. This is why wine cellars can be particularly dangerous, as carbon dioxide accumulates in the lower parts of the cellar system, meaning that a potentially fatal lack of oxygen can develop whilst the must is fermenting. Prevention: ensuring the cellar is properly ventilated is one of the most important precautions. Another is never to work alone in the cellar, especially whilst the must is fermenting.

3.5. Pets and insects

Risks

1. Bite and scratch injuries

Cause: Stress or fear in pets.

- Prevention:
 - Training animals, ensuring they are vaccinated.
- First aid:
 - Clean and disinfect and cover the wound!



Vaccination is compulsory – Source: mormost.hu

2. Parasitic infections (e.g. ticks)

- Prevention:
 - Regular checks on animals, use of insect repellents.
- First aid for tick bites:
 - Remove the tick completely and disinfect the bite site!

3. Insect bites

Cause: Stings from bees, wasps or mosquitoes.

- Prevention:
 - Check work and play areas, wear insect repellent!
- First aid:
 - Cool the bite site and use antihistamines to relieve allergic symptoms.
 - Call for help in the event of an allergic reaction.

**TRAFFIC
ACCIDENTS**

I. ACCIDENTS ON PUBLIC ROADS

This chapter is not about providing assistance to ourselves or those in our immediate circle, where we have a personal connection to those in distress, but about remaining proactive and daring to act even when it is not us or a relative who is in trouble.

Society functions on the basis that people help one another in times of need. Young people who learn today how to behave responsibly in such situations will become responsible adults tomorrow, passing on this attitude to the next generation. Therefore, stopping to help at the scene of an accident is not just an individual decision, but also a community obligation. Getting involved in such situations strengthens the bonds between people and contributes to the development of a safer and more cohesive society. This behaviour not only saves human lives but also contributes to the creation of a more responsible and empathetic society. What is learnt in this chapter can help those who grasp the ideas and knowledge contained within it to dare to stop when arriving at the scene of an accident, and to take part responsibly and confidently in finding a professional solution that is safe for everyone. Recognising and practising the importance of providing assistance is an essential step in helping young people become responsible, caring adults.

According to statistical data, there are more than 60 million vehicles on the road in Austria, Romania, Italy and Hungary. In recent years



It is our duty to stop at the scene of an accident – Source: kozlekedesbiztonsag.kti.hu



Airbag

people's need for mobility has increased significantly. Many new vehicles are put on the road every year, as many people do not wish to be tied to public transport timetables, are afraid of catching illnesses, or find that their work schedules do not allow it; consequently, an increasing number of people are choosing to travel in their own vehicles. Due to the increased volume of traffic on the roads and, regrettably, the rising level of driver aggression, road accidents have become a daily occurrence in transport, with their numbers steadily rising. The majority of these do not result in personal injury, but rather, so to speak, only in material damage. This is the best-case scenario for accidents. Unfortunately, personal injury does occur in many cases. In low-speed accidents, we may encounter minor injuries, such as grazes, bruises and small cuts. It can also happen that there are no visible injuries, yet those involved in the accident must still be considered injured, as the passive safety devices designed to protect them, such as airbags and seatbelts, are activated, and these can cause injuries to the vehicle's occupants.

Of course, these are much less severe injuries than if we were not using safety equipment. In the most serious cases, the vehicles involved in the accident are so badly damaged that the occupants are unable to get out, become trapped between the vehicle's components, and suffer serious injuries. In such situations, the first few minutes can be critical in terms of saving the lives of those injured. If someone does not receive assistance shortly after an accident, this can lead to more serious injuries or even death. In such cases, the fire brigade, ambulance service and police must be called to carry out a professional and safe rescue.

As can be seen from the above, accident victims often require external assistance. It is important that they receive the necessary care as soon as possible, or simply that someone is there with them until professional help arrives.

Unfortunately, in today's fast-paced world, many reports of road accidents come from callers who have seen an accident happen but haven't stopped to find out what's going on; they are unable to provide any meaningful information about how many people have been injured in the accident, how serious their injuries are, or if anyone is trapped in the wreckage, but instead drives on, dialling the emergency number whilst on the move and recounting what they saw. In such situations, it is extremely important that witnesses to the accident do not drive on, but stop and provide assistance. This is not merely a matter of obeying the law, but a human and social duty, the failure to fulfil which can have serious consequences. Many people do not stop because they think they cannot help anyway, or that they might do something wrong and make matters worse. In such situations, it is vital that you stop, assess the situation, and even if you simply call an ambulance or the police, it could save a life. In such cases, the appropriate level of assistance will arrive at the scene to deal with the incident, providing exactly what those present need. It is not only important from the perspective of those involved in the accident to consider what type and how many emergency units will be dispatched to the scene; we must also remember that the manpower and resources of first responders, such as paramedics, firefighters and police officers, are limited. It is important that the appropriate level of emergency units is always dispatched to the scene, as multiple accidents or fires may occur simultaneously within their operational area. They can only do this if they have sufficient information available to assess the incident. Those at the scene of the accident can provide meaningful answers to the questions asked by the qualified duty officers, including how many and what types of vehicles – cars, lorries, motorbikes, etc. – have collided, how many people have been injured, whether there is a fire, whether anyone is trapped in a vehicle, etc. Based on this information, the appropriate number and type of ambulance crews will be dispatched to the scene, equipped with the necessary equipment and tools to treat the injured and rescue those trapped.

1. APPROACHING AN ACCIDENT SCENE, SAFETY MEASURES

1.1. Rules for safe approach

Whilst in the event of an accident at home or at work, we are familiar with the layout of the premises; we could even walk to another room or corridor with our eyes closed, knowing exactly where everything is and what we will find where. In contrast, in the event of an accident on a public road, we have to move around and provide assistance in a relatively unfamiliar, constantly changing

environment. **In every case, the most important thing is to act calmly and deliberately.** Before approaching the scene of an accident, we must ensure that we can do so safely. Why is this important too? Taking part in traffic is always a risky business. All it takes is a moment's inattention, a lapse of just a few seconds, and it can end in an accident with serious consequences. We are walking along the pavement when an accident happens right next to us, for example, a pedestrian is hit by a car on the other side of the road. We want to help and immediately start crossing the road, but we are in such a hurry to help that we don't look around, and we too are swept up and hit by a car. In such cases, unfortunately, help must be called not only for the first accident but for us as well. Based on the example above, we act correctly if we check whether any vehicles are coming and only set off once we are certain we can cross safely to the other side. In the event of an accident on a pavement or cycle path, always look around to check whether there is a cyclist or scooter rider approaching who cannot stop or avoid us if we suddenly go to the scene of the accident. If we come across an accident in town whilst on foot, before attempting to approach the scene, we should always ensure that drivers on the road have also noticed the accident, realised our intention to go there, and are slowing down as they approach the scene, coming to a stop. Making eye contact with the driver is a very good approach. This makes it clear that they have noticed us, and we can see how they react to us. If we are in a vehicle and have stopped, we should not get out until we are certain that the vehicle behind us has not started to overtake us. It may be that they haven't noticed the accident, but have only noticed that we have stopped and are blocking their path, and are trying to drive past us. On main roads and motorways, always wear a high-visibility vest to draw attention to ourselves.

➤ **Important:**

- **Stay calm and think carefully!**
- **Make sure you can approach the scene safely!**
 - Watch out for traffic before stepping onto the road!
 - Make eye contact with drivers to ensure they see you!
 - If you're using a bicycle or scooter, be careful not to get knocked over!
- **Before getting out of the vehicle:**
 - Check the traffic behind you!
 - Switch on your hazard warning lights!
 - Only open the door when it is safe to do so!

1.2. Making the scene safe

Once we are at the scene of the accident, the next important step is to ensure that, whilst we are gathering information, attending to the injured and calling for help, we do not put ourselves in danger.

Unfortunately, it is true of every accident that there will always be people who do not want to help at the scene, but only want to take photos or videos. Sadly, they do this even whilst driving, as they pass by the accident. In such cases, their attention is not on driving but on the accident that has occurred; they do not see, for example, if we step slightly further onto the road because we are talking to an injured person in one of the accidents who is feeling dizzy and leans towards us, so we take two steps back to support them, and we get hit too. That is why it is very important that the accident scene provides relative safety for both the injured and us from oncoming traffic. We must try to create this safe space, which the arriving ambulance crews will also do before they begin their work at the scene. How can we do this? If we are also in a motor vehicle, we can use our own vehicle to secure the scene. We should stop our vehicle near the accident in such a way that other vehicles can only pass by if they maintain a distance of at least one metre. If the accident appears serious at first glance and you feel there is not enough space, feel free to park across the lane to prevent other vehicles from passing. Our safety is always the most important thing! Before getting out, switch on the vehicle's hazard warning lights to signal to other road users that there is a hazard on the road and they should take extra care. Only get out of your vehicle once you are certain it is safe to do so!



The person providing assistance must also be safe – Source: alapjarat.hu



Securing the scene

➤ **Important:**

- **Protect yourself and the injured from further danger!**
 - Some people just want to take photos or videos and don't pay attention to the road!
 - Make sure you don't get hit by a distracted driver!
- **Using a vehicle to secure the scene:**
 - Stop in such a way that other vehicles can pass at a safe distance!
 - If the accident is serious, you can also stop across the road to prevent vehicles from passing through.
 - Always put your own safety and that of others first!

The aim is not only to help, but also to stay safe!

2. GATHERING INFORMATION, CALLING FOR HELP

2.1. The importance of reporting and the obligation to provide assistance

When people see an accident or drive past one, many call the emergency hotline to report that an accident has occurred at a specific location. When the operator asks follow-up questions—such as what kind of accident it was, how many people were injured, whether everyone has exited the vehicles, what injuries they sustained, etc., they are unable to answer—they only saw it while driving by, they didn't stop because they were in a hurry. They just reported it. Beyond the fact that everyone has a legal obligation to stop and provide assistance, everyone should consider how they would feel if they were in an



It is important to provide accurate information to the emergency services – Source: hgv.hu

accident and no one stopped to help or asked if they were injured. An emergency call can only be truly effective if the caller stops at the scene, gathers information, forwards it to the appropriate agencies, then waits for them at the scene and tells them what has changed since the call was made. Meanwhile, their presence supports the accident victims, and if they are trained in first aid, they can provide assistance to the injured.

➤ **Important:**

- **The law requires everyone to stop and provide assistance.**
- **Think about it: if we were involved in an accident, we'd be glad if someone stopped to help!**

➤ **An emergency call is most effective when the caller:**

- **Stops at the scene.**
- **Gathers information and provides the dispatcher with accurate details.**
- **Use short, to-the-point sentences!**
- **Listen to the dispatcher's questions and answer them accurately!**
- **If we don't know something, let's not make things up – let's just say we don't know yet!**
- **Stay at the scene and report any changes.**
- **Support the injured and, if you can, administer first aid.**

2.2. Minor accidents (within towns and villages)

In towns and cities, in the case of minor accidents involving mainly material damage, it is not always clear who was involved in the accident; if we look at them, we might think they are just onlookers. In such cases, start by trying to find someone who can tell us what happened. This will likely tell us how many people were involved in the accident and who they were, as well as whether anyone was injured. If we then report the accident, we will already be able to provide the dispatcher with accurate information. We can report from outside the accident scene how many people were travelling in the vehicles, whether everyone has got out of the cars, and whether anyone is complaining of severe pain or only has minor injuries. Based on the above, the call centre will already know how many ambulances are needed and what equipment they require, as well as that there is no need to send firefighters to the scene, as there are no trapped casualties.

➤ **Important:**

- **These incidents usually involve property damage, and it is not always clear at first glance who is involved.**

➤ **What should we do?**

- **Let's ask someone who saw what happened!**
- **Let's try to find out how many people are involved and if anyone is injured!**
- **When reporting the incident, say:**
 - How many people are involved?
 - Are there any injuries?
 - Has everyone got out of the vehicles?

With this information, the dispatcher will know exactly what kind of assistance is required.

2.3. More serious accidents (main roads, dual carriageways, motorways)

On main roads, dual carriageways and motorways, accidents tend to have more serious consequences due to higher speeds. As a result, vehicles are more severely damaged, doors cannot be opened, and passengers are unable to get out. In such cases, everyone focuses on the injured people trapped in the vehicle, but it is just as important to assess the injuries sustained by those who have managed to get out of the vehicles. In accidents involving higher speeds, the severity of injuries also increases. Gathering information before making the emergency call is much more important, as the ambulance crews are travelling from further away, so it is essential that the correct units are alerted. Let's try to see if there are any people



The white smoke coming from the electric vehicle indicates a damaged battery – Source: infostart.hu

trapped inside the cars! If there are and we can communicate with them, let's try to reassure them that we are there, and help is on its way. It is important not to try to remove the injured from the vehicle unless there is a risk to life. What constitutes a risk to life? If, for example, the vehicle catches fire. The fire should not be confused with the steam from the coolant that rises when the accident occurs, or with the dust that rises when the airbags deploy. These dissipate almost immediately, whereas if a fire breaks out, it can be recognised by continuous dark smoke, or in the case of electric vehicles, white smoke rising from the underside of the vehicle. As soon as you have had a look around the scene, call the emergency number and provide all relevant information. It is best, after giving the location, to state how many vehicles were involved in the accident, then, as you scan each vehicle, describe one by one how many people were travelling in each, whether they have sustained injuries, if anyone is trapped, and if you can see smoke escaping from any of the vehicles. This way, there's a good chance we won't miss any important information. It's important that if there's any change in the condition of the injured, e.g. someone feels unwell or a car starts smoking, we call the emergency services again immediately and inform them of the change so that the ambulance crews on their way can prepare for the necessary intervention.

➤ **Important:**

- Higher speed → **more serious injuries, damaged vehicles** → more difficult rescue.

➤ **What should we look out for?**

- **Is anyone trapped inside the vehicle?**
- **Can we communicate with them? Reassure them!**
- **What condition are those who have got out in?**

Do not attempt to remove the injured, unless their lives are in danger!

- **What constitutes a life-threatening situation?**
 - **If the vehicle catches fire!**
- **Recognising a fire:**
 - Do not confuse this **with coolant vapour or airbag dust** (these dissipate quickly).
 - If **dark or white smoke** is rising **continuously** (from the underside in the case of electric vehicles), a fire may have started.
- **How do we report the accident?**
 1. **Provide the exact location.**
 2. **How many vehicles are involved?**
 3. **Describe each vehicle separately:**
 - How many people were travelling in them?
 - Are there any injured or trapped people?
 - Is there any smoke or fire visible?

If there is a change in the situation (e.g. someone falls ill, a car starts smoking), call the emergency services again immediately!

2.4. Features of electric vehicles

Purely electric passenger cars and vans are becoming increasingly common. One characteristic of electric vehicles is that no engine noise can be heard when the vehicle is in running order, but if, for example, I want to rescue the driver from the vehicle at the scene of an accident, their foot may press the pedal and the vehicle may start moving. Another characteristic is that the built-in battery may be damaged in an accident, and as a result, its cells may catch fire, with the fire spreading to the rest of the vehicle. When gathering information at the scene, if possible, try to find out whether the car involved in the accident is electric! This is essential information for the emergency services, as special procedures must be followed during the rescue of such vehicles; they can prepare for this before arriving at the scene if the report indicates this.

- **Important:**
Electric cars can pose **additional risks** in the event of an accident:
 - There is no engine noise, so **they can start moving even when in running order.**
 - The battery may be damaged and **could catch fire.**

- **What should we do?**
 - **Try to find out if the vehicle in question is electric!**
 - **If so, mention this when making the emergency call!**

This will help the emergency services to prepare appropriately.

- **In summary:**

Do:

- Ensure your own safety and that of others!
- Call 112 and provide accurate information!
- Reassure the injured, if possible!

Don't:

- Do not go near hazardous materials!
- Do not move the injured unless their life is in danger!
- Do not leave the injured alone until the ambulance arrives!

3. ACCIDENTS OCCURRING WITHIN SETTLEMENTS

The fundamental difference between accidents occurring within towns and cities and those occurring outside them lies in the speed of the vehicle at the time of the accident, and the severity of injuries may be proportional to this.

3.1. Accidents involving bicycles or scooters – What should we do?

When someone falls off a bicycle or scooter, it may seem funny at first, but we must never downplay the situation! Even these seemingly minor accidents can result in serious injuries.

1. Safety first!

Approach with caution! Before rushing to help, check that the scene is safe!

- **Accident on the pavement:** Be careful not to suddenly step out in front of another cyclist or scooter rider!
- **Accident on the road:** Make sure that vehicles have stopped; if necessary, stop the traffic!



On average, one person a day is taken to the University of Debrecen clinic following an accident involving an electric scooter – Source: szabolcs24.hu

2. Assessing the condition of the

injured person If the injured

person is conscious:

- Speak to them and ask if you can help!
- Ask if they are in pain anywhere!
- Watch out for signs of a possible concussion!
- If necessary, treat any minor injuries!
- If you cannot manage on your own, ask other passers-by for help!

If the injured person is unconscious:

- Check if they are breathing!
- **If they are breathing and have a pulse:** secure the area, do not let anyone near the injured person, and ensure there is space around them!
- **If they are not breathing:** start CPR using the method you have learnt!
- **Important to know:** In cycling and scooter accidents, it is most often closed head injuries – such as concussion – that require medical attention. This type of injury may be accompanied by bleeding, bruising and shock. Deep cuts to the skin are the second most common injury, whilst the third most common problem is a broken bone.

3. Emergency call – How do we call for help?

Before calling the **112 emergency number**, have the following information ready:

- The exact location of the accident.
- What exactly happened?
- How many people have been injured, and what are their injuries?

4. The dangers of electric vehicles

If an **electric scooter or bicycle** has been involved in an accident:

- If possible, move the bike or scooter away from the injured people!
- If white smoke is coming out of it, the battery is damaged and may catch fire at any moment!
- Such fires start quickly, **with flames shooting up half a metre to a metre high**, posing a serious danger to those nearby.

3.2. A pedestrian is hit by a vehicle – What should we do?

If you see a pedestrian being hit by a vehicle, **be sure to stop and help!** It is not only our moral duty, but we would also expect someone to help us if we were in trouble.

1. Making the scene safe

- If you are in a vehicle, **switch on your hazard warning lights** so that other road users can see the danger!
- Do not move the injured person **unless they are in immediate danger of death** (e.g. fire, risk of another accident)!

2. Assessing the injured person's condition

- **If they are conscious**, try to reassure them and keep talking to them!
- **If they are unconscious**, check:
- **Is the person breathing and do they have a pulse?** → Do not move an unconscious person lying on the ground!
- **Not breathing / no pulse?** → **Start CPR!**

3. Call for help and start CPR

- **First step:** call for help!
 - If there are others nearby, **ask for help** and share the tasks (one person calls the ambulance, another starts CPR)!
 - If you are alone, **call the ambulance (112) first**, then start CPR!

4. Steps for CPR (if necessary)

- **Call the ambulance!**
- **Start chest compressions** (100–120 compressions per minute, to a depth of 5–6 cm).
- If we are trained, we can also perform CPR (at a ratio of 30:2).

➤ Summary

- Secure the scene!
- Call for help!
- Reassure the casualty (if they are conscious)!
- Perform CPR (if necessary)!

3.3. Urban traffic accidents and what to do

Due to the **50 km/h speed limit** in urban traffic, most **accidents** involve **minor collisions**. In such cases, **passengers wearing seatbelts** usually suffer only **grazes and bruises**.

1. Airbags and medical examination

- Deploying **airbags** can also cause injuries.
- **In Hungary**, if an **airbag deploys** in an accident, passengers are **taken to hospital for a check-up**, even if they have no visible injuries.

2. Approaching the scene of the accident

- Approach the scene **with extreme caution!**
- If you are **arriving by car**, stop in such a way that **you are protected from traffic!**



Accidents involving trams and cars are mostly caused by drivers' inattention – Source:haon.hu (Tóth Imre)

3. Assessing the condition of the passengers

- Ask those involved:
 - “**Are you feeling alright?**”
 - “**Are you in any pain?**”
- If someone has not got out of the vehicle and the **door is not jammed**, ask:
 - “**What’s the matter?**”
 - “**Where does it hurt?**”

4. Emergency calls and what to do first

- **Call 112** if there are any casualties!
- Provide accurate information:
 - **The location of the accident**
 - **Number and condition of injured people**
 - **The nature of any visible injuries**
 - **Is anyone trapped?**

5. Until the ambulance arrives

- **Stay at the scene!**
- Help the injured, even if it’s just **by having a reassuring chat!**

3.4. Fixed-route public transport and the risk of accidents

1. Characteristics of fixed-track transport

- They have a higher passenger capacity than buses and trolleybuses.
- They run on pre-built tracks, which may be separate from the road or cross it.
- The most common modes are **trains, suburban rail services and trams**.
- **Trams** are mainly part of urban transport and often run down the middle of the road.

2. The most common cause of accidents

- Accidents at **level crossings** and on tram tracks are most often caused by **driver inattention**.
- **Due to their heavy weight**, rail vehicles require a longer braking distance, so **they** often **push** vehicles driving **in front of them for a considerable distance**.
- In the case of trains, this often happens in places where there is no **road or pavement**, which makes rescue operations difficult.
- The scene of an urban tram accident is **easier to access**, but ensuring that traffic flows smoothly is also an important consideration.

3. How should we approach an accident scene?

- **On foot:**
 - Always **make sure that approaching vehicles can see** that you intend to cross!
 - Only step onto the road when you are certain **you can cross safely**.
 - Stay calm rather than panicking, so as **not to cause another accident!**
- **By car:**
 - Try **to stop safely** so as not to obstruct traffic!
 - **Switch on your hazard warning lights**, and when it is safe, go to the scene!

4. What should we do to care for the injured?

- **Find out about the injured:**
 - How many people were in the car?
 - Were they able to get out, or are they trapped because the doors won't open?
 - If they are trapped, do not try to open the door; wait for the ambulance.
 - If someone is feeling unwell, ask them:
 - **Where does it hurt?**
 - **Can they move their limbs?**

Find the train or tram driver and check on their condition as well.

5. Emergency call and further action

- **Call the emergency number 112** and provide the following information:
 - **The exact location of the accident**
 - **How many people are injured and what injuries have they sustained**
 - **Are there any people trapped?**
 - **Watch out for traffic!**
 - Many people would rather film a video than help.
 - If you see a driver filming whilst driving, try **to stay away from them** so they don't cause another accident.
- **While waiting for the ambulance:**
 - **Reassure the injured!**
 - **Help the paramedics and firefighters** with the information you have gathered.

4. ACCIDENTS ON MAIN ROADS

On roads connecting towns and cities, and on main roads, vehicles travel at much higher speeds than within towns. As a result, road accidents are more serious; the intention to help is no longer sufficient to rescue and treat the injured, and in many cases the fire brigade must be called for assistance.

4.1. Motorcycle accidents

The safety of passengers in cars and lorries is ensured by a number of safety devices, such as:

- Seat belts
- Airbags
- The vehicle's structure

In the case of motorcyclists, however, there is no external protection to safeguard them in the event of a collision. There is nothing that:

- Prevent them from crashing into a car, a pillar or a tree.
- Absorb the impact energy.

Motorcycle clothing and helmets reduce the risk of injury, but **only** provide protection **up to a certain level**. It is therefore particularly important to pay extra attention to them when on the road.

1. First steps to take in the event of an accident

- **Securing the scene**
 - Your own safety and that of the injured is the top priority.
 - **Outside built-up areas**, due to higher speeds, it is particularly important that other road users spot the danger in good time.
- **Ensuring warning and visibility**

If you arrive at the scene by car:

 - Stop **at a safe distance** from the accident!
 - **Switch on your hazard warning lights!**
 - This serves as a warning to other road users that **they need to slow down or stop**.

Important! To avoid causing another accident, do not stop directly in front of the accident scene. If someone fails to notice the situation in time and collides with us, the distance can provide extra protection.

2. Assisting an injured motorcyclist

Move them only as much as absolutely necessary!

Steps to assess the injured person's condition:

- Call out to them and observe their reactions
- **If they respond**, ask:

- What happened?
- Where does it hurt?
- Do you notice any serious injuries?

Risk of hidden injuries!

- Internal bleeding and injuries **are not always visible at first**, but can lead to life-threatening conditions over time.
- **Motorcyclists must not be left alone, even if they feel fine!** Their condition could deteriorate at any moment.

3. What should we do if a motorcyclist is unconscious?

- If the injured person is unconscious:
 - **Do not move them unless their life is in immediate danger!**
 - **Check for breathing and a pulse!**
 - **If there is no circulation, start CPR!**
 - **Call 112 and provide accurate information about the casualty and the location!**

4.2. Road accidents – What should we do?

1. The most common accidents

- Road accidents most often result from **collisions between passenger cars**.
- Collisions at high speeds (over 90 km/h) are **particularly dangerous** because:
 - The vehicles are severely damaged and deformed.
 - Passengers may become trapped in the wreckage and suffer serious injuries.

2. Securing the scene

- It is important to **approach** the scene **safely**.
- Traffic **must be stopped or restricted** so that the rescue can be carried out safely.
- Secure the scene using your own vehicle or another car!



If you spot a road accident, use your hazard warning lights – Source: alaktreszek.hu

3. Locating and assessing the condition of the injured

- **Communicate** with those at the scene:
 - Were there any eyewitnesses who arrived before you?
 - How many people were travelling in the vehicles involved?
- **Approach** the damaged vehicles **with caution**:
 - Check **for smoke** (do not confuse this with coolant vapour)!
 - If the car has rolled onto its side, **do not move it or climb onto it** – check on the occupants through the windows!
 - Watch out **for electric vehicles**: white smoke may indicate battery damage!
- **If there is an injured person in the car**, find out:
 - Are they conscious?
 - Are you trapped? Can you move?

4. The emergency call

- Call **112** and provide accurate information:
 - **Where did the accident happen?** (name of the road, direction, name of the last town passed, kilometre marker if available)
 - **How many people are injured?**
 - **Is anyone unconscious?**
 - **Are there any children among the injured?**
 - **Are people trapped?**
 - **Is an electric vehicle involved?**
- This information **helps ensure the right emergency services are alerted**.

5. Until the emergency services arrive

- **Due to the distance, the rescue operation may take longer**, so it is important:
 - Stay at the scene!
 - **Help the injured**, even if you cannot provide professional medical care!
 - **Talk to them and reassure them** – this is often the most important thing.
 - When the emergency services arrive, **provide them with all the information** about what has happened since the emergency call was made!

4.3. Accidents involving heavy goods vehicles – What should we look out for?

If a **lorry** is involved in an accident, we **must take into account additional risks on top of** those described for car accidents. **Why are lorry accidents more dangerous?**

Heavy goods vehicles transport **large quantities of goods** – food, technical goods, clothing and industrial raw materials. When properly packaged, these do not pose a risk; however, **in the event of an accident**, if the packaging or the container is damaged, **hazardous substances** may be released into the environment, which could be dangerous to those in the vicinity. Unfortunately, there are hazardous substances that cannot be detected by the senses, but inhaling them can cause serious health damage or even death. If there are substances on the lorry that could be hazardous to us, they are clearly marked with signs on all sides of the vehicle, and are clearly visible even from a distance.

1. Our first priority in the event of a lorry accident

- **Check your safety** – Make sure the goods being transported do not pose a danger to you!
- **Identifying hazardous materials** – **Warning signs** are displayed on the sides and front of the lorry to help identify the hazard.

2. How can hazardous materials be identified?

Two types of signs aid identification:

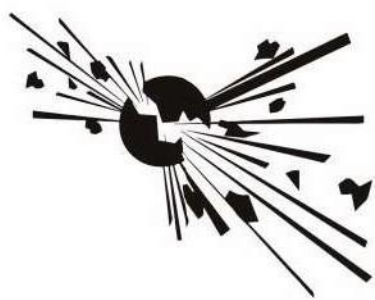
ADR labels

These are **coloured squares placed on their corners**, bearing **symbols**.



ADR labels

Both the colours and the symbols have a clear meaning for professionals. The symbols can be understood by anyone; no prior training is required to understand their meaning. Some examples:



Explosive



Toxic substance



Flammable substance

Orange hazard warning sign

This is a **label consisting of two rows of text**, used to indicate the hazard and classification of the substance being transported.

- **Top row:** Indicates the nature of the hazard (e.g. flammable, toxic, etc.).
- **Bottom row:** The substance's identification number, which reveals its exact name.

Example: Such a sign may indicate that the vehicle is carrying **petrol**, which is a **liquid and highly flammable**.



Warning sign

What should we do if a hazardous substance is released?

- **If there is no leak:** Follow the procedure described for car accidents.
- **If hazardous material has been released into the environment:**
 - **Immediately move** at least **100 metres away from the scene!**
 - **Warn** others not to go near it!
 - Call **112** and provide the following details:
 - **The colours, symbols and numbers** on the hazard warning signs!

Important! Many hazardous substances require **special equipment and procedures** during rescue operations, so emergency services **need** to know **as soon as possible** exactly what substance has been released into the environment.

HAZARDS IN NATURE

I. HAZARDS IN NATURE

Nature is wonderful, but it can also harbour many dangers. In this article, we outline the most common natural hazards that a hiker, day-tripper or even a city dweller might encounter. Our aim is to provide everyone with clear and practical knowledge so that they can enjoy the beauty of nature safely.

1. Accidents caused by vegetation fires

A. BUSH FIRE

B. FOREST FIRE

Spring is the most dangerous time of year for outdoor fires, as many people choose to spend time outdoors or start gardening when the weather is fine. The danger stems partly from dry undergrowth and leaf litter, through which fire spreads easily and quickly, and partly from human negligence, as 99 per cent of outdoor fires are caused by human activity.

Forest fires and the risks they pose present an ever-greater challenge to the defence sector.

Damage can be most easily prevented if we are aware of the basic rules of safe outdoor fire-lighting and fire prevention:



Fires are often caused by human negligence – Source: feol.hu

- Fires should only be lit in suitable weather conditions, when there is no wind.
- Ensure that suitable fire-extinguishing materials and equipment – water, sand, hand tools – are kept within easy reach.
- Only light a fire that is small enough to be kept under constant supervision.
- Do not leave the fire unattended, nor any embers or ashes that have not yet cooled down.
- After burning, the fire must be carefully extinguished, and you must make sure that it has completely gone out.

What should you do if a forest fire breaks out?

- Stay downwind and try to escape from the fire!
- If you cannot escape, look for a water source or lie down in a smoke-free, damp area!
- To protect your clothes, cover your face with a wet cloth!

Rules of conduct

The first and most important task is to prevent emergencies and to report unusual situations or occurrences to the relevant authorities and individuals, first and foremost to the manager in charge at the workplace or place of residence, or to an on-call service (police, fire brigade, civil defence) or the local authority or any sectoral on-call or dispatch service.

The report must be clear: it must specify the location, time and nature of the incident, as well as the nature of the threat as precisely as possible. Prior to this, or at the same time, an attempt must also be made to intervene personally to prevent the anticipated incident, warning all those who may be directly affected of the danger, and, where possible, localising the damage and securing the scene.

However, we must remember that our own inappropriate, unprofessional or careless behaviour can put both ourselves and others at risk; indeed, our attempts to help may even lead to a disaster. Therefore, we must always act with caution and care, and only provide first aid in this manner! **The fundamental principle is that saving lives is the top priority.**

It is important not to remain at the scene of the incident or in the danger zone without authorisation, and once the emergency services have arrived, to leave the rescue operation to the organisations that are trained and equipped for this purpose. If our assistance is required, we must follow the instructions of the incident commander!

It is not possible to provide general or universally applicable personal safety instructions or advice. However, it is advisable to move away from the immediate scene of the incident

to a safe place as soon as possible. Holding a handkerchief over your face can often be a lifesaver, preventing you from inhaling dangerous gases.

We should take even minor injuries and feelings of unwellness seriously, and seek medical attention, particularly if we have been present at an incident involving biological, chemical or radiological hazards.

We must comply with any instructions or appeals we receive without delay, even if we are not convinced of their necessity. **Caution and prompt action can save lives.** We should keep an eye on the news and monitor events so that we can respond to changes in a timely and appropriate manner. Be prepared to take shelter, leave your current location, secure your valuables, and pack the essential items needed for survival (drinking water, food, clothing, medicines, first-aid kits, hygiene items, etc.).

Avoid moving around unnecessarily, using your mobile phone, or putting a strain on public utilities! Stay where you are until you receive instructions to the contrary! A spontaneous, panic-stricken attempt to flee will only expose you to further danger. Inside buildings, take shelter in the safest interior rooms, where the risk of mechanical injury is lowest.

The most important and always hopeful option is to assess our situation and the possible consequences of our actions, to avoid panicking, and to try to reassure those around us.

2. Wild animal attacks

If you happen to have an unexpected encounter with a large wild animal in the forest, make some noise and let the animal know you are there!

In an environment where we don't know the rules, it's best to behave cautiously, but this doesn't mean we should shy away from hiking and walking in nature; instead, let's find out what to do in extreme situations!

Wild animals are generally wary of humans, and this holds true for all our large game species. A few top-predator bears and wolves have now appeared in certain areas of the country; whilst they behave quite differently, they too tend to keep their distance from humans. Our ruminant big game and wild boar rarely attack humans. The noisy, boisterous forest visits typical of tourists and mushroom pickers generally prompt them to retreat to a safe distance in good time.



Stay in the car

It is important that forest visitors stay close to the footpaths and visit the forest during the periods recommended by the forestry authorities.

If you do encounter a wild animal but it has not noticed you, leave the area immediately, as quietly and unobtrusively as possible. If the animal notices you, do not try to scare it away with stones or anything else.

- If you encounter wildlife whilst driving, do not leave your vehicle!
- Do not feed the animal or take photographs of it at close range!
- If the wild animal tries to approach, leave any food you have with you in one place and, keeping an eye on the animal, slowly move away from the area!
- Do not look the wild animal in the eye, as this may provoke aggression; at the same time, do not turn your back on the animal.
- If the animal ventures close, do not provoke it and do not make any sudden movements!
- If it does come towards you, lie face down, cover your head with your hands, and remain motionless!
- Dangerous situations can also arise when walking a dog or hunting with a dog, if the dog, fleeing from game, runs back to its owner – possibly accompanied by the animal it is chasing.
- Do not store strongly scented food in the tent. At night, it is advisable to place it further away from the tent, in a tree or somewhere inaccessible to the animal.

3. Accidents caused by natural phenomena

A. FLOODS

B. FLASH FLOODS

Guidelines for behaviour in the event of a flood

If a flood is approaching, proceed as follows:

- Before leaving the house, turn off the water, gas and electricity supplies!
- Close windows and doors to prevent them from being broken by strong winds, water, floating objects or debris!
- Release your pets and guide them to pre-identified safe places, and take your valuables there too!
- Bring some items inside the house or lay them flat on the ground in a safe place (garden furniture, garden tools or other objects that could move and be blown away by the wind or swept away by the water)!
- If you leave the house, take your personal documents, food, water, first-aid kit, lighting, a radio and warm clothing with you!
- Turn on the radio and television, listen for external announcements, loudspeakers and sirens, and inform your neighbours as well!
- Do not make any phone calls, except to request assistance!
- If you've been ordered to evacuate, don't argue, just follow the instructions!
- Prepare an emergency kit!
- Turn off the gas, electricity and water and lock them away when you leave your home, and make sure to lock the doors and windows too!
- Carry the kit in a rucksack or shoulder bag, keeping your hands free!
- Dress in layers and wear comfortable clothing!
- Remember the needs of your family members too!
- Walk to the designated assembly point!
- Travel in groups so you can help one another!
- Wait at the assembly point for further instructions!
- Do not listen to or spread rumours!
- Trust those who are prepared to protect you and are willing to take risks for your sake!

Basic rule: Floodwater is unpredictable; do not enter it unless there is absolutely no other option. You must decide whether to follow the above guidelines based on whether you can leave the building you are in or not.



Mobile flood barrier against flash floods – Source: villamarviz.hu

General rules of conduct in the event of an evacuation order:

- once the public has been informed of the evacuation order, wherever they may be, the first and most important thing is to return home if possible and ‘gather’ their family members, as the family must prepare for evacuation together,
- It is essential to follow the instructions of the authority overseeing the evacuation and to arrive at the assembly point on time;
- the first task is to assemble an emergency (survival) kit,
- the specified evacuation route must be used,
- the principle of keeping families together applies during the evacuation,
- If pupils are at school when the emergency occurs and the form tutor is responsible for the pupils in their class, they must take them to the evacuation assembly point and hand over the register at the reception centre,
- Everyone must decide whether to go to a reception centre of their own choosing, e.g. to relatives, or to the designated reception centre.
- Special attention must be paid to children left alone, the elderly and the sick; patients who are unable to move must be reported at the assembly point, and someone must remain with them until help arrives;
- No one should risk their life to protect family valuables, as the police, community police and security organisations are responsible for safeguarding any property or other valuables left behind.

When leaving the home:

- switch off the electricity, electrical appliances and lights,
- shut off the water and gas supplies and appliances,
- extinguish any fires in stoves and cookers,
- Close the windows, if there are any, and lower the shutters,
- lock the front door,
- any immobile or sick family members must be registered at the assembly point and, under the supervision of a family member who remains behind, you must wait until they are evacuated centrally.

If the flood catches you in the house:

- Move any movable objects to the top of the house; switch off electrical appliances and move the whole family to a place of refuge (upper floors, roofs, high ground or other elevated areas) that cannot be reached by the maximum flood level!
- If you are unable to leave the house in time, climb onto the roof and wait to be rescued!
- Don’t forget to take your emergency kit with you!

During a flood:

- Keep a cool head!
- Do not ignore warnings issued by the authorities!
- Help protect the area!
- Help reinforce the embankments with sandbags!
- If the authorities recommend it, evacuate the area! Try to save yourself and your family!
- Follow the authorities’ recommendations and go to the nearest shelters!



Protecting property is the responsibility of the police – Source: hvg.hu

Your own life is more important than animals and the possessions and valuables in your home.

- Check whether you are injured or if there are any injured people around you!
- In the event of a serious emergency, call 112: – fire brigade, ambulance, police!
- Make sure the building is not damaged! Do not enter if there is a risk of the building collapsing!
- Stay away from fallen cables on poles!
- Do not drink water from the well until you have been assured by the authorities that the water is safe to drink!
- Follow doctors' advice regarding vaccinations against diseases that may occur after a flood!
- Clean your home by removing the mud!

C. EARTHQUAKE

Rules of conduct

The most important thing is to find a safe shelter immediately and stay there calmly until the earthquake has passed!

If you are inside a building:

- Do not leave the building, do not go out onto the balcony and do not use the lift!
- Seek shelter under a table or desk, or under a doorframe without glass!
- If the earthquake strikes whilst you are in a corridor, crouch down next to an interior wall!
- Make sure you protect your face and head above all else!
- Try to stay as far away as possible from windows, glass, mirrors, bookshelves and objects such as tall pieces of furniture that could cause injury if they fall!

If you are in a lift:

- Press the emergency button!
- If the lift has stopped, get out as quickly as possible and find a safe place to take shelter!

If you are in a public place, such as a shop:

- Try to stay as far away as possible from areas where there are heavy objects more than a metre high, and move away from windows!

If you are outside a building:

- Stay away from windows, buildings/balconies, bridges, power lines or pylons!



These instructions must be followed – Source: infostart.hu

- Keep at least 10 metres away from downed power lines!
- Do not attempt to enter buildings, as this is when most injuries occur (e.g. due to collapsing chimneys, falling plaster or broken glass)!

If you are in a vehicle:

- Stay in the vehicle!
- Stop the vehicle without blocking the road or traffic, preferably away from buildings, bridges and poles!
- If power cables are down nearby, do not get out of the vehicle until the emergency services arrive!

If you are outdoors (e.g. on a mountain or hill):

- Find a safe place away from slopes at risk of landslides!
- Be careful, as rockfalls and landslides are possible, and trees may fall!

The information also specifically covers how to behave after an earthquake. Most of this applies, of course, to stronger earthquakes:

- try to stay calm, and try to reassure frightened people and children nearby
- if you are trapped under rubble or in an enclosed space, then, if possible, bang on the most stable, hardest part of the structure where you are trapped at regular intervals using a hard object, to send signals to specialist search and rescue teams so that they can identify and locate your position

- Do not use the telephone unnecessarily; only do so in a life-threatening situation, as the emergency services need all available lines. In a life-threatening situation, try to explain concisely and briefly what has happened
- Do not light matches or turn on lights; check the condition of gas pipes using soapy water. If you detect a gas leak, open the window and turn off the gas tap
- if the water supply is working, try to build up reserves (fill the bath or other containers), as the supply may be cut off later
- Check your home/building for any major damage, paying particular attention to the walls, ceiling, roof, and entrances and exits
- if you have to leave your home because it is unsafe, take care on the stairs and in lifts
- Follow the instructions issued by the authorities (on the radio, TV, the internet or via mobile apps)
- Only use your car in an emergency; in such cases, keep the roads clear as far as possible for ambulances, fire engines and other emergency vehicles

Your emergency rucksack should contain the following:

- water (4 litres per person per day; 30 ml of water per day is recommended for a pet)
- food (it is advisable to pack food that does not require refrigeration, cooking or baking, e.g. tinned food, energy bars, jam and similar items. Do not forget your pet's food either)
- clothing (season-appropriate clothing and underwear)
- sleeping bags (2 warm blankets per person)
- first aid kit



Emergency rucksack
Source: winterthurmedical.com/

- Essential items (radio with batteries, torch with batteries, whistle for signalling, mobile phone with charger and external battery)
- Hygiene items (toilet paper, wet wipes, soap, deodorant, toothpaste, toothbrush)
- personal items (ID documents, money, important phone numbers)

When packing, it is essential to bear in mind that evacuation may take place using centrally provided transport or, possibly, on foot. It is important that the packed bag is easy to carry and does not exceed 20 kg. The name and address must be written on the bag; where possible, the child's name and year of birth should be written on or sewn into their clothing. A document detailing any medication allergies must be included. Avoid packing items and equipment not essential for daily life, although if it fits within the weight limit, it is advisable to include the child's favourite toy.

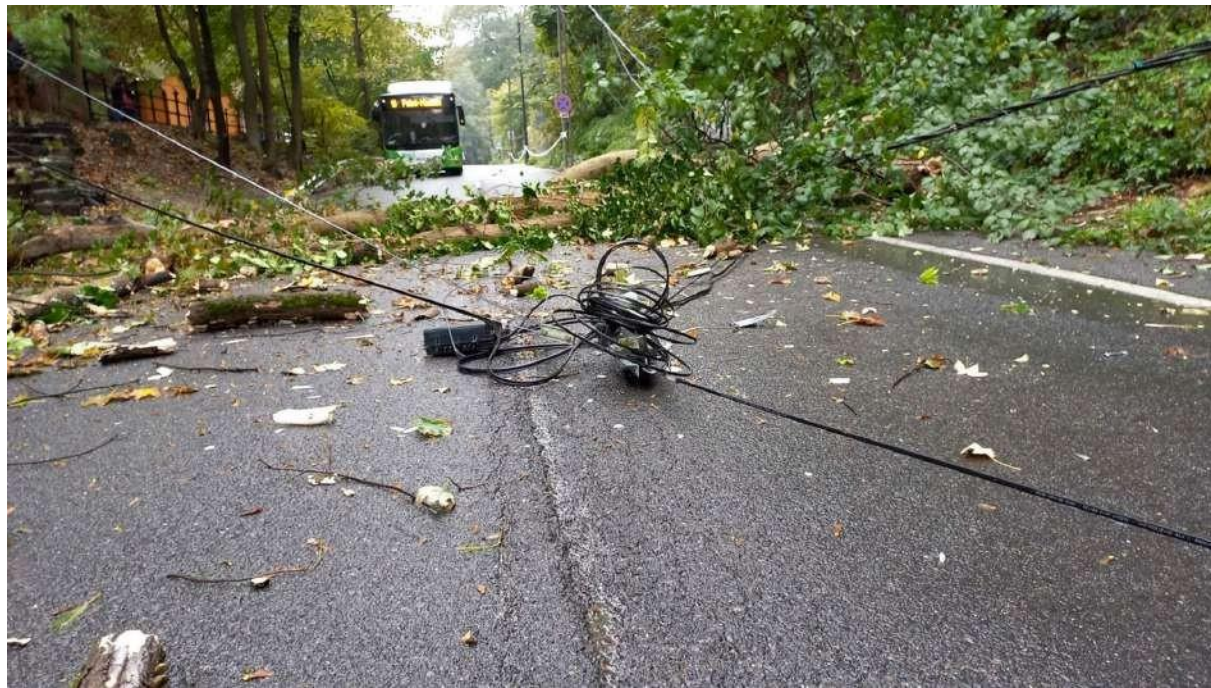
D. STORMS, LIGHTNING

Although sudden, powerful storms can strike at any time of year, it is during the spring and summer months that we are most likely to face weather conditions that change from one day to the next. Given the extreme weather, it is worth being prepared for changing conditions.

If we are lucky, we will be at home or inside a building when the storm hits. However, even indoors, it is wise to take precautions to prevent damage caused by storms and lightning. A lightning strike, even if it strikes a few houses away, can cause severe overvoltage within a radius of a hundred metres. As a result, all our devices connected to the mains may be damaged.



Surge protector



Stay away from downed power lines – Source: boon.hu

It is a good idea to have a surge protector in your home. But if you don't have one, at least unplug your electrical appliances from the mains as a storm approaches.

For your own safety, it is also a good idea to stay away from water pipes, doors and windows, and not to use the shower or bath during a storm.

If you happen to be in a car when a violent storm hits, it's best to pull over! Avoid touching the metal parts of the vehicle, and it's also best to avoid touching the bodywork and the steering wheel. Even if lightning strikes your car, the protective effect of the metal means that the external electric field will not penetrate the vehicle's interior.

If you are on the beach or in the water, you are more likely to be at risk of being struck by lightning. Water attracts and conducts electricity well. Let's not forget this when swimming, boating or even sailing! As a storm approaches, let's get out of the water and not stay on the shore either, however impressive a storm on Lake Balaton might be, for example.

When camping or hiking in the woods, remember that the trees towering above us also attract lightning! Try not to take shelter at the foot of a tree or pitch your tent there; instead, keep a distance of at least 5 metres from them! Remember that accidents under trees can happen not only because of lightning strikes, but also because strong winds that uproot trees and hailstorms can cause serious injuries.

The likelihood of being struck by lightning or of someone nearby being struck is very low. However, it is still wise to be cautious, as the effects of an indirect, over-the-top lightning strike can also be life-threatening.

If you find yourself in such a situation, do not fall for the



Water attracts lightning – Source: hazipatika.hu

misconception that you must not touch a person struck by lightning because you will be electrocuted. The human body is mostly water, which conducts electricity well electricity and does not store it, so we must not fail to provide assistance.

If the person is unconscious, first check that they have a pulse, that their airways are clear, and that their tongue has not slipped back. If vital signs are present, place them in the recovery position; however, if breathing or a heartbeat has stopped, begin resuscitation! If the casualty is conscious, move them to a safe place and seek medical assistance. Whatever the situation, always call the emergency number 112!

A storm or a lightning strike can cause electrical appliances to short-circuit, or a TV or computer to malfunction, which could also pose a fire hazard. If you are going away or even just heading off to work and you see an ominous weather forecast, unplug all appliances from the mains to prevent the risk of fire.

Those living in houses with gardens should also keep an eye on the trees near their homes. After all, even if it isn't lightning, a severe storm can easily cause damage to our homes. Although the time for felling old, accident-prone trees is typically in the spring, it is better to get on with the job later than never.

And it's also worth knowing that lightning can strike even from a clear sky! We may see lightning even kilometres away from the storm cloud. If you hear thunder and see lightning, it's worth doing the maths. A storm is considered dangerous if there are fewer than 15 seconds between the lightning and the thunder. In such cases, the lightning has struck roughly 5 kilometres away from you.

E. LANDSLIDES

A landslide is a mass of earth moving down a slope or along a slip plane that has lost its natural balance. When can it occur?

Landslides can be caused by several factors:

- earthquakes
- blasting operations
- soil erosion (resulting from excessive logging, intensive grazing, ploughing, or burning)
- heavy rainfall



Landslides can cause enormous damage – Source: hirado.hu

Settlements situated near mountain and hillsides are considered to be particularly at risk.

The soil-stabilising effect of plant roots is well known. If the vegetation cover is destroyed, the soil in its place becomes extremely vulnerable, as it is left at the mercy of water and wind. If excess water accumulates at the top of a slope, it increases the pressure on the loose layer of earth and rock below. The soil structure loosens, which can lead to a landslide.

If the ground collapses, it destroys everything in its path. The debris can rush downhill at speeds of up to 77 km/h. Victims of a landslide can be buried under many tonnes of mud and debris.

The shifting earth sweeps away heavy rocks and vegetation, destroys buildings and roads, and tears down power lines, leaving survivors without homes, electricity or water.

Rescue efforts are often hampered by the destruction of roads and railway tracks, and many people die as a result of epidemics and famine following landslides.

How can we protect ourselves?

The most dangerous period is during the early spring rains. Settlements located near mountain and hillside slopes are considered particularly hazardous areas. During this period, we should avoid organising trips to areas with such environmental conditions.

Landslide protection can be achieved through engineering structures designed during the planning phase, such as retaining walls, but there are locations that are best avoided during construction. Informing the public can play a significant role in this regard.

4. Accidents in the mountains

A. MOUNTAIN HIKES

If we're heading into the mountains for a hike, the first thing to do is check the weather forecast for that specific location to see whether the weather will be suitable for the trip at all. It's also important to bear in mind that at altitudes above 1,500 metres in the mountains, there is still snow for most of the year. Accordingly, if we choose to climb higher mountains, we must adapt our equipment accordingly. With proper preparation, consideration of the conditions and caution, the number of accidents can be minimised, if not reduced to zero. Just as in other sports.

It is best to call 112 if there is a problem.

When asked what to do if we find ourselves in trouble or have an accident in the mountains, the mountain rescue service advises that the best course of action is to call 112, as this will put you through to the nearest service. You can call this number anywhere there is mobile coverage, and they will immediately connect you to the mountain rescue service in the area where you are. This way, the rescue teams can reach those in trouble as quickly as possible.

Hikes below 1,500 metres: watch out for bears!

According to the mountain rescue service, all routes below 1,500 metres are accessible. "It's best to tackle these as a group. Those opting for an easier hike in the lower regions can set off with confidence. The forest is beautifully green everywhere at these altitudes. What you need to keep an eye on here is the weather forecast, and it's a good idea not to go hiking alone, but to set off in pairs at the very least. Wherever we go here in Romania, if we're walking through wooded areas, it's worth being cautious and keeping an eye out for wild animals, especially bears, as they are active at this time of year.

If we draw attention to ourselves, chat, or occasionally stop to rest on the forest paths, it's almost certain we won't come across them, because they avoid our company too," the mountain rescuer advised.

Head torch, raincoat, fully charged phone

According to the experts, we should carry at least a litre of water with us, as it is important to stay hydrated regularly whilst hiking.

The expert recommends that your rucksack shouldn't be too heavy, but it should contain everything you might need in an emergency, as anything unexpected can happen in the mountains at any time. That's why your rucksack should always include a head torch, a raincoat, food, perhaps some sweets, and don't forget to charge your phone. It's very important that your phone is fully charged; don't set off with it at 20–30 per cent, as accidents tend to happen in the second half of the day when we're more tired and not paying enough attention. If your phone runs out of battery in the morning, you'll find it difficult to call for help.

Sheepdogs are more aggressive

The dogs used to protect the flocks also pose a real problem; it is common for them to be attacked by the dogs. Shepherds are just as afraid of bears as hikers are – in fact, more so than in the past, as there are more bears roaming the forests these days. Consequently, they have bought larger and more dogs, which has meant, for example, that they cannot provide them with enough food, and so the dogs are more aggressive. So if you go hiking and see a flock, it is best to try to avoid them, or to stop and wait until they have passed. It's a good idea to carry bear spray, as this can be used on both bears and dogs. Furthermore, it's best for the group to stay together rather than wandering off in different directions near a flock of sheep.



Be aware of the danger of bears – Source: szekelyfoldinfo.ro



A pack of sheepdogs – Source: szekelyhon.ro

The solution is to stay in a group, not to shout, and not to panic. You mustn't shout at the dogs – or at the bear, for that matter. It's best to talk to them in a calm voice, without shouting. You should try to avoid eye contact. It is definitely safer to be in a group on the hike, but at the same time, avoid flocks of sheep. And if you haven't managed to avoid them, the group should stay together and talk to the animals, or perhaps call out to the shepherd to come over as soon as possible and take the dogs away from us.

Trying to bribe them with our sandwich – in other words, throwing food to the dogs – isn't the most effective method. You can give it a go; there have been times when it's worked, but there have also been times when, after they'd eaten it, they came back, but we had nothing left to give them.

Do your research in advance!

If we're heading for the mountains, the most important thing is to read up thoroughly in advance on where we're going and find out what the weather will be like there.

It is important to read up in advance on the hike we wish to take part in to find out how difficult it is. You can find this information online too.

Accident prevention is a set of measures designed to prevent accidents by eliminating their root causes.

BASIC RULES OF PREVENTION

- Make sure you eat well before and during the hike!
- Before the hike: a good dinner the night before, a decent breakfast before setting off.
- During the trip: drink frequently (even before you feel thirsty), and warm drinks if possible! Stick to your natural eating and sleeping patterns as much as possible! A caver's daily calorie intake is 500–6000 calories.
- Know your own physical and technical capabilities; don't underestimate the difficulties!
- Know what to do in the event of an accident!
- Ensure you have at least basic rescue skills!
- Form groups of members with similar knowledge and experience!
- Ensure our equipment is in good condition and complete: lighting, clothing (overalls, etc.)!
- Make sure you have a thermal blanket (in your helmet, if it's not too big, or in your boots) and the medical questionnaire (a self-adhesive sticker, stuck inside your helmet)!
- The last two members of a group should always stay together during the climb!
- You must be familiar with the techniques used (artificial climbing, belaying, etc.)!



Rescue blanket (insulating), takes up little space and is useful – Source: sarkcsillagsport.hu

B. MOUNTAIN SPORTS

Things to always bear in mind

- Do not start the descent when tired! If you are tired, take a short break! Most accidents happen in the afternoon, at the end of the day's skiing.
- If you take a break, always do so at the top of the run, not in the lower or middle third.
- Avoid speeding, especially in crowded areas!
- Self-taught skiing courses are no substitute for ski instructors. Do not try to manage without ski poles! Doing so endangers not only your own safety but also that of others.
- Basic skills are not enough. There are also courses for advanced skiers.
- Doctors practising in the vicinity of ski resorts are generally highly skilled in treating the injuries that occur in such situations. However, some doctors recommend local surgical intervention even when it is not strictly necessary. Patients have the right to decide for themselves whether to be treated locally or near their home!

Fitness

Skiing is a physically demanding sport which places great strain on the body due to the low oxygen levels associated with high altitudes. A proper warm-up and good stamina are essential, and these can be built up mainly through running and cycling. Without adequate fitness, injuries and accidents are more likely to occur.

Alcohol

In addition to reduced concentration and the risk of accidents, alcohol's vasodilatory effect also increases the likelihood of hypothermia. As with driving, excessive alcohol consumption is a disqualifying factor when skiing.

Cigarettes

The vasoconstrictive effect of smoking increases blood flow to the fingertips, feet and nose, thereby increasing the risk of frostbite.

Visibility conditions

At high altitudes, the weather can change very quickly. A run that was clear moments before may suddenly be shrouded in fog or cloud, making it almost impossible to spot bumps and moguls. Skiing blind is extremely difficult and terribly dangerous.

The eyes

The intense glare reflected off the snow can cause serious eye injuries (e.g. conjunctivitis) and may also contribute to the development of cataracts and poor eyesight in later life. This can be prevented by wearing good sunglasses or ski goggles that provide side coverage.

In trouble

An accident, poor visibility or an avalanche may cause us to lose contact with the outside world. If there is no shelter available, we should build an ice shelter to prevent hypothermia, dig a hole of suitable size in the snow, or at the very least find a place sheltered from the wind and precipitation. Group members should huddle together, whilst those in trouble on their own should curl up, thereby reducing the risk of hypothermia.

Falling

- Most avoidable accidents result from ‘poorly executed falls’. Both professional competitors and beginners can lose control of their skis. So, if you must fall, fall, but watch where you fall, and it matters how you fall too.
- Avoid rocky or icy terrain and, if possible, don’t knock other skiers off balance!
- Before falling, try to load the skis at a right angle to the slope, on the edges! This will significantly reduce your speed.



Correct sideways fall



Falling sideways incorrectly

- Try to position yourself so that your backside hits the ground first, on the uphill side (don’t sit on the tip of the ski, as this will quickly turn into an uncontrolled slide).
- Spread your arms out; this way, the pole won’t cause any injury! Don’t lie on the poles, otherwise getting back up won’t be easy.
- Protect your knees and elbows; during a fall, ensure as much of your body as possible is in contact with the snow, and if possible, keep your legs together!
- Before standing up, check your bindings and the ski; position yourself perpendicular to the fall line, dig the tips into the snow, then use your pole to help you stand up slowly!

Common injuries

Thanks to technical innovations in safety bindings and high-cut plastic ski boots, the nature of injuries has clearly changed. Previously, ankle joint injuries and tibia fractures were considered the most typical injuries. Today, local clinics – in addition to the still-common tibia fractures – are also seeing injuries that were previously uncommon in skiing: bleeding wounds caused by the sharp edges of modern skis, fractures and sprains of the arms, shoulder girdle and thumb, as well as knee injuries caused by ski boots with excessively high shafts. Internal injuries and serious head injuries are also being treated with increasing frequency.

Duty to provide assistance

Anyone who is first on the scene of an accident has a duty to provide first aid. Providing assistance is a legal obligation – failure to do so may, in serious cases, result in criminal liability – so it is worth knowing how to help.

- First, we must secure the scene of the accident to prevent skiers travelling at high speed from causing further accidents. In such cases, the person providing assistance should stick their skis and poles into the snow at an angle, about 10–20 metres from the scene of the accident, to form a sort of barrier or fence.
- The injured person’s condition may be further aggravated by the shock caused by fear, so it is important for the person providing assistance to act in a firm and calm manner. It can also provide a sense of security and relief for the injured person if we explain how we intend to help and make gentle physical contact (e.g. holding their hand).
- It makes it easier to choose the correct position if the injured person is able to speak and can describe the nature of their injury. By ‘correct’ positioning, we almost always mean the position that causes the least pain.
- An unconscious casualty – after their skis have been removed – must be placed as carefully as possible in a stable recovery position.
- In all cases, ensure that the injured person’s airways are clear!
- We cause relatively little pain when moving the injured person if, for example, the rescuers firmly grip the broken leg both below and above the injury to prevent the injured parts from moving.
- Only remove the ski bindings once the injured leg is in a stable position and secured as much as possible.
- Applying a splint is the job of the emergency services!
- Gently unfasten the ski boots, but under no circumstances pull them off!
- Ski accidents often result in sprains or dislocations. Such injuries are accompanied by severe pain. Immobilise the injured joint and under no circumstances attempt to put it back in place!



Frostbite on the hands – Source: kinai-medicina.tienshoni.hu/

Frostbite

The first signs of impending frostbite: the affected area becomes numb, turns white, and a sharp pain sets in, which may intensify when touched. In such cases, the most important thing to do is to warm up and wrap the affected area. It is important to note that you must not rub the affected tissues under any circumstances, as this can further damage the tissues. This method is used to stimulate blood circulation and prevent frostbite. It is very important to transport the injured person to hospital immediately! If this is not possible straight away, administer painkillers and antibiotics to the injured person to prevent infection. If the frostbitten tissue thaws, medical treatment lasting up to three months may be required.

Hypothermia

In addition to frostbite and skiing accidents, winter sports enthusiasts need to be particularly mindful of the risk of hypothermia. A person's normal body temperature ranges between 36 and 36.5 °C. The body does not tolerate deviations from the optimum well. Even a drop of half a degree can have noticeable consequences, whilst a two-degree drop in body temperature triggers symptoms resembling illness. Initially, it is the brain's impaired functioning that causes problems. Warning signs may include the hypothermic person complaining of tiredness and feeling cold, becoming listless and unable to concentrate, then turning aggressive or passive; over time, shivering fits and visual disturbances may occur, followed by loss of consciousness. Loss of consciousness occurs at a body temperature of approximately 32 °C, and cardiac arrest may occur below 28 °C.

Altitude sickness

After reaching altitudes above 2,000–2,500 metres, allow at least one day to acclimatise, and a further day for every 900 metres gained (take a rest at the same altitude). The discomfort caused by a lack of oxygen at high altitudes is dangerous for both the lungs and the brain. Symptoms include loss of appetite,



You should take regular breaks above 2,500 metres – Source: egeszseggazdasag.com/

headache, nausea, vomiting and sleep disturbances... These relatively mild symptoms should be taken as a warning sign before more serious complications (such as pulmonary and cerebral edema) develop, which can be fatal in severe cases. Mild symptoms can be alleviated with 2–3 days of acclimatisation, after which you can set off again. In more serious cases, you must begin descending immediately and seek medical treatment once you reach lower ground. At high altitudes, evaporation is more intense, which can lead to a dry mouth and throat whilst sleeping. Before going to bed, drink a glass of water; to increase the humidity in the room, use a humidifier or place a damp towel on the radiator...

Heat, shock, hypothermia

The injured person should never be left lying in the cold snow, as the shock that can set in at such times, combined with the cold, can lead to serious consequences. Make a bed using ski clothing or a jumper; if nothing else is available, pine branches will do. For a blanket, we recommend a rescue blanket made of layered aluminium foil, designed specifically for this purpose, which fits into the pocket of any ski suit. In any accident, we can expect shock, which can be helped by positioning the injured person correctly, protecting them from heat loss, and speaking to them reassuringly. If, despite this, sudden weakness, paleness and a rapid heartbeat occur, we must normalise the injured person's circulation. In such cases, the horizontal position with the legs raised, commonly used for fainting, is helpful (this should not be used in cases of head injuries). Ski accidents often result in open, bleeding wounds, which must be treated as soon as possible. If no bandages are available, make a dressing from clean paper tissues and stop the bleeding by applying pressure to the arteries!

5. Accidents in aquatic environments

A. SWIMMING IN STREAMS AND RIVERS

B. SWIMMING IN LAKES AND RESERVOIRS

Although current legislation in Romania prohibits swimming in rivers, lakes and other reservoirs not designated for bathing, and this is also regulated by local authorities, during heatwaves it is still a common sight to see people splashing about in places that are technically off-limits, and tragedies resulting from a lack of caution are not uncommon either.

To prevent such tragedies, the relevant authorities and experts regularly remind the public that swimming is only permitted in authorised areas, and that people should under no circumstances visit lakes or stretches of river where the banks are steep, overgrown with vegetation, the riverbed is muddy, or the currents are strong. It is dangerous to jump into the water from bridges or construction sites, to swim whilst intoxicated or at night, and it is also not advisable to venture into the water during stormy weather. Experts advise that if anyone gets into trouble in the water, they should not panic, but only attempt to swim towards the bank once they have gathered their strength.

Providing first aid in good time can save lives! Drowning can occur not only in deep water. Young children, people with reduced mobility or those under the influence of alcohol can find themselves in serious danger even in water that is only ankle-deep if their nose and mouth become submerged. Drowning in water can occur through two mechanisms. In a ‘classic’ case, one cause may be water entering the airways because the person in distress is unable to rise to the surface and get air. Often, inadequate swimming skills, overestimating one’s own abilities, sudden exhaustion and a lack of water safety are the causes of the accident.

On other occasions, a confident swimmer may encounter unexpected difficulties (such as a particularly strong current in a section of the river). In such cases, the swimmer is pulled under the surface of the water and quickly panics. For a while, they can hold their breath deliberately to prevent water from entering their airways, but after a certain point, the lack of oxygen triggers a reflexive inhalation, and the lungs fill with water, which is only exacerbated by the resulting gasping and struggling.

The drowning person may also swallow water and vomit. If help does not arrive in time, the lack of oxygen worsens, nerve cells are damaged, and in the event of a delayed rescue, permanent brain damage or even death may occur.

A sudden drop in temperature can also lead to choking.

Another source of danger is the harmful effects and adverse events that can occur whilst bathing or entering the water, which may cause the person in the water to lose consciousness and subsequently drown.

Jumping into cold water with a heated body is particularly dangerous: the sudden cold shock can cause a reflexive cessation of breathing. The activation of the diving reflex in the face and neck can cause life-threatening cardiac arrhythmia or circulatory arrest. The so-called Kratschmer reflex causes a spasm of the larynx and cessation of breathing. Late detection of a hazard can put the swimmer in danger by triggering a panic reaction.

It is also not advisable to go into the water on a full stomach: in people prone to this physiological condition following digestion, the effect of cold water places a heavy strain on the heart, which can cause cardiac arrhythmias and, consequently, a risk of drowning.

A drowning person’s body temperature almost always drops significantly, which poses a further risk. (However, in cases of severe oxygen deprivation, this cooling can actually improve the chances of survival: at low temperatures, the oxygen demand of the cells—and thus of the body—decreases, which mitigates the harmful effects of oxygen deprivation.)

Rules for rescue

If you spot someone drowning, immediately alert the appropriate staff (lifeguard, doctor on duty, ambulance crew)! As a layperson providing assistance, we always have a duty to improve the situation of the person in distress, but only within certain limits.



Rescuing an unconscious person

Even a person with good swimming skills and adequate water safety knowledge should only attempt a water rescue if they have the appropriate qualifications and sufficient experience. Rescuing a drowning person is a very difficult task: due to panic, the drowning person does not think rationally; they cling on, thrash about, kick and instinctively try to save their own life. Even if this costs the rescuer their life. Let us bear this in mind, lest one person in trouble becomes two!

Drowning can happen quickly and silently, and causes a frightening number of deaths every year. In the article below, we go through the essential information and first-aid advice that everyone should read before heading to the lakeside, beach or water park with the family or friends to relax.

If someone is drowning, it may go unnoticed even if friends or family members are nearby. Children must always be supervised near water; they can drown in just a few centimetres of water. For your child's safety, do not rely solely on flotation aids such as rubber rings, air mattresses or armbands; always stay with your children!

Most drowning deaths result from secondary asphyxia or a spasm of the throat muscles, which causes the airways to become blocked, and often occur after the rescue, once the victim is back on shore.

Caring for a drowning victim rescued from the water – first aid

- Do not put yourself at risk when trying to rescue an injured person! If there is an unconscious person in the water, remove them from the water as quickly as possible, but do not go into the water to rescue the drowning person if you cannot swim! In such cases, ask someone else for help!
- Once the casualty has been pulled out of the water, you must first carry out an initial assessment:
- Check for breathing! Place your ear next to the person's mouth and nose – can you feel air on your cheek? Check to see if the person's chest is moving!
- If the person isn't breathing, check their pulse! Count the person's pulse for 10 seconds.
- Illustration: unconscious
- If there is no pulse, start CPR!
- If you establish that the casualty is unresponsive and not breathing, ask a helper to call the ambulance on 112 for emergency assistance as you begin CPR; another person (if there is one nearby) should notify the water rescue services!
- Turn the casualty onto their back, tilt their head back and lift their chin to open the airway. If they are still not breathing, start CPR! Use a defibrillator immediately if one is available!
- If you are alone and have called the ambulance service (112), use the speakerphone on your phone so that you can start CPR whilst speaking to the ambulance dispatcher.
- It is important to prevent hypothermia, which even a layperson can easily do: remove wet clothing and avoid any unnecessary movement. This prevents cold peripheral blood from flowing towards the body's core (towards the vital organs), which would only further worsen the casualty's condition.
- If it is warm and the casualty has not been in the water for long, you may find that the drowning person quickly begins to regain consciousness. If this happens, place them in the recovery

position as soon as possible to help them clear their airways and vomit! Keep checking that they are breathing whether the airways are damaged and remain clear. If it is cold, they will not regain consciousness until their body is warm enough.

The following symptoms may be observed in a drowning patient after rescue:

- panic, fear, agitation, or loss of consciousness;
- labored, irregular breathing, apnoea (cessation of breathing);
- cyanosis (bluish discolouration of the skin, mucous membranes and nails due to an increase in the carbon dioxide content of the blood);
- signs of pulmonary oedema;
- seizures, and ultimately cardiac arrest and hypothermia (overcooling).
- In adults, the primary life-threatening factor is acute hypoxaemia (low blood oxygen levels), rather than fluid entering the airways (aspiration). Even a significant volume of water does not usually exceed the amount that can be absorbed without difficulty by the alveoli.

Drowning victims usually swallow large amounts of water and are therefore highly likely to vomit. You may need to turn them onto their side from time to time to prevent them from inhaling vomit into their lungs.

In the case of water accidents involving adults, circulation usually stops before hypothermia sets in. Severe pulmonary oedema can develop within minutes or hours, causing secondary respiratory failure. At the same time, hypothermia increases hypoxia tolerance, meaning that the body is able to adapt to the oxygen-deprived state to a certain extent through various physiological processes.

It is important to note that other serious medical conditions (such as a heart attack or an epileptic seizure) can also lead to water accidents and, consequently, to near-drowning. In such cases, treatment for these conditions may also be necessary.

Anyone who has been in a near-drowning situation must undergo a medical examination. Survivors are not yet completely out of danger, as without proper treatment, severe pulmonary oedema can develop within minutes or hours, leading to what is known as "secondary drowning".

6. The dangers of ice

The frozen surface of open water attracts both children and adults alike, yet it also harbours dangers. Falls through the ice are often fatal due to people's irresponsible behaviour and a lack of knowledge about the ice.

Sudden changes in temperature or prolonged mild weather can significantly alter the properties of the ice cover, making it dangerous and unpredictable.

In the case of frozen standing water

- the ice is usually thinner near the shore, sometimes hollow, and therefore breaks more easily.
- At narrowings, currents can weaken the ice (the same applies to the mouths of tributaries in standing waters).
- Hot springs are particularly dangerous because they do not always create ice-free patches; instead, they thin the ice, which is not visible.
- Under a thick blanket of snow, the ice is thinner than in snow-free areas.

In the case of frozen rivers

- particularly thin ice and ice-free patches can be found in the 'drift line'.
- A thin layer of ice must also be expected on the outer side of river bends.
- In fast-flowing sections or those filled with boulders, the ice is also significantly thinner.

Important advice in both cases:

- during the thaw, the load-bearing capacity of the ice cover decreases significantly even if its thickness remains unchanged.
- When walking on ice, take calm, steady steps; if you rush, it increases the risk of the ice breaking.
- If there are several people, maintain the necessary distance even when resting.
- When walking on ice, use a stick or ski pole to constantly check the thickness and strength of the ice ahead of you.

What to do if the ice breaks

A break in the ice is usually forewarned by cracking and creaking sounds, and the surface of the ice sinking. At this stage, the break may still be avoided.

What to do:

- Lie flat on the ice immediately (to maximise your surface area), preferably with your face towards the shore.
- Crawl towards the shore using slow, calm movements (always covering as much surface area as possible).

If the ice breaks without the above warning signs, or if you react too late and it breaks beneath you, do the following:

- Immediately spread your arms and throw yourself forward.
- Use every means possible to prevent yourself from sliding under the ice or sinking into the water.

If you do end up under the ice:

- keep your eyes open and look upwards;
- if the ice is covered with snow, you may still be able to spot the nearby crack in the ice by the beam of light shining through and reach it,
- If the ice is not covered by snow, the identical refractive indices of water and ice make it very difficult to spot where the ice has broken; in the case of flowing water, the current means that even if we know where this spot is, we cannot reach it, and the chances of survival in such circumstances are very slim.
- Try to use your upper body to get back above the surface of the ice (ideally with your face towards the bank)!
- Make thrusting swimming movements with your legs, and use your arms and weight shifting to assist your leg movements!
- If you are unable to get onto the ice in this way, try to place one foot on the ice on the side opposite the hole, and then, using your hands and feet for support, push your body sideways onto the ice!



The Hungarian Lifeguard Service is holding a demonstration

- Depending on the shape and size of the hole in the ice, this method can also be used whilst lying on your back.
- If the ice keeps breaking, cut a path towards the shore until you reach the shore or a load-bearing section of ice!
- The water temperature beneath the ice is 0–4 degrees Celsius, meaning that hypothermia can set in after just 20–30 seconds (circulatory problems, or even cardiac arrest).

If others are in trouble, we can provide assistance as follows:

- Do not approach the person trapped in the ice while standing upright; instead, slide towards them on your stomach (otherwise you may also be in danger, as the ice could break beneath you)!
- Do not approach the exact spot where the ice has broken (the ice is fragile)!
- Cross the final section using aids (a long branch, stick, rope, belt, or perhaps several tied together, or items of clothing)! Caution: do not pull the victim out by the sleeve of their clothing, as it may easily tear at the seams!
- If there are several rescuers at the scene: form a chain so that everyone lies on their stomachs and holds the feet of the person in front of them. This allows the others to provide effective support to the person at the front during the rescue operation.
- Using the aids provided, pull the person in distress onto the ice, then from the point of collapse to the shore!
- If the victim has already fallen through the ice, the rescue attempt can only be carried out by trained professionals, so it is essential to contact the fire brigade immediately on the emergency number 105.

HAZARDS IN COMPLEX ENVIRONMENTAL SITUATIONS

I. HAZARDS IN COMPLEX ENVIRONMENTAL SITUATIONS

Complex environmental situations, such as natural disasters and large-scale public events, are situations that require a rapid and effective response in order to minimise risks and ensure public safety. This handbook is not only intended to provide a theoretical understanding of hazards and emergency management strategies, but also to foster a mindset of preparedness and awareness, which is essential in any critical situation. Behind this approach lies the mindset that preparedness is not just about acquiring knowledge, but also about the ability to adapt to unforeseen circumstances and to remain calm under pressure. A proactive approach, which involves assessing risks and taking preventive measures, is key to successfully managing any emergency.

1. TYPES OF HAZARDS

In complex environmental situations, managing hazards requires the accurate classification of the main hazards so that the most appropriate prevention and management measures can be implemented. The philosophy behind this classification is that understanding the types of risks and hazards is the first step towards developing effective response measures. Early identification of hazards enables the development of more targeted and timely protection strategies.

Teaching tips: In this section, teachers can encourage pupils to think about the hazards that arise in everyday situations and ask them to consider how they would react to each of the listed hazards. A useful activity would be to ask pupils to create a diagram linking each type of hazard to a possible response or solution, to help them better understand the connections between different risks and preventive measures.

1.1. Safety at public events

Public events, such as concerts, parades, festivals and rallies, present high-risk situations due to large crowds, temporary infrastructure and various environmental factors. Security management for such events must be based on advance preparation, where the adoption of effective security strategies is essential to preventing accidents and ensuring the safety of all participants.

The underlying philosophy is that, in order to avoid dangerous situations, it is essential to raise awareness of the presence of such risks and to plan protective measures.

Teaching tips: In this section, teachers can encourage students to think about situations they might encounter at crowded events. A useful activity would be to ask students to work in small groups to identify the main risks arising during events and the preventive measures to be taken. They could also simulate the management of a public event, taking into account escape routes and the behaviour to be followed in an emergency.



Mass events

1.1.1. Key risks

One of the most common risks at public events is overcrowding, which can become dangerous if space is limited and movement is restricted. In crowded conditions, the risk of falls, suffocation and being crushed increases significantly, particularly in enclosed or fenced-off areas. It is important to avoid lingering in overcrowded areas, to remain calm, and to always follow the instructions of the authorities if necessary. The philosophy here is that calmness and self-control can prevent panic situations, which usually only exacerbate the dangers.

Fires pose a further risk, particularly when temporary electrical installations, fireworks or flammable materials are used.

In such cases, it is essential to identify emergency exits in good time, avoid smoking in crowded areas, and evacuate the premises immediately in the event of a fire.

Public events may be vulnerable to acts of violence or terrorist threats. It is essential to be alert to suspicious behaviour and to report it to the authorities. In the event of danger, it is advisable to seek a safe place of refuge and to follow the instructions of security personnel. The philosophy here is that foresight and paying attention to warning signs help prevent serious harm.

1.1.2. Escape routes and personal safety

For our own safety, it is important to locate the emergency exits as soon as we arrive at the event. Signs indicating escape routes must be clearly visible and easily accessible, and we should avoid standing in dead-end areas or near obstacles that could hinder the evacuation of the venue. In an emergency, it is essential to remain calm: pushing and shoving or panicking can increase the risk of accidents. The philosophy here is that good preparation and knowledge of the venue are essential for reducing reaction times in crisis situations.



Emergency exit

Teaching tips: Teachers can ask pupils to ‘map out’ escape routes during a visit to a school or other public building, to highlight the importance of being familiar with their surroundings. In addition, practical

exercises can be carried out by simulating an evacuation from a school building, so that pupils learn what to do, what signs to look out for and how to behave in the event of danger.

1.1.3 Training and preparation

The safety of public events depends not only on the organisers and the authorities, but also on individual awareness. Taking part in first-aid courses and familiarising oneself with the safety plans for events can make a significant difference in critical situations.

Knowing how to react in an emergency is essential. If you find yourself in a dangerous situation, first of all try to stay calm and assess your surroundings to find the safest escape route. If you find yourself in a crowd, it is important to protect your chest with your arms, move sideways to avoid the pressure of the crowd, and try to avoid falling! If you do fall, make sure you try to get up as quickly as possible, and if this is not possible, protect your head with your arms! In the event of a fire, move away from the source of smoke or flames immediately, stay low to avoid inhaling toxic smoke, and follow the emergency exit signs! If the fire blocks the main exit, it is advisable to look for alternative routes, and avoid using the lifts.



Warning sign

If you witness an accident or see someone in distress, it is important to call the emergency services as soon as possible and provide clear information about the location and nature of the emergency. If you are trained in first aid, you can intervene directly, for example by performing CPR in the event of a cardiac arrest, or by applying first aid techniques in the event of injuries.

In addition, preparing in advance is crucial for your personal safety when attending the event. It is useful to familiarise yourself with the layout of the venue beforehand, identify escape routes in advance, and draw up an emergency

with those accompanying us. Appropriate clothing, comfortable shoes and avoiding bulky items that restrict movement can help us move more easily if necessary.

1.1.4. Teaching materials

1. Preparation before the event: Teachers must make pupils aware that they must attend public events with an awareness of potential hazards. Before attending any event, it is essential that pupils know how to identify escape routes, assembly points and emergency exits. It is advisable to discuss with students how they would react in different situations (overcrowding, fire, acts of violence) to practise their ability to make quick decisions.

2. Emergency simulations: Organise exercises in which students

The students must simulate an emergency evacuation. During the drill, pupils should be asked to follow the escape routes and remain calm, following the instructions of teachers or organisers. Teachers should monitor pupils' readiness to deal with problems and observe their behaviour.

3. Focus on first aid: During the lesson, the teacher should emphasise the importance of basic first aid training, such as resuscitation and wound care. It may be useful to organise practical workshops with first aid experts to ensure that pupils are better prepared to respond effectively in an emergency.

4. Activities to raise awareness of collective behaviour: One person's behaviour can affect collective safety. During the lesson, it is useful to suggest activities that encourage pupils to reflect on group behaviour, such as avoiding panic and promoting an orderly evacuation without running or pushing. Simulating situations in which some pupils react impulsively (pushing or blocking escape routes) whilst others remain calm is an excellent way to teach crowd management.

Situation	Problem	Attitudes to adopt	Acceptable solutions	Desired outcome
Crowded presentation	Overcrowding , crushing, risk of crushing	Stay calm, avoid panic	Avoid crowded places, follow official instructions, and locate emergency exits in advance	Prevent accidents, ensure safety
Possible fire	Fire hazard, toxic smoke	Stay calm, follow instructions	Identify emergency exits, do not smoke, and move away the danger zone	Safe evacuation, fire safety
Acts of violence or terrorism	Threats of violence or terrorist attacks	Be vigilant, report suspicious behaviour	Seek a safe place of refuge, follow the instructions of the authorities, stay away from potential conflict areas	Personal safety, risk reduction
General panic	Panic and disorientation in an emergency	Stay calm, follow standard procedures	Follow escape routes, avoid irrational pushing or shoving, and help others where possible	Orderly evacuation, reduction of accidents
Lack of safety awareness	Lack of knowledge of evacuation procedures	Be prepared, know the safety plan	Take first aid courses, familiarise yourself with escape routes and safety plans	Raise awareness and preparedness

1.2. Safety in the event of natural disasters

Natural disasters are unpredictable events that can have a devastating impact on people, infrastructure and the environment. The most common include earthquakes, floods, wildfires and landslides. To minimise risks and ensure public safety, it is essential to understand how to act before, during and after disasters.

Teaching tips: To make concepts more concrete and easier to understand, it is important to use images and real-life situations that are relevant to the pupils' own experiences. Using photographs of natural events, simulation videos or accounts of real-life experiences helps students better understand the dynamics and imagine what might happen in an emergency. Images of earthquakes, floods and forest fires, for example, can be used to stimulate discussion on how to respond in such situations.

It is also useful for students to talk about their personal experiences in similar situations, if they have any, such as a minor flood or a power cut caused by an earthquake. This comparison allows students to reflect on what they did correctly and what could have been improved, thereby increasing the awareness and effectiveness of their emergency response.

1.2.1. Earthquakes

Earthquakes are among the most dangerous disasters, as they occur without warning and can cause building collapses, fires and the disruption of essential services. Before an earthquake, it is essential to take preventive measures, such as securing furniture and shelves to the walls, identifying safe areas within your home or workplace, and preparing an emergency kit containing water, non-perishable food, torches and medicines.

During a shock, if you are indoors, take cover under a sturdy table or near load-bearing walls, and stay away from windows, mirrors and hanging objects! If you are outdoors, it is important to move away from buildings, trees, electricity pylons and power lines! If you are in a car, pull over to a safe place. Avoid bridges and overpasses! After an earthquake, make sure to check your own others' safety, avoid using lifts, and before entering a building, check for gas leaks or structural damage! Follow the authorities' instructions and watch out for possible aftershocks!

1.2.2. Floods

Floods can be caused by heavy rainfall, snowmelt or the failure of dams and embankments. They can occur suddenly, as in the case of flash floods, or as a result of the gradual accumulation of water.

Before a flood, it is important to check the weather forecast, know where the safe areas are, and prepare an emergency kit. People living in at-risk areas should erect flood defences and keep valuables on the upper floors of their homes.

During a flood, avoid walking or travelling on flooded streets, as even a few centimetres of water can be dangerous. If water enters the house, it is advisable to seek shelter on the upper floors and wait for help. It is important not to touch electrical appliances with wet hands or feet to avoid electric shock.

After a flood, be wary of debris and possible water contamination, and avoid consuming food and drink that has come into contact with floodwater. Follow the authorities' instructions before returning to your homes, and be aware of the risk of landslides.



Landslides

1.2.3. Fires

Forest and urban fires can spread rapidly, endangering people and buildings.

Before a fire breaks out, it is useful to take preventive measures, such as clearing flammable materials from surrounding areas, avoiding lighting fires in high-risk

and having a clear evacuation plan in place. People living in forested areas should establish safety zones around their homes and maintain the vegetation carefully.

In the event of a fire, it is essential to act quickly. If the fire is still some distance away, you must evacuate the area immediately, following the instructions of the authorities. If you are in an area affected by fire, protect your nose and mouth with a damp cloth and find a safe escape route, preferably in areas free from vegetation and flammable structures. If you are trapped, seek shelter in an enclosed space by closing doors and windows.

After the fire, check that the area is safe before re-entering! Avoid touching debris or damaged structures, and watch out for fires that are still active! Follow the instructions of the authorities and help anyone in distress!

1.2.4. Landslides and subsidence

Landslides and mudslides can be caused by heavy rainfall, earthquakes or human activities such as logging. Before a landslide occurs, it is useful to recognise warning signs, such as cracks in the ground, trees or walls suddenly leaning, and unusual sounds from moving rocks. Avoid building on unstable ground and implement drainage measures to reduce the risk of subsidence.

In the event of a landslide, move away from the danger zone immediately and head to a safe area! If you are at home, go to the upper floors and stay away from windows! If you are in a car, try to get out of the vehicle and move to lower-lying ground! Following a landslide, avoid walking in the affected areas without first checking the stability of the ground! Follow the authorities' instructions before returning to your homes, and watch out for any further landslides!

1.2.5. Teaching materials

1. Encouraging reflection through personal experiences: It is helpful for pupils to talk about their own experiences or those of people they know, particularly if they have ever experienced an emergency involving fire or a landslide. Discussing together what they did well and what could be improved helps students to better understand the concepts and to internalise safety preparedness.

2. Practical simulations and emergency plans: Teachers can encourage students to draw up an evacuation plan for home or school, including steps to take in the event of a fire or landslide. Practical evacuation or emergency response simulations are effective tools for preparing pupils to behave safely in the event of natural disasters.

Situation	Problem	Attitudes to adopt	Acceptable solutions	Desired outcome
Earthquakes	Collapses, fires, disruptions to essential services	Stay calm, seek a safe shelter	– Secure furniture and shelves, and prepare an emergency kit! - During an earthquake, take cover under a table or near load-bearing walls!	Immediate safety, minimising structural damage
Floods	Floods, risk of contamination and structural damage	Stay calm, avoid flooded areas	– Avoid walking or driving on flooded roads! – Seek shelter on upper floors and wait for help!	Personal safety, preventing contamination
Fires	Rapid spread of fire, danger to people and buildings	Act immediately, follow the instructions of the authorities	– Evacuate immediately, protect your nose and mouth with a damp cloth. – Establish safety zones, avoid the accumulation of flammable materials!	Safe evacuation, fire protection, minimising damage

1.3. Health emergencies

Health emergencies can occur in various contexts, such as during natural disasters, pandemics or events involving large crowds. The effective management of health resources and facilities is essential to minimise damage and ensure public safety.

Situation	Problem	Attitudes to adopt	Acceptable solutions	Desired outcome
Landslides and mudslides	Land subsidence, risk of injury to people and damage to buildings	Pay attention to warning signs	– Recognise the signs of landslides, such as cracks in the ground, and move to safe areas. – If you are at home, seek shelter on the upper floors.	Ensuring people's safety and preventing serious structural damage



It's dangerous to walk on the streets – Source: euronews.com

Teacher's notes: In health emergencies, the key to an effective response lies in advance planning and community preparedness. Managing health emergencies does not depend solely on professionals, but requires the awareness and commitment of everyone – authorities, healthcare professionals and citizens. Everyone must be prepared to take immediate and sensible action, cooperating with the authorities and following the guidelines set out.



First aid point – Source: ifusag.obuda.hu

1.3.1. First aid points

In the event of a medical emergency, first aid points serve as the first point of reference for medical assistance. It is essential that they are located in strategic places to ensure rapid accessibility. They must be equipped with first-aid supplies, essential medicines and trained staff capable of handling emergencies. Furthermore, signage must be clear and clearly visible to facilitate access even for those unfamiliar with the area.

For those who find themselves in an area affected by a medical emergency it is important to know where is the nearest emergency point

and how to get there safely. In some cases, mobile apps and alert systems can provide real-time updates on the availability of medical assistance.

1.3.2. The flow, shift management and rotations of healthcare services

In healthcare emergencies, managing patient flow is a key consideration. Hospitals and emergency facilities must be able to treat large numbers of people without becoming overcrowded. Triage, i.e. the assessment of patients' condition and severity, helps to establish priorities and ensure that the most critical cases receive immediate assistance.

The deployment of healthcare staff is also a crucial factor in preventing doctors and nurses from becoming overburdened. It is essential to establish sustainable working schedules, provide adequate psychological support and ensure the availability of personal protective equipment to reduce the risk of infection during outbreaks.

1.3.3. Procurement and distribution of essential supplies

In a public health emergency, access to essential supplies such as drinking water, food and medicines may be limited. It is essential to establish efficient distribution centers and organize the logistics necessary to ensure a continuous supply of these products.

The authorities must work together with humanitarian organisations and private companies to ensure that supplies are distributed fairly, avoiding waste and speculation. The public must be informed about distribution points and how to access essential supplies in order to avoid confusion and panic.

1.3.4. Management of medicines and diagnostic tests

Another key element in managing health emergencies is the availability of medicines and the ability to carry out diagnostic tests quickly and effectively. In the event of an outbreak, it is essential to ensure a comprehensive testing system is in place to enable the rapid identification and isolation of infected individuals.

Pharmacies and hospitals must maintain adequate stocks of essential medicines, ensuring that even the most vulnerable patients have access to the necessary treatment. It is also important that the public receives clear information on the correct use of medicines and on the need to undergo diagnostic tests when necessary.

1.3.5. Communication and public information

Clear and timely communication is crucial in managing public health emergencies. Health authorities must provide regular updates on the situation, use various communication channels such as radio, television and social media, and counter the spread of false information that causes panic.



Hygiene practices are important – Source: fertozesekrol.hu

Equally important is educating the public on hygiene practices, safety protocols and how to behave in the event of a health emergency. Schools, businesses and local communities must be involved in awareness-raising programmes so that everyone knows how to protect themselves and others.

1.3.6. Teaching materials

1. Use of real-life examples and case studies: Using specific examples from past health emergencies (pandemics, natural disasters) to explain how healthcare facilities were managed effectively. Teachers can use videos, articles or personal accounts to illustrate the real challenges faced by healthcare professionals.

2. Awareness-raising and communication: Teach students how to communicate clearly and effectively during a health emergency, distinguishing between accurate and false information. Exercises involving the critical analysis of health messages from various sources (social media, news, official announcements) may be recommended.

Situation	Problem	Attitudes to adopt	Solutions to be adopted	Desired outcome
First aid points	Restricted access, poor organisation, overcrowding	Stay calm, follow the instructions of the authorities	– Place first aid stations in easily accessible locations ! – Ensure clear and visible signage! – Use apps for real-time updates.	Easier access, reducing waiting times for assistance
Shift management in healthcare services	Overcrowding, difficulties in treating patients	Maintaining order, apply triage	Implementing triage based on patient priority. - Organising shifts for staff.	Providing timely assistance, avoiding overcrowding

Situation	Problem	Attitudes to be maintained	Acceptable solutions	Desired outcome
Procurement and distribution of essential goods	Insufficient supply, distribution disruptions	Coordinate, maintain order	Establishment of efficient distribution centres. – Cooperation with humanitarian organisations. – Fair and timely distribution must be ensured.	Access to essential goods for the entire population, reducing panic
Management of medicines and diagnostic tests	Drug shortages, delays in diagnostic tests	Be proactive, ensure access to medicines	– Adequate supply of essential medicines. – Carrying out rapid diagnostic tests to curb outbreaks.	Rapid and effective treatments, curbing the spread of disease
Communication and awareness	Misinformation and the spread of panic among the public	Provide clear and timely information	– Use a variety of communication channels, including social media, radio and TV. – Combating fake news.	Clarity of information, reducing panic and confusion

2. EMERGENCY MANAGEMENT METHODS: THE ROLE OF PLANNING AND LOGISTICS

Effective management of emergencies requires a well-defined strategy based on precise planning and the adoption of consolidated methods. In Italy, the Augustus method serves as the benchmark for civil protection, providing

provides a flexible organisational model for managing crisis situations. This method is based on the sharing of support functions, facilitating cooperation between agencies and ensuring a timely and effective response. Logistics is a key aspect of emergency management, ensuring the coordination and efficient allocation of resources. Identifying safe areas, keeping communication routes open and organising transport are essential to ensuring the effectiveness of rescue operations.

2.1. Logistics in emergencies

2.1.1. Identifying emergency areas

In the event of a disaster or large-scale emergency, it is essential to prepare and identify strategic areas that enable the effective management of relief efforts and the affected population. These areas can be divided into three main categories:

- **Assembly areas:** Areas designated for the population in the event of temporary evacuation. These must be accessible and equipped with essential services, such as drinking water, lighting and temporary shelters.

- **Reception areas:** Areas designated for medium- and long-term assistance must be equipped with beds, food distribution points and washrooms. They must be set up quickly, whilst ensuring that safety and accessibility criteria are met.

- **Aid collection points:** Areas where aid resources, such as medical supplies, food and emergency teams, are gathered and organised. It is essential that these are located in easily accessible and secure places.

- **Teaching tips:** Pupils can be divided into groups to investigate potential emergency sites in their local area, assessing them on the basis of their capacity and strategic location, taking into account ease of access and the availability of services, as well as water and electricity supplies. At the end of the group work, discuss the results obtained and any differences between the groups.

2.1.2. Communication routes and mobility

Ensuring the availability of communication channels is another essential aspect of logistics. Roads and infrastructure must be kept operational to allow the passage of emergency vehicles and the transport of necessary resources.

- **Checking road conditions:** In the event of a disaster, roads may be at risk from landslides, flooding or structural collapse.

To optimize travel, it is essential to conduct a quick assessment and identify alternative routes.

- **Priority for emergency vehicles:** Priority lanes must be established for ambulances, fire engines and rescue units to ensure they can travel unhindered.

- **Traffic coordination:** In large-scale evacuation situations, traffic management is necessary to avoid congestion and facilitate access to areas in crisis.

- **Teaching tips:** Which roads in your town are at high risk in the event of a disaster? Which routes must the ambulance service use? Try answering the questions in groups, discussing the solutions you have found.



Emergency vehicle lane – Source: kecskemet365.hu

2.1.3. Organising transport

The rapid movement of people, equipment and supplies during emergencies is one of the cornerstones of logistics management. The characteristics of a well-organised transport system are:

- **Means specifically designed for evacuation must be provided:** coaches, trains and ferries must be ready to transport people from dangerous areas to safe areas.

- **The transport of essential supplies must be ensured:** medicines, food and water must be distributed immediately, avoiding delays in the supply chain.

- **Coordination of the deployment of emergency personnel:** Emergency teams must be able to reach the affected areas quickly so that they can provide immediate assistance.

2.1.4. Ensuring the continuity of essential services

The continuity of essential services is another critical aspect of logistics. In particular:

- **Energy and water supply:** Disruptions to distribution networks can exacerbate emergencies. Emergency generators and water storage systems must be provided.
- **Medical support:** Field hospitals, mobile first-aid units and medical equipment must be made available quickly.
- **Assistance for the public:** Setting up information points and organising psychological support is essential for helping those affected by the emergency.



Inside a field hospital Source: szekelyfold.ma

2.1.5. The Augustus method and logistical planning

The effectiveness of logistics in emergencies depends to a large extent on advance planning. The Augustus method proposes an approach that integrates all aspects of emergency management, promoting synergy (effective cooperation) between different institutional levels and aid organisations. By assigning specific roles and defining standardised procedures, this method enables more effective and rapid management of emergencies. A key element in ensuring a structured and coordinated response is the adoption of detailed logistics plans based on realistic scenarios and regularly updated. Only through proper preparation can chaos be reduced and the use of available resources optimised, thereby protecting the lives and well-being of the affected population. Logistics is therefore not merely a technical element of emergency management, but one of the cornerstones of the entire response strategy. Investment in preventive planning and organisation enables crises to be managed more effectively,

minimising damage and speeding up the return to normal operations. Teaching tips: Referring to a recent emergency, analyse whether the Augustus method was used, what benefits it brought, where it fell short, and what benefits it would have brought in terms of overcoming the emergency had it been used.

2.1.6. Teaching materials

Situation	Problem	Attitudes to be maintained	Acceptable solutions	Desired outcome
Areas of concern	Overcrowding, lack of resources	Maintain order, ensure rapid access	Establish easily accessible areas equipped with water, temporary shelters and lighting.	Public safety, panic prevention
Reception areas	Inadequate living conditions for long-term stays	Ensure safe and decent accommodation	Quickly set up beds, food and water distribution points, and toilets.	Long-term care, comfort and safety
Emergency Assembly Areas	Difficulties in organising the arrival of resources	Coordination between rescue teams	Place resources in easily accessible areas, ensuring the rapid deployment of aid supplies.	Efficient distribution of aid, rapid relief
Transport and mobility	Communication channels and traffic blocking	Manage traffic, optimise routes	Create priority lanes for emergency vehicles, suggest alternative routes and monitor road conditions.	Rapid mobility, access to emergency areas

Situation	Problem	Attitudes to adopt	Solutions to be adopted	Desired outcome
Ensuring essential services	Disruption of essential services	Ensure continuity of services, avoid inconvenience	Use emergency generators, set up field hospitals and mobile emergency response units.	Ensure continuity of services, avoid inconvenience

2.2. Communication systems in emergencies

Effective communication is a fundamental element of emergency management, enabling the coordination of rescue operations, the provision of information to the public, and a continuous flow of information between the relevant agencies and stakeholders. The Augustus method emphasises the importance of communication as a strategic support function, ensuring that messages are delivered in a timely, clear and reliable manner.

2.2.1. Alerting the public

Timely information can mean the difference between risk and safety. Warning systems must be designed to reach as many people as possible in the shortest possible time. The main methods of warning are as follows:

- **Sirens and audible alarms:** These are used to quickly warn the public in the event of an immediate danger, such as an earthquake, fire or industrial accident.
- **SMS and mobile emergency alerts:** Systems that automatically send notifications to the mobile phones of people living in a specific geographical area.
- **Radio and television:** The primary channels for broadcasting official announcements, evacuation instructions and the latest information.
- **Emergency and social media applications:** New technologies enable information to be disseminated via digital platforms, providing wider and more interactive coverage. Preparing the public through drills and information campaigns is essential to ensuring an effective emergency response.
- **Teacher's notes:** Teachers may ask students to discuss the advantages and limitations of various warning methods, such as sirens, text messages and social media, and ask them how these could be used in an emergency in their own area.

2.2.2 Methodological communication and coordination

In emergencies, communication involves not only informing the public but also coordination between the various emergency services and stakeholders. The Augustus method provides a structured system for managing information and ensuring that the various support functions receive continuous updates. Some key principles are as follows:

- **Centralisation of information:** Information must be collected, verified and disseminated from a single official source to avoid misunderstandings or the spread of misinformation.
- **Dedicated communication channels:** To avoid overloading telecommunications infrastructure, it is essential to use radio frequencies reserved for data transmission by backup systems, emergency management software and secure networks.
- **Continuous updates:** The situation must be monitored continuously, and information must be updated regularly to ensure timely and effective decision-making.
- **Operator training:** Staff involved in emergency management must be trained in the use of communication systems and information management in critical situations.

2.2.3. Defining roles and responsibilities

Another key aspect of emergency communication is the clear definition of roles and responsibilities among the various participants. The Augustus method ensures a precise division of tasks, ensuring that individual support functions operate in a coordinated manner without overlap. This approach enables:

- **The dissemination of conflicting information to be avoided:** by ensuring that all official communications originate from accredited sources.
- **The decision-making process to be accelerated:** by enabling stakeholders to quickly ...can act without unnecessary delays or uncertainty.
- **Improving the effectiveness of interventions:** By coordinating responses between civil protection, law enforcement, health services and other relevant agencies.

2.2.4. Teaching materials

1. Practical coordination exercises: Teachers can organise role-plays in which pupils take on different roles (e.g. paramedics, law enforcement officers, healthcare staff) during an emergency simulation to test their coordination and communication skills.

2. *Discussion and analysis of real-life cases:* Ask students to analyse real-life cases in which communication during an emergency was successful or unsuccessful. This will help them understand the importance of well-structured communication systems and how to avoid common mistakes.

Situation	Problem	Attitudes to adopt	Acceptable solutions	Desired outcome
Public alerts	Delays in providing information, panic	Be timely and ensure wide coverage	Use sirens, text messages, radio and social media to reach as many people as possible.	Prevent panic, disseminate information quickly
Communication between aid organisations	Confusion, conflicting information	Centralisation of information, coordination between entities	Use a single official source for communication. Use secure and dedicated channels for data transfer.	Effective coordination, rapid and precise response
Roles and responsibilities	Overlapping tasks, delays in decision-making	Act quickly, respect the assigned roles	Clarify roles, prevent the information, and speeding up the decision-making process.	Greater efficiency, reducing internal conflicts

3. CONCLUSIONS AND FINAL ADVICE FOR THE TEACHER

Teaching emergency management requires an approach that goes beyond the mere transfer of theoretical knowledge. Practical lessons involving active student participation are essential to ensure that students not only learn what to do in an emergency, but also how to do so effectively under pressure.

Learning only becomes truly meaningful when learners put themselves to the test in scenarios that mimic real-life situations, where they have to make quick decisions, work together with their peers, and put what they have learnt into practice. Practical simulations are one of the most effective tools for teaching the skills needed in an emergency. Creating crisis scenarios in which students play different roles (rescuers, people to be evacuated, medical staff, etc.) allows them to experience the dynamics of an emergency first-hand. In this way, they can apply the techniques and solutions learnt in class, so that theory becomes an integral part of the experience. Furthermore, simulations of this kind encourage critical thinking, problem-solving skills and, above all, stress management, which is a fundamental aspect when facing critical situations.

At the same time, the analysis of real-life cases gives students the opportunity to reflect on how emergencies have been handled in the real world. Natural disasters, pandemics and accidents are concrete examples that enable pupils to understand which measures were appropriate and where more could have been done. Jointly discussing the mistakes and successes of responses to past events enables students to learn from the facts and understand the complexity of decisions made in an emergency. It is important to remember that students’ active participation is key to ensuring a lesson is truly effective. All teaching activities should encourage participation, dialogue and collaboration. Teamwork is essential in an emergency, and through classroom discussions and brainstorming, students learn to listen to others’ opinions, evaluate different solutions and make decisions together. This process not only enriches their learning but also strengthens their ability to cooperate in stressful situations, which really counts for a lot in an emergency. Finally, it is important that the teacher is able to adapt the activities to the different needs of the class. Every student has different experiences and skills, and a good emergency lesson must be flexible enough to allow everyone to participate actively and feel involved. A teacher who knows how to strike a balance between theory, practice and stimulating discussion is able to transform a complex topic such as emergency management into a learning experience that leaves a lasting impression on students.

FIRST AID

I. FIRST AID

First aid is the initial assistance that anyone can provide upon seeing a person who has had an accident or has suddenly fallen ill. The aim is not to replace medical treatment, but to provide rapid, effective and safe assistance until professional help arrives, thereby preventing the injured person's condition from deteriorating. In the event of a serious injury, every second counts; first aid can save lives. That is why knowledge of the basic procedures that anyone can perform is a useful and important skill for everyone. The basics of first aid are easy to learn; the most important things are creating a safe environment, quickly assessing the casualty's condition, providing appropriate assistance, and alerting the ambulance service as soon as possible. The aim of the following chapters is to guide you, in a clear and practical manner, through the most important steps of first aid in the emergency situations described in the previous chapters, using the equipment found in household first-aid kits and vehicle first-aid kits, thereby helping to ensure that more people feel confident and able to help in an emergency.

1. WHAT TO DO IN THE EVENT OF AN ACCIDENT OR ILLNESS

- 1. Safety!** The first and most important rule of first aid is safety: your own safety, that of the injured person or persons, and the safety of your surroundings must always take priority. Never start providing assistance if doing so puts your own life or physical safety at risk! You must ensure that the scene is safe for you. A second casualty is of no help; in fact, it makes the situation even worse.
- 2. Rapid assessment of the situation.** Once the scene has been secured, the next step is to carry out a rapid, systematic assessment of the condition of the injured person or persons. This information will be important when calling for help, so that you can provide the dispatcher with accurate details.
 - Number of injured people.
 - Are the injured person or persons conscious or unconscious?
 - Visible injuries.
- 3. Calling the ambulance, the 112 emergency number.** Standardised emergency call centres have been established in every country in Europe, making it easy and quick to call for help. It is very important to remain calm and speak clearly; this can speed up the process of requesting assistance. In our modern world, almost everyone has a smartphone, so by putting it on speakerphone, placing it on the ground or in an upper pocket, both hands remain free and you can begin assessing and treating the injured person. When calling for help, there are a few pieces of information you must provide.

- **Name and telephone number:** It is very important to provide a contact number that the dispatcher can use to call you back in the event of a network connection failure.
- **Exact address:** You must provide the location of the incident where you are requesting assistance. If you do not have precise information about where the incident occurred, you should describe the surroundings, e.g. in the car park of the shopping centre in this town.
- **What has happened?:** You must explain what kind of emergency has arisen and what kind of assistance you require, e.g. a road traffic accident, a person has collapsed in the street, a person has been hit by a car.
- **How many people are injured and what is their condition?:** In such cases, you should describe what you observed during the quick assessment discussed earlier, e.g.: a person has fallen down the stairs and is bleeding from the head; there are two people in the car, one is unconscious and the other is conscious but complaining of severe chest pain.

This information is vital when calling for help. It is also very important **not to hang up** until the dispatcher tells you to.

2. ASSESSING AN UNCONSCIOUS PERSON AND PROVIDING FIRST AID

The following checks must be carried out on any unconscious person, whether they have collapsed in the street or been injured in a traffic accident. Unconsciousness means that the injured person does not respond to external stimuli (e.g. speech, touch) and is unable to interact with their surroundings independently. The procedure is as follows:

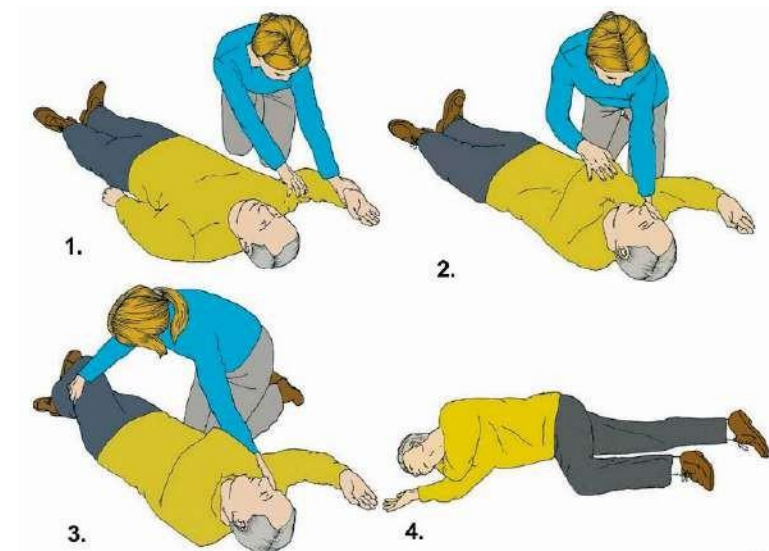
1. **Checking consciousness:** Call out to the injured person loudly and gently shake both their shoulders. If they do not respond or regain consciousness, they should be considered unconscious.
2. **Checking for breathing:** Before checking for breathing, the casualty's head should be tilted back, with the chin slightly raised, to ensure that the upper airways are clear. The person carrying out the check should then lean towards the casualty's mouth and nose, whilst looking towards the chest. This allows them to observe the three classic signs of breathing simultaneously: the sensation of airflow on the face, the sound of breathing, and chest movement. The breathing check lasts for **10 seconds**, during which time it must be determined whether the casualty is breathing. Breathing is considered normal if at least **two breaths** are taken during the observation period.

Normal breathing → Lying steadily on your side!

Not breathing, or only once → Resuscitation!

Stable recovery position: The aim is to ensure the unconscious person's airway is clear, to prevent them from choking, and to allow any vomit to drain from the mouth. The steps for the stable recovery position are shown in the image below. At the end of the process, it is very important **to tilt the person's head back**, which clears the airway.

STABLE RECOVERY POSITION

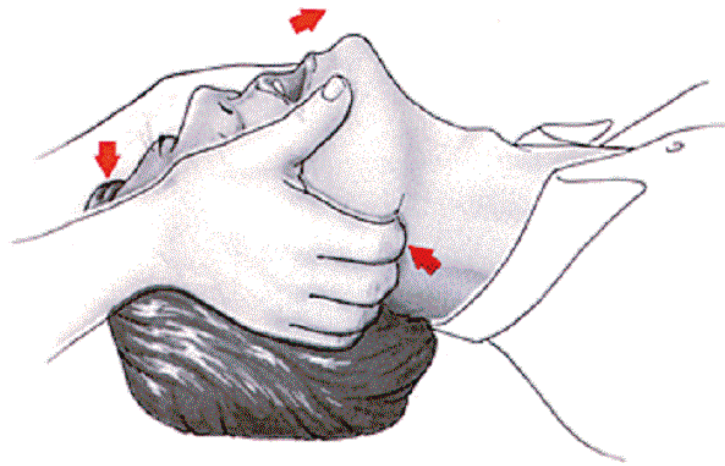


Steps for placing the casualty in the recovery position

There are a few injuries that prevent a person from being placed in the recovery position.

These are: – femur fracture
– pelvic fracture
– open chest or abdominal injury
– multiple rib fractures
– spinal injury

In these cases, the airway must be cleared in a different way. The Esmarch manoeuvre is ideal for this. To perform it, the head must be tilted back by holding the corners of the jaw, whilst the mouth is opened using both thumbs, as shown in the image below.



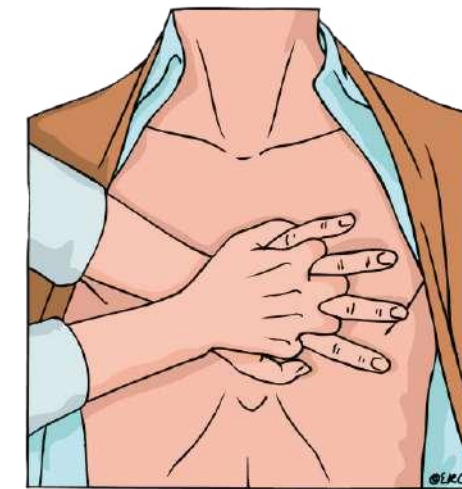
The Esmarch manoeuvre

The Esmarch manoeuvre should be used in road traffic accidents where the injured person is unconscious and trapped in the vehicle. As clearing the airway is the priority for unconscious casualties, this technique can be performed perfectly once the headrest has been removed.

3. RESUSCITATION

The aim of resuscitation is to maintain circulation artificially in cases where, upon examination of an injured, unconscious person, breathing is inadequate, i.e. if a respiratory rate of 1 or 0 is observed. Resuscitation initiated quickly and professionally significantly increases the chances of survival, particularly if the intervention begins within the first few minutes following the incident. When examining an unconscious person, only breathing should be observed. It is not necessary to check for a pulse. Breathing and circulation are interrelated; therefore, if there is no breathing, there is no circulation either. Checking for a pulse is only recommended for trained first aiders, as it is not easy to detect, whereas monitoring breathing is straightforward. Therefore, if no breathing is detected, chest compressions must be started as soon as possible, but before doing so, it is important to notify the ambulance service of the resuscitation; if we are alone, we must do so before starting resuscitation, or if others are present, they can do so at the same time as we begin chest compressions. CPR must only be performed on a hard surface, not on a mattress or bed, as these are soft and the chest compressions will not be effective. When performing chest compressions, the following must be taken into account:

- **Frequency:** 100–120 chest compressions per minute
- **Depth:** the chest must be compressed to a depth of 5–6 cm
- **Location of chest compressions:** the lower third of the sternum, located in the centre of the chest
- After each chest compression, the sternum **must be fully released**
- Compressions should be performed **with arms extended and hands interlocked**



Location of chest compressions and correct hand position

During resuscitation, artificial respiration is not necessary, as there is still sufficient oxygen in the blood and lungs for several minutes following cardiac arrest. This means that chest compressions alone are sufficient to ensure that oxygen-rich blood reaches the brain and vital organs until the ambulance arrives. Chest compressions should be continued until:

- The injured person begins to breathe spontaneously
- The arriving paramedics take over the resuscitation

CPR is very physically demanding and requires a great deal of energy and strength, so the person providing assistance can quickly become exhausted. It is therefore very important that, once resuscitation has begun, you ask for help from those around you. After this, chest compressions should be performed alternately every 2 minutes. This makes the chest compressions much more effective, increasing the chances of survival. In many cases, ribs are broken during chest compressions; this is 'nothing to worry about' – the injured person's life is worth more than a few broken ribs. If the chest compressions have been successful, the injured person is breathing spontaneously and the ambulance crew has not yet arrived, they should be placed in the recovery position.

4. HEAD INJURIES

A head injury refers to damage of varying severity to the skull and/or brain, which may result from a blunt blow, a fall, a road traffic accident or other external impact. Such injuries can be particularly dangerous, as damage to the brain can quickly become life-threatening, even if the external symptoms appear mild. When treating any head injury, it is essential to stabilise the head and cervical spine, as the traumatic impact is often associated with a risk of cervical spine injury. Immobilisation can be achieved through manual stabilisation or using improvised devices, such as blankets or items of clothing placed around the head, which effectively restrict unwanted movement of the head and neck. The primary objectives of first aid for head injuries include securing and protecting the airways, as well as controlling bleeding. It is important to emphasise that in the case of a head injury, symptoms may be delayed, often only appearing hours after the injury. Accordingly, the ambulance service must be contacted for every person with a head injury, even if only mild symptoms are present. Under no circumstances should the injured person be left unattended; continuous observation is necessary to immediately detect any deterioration in their condition.

4.1. Major injuries

1. Closed head injuries: In this case, no external, visible injuries are apparent; however, **intracranial bleeding** may develop as a result of the trauma. As the skull acts as a closed space, the accumulation of blood exerts pressure on the brain tissue, a condition known as intracranial pressure. A common consequence of head injuries is **concussion**, which can occur in almost all cases of head injury. Closed injuries also include a **skull base fracture**, the characteristic symptoms of which are blood or a watery fluid (cerebrospinal fluid) flowing from the ear or nose, as well as bruising around the eye, known as a periorbital haematoma. It is important to emphasise that if blood or cerebrospinal fluid is draining through the nose or ear following an injury, the passage must not be blocked (e.g. with a bandage or tamponade), as this can lead to a further increase in intracranial pressure and may worsen the patient's condition.

➤ **Concussion**

- The most common type of closed head injury encountered in everyday life.

➤ **Typical accident scenarios:**

- During sport: when players collide heads in football, or when a ball strikes someone on the head at high speed

- While travelling: falling off a bicycle or scooter, if you are not wearing a helmet
- During outdoor activities: falling from a tree or a rock
- At home: bumping your head on a cupboard or table

➤ **How to recognise it:**

- Loss of consciousness, even for a short time
- Confusion, disorientation, memory loss
- Nausea, vomiting
- Headache, dizziness

➤ **First aid:**

- Lay the injured person down, preferably on their back, with their head slightly raised!
- Keep a close eye on their condition, and if symptoms worsen, call an ambulance!

➤ **Intracranial haemorrhage**

- A serious closed head injury resulting from more severe accidents involving significant impact.

➤ **Typical accident scenarios:**

- Falling from a height: from a ladder, a bunk bed.
- Traffic accidents: car collisions, when the head strikes the windscreen.

➤ **Recognisable signs:**

- Slow recovery from loss of consciousness, confusion.
- One pupil is wider than the other.
- Headache, nausea, drowsiness.
- Blood or clear fluid (cerebrospinal fluid) leaking from the nose or ear.

➤ **First aid:**

- Do not move the head! Keep it stable and secure it!
- Call an ambulance immediately!
- If the person is unconscious, place them in the recovery position, but avoid unnecessary movement of the head!

2. Open, visible injuries: In this case, the injury is limited to the soft tissues covering the skull and the skin surface. The scalp has an extremely rich network of blood vessels, so even minor trauma can result in significant bleeding. Although the bleeding may be dramatic, due to anatomical

features, the human body is unable to bleed exclusively through the scalp. When treating this type of injury, the primary aim is to stop the bleeding and prevent infection. Accordingly, applying a sterile dressing is usually sufficient, as this covers the wound, reduces bleeding through pressure, and protects against environmental contaminants.

4.2. e injuries to the scalp

➤ Typical accident scenarios:

- Young children or elderly people falling onto a hard surface.
- Sports accidents (e.g. being struck by an elbow or a ball).
- Kitchen or household accidents (e.g. bumping into the corner of a cupboard).

➤ Possible symptoms:

- Heavy, visible bleeding.
- Swelling at the site of the injury.

➤ First aid:

- Press down on the wound with a clean, sterile cloth or gauze!
- Cool the swelling with a cold compress!
- If the bleeding does not stop within 10 minutes, seek medical attention!

1. Facial skull injuries: Facial skull injuries are traumas affecting the front part of the skull, which may include injuries to the nose, zygomatic bone, upper and lower jawbones, as well as the bony and soft tissues of the eye socket. Swelling and bleeding often occur as a result of the injury, and these can cause breathing difficulties. In this case too, heavy bleeding can be alarming, but it can be easily controlled. A sterile dressing or a light pressure bandage is ideal for treating the injury. If the injured person is conscious, it is advisable to raise their head slightly (by placing a blanket or bag under their head), which can reduce breathing difficulties and allow blood to drain more easily.

➤ Common accident scenarios:

- Traffic accidents – e.g. in a collision without a seatbelt or airbag, the head strikes the window or dashboard.
- Sports accidents – e.g. a blow or a fall during combat sports or ball games.
- Falls – e.g. falling down stairs or from a height, hitting one's head against an obstacle.

- During an outing – e.g. tripping, falling onto rocks, colliding with a tree branch.

➤ Signs of a concussion:

- Severe, visible swelling of the face.
- Bleeding from the nose, mouth, or through an open wound.
- Difficulty breathing (e.g. due to a broken nose or injury to the mouth).
- Pain or difficulty moving the jaw.
- Facial deformity, 'distorted' features.

➤ First aid steps:

- **Do not move the head or neck unnecessarily!** If a fracture is suspected, keep the head and neck stable (e.g. by holding them from the sides with both hands until help arrives)!
- **Stopping bleeding:** If there is an open wound, apply gentle pressure with a sterile dressing or clean cloth – take care not to completely block the airways!
- **Place the person in a semi-sitting position:** if the injured person is conscious and able to sit up, prop a bag or blanket behind their back! This aids breathing and helps the blood to drain away.
- **If they are having difficulty breathing:** turn their head slightly to one side so that blood does not flow into the airways!
- **Do not:** plug the nose or mouth, force the jaw open, or give painkillers!
- **Call an ambulance!** Medical attention is required if a skull fracture is suspected, as there may be internal bleeding, a fracture or nerve damage.

5. FRACTURES

The skeleton is the internal framework of the human body, which determines the body's shape, ensures good posture, and serves as an attachment point for the muscles. Movement is made possible through the connection between the muscles and bones. In addition, certain bones also perform a protective function, shielding our vital organs. The skull protects the brain, the spine protects the central pathway of the nervous system, the spinal cord, whilst the ribs and sternum protect the heart and lungs. From this, it is clear that bones play a major role in movement and protection, and perform numerous other functions, such as blood formation and the storage of minerals. A fracture is an injury resulting from an external force exceeding the bone's strength, involving a break in the continuity of the bone. The severity of fractures can vary depending on the mechanism of injury, the type of bone involved and any associated injuries. Appropriate initial care is crucial for preventing permanent damage and promoting subsequent healing.

1. Spinal fracture: The first and most important point to note is that there are certain types of accidents in which the injured person must be regarded as having a potential spinal injury. These include situations where a person is trapped following a road traffic accident, has been run over, or has fallen from a height or into a deep pit. The spine is made up of vertebrae, with the spinal cord situated in the centre. Spinal injury is a critical issue, as damage to the spinal cord can result in permanent neurological damage that significantly affects quality of life. Detecting vertebral injuries by touch is not a simple task for a layperson providing first aid; therefore, one must instead infer from the mechanism of the injury that there is a risk of spinal injury, and in this case, the injured person **MUST NOT** be moved! Any incorrect movement or handling can further aggravate the injury and increase the extent of permanent damage. In such cases, the only thing that can be done is to support the injured person's body with blankets or any similar means; in the event of a road traffic accident, the injured person must not be moved.

➤ **Common occurrences:**

- Falling from a height or into a deep pit
- Car accidents, particularly where the injured person is trapped
- Pedestrian being hit by a vehicle

➤ **Symptoms:**

- Pain along the spine
- Numbness in the limbs
- Paralysis
- Difficulty urinating or passing stools

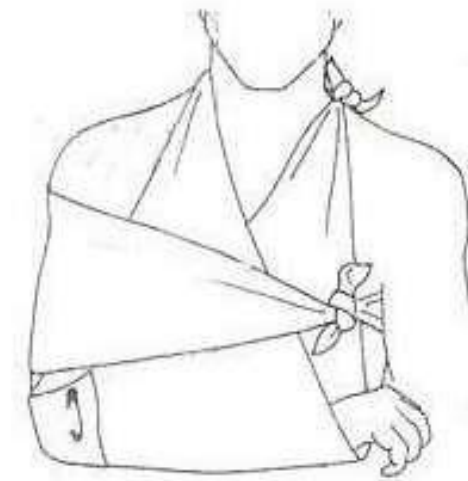
➤ **First aid:**

- **DO NOT move the injured person!**
- The head and neck must be secured with a blanket, clothing or by hand
- Support the body to prevent it from moving
- **Call an ambulance; keep the injured person under observation**

2. Fractures of the upper limbs: Fractures of the upper limbs are among the most common types of injury, particularly following a fall or a road traffic accident. Fractures of the upper limbs include:

- clavicle fracture
- scapular fracture
- humerus fracture
- fractures of the forearm bones
- wrist fracture
- fracture of the hand bones and finger phalanges

In the event of a fracture to these body parts, the treatment is always the same: the hand and arm must be immobilised. Immobilisation can be carried out using the triangular bandage found in a vehicle's first-aid kit, a scarf or any other improvised means suitable for the purpose. In the case of a forearm or hand fracture, the arm must be immobilised against the body with the arm bent at a 90° angle, as shown in the picture. In the case of an upper arm or collarbone fracture, the arm must be firmly immobilised against the body, with the elbow supported. In the event of deformity, the broken part must not be 'put back in place'!



Correct immobilisation in the event of a hand fracture

➤ **Common occurrences:**

- Falls at home (e.g. on stairs, in the bathroom)
- Pedestrian accident
- Hiking, cycling accident

➤ **Symptoms:**

- Pain, swelling, bruising
- Limited mobility, deformity
- The injured person cannot use their arm/hand

➤ **First aid:**

- The arm must be secured to the body using a triangular bandage, a scarf or other suitable means
- **For forearm, hand and wrist fractures:** elbow bent, hand facing upwards
- **For clavicle and upper arm fractures:** arm pressed against the body, elbow supported
- **Do not attempt to realign the broken limb!**

3. Rib and sternum fractures: In the event of injuries of this nature, supporting breathing is the primary task for a layperson providing first aid. Generally speaking, a semi-sitting position offers the injured person the greatest comfort. However, it is important to note that the patient will typically instinctively adopt the position in which they can breathe most easily. If the injured person is unconscious but still breathing spontaneously, they should be placed in a stable lateral position. In such cases, it is advisable to lay the injured person on the side with the broken ribs, as this can reduce pain and, by placing the uninjured side of the chest on top, makes breathing easier. In the event of a chest injury, placing the injured person in a resting position and ensuring they are in the most comfortable position constitutes adequate first aid.

➤ **Frequency:**

- Sports accidents
- Traffic collisions (e.g. pressure from a seatbelt)
- Falls from a height

➤ **Symptoms:**

- Pain when breathing in
- Shallow breathing, possible chest deformity
- Feeling or hearing crackling

➤ **First aid:**

- Place the injured person in a comfortable position, **in a semi-sitting position**
- If unconscious, place in the recovery position → lay **on the side opposite the fracture**
- Monitor breathing, call an ambulance

4. Pelvic fracture: A pelvic fracture is considered a serious, life-threatening injury, as there is a risk of significant blood loss as a result of the fracture, as well as damage to the organs located in that area (urinary tract, intestines, blood vessels). It is important to note that a pelvic injury can involve up to 2–3 litres of internal bleeding without any external signs of bleeding. Pelvic fractures do have visible signs, but there are certain accident scenarios in which the injured person must be considered a potential pelvic fracture victim; these include a person trapped following a road traffic accident, in the event of a gas explosion, or following a fall from a height or into a deep pit.

➤ **Common causes:**

- Being run over, road traffic accident
- Falls from a height, for example from stairs or a balcony

➤ **Symptoms:**

- Pain in the pelvis and hips
- Inability to move
- Bruising, bleeding from the urethra
- Shortening of the lower limbs (when the legs are stretched out, one leg is shorter than the other)
- Deformity
- Bruising around the hip

➤ **First aid:**

- The injured person **must be laid down; DO NOT sit them up or move them!**
- Support the knees with them slightly bent
- The legs must not be moved
- Rest and call an ambulance

5. Fractures of the lower limbs: Fractures of the lower limbs often occur in accidents. Fractures of the lower limbs include:

- fracture of the femur
- tibia fracture
- fibula fracture
- ankle fracture
- metatarsal and tarsal fractures

Of these injuries, a fracture of the femur is the most dangerous, as a break in this bone can damage the major blood vessels running through it, which can lead to severe, profuse bleeding. Signs of internal bleeding in the thigh include swelling and a bluish discolouration.

➤ **Common occurrences:**

- Pedestrian accidents, slipping whilst out walking
- Traffic accidents
- Accidents at home (e.g. falling from a ladder)

➤ **Symptoms:**

- Severe pain, deformity, bruising
- Inability to move the limb, shortening of the limb

➤ **First aid:**

- Immobilise the injured limb **in the position found** (never straighten it!)
- A rigid object or the other leg can be used for immobilisation
- **A broken femur** may be accompanied by severe internal bleeding → call an ambulance immediately!

6. Open fractures: There are certain bones where an open fracture often occurs when they are injured; these are generally the so-called 123 long bones, namely the upper and lower arm bones, and the thigh and shin bones. An open fracture is a bone injury in which the broken end of the bone pierces the skin and comes into direct contact with the air. An open fracture is clearly visible to the naked eye, as the bone end protrudes from the skin. It can happen that the sharp, pointed ends of the bone damage blood vessels, resulting in significant bleeding. When providing first aid, it is important to immobilise the injured body part, and then apply a dressing to the open wound, and a pressure bandage if necessary. Do not move the body part or attempt to push the bone back under the skin.

➤ **Frequency:**

- Traffic accidents
- High-impact sports or work-related accidents
- Falling from a height whilst out on an excursion

➤ **Symptoms:**

- Exposed bone ends
- Severe pain and deformity

➤ **First aid:**

- **Cover the wound with a sterile dressing;** if necessary, apply a **pressure bandage** to stop the bleeding
- Immobilise the injured limb **in the position in which it was found**
- **Do not attempt to reposition the bone end!**
- Call an ambulance immediately!

6. DISLOCATION, SPRAIN, STRAIN

Dislocations and sprains are traumatic injuries affecting the joints of the musculoskeletal system, involving partial or complete displacement of the bone ends relative to one another. In both types of injury, the affected body part must be immobilised in its current position. Applying ice can help to relieve pain and reduce swelling. Medical attention is essential in the case of a dislocation; in the case of a sprain, it is also advisable to undergo an examination to diagnose and treat any ligament injuries.

1. Dislocation: In a dislocation, the bone ends forming the joint are completely displaced from their normal position and do not return to it following the injury. This involves damage to the joint capsule, ligaments and surrounding soft tissues.

Typical accident scenarios:

- **Traffic accident:** e.g. shoulder dislocation caused by being jerked by a seatbelt
- **Falling from a ladder or a height:** the shoulder, elbow or ankle may be affected
- **Intense sport or a fight:** shoulder or finger dislocation is common

➤ **Recognisable symptoms:**

- Sudden, severe pain
- Joint deformity, unnatural position
- Complete inability to move
- Swelling, discolouration

2. Sprain: A sprain is a temporary, partial displacement of the joint, after which the bone ends return to their normal position. The ligaments may be stretched or partially torn.

➤ **Typical accident scenarios:**

- **Outings:** sprained ankle caused by a misstep on slippery ground
- **Sport:** sudden change of direction (e.g. football, basketball, skiing)
- **Household:** slipping on a wet floor, awkward movement whilst carrying something

➤ **Recognisable symptoms:**

- Pain, swelling
- Limited mobility
- Tenderness
- Occasional bluish discolouration

➤ **First aid**

• **General principles:**

- Immediately **stop movement**, rest
- **Ice** (cool for 20 minutes, not directly on the skin)
- **Immobilisation** (using a homemade splint or loose bandage, if available)
- **Elevation** helps reduce swelling
- **Pain relief**

• **Specific actions:**

- **In the event of a sprain, do not attempt to put the joint back into place!**
- **Immediate medical attention is required**, especially if the affected area is misshapen, discoloured, numb or the injured person cannot move it.

7. WOUNDS

Wounds can vary; in addition to bleeding, there is also a risk of infection. If possible, the wound and the surrounding area should **be disinfected**. For minor bleeding, a pressure dressing is sufficient; however, if a firm pressure bandage is required, or if direct pressure is applied to the wound, the bleeding can be significantly reduced. It is very important not to remove or move any foreign objects found in the wound. The wound must be covered with a sterile dressing, and any protruding foreign objects must be secured using nearby items.



Disinfectants

Type of wound	Description / danger	First aid
Cut	Sharp, clean edges	Disinfection, dressing
Puncture wound	Deep, narrow (e.g. nail, knife)	Do not move the object! Cover the wound, doctor!
Crush injury	Blunt trauma, jagged edges	Disinfection, pressure dressing
Bite wound	High risk of infection, risk of rabies	Thorough cleaning, dressing and medical attention required
Gunshot wound	Entry/exit wound, internal injury possible	Do not move the object, dress the wound, call an ambulance!

8. BLEEDING

Bleeding is a condition resulting from a break in the continuity of blood vessels, during which blood enters a body cavity, the interstitial space, or the external environment. Depending on the nature of the injury, bleeding may be external or internal, whilst a wound refers to a break in the continuity of the body’s surface, which is often accompanied by bleeding. The aim of first aid is to stop the bleeding as quickly as possible, prevent infection and avoid the onset of shock.

- 1. Capillary bleeding:** This type of bleeding occurs in the case of grazes or superficial wounds. In such cases, the blood flows gently and oozes. It is typically the case that the bleeding stops on its own or can be easily stopped.
- **Typical situations:**

 - Falls from a bicycle or scooter
 - Minor household accidents (e.g. graze on the corner of a table)
 - Slipping whilst out walking, scratches from bushes
- **Recognition:**

 - Mild, oozing bleeding
 - Mostly grazes, superficial injuries
- **First aid:**

 - Cleaning, disinfecting
 - A plaster or dressing is sufficient
- 2. Venous bleeding:** In this case, blood flows copiously and steadily from the wound. The blood is dark red in colour. This is a life-threatening condition, as a large amount of blood can be lost from the body in a short space of time, and the injured person may bleed to death. It is common for the injured person to go into shock, which is also a life-threatening condition, as will be discussed later.
- **Typical situations:**

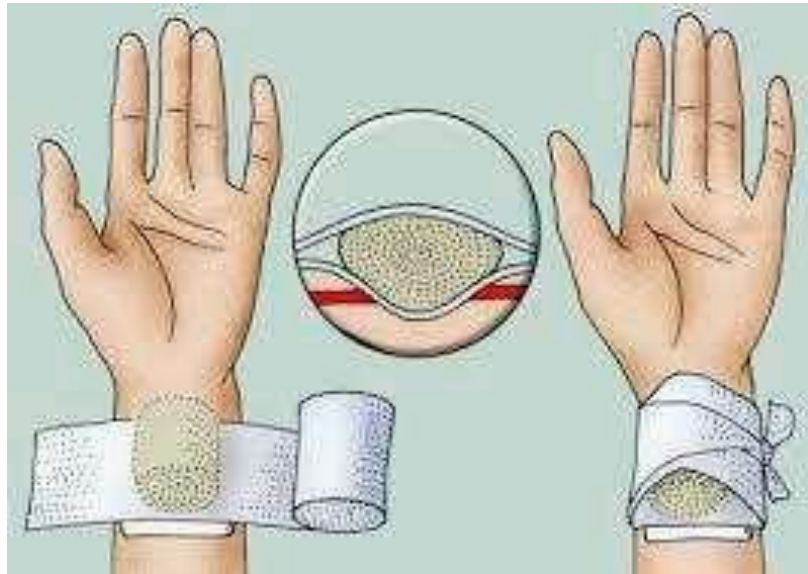
 - Deep cuts caused by knives or glass in the kitchen
 - Accidents (e.g. car, bicycle, workplace accident)

➤ **Recognition:**

- Dark red blood **flowing steadily**
- May be lost in large quantities

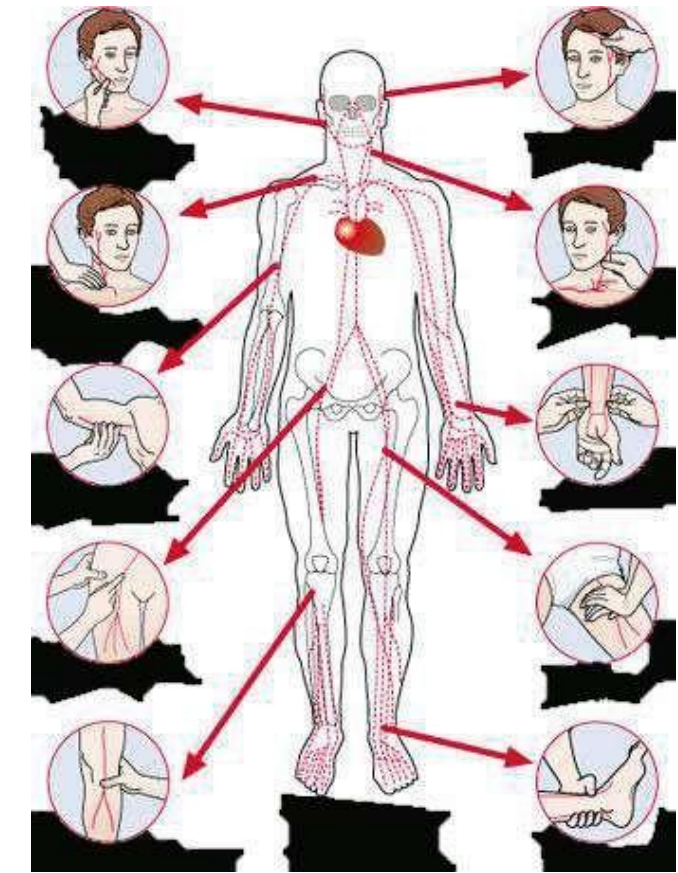
➤ **First aid:**

- **Apply direct pressure to the wound**
- Apply a **pressure bandage** (if it bleeds through: do not remove the soaked bandage; apply a new layer over the existing one)
- Raise the limb **above the heart**
- Watch for **signs of shock**



Tourniquet

3. Arterial bleeding: This is also a life-threatening injury, as blood gushes rapidly from the blood vessels. The blood is bright red and spurts out in time with the heartbeats. Shock may also occur in this situation. Treatment requires a pressure bandage, and the affected limb must be raised above the heart. There are so-called arterial pressure points which, when pressed before applying the bandage, can significantly reduce the bleeding by applying pressure to the nearest point between the wound and the heart. The pressure points are shown in the image below.



Arterial pressure points.

➤ **Typical situations:**

- Serious cuts caused by glass, machinery or a saw
- Amputation accident
- Serious accidents, trauma

➤ **Recognition:**

- Bright red blood **pulsating and spurting out**
- Rapid, massive blood loss, state of shock

➤ **First aid:**

- Tourniquet
- Raise the limb above the heart
- Pressure on **an arterial pressure point** above the wound (e.g. popliteal fossa, armpit)
- **Seek urgent medical attention!**

4. Internal bleeding: Internal bleeding is an injury in which blood flows beneath the body's surface into closed body cavities or tissue spaces, meaning that signs of external bleeding are not necessarily visible. Internal bleeding often represents a serious, life-threatening condition, as significant blood loss may go unnoticed until it is too late

This can lead to the injured person going into shock. In some cases, internal bleeding may occur as a result of an injury, such as in the case of the aforementioned fractures of the thigh and pelvic bones. It often occurs following blunt, high-impact blows, during which the internal organs begin to bleed. A characteristic symptom of internal abdominal injury is the so-called ‘board-like abdomen’. In this case, the abdomen is hard and cannot be pressed in.

➤ **Typical situations:**

- Traffic accident
- Fall from a height
- Severe blow, contusion

➤ **Recognition:**

- No external bleeding, but:
 - Pale skin, cold sweat
 - Swelling, pain
 - Haematoma, ‘board-like abdomen’
- Signs of shock are common

➤ **First aid:**

- **Lay the person down with their head elevated** and knees bent (if abdominal trauma)
- **Do not move the patient!**
- **Call 112 – immediately**

9. SHOCK

Shock is a life-threatening condition characterised by circulatory failure, in which tissues and organs do not receive enough oxygen to function normally. If left untreated, shock can lead to multiple organ failure and death. The essence of shock is that the body is unable to maintain adequate blood circulation, thereby reducing the oxygen supply to cells, causing internal organs to gradually shut down, and ultimately leading to death. As a first aider, you cannot stop or treat the state of shock. At the scene, one can only slow down the progression of shock. In this case, the so-called shock position must be applied. When placing the casualty in the shock position, they must be laid on their back with their legs raised, which helps to restore circulation.



Shock position

➤ **Typical accident scenarios:**

- Severe bleeding, following an open fracture
- Burn injury – particularly over a large area
- Severe allergic reaction (anaphylaxis)
- Electric shock, internal injury, or spinal cord trauma
- Infection-induced shock (e.g. as a late complication of severe wound infection)

➤ **Recognition (general signs):**

- **Pale, cold, clammy skin**
- **Rapid, weak pulse**
- **Rapid, shallow breathing**
- **Dizziness, confusion, weakness**
- **Nausea, feeling faint**
- **Sudden mood swings**
- In advanced stages: **loss of consciousness**

➤ **First aid:**

- 1. Lay the casualty down**, provided there are no injuries that this might aggravate – **raise their legs by approx. 30 cm** to allow blood to flow to vital organs (provided there is no suspicion of spinal injury!)

2. **Do not move the person** if they have been injured in an accident and may have a spinal or pelvic injury!
3. **Keep them warm** and cover them with a blanket to prevent them from getting cold – but **do not overheat them!**
4. **Do not give them anything to eat or drink!**
5. **Speak to them calmly**, try to calm them down and keep them conscious!
6. **Call an ambulance!** (112)

10. BURN E INJURIES

A burn is tissue damage caused by heat, resulting from intense exposure of the human body to heat. The severity of the injury and the required treatment are determined by the extent and depth of the burn. Most burns occur in the home, primarily as a result of kitchen accidents, when hot water, oil or steam comes into contact with the skin. However, burns also occur during fires, where people are injured directly by the heat of the fire or suffer damage to the airways as a result of inhaling hot smoke. When treating burns, the first and most important step is to place the affected body part under cold, running water and cool it for approximately 15–20 minutes. The cold soothes the skin and alleviates the pain, whilst also preventing further tissue damage. Ice or ice packs must not be placed on the wound, as this can only cause further tissue damage. The wound should be dressed with a loose covering, using sterile, non-adhesive dressings. Blisters must not be punctured, nor should burnt, stuck-on clothing be removed from the wound. Proper treatment of the wound requires hospital care. The effects of heat, as well as inhaled combustion products, can cause severe mucosal swelling, airway inflammation and oedema, which may lead to acute airway obstruction. As a result of respiratory tract burns, the injured person will experience a sore throat, hoarseness, difficulty swallowing, coughing, and wheezing. In such cases, if the injured person's condition permits, they should be taken to fresh air, and the aforementioned semi-sitting position is the most optimal.

➤ Common accident scenarios

→ Domestic:

- Spilling hot liquids (tea, soup) – common among young children
- Burns caused by stoves, ovens or irons
- Hot water or steam
- Electrical faults (e.g. short circuits, overheating of distribution boards)

→ Transport:

- Vehicle fire, contact burns caused by exhaust pipes
- Battery, ignition of flammable materials

→ Outings/camping:

- Campfire, gas stove, barbecue, clothing catching fire
- Sunstroke or intense sunlight (e.g. on a long hike)

→ Classification (by severity):

• First-degree burn (mild):

- Red, dry skin
- Pain, burning sensation
- E.g.: scalding, sun exposure

• Second-degree burn (moderate):

- Red, blistered skin
- Surface feels moist
- Severe pain

• Third-degree burn (severe):

- White, grey or charred skin
- Numbness (due to damage to nerve endings)
- Deep tissue damage

→ Primary, lay first aid:

- **Immediately remove the source of heat** (e.g. extinguish clothing, turn off the heat source)
- **Cool the affected area with running, cool (not icy) water for 10–15 minutes**
- **Do not use ice, grease, toothpaste or home remedies!**
- **Apply a sterile, loose dressing** (e.g. sterile gauze, clean cloth)
- **Do not pierce the blisters!**
- **Pain relief (e.g. paracetamol) is permitted**
- **Medical attention is required if:**
 - The injury is extensive (larger than the palm of your hand)
 - It affects the face, genitals, hands or feet
 - The person affected is a child, elderly person or has a chronic illness
 - There is a suspicion of an electrical or chemical burn

11. FROSTBITE

Frostbite is damage to the body's tissues caused by cold. It most commonly affects the fingers, nose, ears, face and toes, as these are the least protected parts of the body. Exposure to the cold can damage cells, leading to circulatory problems and, in more severe cases, tissue necrosis. Frostbite is most commonly caused by prolonged exposure to the cold or by wearing cold, damp clothing.

When treating frostbite, the primary aim is to prevent further heat loss and restore circulation to the affected area. The person affected must be taken to a warm place immediately, and wet clothing must be replaced with dry clothing. The frostbitten limb must be warmed up gradually, avoiding the use of hot water, open flames or other heat sources, as these can cause further damage. Pain experienced during warming indicates that blood circulation to the tissues is returning. In addition to appropriate first aid, professional medical care is essential, particularly in cases of more severe frostbite. During first aid, efforts should be made to ensure the intake of warm fluids, which helps maintain internal circulation.

➤ Typical accident scenarios:

- **Domestic:** staying in a cold home for a prolonged period (e.g. elderly people, with poor heating)
- **Road traffic:** prolonged waiting in cold weather following a road traffic accident (e.g. in a car that has skidded into a ditch)
- **Outings/winter sports:** using wet gloves or shoes in the snow whilst hiking or skiing without suitable clothing

➤ Recognition:

- **Signs of mild frostbite:**
 - flushed, cold skin
 - numbness, tingling
 - itching
- **Signs of more severe frostbite:**
 - white/greyish skin
 - pain (or numbness)
 - blistering
 - blackening (may be a sign of tissue necrosis)

➤ Primary, lay first aid:

- **Move the injured person to a warm place.**
- **Change wet clothing to dry.**

- **Warm** the frostbitten area **slowly and gradually** (e.g. with body heat or lukewarm water at approx. 37–39 °C)
- **Do not use hot water, a heater or an open flame!**
- **Do not rub the frostbitten area!**
- **Do not pierce any blisters!**
- **Give the person warm fluids to drink!** (No alcohol!)
- **Medical attention is required** for all cases of moderate or severe frostbite.

12. ELECTRIC SHOCK

An electric shock is damage caused by the passage of an electric current through the body, which can lead to a potentially life-threatening condition. The effect of an electric current depends on the voltage, current, route of entry, duration, and the body's resistance.

➤ Typical accident scenarios:

- **Domestic:**
 - Touching an uninsulated wire
 - Electrical appliances used in the bathroom (e.g. hairdryers)
 - Poorly secured extension leads, overloaded sockets
- **Road traffic:**
 - Vehicle colliding with an electricity pylon
 - Damage to electric scooter or vehicle battery
- **Outings, outdoors:**
 - Lightning strike during a storm
 - Entry into restricted areas (e.g. railway overhead lines, vicinity of transformer stations)



Electric shock

➤ **Recognisable symptoms:**

• **Mild electric shock:**

- Tingling, muscle twitching
- A burning sensation at the entry/exit point
- Dizziness, light-headedness

• **More severe cases:**

- Loss of consciousness
- Muscle stiffness, convulsions
- Respiratory or cardiac arrest
- Burns (at entry and exit points)
- Cardiac arrhythmia (which can be fatal)

➤ **First aid:**

Your own safety comes first! Never touch the victim whilst they are still live!

1. **Cut off the power supply** (main switch, switch off the fuse)
2. If it cannot be safely disconnected, try to pull the person away **using a non-conductive object** (wooden handle, rubber gloves)
3. **Call an ambulance immediately!** (112)
4. **Check for consciousness and breathing:**
 - If there is no breathing or the person is unconscious: **perform CPR**
 - If breathing but unconscious: **place in the recovery position**
5. **Additional steps:**
 - For burns: cooling, sterile dressing
 - Do not give food or drink, do not move the person if a spinal injury is suspected
 - Stay with them until the ambulance arrives

All victims of electric shock must be examined, as cardiac arrhythmia can occur even hours later, even in cases where symptoms are mild.

13. POISONING

Poisoning is a pathological condition caused by the entry of a toxic substance into the body. The toxic substance can enter the body in various ways, and the symptoms and their severity depend on the type of substance, the quantity, the route of entry, and individual sensitivity. Toxic substances can enter the body in different ways, so their treatment also varies.

1. **Ingestion poisoning:** As different treatments are required for each toxic substance, the first step is to locate and identify the ingested toxic substance. If the substance swallowed is known, appropriate

first aid can be administered. As a general rule, as a layperson providing first aid, you must not induce vomiting or give the injured person anything to eat or drink if they have swallowed any substance, unless instructed to do so by the emergency services or a doctor. In such cases, you should identify the substance and ensure the injured person is kept calm.



Poisoning

➤ **Typical situations:**

- Ingestion of cleaning products (e.g. bleach, Domestos)
- Overdose of medication
- Poisonous plants or mushrooms
- Chemicals poured into a child's drink container (mistaken identity)

➤ **Symptoms:**

- Vomiting, stomach ache, nausea
- Burning sensation in the mouth or oesophagus
- Excessive salivation, difficulty speaking or swallowing
- Confusion, drowsiness, convulsions

➤ **First aid:**

- Do **not induce vomiting** (especially in the case of acid or corrosive substances)!
- **Call 112!**
- **Keep the packaging** – it makes diagnosis easier!
- **If they are conscious:** reassure them, do not give them anything to drink or eat!
- **If they are unconscious:** place them in the recovery position
- **CPR** if they are not breathing

2. Inhalation poisoning: In such cases, toxic gases or vapours enter the body through the nose or mouth and are absorbed into the lungs. Common toxic gases include carbon monoxide and vapours produced by the incorrect use of cleaning products.

➤ **Typical situations:**

- Carbon monoxide poisoning (boiler or stove malfunction)
- Inhalation of exhaust fumes in an enclosed space
- Inhalation of chemical sprays (e.g. bleach, ammonia)
- Accident at work (e.g. solvent vapours)
- At the scene of an accident involving a lorry carrying hazardous materials

➤ **Recognition:**

- Headache, dizziness
- Drowsiness, confusion
- Difficulty breathing
- Nausea, vomiting
- Loss of consciousness

➤ **First aid:**

- **Take the injured person out into the fresh air!**
- **Ventilate the area immediately if it is safe to do so!**
- **Call 112!**

➤ **Unconscious:**

- place them in the recovery position

➤ **Not breathing?**

- CPR

3. Skin absorption: In this case, a chemical comes into contact with the skin's surface and is absorbed through it. Common chemicals include pesticides, acids and alkalis. The first and most important step in such cases is to remove contaminated clothing, thereby preventing further absorption of the toxic substance. The skin should then be rinsed with cold water for a few minutes. Acids and alkalis can corrode the skin's surface. In such cases, a wound resembling a burn may be visible. After rinsing, the wounds should be treated with a sterile, loose dressing.

➤ **Typical situations:**

- Spray or solvent spills onto the skin
- Industrial accident (e.g. adhesive, paint)
- Overdose of a transdermal medication (e.g. a patch)

➤ **Recognition:**

- Burning sensation, redness, blisters
- Localised itching, swelling
- Systemic symptoms: headache, confusion, vomiting

➤ **First aid:**

- **Remove any clothing contaminated with the chemical!**
- **Rinse the skin immediately with running water and soap**
- **Do not rub!**
- **Call 112** and tell them what has come into contact with the skin!
- **Monitor symptoms** – if the condition worsens, or in the event of loss of consciousness or respiratory arrest, perform CPR!

4. Animal bites and stings: In such cases, it is very important to identify the animal or insect; therefore, it is necessary to note the creature's physical characteristics for the purposes of subsequent treatment. In the event of a bite or sting, it is important to rinse and disinfect the wound. In the case of a bleeding wound, a loose dressing should be applied to allow any exudate to drain away. In the case of certain animals and insects, an allergic reaction may occur, which can even be life-threatening. During this, the site of the sting swells significantly, and breathing difficulties arise due to airway oedema. In such cases, the injured person must be kept calm and their airway secured.

14. CHOKING

Choking is a life-threatening condition in which the airways become partially or completely blocked, preventing air from reaching the lungs. In such cases, the lack of oxygen can quickly lead to a serious condition, loss of consciousness and, subsequently, cardiac arrest if appropriate action is not taken in time. In most cases, the problem is caused by choking, which may be on food or, in the case of children, small toys. Choking usually has visible signs, which are as follows:

- The person is unable to speak, cough, breathe or make a sound.
- They suddenly clutch their throat, panic and turn pale.

When providing care, a distinction must be made between adults, older children and infants.

1. Adults and older children: The first step is to administer 5 back blows. To do this, stand slightly behind the person's back. Ask them to lean forward slightly and support their chest with one hand. Then, using the heel of your free hand, deliver 5 firm blows between the shoulder blades. If the 5 back blows are unsuccessful (the object blocking the airway has not been dislodged), the Heimlich manoeuvre must be performed. To do this, stand behind the person and reach around their waist with both arms. Make a fist with one hand and place it just below the victim's breastbone, on the pit of the stomach, then grasp it with your other hand. Next, deliver 5 abdominal thrusts using firm, inward and upward movements. If this is unsuccessful, perform 5 back blows again, followed by 5 abdominal thrusts, and continue alternating between the two until:

- The airway does not clear.
- The injured person loses consciousness.

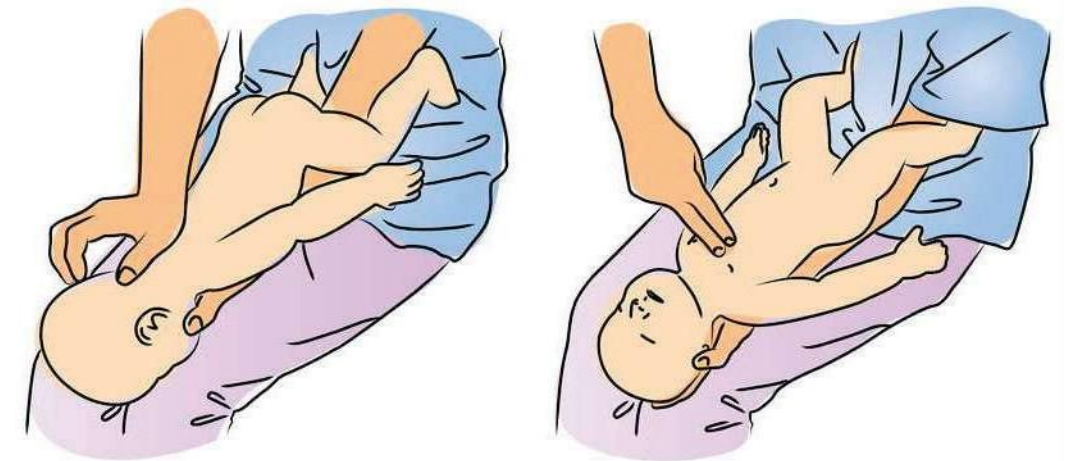


Heimlich manoeuvre

If the victim loses consciousness, lay them down, call for help and start resuscitation! It is very important that if the Heimlich manoeuvre is used, the casualty must be taken to hospital, as this technique can damage internal organs, causing internal bleeding, which can only be diagnosed in hospital.

2. Infants: Place the infant face down on your forearm, head downwards, with the head at the lowest point. Support the head and neck, then deliver 5 gentle back blows with the heel of your hand between the shoulder blades. If the 5 back blows are unsuccessful, turn the infant over and place them on their back on your forearm, with their head lower down. Then, using two fingers, press the upper part of the abdomen inwards and upwards 5 times. If this is also unsuccessful, repeat the 5 back blows, then another 5 abdominal thrusts, alternating between the two until:

- The airway is cleared.
- The casualty loses consciousness.



Caring for an infant

If the person loses consciousness, lay them down, call for help and start CPR! In the case of infants, it is very important that, following prolonged choking or the use of abdominal thrusts, you must call for medical assistance to prevent permanent damage.

References:

- RESCUE TECHNIQUES – FIRST AID, Recovery position, 16 February 2010. vidra-vizitura.hu, URL: <https://www.vidra-vizitura.hu/stabil-oldalfekves/>
- Esmarch manoeuvre, 30 November 2014. blog.xfree.hu, URL: <https://blog.xfree.hu/myblog.tvn?n=pacsakute&pid=187409>
- Robairto: Resuscitation revived! 7 February 2015. tuke.blog.hu https://tuke.blog.hu/2015/02/07/ujraelesztes_ujraelesztve
- Aplicar uma ligadura de compressão, mozaweb.hu URL: https://www.mozaweb.hu/pt/Extra-Imagens-%20Aplicar_uma_ligadura_de_compres-%20sao-22309
- Zsófia Zádor: Lacerations, 2014, docplayer.hu URL: <https://docplayer.hu/8358604-Sebzesek-sebben-melyen-levo-rogzult-idegen-testet-nem-sza-bad-eltavolitani-rogziteni-kell-vedve-a-kimozdulastol.html>
- Dr Beáta Farkas: Life-saving manoeuvre: the Heimlich manoeuvre, 18 June 2015. vajma.info.hu URL: <https://www.vajma.info/cikk/etmod/69/Eletmen-to-mozdulat-Heimlich-fele-mufogas.html>
- Anna Süle: First aid for removing a foreign body from the airway, 14 August 2022. gyogyhirek.hu URL: <https://gyogyhirek.hu/leguti-idegentest-eltavolitasa/>

