# medical assessments

CHRIS ALFORD·SATURDAY, APRIL 13, 2019

Assessment of the area

You may be alerted to the possibility of an emergency by various unusual sights and sounds, or by seeing a person who appears to be either sick or injured.

Before assessing the patient, it is vital to check that the area is safe for you, the patient, and bystanders.

Hazards might include:

vehicles

electricity, both high and low voltage

deep water or rough, fast-flowing water

poisonous gases, chemicals or fumes

fire

The general rule is to remove the danger to make the scene safe. Where this is not possible, the patient may need to be moved to a safe area.

Assessment of a sick or injured person

Assess the nature of any injury or illness and set priorities for the care required.

If the patient appears collapsed, first check their response to a shouted command and to a firm squeeze of the shoulders. If the collapsed patient does not respond, then CPR may be required.

If the patient responds to your voice, then it is possible to obtain important information and plan any emergency treatment required.

Unless the injury or illness appears to be minor, ask a bystander to call 911 for an ambulance and then follow these simple steps:

Ask the patient and any bystanders for the history of the problem, outlining what happened, the time of onset, and whether there is any known underlying health problem, such as asthma, diabetes, epilepsy or a heart condition. Quickly check for a MedicAlert bracelet or necklet, which may record any major health problem.

Ask the patient to describe any symptoms, including pain, soreness or discomfort, and any other unusual sensations such as numbness or tingling in the fingertips.

Check the patient carefully, looking for any signs of injury or illness, basing your observations on the history and any symptoms described. After an injury, look for any of the following:

bleeding

bruising

wounds

swelling

deformity (when one side is compared with the other)

loss of power or function

The observations should be as follows:

1. Conscious state: If help is going to be delayed, check the conscious state every few minutes and note any changes. Use the 'AVPU' code:

A Alert

Is the patient alert and responding to you?

V Voice

Does the patient respond to your voice?

P Painful

Does the patient respond to a painful stimulus?

U Unresponsive

Is the patient unresponsive?

2. Airway: ensure that it is clear and open and that the patient does not have any secretions that might obstruct breathing.

3. Breathing: Check for normal breathing – note the rate and rhythm for any changes. Check whether the breathing is deep or shallow, quiet or noisy, and whether there are any abnormal sounds such as wheezing on breathing out. This is especially important with the unconscious patient because any change may be a warning of deterioration.

4. Skin: Look at the skin and note the colour (whether tinged with blue), and feel whether it is hot (with fever) or cold and clammy (as in shock).

What are vital signs?

Vital signs are measurements of the body's most basic functions. The four main vital signs routinely monitored by medical professionals and health care providers include the following:

Body temperature

Pulse rate

Respiration rate (rate of breathing)

Blood pressure (Blood pressure is not considered a vital sign, but is often measured along with the vital signs.)

Vital signs are useful in detecting or monitoring medical problems. Vital signs can be measured in a medical setting, at home, at the site of a medical emergency, or elsewhere.

What is body temperature?

The normal body temperature of a person varies depending on gender, recent activity, food and fluid consumption, time of day, and, in women, the stage of the menstrual cycle. Normal body temperature can range from 97.8 degrees F (or Fahrenheit, equivalent to 36.5 degrees C, or Celsius) to 99 degrees F (37.2

degrees C) for a healthy adult. A person's body temperature can be taken in any of the following ways:

Orally. Temperature can be taken by mouth using either the classic glass thermometer, or the more modern digital thermometers that use an electronic probe to measure body temperature.

Rectally. Temperatures taken rectally (using a glass or digital thermometer) tend to be 0.5 to 0.7 degrees F higher than when taken by mouth.

Axillary. Temperatures can be taken under the arm using a glass or digital thermometer. Temperatures taken by this route tend to be 0.3 to 0.4 degrees F lower than those temperatures taken by mouth.

By ear. A special thermometer can quickly measure the temperature of the ear drum, which reflects the body's core temperature (the temperature of the internal organs).

By skin. A special thermometer can quickly measure the temperature of the skin on the forehead.

Body temperature may be abnormal due to fever (high temperature) or hypothermia (low temperature). A fever is indicated when body temperature rises about one degree or more over the normal temperature of 98.6 degrees Fahrenheit, according to the American Academy of Family Physicians. Hypothermia is defined as a drop in body temperature below 95 degrees Fahrenheit.

## What is the pulse rate?

The pulse rate is a measurement of the heart rate, or the number of times the heart beats per minute. As the heart pushes blood through the arteries, the arteries expand and contract with the flow of the blood.

Taking a pulse not only measures the heart rate, but also can indicate the following:

Heart rhythm

Strength of the pulse

The normal pulse for healthy adults ranges from 60 to 100 beats per minute. The pulse rate may fluctuate and increase with exercise, illness, injury, and emotions. Females ages 12 and older, in general, tend to have faster heart rates than do males. Athletes, such as runners, who do a lot of cardiovascular conditioning, may have heart rates near 40 beats per minute and experience no problems.

## How to check your pulse

As the heart forces blood through the arteries, you feel the beats by firmly pressing on the arteries, which are located close to the surface of the skin at certain points of the body. The pulse can be found on the side of the neck, on the inside of the elbow, or at the wrist. For most people, it is easiest to take the pulse at the wrist. If you use the lower neck, be sure not to press too hard, and never

press on the pulses on both sides of the lower neck at the same time to prevent blocking blood flow to the brain. When taking your pulse:

Using the first and second fingertips, press firmly but gently on the arteries until you feel a pulse.

Begin counting the pulse when the clock's second hand is on the 12.

Count your pulse for 60 seconds (or for 15 seconds and then multiply by four to calculate beats per minute).

When counting, do not watch the clock continuously, but concentrate on the beats of the pulse.

What is the respiration rate?

The respiration rate is the number of breaths a person takes per minute. The rate is usually measured when a person is at rest and simply involves counting

The respiration rate is the number of breaths a person takes per minute. The rate is usually measured when a person is at rest and simply involves counting the number of breaths for one minute by counting how many times the chest rises. Respiration rates may increase with fever, illness, and other medical conditions. When checking respiration, it is important to also note whether a person has any difficulty breathing.

Normal respiration rates for an adult person at rest range from 12 to 16 breaths per minute.

What is blood pressure?

Blood pressure is the force of the blood pushing against the artery walls during contraction and relaxation of the heart. Each time the heart beats, it pumps blood into the arteries, resulting in the highest blood pressure as the heart contracts. When the heart relaxes, the blood pressure falls.

Two numbers are recorded when measuring blood pressure. The higher number, or systolic pressure, refers to the pressure inside the artery when the heart contracts and pumps blood through the body. The lower number, or diastolic pressure, refers to the pressure inside the artery when the heart is at rest and is filling with blood. Both the systolic and diastolic pressures are recorded as "mm Hg" (millimeters of mercury).

High blood pressure, or hypertension, directly increases the risk of heart attack, heart failure, and stroke. With high blood pressure, the arteries may have an increased resistance against the flow of blood, causing the heart to pump harder to circulate the blood.

Blood pressure is categorized as normal, elevated, or stage 1 or stage 2 high blood pressure:

Normal blood pressure is systolic of less than 120 and diastolic of less than 80 (120/80)

Elevated blood pressure is systolic of 120 to 129 and diastolic less than 80

Stage 1 high blood pressure is systolic is 130 to 139 or diastolic between 80 to 89

Stage 2 high blood pressure is when systolic is 140 or higher or the diastolic is 90 or higher

These numbers should be used as a guide only. A single blood pressure measurement that is higher than normal is not necessarily an indication of a problem.

# cardiac emergencies

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cardiac emergencies

Heart attack - this is death of heart muscle due to the blockage of a coronary artery. The heart muscle dies because it is starved of oxygen (because blood is not getting to it).

Heart failure - this means the heart muscle cannot pump blood around the body properly. It is not a heart attack.

Cardiac arrest - this means the heart stops, blood circulation stops, and there is no pulse.

Causes

Heart failure is caused by any conditions that damage the heart muscle. These include:

Coronary artery disease - the coronary arteries supply the heart muscle with blood. If these are blocked or the flow is reduced, the heart does not receive the blood supply it needs.

Heart attack - a sudden block of the coronary arteries; this causes scars in the heart's tissues and decreases how effectively it can pump.

Cardiomyopathy - damage to the heart muscle other than by artery or blood flow problems; for instance caused by drug side effects or infections.

What Happens During a Heart Attack?

A heart attack occurs when the flow of blood to the heart is blocked. The blockage is most often a buildup of fat, cholesterol and other substances, which form a plaque in the arteries that feed the heart (coronary arteries).

The plaque eventually breaks away and forms a clot. The interrupted blood flow can damage or destroy part of the heart muscle.

A heart attack, also called a myocardial infarction, can be fatal, but treatment has improved dramatically over the years. It's crucial to call 911 or emergency medical help if you think you might be having a heart attack.

Symptoms

Common heart attack signs and symptoms include:

Pressure, tightness, pain, or a squeezing or aching sensation in your chest or arms that may spread to your neck, jaw or back

Nausea, indigestion, heartburn or abdominal pain

Shortness of breath

Cold sweat

Fatigue

Lightheadedness or sudden dizziness

Heart attack symptoms vary

Not all people who have heart attacks have the same symptoms or have the same severity of symptoms. Some people have mild pain; others have more severe pain. Some people have no symptoms; for others, the first sign may be sudden cardiac

arrest. However, the more signs and symptoms you have, the greater the likelihood you're having a heart attack.

Some heart attacks strike suddenly, but many people have warning signs and symptoms hours, days or weeks in advance. The earliest warning might be recurrent chest pain or pressure (angina) that's triggered by exertion and relieved by rest. Angina is caused by a temporary decrease in blood flow to the heart.

If the Person is Awake and Responsive

After calling 911, there are several ways you can help a heart attack victim who is still awake and responsive.

If he or she is allowed to take aspirin, offer 324 mg of baby aspirin or 325 mg of adult aspirin if the baby version is not available. (Baby aspirin is preferred because it doesn't have the extra coating that's added to adult aspirin, so it can be absorbed more quickly.)

Also, if the person has a history of heart problems, he or she may have nitroglycerin tablets on hand. Help the person get and take the nitroglycerin, but avoid touching it, as the medicine is easily absorbed into the bloodstream.

Don't offer the person water or food.

Make a list of his or her medications and dosages if possible.

Keep the person comfortable and offer reassurance with your words and actions.

If the Person Loses Consciousness

As long as the person is still breathing normally, his heart is still beating. At this point, you can provide several basic first aid procedures before EMS arrives.

Try to lower the person to the ground, if you can.

From there, roll the person onto his side, and help to keep the airway clear by ensuring the head remains in a relaxed, yet erect, position (not bent at the neck too far forward or backward). This helps prevent choking by letting saliva drain from the mouth.

If the Person Loses a Pulse

You don't need to be an expert at pulse-taking to know if a person is experiencing cardiac arrest (when the heart stops beating). An unconscious person without a heartbeat will "look dead," meaning they are either not breathing or not breathing "normally."

Even without a heartbeat, a person can experience a ragged, intermittent form of "breathing," which is an indicator of serious trouble.

If the heart stops beating, follow the steps for CPR (cardiopulmonary resuscitation):

Bystander CPR

Bystander CPR is no different than traditional CPR, except the person administering it (you) may or may not have formal CPR training. You do NOT need formal CPR training to perform life-saving CPR (though classes can help with technique and confidence).

To perform chest compressions:

Find the best spot to compress, at the center of the chest at the nipple line, place one hand over the other and push hard and fast.

Try for 100-120 compressions per minute (the beat of the 70s song “Stayin’ Alive” provides a good rhythm to follow).

Don’t let fear stop you from performing these compressions. You CAN do it. Studies have shown that we all have the ability to save a heart attack victim’s life.

# stroke, shock and seizures

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strokes,shock and seizures

Strokes are brain attacks. They occur when the blood supply to the brain becomes blocked. A stroke is a medical emergency that needs immediate medical attention.

During a stroke, the brain does not receive enough oxygen or nutrients, causing brain cells to die.

Strokes need to be diagnosed and treated as quickly as possible to minimize brain damage.

Treatment depends on the type of stroke.

The most effective way to prevent strokes is through maintaining a healthy lifestyle and treating underlying conditions that could be a risk factor

A stroke occurs when the supply of blood to the brain is either interrupted or reduced. When this happens, the brain does not get enough oxygen or nutrients, and brain cells start to die.

Ischemic stroke

Ischemic strokes are caused by arteries being blocked or narrowed, and so treatment focuses on restoring an adequate flow of blood to the brain.

Hemorrhagic stroke

Hemorrhagic strokes are caused by blood leaking into the brain, so treatment focuses on controlling the bleeding and reducing the pressure on the brain.

Symptoms

Symptoms of a stroke often appear without warning.

The main symptoms of stroke are:

confusion, including trouble with speaking and understanding

a headache, possibly with altered consciousness or vomiting

numbness or inability to move parts of the face, arm, or leg, particularly on one side of the body

vision problems in one or both eyes

trouble walking, including dizziness and lack of co-ordination

Strokes can lead to long-term health problems. Depending on how quickly it is diagnosed and treated, an individual can experience temporary or permanent disabilities in the aftermath of a stroke.

In addition to the persistence of the problems listed above, people may also experience the following:

bladder or bowel control problems

depression

pain in the hands and feet that gets worse with movement and temperature changes

paralysis or weakness on one or both sides of the body

trouble controlling or expressing emotions

Symptoms vary and may range in severity.

The acronym F.A.S.T. is a way to remember the signs of stroke, and can help identify the onset of stroke:

Face drooping: If the person tries to smile, does one side of the face droop?

Arm weakness: If the person tries to raise both their arms, does one arm drift downward?

Speech difficulty: If the person tries to repeat a simple phrase, is their speech slurred or strange?

Time to call 911: If any of these signs are observed, contact the emergency services.

The faster a person with suspected stroke receives medical attention, the better their prognosis will be, and the less likely they will be to experience permanent damage or death.

What are the first steps in dealing with stroke

After calling 911:

Remain calm.

Ensure the surrounding area is safe and that there is no imminent danger, such as from moving vehicles.

Talk to the person. Ask them their name and other questions. If the individual is unable to speak, ask them to squeeze your hand in response to questions. If the person does not respond, they are likely unconscious.

If the person is conscious:

Gently place them into a comfortable position. Ideally, they should be lying on their side with their head and shoulders slightly raised and supported with a pillow or item of clothing. After this, try not to move them.

Loosen any tight clothing, such as buttoned-up shirt collars or scarves.

If they are cold, use a blanket or coat to keep them warm.

Check that their airway is clear. If there are objects or substances, such as vomit, in the mouth that may be hindering breathing, place the person on their side in the recovery position (see below).

Reassure the person. Tell them that help is on the way.

Do not give them any food or liquids.

Note the person's symptoms and look for any changes in condition. It is important to give the emergency personnel as much information as possible about the situation.

If the person is unconscious:

Move them into the recovery position (see below).

Monitor their airway and breathing. To do this:

lift the person's chin and tilt their head slightly backward

look to see if their chest is moving

listen for breathing sounds

place a cheek over their mouth and try to feel their breath

If there are no signs of breathing, begin CPR (cardiopulmonary resuscitation)

The recovery position

If someone is unconscious, or if their airway is not completely clear, place them in the recovery position. To do this:

Kneel beside them.

Take the arm that is farthest away and place it at a right angle to their body.

Place the other arm across their chest.

The leg that is farthest away should remain straight. Bend their other knee.

Support their head and neck and roll the person onto their side, so that their bottom leg is straight and their top leg is bent at the knee, with that knee touching the ground.

Tilt their head slightly forward and down so that vomit in the airway can drain out.

Manually clear out the person's mouth, if necessary.

Try to remember the time that the symptoms started, look at a clock if possible. It is hard to estimate the passage of time when you are in a stressful situation.

Shock

Shock is a life-threatening medical condition and is a medical emergency. If shock is suspected call 911 or get to an emergency department immediately.

Medical shock is a medical emergency and can lead to other conditions such as lack of oxygen in the

body's tissues (hypoxia), heart attack (cardiac arrest) or organ damage. It requires immediate treatment as symptoms can worsen rapidly.

Medical shock is different than emotional or psychological shock that can occur following a traumatic or frightening emotional event.

The main symptom of shock is low blood pressure. Other symptoms include rapid, shallow breathing; cold, clammy skin; rapid, weak pulse; dizziness, fainting, or weakness.

There are several types of shock: septic shock caused by bacteria, anaphylactic shock caused by hypersensitivity or allergic reaction, cardiogenic shock from heart damage, hypovolemic shock from blood or fluid loss, and neurogenic shock from spinal cord trauma. requires immediate treatment as symptoms can worsen rapidly.

Treatment for shock depends on the cause.

Septic shock is treated with antibiotics and fluids.

Anaphylactic shock is treated with diphenhydramine(Benadryl), epinephrine (an "Epi-pen"), and steroid medications (solu-medrol).

Cardiogenic shock is treated by identifying and treating the underlying cause.

Hypovolemic shock is treated with fluids (saline) in minor cases, and blood transfusions in severe cases.

Neurogenic shock is the most difficult to treat as spinal cord damage is often irreversible. Immobilization, anti-inflammatories such as steroids and surgery are the main treatments

1. Lay the Person Down, if Possible

Elevate the person's feet about 12 inches unless head, neck, or back is injured or you suspect broken hip or leg bones.

Do not raise the person's head.

Turn the person on side if he or she is vomiting or bleeding from the mouth.

2. Begin CPR, if Necessary

If the person is not breathing or breathing seems dangerously weak

3. Treat Obvious Injuries

4. Keep Person Warm and Comfortable

Loosen restrictive clothing.

Cover with coat or blanket.

Keep the person still. Do not move the person unless there is danger.

Reassure the person.

Do not give anything to eat or drink.

Seizures

A seizure is a sudden, uncontrolled electrical disturbance in the brain. There are many types of seizures, which range in severity. Seizure types vary by where and how they begin in the brain. Most seizures last from 30 seconds to two minutes. A seizure that lasts longer than five minutes is a medical emergency.

Seizures are more common than you might think. Seizures can happen after a stroke, a closed head injury, an infection such as meningitis or another illness. Many times, though, the cause of a seizure is unknown.

Symptoms

With a seizure, signs and symptoms can range from mild to severe and vary depending on the type of seizure. Seizure signs and symptoms may include:

Temporary confusion

A staring spell

Uncontrollable jerking movements of the arms and legs

Loss of consciousness or awareness

Cognitive or emotional symptoms, such as fear, anxiety or deja vu

Doctors generally classify seizures as either focal or generalized, based on how and where abnormal brain activity begins. Seizures may also be classified as unknown onset, if how the seizure began isn't known.

Focal seizures result from abnormal electrical activity in one area of your brain. Focal seizures can occur with or without loss of consciousness:

Focal seizures with impaired awareness. These seizures involve a change or loss of consciousness or awareness. You may stare into space and not respond normally to your environment or perform repetitive movements, such as hand rubbing, chewing, swallowing or walking in circles.

Focal seizures without loss of consciousness. These seizures may alter emotions or change the way things look, smell, feel, taste or sound, but you don't lose consciousness. These seizures may also result in the involuntary jerking of a body

part, such as an arm or leg, and spontaneous sensory symptoms such as tingling, dizziness and flashing lights.

Symptoms of focal seizures may be confused with other neurological disorders, such as migraine, narcolepsy or mental illness.

Generalized seizures

Seizures that appear to involve all areas of the brain are called generalized seizures. Different types of generalized seizures include:

Absence seizures. Absence seizures, previously known as petit mal seizures, often occur in children and are characterized by staring into space or by subtle body movements, such as eye blinking or lip smacking. These seizures may occur in clusters and cause a brief loss of awareness.

Tonic seizures. Tonic seizures cause stiffening of your muscles. These seizures usually affect muscles in your back, arms and legs and may cause you to fall to the ground.

Atonic seizures. Atonic seizures, also known as drop seizures, cause a loss of muscle control, which may cause you to suddenly collapse or fall down.

Clonic seizures. Clonic seizures are associated with repeated or rhythmic, jerking muscle movements. These seizures usually affect the neck, face and arms.

Myoclonic seizures. Myoclonic seizures usually appear as sudden brief jerks or twitches of your arms and legs.

Tonic-clonic seizures. Tonic-clonic seizures, previously known as grand mal seizures, are the most dramatic type of epileptic seizure and can cause an abrupt loss of

consciousness, body stiffening and shaking, and sometimes loss of bladder control or biting your tongue.

To help someone during a seizure, take these steps:

Call 911

Carefully roll the person onto one side

Place something soft under his or her head

Loosen tight neckwear

Avoid putting your fingers or other objects in the person's mouth

Don't try to restrain someone having a seizure

Clear away dangerous objects, if the person is moving

Stay with the person until medical personnel arrive

Observe the person closely so that you can provide details on what happened

Time the seizure

Stay calm

# blood sugar, allergic reactions and poisoning

CHRIS ALFORD·SATURDAY, APRIL 13, 2019

What is hypoglycemia?

Hypoglycemia happens when there is not enough glucose, or sugar, in the blood. note that symptoms usually appear when blood sugar levels are below 70 milligrams per deciliter (mg/dL).

Symptoms

People with mild hypoglycemia may experience the following early symptoms:

hunger

tremor or trembling

sweating

shaking

a pale face

heart palpitations

rapid or irregular heart rate

dizziness and weakness

blurred vision

confusion

Severe hypoglycemia may involve:

weakness and tiredness

poor concentration

irritability and nervousness

confusion

irrational or argumentative behavior and personality changes

tingling in the mouth

coordination problems

Treatment

A person who notices the signs of hypoglycemia should immediately consume:

a glucose tablet

a sugar lump

a candy

a glass of fruit juice

These can bring rapid results. After this, they should eat slower-release carbohydrates, such as cereals, bread, rice, or fruit.Severe symptoms

If symptoms are severe, and the individual cannot treat themselves, somebody else will need to apply honey, treacle, jam, or Glucogel to the inside of the cheeks and then gently massage the outside of the cheeks.

The person should start feeling better within 10–20 minutes.

## Losing consciousness

If the person loses consciousness, someone should place them in the recovery position, and a qualified health professional should administer a glucagon injection.

If this is not possible, someone should call for emergency services to take the person to the emergency department of a hospital.

It is important not to place food or drink into the mouth of an unconscious person, as it could block the airways.

## allergic reactions

### What is an allergic reaction

An allergic reaction occurs when cells in the immune system interpret a foreign substance or allergen as harmful.

The immune system overreacts to these allergens and produces histamine, which is a chemical that causes allergy symptoms, such as inflammation, sneezing, and coughing.

Mild allergic reactions can usually be treated with home remedies and over-the-counter (OTC) medications.

However, chronic allergies need treatment from a medical professional. Severe allergic reactions always require emergency medical care.

## Allergy symptoms

The symptoms associated with an allergic response depend on the specific allergen, how severe the allergy is, and whether a person has touched, swallowed, or inhaled the allergen.

Not everyone responds the same way to each allergen. But there are similar sets of symptoms most people experience when exposed to specific allergens.

Common symptoms associated with different type of allergens include:

Common symptoms associated with different type of allergens include:

Airborne allergens

Animal saliva

Insect stings/bites

Food allergens

Drug allergens

Treating allergic reactions

Many mild to moderate allergic reactions can be treated at home or with OTC medications. The following treatments are commonly used to reduce the symptoms of an allergic reaction:

Antihistamines

Antihistamines can help to treat most minor allergic reactions regardless of the cause. These drugs reduce the body's production of histamine, which reduces all symptoms, including sneezing, watering eyes, and skin reactions.Second-generation antihistamines, including Claritin (loratadine) and Zyrtec (cetirizine), are less likely to cause drowsiness than first-generation antihistamines, such as Benadryl.

Antihistamines come in several forms, usually to help deliver the medication closer to the source of the reaction or make it easier to consume, such as:

oral pills

dissolvable tablets

nasal sprays

liquids

eye drops

For airborne allergens, such as pollen, dust, and mold spores, additional treatment options include:

throat lozenges with soothing ingredients, such as menthol, honey, or ginger

shower and wash all clothing after being exposed to an allergen

exercise for a few minutes to help reduce nasal congestion

Treating allergies on the skin

For allergic reactions that cause skin symptoms, including those associated with allergens found in animal saliva, poisonous plants, drugs, chemicals and metals, additional treatment options include:

Topical corticosteroid creams or tablets. Corticosteroids contain steroids that reduce inflammation and itching. Mild forms of these creams can be found online, and a doctor can prescribe stronger versions.

Moisturizing creams. Emollient creams with soothing ingredients, such as calamine can treat skin reactions.

Bite or sting medication. Medication targeted to reduce allergic reactions to insect bites or stings have a similar effect to other allergy medications.

Ice pack. Applying an ice pack wrapped in cloth to the area for 10- to 15-minute intervals can reduce inflammation.

A very severe allergic reaction can lead to a condition called anaphylaxis, or anaphylactic shock.

Anaphylaxis occurs when the body's immune response to an allergen is so severe and sudden that the body goes into a state of shock.

Anaphylaxis can impact multiple organs and if left untreated lead to coma, organ failure, and death.

The early symptoms of anaphylaxis can be fairly mild and similar to those of minor to moderate allergic reactions, but they often rapidly worsen.

Symptoms unique to anaphylaxis include:

unexplained anxiety

tingling in the palms of the hand, soles of the feet, and lips

swollen tongue, throat, mouth, and face

difficulty breathing

rapid but weak pulse

low blood pressure

sense of dread or doom

vomiting or diarrhea

confusion or disorientation

loss of consciousness

very pale or blue skin

a heart attack

Anyone who suspects anaphylaxis should call 911 and seek emergency medical care.

If the person carries an EpiPen, which is a self-injectable dose of epinephrine that is designed to treat anaphylaxis, inject this into their thigh, as soon as possible.

First aid for anaphylaxis includes:

try to keep the person calm

the person may vomit, so turn them on their side and keep their mouth clear

try to get the person to lay flat on their back with their feet raised about a foot above the ground

make sure the person's clothing is loose or remove constricting clothing

do not give them anything to drink or eat, even if they ask for it

if they are not breathing, practice CPR with around 100 firm chest compressions every minute until emergency services arrive

If a person does not have an EpiPen, a doctor or paramedic will give an injection of the hormone epinephrine, or adrenaline. This will immediately increase the output of the heart and blood flow throughout the body.

A person should seek medical care each time anaphylaxis occurs. Even if they start to feel better or their symptoms go away, a second severe allergic reaction can occur up to 12 hours after the initial response.

Poisoning Poison is anything that kills or injures through its chemical actions. Most poisons are swallowed (ingested). The word poison comes from the Latin word - potare - meaning to drink. But poisons can also enter the body in other ways:

By breathing

Through the skin

By IV injection

From exposure to radiation

Venom from a snake bite or insect bite

Poisoning Causes

Poisons include highly toxic chemicals not meant for human ingestion or contact, such as cyanide, paint thinners, or household cleaning products.

Many poisons, however, are substances meant for humans to eat, including foods and medicines.

Foods

Some mushrooms are poisonous

Drinking water contaminated by agricultural or industrial chemicals

Food that has not been properly prepared or handled

Drugs

Drugs that are helpful in therapeutic doses may be deadly when taken in excess.

Examples include:

Poisoning first aid

Poisoning is caused by exposure to a harmful substance. This can be due to swallowing, injecting, breathing in, or other means. Most poisonings occur by accident.

Immediate first aid is very important in a poisoning emergency. The first aid you give before getting medical help can save a person's life. If you or someone you are with has an exposure, call your local emergency number (such as 911), or

your local poison center can be reached directly by calling the national toll-free Poison Help hotline (1-800-222-1222) from anywhere in the United States.

Considerations

Millions of poisonings are reported to United States poison control centers every year. Many result in death.

Symptoms of poisoning may take time to develop. However, if you think someone has been poisoned, DO NOT wait for symptoms to develop. Get medical help right away

Symptoms

Symptoms vary according to the poison, but may include:

Abdominal pain

Bluish lips

Chest pain

Confusion

Cough

Diarrhea

Difficulty breathing or shortness of breath

Dizziness

Double vision

Drowsiness

Fever

Headache

Heart palpitations

Irritability

Loss of appetite

Loss of bladder control

Muscle twitching

Nausea and vomiting

Numbness and tingling

Seizures

Skin rash or burns

Stupor

Unconsciousness (coma)

Unusual breath odor

Weakness

First Aid

Seek immediate medical help.

For poisoning by swallowing and some inhalations:

Check and monitor the person's airway, breathing, and pulse. If necessary, begin rescue breathing and CPR.

Try to make sure that the person has indeed been poisoned. It may be hard to tell. Some signs include chemical-smelling breath, burns

around the mouth, difficulty breathing, vomiting, or unusual odors on the person. If possible, identify the poison.

DO NOT make a person throw up unless told to do so by poison control or a health care professional.

If the person vomits, clear the person's airway. Wrap a cloth around your fingers before cleaning out the mouth and throat. If the person has been sick from a

plant part, save the vomit. It may help experts identify what medicine can be used to help reverse the poisoning.

If the person starts having convulsions, give convulsion first aid.

Keep the person comfortable. The person should be rolled onto the left side, and remain there while getting or waiting for medical help.

If the poison has spilled on the person's clothes, remove the clothing and flush the skin with water.

For inhalation poisoning:

Call for emergency help. Never attempt to rescue a person without notifying others first.

If it is safe to do so, rescue the person from the danger of the gas, fumes, or smoke. Open windows and doors to remove the fumes.

Take several deep breaths of fresh air, and then hold your breath as you go in. Hold a wet cloth over your nose and mouth.

DO NOT light a match or use a lighter because some gases can catch fire.

After rescuing the person from danger, check and monitor the person's airway, breathing, and pulse. If necessary, begin rescue breathing and CPR.

If necessary, perform first aid for eye injuries or convulsion first aid.

If the person vomits, clear the person's airway. Wrap a cloth around your fingers before cleaning out the mouth and throat.

Even if the person seems perfectly fine, get medical help.

DO NOT:

Give an unconscious person anything by mouth.

Induce vomiting unless you are told to do so by the Poison Control Center or a doctor. A strong poison that burns on the way down the throat will also do damage on the way back up.

Try to neutralize the poison with lemon juice or vinegar, or any other substance, unless you are told to do so by the Poison Control Center or a doctor.

Use any "cure-all" type antidote.

Wait for symptoms to develop if you suspect that someone has been poisoned.

When to Seek Medical Care

Call the U.S. National Poison Control Center at 1-800-222-1222 if you have questions about possible poisoning.

# hyper and hypothermia

CHRIS ALFORD·SATURDAY, APRIL 13, 2019

Hyperthermia refers to a group of heat-related conditions characterized by an abnormally high body temperature — in other words, the opposite of hypothermia.

The condition occurs when the body's heat-regulation system becomes overwhelmed by outside factors, causing a person's internal temperature to rise.

Hyperthermia is considered separate from conditions where internal body sources, such as infection, heat-regulating problems, and adverse drug reactions or overdoses cause a raised body temperature.

In humans, core body temperature ranges from 95.9°F to 99.5°F during the day, or 35.5°C to 37.5°C. In contrast, people with some level of hyperthermia hThe symptoms of hyperthermia depend on the stage it has reached or how much the body is overheated. Symptoms of overheating may develop very quickly or over the course of hours or days.

As the body attempts to cool itself by sweating, the sweat takes with it water and crucial salts called electrolytes, causing dehydration.

Mild dehydration tends to cause minor symptoms, such as headache and muscle cramps.

Severe dehydration, however, can strip the body of its ability to cool. Without treatment, this can result in dangerously high body temperatures and life-threatening conditions, including organ failure and death.

ave a body temperature of more than 100.4°F (38°C).

Types of hyperthermia and their associated symptoms include:

Heat fatigue and cramps

This stage of hyperthermia causes:

excessive sweating

exhaustion

flushed or red skin

muscle cramps, spasm, and pain

headache or mild light-headedness

nausea

Heat exhaustion

Heat exhaustion, if left untreated, can lead to heat stroke, which is a life-threatening condition.

Symptoms of heat exhaustion include:

cold, pale, wet skin

extreme or heavy sweating

fast but weak pulse

nausea, vomiting, and diarrhea

headache

muscle cramps

exhaustion

weakness

intense thirst

dizziness

less frequent urination and dark urine

difficulty paying attention or concentrating

mild swelling of the feet and ankles or fingers and hands

temporarily fainting or losing consciousness

Heat stroke

With heat stroke the body temperature is more than 103°F to 104°F, depending on a person's normal, average body temperature.

Temperature and many of the other early signs of heat stroke are the same as those for heat exhaustion. Symptoms of heat stroke include:

fast, strong pulse or very weak pulse

fast, deep breathing

reduced sweating

hot, red, wet, or dry skin

nausea

headache

dizziness

confusion

disorientation

blurred vision

irritability or mood swings

lack of coordination

fainting or losing consciousness

Symptoms of severe heat stroke include:

seizure

organ failure

coma

death

What are the treatments?A person should immediately stop what they are doing and move to a cool, shaded place with good airflow if they suspect hyperthermia.

People should seek medical attention if heat cramps last longer than one hour after they have rested in a cool place.

Medical attention should also be sought for general symptoms that do not improve within 30 minutes of rest and care.

Additional tips for treating mild to moderate hyperthermia include:

sipping cool water or an electrolyte drink

loosening or removing excess clothing

lying down and trying to relax

taking a cool bath or shower

placing a cool, wet cloth on the forehead

running the wrists under cool water for 60 seconds

not resuming activity until symptoms have gone away

placing ice packs or compresses under the arms and groin

using a fan to cool the skin

If heat stroke is suspected or symptoms persist, 911 must be called immediately or the individual must be taken to the emergency room.

Another person will have to help if the individual with heat stroke is unconscious or very disorientated.

Guidelines for treating heat stroke include:

moving to a cool, shaded, well-ventilated area

laying down

loosening or removing excess clothing

calling 911 or seeking medical attention

not eating or drinking anything unless fully conscious

taking a cool shower or bath

using cool, wet cloths on the skin

What is hypothermia?

Hypothermia is a severe condition in which the body temperature drops to an abnormally low level. It occurs when the body is unable to produce enough heat

to counter the heat that it is losing.The body produces heat during routine metabolic processes in cells that support vital bodily functions. Most

heat leaves the body through the skin's surface by the processes of convection, conduction, radiation, and evaporation.

If the environment becomes colder, the body shivers. This increase in muscle activity generates more heat. However, if the body loses heat more quickly than it can make it, the core temperature will fall.

As the temperature falls, the body shunts blood away from the skin to reduce the amount of heat that escapes.

Instead, it directs blood flow to the vital organs of the body, such as the heart, lungs, kidney, and brain. The heart and brain are most sensitive to lower temperatures, and electrical activity in these organs slows down when they become cold.

If the body temperature keeps falling, the organs begin to fail, ultimately leading to death.

Symptoms

As hypothermia sets in, it becomes more challenging to think, move, and take preventive action. This is dangerous because it means that people who have hypothermia will not seek to keep themselves warm and safe.

The body starts to slow down as the temperature drops. If the person stops shivering, it can be a sign that their condition is getting worse.

The individual is at risk of lying down, falling asleep, and dying. In some cases, people will paradoxically remove their clothes just before this occurs.

Treatment

Treatment depends on the degree of hypothermia, but the aim will be to make the person warm.

Treatments include the following:

First aid treatment

Anyone with symptoms of hypothermia will need immediate medical assistance.

Until medical assistance arrives, taking the following action can help:

moving the person to a warm, dry place, if possible, or sheltering them from the elements

removing wet clothing, cutting items away if necessary

covering their whole body and head with blankets, leaving only the face clear

putting the individual on a blanket to insulate them from the ground

monitoring breathing and carrying out CPR if breathing stops

providing skin-to-skin contact, if possible, by removing clothing and wrapping yourself and the individual in the blanket together to transfer heat

providing warm drinks, if the individual is conscious, but no alcohol or caffeine

It is vital not to use direct heat, such as heat lamps or hot water, as this can damage the skin. It can also trigger irregular heartbeats and, potentially, lead to cardiac arrest.