

FIRST AID · WHEN HELP IS DELAYED ·
UK FIELD REFERENCE



EMERGENCY MEDICAL SURVIVAL

M A S T E R G U I D E



Recognise · Act · Keep Them Going

What to do in the first minutes — and in the hours and days when no ambulance is coming.

Edition 1.0 · UK Edition

Print this guide and keep it with your first aid kit. Read it before you need it — in an emergency there is no time to learn.

Adapted from medsys.uk/emergency · Resuscitation Council UK 2025 · NICE · NHS · MHRA · UKHSA · RCOG · St John Ambulance · British Red Cross

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Emergency Medical Survival Master Guide

First aid and medical care when help is delayed or not coming · **UK Edition 1.0** · Print & keep with your first aid kit

Most first aid advice ends with "wait for the ambulance". This guide covers the first minutes of the emergencies that kill: cardiac arrest, choking, bleeding and serious injuries, anaphylaxis, asthma and chest pain, collapse, burns, head injury, sepsis, dehydration, heat and cold, poisoning, and pregnancy and childbirth. For each one it adds what to do when the ambulance is hours away, or not coming at all, because the phones are down, the roads are blocked, or the NHS is overwhelmed. It ends with how to care for someone for days at home, a full vital-signs guide for every age, a medicines and antibiotics lookup, the kit worth having, and when someone dies.

IMPORTANT — PLEASE READ FIRST

This is an educational reference, not medical training and not a substitute for professional care. Reading about chest compressions does not make anyone able to do them under pressure; a half-day course does. **Whenever 999 or 111 can be reached, call them first** and follow the call handler. They will talk you through what to do.

Medicines and doses are general reference information for the UK, taken from NHS, NICE and Resuscitation Council UK guidance. Doses vary with age, weight, pregnancy, allergies, kidney and liver function and other medicines. The Medicines lookup gives standard NICE and BNF doses, including antibiotics, so a pharmacist, prescriber or trained person can check them and so you understand a prescription. Prescription-only medicines should come from a prescriber: talk to your GP or pharmacist now about what your household may need.

"When help is delayed" boxes describe what is reasonable when no professional can be reached. They are the last resort, not an alternative to getting help. Keep trying to reach help, and move the person to help when that is safer than waiting.

Much of this guide is adapted from the emergency chapters of **medsys.uk**, where the full clinical detail and evidence are set out.

The three rules of emergency care:

1. **Safety, then the two questions.** Make sure you won't become a second casualty. Then: are they **responsive**, and are they **breathing normally**? If not, start CPR. Everything else is refinement.
2. **Call early, and say the word.** "Cardiac arrest", "anaphylaxis", "stroke", "sepsis", "heat stroke". Naming it changes the response. If phones are down, send a runner with a written note.
3. **Trust how they look over any number.** Someone who looks wrong is wrong, whatever the readings say. Watch the trend, write it down, and act on deterioration.

HAPPENING NOW

Not breathing: CPR. Choking:
Choking. Bleeding: Severe
bleeding. Allergic: Anaphylaxis.
Collapsed: The collapsed person.

PREPARING AHEAD

Start with The medical kit & skills
to learn, then Vital signs and the
Quick reference.

NO HELP IS COMING

Read When help is delayed,
Caring for someone for days and
the Medicines lookup. A baby
coming? Emergency childbirth.

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The First Look

Getting help when systems are failing, assessing someone in seconds, and the vital signs that tell you how sick they are.

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01 📞 When Help Is Delayed: Getting Care When Systems Fail

In normal times the answer to almost every emergency in this guide is "call 999". In a crisis that call may not connect, the ambulance may be hours away, and the hospital may be overwhelmed. Help rarely disappears completely. It becomes slower and harder to reach. This section is about reaching it anyway, and about deciding when to take someone to help rather than wait.

The ladder: try each rung, in order

Rung	When	Worth knowing
999 or 112	Danger to life: not breathing, unconscious, severe bleeding, chest pain, stroke, anaphylaxis, a seizure over 5 minutes, sepsis	If your own network has no signal, a 999 call can use any other network that does (in the UK, though, a phone with no SIM card can't call 999). Keep trying, because lines often clear within minutes.
111 (phone or online)	Urgent but not life-threatening, or you're unsure	111 can book you into urgent care, send an ambulance, or arrange an emergency supply of medicine.
Pharmacy	Minor illness, medicines, advice	In England, pharmacists can treat seven common conditions under Pharmacy First , including sore throat, earache, sinusitis, infected insect bites, impetigo, shingles and urinary infection in women aged 16–64. They can also make an emergency supply of most regular medicines.
GP, minor injuries unit, urgent treatment centre	Wounds, sprains, possible fractures, infections	Walk-in centres often stay open when phone lines are jammed.
Go in person	Phones are down and it's urgent	The nearest A&E, ambulance station, fire station, police station, GP surgery, rest centre or pharmacy. In a long crisis these become the places where help is organised.

If you're deaf or can't speak: register for the **emergencySMS** service *now*, by texting "register" to 999, so you can text 999 in an emergency. You can't register during one.

If the phones are down: send a runner with a note

Send **two people** if you can, so one can stay with the ambulance or bring help back. Give them a **written note**, because a message passed by word of mouth gets garbled. Use the format ambulance crews use, MIST:

THE NOTE

- **Where:** exact address, and how to find you (flat number, gate, landmarks)
- **Who:** name, age, sex, and roughly how much they weigh
- **M — Mechanism or medical problem:** what happened, and **when**
- **I — Injuries or illness** found
- **S — Signs:** awake or not, breathing rate, pulse, colour, and how they're changing
- **T — Treatment given:** what you've done, and when (tourniquet time, adrenaline time, medicines)
- Their regular medicines, allergies and conditions
- Your name and how to reach you

WHILE YOU WAIT

- Keep one person with the casualty **at all times**.
- Re-check them every 5–15 minutes and write down the time and what you find. That record is gold to whoever takes over (chart in Quick reference).
- Mark the house: a light, a sheet or a person at the road.
- Keep them warm. Almost every injured or ill person gets cold, and cold makes bleeding, shock and outcomes worse.

Wait for help, or take them to it?

Usually better to move them	Usually better to wait, and send for help
They need a hospital and no ambulance is coming: suspected heart attack, stroke, sepsis, anaphylaxis (after adrenaline), uncontrolled bleeding, a large burn, a broken thigh bone, labour that isn't progressing, a child who is getting worse	Cardiac arrest: CPR can't be done in a moving car. Continue where you are.
You have transport, a second adult, and a safe route	Possible spinal injury from a fall, crash or diving, unless the place is unsafe
The place you're in is unsafe: fire, flood, collapse, violence	Severe hypothermia: rough handling can stop a cold heart (see Cold)
Help is reachable within an hour or two	Help has said it is on its way



MOVING SOMEONE BY CAR

- Two adults: one drives, one watches the casualty.
- **Breathless:** sitting up. **Faint, bleeding or in shock:** lying flat, legs raised if possible. **Drowsy:** on their side in the recovery position across the back seat.
- **Anaphylaxis:** lying flat, never sitting up or walking to the car, unless breathing makes lying impossible (see Anaphylaxis).
- Drive smoothly. A crash on the way helps no one. Take the medicines, the packaging and your written notes.



The law and helping. There is no legal duty in the UK for a bystander to give first aid, and people who try to help are very rarely sued. In England and Wales, the **Social Action, Responsibility and Heroism Act 2015** requires courts to consider whether someone was acting for the benefit of others, or heroically in an emergency. Act in the person's best interests, do what you've been trained to do, and don't go beyond it unless there is no alternative.

Sources: NHS 999/111 guidance; NHS England Pharmacy First (2024); Human Medicines Regulations 2012 (emergency supply); emergencySMS (Ofcom/BT Relay UK); SARAH Act 2015.



When help is delayed for hours or days

- Keep trying all the rungs, several times an hour. Systems often recover locally before they recover nationally.
- Look for organised help: community hubs, rest centres, field hospitals, military medical teams. Listen to local radio for where they are.
- Ask around your street for nurses, doctors, paramedics, vets, first-aiders and pharmacists. In a long crisis, skills are the scarcest supply.
- Look after the casualty with the routines in Caring for someone for days, and keep the written record going.

02



The First Look: Danger, Response, Breathing

Every emergency starts the same way, whatever it turns out to be. Two observations sort almost everything: **are they responsive**, and **are they breathing normally**? If the answer to both is no, start CPR and stop diagnosing. You cannot make an arrest worse by treating it as one, and the commonest fatal error is spending a minute deciding.

1

Danger. Traffic, fire, gas, electricity, water, an unstable structure, an aggressive person. A second casualty ends the rescue for both. Switch off power at the fuse box before touching anyone (see Electricity).

2

Response. Speak loudly ("Can you hear me? Open your eyes!") and tap their shoulders firmly. Use **AVPU**: **A**lert, responds to **V**oice, responds only to **P**ain, or **U**nresponsive. Anything less than Alert matters.

3

Shout and call. Shout for help. If they are unresponsive, **call 999 now**, on speakerphone so you never leave them. Since 2025, the advice is to call *before* checking breathing, and let the call handler guide you.

4

Airway. Tilt the head back gently with a hand on the forehead, and lift the chin with two fingertips. Look in the mouth and remove only what you can see. Never do a blind finger sweep.

5

Breathing. Look, listen and feel for **no more than 10 seconds**. Occasional gasps, snoring or noisy breaths in the first minutes of a cardiac arrest are **not** normal breathing. If in doubt, start CPR (see CPR).

- 6 Breathing normally but not alert:** put them in the **recovery position** (below), keep them warm, and check breathing every minute until help arrives.

THE RECOVERY POSITION

1. Kneel beside them. Place the arm nearest you at a right angle, palm up.
2. Bring the far arm across the chest, and hold the back of that hand against their near cheek.
3. Bend the far knee up, foot flat on the floor.
4. Pull on that knee to roll them towards you onto their side.
5. Adjust the top leg so hip and knee are at right angles, and tilt the head back so the airway stays open and fluids drain out of the mouth.
6. Check breathing every minute. If you have to leave them, or they're there for more than 30 minutes, roll them onto the other side.

Pregnant: left side. **Possible spinal injury:** keep the head in line with the body. Only roll them if you must, to keep the airway clear.

AFTER AN INJURY: BLEEDING BEFORE BREATHING

For trauma (a crash, fall, blast, stabbing or crush), ambulance crews use **<C>ABCDE**. Stop catastrophic bleeding first, because it kills in minutes.

- **<C>** Catastrophic bleeding: pressure, packing, tourniquet (see Bleeding)
- **A** Airway: open and clear. Protect the neck if the injury could have damaged it.
- **B** Breathing: rate, effort, both sides of the chest moving
- **C** Circulation: pulse, skin colour, capillary refill, other bleeding
- **D** Disability: AVPU, pupils, blood sugar
- **E** Exposure: look everywhere for injuries, then cover them up again quickly to keep them warm

Questions to ask, and write down (SAMPLE)

Letter	Ask about	Why it matters
S	Signs and symptoms: what is wrong, where it hurts, since when	The timeline is often the diagnosis
A	Allergies	Before giving any medicine
M	Medicines, and bring the boxes	Blood thinners, insulin, heart drugs and opioids change everything
P	Past history: heart, lungs, diabetes, epilepsy, pregnancy	Points to the likely cause
L	Last ate or drank	Matters if surgery is needed, and for diabetes
E	Events: what happened just before	Collapse mid-sentence, after chest pain, or in water all mean different things

More than one casualty

WHO FIRST?

1. Anyone with **catastrophic bleeding**: one minute of pressure or a tourniquet, then move on
2. Anyone **unresponsive**: open the airway, and use the recovery position if they're breathing
3. Anyone **struggling to breathe**
4. Then everyone else. People who are shouting are breathing. The quiet ones are often the sickest.

⚡ TWO EXCEPTIONS

- **Lightning**: treat the ones who appear dead first. Lightning often causes a brief cardiac arrest that responds well to CPR, while those groaning and moving are, for now, alive.
- **Too many casualties for the helpers**: in a major incident, effort goes first to people who can be saved with simple measures. Opening an airway or applying a tourniquet saves more lives than prolonged CPR on one person while others bleed.

🕒 When help is delayed

- Repeat the first look every 5–15 minutes, and **write it down**: time, AVPU, breathing rate, pulse, colour, and what you've done.
- Deterioration shows in the trend long before any single reading is alarming. A rising breathing rate, a rising pulse and growing drowsiness are the three to watch.
- Keep them warm, insulated from the ground, and reassured. Fear and cold both make shock worse.

Sources: Resuscitation Council UK Guidelines 2025; St John Ambulance and British Red Cross first aid guidance; JRCALC; medsys.uk/emergency.

03



Vital Signs: The Full Guide for Every Age

Vital signs turn "they don't look right" into something you can track, write down and hand over. But they are a screening aid, not a verdict. **Anyone who looks unwell, is getting worse, or who you are worried about is urgent, whatever the numbers say.** A normal set of observations in someone who looks wrong is a reason to act, not to relax. How to take each reading properly is in Measuring properly.

The breathing rate is the earliest and most sensitive warning sign in almost every serious illness — and the one most often not counted. Count it for a full minute.

All ages at a glance: normal ranges at rest

Age	Pulse (beats/min)	Breathing (breaths/min)	Breathing too fast if over	Lowest normal systolic BP	SpO ₂
Newborn (first 4 weeks)	110–160 (may dip to about 90–100 asleep)	30–60	60	about 60	95–100%
Baby 1–12 months	110–160	30–40	60 (to 5 months), 50 (6–12 months)	about 70	96–100%

Age	Pulse (beats/min)	Breathing (breaths/min)	Breathing too fast if over	Lowest normal systolic BP	SpO ₂
1–2 years	100–150	25–35	40	about 70 + 2 × age	96–100%
2–5 years	95–140	25–30	40	about 70 + 2 × age	96–100%
5–11 years	80–120	18–28	30–35	80–90	95–100%
12–17 years	60–100	12–20	25	90	95–100%
Adult	60–100	12–20	25 (21–24 is a warning)	100 (90 is an emergency)	96–100%

Temperature at all ages: normal 36.1–37.9 °C. Fever is 38 °C or more; under 36 °C in someone unwell is just as worrying. Children's ranges are the APLS and NICE reference values, rounded. A child who is crying, feverish or frightened will read higher, so count again when they are calm. A child's blood pressure falls *last*, so never wait for it.

Adults

Adults vary hugely: a fit athlete can rest at 45 bpm, and someone with severe lung disease can live at 89% oxygen. What matters is the **change from their own normal** and the **direction of travel**.

Sign	Normal	Alert: re-check, get advice	Emergency: 999 or get them to help
Breathing	12–20 per minute	9–11 or 21–24	Under 8, or 25 and over, or gasping
Pulse	60–100 per minute	50–59 or 101–130	Under 40, over 130, newly irregular, or absent
Oxygen (SpO₂)	96–100%	94–95%	Under 92% (under 88% in known COPD), or new blue lips
Blood pressure (top number)	110–139	100–109, lower than usual for them; or 180+	90 or below, a drop of 40 from their usual, or 180+ with chest pain, breathlessness or confusion
Temperature	36.1–37.9 °C	35.1–36.0 or 38.0–39.0	39.1+ with other warning signs, or 35.0 and below
Alertness (AVPU)	Alert and orientated	New confusion, even with normal numbers	Responds only to voice or pain, or unresponsive
Blood sugar (diabetics)	4.0–7.0 mmol/L	3.5–3.9: fast-acting sugar, re-check in 15 min	Under 3.0, drowsy at any low reading, or high with vomiting and deep breathing
Urine	Pale straw, every few hours	Dark, or none for 8 hours	None for 12 hours, or dark brown

NEWS2: the score UK hospitals and ambulances use

Add up the points for each reading. The total says how urgent things are, and a rising score over time is the warning. This is the adult score (not for children or pregnancy).

Reading	3	2	1	0	1	2	3
Breathing /min	≤8		9–11	12–20		21–24	≥25
SpO ₂ %	≤91	92–93	94–95	≥96			
On oxygen?		Yes		No (air)			
Systolic BP	≤90	91–100	101–110	111–219			≥220
Pulse /min	≤40		41–50	51–90	91–110	111–130	≥131
Alertness				Alert			New confusion, V, P or U
Temperature °C	≤35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥39.1	

WHAT THE TOTAL MEANS

- **0–4:** low. Keep observing, at least every 4–6 hours. **But a 3 in any single reading** needs an urgent review.
- **5–6:** medium. Urgent medical review; observations at least hourly.
- **7 or more:** high. Emergency: 999, or get them to hospital.

⚠️ FOUR ADULT TRAPS

- **Breathing at 25 or more** is one of the strongest predictors of deterioration. Count it without telling them.
- **New confusion in an older person** is a red flag, not "just their age".
- **Beta blockers** stop the pulse rising, so shock may not show as a fast pulse.
- **Two or three mildly abnormal readings together** worry more than one very abnormal one.

👴 OLDER PEOPLE PRESENT DIFFERENTLY

- Serious infection often comes **without fever**. Under 36 °C counts as much as a high temperature.
- Falls, confusion and being suddenly "off their legs" are signs of illness, not diagnoses.
- Heart attacks often show as breathlessness, nausea or collapse rather than chest pain.

🤰 PREGNANCY CHANGES THE NUMBERS

- Normal pulse rises by 10–20 beats; blood pressure dips in mid-pregnancy; breathing is slightly faster.
- **Warning signs:** pulse over 100–110, breathing over 20, blood pressure **140/90 or more** (160/110 is severe), temperature 38 °C+ or under 36 °C, SpO₂ under 95%.
- Normal adult scores can look reassuring when a pregnant woman is seriously ill. Say she is pregnant, every time.

Babies and children under 5: watch behaviour first

In a young child, **how they look and behave outperforms every measurement**. UK doctors use a three-band "traffic light" from NICE. **The single most serious feature present sets the band**. One red feature makes a child high risk, however well everything else looks.

	● Reassuring	● Needs seeing today	● High risk: urgent
Colour	Normal skin, lips, tongue	Pale, as reported by a parent	Pale, mottled, ashen or blue
Behaviour (the most important row)	Responds normally, smiles, wakes quickly, strong cry or not crying	Not responding normally, no smile, wakes only with effort, less active	No response to you, won't wake or stay awake, weak, high-pitched or continuous cry, or an experienced person thinks they look ill
Breathing	Normal	Nostrils flaring; fast for age; SpO ₂ 95% or less; crackles	Grunting; over 60 a minute; chest sucking in between or under the ribs
Fluids	Moist mouth, feeding normally	Dry mouth, poor feeding, fewer wet nappies, refill 3 seconds or more	Skin stays pinched up
Other	None of these	Fever 5+ days; shivering fits; swollen joint; not using a limb; 3–6 months with 39 °C+	Under 3 months with 38 °C+; a rash that doesn't fade under a glass; bulging soft spot; stiff neck; a long or one-sided seizure

FIVE THINGS PARENTS SHOULD KNOW

- **A baby under 1 month with 38 °C or more** is an emergency, even if they look well. They need hospital and antibiotics within the hour.
- How high or how long a fever runs does **not** tell you how serious it is. A fever lasting 5 days or more needs assessment.
- Babies with meningitis often have **no stiff neck, no bulging soft spot and no rash**.
- An unexplained fast pulse alone means "needs seeing".
- **Count wet nappies:** 6 or more a day is normal after the first week. Eight to twelve hours without one is significant.

Children and young people, 5 to 17: the full chart

Sign	Age	Normal	Alert: reassess	Emergency: 999
Pulse (bpm)	5–6	80–120	70–79 or 121–140	Under 70 or over 140, or irregular / absent
	7–9	75–118	65–74 or 119–140	Under 65 or over 140
	10–11	75–118	60–74 or 119–140	Under 60 or over 140
	12–15	60–100	50–59 or 101–120	Under 50 or over 120
	16–17	60–100	50–59 or 101–120	Under 50 or over 130

Sign	Age	Normal	Alert: reassess	Emergency: 999
Breathing (/min)	5–6	20–28	16–19 or 29–35	Under 16 or over 35, gasping, or not breathing
	7–9	18–25	15–17 or 26–32	Under 15 or over 32
	10–11	18–25	14–17 or 26–30	Under 14 or over 30
	12–17	12–20	9–11 or 21–25	Under 9 or over 25
SpO₂	All	95–100%	90–94%	Under 90%, or blue lips at any reading
Blood pressure	5–6	about 95–110 / 56–72	Systolic 80–94 or over 115	Systolic under 80 with symptoms, or shock
	7–9	about 100–115 / 58–76	Systolic 85–99 or over 120	Systolic under 85 with symptoms, or shock
	10–15	about 105–130 / 61–83	Systolic 90–104 or over 140	Systolic under 90 with symptoms, or shock
	16–17	under 120 / 80	120–139 / 80–89, or systolic 90–99	Systolic under 90 with symptoms, or 180/120+
Temperature	All	36.1–37.9 °C	38.0–39.4 °C	40.0 °C or more, or under 35.0 °C
Blood sugar (diabetics)	All	4.0–7.0 mmol/L	3.0–3.9: fast sugar, re-check at 15 min	Under 3.0 with drowsiness or seizure, or over 15 with vomiting or drowsiness
Alertness	All	Alert and orientated	Responds to voice only	Responds to pain only, or unresponsive

Children compensate well and then fail suddenly, and the numbers move last. Watch the **work of breathing**: flaring nostrils, a tugging throat, grunting and the chest sucking in appear before the numbers change.

The other vital signs

CIRCULATION AND SKIN

- **Capillary refill:** press a fingertip (or the breastbone in a child) for 5 seconds. Colour should return within **2 seconds**; 3 or more is a warning.
- **Skin:** pale, grey, mottled, blue or cold and clammy all mean poor circulation.
- **Cold hands and feet with a hot body** in a child is a sepsis warning.

URINE IS A VITAL SIGN

- **Adults:** pale urine every 3–4 hours is good. None for 12 hours is a warning.
- **Children:** passing urine at least every 6–8 hours.
- **Babies:** 6 or more wet nappies a day after the first week.
- **Dark brown urine** after an injury, crush or heat illness means muscle breakdown: urgent.

ALERTNESS: AVPU

- **A**lert: eyes open, talking normally, knows where they are.
- **V**oice: responds only when you speak to them.
- **P**ain: responds only to a firm squeeze of the shoulder or ear lobe.
- **U**nresponsive.
- Anything less than Alert, or **new confusion**, is a warning at any age.

PAIN

- Ask for a score from 0 (none) to 10 (the worst imaginable), and write it down with the time.
- Young children: faces scales, or watch crying, guarding, and whether they will play or eat.
- Pain that is getting worse despite pain relief, or out of proportion to the injury, needs a fresh look.

When help is delayed

- Take a full set of observations every 15 minutes while someone is unstable, then every 1–4 hours. Write them on the chart in Quick reference, and work out the NEWS2 score for adults each time.
- Trust the trend over three sets more than any one set. And trust a parent or carer who says "this illness is different". That judgement outperforms several measured signs.
- Take a baseline on every family member **now**, while they're well, and keep it with this guide. "Their normal" is the most useful number you can have.
- Any red feature in a child, a NEWS2 of 7 or more, or a 3 in any single reading that doesn't correct, means moving them to help (see When help is delayed).

Sources: medsys.uk/emergency/vital-signs; NICE NG143 (fever in under-5s, traffic-light system); Royal College of Physicians NEWS2 (2017); Advanced Paediatric Life Support (APLS) normal values; Resuscitation Council UK; RCOG and MBRRACE-UK on maternal observations.

04



Measuring Properly: Oximeters, Thermometers, Blood Pressure & Sugar

Home devices are genuinely useful, but each fails in predictable ways, and usually in the direction that makes things look better than they are. A reading that disagrees with how the person looks is more likely to be wrong than your impression is. These are the techniques, and the traps.

The observations no device does for you

BREATHING RATE

- Count the rise of the chest for a **full minute** (30 seconds × 2 is acceptable in adults). In a child, always a full minute.
- Do it while appearing to take the pulse, because people change their breathing when they know you're counting.
- Also note the **work** of breathing: can they speak in full sentences? Are the neck muscles working? Is the chest sucking in? Are they grunting?

PULSE & CIRCULATION

- Wrist (radial) or neck (carotid). Count 30 seconds × 2. In babies, use the inside of the upper arm.
- Note the **strength** as well as the rate: a fast, thready pulse says more than the number.
- **Capillary refill**: press a fingertip, or the breastbone in a child, for 5 seconds. Colour should return within **2 seconds**. Longer means poor circulation, unless they're simply cold.

Pulse oximeters: useful, and over-trusted

An oximeter tells you what percentage of the haemoglobin present is carrying oxygen. It tells you nothing about *how much* blood there is, whether oxygen is reaching the tissues, or whether carbon dioxide is being cleared.

WHY 94% AND 90% ARE NOT FOUR POINTS APART

The oxygen curve is flat at the top and steep at the bottom. A fall from 98 to 94 uses up reserve. A fall from 92 to 88 means **running out**. That's why thresholds cluster at 90–92%, and why a slow drift downward should be acted on early. One reading of 97% means little; the trend across several readings tells you much more.

GETTING A READING YOU CAN TRUST

- Warm, still hand resting on a surface. Wait 30 seconds before reading.
- Remove nail varnish or false nails, or turn the probe sideways.
- **Check the waveform or signal bar**, and check that the pulse rate shown matches the pulse you can feel. If it doesn't, the reading is wrong.
- Write down whether they were breathing room air or oxygen.
- Children: use a child-sized probe. Try a toe in infants, ideally while they're asleep.

The four ways it lies	What happens	What to do
Carbon monoxide	Reads falsely high , even 99%, in someone dying of CO poisoning	Generator, faulty boiler, house fire, or several people with headaches: ignore the oximeter, get everyone into fresh air, 999
Darker skin	Reads higher than the truth, so real low oxygen is missed	Weigh how the person looks more heavily, and treat a borderline reading as lower than it says
Poor circulation	Cold hands, shock or shivering: low, or no reading at all	Warm the hand, try another finger or the earlobe. No reading in a sick person is itself a warning sign.
Opioids and sedation	Can stay normal while breathing slows to a dangerous rate	Count the breathing rate. No oximeter replaces it.

Targets: most adults and children 94–98%. Some people with severe COPD are given a target of 88–92% by their specialist and carry an alert card. That is a target for oxygen therapy, not a reason to accept a falling reading. Under 92% that doesn't correct, or new blue lips at any reading, is an emergency. Sitting a breathless person upright almost always helps. Never lay them flat. Normal readings are also common early in anaphylaxis, sepsis and heavy bleeding, so never let a good number delay treatment.

Thermometers

EVERYDAY USE

- **Under 5s:** digital thermometer in the armpit. An infrared ear thermometer is fine from 4 weeks old.
- **Older children and adults:** digital, under the tongue.
- Fever is **38 °C or more**. A temperature under 36 °C in someone unwell is just as concerning.
- Paracetamol or ibuprofen given an hour earlier lowers the reading, and makes someone with sepsis look better than they are. Note what was given and when.

IN HEAT STROKE AND SEVERE COLD, ONLY A RECTAL READING IS ACCURATE

Ear, forehead, mouth and armpit thermometers all read **low** at the extremes. In one recorded case an ear thermometer read 36.7 °C in a collapsed runner whose core temperature was 41.1 °C. A normal reading in a confused, overheated person rules nothing out. **Treat the confusion, not the number** (see Heat illness).

Blood pressure and blood sugar

BLOOD PRESSURE: THE SET-UP DECIDES THE READING

- Seated, back supported, feet flat, legs uncrossed, silent for a minute.
- Arm supported at heart height. An arm hanging down adds about 6–9 mmHg.
- Cuff on bare skin, and the **right size**. A cuff that's too small reads 10–20 mmHg too high; if in doubt, go up a size. Children need child cuffs.
- Take 2–3 readings a minute apart and average the last two.
- In an emergency, the **top number** matters most, but it falls *last*, especially in children and fit young adults. Never delay treatment to get a reading.

BLOOD GLUCOSE (FINGER-PRICK METER)

- Check anyone who is **drowsy, confused, fitting or behaving oddly**. Low sugar mimics stroke, seizures, drunkenness and psychosis, and is reversible in minutes.
- Below **4.0 mmol/L** is low (see Diabetic emergencies).
- Wash and dry the finger first. Sugar on the skin gives a false high.
- Any child with thirst, weight loss, passing lots of urine and tummy pain needs a finger-prick test **the same day**. It catches undiagnosed diabetes before it becomes life-threatening.

SMARTWATCH AND HOME ECG DEVICES

Single-lead ECGs (watches, thumb pads, combined blood-pressure monitors) are good at one job: spotting **atrial fibrillation**, an irregular rhythm that raises stroke risk. Around a fifth to a quarter of recordings give no answer at all. They **cannot** rule out a heart attack. A reassuring trace during chest pain is one of the most dangerous pieces of information a consumer device can produce. Chest pain needs 999, whatever the watch says.

When help is delayed

- A pulse oximeter, a digital thermometer, a blood-pressure monitor and a glucose meter together cost less than £80, and they turn guesswork into a record you can act on. See The medical kit.
- Take a baseline on every family member **now**, while they're well, and write it down. "Their normal" is the most useful number you can have in an emergency.
- Keep spare batteries for every device, and test them every few months.

Sources: medsys.uk/emergency (pulse oximetry, measuring, single-lead ECG, heat illness); MHRA safety communication on pulse oximeters and skin pigmentation; BASEL Wearable Study; NICE NG136.

Life Threats: The First Minutes

Cardiac arrest, choking, bleeding and serious injuries, anaphylaxis, breathing problems and chest pain, drowning, collapse, head injury, burns, electricity and crush.

05 Cardiac Arrest: CPR & Defibrillators

06 Choking

07 Severe Bleeding

08 Serious Injuries: Chest, Abdomen, Spine, Amputation & Blast

09 Anaphylaxis: Severe Allergic Reaction

10 Breathing Problems & Chest Pain

11 Drowning

12 The Collapsed or Confused Person: Seizures, Stroke, Diabetes, Overdose

13 Fainting

14 Head Injury

15 Burns & Scalds

16 Electrical Injury & Lightning

17 Crush Injury: Trapped Under Something Heavy

05 ❤️ Cardiac Arrest: CPR & Defibrillators

Chest compressions and a defibrillator do completely different jobs, and neither replaces the other. Compressions **move blood**: they keep the brain and heart alive, but they don't restart the heart. A defibrillator (AED) **stops a chaotic rhythm** so the heart can restart itself, but it moves no blood. So the sequence is compressions continuously, with a shock added the moment one is available and advised. Guidance changed at the end of 2025, and the changes are marked below.

Adults: step by step

- 1 **Unresponsive? Call 999 straight away**, on speaker, before checking breathing. *(Changed in 2025.)* The call handler will coach you. Send someone for the nearest AED. If you're alone, call and start compressions; don't leave to find an AED.
- 2 **Not breathing normally?** Occasional gasps are **not** breathing. They are common in the first minutes of an arrest and are routinely mistaken for life. If in doubt, start.
- 3 **Compressions:** heel of one hand in the centre of the chest, other hand on top, arms straight. Push down **5–6 cm** at **100–120 a minute** (the beat of "Stayin' Alive"), letting the chest come fully back up each time.
- 4 **30 compressions, then 2 rescue breaths:** head tilted, chin lifted, nose pinched, about 1 second each, watching the chest rise. If you can't or won't give breaths, **compression-only CPR is far better than nothing**.
- 5 **AED:** switch it on and follow the voice. Bare, dry chest. Keep pressing until it tells you to stand clear.
- 6 **Keep going** until they wake and breathe normally, help takes over, or you physically can't continue. Swap compressors every 2 minutes if you can, because quality falls fast with tiredness.

⚠️ "NO SHOCK ADVISED" IS NOT GOOD NEWS

An AED only shocks a **shockable** rhythm (a heart quivering in VF, or racing uselessly in VT). A flat, stopped heart is *not* shockable. So "no shock advised" means either the heart is beating, or it's in a rhythm a shock can't fix. The machine can't tell you which. **If they're unresponsive and not breathing normally, carry on compressions.** Stopping because the AED didn't shock is how people die next to a working defibrillator. Good compressions also keep a heart shockable for longer.

Children and babies

	What to do
Why it's different	Children usually arrest because they stopped breathing, not because of a heart rhythm problem, so breaths matter more .
If you've been trained in child CPR	5 rescue breaths first , then 15 compressions to 2 breaths. <i>(Now taught on first aid courses too, from 2025.)</i>
If you only know adult CPR	Use 30:2 on a child. It is far better than hesitating. Fear of causing harm is why some children get nothing.
Depth	One third of the chest depth: about 5 cm in a child, 4 cm in a baby
Hands	Child: one or two hands, whatever reaches the depth. Baby: two thumbs on the breastbone with your hands encircling the chest. <i>(Changed in 2025 from two fingers.)</i>
Rate, and surface	100–120 a minute, on a firm surface, never a bed
AED	Use at any age, including babies (2025). Use child pads or child mode if it has them; if not, use adult pads anyway. Child pad positions: one on the front just left of centre, one in the middle of the back. Pads must not touch.

Arrest, heart attack, stroke, faint or seizure?

	Responsive?	Breathing normally?	What you do
Cardiac arrest	No	No, or gasping	CPR and an AED, now
Heart attack	Yes, usually awake and frightened	Yes, may be breathless	999, sit them down, keep still and calm. Aspirin 300 mg chewed if not allergic, not bleeding and not on a blood thinner
Stroke	Usually yes, may be drowsy	Yes	999, note the time, nothing by mouth, no aspirin (see Collapse)
Faint	Briefly no, then fully yes	Yes	Lie flat, legs up (see Fainting)

	Responsive?	Breathing normally?	What you do
Seizure	No, then confused for a while	Irregular during, then normal	Protect, time it (see Collapse)
Low blood sugar	Variable: confused, aggressive	Yes	Sugar if able to swallow

A **heart attack** is a plumbing problem: an artery blocks and heart muscle starts to die, but the person is usually awake and their heart still beating. A **cardiac arrest** is an electrical problem: the heart stops pumping, and the person is unconscious and not breathing normally within seconds. A heart attack *can* cause an arrest, which is why chest pain needs an ambulance, not a lift.

WHAT TO TELL THE CREW

- What happened just before, and whether anyone saw it.
- **How long before CPR started.** It's the most useful number, and only you have it.
- Their medicines (bring the boxes), and any drugs taken. Nobody is in trouble.
- Dialysis, and when they last went; recent surgery, a long flight, or a swollen leg.

IF THEY START BREATHING AGAIN

- Recovery position. Stay with them and check breathing every minute. They can arrest again.
- Keep the AED pads on and the machine switched on.
- Keep them warm, but don't let them overheat. Fever after an arrest harms the brain.
- Expect confusion, and possibly a seizure.

When no ambulance is coming: how long to keep going

- Keep going while there is **any** prospect of help arriving, or of getting them to an AED. Take turns.
- **Keep going much longer** for drowning, hypothermia ("nobody is dead until they are warm and dead"), lightning, electrocution, and children. Recoveries after long resuscitation are well recorded in all of these.
- In an adult who collapsed suddenly, if 20–30 minutes of good CPR has produced no sign of life, and an AED (if you had one) never advised a shock, the chance of survival is very small. Stopping then is a reasonable decision that nobody should blame you for. You gave them the only chance they had.
- Afterwards, look after yourself and the others who helped. Doing CPR, whatever the outcome, commonly leaves people shaken for weeks. Talk about it.

Sources: Resuscitation Council UK Guidelines 2025; medsys.uk/emergency/resuscitation; NHS (heart attack, aspirin advice).

06



Choking

First decide in two seconds whether it is **mild or severe**, because the answer changes everything. The commonest adult reflex, slapping the back of someone who is coughing well, can turn a partial blockage into a complete one.

Mild: an effective cough

They can speak, cry, breathe and cough forcefully.

Encourage coughing and do nothing else. A cough generates more pressure than anything you can do to them. Stay with them.

SEVERE: AN INEFFECTIVE COUGH

Silent, or a weak wheezy cough. Can't speak or breathe, clutching the throat, going blue or quiet. **Act immediately.** Going quiet is deterioration, not improvement.

Adults and children over 1 year

- 1 Up to five back blows.** Lean them well forwards so anything dislodged falls out, not back. Strike firmly between the shoulder blades with the heel of your hand. Check after each one.
- 2 Up to five abdominal thrusts.** Stand behind them with a fist between the navel and the bottom of the breastbone, the other hand over it, and pull sharply **inwards and upwards**. For a small child, kneel behind them and use less force.
- 3 Call 999 and keep alternating** five and five until it clears, or they become unresponsive.
- 4 If they become unresponsive, start CPR** (see CPR). Chest compressions create more airway pressure than thrusts. Look in the mouth before each set of breaths and remove anything you can see. **Never do a blind finger sweep.**

Babies under 1 year: never abdominal thrusts

THE SEQUENCE

- 1. Five back blows:** baby face down along your forearm, head lower than the chest, supporting the jaw. Use the heel of your hand between the shoulder blades.
- 2. Five chest thrusts:** turn the baby face up. Use **two thumbs** on the lower breastbone with your hands encircling the chest, as for baby CPR, but sharper and slower. *(Changed in 2025.)*
3. Alternate, call 999, and start baby CPR if they become unresponsive.

Abdominal thrusts can rupture a baby's liver, which sits low and unprotected.

WHEN THE TECHNIQUE CHANGES

- **Late pregnancy, or too large to reach round:** chest thrusts instead. Hands on the lower half of the breastbone, pushing sharply backwards.
- **Wheelchair user:** same sequence. Move the armrests, not the person.
- **Alone and choking:** call 999 anyway, because an open line brings help even if you can't speak. Then thrust your own abdomen against the back of a chair or the edge of a worktop.

AFTER IT WORKS

Anyone who has had abdominal or chest thrusts **must be checked by a clinician**, even if they feel fine. Thrusts can break ribs or injure the liver, spleen or stomach, and these injuries may not show for hours. Something may also still be in the airway. "It came out and she's fine" is not the end of it.

Anti-choking suction devices (LifeVac, Dechoker). These are registered medical devices, but **only as a second-line option** after back blows and thrusts have failed. They are only for adults and children over 1, and the operator must be at least 18. The Resuscitation Council UK does not endorse them, because the evidence is weak. The MHRA warns that more than 10,000 **counterfeit** devices were sold online in the UK. Without a working one-way valve they can push the obstruction deeper, so throw away any cheap marketplace copy. Learning back blows and thrusts matters far more, because they are free and always to hand.

When help is delayed

- Keep alternating back blows and thrusts, and keep checking the mouth. Many obstructions clear after several cycles as the person tires and the muscles relax.
- After a severe choking episode, watch for a **persistent cough, wheeze, fever or breathlessness** over the next days. A fragment may have gone into the lung, and needs treatment as soon as care can be reached.
- Watch for pain in the abdomen or chest, or faintness, in the hours after thrusts. Internal injury is uncommon but serious.
- **Prevention** in a long crisis: cut grapes, cherry tomatoes and sausages lengthways for under-5s; keep small batteries, magnets and coins out of reach; and supervise eating in anyone with swallowing problems.

Sources: Resuscitation Council UK Guidelines 2025; medsys.uk/emergency/airway; MHRA safety notice on counterfeit anti-choking devices.

07 Severe Bleeding

Someone can bleed to death from a limb in **three to five minutes**. That's shorter than an ambulance response almost anywhere, which makes this one of the few emergencies where what a bystander does in the first two minutes decides the outcome. Tourniquets used to be taught as a last resort that would cost the limb. That was wrong. Current guidance treats them as a normal step when pressure isn't enough.

| The escalation, in order

- 1 Hard, direct, uninterrupted pressure.** Straight onto the wound with whatever is available, pressing hard enough that it is uncomfortable for you to keep up. Most bleeding stops here. Use gloves if you have them, but don't go looking for them first.
- 2 Don't lift it to look.** Every check disturbs the clot and restarts the bleeding. If blood soaks through, add more dressing on top and press harder. Never remove what's already there.
- 3 Pack a deep wound.** For deep wounds in the groin, armpit, neck or a limb where pressure alone isn't working, push gauze firmly *into* the wound to fill it. Use haemostatic gauze if you have it, plain if not. Then press on top for at least **3 minutes** (haemostatic) or **10 minutes** (plain). Don't pack the chest or abdomen.
- 4 Tourniquet, for a limb that is still bleeding.** Place it **high and tight** on the limb, above the wound, and tighten until the bleeding stops. This hurts, and that's the point. A loose tourniquet is worse than none, because it traps blood in the limb without stopping the artery. **Write the time** on it, or on the person's forehead.
- 5 Never loosen it to check.** Once on, it stays on until a clinician removes it.

🚫 WHERE A TOURNIQUET CAN'T HELP

- **Groin, armpit, neck, shoulder** ("junctional"): pack hard and lean your whole body weight onto it.
- **Neck**: direct pressure only. Never put anything around the neck, or press on both sides.
- **Chest or abdomen**: you can't reach the source. Press over the wound, lie them flat, keep them warm. They need surgery.

🔧 IMPROVISED TOURNIQUETS ARE POOR

- A belt doesn't tighten enough, and a narrow cord or wire cuts tissue.
- If you must improvise, use a band at least **4 cm wide** (a triangular bandage or folded cloth), tied around the limb with a **rigid rod** twisted in the knot (a stick, pen or spoon handle), then tie the rod down.
- A proper windlass tourniquet costs about £15, and is one of the few pieces of kit that genuinely changes outcomes. Keep one in the car and one in the home kit, and practise with it.

Shock: recognise blood loss before the blood pressure falls

Earlier signs	Later signs
Rising pulse. Pale, cool, clammy skin. Anxious, restless, "something is wrong". Thirst. Capillary refill over 2 seconds.	Confusion and drowsiness. Weak, thready pulse. Falling blood pressure. Fast, shallow breathing. Loss of consciousness.

- **Lie them flat and keep them warm.** Cold blood clots badly, and heat loss in a bleeding person contributes directly to death. A foil blanket here is treatment, not comfort.
- Children and fit young adults compensate, then crash. A small child can't afford to lose an amount an adult would survive.
- A pulse oximeter can read 99% in someone who has lost half their blood. Don't let a good number reassure you.

Nosebleeds: sit up, **lean forward**, pinch the soft part of the nose (not the bony bridge) and hold for a full **10 minutes** without letting go to check. Leaning back sends blood into the stomach and causes vomiting. Get help if it continues past 20 minutes of proper pressure, follows a head injury, or the person takes a blood thinner.

🕒 When help is delayed for hours

- **A tourniquet stays on.** Up to about 2 hours carries little risk to the limb, and limbs often survive considerably longer. Loosening it to "let blood in" restarts the bleeding and can kill. Converting a tourniquet to a pressure dressing is a skill for trained hands only, and only once bleeding is controlled by packing. If no one trained can be reached, the tourniquet stays, and the priority is getting them to surgery.
- Once bleeding is controlled and they're fully alert and able to swallow, if surgery is many hours away, **small sips of water or oral rehydration solution** are reasonable. Give nothing by mouth if they're drowsy, vomiting, or likely to reach an operating theatre soon.
- Keep checking under dressings for **re-bleeding**, especially as they warm up and their blood pressure rises. Re-check the tourniquet is still tight.
- Record pulse, breathing and alertness every 15 minutes. A rising pulse and growing confusion mean ongoing bleeding, so move them to surgical care by any safe means.

Sources: medsys.uk/emergency/bleeding; Resuscitation Council UK and ERC first aid guidance 2025; Faculty of Pre-Hospital Care.

Falls, crashes, collapsing buildings, blasts and violence cause injuries that bleeding control alone doesn't cover. The order of priorities never changes: **stop catastrophic bleeding, then airway, then breathing, then circulation** (<C>ABCDE). Keep them still, keep them warm, and get them to surgery. These injuries are where hospital care matters most.

Chest injuries

OPEN ("SUCKING") CHEST WOUND

- A wound to the chest or upper back that bubbles or sucks air.
- **Leave it open to the air**, or cover it only with a **vented chest seal** if you have one. Current first aid guidance advises against taping an airtight dressing over it, because trapped air can build up and squash the lung and heart.
- Control bleeding with direct pressure *around* the wound.
- Sit them up, leaning towards the injured side if that's more comfortable. 999.
- If anything was put over the wound and breathing gets worse, **lift it off**.

SIGNS A CHEST INJURY IS GETTING WORSE

- Increasing breathlessness, fast breathing, falling SpO₂
- One side of the chest not moving, or moving the wrong way (a "flail" segment of broken ribs)
- Coughing blood; swelling of the neck veins; crackling under the skin
- Becoming pale, sweaty, faint: possible bleeding inside the chest

Broken ribs: pain relief, sit up, a pillow to hug when coughing, 10 deep breaths every hour. No strapping.

Abdomen and pelvis

OPEN ABDOMINAL WOUND

- **Don't push anything back in.**
- Cover with a clean, **moist** dressing or cling film to stop it drying out.
- Lie them on their back with the knees bent up, supported.
- Nothing by mouth. Keep warm. Surgery needed.

INTERNAL BLEEDING

- After a blow, fall, crash or blast: tummy pain or swelling, bruising across the tummy, pain in the left shoulder tip (spleen), and signs of shock with little visible blood.
- Lie flat, legs raised, keep warm, nothing by mouth.
- **Pelvis** (high-energy fall or crash, hip or groin pain, can't stand): don't roll them; a sheet tied firmly around the hips at the level of the bony points at the top of the thighs can reduce bleeding (see Broken bones).

Impaled objects, spine and amputation

Injury	What to do
Impaled object (knife, metal, wood)	Leave it in: it may be plugging the bleeding. Pad around it with rolled dressings so it can't move, and bandage over the padding. Press around it, not on it. Cut it short only if it must be moved and you can do so without moving the part inside.
Possible spinal injury (fall from a height, diving, a crash, a heavy blow to the head or back)	Neck or back pain, tingling, numbness or weakness in the limbs. Keep them still , and hold the head in line with the body with your hands if they're lying down. Don't move them unless they are in danger or you must clear the airway. Then turn them as one, with several people (a "log roll"). Neck collars are no longer advised for first aiders. A conscious person who is walking and talking may move themselves gently into a comfortable position.
Amputation (finger, hand, limb)	Stop the bleeding first: pressure, or a tourniquet for a limb (see Bleeding). The part: rinse off heavy dirt, wrap in a damp clean cloth, put it in a sealed plastic bag, and put the bag in a container of ice and water. Never let ice touch the part directly. Label it with the name and time, and send it with the casualty.
Stab and gunshot wounds	Bleeding control first (pressure, packing, tourniquet). Look for an exit wound too, and check the back, armpits and groin. Chest or abdominal wounds as above. Never remove a knife.

★ BLAST INJURIES (EXPLOSIONS, MISSILE AND DRONE STRIKES)

- Expect **several injuries at once:** flying glass and fragments, burns, crush, fractures, and injuries you can't see.
- **"Blast lung":** breathlessness, cough, coughing blood or chest pain, which can develop **hours later**. Anyone near a blast needs watching for 24 hours, even if they look fine.
- **Burst eardrums** (deafness, ringing, ear pain) are common. They're a sign of a big blast, so look for other injuries.
- Small entry wounds from fragments can hide deep injuries. Treat any chest or abdominal wound as serious.
- Dust and smoke: eye irrigation, and watch breathing. Make sure the rescuer is safe first: secondary devices, collapse and fire are real risks.

🕒 When help is delayed

- Penetrating chest or abdominal wounds, internal bleeding, pelvic fractures and amputations need surgery. Moving the casualty to a hospital, field hospital or military medical team is the priority, lying down and kept warm.
- Pain relief: paracetamol is safe. **Avoid ibuprofen and aspirin** while there may be bleeding inside. Stronger painkillers only if prescribed, and watch their breathing.
- Small sips of water only once bleeding is controlled, the person is fully alert, and surgery is many hours away.
- Re-check observations every 15 minutes. A rising pulse and breathing rate, growing paleness and drowsiness mean ongoing bleeding.
- Wounds from blasts and debris are heavily contaminated. Clean thoroughly once bleeding is controlled, don't close them, and watch for infection (see Wounds and Medicines lookup).

Sources: ERC and Resuscitation Council UK first aid guidelines (2020, 2025); Faculty of Pre-Hospital Care consensus statements; NHS; UK Defence Medical Services and NATO guidance on blast injury; JRCALC.



Anaphylaxis kills in two ways, and people prepare for the wrong one. The airway closing is the version everyone pictures. **Circulatory collapse** more often kills quickly, and it's the one where a well-meant action, standing someone up to walk them to help, can be fatal within minutes. Four mistakes cost lives: **standing them up, waiting to see if it settles, giving an antihistamine instead of adrenaline, and trusting a normal oxygen reading.**

Recognise it: sudden, fast, and Airway, Breathing or Circulation

System	Look for
Airway	Swollen throat or tongue, difficulty swallowing, a hoarse or changed voice (early, and often missed), high-pitched noisy breathing
Breathing	Wheeze, breathlessness, faster breathing, tiring, confusion from low oxygen, blue lips (late)
Circulation	Pale and clammy, fast weak pulse, dizzy on sitting or standing, collapse, drowsiness
Not enough on their own	Hives, itching, flushing, swollen lips or eyes. Many fatal reactions have no rash at all . Vomiting and tummy pain can be part of it after an insect sting.

A **sense of impending doom** is a clinical sign, not anxiety. People often say something is badly wrong before anything measurable has changed.

What to do

- 1 Adrenaline now**, into the **outer middle of the thigh**, through clothing if necessary, as soon as you recognise it. If you're hesitating, that hesitation is the diagnosis.
- 2 Lie them flat and raise their legs. Do not let them stand or walk**, not even to a car or an ambulance. If breathing is the main problem and lying flat makes it worse, let them sit up, but lie them down again the moment they feel faint. Pregnant: lie on the left side. Unresponsive and breathing: recovery position.
- 3 Call 999 and say "anaphylaxis"**, even if they're improving.
- 4 Repeat the adrenaline after 5 minutes** if they're not clearly better. Use the second pen. Labels often say 5–15 minutes; resuscitation guidance says 5.
- 5 Not breathing normally?** Start CPR (see CPR).

AUTO-INJECTORS (ADRENALINE PENS)

Strength	Roughly for
150 micrograms	Children about 7.5–25 kg (roughly under 6)
300 micrograms	Over about 25 kg (roughly 6+), most adults
500 micrograms	Larger teenagers and adults, if prescribed

- **Always carry two.** A second dose is needed in a meaningful minority of reactions.
- **An expired pen is weaker, not useless.** If it's all you have, use it.

FROM AN AMPOULE (CLINICIANS AND TRAINED PEOPLE ONLY)

Adrenaline **1 mg/mL (1:1000)**, intramuscular, repeated after 5 minutes if not improving. These are the Resuscitation Council UK doses:

Age	Dose	Volume
Adult, child over 12	500 micrograms	0.5 mL
6–12 years	300 micrograms	0.3 mL
6 months–6 years	150 micrograms	0.15 mL
Under 6 months	100–150 micrograms	0.1–0.15 mL

Never intravenous outside critical care: a different concentration, and dosing errors kill. If you're reading this to work out what to do, the answer is the auto-injector.

What doesn't work, and why people reach for it

Intervention	Why it isn't the answer
Antihistamines	They treat itching and hives over tens of minutes. They do nothing for a swelling airway, bronchospasm or failing circulation. Third-line, and must never delay adrenaline.
Steroids	No longer recommended for the emergency (since 2021). Far too slow, and they don't prevent a second reaction.
An inhaler alone	Helps wheeze, does nothing for airway swelling or circulation. Useful <i>after</i> adrenaline, useless <i>instead of</i> it.
An airway tube (oral or nasal)	The swelling is at and below the voice box, below where the tube ends. It can cause vomiting or spasm. Adrenaline is what shrinks the swelling.
"Let's see if it settles"	Anaphylaxis can go from hives to collapse in under 10 minutes. The reactions that kill often looked mild at 5 minutes.

When help is delayed

- **Keep them lying down for at least an hour** after recovery, and then sit them up slowly. Watch them closely for **12–24 hours**, because a second wave (a **biphasic reaction**) can come hours after full recovery, without any new exposure.
- Two doses without improvement means they need hospital treatment (an adrenaline drip). Move them by any safe means, **lying flat**, with a third pen if you have one.
- Once fully recovered, an antihistamine (e.g. cetirizine or chlorphenamine) for itch and hives is reasonable, as is their inhaler for any wheeze.
- Anyone with known severe allergies should hold **at least two in-date pens**, and ideally a spare set for a long crisis. Ask your GP now. Check expiry dates when the clocks change.
- In a crisis, food labels and supply chains change. Read ingredients every time, and keep a safe-food stash for anyone with a severe food allergy.

Sources: Resuscitation Council UK, *Emergency treatment of anaphylaxis* (2021, updated 2024–25); medsys.uk/emergency/anaphylaxis; MHRA advice on adrenaline auto-injectors.

10 Breathing Problems & Chest Pain

Struggling to breathe and chest pain are two of the most frightening symptoms, and two where the right first steps make a real difference. **Sit them up** (never lie a breathless person flat), **count their breathing**, check their oxygen if you have an oximeter, and work out which of a few common causes it is.

Asthma attack

SIGNS OF AN ATTACK

- Wheeze, cough and tight chest getting worse; the reliever isn't helping or lasting
- Too breathless to finish a sentence, eat or sleep
- Breathing fast. In children: chest sucking in, nostrils flaring, too breathless to feed or talk
- **Life-threatening**: blue lips, exhaustion, a "quiet" chest with little wheeze, confusion or drowsiness, SpO₂ under 92%: **999**

What to do (adults and children)

1. **Sit up straight**, stay calm, loosen tight clothing.
2. **Reliever inhaler (usually blue) through a spacer**: 1 puff every 30–60 seconds, up to **10 puffs**. Under about 3, use a spacer with a face mask.
3. If they feel worse at any point, or aren't better after 10 puffs: **999**.
4. If help hasn't come within 15 minutes, **repeat step 2**.
5. Even if the attack settles, they need a same-day review, usually with a short course of steroid tablets (see Medicines lookup).

No spacer? Make one from a clean, empty **500 ml plastic drinks bottle**: cut a hole in the bottom just big enough for the inhaler's mouthpiece, seal any gap, and breathe in and out through the bottle's neck for 5 breaths after each puff. It works almost as well as a proper spacer, and far better than puffing straight into the mouth.

Other breathing problems

Problem	Looks like	What to do
COPD flare	More breathless than usual, more or greener phlegm, wheeze	Sit up, use their reliever, breathe out slowly through pursed lips. Start their rescue pack if they have one. Their oxygen target is often 88–92%. Getting drowsy or confused is an emergency
Croup (children, 6 months–6 years)	Barking, seal-like cough, hoarse voice, noisy breathing in (stridor), worse at night	Keep them calm and upright on your lap; crying makes it worse. Paracetamol or ibuprofen for fever. Steam is no longer advised. A doctor may give one dose of steroid. 999 if noisy breathing <i>at rest</i> , struggling, pale or blue, or drowsy
Epiglottitis (rare)	Very unwell, drooling, can't swallow, sitting forward, muffled voice, high fever	999 . Keep them sitting up and calm. Don't look in the throat or lie them down
Bronchiolitis (babies under 1)	Starts like a cold, then cough, fast breathing, feeding less	Small, frequent feeds; saline nose drops; keep upright for feeds. Urgent help if: breathing over 60, grunting, pauses in breathing, taking less than half their usual feeds, no wet nappy in 12 hours, or blue
Blood clot on the lung (pulmonary embolism)	Sudden breathlessness, sharp chest pain worse on breathing in, fast pulse, coughing blood; often after surgery, a long journey, bed rest, a leg injury, or with a swollen calf	999 . Sit up, keep still. Needs hospital treatment
Collapsed lung (pneumothorax)	Sudden one-sided chest pain and breathlessness, often in tall, thin young people, or after a chest injury	999 . Sit up. Rapidly worsening breathing after an injury is an emergency (see Serious injuries)
Panic or over-breathing	Fast breathing, tingling fingers and lips, dizziness, fear; SpO ₂ normal or high	Slow breathing: in for 4, out for 6. No paper bag . Don't assume it's panic the first time (see The mind)

Chest pain

♥ COULD IT BE A HEART ATTACK?

- Pressure, tightness, heaviness or squeezing in the chest, often spreading to the arms, jaw, neck, back or stomach, lasting more than a few minutes
- Sweating, feeling sick, breathless, light-headed, a sense of dread
- Women, older people and diabetics often have **less typical** symptoms: breathlessness, nausea, indigestion-like pain or exhaustion

Do: 999 and say "chest pain". Sit them down and keep them still. **Chew aspirin 300 mg** if not allergic, not bleeding and not on a blood thinner. Use their GTN spray if prescribed. Find the nearest defibrillator, and start CPR if they collapse.

OTHER CAUSES OF CHEST PAIN

- **Angina:** heart pain on exertion that eases with rest and GTN within 5 minutes. If it doesn't, treat it as a heart attack.
- **Blood clot on the lung or collapsed lung:** above.
- **Muscle or rib pain:** tender to press on, worse with movement, the person otherwise well.
- **Indigestion or reflux:** burning behind the breastbone, after food, eased by antacids. *Never assume it's indigestion* in someone with heart risk factors.
- **Pain tearing through to the back,** with collapse: a torn aorta. 999.

⌚ When help is delayed

- **Asthma:** after an attack, reliever 2–4 puffs every 4 hours while needed, and steroid tablets if prescribed or in a rescue pack. Anyone with asthma should have **at least two in-date relievers and a spacer**. Ask your GP now.
- **Suspected heart attack:** rest completely, sitting up, for at least 24–48 hours. Aspirin 75 mg a day after the first dose if supplies allow. Have a defibrillator located and someone ready to do CPR. Moving them to hospital is the priority: treatment within hours saves heart muscle.
- Track the breathing rate and SpO₂ every hour or two. Rising numbers, falling oxygen, drowsiness, or being unable to speak in sentences mean they need help now.
- In smoke, dust or after a fire, protect the airway with a well-fitting FFP3 mask, and watch for delayed breathlessness over the next 24 hours.

Sources: Asthma + Lung UK (asthma attack advice and improvised bottle spacers); BTS/SIGN/NICE asthma guidance (2024); NICE CKS (croup, bronchiolitis, COPD, chest pain); NHS (heart attack, pulmonary embolism); Resuscitation Council UK.

11

Drowning

An ordinary cardiac arrest is usually a heart rhythm problem, so CPR leads with compressions. **Drowning is different: the heart stopped because the oxygen ran out.** So the priority flips. Oxygen first.

RESCUE SAFELY

- **Reach, throw, don't go.** Offer a pole, rope, branch or anything that floats, from the bank. Rescuers drowning is a real and common outcome.
- **Real drowning is silent.** It isn't the thrashing and shouting people expect. Someone drowning is usually upright, low in the water, quiet, and can't call out.
- In cold water, the first minute of **cold shock** causes gasping. Floating on your back until breathing settles saves lives ("Float to Live").

IF THEY'RE NOT BREATHING NORMALLY

1. Call 999 (coastguard at sea).
2. **Five rescue breaths first**, in adults as well as children.
3. Then 30 compressions to 2 breaths, as normal (see CPR).
4. **Don't try to drain water from the lungs.** There's very little there, and trying wastes the minutes that count. Vomiting is common, so be ready to turn the head.
5. Assume a **neck injury** only if the way it happened suggests one (diving, surfing, a fall).

TWO THINGS THAT SURPRISE PEOPLE

- **Cold-water drowning can turn out far better than it looks**, especially in children, because cold protects the brain. Keep resuscitating for much longer than usual.
- **Everyone rescued from drowning needs a medical check**, even if they seem fine. Lung injury can develop over the following hours. Watch for coughing, breathlessness, fast breathing, chest pain or drowsiness.

When help is delayed

- Warm them gently, keep them lying down, and treat them for hypothermia (see Cold).
- Watch closely for **24 hours**. Count their breathing rate every hour. Increasing breathlessness, a persistent cough, fever or drowsiness means lung damage or infection, so get them to care. Sit them up if they're breathless.
- In floods, water is contaminated with sewage and chemicals. Anyone who swallowed floodwater may develop diarrhoea and infection over the following days, and wounds need thorough cleaning (see Wounds).

Sources: Resuscitation Council UK Guidelines 2025; medsys.uk/emergency/drowning; RNLI "Float to Live".

12



The Collapsed or Confused Person: Seizures, Stroke, Diabetes, Overdose

You find someone unresponsive, drowsy or behaving strangely, and you don't yet know why. The four commonest reversible causes need different things. So start from what you see. **Responsive?** (AVPU). **Breathing normally?** If not, it's a cardiac arrest, so start CPR. Unresponsive but breathing: **recovery position**. Came round within a minute or two and fully recovered: probably a faint. And **check blood sugar if you can**, because low sugar mimics stroke, seizures, drunkenness and psychosis, and is reversible in two minutes.

1 · Seizures

Do:

- **Note the time** it started.
- Cushion the head, move hard objects away, and loosen anything tight at the neck.
- Afterwards, put them in the recovery position and stay until they're fully orientated, which commonly takes **10–30 minutes**.

DON'T:

- Restrain them, or move them unless they're in danger.
- **Put anything in the mouth.** Nobody swallows their tongue; you'll break teeth or fingers.

CALL 999 FOR A SEIZURE IF:

- It lasts **more than 5 minutes**, or a second one starts before they've recovered from the first (status epilepticus, a time-critical emergency).
- It's their **first ever** seizure, they're injured, it happened in water, or they're pregnant or diabetic.
- They don't wake up properly, or their breathing doesn't return to normal.
- A known epileptic having a typical seizure that stops by itself doesn't automatically need an ambulance. Ask about their care plan, and whether they carry **rescue medicine** (buccal midazolam, given into the cheek, by people trained to use it).

Febrile convulsions (children roughly 6 months to 5 years, with fever): frightening but usually harmless. Same care. Call 999 for a first one, one lasting over 5 minutes, or a child who doesn't recover quickly. Stripping and fanning a shivering child doesn't prevent another.

2 · Stroke: FAST, plus balance and eyes

RECOGNISE IT

- **F**ace drooping, **A**rm weakness, **S**peech difficulty, **T**ime to call 999.
- FAST misses about **one stroke in five**, those at the back of the brain. Those show as **sudden vertigo, loss of balance, double vision**, difficulty swallowing, vomiting or a violent sudden headache ("BE-FAST": **B**alance and **E**yes). Sudden vertigo plus being unable to walk unaided is a stroke until proven otherwise.
- **Age is no filter.** About a quarter of strokes happen under 65. Sudden onset is what matters.

DO

- **999 and say "stroke"**. Don't drive them yourself unless no ambulance can come.
- **Note the time they were last definitely normal.** "Woke up like this" means the clock started when they went to bed. Every treatment decision is measured from it.
- **Nothing by mouth:** no food, drink or tablets, because swallowing is often affected. And **no aspirin:** about one stroke in seven is a bleed, which aspirin worsens.
- Head and shoulders slightly raised, or the recovery position if drowsy or vomiting. Keep them warm.
- Gather their medicines, especially **blood thinners**.

3 · Diabetic emergencies

	Low sugar (hypoglycaemia)	High sugar (DKA)
Speed	Minutes, sudden	Hours to days, gradual

	Low sugar (hypoglycaemia)	High sugar (DKA)
Looks like	Sweaty, pale, shaky, irritable or aggressive, confused, slurred. Often mistaken for drunkenness	Thirst, passing lots of urine, weight loss, tummy pain, vomiting, deep sighing breaths, pear-drop smell, drowsy
Glucose	Below 4.0 mmol/L	Usually high, but can be near normal in people on SGLT2 tablets (the "-gliflozins")
Do	If fully alert: fast sugar, such as 4–5 glucose tablets, 150–200 ml of fruit juice or non-diet cola. Re-check in 15 minutes and repeat if still low, then a starchy snack	999. Needs fluids and insulin in hospital
Don't	Give anything by mouth if drowsy (999 instead). Give insulin	Give sugar. Assume they're drunk

Can't tell which, and can't measure? Treat as low sugar. Sugar given in DKA makes little difference over a few minutes; sugar withheld in a hypo can cause brain injury. If they're drowsy but can still swallow, glucose gel rubbed into the inside of the cheek is reasonable while you wait. If they carry a **glucagon** kit and someone is trained, it can be injected.

4 · Opioid overdose and naloxone

RECOGNISE IT

Pinpoint pupils, unresponsive, and slow or absent breathing. The breathing slows, then stops, and the heart follows. The same picture can come from some strokes and poisonings, so don't assume it's drugs.

DO

- **Breaths matter more than naloxone.** If they're not breathing normally, start CPR with rescue breaths.
- **Naloxone** (nasal spray or injection) reverses opioids, and **anyone may give it to save a life** in the UK. Free take-home kits are available from drug services and many pharmacies. Giving it on suspicion is reasonable, because it does nothing if there are no opioids on board.
- It **wears off in 20–90 minutes**, before most opioids do, so they can stop breathing again after waking. Stay with them. Fentanyl and nitazenes may need repeated doses.
- They may wake agitated and in withdrawal. That's unpleasant, but not dangerous.

When help is delayed

- **Seizures:** if someone has buccal midazolam prescribed, learn their plan now. For a seizure over 5 minutes with no medicine and no help, protect them, keep the airway clear, and get them to a hospital as soon as it stops.
- **Stroke:** even when clot-busting treatment can't be reached, people do better with care. Keep them upright for meals once a **swallow test** is passed: sips of water while sitting fully upright, watching for coughing, a wet voice or choking. Turn them every 2–3 hours, and keep the weak limbs supported.
- **Diabetes:** anyone on insulin needs a supply plan, a cool store (see the UK Crisis guide), testing strips, and a stash of glucose. Sickness rules matter: **never stop basal insulin** in someone who isn't eating, and test more often when ill.
- **Overdose:** stay with them for at least 2–3 hours after naloxone. Give further doses if breathing slows again.

Sources: medsys.uk/emergency (collapse, stroke); NICE NG217 (epilepsy), NG128 (stroke), NG17/NG18 (diabetes); Resuscitation Council UK; Home Office and DHSC naloxone guidance (2024).

13



Fainting

Most fainting is harmless and needs nothing but the floor and a few minutes. A small proportion is the first and only warning of something that will kill. Three questions do almost all the work. **Did it happen during exertion? Did it happen lying down? Was there no warning at all?** A "yes" to any of them makes this a heart problem until proven otherwise, and a 999 call.

IT'S A SIMPLE FAINT IF...

They were out for seconds to a minute or two, then rapidly and **fully** back to normal. They were pale and clammy, and usually had a warning first: hot, sick, sweaty, sounds going distant or "popping", vision greying.

THINK AGAIN IF...

- They were out for more than a couple of minutes, confused for more than about 5 minutes afterwards, or not back to their usual self.
- They're **not breathing normally**. That's a cardiac arrest, so start CPR.

What to do

- 1 **Lie them flat and raise their legs** on a chair or held up. This puts blood back in the brain within seconds. If they're already on the floor, leave them there.
- 2 **Don't sit them up or prop them against a wall.** This is the commonest mistake. They often faint again, from a height.
- 3 **Loosen tight clothing and get air moving.** Move the crowd back and open a window.
- 4 **Check they're breathing normally**, and stay with them.
- 5 **Nothing by mouth until fully alert**, then sips of water. Sugar only if you suspect low sugar.

6 Get them up in stages (below). Most repeat faints happen because someone stood up too soon.

Stage	How long	Watch for
Flat, legs raised	At least 10–15 minutes	Colour returning, sweating stopping, and them saying they feel normal , not just "better"
Legs down, still flat	A couple of minutes	Any light-headedness. If it returns, legs back up and start again
Sitting up, supported	At least 5 minutes	Paleness, sweating, greying vision. Lie them down at the first sign
Standing, held	The first minute is the risky one	Keep something to sit on close by
Walking	Escorted	Not alone to a bathroom, which is where people faint again onto hard floors

Observe for about 30 minutes in total before letting them go, if there was a clear trigger, a typical warning, a quick full recovery and no injury. A second faint restarts the clock and lowers the bar for getting help.

 COLLAPSING AROUND EXERCISE

- **After stopping** (at the finish, in a queue, in the shower) with a warning: usually blood pooling in the legs. Lie flat with legs and hips well raised, cool them, and give salty, sugary sips once fully alert. No more exercise that day.
- **During the effort**, with no warning: treat it as a heart problem, and call 999.
- **Confused or aggressive**: heat stroke until proven otherwise (see Heat).
- Long endurance event, lots of plain water drunk, headache, vomiting, confusion: possibly **low blood sodium**. 999, and **no more plain water**.

 RED FLAGS: CALL 999

- Fainted during exertion, while lying down, or with no warning
- Chest pain, palpitations or breathlessness before or after
- Not fully recovered within about 15 minutes of lying flat
- A family history of sudden death under 40, or a known heart condition
- Pregnant, or bleeding (internal bleeding can show as fainting)
- They banged their head hard (see Head injury)

 When help is delayed

- An ordinary faint needs no further care beyond fluids, food, rest and avoiding the trigger.
- Repeated faints in a crisis are often **dehydration, poor food intake or heat**. Fix these first. Medicines that lower blood pressure (tablets for blood pressure, prostate or water) may need review with a pharmacist if someone is eating and drinking much less than usual.
- A faint with any red flag still needs medical assessment as soon as it can be reached. Meanwhile, avoid driving, ladders, swimming and being alone.

Sources: medsys.uk/emergency/fainting; NICE CG109 (transient loss of consciousness); European Society of Cardiology syncope guidelines.

14 🧠 Head Injury

The great majority of head knocks need nothing but observation. The value of a list like this is that it tells you which ones need more, so the rest can be left alone. The dangerous pattern is **"talk and deteriorate"**: a brief knock-out, a period of being perfectly lucid, then a rapid decline as a bleed expands. Someone who seems fine an hour after a hard blow hasn't been cleared. They've been observed for an hour.

🏥 HOSPITAL, OR 999, IF ANY OF THESE

- Any loss of consciousness, however brief
- Vomiting more than once
- Drowsy, confused, hard to wake, or getting less alert
- A seizure
- Weakness, numbness, slurred speech, double vision, unsteadiness
- A headache that keeps getting worse
- Clear fluid or blood from the nose or ears, or bruising behind the ears or around both eyes (skull fracture)
- Memory loss for more than a few minutes around the event
- A dangerous mechanism: a fall of more than about 1 metre or 5 stairs, a vehicle, a high-speed collision
- **Anyone on a blood thinner** (warfarin, apixaban, rivaroxaban etc.) after *any* head injury, even with no symptoms
- Drunk, or with no one to watch them

How long to watch, and how

Period	What to do
First 4 hours	The highest-risk window. Someone with them, checking every 30 minutes that they're awake, orientated and behaving normally.
First 24 hours	A responsible adult stays with them. Sleep is allowed . What matters is that they can be woken and then respond normally. Rouse them hourly for the first few hours, then every 2–3 hours overnight. If you can't rouse them normally, call 999 rather than trying again later.
Days 2–3	Headache and tiredness are expected. New confusion, drowsiness or weakness are not.
Up to 2–3 weeks or more	The window for a slow bleed (a chronic subdural haematoma), especially in older people, those on blood thinners, and heavy drinkers. The knock may have been trivial and forgotten.

CHECKING THE MIND, WITHOUT EQUIPMENT

- Ask open questions and listen to the *shape* of the answer: slowed speech, losing the thread, repetition.
- Orientation: what day is it, where are we, who is this with you?
- Memory: what's the last thing before it, and the first thing after? A gap that **grows** when you ask again 20 minutes later is significant.
- Three unrelated words: repeat now, and again in 5 minutes.
- Ask someone who knows them: "**is this how they normally are?**"
- Re-check rather than check once. The trend detects a bleed.

PUPILS: A LATE SIGN

- Look for both pupils the same size, both shrinking briskly to a light.
- A **newly larger, sluggish pupil on one side** means pressure is already on the brainstem. That's 999 **immediately**, not a re-check in 10 minutes.
- About 1 in 5 people have slightly unequal pupils normally. A change you watch happen matters far more.
- Don't wait for pupils. Alertness and behaviour change earlier.

SLOW BLEED: SIGNS DAYS OR WEEKS LATER

A headache that's different or gradually worse (especially lying down, coughing, or first thing in the morning); personality change (flat, irritable, withdrawn); increasing sleepiness; slowed thinking or word-finding trouble (often mistaken for dementia or depression); unsteadiness or a dragging foot; one-sided weakness; new incontinence; in older people, suddenly "off their legs". **Same-day assessment**, and say there was a head injury, even weeks ago. A chronic subdural is often curable by an operation.

Concussion: a brain injury. "If in doubt, sit them out": no return to sport the same day, and a gradual return over about 2–3 weeks. **Possible neck injury** (a fall from height, diving, a crash, a heavy blow): keep the head still, in line with the body, don't remove a helmet, and call 999.

When help is delayed

- For anyone in the "hospital" list who can't get there: continue the **30-minute checks for at least 4 hours, then rousing checks overnight**, and keep a written record of each check.
- Paracetamol for headache is fine. **Avoid ibuprofen and aspirin** for the first 24–48 hours, which can worsen bleeding, and avoid alcohol, sleeping tablets and strong painkillers that cloud the picture.
- Rest with the head and shoulders slightly raised. Limit screens and reading if they worsen symptoms. Return to activity gradually.
- Any deterioration (drowsiness, repeated vomiting, a seizure, weakness, an unequal pupil) needs a neurosurgical hospital. Move them by any safe means, lying on their side if drowsy.

Sources: medsys.uk/emergency/head-injury; NICE NG232 (head injury, 2023); RFU/UK Sport "If in doubt, sit them out" concussion guidance.



Twenty minutes of cool running water matters more than anything done later in hospital. It reduces the depth of the burn, the need for surgery and the scarring, and it's still worth doing up to about **3 hours** after the injury. Almost everything else people put on burns makes them worse.

- 1 Stop the burning.** Flames: stop, drop and roll, or smother with a blanket. Chemicals: brush off powder, then flood with water. Electricity: power off first (see Electricity).
- 2 Cool running water for 20 minutes.** Cool, not ice-cold. Not five minutes, and not "until it feels better".
- 3 Remove clothing and jewellery** near the burn, unless it's stuck. Swelling comes fast, and rings and watches become tourniquets.
- 4 Cover loosely with cling film**, laid lengthways, never wrapped tightly round a limb. It's sterile inside the roll, doesn't stick, and lets the burn be seen. A clean plastic bag works for a hand or foot.
- 5 Keep the rest of them warm.** Cooling a burn cools the person, and hypothermia is a real risk in children and large burns. Cool the burn, warm the patient.

NEVER PUT ON A BURN

Ice or iced water, which deepens the burn. Butter, oil, cream, toothpaste or flour: they hold heat in, introduce infection, and have to be scrubbed off later. Burn gels *instead of* the 20 minutes of water. Don't burst blisters.

DO INSTEAD

Cool running water for 20 minutes, then cling film, then pain relief (paracetamol or ibuprofen) and warmth. Gels and dressings are for *after* cooling, not instead of it.

HOW BIG IS IT?

- The person's own **palm with fingers together** $\approx$ **1%** of their body surface.
- Rough adult guide (rule of nines): head 9%, each arm 9%, front of the trunk 18%, back 18%, each leg 18%. Children have bigger heads, about 18%, and smaller legs.
- Count only blistered or deeper skin, not simple redness.
- More than about 15% in an adult, or 10% in a child**, causes dangerous fluid loss and needs hospital fluids.



NEEDS MEDICAL ASSESSMENT

- Larger than the person's palm
- Face, hands, feet, genitals, or across a joint, whatever the size
- Right around a limb, finger or the chest
- Full thickness:** white, brown, leathery or charred, often **painless**. Painlessness is a bad sign.
- All chemical and electrical burns
- Smoke inhalation:** soot around the nose or mouth, a hoarse voice, singed nasal hair. The airway can swell over hours: 999.
- Any burn in a child, an older person, or that doesn't fit the story given

When help is delayed: caring for a burn over days

- **Dressings:** cling film is fine for the first 24 hours. Then gently clean the burn with clean running water or boiled-and-cooled salty water (1 teaspoon of salt per 500 ml), pat dry, and cover with a **non-stick dressing** (paraffin gauze or silicone) under a padded layer. Change every **2–3 days**, or sooner if wet or smelly.
- **Blisters:** leave them intact. If one is huge, tense, or over a joint and bursts, trim the loose dead skin with clean scissors, then dress as above.
- **Fluids for large burns:** if over ~15% (adult) or 10% (child) and no hospital can be reached, give **oral rehydration solution in frequent sips**, continuously. Aim for pale urine every few hours. In a child, count wet nappies. Dark, scanty urine means more fluid is needed.
- **Raise burned limbs** to reduce swelling. Keep moving burned hands and joints gently several times a day, so they don't stiffen.
- **Infection** (spreading redness, increasing pain, pus, a bad smell, fever, or the person becoming unwell) needs antibiotics and medical care. See Infection. Large burns also need extra protein and calories to heal.
- Honey (medical-grade if possible) has good evidence as a burn dressing where proper dressings run out.

Sources: medsys.uk/emergency/burns; British Burn Association first aid guidance; NICE CKS (burns and scalds); WHO burn care guidance for low-resource settings.

16 Electrical Injury & Lightning

Electricity is different from other injuries in two ways. The danger is **still there when you arrive**, and the visible wound is **almost never the injury**. A rescuer becoming a second casualty is the commonest way this turns into two deaths, and it happens because someone reached for an arm.

Make it safe first

Situation	What to do
Indoors, household supply	Switch off at the fuse box (consumer unit), or unplug at the socket, not at the appliance switch. As a last resort, push the source away with something dry and non-conducting (a wooden broom, a plastic chair) while standing on something dry.
Overhead power lines	Stay at least 25 metres away and keep others back. Electricity arcs and spreads through the ground. Fallen lines can re-energise automatically. Call 999 and say "overhead line".
Railway	The third rail and overhead wires stay live until the operator isolates them. Don't go on the track.
Car touching a cable	The occupants stay inside. If fire forces them out, they jump clear without touching the car and the ground at the same time, then shuffle away with feet together.
Water	Water spreads the hazard. Isolate the power before entering any wet area.
Generators (in a crisis)	A generator back-fed into house wiring can electrocute line workers and neighbours. A wet extension lead is a common cause in blackouts.

Then treat them

♥ FIRST

- **Not breathing normally: CPR and an AED immediately.** Electrical injury often causes a shockable rhythm in a healthy heart, so outcomes from quick CPR are better than for most arrests. It can also stop breathing while the heart carries on, so rescue breaths matter.
- **Assume a fall too.** Being thrown or falling from a ladder is part of most serious electrical injuries. Protect the neck, and look for fractures.
- **Look for two burns:** an entry and an exit, often a hand and a foot. Small, deep and often painless. Cool and cover them (see Burns).

🔍 WHY THE SKIN TELLS YOU LITTLE

- Current travels through muscle, nerve and blood vessels, cooking them along the track while the skin shows two small marks.
- Damaged muscle releases myoglobin, which damages the kidneys. Watch for **dark brown urine**.
- Swelling inside a limb can cut off its circulation hours later. **Increasing pain, tightness, numbness, or a cold hand or foot** is an emergency.
- A current across the chest can disturb the heart rhythm without any burn at all.

⚡ LIGHTNING IS DIFFERENT

- Someone struck by lightning **is safe to touch**. They hold no charge.
- **Reverse triage:** in a group, treat the ones who **appear dead first**. Lightning often causes a brief arrest that responds well to CPR.
- Expect temporary paralysis, deafness and confusion that recover, and check for burst eardrums and eye injury.
- Shelter in a substantial building or a hard-topped car, away from windows and plumbing. Not under a tree or on high ground. **30-30 rule:** if thunder follows the flash within 30 seconds, take shelter, and wait 30 minutes after the last thunder.

🕒 When help is delayed

- Someone with a **brief, low-voltage household shock**, no loss of consciousness, no burn, dry skin and a current path not across the chest (a finger on a socket), with no symptoms, is very unlikely to develop a delayed heart problem. Rest, and watch.
- Anything more (lost consciousness, high voltage or lightning, current across the chest, palpitations, chest pain, burns, a fall, pregnancy, or a heart condition) needs medical assessment and heart monitoring as soon as possible.
- For deep electrical burns, give plenty of fluids by mouth if fully alert, and **watch the urine colour**. Dark brown urine means muscle breakdown, which is an emergency.
- **A child who bit a cable:** the corner of the mouth can **bleed heavily 5–14 days later** as dead tissue separates. If it does, pinch the lip firmly between finger and thumb, sit the child up, and get help.

Sources: medsys.uk/emergency/electrical; Resuscitation Council UK Guidelines 2025 (special circumstances); HSE and Energy Networks Association safety advice.

17



Crush Injury: Trapped Under Something Heavy

In a crush injury the danger isn't the crushing, it's **the release**. Squeezed muscle dies and leaks potassium (which can stop the heart) and myoglobin (which blocks the kidneys). While the limb is compressed, none

of it circulates. Release opens the tap. That's why someone chatting to you under a fallen wall can collapse within minutes of being freed. In a crisis with collapsed buildings, falls and blast damage, this matters.

Time trapped	What to do
Under about 15 minutes	If you can free them safely, do it now. Crush syndrome needs time to develop.
Longer, or unknown	Call 999 and say " trapped, for about X minutes ". That sentence changes what the ambulance brings. Ideally release happens with a drip running and a heart monitor attached.
Chest or abdomen compressed	Release immediately , whatever the time. A load on the chest stops breathing. The face and neck may look dark red or purple with pinpoint bleeding. Breathing outranks everything.
Immediate danger: fire, water, further collapse	Get them out. Crush syndrome is a risk; a fire is a certainty.

✓ WHAT YOU CAN ALWAYS DO

- Call for help, and say how long they've been trapped.
- **Keep them warm**, insulated above and below. Trapped people get cold fast.
- Keep talking to them, where they can see you. You'll notice if they become drowsier.
- Control any bleeding you can reach (see Bleeding).
- Check the scene repeatedly: is the load stable? Is there gas or fuel? Is anyone else trapped?
- **Never put yourself under an unstable load.**

⊘ DON'T

- Don't apply a tourniquet to "prevent crush syndrome". That was once taught and is no longer recommended. A tourniquet is only for uncontrollable bleeding.
- Don't give food or drink while help with drips and anaesthesia may be coming.
- Don't leave someone trapped and do nothing. If you're alone and help is minutes away, waiting is better; but a bystander who lifts a wall off someone has not done something reckless.

⚠ AFTER RELEASE, AND THE DAYS AFTERWARDS

- If they collapse after release, that's crush syndrome: start CPR, and tell anyone who arrives that they've just been freed from a crush.
- **Dark brown, cola-coloured urine** after any crush, a long lie on the floor, an electrical injury or extreme exertion means muscle breakdown. It's a same-day medical problem.
- **Compartment syndrome:** pain out of all proportion, a tight, swollen limb, numbness, or a limb that's hard to move. It needs an urgent operation.
- "Found on the floor, unknown time": an older person who lay for hours after a fall, or someone unconscious on a limb after an overdose, can have the same muscle breakdown with nothing to see.

When no ambulance or rescue team can come

- If someone has been trapped for a long time and you must free them without medical help: before release, if they're alert and can swallow, give them **as much water or oral rehydration solution to drink as they can comfortably take** over the time you're preparing. Fluid is the main protection against kidney damage and the potassium surge.
- Release gradually if you can, one limb at a time, and be ready to start CPR.
- Afterwards, keep fluids going: aim for **plenty of pale urine**. Keep the injured limb at heart level, not raised high. Watch for dark urine, very little urine, swelling, palpitations or weakness, and get them to hospital by any means.

Sources: medsys.uk/emergency/crush; Faculty of Pre-Hospital Care consensus on crush injury; International Society of Nephrology Renal Disaster Relief Task Force guidance.

Illness That Turns Dangerous

Sepsis and meningitis, diarrhoea, dehydration and tummy pain, heat and cold, poisoning, urinary infection, and bites and stings.

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Sepsis & Meningitis

Sepsis is the body's response to an infection damaging its own organs. It's common, it kills quickly, and it's hard to spot, because early on it looks like the infection everyone already knows they have. Both sepsis and meningitis are taught around a rash, and **the rash is the least reliable part of either**. It appears late, in a minority, and sometimes never. Waiting for it is the commonest way they're missed.



ADULTS: GET URGENT HELP IF ANY OF THESE

- Slurred speech or new confusion
- Extreme shivering or muscle pain
- Passing no urine all day
- Severe breathlessness
- It feels like you're going to die (take this literally)
- Skin mottled, ashen, blue or very pale



CHILDREN: ALSO

- Very fast breathing, grunting, or pauses in breathing
- A weak, high-pitched or continuous cry, or not responding as normal
- Floppy, very sleepy, or hard to wake
- No feeds or no urine for 8–12 hours; no wet nappies
- Cold hands and feet with a hot body, or mottled skin
- A temperature **below 36 °C**, which is as worrying as a high one

WHY IT GETS MISSED

- **The infection gets a name** ("just a chest infection", "a virus") and the name closes the question.
- One set of normal observations, never repeated. **Sepsis is a trajectory, not a snapshot.**
- Young, fit people hold a normal blood pressure until they collapse.
- Older people and babies often have **no fever**, and may be cold.
- Paracetamol given an hour before makes them look better than they are.
- Chemotherapy, steroids and immune-suppressing drugs hide the signs.

WHAT TO SAY WHEN YOU GET HELP

- **"Could this be sepsis?"** Ask for it to be considered and written down.
- **Give the trajectory:** "yesterday he was at work; this morning he couldn't stand; in the last hour he hasn't known where he is."
- Say what's different from every other illness they've had. Trust a parent or carer who says "this is different".
- Mention anything that raises the risk: recent surgery, a catheter or line, chemotherapy or steroids, no spleen, pregnancy or recent birth, diabetes, a wound.
- In England, you can ask for an urgent independent review under **Martha's Rule** if you're worried someone in hospital is getting worse.

Meningitis

Who	What it actually looks like
Babies and toddlers	Fever with cold hands and feet, refusing feeds, vomiting, a high-pitched or moaning cry, irritable when handled, floppy, a bulging soft spot, unusually drowsy. A stiff neck is often absent.
Children and adults	Severe headache, fever, vomiting, stiff neck, dislike of bright light, confusion, drowsiness, seizures. Leg pain and cold hands and feet can come hours before the rest.
The rash, if it comes	Tiny red or purple pinpricks spreading to blotches and bruise-like patches that don't fade when a glass is pressed on them . On darker skin, check the palms, soles, inside the eyelids, the roof of the mouth and the whites of the eyes. A rash that doesn't fade confirms it; no rash rules out nothing .

Call 999 on suspicion, and say "sepsis" or "meningitis". Don't wait for a rash or tomorrow's GP appointment. Someone seen four hours ago and now worse must be seen again.

When help is delayed

- **Sepsis and meningitis need antibiotics, often through a drip, within the hour.** Nothing at home replaces that. Moving the person to any hospital, clinic or medical team is the priority, lying down and kept warm.
- If a GP has given your household a **"rescue pack"** of antibiotics with written instructions (some people with chronic lung disease or no spleen hold one), start it as instructed while you arrange care.
- Meanwhile, keep them lying down if their blood pressure seems low (pale, faint, fast pulse), give frequent sips of fluid if they're alert, keep them warm (but not overheated), and record observations every 15–30 minutes.
- In a household outbreak of meningitis, close contacts need preventive antibiotics, which public health teams arrange. Tell anyone treating the patient who else lives with them.
- Prevention matters more in a crisis: keep up with vaccinations, clean wounds properly, and treat urine and chest infections promptly (see Infection).

Sources: medsys.uk/emergency/sepsis; NICE NG51 (sepsis, updated 2024); UK Sepsis Trust; Meningitis Research Foundation; NHS England Martha's Rule.

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Diarrhoea, Vomiting, Dehydration & Tummy Pain

In any long crisis, with unsafe water, crowded living and poor hygiene, diarrhoea and vomiting become common. They rarely kill through the infection itself. They kill through **dehydration**, especially in babies, young children and older people. Replacing fluid and salts the right way, by mouth, saves almost everyone.

How dehydrated are they?

	Mild	Clinically dehydrated	 Severe / shock
Behaviour	Alert, thirsty	Unusually irritable or tired, "not themselves"	Drowsy, floppy, confused, unresponsive
Mouth and eyes	Normal	Dry mouth, sunken eyes; in babies, a sunken soft spot	Very dry; no tears
Urine	A bit darker	Dark and little; fewer wet nappies	None for 12 hours (8 in a baby)
Circulation	Normal	Fast pulse, fast breathing; dizzy on standing (adults)	Cold, pale or mottled hands and feet; capillary refill over 3 seconds; weak pulse; low blood pressure
Skin pinch (back of the hand or tummy)	Springs back	Slow to go back	Stays pinched up

Oral rehydration: how much

- **Use oral rehydration solution (ORS):** sachets, or home-made: 1 litre of boiled-and-cooled water + 6 level teaspoons of sugar + ½ level teaspoon of salt.
- **Children, dehydrated: 50 ml/kg over 4 hours,** given a little at a time (for a 10 kg child, 500 ml: about 5 ml every 2–3 minutes from a syringe or spoon). Then normal fluids, plus **5 ml/kg after each large loose stool.**
- **Adults:** 200–400 ml of ORS after each loose stool, plus normal drinking: 2–3 litres a day or more in heat.
- **Vomiting:** tiny amounts often. A spoonful every 1–2 minutes stays down where a cupful won't. After a vomit, wait 10 minutes and start again.

FEEDING AND MEDICINES

- **Keep breastfeeding,** more often than usual. Formula-fed babies: carry on with formula alongside ORS.
- Food as soon as they want it: plain starchy food, soups, bananas, yoghurt.
- Avoid fruit juice and fizzy drinks in children; the sugar worsens diarrhoea.
- **Loperamide:** adults only, not with blood or fever. No anti-diarrhoea medicine for children.
- Antibiotics are rarely needed (see Medicines lookup).
- Withhold water tablets, metformin, some blood-pressure tablets and SGLT2 tablets while someone can't keep fluids down: the "sick day rules". Ask a pharmacist.

GET URGENT HELP IF:

- Signs of severe dehydration or shock (above)
- A baby under 6 months with vomiting or diarrhoea, or under 3 months with fever
- **Green (bile-stained) vomit,** especially in a baby: possible blocked bowel
- Blood in the vomit, or black, tarry stools
- Bloody diarrhoea, or a high fever
- Can't keep any fluid down for 8 hours (child) or 24 hours (adult)
- Diarrhoea for more than 7 days, or vomiting for more than 2
- Severe tummy pain (below)

Tummy pain: the dangerous ones

Condition	Clues	What to do
Appendicitis	Pain starting around the navel, moving to the lower right; worse on moving, coughing or bumps in the road; loss of appetite, fever, vomiting	Hospital. Nothing by mouth. A burst appendix causes peritonitis: a rigid, very tender tummy and a very unwell person
Blocked bowel	Cramping pain, swollen tummy, vomiting (sometimes green), not passing wind or stools	Hospital. Nothing by mouth
Ectopic pregnancy	Pain low on one side in someone who could be pregnant, bleeding, shoulder-tip pain, fainting	999 (see Pregnancy)
Twisted testicle (boys and young men)	Sudden severe pain in a testicle, sometimes felt in the lower tummy, with swelling and vomiting	Emergency surgery within about 6 hours to save the testicle. Don't let embarrassment delay it
Gallbladder or kidney stones	Severe colicky pain: upper right under the ribs (gallbladder), or loin to groin (kidney)	Pain relief. Fever, yellow skin or eyes, or vomiting with it: urgent

Condition	Clues	What to do
Burst aortic aneurysm	Older person, sudden severe tummy or back pain, collapse, pale and clammy	999. Keep them lying flat and still

Most tummy pain is wind, constipation, indigestion or a stomach bug, and it settles. Pain that is **severe, constant, getting worse, or with a rigid tummy, fever, vomiting, blood, or fainting** needs a doctor.

When help is delayed

- Oral rehydration works even in severe dehydration if the person can swallow: give it continuously, little and often, day and night. Keep a written tally of what goes in and what comes out.
- **Stop it spreading:** handwashing with soap and water (hand gel doesn't kill norovirus), a separate toilet or bucket if possible, bleach for toilets and surfaces, and nobody who is ill prepares food until 48 hours after the symptoms stop.
- Clean water is the best prevention: boil, filter or chlorinate everything you drink (see the UK Crisis guide).
- Suspected appendicitis, blocked bowel, ectopic pregnancy, a twisted testicle or a burst aneurysm all need surgery. Move the person to a hospital by any safe means, with nothing by mouth except sips if the journey is very long.

Sources: NICE CG84 (diarrhoea and vomiting in children); WHO oral rehydration guidance; NHS (dehydration, appendicitis, testicular torsion, ectopic pregnancy); UKHSA norovirus guidance; Think Kidneys sick-day guidance.

20 Heat Illness & Heat Stroke

Heat illness has one decisive line across it, and it isn't a temperature: **is the brain working?** Hot and unwell but lucid is heat exhaustion. **Hot and confused is heat stroke:** an emergency with an intensive-care death rate approaching 60%, leaving about a third of survivors with lasting damage. Cool first, transport second.

	What it looks like	What to do
Heat cramps	Painful muscle cramps during or after effort, otherwise well	Stop, shade, fluids with salt, gentle stretching
Heat exhaustion	Headache, nausea, dizziness, weakness, heavy sweating, but orientated and making sense	Shade, lie down with legs up, cool them actively, salty-sugary fluids. Should be obviously better within 30 minutes
Heat stroke	Any change in mental state with heat: confusion, odd behaviour, aggression, unsteadiness, a seizure, collapse	999 and cool immediately , where they are

Don't wait for the sweating to stop. "Hot, dry skin" describes late heat stroke in an elderly person in a heatwave. In someone exercising or working, the skin is usually **still wet**, and may not even feel hot. And ear, forehead and mouth thermometers read **low**: only a rectal temperature is accurate. **Treat the confusion, not the thermometer.**

Cooling heat stroke

- 1 Cold-water immersion, neck down, is first choice:** a bath, paddling pool, wheelie bin, cattle trough or stream. Anywhere from 1 to 26 °C works, and colder is faster. Don't delay to find a thermometer.

- 2 **One person holds them the whole time**, keeping the head and airway out of the water. A confused or seizing person can drown in a paddling pool.
- 3 **If you can't immerse them, use everything at once**: strip to underwear, cold wet sheets replaced as they warm, ice packs to the neck, armpits and groin, continuous fanning, pouring cold water, hands and forearms in cold water. A fan plus wet skin beats a fan alone by a wide margin.
- 4 **Stop at improvement, not at cold**: when they're below about 39 °C or their mind clears. Then keep watching, because overshooting into hypothermia is easy, especially in children.
- 5 **Everyone with heat stroke goes to hospital**, even if they look transformed. Kidney, liver, clotting and muscle damage can show up hours later.

DON'T

- Give paracetamol or ibuprofen. Heat stroke isn't a fever, so they don't work and they add risk.
- Give drinks to anyone confused or drowsy, because they may choke.
- Let them go back out. Heat exhaustion means they're done for the day; heat stroke means much longer.
- **Children**: cool just as urgently, but prefer wet skin plus moving air, check often, and stop sooner.

WHO IS AT RISK IN A HEATWAVE

- **Older people living alone**, who are less thirsty, sweat less, and have nobody checking.
- **Babies and young children**. Never leave a child in a parked car, even with a window open.
- **People on certain medicines**: water tablets, antihistamines, some antidepressants and antipsychotics, beta blockers, stimulants.
- Heart, kidney or lung disease; diabetes; obesity; drug users; outdoor and kitchen workers in the first days of a heatwave.

When help is delayed: a heatwave without power

- For heat stroke, cooling *is* the treatment. Cool hard and fast, then keep them in the coolest place, sipping salty-sugary fluid once fully alert. Watch for dark urine, very little urine, confusion returning, or bleeding gums or bruising, which mean organ damage. Get them to care by any means.
- **Keep homes cool without power**: close curtains and windows on the sunny side by day, open them at night, use the coolest room (often downstairs, north-facing), wet cloths and a battery fan, cool showers or foot baths, and don't cook in the heat of the day.
- Drink before you're thirsty. Pale-straw urine is the target. Check on vulnerable neighbours twice a day.

Sources: medsys.uk/emergency/heat; UKHSA Heat-Health Alerts and Beat the Heat guidance; Wilderness Medical Society heat illness guidelines (2024); NICE CKS.

21 **Cold: Hypothermia & Frostbite**

Cold kills slowly, and then very suddenly. Almost every instinct about warming someone up is either useless or dangerous. Three things surprise people. **Handle them gently**: a cold heart is electrically unstable, and rough movement can stop it. **Warm the trunk, not the limbs**: warming arms and legs first sends cold

blood back to the core, and blood pressure can collapse. And **nobody is dead until they are warm and dead.**

Stage	Core temperature	What you see
Mild	32–35 °C	Shivering, still able to help themselves. Clumsy hands, slurred speech, poor judgement, withdrawn or irritable
Moderate	28–32 °C	Shivering stops (a deterioration, not an improvement). Confused, drowsy, stumbling, mumbling. Slow pulse and breathing
Severe	Below 28 °C	Unresponsive, rigid, very slow and faint pulse and breathing, pupils may be wide. Can be mistaken for dead

Two behaviours come just before collapse: **irrational behaviour** and **paradoxical undressing**, where someone hypothermic insists they're hot and takes clothes off.

What to do

- 1 Move them gently and keep them horizontal** once shivering has stopped, or if they're confused or stumbling. Someone mild, still shivering, lucid and steady can walk a short way to shelter, because their muscles make heat.
- 2 Get them out of the cold and out of wet clothes.** Cut clothing off if that's gentler. Wet fabric strips heat far faster than air.
- 3 Insulate everything, including the head, and put something underneath.** The ground steals heat faster than the air: use a roll mat, rucksack, cardboard or coats. Then sleeping bags, blankets, a foil blanket, and a hat.
- 4 Warm the core, not the extremities.** Wrapped warm-water bottles or heat packs to the chest, armpits, neck and groin, **never directly on skin**. No hot bath. Don't rub the arms and legs.
- 5 Warm sweet drinks only if fully alert** and able to swallow. **No alcohol**, which makes you lose heat faster.
- 6 999** for anything beyond mild, and for anyone who has stopped shivering.

⚠ WHY PEOPLE GET WORSE AFTER RESCUE

Afterdrop: core temperature often keeps falling after someone is brought indoors, as cold blood from the limbs returns to the trunk. As vessels open up, blood pressure can collapse. This is a recognised cause of death *during* rescue. It's the reason to handle gently, keep them flat and warm the trunk, and why a hypothermic person must never be left alone to warm up.

♥ IF THEY SEEM LIFELESS

- Check for breathing and a pulse for a **full minute**, not 10 seconds.
- No breathing: start CPR. CPR and shocks work less well in a cold heart, which is a reason to **continue**, not to stop.
- Full recovery has followed hours of resuscitation in deep hypothermia. Don't conclude death in a cold person unless the injuries are obviously not survivable.

🧊 FROSTBITE AND TRENCH FOOT

- Treat the whole person's hypothermia first. Remove rings and wet gloves or boots.
- **Frostbite:** rewarm in water at **37–39 °C** (comfortably warm to an uninjured hand) for 20–30 minutes. Then dress loosely, separate the fingers or toes, raise the part, and give ibuprofen if suitable.
- **Never** rub it, use snow, or use direct heat (fire, radiator, hairdryer): numb skin burns. **Don't thaw it if it could refreeze**, which does far more harm. Don't burst blisters, and don't walk on thawed feet.
- **Trench foot** (feet cold and wet for hours or days, never frozen): numb, white, swollen. Warm gradually at room temperature, dry and raise them. Pain on rewarming can last months.

🕒 When help is delayed: a winter without heating

- For mild hypothermia, rewarming in a warm room with insulation, warm sweet drinks and food works. Shared body warmth in a sleeping bag is effective and safe.
- For moderate to severe hypothermia with no hospital: keep them flat, insulated, with heat to the trunk, and handle them minimally. Warm them slowly over hours, and watch their breathing constantly.
- **Prevent it:** one warm room above about 18 °C if possible (never below 12–14 °C), layers, hats indoors, hot drinks and regular food, and moving about. Check older neighbours twice a day. They may not notice they're cold.
- **Never** use BBQs, camping stoves, patio heaters or generators indoors for warmth. Carbon monoxide kills silently (see Poisoning).

Sources: medsys.uk/emergency/cold; Resuscitation Council UK Guidelines 2025 (hypothermia); Wilderness Medical Society hypothermia and frostbite guidelines; UKHSA Cold Weather Plan.

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Poisoning, Overdose & Carbon Monoxide

The dangerous poisonings are the ones where the person **looks fine**. Four rules cover most of it. **Get advice early:** 999 if they're unwell or drowsy, 111 otherwise. **Keep the packaging**, or photograph the label, including how much was in it. **Never make them vomit**. And **give nothing to drink** beyond small sips of water unless told to. Opioid overdose is covered in The collapsed person.

PARACETAMOL: SILENT FOR A DAY

- The commonest serious overdose in the UK. Someone who has taken a dangerous amount usually feels **normal or mildly sick for the first day**. By the time they feel ill, liver damage is established.
- The antidote works very well when started early, and progressively less with delay. **Go now**, however much was taken and however well they feel.
- **Staggered overdoses** (extra doses over hours for pain) also cause real damage.
- Feeling better later isn't reassurance. There's a quiet period before liver failure.

BUTTON BATTERIES: A TWO-HOUR EMERGENCY

- If a child **may** have swallowed one, go to A&E **now**, even if they're well. A lodged battery burns through the gullet, starting within about 2 hours.
- **Honey on the way** (children **over 12 months only**, within 12 hours of swallowing): 2 teaspoons (10 ml) every 10 minutes. It coats the battery and slows the burn. Never under 12 months.
- Nothing else by mouth. Take the device or packaging.
- Bleeding can come **days or weeks later**. Any vomited blood or black stools afterwards is a 999 call.
- **Two or more magnets** swallowed: also A&E straight away.

Household and garden

What	What to do differently
Corrosives: drain or oven cleaner, dishwasher tablets, descaler	Never make them vomit. Small sips of water or milk if alert and swallowing normally, and 999. Liquid dishwasher capsules cause airway swelling in toddlers.
Petrol, white spirit, lamp oil, paraffin	The danger is in the lungs. No vomiting, nothing to drink, and 999 for any cough or breathlessness. In a fuel crisis, never siphon petrol by mouth .
Antifreeze, screenwash	Sweet-tasting and drunk in quantity. Looks harmless for hours, but there's an antidote, so it's time-critical: 999.
Plants, berries, mushrooms	Most plants are minor. Photograph them and take a sample. Foraged mushrooms are the exception: some are lethal, with symptoms delayed for 6–24 hours.
Alcohol in a child	Far more dangerous than in an adult, because children's blood sugar falls. A drowsy child who's drunk alcohol needs 999, not bed.
Recreational drugs	Say what was taken. Paramedics aren't police, and hiding it is what turns a survivable overdose into a fatal one.

Carbon monoxide: headache, nausea, dizziness and confusion in several people in one building, or that improves outside. Get everyone out into fresh air, don't go back in, 999. A pulse oximeter reads falsely normal.

CO IN A CRISIS

- Blackouts and cold snaps bring a **surge in CO poisoning**: generators in garages or sheds near windows, BBQs or camping stoves brought indoors, gas ovens used for heat, blocked flues.
- Fit a **battery CO alarm** in every room with a flame or a sleeper. Mains alarms without a battery back-up stop working in a power cut.
- Pets falling ill, or a sooty, lazy yellow flame, are warning signs.

WHAT TO TELL 111 OR 999

- **What**: the exact product or medicine name.
- **How much**, or the most that could be missing. Over-estimate rather than under.
- **When**, as precisely as you can.
- Anything else taken, including alcohol.
- A child's rough weight.

When help is delayed

- **Paracetamol overdose, button batteries, antifreeze, foraged mushrooms and corrosives** all need hospital treatment. There is no safe home treatment. Move them now, by any means.
- For CO, fresh air is the treatment until oxygen can be given. Keep the person resting and warm outside or in a ventilated room. Anyone who was unconscious, pregnant, or has chest pain or confusion needs hospital.
- For an unknown poisoning in someone who is well, watch them closely for 6–12 hours: breathing, alertness, vomiting, and urine colour. Put them in the recovery position if drowsy.
- **Deliberate overdose**: treat the poisoning first and the reason second, but do treat the reason. Don't leave them alone. Samaritans: **116 123**. Text **SHOUT to 85258**. See also The mind.

Sources: medsys.uk/emergency/poisoning; TOXBASE/National Poisons Information Service public guidance; NICE CKS (poisoning); UKHSA carbon monoxide guidance; Child Accident Prevention Trust (button batteries).

23 Urinary Infection

Urinary infections are common and mostly straightforward, but there are two opposite mistakes. Young women with clear symptoms wait too long for treatment. And older people with no urinary symptoms get treated for a positive dipstick that means nothing. In a crisis, when antibiotics are scarce, getting this right matters more than ever.

Over 65, or with a catheter: a urine dipstick should not be used to diagnose infection. Bacteria in the urine without symptoms is common and normal in these groups, and treating it causes harm.

Who	What actually suggests infection
Women under 65, not pregnant	Burning on passing urine, with new frequency or urgency, and no vaginal discharge or irritation. Two or three of these together make infection likely. Lower tummy pain, visible blood and cloudy urine add weight.
Men	The same symptoms, but always treated as a complicated infection, with a longer course. Pain between the legs or in the back passage, or fever, suggests prostate infection.

Who	What actually suggests infection
Pregnancy	Any suspicion is treated and tested. Here, bacteria without symptoms <i>are</i> treated, because of the risk of kidney infection and early labour.
Over 65, or catheterised	New urinary symptoms: burning, new incontinence, lower tummy or loin pain, visible blood, shivering fits, fever. Not a smell, not cloudiness, and not confusion on its own.
Children	Often vague: fever without a cause, vomiting, poor feeding, lethargy, tummy pain, new bed-wetting, smelly urine. Any baby under 3 months with a fever needs urgent assessment.

✗ NOT A URINE INFECTION ON ITS OWN

- **Cloudy or strong-smelling urine** is usually just concentrated. Drinking water fixes it.
- **Confusion in an older person with a positive dipstick.** Most older people's strips are positive. Look for other causes: chest infection, dehydration, constipation, pain, medicines, low sugar, a fall with a head injury. If they're also feverish, shivering or breathing fast, think of sepsis.

⚠ **KIDNEY INFECTION: GET HELP TODAY**

- Fever, shivering fits, pain in the side or back (loin), vomiting, feeling very unwell
- Any urinary infection in pregnancy, in a man with fever, or in a child
- No improvement after 48 hours of treatment

What a prescriber will usually choose (for reference)

Group	First choice	How long
Women under 65, not pregnant	Nitrofurantoin (if kidneys work normally)	3 days
Men	Nitrofurantoin or trimethoprim	7 days
Pregnancy	Nitrofurantoin (not near term); otherwise cefalexin	7 days
Kidney infection	Cefalexin, or co-amoxiclav or ciprofloxacin guided by tests	7–10 days

From NICE guidance. Doses for adults and children, and second-line choices, are in the **Medicines lookup**. Doses depend on age, weight and kidney function. **Penicillin allergy:** nitrofurantoin, trimethoprim and fosfomycin are unrelated to penicillin.

Pivmecillinam is a penicillin despite its name. Trimethoprim isn't used in early pregnancy. In England, women aged 16–64 with an uncomplicated urinary infection can be treated by a pharmacist under **Pharmacy First**.

When help is delayed

- Many mild infections in otherwise healthy women **settle on their own within a few days**. Drink plenty, and take paracetamol or ibuprofen for pain. Waiting 48 hours is a legitimate choice if symptoms are mild.
- Cranberry juice and D-mannose don't treat an infection. Sodium bicarbonate or potassium citrate "cystitis sachets" only ease symptoms, and they reduce the effect of nitrofurantoin.
- Fever, loin pain, vomiting or feeling very unwell means kidney infection, which needs antibiotics. Get to a prescriber by any means.
- **Catheter users** in a long crisis need spare catheters, bags and training in changing them. Ask your district nurse now. A blocked catheter (lower tummy pain, no drainage) is urgent.

Sources: medsys.uk/emergency/uti; NICE NG109 and NG111/112/113 (urinary tract infection prescribing); UKHSA diagnosis of UTI guidance; NHS England Pharmacy First.

24



Bites & Stings

Almost all bites and stings are trivial. The few that aren't fall into three groups, and each needs something different: **bites that get infected**, **bites that transmit disease**, and **stings that cause anaphylaxis**. Any bite or sting followed by swelling away from the site, a change in voice, difficulty breathing or feeling faint is anaphylaxis until proven otherwise: adrenaline, lie flat, 999 (see Anaphylaxis). A sting **inside the mouth or throat** can block the airway by swelling alone, so treat it with the same urgency.



INSECT STINGS

- **Scrape a bee sting out sideways** with a fingernail or card edge. Gripping it squeezes in more venom. Wasps don't leave one.
- Then cold, raise the area, and wait. Redness, swelling and itching for up to **10 days** are normal, not infection.
- A large local swelling (a whole forearm after a sting on the hand) is common, and doesn't predict anaphylaxis next time.
- Antihistamines help the itch. Antibiotics don't help a sting.



TICKS

- **Remove it now.** The risk of infection rises the longer it's attached. Use fine tweezers or a tick tool (fingers beat waiting): grip as close to the skin as you can and **pull straight up with steady pressure**. Don't jerk or twist.
- **Nothing else:** no burning, Vaseline, alcohol or nail varnish, which make the tick regurgitate into the wound.
- Wash with soap and water. Note the **date and the body site**.
- Watch for **a red rash spreading beyond about 5 cm**, 3–30 days later. It's usually *not* a bullseye. That's Lyme disease, and a reason to be treated. Routine antibiotics after a tick bite aren't given in the UK.

Animal and human bites

Do: irrigate immediately with lots of running water (the volume is the treatment); encourage a little bleeding from a puncture; cover; raise; get it assessed. Check tetanus.

DON'T:

Close a bite with stitches, glue or Steri-Strips. Bites are left open on purpose, because sealing them traps bacteria inside.

- **Human bites** carry the highest infection risk, including the one people don't recognise: a **knuckle wound from punching someone in the mouth**. It goes straight into the tendon sheath, so it needs to be seen the same day.
- **Cat bites** look trivial and behave badly. Needle teeth push bacteria deep. Get them assessed.
- **Dog bites** crush and tear. Assess them, especially on the hand or face.
- **Rabies:** UK animals don't carry it, **except bats**. Any bat bite, scratch, or contact with the mouth or eyes needs urgent assessment for vaccine. Abroad, any mammal bite or scratch needs same-day medical care.

British wildlife

	What to do
Adder	Rarely fatal, but can cause major swelling and illness, and there's an antivenom. Keep them still; keep the limb at or below heart level; remove rings and watches. No tourniquet, no cutting, no sucking, no ice. Note the time and mark the edge of the swelling with a pen and the time . Hospital, even if it seems a "dry" bite.
Weever fish (trodden on at the beach)	Immerse the foot in water as hot as can be tolerated without scalding for 30–90 minutes (test on your own hand first). Top it up as it cools, and remove any spines.
Jellyfish	Rinse with seawater , not fresh. Lift tentacles off with tweezers or a card. Then hot water or a cold pack for pain. Vinegar isn't recommended for UK species.
Horsefly	They cut rather than pierce, so bites heal slowly and infect more often. Clean well and watch.
Spiders	No UK spider causes serious envenomation. False widow bites hurt and occasionally get infected.

When help is delayed

- Clean all bites thoroughly and leave them open under a dressing. Raise bitten hands and feet.
- **Spreading redness or a red line up the limb, worsening pain after day 2, pus or fever** means infection needing antibiotics. Bites to the hand are the most dangerous (see Infection).
- In a crisis, **rats and stray dogs** become more common. Rat bites and floodwater carry the risk of leptospirosis (fever, aching muscles, red eyes, yellow skin, 1–2 weeks later), which needs antibiotics.
- Prevention: long sleeves and trousers tucked in for walks in long grass; insect repellent; check for ticks every evening in tick country.

Sources: medsys.uk/emergency/bites; NICE NG184 (human and animal bites) and NG95 (Lyme disease); UKHSA rabies and leptospirosis guidance; RNLI.

Injuries & Longer Care

Cleaning and closing wounds, broken bones and sprains, eyes and teeth, pregnancy emergencies, and delivering a baby.

25 Wounds: Cleaning, Closing & Healing

26 Broken Bones, Sprains & Dislocations

27 Eye & Dental Injuries

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29 Emergency Childbirth: Delivering a Baby Safely

25 Wounds: Cleaning, Closing & Healing

Most wounds heal whatever anyone does to them. The few that go wrong mostly do so for two reasons: **something was left in them**, or **something unhelpful was put on them**. Both happen in the first five minutes, and both are usually caused by trying to help. The whole of it: **pressure to stop the bleeding, then plenty of clean running water, then cover it.**

Cleaning: volume and flow do the work

IRRIGATE

- **Clean running tap water is fine** for ordinary fresh wounds. Trials haven't found more infections than with sterile saline. Volume matters more than sterility.
- A minute or two under a running tap, lukewarm, not a wipe with a damp cloth. For gritty grazes, this is the difference between healing clean and grit tattooed permanently under the skin.
- **Don't scrub**: it damages healing tissue and drives dirt deeper.
- Antiseptic *around* the wound is optional. Pouring strong antiseptic *into* it harms healing. **Never hydrogen peroxide.**

OUT AND ABOUT, WITH NOTHING

Reasonable	Harmful
An unopened bottle of water, poured, not dabbed	A part-drunk bottle carried warm for hours
The cleanest cloth available for pressure, even a T-shirt	A used tissue, which shreds into the wound
Letting it air-dry	Saliva: licking it, or wetting a cloth to clean it
Cling film as a temporary cover	A cloth of unknown origin pressed on and left

AFTERWARDS

- **Keep it covered and slightly moist** (non-stick dressing or a hydrocolloid). That heals faster and scars less than a hard dry scab. Wounds don't need to "breathe".
- Change the dressing when it's dirty, wet or lifting, not daily by routine.
- **Steri-Strips or skin glue** only for a clean, straight, shallow cut whose edges come together easily. Not for gaping or deep wounds, wounds over joints, wounds bleeding through, or bites.
- No cotton wool directly on a wound.
- **Tetanus:** check vaccination for anything deeper than a graze, especially with soil, punctures or bites. Adults need 5 doses in a lifetime.

BEYOND FIRST AID

- Still bleeding after 10 minutes of firm pressure
- Gaping, or you can see fat, muscle or bone. Best closed within a few hours
- Something embedded that irrigation didn't remove
- Bites, punctures (nails, needles, garden forks)
- Hands, face, joints, genitals
- Heavily contaminated: soil, manure, sewage, floodwater
- **Numbness, weakness, or can't move the part beyond it:** nerve or tendon injury
- Diabetes, poor circulation, steroids, blood thinners

● SIGNS OF INFECTION

Spreading redness, warmth and swelling; pain getting worse after day 2; pus; a bad smell; fever; a red line tracking up the limb (same-day care). Draw around the edge of the redness with a pen and note the time. If it spreads past the line, it's getting worse.

When help is delayed: wounds without a clinic

- **Clean, fresh, gaping cut (under about 6–8 hours old):** after thorough irrigation, the edges can be drawn together with Steri-Strips laid across the wound every few millimetres, with the skin around it dry. Leave small gaps for fluid to drain. Stitching is a skill to learn on a course, not from a book.
- **Dirty, old (over about 12 hours), bitten, crushed or puncture wounds: don't close them.** Irrigate thoroughly, pack loosely with damp sterile gauze, cover, and re-dress daily. These heal from the bottom up. Once clean and healthy-looking after a few days, they can sometimes be drawn closer with strips ("delayed closure").
- Clean around the wound daily, and re-irrigate with boiled-and-cooled water if it's dirty. Raise injured limbs.
- Infection signs mean antibiotics are needed. See Infection & antibiotics. A wound with fever and the person feeling ill may be sepsis.
- Splinters: remove with clean tweezers and a sterilised needle. If it's deep, or glass or metal, leave it for a clinician unless it's causing infection.

Sources: medsys.uk/emergency/wounds; Cochrane review of water for wound cleansing (2022); NICE CKS (lacerations, insect bites); UKHSA Green Book (tetanus).



Broken Bones, Sprains & Dislocations

Broken bones are rarely what kills, but they cause a great deal of pain, blood loss and lasting disability, and in a crisis they're common: falls, debris, ice, accidents. The first-aid principle is simple: **support it in the position you find it, stop it moving, and check the circulation beyond it.**



SIGNS OF A BREAK

- Pain, swelling and bruising at one spot, worse on movement
- An abnormal shape, angle, or shortened limb
- Can't use it or bear weight
- A grating feeling, or the person heard a crack
- **Open fracture:** a wound over the break, or bone visible

If in doubt, treat it as broken. A sprain splinted unnecessarily costs nothing.



CSM: CHECK BEFORE AND AFTER

Beyond the injury (fingers or toes), check:

- **Circulation:** warm, pink, capillary refill under 2 seconds
- **Sensation:** can they feel you touch each finger or toe?
- **Movement:** can they wiggle them?

Check before splinting, after, and every 15–30 minutes.

Cold, pale, blue, numb or tingling means loosen the splint or bandage. If that doesn't help, it's an emergency.

What to do

1

Stop bleeding first, around but not on a protruding bone (see Bleeding).

2

Open fracture: cover the wound with a clean, moist dressing. **Don't push bone back in.** It needs surgery and antibiotics within hours.

3

Support it as found. Let them hold it in the most comfortable position, with padding (towels, clothing) around it.

4

Immobilise the joint above and below. Use slings for the arm and collarbone, and splints for the forearm, lower leg or knee. Pad well, especially at bony points.

5

Ice, wrapped in cloth, for 20 minutes at a time; raise the limb if you can do so gently; and give pain relief (see Pain & fever).

6

Watch for shock: a broken thigh bone can lose 1–1.5 litres of blood into the thigh, and a broken pelvis more.

Injury	Improvised support
Collarbone, upper arm, elbow, wrist	An arm sling from a triangular bandage, scarf or a safety-pinned jumper. A rolled magazine or padded board along the forearm for wrist and forearm breaks
Fingers	"Buddy strap" to the neighbouring finger, with padding between
Lower leg and ankle	Padded splint on both sides (boards, rolled blankets, a folded camping mat, a SAM splint) from above the knee to the foot, tied above and below the injury, not over it
Thigh (femur)	Keep them lying still. Pad between the legs and tie the injured leg to the good one at several points. A traction splint is for trained hands. Treat for shock and keep them warm
Pelvis (high-energy fall or crash, groin or hip pain, can't stand)	Don't roll them, and don't "spring" the pelvis to test it. Keep them flat. If help is far away, a folded sheet wrapped firmly around the hips at the level of the bony points at the top of the thighs (not the waist) and tied can reduce bleeding

Injury	Improvised support
Neck or back	Keep the head in line with the body. Don't move them unless they're in danger. If you must, use several people turning them as one ("log roll")
Ribs	No strapping, which stops deep breathing. Pain relief, a pillow to hug when coughing, and 10 deep breaths every hour to prevent pneumonia. Increasing breathlessness is an emergency

SPRAINS AND STRAINS

- For the first 2–3 days: **rest, ice** (wrapped, 20 minutes every 2–3 hours), a light **compression** bandage (off at night), and **raise** it. Pain relief.
- Then gradually start using it again. Gentle movement speeds recovery.
- **Ankle:** if they can't take **four steps**, or there's bony tenderness at the back edge or tip of either ankle bone, it may be broken. Splint it.

DISLOCATIONS

- An obvious deformity at a joint, a joint locked in position, severe pain.
- **Don't try to put it back** unless trained. Nerves and blood vessels can be damaged, and some "dislocations" are fractures.
- Support it as found, check CSM, and get them to care, ideally within hours.
- A dislocated **kneecap** often slips back by itself as the leg is gently straightened.
- If no help can come for days, and especially if the limb beyond is cold or numb, find the most experienced person you can (a nurse, paramedic, doctor or physiotherapist).

When help is delayed: healing without a fracture clinic

- Most closed breaks of the arm, wrist, collarbone, ribs, fingers and toes **heal with good immobilisation**, even without X-rays. Roughly 4–6 weeks for the arm, 6–8 weeks or more for the leg. Older people heal more slowly.
- Check the skin under splints daily for pressure sores. Re-pad as swelling goes down, because a loose splint doesn't support anything.
- **Keep everything else moving:** wiggle fingers and toes hourly, and move the shoulder of a slung arm gently a few times a day so it doesn't freeze.
- **Blood clots** are a real risk with leg injuries and bed rest. Move the good leg and the feet often, drink plenty, and watch for a swollen, painful calf or sudden breathlessness (emergency).
- Open fractures, thigh and pelvis fractures, and any break with poor circulation beyond it need a hospital. Move them, well splinted, by any safe means.

Sources: St John Ambulance and British Red Cross first aid guidance; Faculty of Pre-Hospital Care (pelvic binders, splintage); NICE NG38 (fractures, non-complex) and NG37 (complex fractures); Ottawa ankle rules.

27 **Eye & Dental Injuries**

Two injuries where the window is minutes to hours, and the instinctive action is usually the wrong one. In the eye, the urge to inspect the damage often causes it. A knocked-out adult tooth handled by its root, or kept in water, is lost; held by the crown and dropped into milk, it can often be saved an hour later.

Eyes

Chemical in the eye: irrigate immediately, with whatever water reaches it in the next 10 seconds, for at least 20 minutes. Then A&E, every time.



CHEMICAL SPLASH

- Don't stop to find sterile fluid. Use a tap, a shower or a bottle of water.
- **Hold the eyelids open**, because they will clamp shut. Run the water away from the good eye.
- **Alkalis are worse than acids**: oven cleaner, drain cleaner, **cement**, plaster and lime keep burning after contact. Brush dry powder off first.
- Never try to neutralise an acid with an alkali, or the reverse.
- Take the container.

OTHER EYE INJURIES

Grit or an eyelash	Irrigate, or blink under water. If it won't shift, stop and get it seen
Something embedded or penetrating	Don't remove it, press on it or irrigate. Cover <i>both</i> eyes (they move together), sit them up, hospital
High-speed fragment (grinding, hammering, strimming)	Assume penetration even if the eye looks fine. A&E, and say what they were doing
Blunt blow	Cold compress <i>around</i> the eye. Hospital for any change in vision, blood in the front of the eye, an odd-shaped pupil, or pain on moving the eye
Welding or sun-lamp flash	Painful, gritty eyes hours later. Needs assessment

Any change in vision after any eye injury (a shadow, a curtain, flashes, a sudden shower of floaters, double vision) needs hospital. Sight lost through delay is rarely recovered.

Teeth

Injury	What to do
Knocked-out adult tooth	Hold it by the crown, never the root . If dirty, rinse briefly in milk or saline; never scrub. Push it back into the socket the right way round and bite gently on a cloth. If you can't, keep it in milk , or inside the cheek (if old enough not to swallow it), not water . Dentist within the hour.
Knocked-out baby tooth	Don't put it back , because it can damage the adult tooth beneath. Gauze pressure, then a dentist.
Broken or chipped tooth	Keep any fragment in milk. Dentist promptly: an exposed nerve is painful and a route for infection.

Injury	What to do
Loosened or pushed-out tooth	Don't force it back. Soft food; dentist the same day.
Bleeding socket	Bite on rolled gauze for 10 minutes without checking. Don't rinse.
Possible broken jaw	Support the jaw, don't test the bite, A&E.

When help is delayed: eyes and teeth

- **Toothache** in a long crisis is common and miserable. Use paracetamol and ibuprofen together (if suitable), clove oil on cotton wool against the tooth, and warm salt-water rinses. A **temporary filling kit** from a chemist can cover a lost filling or broken tooth.
- **Dental abscess warning signs:** swelling of the face or under the jaw that spreads, fever, difficulty swallowing, opening the mouth or breathing. This can block the airway and needs urgent care and antibiotics.
- Keep brushing twice a day, with fluoride toothpaste, even when water is short. A cup of water is enough.
- **Sore red eye:** sticky discharge with gritty eyes is usually conjunctivitis, which clears by itself. Bathe with cooled boiled water. A painful red eye with blurred vision or light sensitivity needs urgent assessment.
- Keep spare glasses and contact-lens supplies. In dusty or smoky conditions, wear glasses, not lenses.

Sources: medsys.uk/emergency/eye-dental; Royal College of Ophthalmologists and College of Optometrists guidance; International Association of Dental Traumatology guidelines; NHS dental advice.

28 Pregnancy Emergencies

Everything here is ultimately a hospital problem. What a bystander does in the minutes before help arrives (positioning, one instruction not to push, knowing what *not* to do) changes outcomes more than almost anywhere else in first aid. **In pregnancy and the six weeks after, call 999 or the maternity unit for anything that worries you:** bleeding, severe headache, tummy pain, reduced baby movements, breathlessness, a seizure, or feeling profoundly unwell. Not wanting to make a fuss is the commonest cause of delay. Delivering a baby is covered step by step in Emergency childbirth.

Early pregnancy: miscarriage and ectopic pregnancy

ECTOPIC PREGNANCY: CAN BE LIFE-THREATENING

A pregnancy growing outside the womb, usually in a tube, which can burst and bleed inside. Suspect it in anyone who is, or could be, pregnant (usually 4–12 weeks) with:

- Pain low in the tummy, often on one side
- Vaginal bleeding or brown discharge (may be light, or none)
- **Pain in the tip of the shoulder** (blood irritating the diaphragm)
- Pain when passing urine or opening the bowels; diarrhoea
- **Dizziness, fainting, pale and sweaty:** internal bleeding. 999, lie her flat with legs raised, keep warm, nothing by mouth.

MISCARRIAGE

- Bleeding with cramping period-type pain in the first months. Sadly common (about 1 in 8 known pregnancies), and usually nothing could have prevented it.
- Most complete on their own. Rest, pads not tampons, and paracetamol for pain.
- **Urgent help if:** soaking a pad an hour, large clots, feeling faint, fever or foul-smelling discharge (infection), or severe one-sided pain (could be ectopic).
- Grief after a miscarriage is real. See The mind.

Bleeding later in pregnancy and after birth

DURING PREGNANCY

Any bleeding needs assessment. **Heavy bleeding, or bleeding with constant severe pain and a hard, tender bump**, suggests the placenta separating: 999, lie on the left side, keep warm, nothing by mouth. It can bleed mostly inside, so what you see may be a fraction of the loss.

AFTER THE BIRTH

999. **Rub up a contraction:** firm circular massage of the top of the womb through the tummy until it hardens. Get her to empty her bladder, put the baby skin to skin and let it feed, which releases oxytocin. Keep her flat, legs raised and warm. **Soaking a pad in under an hour, or any faintness, is an emergency.** More in Emergency childbirth.

PRE-ECLAMPSIA AND ECLAMPSIA (AFTER 20 WEEKS, AND UP TO 6 WEEKS AFTER BIRTH)

A severe headache that won't settle, flashing lights or blurred vision, **pain under the ribs (especially on the right)**, vomiting, sudden swelling of the face, hands or feet, or feeling dreadful: a same-day call. Blood pressure of 140/90 or more confirms the worry. Rib-area pain is repeatedly dismissed as indigestion. **Eclampsia** is a seizure on top of this. Manage the seizure (see Seizures), then lay her on her left side and call 999, saying "eclampsia".

CORD PROLAPSE: A LOOP OF CORD VISIBLE OR FELT AFTER THE WATERS BREAK

- 999 immediately, and say "cord prolapse". The cord is being squeezed, and with it the baby's oxygen.
- **Don't push it back**, and handle it as little as possible.
- Take the weight off it: **knees to chest on all fours with the head down**, or on the left side with the hips raised on cushions.
- Tell her **not to push**. Keep any exposed cord warm and moist with a warm, wet cloth.

REDUCED BABY MOVEMENTS

- From about 24 weeks, a baby that moves less than usual, or in a different pattern, needs checking **the same day**. Don't wait until tomorrow.
- Drinking something cold or lying down to "get the baby moving" isn't a reliable check.
- Counting kicks to a set number is no longer advised: what matters is a change from *this* baby's usual pattern. If no help can be reached, lie on her left side for an hour and concentrate on movements. If they're still reduced, keep trying to reach maternity care. It can be the only warning.

CPR in pregnancy (from about 20 weeks): standard CPR, with someone pushing the bump up and to her left with two hands, and your hands slightly higher on the breastbone. AEDs are safe in pregnancy. And don't let her lie flat on her back for long in late pregnancy: the womb compresses the big blood vessels. Use the left side, or prop her up.

When help is delayed

- **Labour before 37 weeks** (regular painful tightenings, waters breaking, bleeding) needs a maternity unit immediately. Even 24–48 hours there lets steroid injections mature the baby's lungs.
- **Waters break before labour starts**: note the time and the colour (clear is normal; green, brown or bloody needs urgent assessment). Use pads, not tampons, and nothing inside the vagina. Labour usually starts within 24 hours. Fever, a fast pulse, smelly fluid or tummy tenderness mean infection: urgent.
- Keep a **birth kit** if anyone in the household is pregnant (list in Emergency childbirth), and the maternity unit's number.
- Keep taking folic acid in early pregnancy and vitamin D throughout, and eat as well as supplies allow. Stay hydrated, especially in heat or illness.

Sources: [medsys.uk/emergency/obstetric](https://www.medsys.uk/emergency/obstetric); RCOG Green-top guidelines; NHS (ectopic pregnancy, miscarriage, baby movements); NICE NG126 (ectopic pregnancy and miscarriage), NG25 (preterm labour), NG133 (hypertension in pregnancy).

29



Emergency Childbirth: Delivering a Baby Safely

Women have given birth without professional help for all of human history, and most births go well on their own. Your job is mostly to **keep calm, keep things clean and warm, support rather than pull, and know the few things that need action**. Call 999 or the maternity unit as soon as labour starts: the call handler or midwife will talk you through it. This section is for when they can't come in time, or can't come at all.

IS THE BABY COMING NOW?

- Contractions every **2–3 minutes**, each lasting about a minute, getting stronger
- She has an **urge to push** or bear down, or feels she needs to open her bowels
- The waters have broken
- You can see the baby's head at the opening during a push
- She says "the baby's coming", and she is usually right, especially if she has given birth before

A first labour usually takes many hours. Later labours can be much faster.

GET READY (KEEP A BIRTH KIT)

- ★ Wash your hands well; gloves if you have them
- ★ Make the room **warm** (25 °C if possible), close windows, draught-free
- ★ Clean towels (at least 4), a waterproof sheet or bin bags under her
- ★ A hat and blanket for the baby; maternity pads for her
- ☐ A bowl or bag for the placenta
- ☐ Clean string or cord ties and scissors boiled for 10 minutes (only needed if the cord must be cut)
- ☐ A clean, clear food or freezer bag (for a very premature baby)
- ☐ A torch, drinks for her, and a phone

Delivering the baby, step by step

- 1 Let her choose the position.** Kneeling on all fours, kneeling upright, on her side, or semi-sitting propped up with pillows. Avoid flat on her back. Stay calm and encouraging.
- 2 Let her push with each contraction** and rest in between. Don't tell her to push before she feels the urge. Never press on her tummy.
- 3 As the head appears and stretches the opening ("crowning"), slow it down.** Ask her to stop pushing and pant or blow in short breaths, so the head comes out gently. This reduces tearing. Rest your palm lightly on the head to stop it popping out suddenly. Don't hold it back.
- 4 Once the head is out, don't pull.** The baby will turn to face one of her thighs. Feel gently around the neck for the cord. If it's loose, slip it over the head. If it's tight and won't slip, leave it: the baby can be born through it, with the head kept close to her thigh as the body comes out ("somersault").
- 5 With the next contraction, the shoulders come:** usually the top one first, then the bottom one. Support the head and let the body slide out by itself. Babies are slippery, so hold firmly under the arms and against your body, and keep the baby low, near her.
- 6 Note the time of birth.** Lay the baby straight onto her tummy or chest.

The first minute: dry, warm, breathing

A **healthy newborn** cries or breathes within about 30–60 seconds, turns pink over several minutes (hands and feet stay bluish for a while), and moves its arms and legs.

- **Dry the baby vigorously** with a warm towel. Drying is also what stimulates the first breath.
- **Throw away the wet towel.** Put the baby **skin to skin** on her chest, cover both with a dry towel or blanket, and put a hat on the baby.
- Wipe mucus from the mouth and nose with a clean cloth if needed. Don't suck it out routinely.

IF THE BABY ISN'T BREATHING AFTER DRYING

1. Rub the back firmly and flick the soles of the feet. Keep the baby warm throughout.
2. Lay the baby on its back on a firm surface, **head in a neutral position** (flat, not tipped back). A folded towel under the shoulders helps.
3. Give **5 inflation breaths**: cover the baby's mouth and nose with your mouth, and blow steadily for 2–3 seconds each, just enough to see the chest rise.
4. Then breaths at about **30 a minute**, watching for the chest to rise.
5. If after 30 seconds of good breaths the baby still isn't responding and is floppy and blue or pale, add **chest compressions**: two thumbs on the lower breastbone, a third of the chest depth, **3 compressions to 1 breath**. Keep going until the baby breathes or help arrives.

The cord: there's no need to cut it

Don't worry about the cord. There is no rush to cut it, and no danger in leaving it. Leaving it attached for at least a few minutes lets the baby receive extra blood from the placenta, which helps. After the placenta is born, it can simply be put in a clean bowl or bag beside the baby, still attached, until help arrives. Cutting the cord with dirty scissors causes far more harm (infection, bleeding) than leaving it.

IF THE CORD HAS TO BE CUT

1. Wait until it has **stopped pulsing** and gone white and limp, usually several minutes after birth, or until after the placenta is out.
2. Tie it tightly with clean string, a cord clamp or a strip of clean cloth about **2–3 cm from the baby's tummy**, then tie it again about **5 cm further along**. Double knots.
3. Cut **between the two ties** with scissors or a new blade that has been boiled for 10 minutes.
4. Check the baby's end after a few minutes. If it oozes blood, tie again just above the first tie.

CARING FOR THE CORD STUMP

- Keep it **clean and dry**, and fold the nappy below it.
- Nothing on it: no creams, powders or spirit, just clean water if it gets dirty, then pat dry.
- It shrivels and falls off in about 5–15 days.
- **Infection signs**: redness spreading onto the tummy, a bad smell, pus, or the baby unwell or feverish. Urgent help and antibiotics.

Delivering the placenta

- 1 **Wait.** The placenta (afterbirth) usually comes within **30 minutes**, and sometimes up to an hour. Keep the baby skin to skin and let it feed: breastfeeding releases oxytocin, which helps the womb contract.

- 2 Signs it's coming:** a small gush of blood, the cord getting longer, and the womb rising and feeling firm and round under her tummy. She may feel a contraction or the urge to push.
- 3 Let her push it out**, ideally sitting upright or squatting over a bowl. **Never pull on the cord:** it can tear, or turn the womb inside out, causing massive bleeding.
- 4 Keep it** in a bowl or bag for a midwife to check that none has been left behind.
- 5 Then rub up the womb:** feel for the top of the womb (around the level of the navel) and massage firmly in circles until it feels hard, like a grapefruit. Check again every 15 minutes for the first hour. Encourage her to pass urine, because a full bladder stops the womb contracting.

Common problems, and what to do

Problem	What to do
Head born, but the shoulders won't come (the head pulls back tight against her, "turtling")	Don't pull on the head, and don't push on the top of the bump. 1. Knees to chest: she lies back and two helpers pull her knees right back towards her armpits. 2. Pressure above the pubic bone: a helper presses firmly <i>just above her pubic bone</i> , downwards and slightly to the side of the baby's back, for 30 seconds while she pushes. 3. If still stuck: all fours , and push again. Most cases free with the first two.
Bottom or feet first (breech)	Hands off. Let it come by itself, ideally with her on all fours or at the edge of a bed. Don't pull on the legs or body. Keep the baby's back facing up. Support the body when it's out, and keep it warm with a towel. The head comes last: ask her to push. If it doesn't come within a few minutes, follow the call handler.
Green or brown waters (meconium)	Usually fine if the baby cries. If the baby is floppy and not breathing, wipe the mouth and nose, then start inflation breaths straight away. Don't delay breathing to clear it.
Heavy bleeding after the birth (soaking a pad in under an hour, a steady trickle, over about 500 ml, or she feels faint)	Rub up the womb hard and keep rubbing. Baby to the breast. Empty her bladder. Lie her flat with legs raised and keep her warm. If the placenta is still inside, she needs help urgently. Get her to hospital by any means.
Placenta not out after an hour	Don't pull. Get her upright, breastfeed, empty her bladder. Keep watching for bleeding. She needs a midwife or doctor.
Tears	Small tears usually heal on their own. Press a clean pad on any bleeding. Keep clean: pour warm water over the area while passing urine. Large tears, or ones reaching the back passage, need repair.
Twins	The second baby usually comes within about 30 minutes. Same steps. Keep the first baby warm, skin to skin. The placenta(s) come after both babies.
Very premature baby (under about 32 weeks)	Dry only the head, put on a hat, and put the body straight into a clean, clear food or freezer bag without drying, with the face uncovered. Then skin to skin, covered. Urgent help.

After the birth

KEEPING THE BABY WARM

- **Skin to skin** for at least the first hour, and as much as possible after that, covered with a blanket and wearing a hat. The mother's chest is the best warmer there is. A second adult can do skin to skin too.
- Keep the room warm and draught-free. Dress the baby in one more layer than an adult would need.
- Normal temperature (armpit) is **36.5–37.5 °C**. Cold hands and feet are normal; a cold chest or tummy isn't.
- **Don't bath the baby** for at least the first day. Just wipe off blood.
- Don't overheat either: no hot-water bottles against the baby.

FEEDING

- Put the baby to the breast within the first hour. The first milk (colostrum) is small in amount and all the baby needs.
- Feed whenever the baby wants, at least **8–12 times in 24 hours**.
- Good signs: swallowing sounds, wet nappies increasing to 6+ a day by day 5, yellow stools by day 4–5.
- Breastfeeding needs no water, sterilising or supplies, which matters in a crisis.

BABY DANGER SIGNS

- Not feeding, or too sleepy to feed
- Floppy, or a weak or high-pitched cry
- Breathing over 60 a minute, grunting, or pauses
- Temperature 38 °C+ or under 36 °C
- Yellow skin in the first 24 hours, or very yellow later
- Red, smelly or pus-filled cord
- Fits, or blue or grey colour

MOTHER DANGER SIGNS

- Heavy bleeding, or large clots
- Fever, shivering, foul-smelling discharge
- Severe headache or vision changes (pre-eclampsia can start after birth)
- A painful, swollen leg, chest pain or breathlessness (blood clot)
- Not able to pass urine within 6 hours
- Feeling very low, confused, or having frightening thoughts

When help is delayed for days

- Mother: rest, drink plenty, eat well, pass urine regularly, change pads often and keep clean with warm water. Check the womb is firm and the bleeding is lessening each day. It changes from red to brown to cream over 2–6 weeks.
- Baby: warmth, frequent feeds, and a daily check of breathing, colour, cord, nappies and feeding. Write it down.
- Record the time of birth, the baby's sex, and any problems. The birth must be registered within 42 days in England and Wales (21 days in Scotland) once services allow.
- Any danger sign in mother or baby means getting to a midwife, doctor or hospital by any safe means.

Sources: NHS "What to do if you go into labour unexpectedly"; St John Ambulance emergency childbirth; Resuscitation Council UK newborn life support (2025); WHO Essential Newborn Care and Pregnancy, Childbirth, Postpartum and Newborn Care guide; RCOG Green-top guidelines (shoulder dystocia, breech, postpartum haemorrhage); NICE NG194 (postnatal care).

When Help Isn't Coming

Caring for someone for days, pain and fever, a medicines and antibiotics lookup, infection, the mind, the medical kit, and when someone dies.

[30 Caring for Someone for Days](#)
[31 Pain, Fever & Everyday Medicines](#)
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30 Caring for Someone for Days

When help is delayed, the work changes from the first minutes to the long middle: keeping a sick or injured person safe, fed, clean and comfortable for days, and noticing early when they're getting worse. Most of this is nursing, not medicine, and simple routines prevent most of the harm.

Set up a care space



THE ROOM

- A bed you can reach from both sides, ideally raised, near a toilet or commode, with good light.
- Warm but ventilated: open a window for 10 minutes a few times a day.
- Everything at hand: water and cup with a straw, the observation chart, medicines and their record, bowl, towels, bin bags, gloves, hand gel.
- A bell, whistle or baby monitor so they can call you.



THE CARERS

- One lead carer, and at least one relief. Nobody can do 24 hours a day for long.
- A written handover at each change: how they've been, what's been given, what's due.
- **Hand hygiene** before and after care, and gloves for body fluids, wounds and toileting.
- Look after yourselves: food, sleep, and someone to talk to.

The daily routine

What	How	Why
Observations	Breathing rate, pulse, temperature, alertness, and urine output, every 1–4 hours (every 15–30 minutes if unstable). Write them on the chart.	The trend shows deterioration hours before a crisis
Fluids	About 1.5–2 litres a day for an adult, little and often, unless restricted for heart or kidney disease. More with fever, diarrhoea, vomiting or heat. Target: pale urine every few hours.	Dehydration causes confusion, kidney damage, clots, constipation and falls
Food	Small, frequent meals; soft food if weak. Protein (eggs, beans, milk, tinned fish) for healing. Sit fully upright to eat.	Injured and sick people need more energy, not less

What	How	Why
Pressure areas	If they can't move themselves, change position every 2–3 hours , day and night. Check heels, hips, the base of the spine, elbows and ears daily. Keep the skin clean and dry, and pad with pillows.	Pressure sores can start within hours and become deep, infected wounds
Breathing	Sit them up. Ten deep breaths and a cough every hour while awake. Move them out of bed when possible.	Lying still causes chest infections
Circulation	Ankle pumps and leg movements every hour. Watch for a swollen, painful calf.	Prevents blood clots
Toilet	A commode, bedpan or bucket with a lid. Record when they pass urine and open their bowels. Fluids and fibre against constipation.	No urine for 12 hours is a warning sign
Mouth, eyes, skin	Teeth cleaned twice a day. Moisten the lips. Wipe the eyes clean. A daily wash, with special care in skin folds.	Comfort, and prevents infection
Medicines	A written record of every dose and time. Keep their regular medicines going unless they can't swallow or are very unwell (ask a pharmacist).	Prevents double doses and missed doses

Oral rehydration solution (ORS): best from sachets (Dioralyte, or WHO-ORS). If you have none: **1 litre of clean (boiled and cooled) water + 6 level teaspoons of sugar + ½ a level teaspoon of salt**, stirred until dissolved. Measure carefully, because too much salt is harmful. Give it in frequent small sips, a spoonful every minute or two for a vomiting child. Make a fresh batch every 24 hours.

MOVE THEM TO HELP IF

- Any emergency-band vital sign that doesn't correct (see Vital signs)
- New confusion, or becoming harder to wake
- Can't keep fluids down for 12–24 hours, or no urine for 12 hours or more
- **Unable to swallow safely for more than a day:** a person who can't drink needs a drip or tube, which only a medical team can provide
- Breathing getting faster or harder
- Signs of sepsis, a spreading infection, or a blood clot

SOMEONE WHO IS UNCONSCIOUS FOR LONG PERIODS

- Recovery position, alternating sides every 2 hours.
- Check their breathing constantly. Never leave them on their back.
- Nothing by mouth. Moisten the mouth with a damp swab.
- Pad pressure areas and keep the eyes closed and moist.
- This is the clearest case where home care can't replace hospital. Every hour counts towards getting them there.

Looking after the carers

- Carers burn out within days. Share the load, sleep in shifts, eat proper meals, and accept help from neighbours.
- Lifting injures carers. Get help to move people, bend your knees, use sheets to slide rather than lift, and never lift a fallen person alone. Make them comfortable on the floor until help comes.
- Write everything down. When you're exhausted, the record keeps the care safe.

Sources: NHS and NICE guidance on pressure ulcer prevention (CG179), venous thromboembolism (NG89), and nutrition and hydration; WHO oral rehydration guidance; Royal College of Nursing.



Pain relief matters more than people think. Untreated pain stops people breathing deeply, moving, eating and sleeping, and all of those slow recovery. Fever is the body fighting infection: it isn't dangerous in itself, and bringing the number down doesn't cure anything. Treat fever and pain to make the person **comfortable** and able to drink, and watch the warning signs, which matter far more than the thermometer.

A SIMPLE PAIN PLAN

1. **Non-drug measures** for every injury: support or splint it, ice for the first 48 hours (wrapped, 20 minutes at a time), raise it, a comfortable position, reassurance.
2. **Paracetamol**, regularly rather than "when needed", for pain that's expected to last.
3. **Add ibuprofen** for injuries, dental pain, period pain and inflammation, if suitable (see the safety rules). Adults can take both together.
4. **Ibuprofen gel** for sprains and joint pain. It has fewer side effects than tablets.
5. **Stronger painkillers** (codeine, tramadol, morphine) only on prescription and as directed. They cause drowsiness, constipation and slowed breathing, especially in older people, and are dangerous with alcohol or sleeping tablets.

FEVER, WITHOUT MEDICINE

- A high temperature is **38 °C or more**.
- Plenty of fluids, little and often. Light clothing and bedding, in a comfortably cool room.
- **Don't sponge with cold or tepid water**, and don't over-wrap or under-dress a child.
- Check a feverish child during the night. A parent's sense that a child is hot counts.
- Paracetamol or ibuprofen can hide a rising temperature. Write down what you gave and when.

Paracetamol and ibuprofen — standard NHS doses

Always check the strength on the packet — liquid medicines for children come in different strengths. Use the oral syringe that comes with the medicine. Write down every dose and its time.

Adults (16+)	Dose	How often	Maximum
Paracetamol 500 mg tablets	1–2 tablets	At least 4 hours apart	8 tablets (4 g) in 24 hours
Ibuprofen 200 mg tablets	1–2 tablets, with or after food	Up to 3 times a day, at least 4 hours apart	6 tablets (1,200 mg) in 24 hours

Adults under 50 kg may need lower doses of paracetamol — check with a pharmacist. Don't take paracetamol with other products that contain it (many cold and flu remedies do). Don't take ibuprofen with other anti-inflammatories such as naproxen or aspirin. Adults can take paracetamol and ibuprofen together. Paracetamol for more than 3 days, or ibuprofen for more than 10, needs medical advice.

Child's age	Paracetamol infant liquid 120 mg/5 ml (up to 5 yrs) · 250 mg/5 ml "6+" liquid (6 yrs+)	Ibuprofen 100 mg/5 ml liquid
Under 2 months	Don't give — get medical advice	Don't give
2–3 months	2.5 ml (120 mg/5 ml) — only if over 4 kg and born after 37 weeks; up to 2 doses, then get advice	Don't give under 3 months
3–5 months	2.5 ml (120 mg/5 ml)	2.5 ml, up to 3 times a day — only if over 5 kg; no more than 24 hours without advice
6–11 months	5 ml (120 mg/5 ml)	2.5 ml, 3–4 times a day
1–3 years	1 yr: 5 ml · 2–3 yrs: 7.5 ml (120 mg/5 ml)	5 ml every 6–8 hours (max 3 doses in 24 h)
4–5 years	10 ml (120 mg/5 ml)	7.5 ml every 6–8 hours (max 3 doses)
6–7 years	5 ml (250 mg/5 ml)	7.5 ml (6 yrs) · 10 ml (7 yrs) every 6–8 hours (max 3)
8–9 years	7.5 ml (250 mg/5 ml)	10 ml every 6–8 hours (max 3)
10–11 years	10 ml (250 mg/5 ml)	7.5 ml of the 200 mg/5 ml liquid every 6–8 hours (max 3)
12–15 years	10–15 ml (250 mg/5 ml) or one 500 mg tablet	One or two 200 mg tablets every 6–8 hours (max 6 in 24 h), with food
How often	Up to 4 doses in 24 hours, at least 4 hours apart	As above — usually up to 3 doses in 24 hours

Doses are the NHS's published age-based doses (nhs.uk, 2025–26). Ibuprofen doses up to 9 years are for the 100 mg/5 ml liquid; from 10 years the NHS gives doses for the 200 mg/5 ml liquid or tablets. Always check your product's label. Give children medicine for more than 3 days only on medical advice.

⚠ SAFETY RULES

- **Children:** give paracetamol *or* ibuprofen, not both at the same time. Only alternate them if a doctor or nurse advises, or if the child is still distressed before the next dose is due — and write every dose down.
- **Don't give ibuprofen** to a child who is dehydrated, has chickenpox, is under 3 months or under 5 kg. It may not be suitable for anyone with asthma, kidney, liver or heart problems, stomach ulcers, or in pregnancy.
- **Pregnancy and breastfeeding:** paracetamol is the first choice. Avoid ibuprofen in pregnancy unless a doctor advises.
- **Never exceed the maximum dose.** Paracetamol overdose damages the liver without early symptoms — if too much is taken, call 111 or go to A&E even if the person feels fine.
- Never give aspirin to anyone under 16.

When help is delayed

- Keep a stock of **paracetamol and ibuprofen** (tablets, plus children's liquids if you have children) for at least a month, rotated before expiry. The UK limits how many packs are sold in one purchase, so build the stock gradually.
- Write every dose on the record sheet. Double-dosing, especially of paracetamol, is a real risk when several people share caring.
- Don't use leftover prescription painkillers belonging to someone else, or "borrowed" medicines whose names and doses you don't know.
- Constipation from painkillers and bed rest: fluids, fibre, moving about, and a simple laxative from the pharmacy.

Sources: NHS paracetamol and ibuprofen pages for adults and children (2025–26); NICE NG143 (fever in under-5s); MHRA Drug Safety Update (September 2025); NICE CKS (analgesia).

32 Medicines Lookup: Common Medicines & Antibiotics

A quick reference to the medicines most often needed in an emergency or a long crisis: what each is for, the usual adult and child doses, and, for infections, the first choice, the option for penicillin allergy, and what to use second if the first isn't working. Paracetamol and ibuprofen doses by age are in Pain & fever.

READ BEFORE USING THIS TABLE

- These are the **standard UK doses** from NICE guidance and the BNF (2025–26). They're here so a pharmacist, prescriber or trained person can check them quickly, so you understand a prescription, and for when a prescriber has supplied medicines with instructions.
- **Antibiotics are prescription-only**, and should be taken only for a likely *bacterial* infection. They do nothing for colds, flu, most coughs and sore throats, or diarrhoea, and the wrong use breeds resistance. Keep trying to reach a prescriber, including pharmacists under **Pharmacy First**.
- **Always check first:** allergies (and what actually happened), pregnancy or breastfeeding, age and weight, kidney or liver disease, and other medicines. Read the leaflet in the box.
- Children's doses depend on age *and* weight. If a child is small or large for their age, use their weight. Use a measuring syringe, never a kitchen spoon.
- Write down every dose and time on the patient's record.

Everyday and emergency medicines

Medicine	For	Adult (and 12+ unless stated)	Child	Watch out
Paracetamol	Pain, fever	500 mg–1 g every 4–6 h; max 4 g a day	By age: see Pain & fever (about 15 mg/kg a dose, max 4 doses a day)	Overdose damages the liver silently. Many cold remedies contain it
Ibuprofen	Pain, fever, inflammation, sprains	200–400 mg up to 3 times a day with food; max 1.2 g a day	By age: see Pain & fever (about 5–10 mg/kg a dose, 3 times a day)	Not if dehydrated, pregnant, stomach ulcer, kidney disease, or bleeding

Medicine	For	Adult (and 12+ unless stated)	Child	Watch out
Cetirizine	Hay fever, hives, itch, mild allergy	10 mg once a day	2–5 y: 2.5 mg twice a day · 6–11 y: 5 mg twice a day	Not a treatment for anaphylaxis
Loratadine	As cetirizine, less drowsy	10 mg once a day	2–11 y: under 30 kg 5 mg, 30 kg+ 10 mg, once a day	
Chlorphenamine	Itch, allergy (and at night, as it's sedating)	4 mg every 4–6 h; max 24 mg a day	1–2 y: 1 mg twice a day · 2–5 y: 1 mg every 4–6 h (max 6 mg a day) · 6–11 y: 2 mg every 4–6 h (max 12 mg a day)	Drowsy: no driving or machinery
Oral rehydration salts	Diarrhoea, vomiting, heat	200–400 ml after each loose stool, plus normal drinks	5 ml/kg after each large loose stool; for dehydration, 50 ml/kg over 4 hours (see Dehydration)	Make up exactly as the packet says
Loperamide	Diarrhoea in adults	4 mg first, then 2 mg after each loose stool; max 12 mg a day (16 mg on prescription)	Not under 12 unless prescribed	Not with blood in the stool or a high fever
Salbutamol inhaler (blue, 100 micrograms a puff)	Asthma, wheeze	1–2 puffs as needed. Attack: 1 puff every 30–60 seconds, up to 10 puffs, through a spacer	Same, through a spacer (with a mask under about 3)	Needing it more than 3 times a week means poor control. See Breathing
Aspirin	Suspected heart attack	300 mg, chewed, once	Never under 16	Not if allergic, bleeding, or on a blood thinner. Never for stroke before a scan
Glucose (tablets, gel, juice)	Low blood sugar	15–20 g fast sugar (4–5 glucose tablets, or 150–200 ml juice); re-check in 15 minutes	About 0.3 g/kg (e.g. 5–10 g for a small child)	Only if able to swallow safely
Hydrocortisone 1% cream	Eczema, bites, itchy rashes	Thin layer once or twice a day, up to 7 days	Over 10 (younger on advice)	Not on the face or broken or infected skin unless advised
Clotrimazole 1% cream	Athlete's foot, fungal rashes, nappy thrush	2–3 times a day; continue 2 weeks after it clears	Same	
Fluconazole 150 mg	Vaginal thrush	One capsule, once (16–60 without prescription)	No	Not in pregnancy

Medicine	For	Adult (and 12+ unless stated)	Child	Watch out
Chloramphenicol 0.5% eye drops	Bacterial conjunctivitis (sticky eye)	1 drop every 2 hours for 2 days, then 4 times a day; 5 days in total	From 2 years without prescription	A painful red eye with blurred vision needs urgent care, not drops
Naloxone	Opioid overdose	Nasal: 1 spray, repeat in the other nostril after 2–3 min if needed. Injection kit: 0.4 ml into the thigh, repeat every 2–3 min	Can be given in an emergency	Wears off before most opioids: stay with them (see Collapse)
Adrenaline pen	Anaphylaxis	300 or 500 micrograms into the outer thigh; repeat after 5 min	150 micrograms (about 7.5–25 kg); 300 micrograms over 25 kg	See Anaphylaxis
Prednisolone (prescription)	Asthma attack; COPD flare	Asthma: 40–50 mg once a day for at least 5 days. COPD: 30 mg once a day for 5 days	Asthma: 1–2 mg/kg once a day (max 40 mg) for 3 days	Take in the morning, with food
GTN spray (prescription)	Angina	1–2 sprays under the tongue, sitting down; repeat after 5 min	No	999 if the pain isn't gone 5 min after the second dose. Not with sildenafil-type drugs
Codeine (prescription, or low-dose in pharmacy combinations)	Moderate pain	30–60 mg every 4 h if needed; max 240 mg a day	Not under 12	Constipating, drowsy; not when breastfeeding; addictive over weeks

Antibiotics: first choice, allergy option and second line

Adult doses, from NICE guidance. Children's doses for the main antibiotics are in the next table. **Pen allergy** = true penicillin allergy. Co-amoxiclav and pivmecillinam are penicillins.

Infection (and when antibiotics help)	First choice (adult)	Penicillin allergy	Second line / not improving	Days
Strep sore throat: fever, pus on tonsils, tender neck glands, no cough	Phenoxymethylpenicillin 500 mg 4× a day (or 1 g 2× a day)	Clarithromycin 250–500 mg 2× a day · pregnant: erythromycin 250–500 mg 4× a day	Reassess; quinsy (one-sided swelling, can't swallow) needs hospital	5–10

Infection (and when antibiotics help)	First choice (adult)	Penicillin allergy	Second line / not improving	Days
Ear infection (children, if very unwell, discharging, or not better in 3 days)	Amoxicillin (child doses below)	Clarithromycin	Co-amoxiclav if worse after 2–3 days	5–7
Sinusitis lasting over 10 days and getting worse	Phenoxymethylpenicillin 500 mg 4× a day	Doxycycline 200 mg day 1, then 100 mg once a day · or clarithromycin 500 mg 2× a day	Co-amoxiclav 500/125 mg 3× a day	5
Pneumonia: fever, cough, fast breathing, chest pain on breathing	Amoxicillin 500 mg 3× a day (higher doses possible)	Doxycycline 200 mg day 1, then 100 mg once a day · or clarithromycin 500 mg 2× a day · pregnant: erythromycin 500 mg 4× a day	Moderate: amoxicillin <i>plus</i> clarithromycin. Severe: hospital	5
COPD flare with more, or green, phlegm	Amoxicillin 500 mg 3× a day · or doxycycline · or clarithromycin 500 mg 2× a day	Doxycycline or clarithromycin	A drug from a different group; higher risk: co-amoxiclav 500/125 mg 3× a day	5
Cellulitis: spreading red, hot, swollen skin; infected wound	Flucloxacillin 500 mg–1 g 4× a day	Clarithromycin 500 mg 2× a day · or doxycycline 200 mg day 1, then 100 mg once a day · pregnant: erythromycin 500 mg 4× a day	Near the eye or nose: co-amoxiclav 500/125 mg 3× a day (7 days). Spreading fast or very unwell: hospital	5–7
Impetigo: crusted golden sores	Small area: hydrogen peroxide 1% cream 2–3× a day; then fusidic acid 2% cream 3× a day. Widespread: flucloxacillin 500 mg 4× a day	Clarithromycin 250 mg 2× a day	Mupirocin 2% cream if fusidic acid fails	5
Bite (human, cat, dog) that broke the skin, or is infected	Co-amoxiclav 250/125 or 500/125 mg 3× a day	Doxycycline 200 mg day 1, then 100–200 mg a day, <i>plus</i> metronidazole 400 mg 3× a day	Pregnant with allergy, or under 12 with allergy: specialist advice	3 to prevent, 5 to treat
Dental abscess with spreading swelling or fever (drainage by a dentist is the real treatment)	Phenoxymethylpenicillin 500 mg 4× a day · or amoxicillin 500 mg 3× a day	Metronidazole 400 mg 3× a day · or clarithromycin	Severe or spreading: add metronidazole 400 mg 3× a day. Swelling of the neck or floor of the mouth: hospital	Up to 5

Infection (and when antibiotics help)	First choice (adult)	Penicillin allergy	Second line / not improving	Days
Urine infection , women 16+ (not pregnant)	Nitrofurantoin 100 mg MR 2× a day (if kidneys are normal) · or trimethoprim 200 mg 2× a day	Both are fine with penicillin allergy	Not better in 48 h: nitrofurantoin (if not used first), pivmecillinam 400 mg then 200 mg 3× a day, or fosfomycin 3 g once	3
Urine infection , men	Trimethoprim 200 mg 2× a day · or nitrofurantoin 100 mg MR 2× a day	As first choice	Fever or pain between the legs: prostate or kidney infection, needs a prescriber	7
Urine infection , pregnancy	Nitrofurantoin 100 mg MR 2× a day (not near term)	Cefalexin (with care)	Cefalexin 500 mg 2× a day	7
Kidney infection: fever, loin pain, vomiting	Cefalexin 500 mg 2–3× a day (up to 1–1.5 g 3–4× a day if severe)	Cefalexin with care (avoid after anaphylaxis); ciprofloxacin 500 mg 2× a day only if nothing else is suitable (7 days)	Vomiting or very unwell: hospital (drip antibiotics)	7–10
Lyme disease: spreading red rash after a tick bite	Doxycycline 100 mg 2× a day (or 200 mg once a day)	Doxycycline · or azithromycin 500 mg once a day (17 days)	Amoxicillin 1 g 3× a day	21

Children's doses for the main antibiotics

Antibiotic	1–11 months	1–5 years	6–11 years	12–17 years
Amoxicillin (3× a day)	125 mg	1–4 y: 250 mg	5–11 y: 500 mg	500 mg
Phenoxymethylpenicillin (4× a day)	62.5 mg	125 mg	250 mg	500 mg
Flucloxacillin (4× a day)	62.5–125 mg (to 1 year)	2–9 y: 125–250 mg	10–17 y: 250–500 mg	250–500 mg
Co-amoxiclav (3× a day)	0.25 ml/kg of 125/31 liquid	5 ml of 125/31 liquid (or 0.25 ml/kg)	5 ml of 250/62 liquid (or 0.15 ml/kg)	250/125 or 500/125 mg
Clarithromycin (2× a day), by weight up to 11 years	Under 8 kg: 7.5 mg/kg · 8–11 kg: 62.5 mg · 12–19 kg: 125 mg · 20–29 kg: 187.5 mg · 30–40 kg: 250 mg			250–500 mg
Trimethoprim (urine; 2× a day, from 3 months)	4 mg/kg (3–5 months: 25 mg; 6 months+: 50 mg)	4 mg/kg or 50 mg	4 mg/kg or 100 mg (max 200 mg)	12–15 y: 200 mg

Antibiotic	1–11 months	1–5 years	6–11 years	12–17 years
Nitrofurantoin (urine; 4× a day, from 3 months)	750 micrograms/kg			50 mg 4× a day, or 100 mg MR 2× a day
Cefalexin (urine, kidney)	3–11 months: 125 mg 2× a day (or 12.5 mg/kg)	1–4 y: 125 mg 3× a day	5–11 y: 250 mg 3× a day	500 mg 2–3× a day

Course lengths for children are as in the adult table, except: urine infection 3 days (kidney infection 7–10 days); non-severe pneumonia 3 days from 3 months to 11 years (5 days under 3 months and from 12 years). **Doxycycline is not used under 12.** Babies under 3 months with any infection, and any child with fever and a red feature (see Vital signs), need hospital, not tablets.

⚠️ ANTIBIOTIC CAUTIONS

- **Doxycycline:** not under 12, in pregnancy or breastfeeding. Swallow with a full glass of water, sitting upright. It makes skin burn easily in the sun.
- **Clarithromycin and erythromycin:** interact with many drugs, including statins and some heart medicines. Check the leaflet.
- **Nitrofurantoin:** needs working kidneys; not near the end of pregnancy.
- **Trimethoprim:** not in the first 3 months of pregnancy, or with methotrexate.
- **Metronidazole:** no alcohol during the course and for 48 hours after.
- **Ciprofloxacin** and similar: last resort only, because of tendon and nerve damage.

✅ USING ANTIBIOTICS WELL

- Space doses evenly through the day, and take the whole course.
- Expect improvement within **48–72 hours**. Getting worse at any point, or no better by then, means reassessment, or the second-line option.
- A rash, swelling of the face or lips, or breathing difficulty after a dose is an allergy. Stop it, and treat anaphylaxis if severe.
- Diarrhoea is common. Severe or bloody diarrhoea during or after antibiotics needs medical help.

🕒 When help is delayed

- Use this table with the person's written record of allergies and medicines. If in any doubt about an allergy, choose the penicillin-allergy option.
- Many infections (most coughs, sore throats, ear infections in children, sinusitis, mild urine infections in women) settle without antibiotics in a few days. Keep the antibiotics you have for the infections that need them: pneumonia, spreading skin infection, infected bites, kidney infection.
- Sepsis, meningitis, a baby under 3 months with fever, and anyone too unwell to swallow need hospital antibiotics. Tablets are not a substitute (see Sepsis).
- Store medicines cool, dry and dark, in their original packs. Most stay usable for a while past their date if kept well, but liquid antibiotics for children only last 7–14 days once made up.

Sources: NICE antimicrobial prescribing guidelines NG84 (sore throat), NG91 (otitis media), NG79 (sinusitis), NG250 (pneumonia, 2025), NG114 (COPD), NG141 (cellulitis), NG153 (impetigo), NG184 (bites), NG109 (lower UTI), NG111 (pyelonephritis), NG95 (Lyme disease); SDCEP Drug Prescribing for Dentistry; BNF and BNF for Children; NHS medicines pages; Asthma + Lung UK.



Doses for every antibiotic below are in the Medicines lookup. In a long crisis, infections become the main threat. Wounds get dirty, water and food get less safe, and people are crowded, cold and tired. Antibiotics save lives in bacterial infections, do nothing for viral ones, and run out. Knowing which infections need them, which don't, and which need hospital is the skill.

Common infections: what needs what

Infection	Signs	Usually needs
Colds, flu, most coughs, sore throats, earaches, sinusitis	Runny nose, sore throat, cough, aches, fever for 2–4 days	No antibiotics. Rest, fluids, paracetamol or ibuprofen. Most clear within 1–3 weeks (a cough can linger 3 weeks)
Diarrhoea and vomiting	Loose stools, cramps, nausea	Fluids (oral rehydration solution), hand hygiene, rest. Antibiotics rarely. Get help if there's blood, high fever, signs of dehydration, or no improvement in 3 days (sooner for a baby)
Skin infection (cellulitis)	Spreading redness, warmth, swelling, pain, often around a wound; a red line up the limb	Antibiotics. Mark the edge with a pen. Spreading fast, or fever, means urgent care
Wound infection or abscess	Pus, increasing pain after day 2, a bad smell, a tender swelling	Opening and draining an abscess (a clinician's job). Antibiotics if spreading
Chest infection or pneumonia	Cough with coloured phlegm, fever, fast breathing , chest pain on breathing, breathlessness	Antibiotics if bacterial pneumonia. Breathing rate over 25, confusion or low oxygen means urgent care
Urinary infection	See Urinary infection	Sometimes settles; kidney infection needs antibiotics
Sepsis, meningitis	See Sepsis	Hospital antibiotics within the hour



USING ANTIBIOTICS WELL

- Only the **right antibiotic** works for each infection, at the right dose for age, weight and kidney function. That's why they're prescription-only.
- Take the **whole course** as prescribed, at evenly spaced times.
- Know your household's **allergies**, and what actually happened. Many recorded "penicillin allergies" were a childhood rash during a virus, but a real one can be fatal.
- Never use leftover or someone else's antibiotics, or "fish antibiotics" sold online. The dose, quality and choice are all unknown, and the wrong one fuels resistance while the infection progresses.



PREPARE WITH YOUR GP, NOW

- People with long-term lung disease, no spleen or other risks may be given a **"rescue pack"** of antibiotics with written instructions. Ask.
- Keep a written list of each person's medicines, allergies and past infections with the antibiotics that worked.
- Keep vaccinations up to date (tetanus, pneumococcal, flu, COVID, MMR). They prevent the infections that are hardest to treat.
- Pharmacists in England can now treat several infections directly under **Pharmacy First** (see When help is delayed).



PREVENTING INFECTION IS EASIER THAN TREATING IT

- **Hand washing** with soap for 20 seconds, especially after the toilet and before food. Hand gel when water is short.
- **Safe water**: boil, filter or chlorinate any water not from a sealed bottle or a working mains supply (see the UK Crisis guide).
- **Safe food**: cook thoroughly, eat promptly, and keep food covered from flies.
- **Clean wounds** thoroughly at once (see Wounds).
- **Isolate the sick** where possible, ventilate rooms, and use masks when caring for someone with a cough (see the Pandemic guide).



When help is delayed

- For any infection: fluids, rest, warmth, food, and paracetamol or ibuprofen for comfort. Record temperature, breathing rate and pulse every few hours.
- **Get to a prescriber** (pharmacy, GP, urgent care, field clinic or medical team) for spreading skin infection, pneumonia, kidney infection, infected bites or wounds, or any infection in a baby, a pregnant woman or a frail person. Sepsis signs mean hospital, by any means.
- If you hold a prescribed rescue pack, follow its written instructions exactly, and still seek review as soon as possible.
- Keep a log of who in the household has been ill, with what, and when. Outbreak patterns help clinicians and public health teams.

Sources: NICE antimicrobial prescribing guidelines (cellulitis NG141, pneumonia NG138, cough NG120, sore throat NG84); UKHSA *Start Smart* and TARGET antibiotic toolkits; NHS England Pharmacy First.



After an emergency, almost everyone feels it: shaking, numbness, racing thoughts, tears, anger, sleeplessness, replaying what happened. These are **normal reactions to an abnormal event**, and most fade over days to weeks. What helps most at the time isn't therapy. It's **safety, calm, connection and practical help**. That's psychological first aid, and anyone can give it.

PSYCHOLOGICAL FIRST AID: LOOK, LISTEN, LINK

- **Look:** make them safe, meet basic needs (warmth, water, food, a quiet spot), and notice who is most distressed.
- **Listen:** introduce yourself, sit with them, let them talk if they want to, but don't push for details. Acknowledge the feelings: "that sounds terrifying."
- **Link:** help them reach family, information and practical help. Give accurate information, and don't promise what you can't deliver.
- Keep children with their carers wherever possible.

PANIC ATTACKS

- A racing heart, breathlessness, tingling, chest tightness, a feeling of dying. Intense, but not dangerous, and they pass within about 10–20 minutes.
- Stay calm and stay with them. **Slow the breathing:** in through the nose for 4, hold for 2, out slowly through the mouth for 6.
- Grounding: name 5 things you can see, 4 you can hear, 3 you can touch.
- **Don't assume it's panic** the first time, or in someone with heart or lung disease: chest pain and breathlessness can be a heart attack, a blood clot or asthma.

WHEN SOMEONE IS IN DANGER FROM THEMSELVES

- **Ask directly:** "Are you thinking of ending your life?" Asking doesn't put the idea in someone's head. It often brings relief.
- **Stay with them**, and remove the means where safe: medicines, ropes, sharp objects, car keys.
- Get help: **999** if there's immediate danger; **111** (mental health option); **Samaritans 116 123**, free, 24 hours; **text SHOUT to 85258**; for young people, **Papyrus HOPELINE247 0800 068 4141**.
- After an overdose, treat the poisoning first (see Poisoning).

CHILDREN

- Children take their cues from adults. Calm, simple, honest explanations suited to their age.
- Keep routines (meals, bedtime, small jobs) and play. Drawing and play are how they process events.
- Expect clinginess, bed-wetting, nightmares and tantrums for a while. Respond with patience, not punishment.

GRIEF AND LASTING DISTRESS

- Grief comes in waves, and there's no right way to do it. Practical help (meals, childcare) is often the kindest support.
- Seek help if distress isn't easing after about a month, or if there are flashbacks, avoidance, constant fear, heavy drinking, or an inability to function.
- **Cruse Bereavement Support:** 0808 808 1677.

When help is delayed: protecting minds over weeks

- **Routine is survival equipment:** fixed times for waking, meals, jobs and rest. A daily update for the household, and a small achievement each day.
- Limit rumours and doom-scrolling. Get news at set times from reliable sources.
- Sleep: dark, quiet and regular; no caffeine late; physical activity in daylight.
- Watch for withdrawal, not eating, heavy drinking, or talk of hopelessness, in yourself as much as others. Check on people who live alone.
- Rescuers and carers are affected too. Talk afterwards about what happened, as a group if you can.

Sources: WHO *Psychological First Aid* guide; NHS mental health services; NICE NG116 (PTSD); Samaritans; Papyrus; Cruse.



The best piece of medical kit is a person who has done a first aid course. The second best is a tourniquet and a pair of gloves in the right place. Build the kit in three layers: a **home kit** for days of care, a **car and grab-bag kit** for the first minutes, and a **medicines stock** for when the pharmacy is shut.



HOME KIT: THE FIRST-MINUTES ITEMS (★ = ESSENTIAL)

- ★ Windlass tourniquet (CAT or SOF-T type, from a reputable supplier), ×2
- ★ Haemostatic gauze (e.g. Celox, QuikClot), ×2
- ★ Trauma ("Israeli") bandages and large sterile dressings
- ★ Nitrile gloves (100), a CPR face shield or pocket mask
- ★ Cling film, foil blankets, triangular bandages, safety pins
- ★ Saline pods or a clean squeeze bottle for eye and wound irrigation
- ★ Reusable syringes: 10–20 ml for washing out wounds (clean and boil between uses), and 5 ml oral syringes for measuring medicines
- ☐ Needles and strong cotton thread: for securing slings, dressings and splints, and repairs. Stitching wounds is a skill to learn on a course, not from a book
- ☐ Inhaler spacer (for anyone with asthma; a 500 ml plastic bottle can be improvised, see Breathing)
- ☐ Assorted plasters, non-stick dressings, adhesive dressings, hydrocolloid dressings, blister plasters
- ☐ Steri-Strips, skin glue, wound-closure strips
- ☐ Crepe and conforming bandages, tape
- ☐ SAM splint (mouldable), finger splints
- ☐ Tick remover, tweezers, scissors, a fine needle for splinters
- ☐ Instant ice packs and heat packs
- ☐ A head torch (for looking into wounds and mouths in the dark)



MONITORING (UNDER ABOUT £80 IN TOTAL)

- ★ Thermometer: an **infrared ear thermometer** (quick, works on a sleeping child from 4 weeks old) and a digital one (under the arm for babies)
- ★ **Pulse oximeter (SpO₂)**, with spare batteries. About £15–25, and the single most useful monitor for breathing problems and infection
- ☐ Upper-arm blood-pressure monitor, with the right cuff size
- ☐ Blood glucose meter, strips and lancets (essential with diabetes)
- ☐ A printed observation chart and pens (see Quick reference)



CAR AND GRAB-BAG MINI KIT

- ★ Tourniquet, haemostatic gauze, trauma bandage, gloves
- ★ Foil blanket, CPR face shield, small scissors
- ☐ Plasters, blister plasters, a small burn gel, saline pods
- ☐ Fingertip pulse oximeter and a small ear thermometer
- ☐ A 10–20 ml syringe for washing out wounds
- ☐ Warm gloves and waterproof gloves for the rescuer: cold, wet hands can't do first aid
- ☐ A personal medicines pouch: 3–7 days of each person's medicines, including inhalers and adrenaline pens

MEDICINES STOCK (OVER THE COUNTER)

- ★ Paracetamol and ibuprofen tablets; children's liquids if you have children
- ★ Oral rehydration sachets (Dioralyte or similar), ×20+
- ★ Antihistamine tablets (cetirizine or loratadine) and chlorphenamine
- ☐ Loperamide (for adults with diarrhoea, not with blood or fever)
- ☐ Antiseptic (chlorhexidine), and antiseptic or barrier creams
- ☐ Hydrocortisone 1% cream, clotrimazole cream
- ☐ Ibuprofen gel; a simple laxative; antacid
- ☐ Glucose tablets or gel (with diabetes)
- ☐ Sun cream, insect repellent, lip balm
- ☐ Temporary dental filling kit and clove oil
- ☐ Aspirin 300 mg (for suspected heart attack in adults only, if not allergic)

PRESCRIBED: TALK TO YOUR GP NOW

- ★ **30+ days of every regular medicine:** order repeats a week early to build a buffer
- ★ **Two in-date adrenaline pens** for anyone with severe allergy, and spare inhalers
- ☐ Rescue antibiotics or steroids if your condition warrants them
- ☐ Insulin and supplies, with a plan for keeping it cool
- ☐ Seizure rescue medicine (buccal midazolam) if prescribed
- ☐ **Naloxone:** free take-home kits from drug services and many pharmacies, for any household where opioids are used, prescribed or not
- ☐ A written list for each person: medicines and doses, allergies, conditions, NHS number

Skills: the best investment

Skill	Where	Time
CPR and defibrillator use	Resuscitation Council UK's free online RevivR course; British Heart Foundation; local community groups	15 minutes online; 1–2 hours in person
Emergency first aid	St John Ambulance, British Red Cross, St Andrew's First Aid (Scotland)	One day
Bleeding control	"Stop the Bleed" and trauma first aid courses	2–3 hours
Paediatric first aid	St John Ambulance, Red Cross, NCT (for parents)	One day
Outdoor or remote first aid	Outdoor first aid providers (16-hour courses)	Two days, and covers prolonged care

When help is delayed

- Know where your nearest **public defibrillators** are: they're registered on **The Circuit** (the national defibrillator network) and appear in the GoodSAM and Save a Life apps. Note the nearest few on paper, because apps may not work in a crisis.
- Check the kit and medicines when the clocks change: expiry dates, batteries, and anything used and not replaced.
- Keep the kit in one known place, plus a smaller kit upstairs and in the car. Everyone in the house should know where they are.
- Print this guide and keep it with the kit.

Sources: Resuscitation Council UK (RevivR); British Heart Foundation (The Circuit); St John Ambulance; British Red Cross; Faculty of Pre-Hospital Care (tourniquet and haemostatic guidance); NHS medicine cabinet advice.

36 When Someone Dies

In a long crisis, more people die at home, and services may be slow to come. Knowing what to do protects the rest of the household, avoids problems later, and lets you focus on the person and your family.

ARE THEY REALLY DEAD?

- No response to voice or a firm shoulder squeeze, no breathing and no pulse for a full minute.
- Pupils wide and not reacting to light. Later: the body cooling, stiffness (from about 2–6 hours), and purple discolouration in the lowest parts.
- **Be cautious** in someone very cold, drowned, electrocuted, or after an overdose of sedatives. They can look dead and be revived. Start CPR and keep going (see CPR).
- If you're unsure, treat them as alive.

WHO TO TELL

- **Expected death** (known serious illness, under a GP or palliative care): their GP, or **111** out of hours. You don't need 999.
- **Unexpected death**, or you're not sure: **999**. Police and the coroner are routinely involved after an unexpected death.
- Don't move or clean the body after a sudden or violent death if you can avoid it.
- Then: a doctor certifies the cause, a medical examiner reviews it, and you **register the death** (within 5 days in England and Wales, 8 in Scotland). A funeral director can collect them from home.

When services can't come for days

- **Write down** the time, what happened, who was present, and the person's medicines and conditions. This record matters to the certifying doctor and the family.
- Lay them flat on their back, close the eyes and mouth (a rolled towel under the chin), straighten the limbs, and cover them with a sheet.
- **Keep the body as cool as possible:** the coldest room, heating off, windows open in cool weather, curtains closed in warm weather. Cooling slows decay considerably.
- If the person had an infection, avoid touching the body, use gloves, and wash your hands afterwards. Place a cloth over the mouth and nose before moving them. For suspected Ebola-type infections, don't touch the body at all.
- Attach a label with their name, date of birth, address, and date and time of death. Keep their ID with them.
- Don't bury or cremate anyone yourself. Wait for the authorities, who will organise arrangements in a mass emergency. Listen to local radio and your council for instructions.
- **Look after the living.** Children should be told honestly, in simple words. Grief in a crisis is often made harder by isolation. Lean on others, and plan a memorial for later. Cruse Bereavement Support: 0808 808 1677. Samaritans: 116 123.

Sources: gov.uk "What to do after someone dies"; medical examiner system (statutory from September 2024); mygov.scot; Marie Curie care-after-death guidance; archived UKHSA guidance on care of the deceased with infection.

Quick Reference

The one-page summaries and an observation chart to print.

37 Quick Reference: One-Page Summaries

37



Quick Reference: One-Page Summaries

♥ NOT BREATHING NORMALLY: CPR

1. Safe? Responsive? Shout for help. **999 on speaker.**
2. Gasping isn't breathing. Start compressions: centre of chest, 5–6 cm, 100–120 a minute.
3. 30 compressions : 2 breaths (or compressions only).
4. Child: 5 breaths first if trained, then 15:2. Baby: two thumbs, 4 cm.
5. Drowning: 5 breaths first.
6. AED as soon as it arrives, at any age. "No shock advised" means **keep pressing.**

💧 SEVERE BLEEDING

1. Hard, direct pressure. Don't lift to look.
2. Soaked through: add more on top and press harder.
3. Deep wound: pack it, press for 3–10 minutes.
4. Limb still bleeding: **tourniquet high and tight.** Write the time. Never loosen it.
5. Lie flat, keep warm, watch for shock.

🫁 CHOKING

1. Coughing well: encourage coughing only.
2. Can't cough, breathe or speak: **5 back blows, 5 abdominal thrusts**, repeat. 999.
3. Baby: 5 back blows, 5 chest thrusts. **Never abdominal.**
4. Unresponsive: CPR. Afterwards, always get them checked.

💉 ANAPHYLAXIS

1. Swollen throat, hoarse voice, wheeze, pale or faint, after a trigger.
2. **Adrenaline pen to the outer thigh, now.**
3. **Lie flat, legs up. Never stand or walk.**
4. 999, say "anaphylaxis". Second pen after 5 minutes if not better.
5. Watch for 12–24 hours: it can come back.

🧠 COLLAPSED OR CONFUSED

- **Seizure:** protect, time it, nothing in the mouth. 999 if over 5 minutes, or a first one.
- **Stroke (BE-FAST):** 999, note the time last normal, nothing by mouth, no aspirin.
- **Low sugar:** sugar if they can swallow safely.
- **Opioids:** breaths first, then naloxone, and stay with them.

🔥 BURNS • ☀️ HEAT • ❄️ COLD

- **Burn:** 20 minutes of cool running water, cling film, keep them warm.
- **Hot and confused = heat stroke:** cool immediately, ideally in cold water, and hold them.
- **Cold and stopped shivering:** handle gently, keep flat, insulate, warm the trunk.
- **CO:** several people with headaches, so everyone out into fresh air.

GET HELP URGENTLY, WHATEVER THE NUMBERS SAY

- Not breathing normally, or unresponsive
- Chest pain, especially with sweating or breathlessness
- Breathing rate 25+ (adult) or very hard work to breathe
- Blue or grey lips, mottled skin
- New confusion or drowsiness
- A seizure over 5 minutes
- Bleeding that won't stop
- Signs of sepsis or meningitis; a rash that doesn't fade
- A baby under 3 months with 38 °C or more
- Severe headache, sudden weakness or slurred speech
- Any pregnancy bleeding, severe headache or reduced movements
- **Anyone you're seriously worried about**

Observation chart: copy for each patient

Name: _____ Age: ____ Weight: ____ Allergies: _____ Usual medicines: _____

Time	Breaths /min	Pulse	SpO ₂ %	Temp °C	BP	AVPU	Urine?	Fluids in	Notes, medicines given

Adult warning levels: breathing under 8 or 25+; pulse under 40 or over 130; SpO₂ under 92%; top BP 90 or under; temperature 39.1+ or 35.0 or below; anything less than Alert. Children: see Vital signs.

RUNNER'S NOTE (WHEN PHONES ARE DOWN)

Address and how to find us: _____ Patient: name _____ age ____ sex ____

M What happened, and when: _____

I Injuries or illness found: _____

S Signs (awake? breathing rate? pulse? colour?) and getting better or worse: _____

T Treatment given, with times (tourniquet, adrenaline, medicines): _____

Regular medicines and allergies: _____ Sent by: _____ at (time) ____

Emergency Medical Survival Master Guide — UK Edition 1.0

Print this document and keep it with your first aid kit. Take a first aid course: it is the single best preparation there is.

Adapted from medsys.uk/emergency, and compiled from Resuscitation Council UK (2025 guidelines), NICE, NHS, MHRA, UKHSA, RCOG, the Faculty of Pre-Hospital Care, St John Ambulance and the British Red Cross.

Remember: safety, responsive, breathing. Call early and say the word. Trust how they look over any number.

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