

## Appendix

### Survival Tips

When a disaster occurs, many emergencies arise in various places. These Survival Tips provide easy-to-understand explanations of knowledge that will be useful when a disaster occurs. If you know how to perform CPR, and how to use an AED and a fire extinguisher, you can protect your life and those of your loved ones in an emergency.

### Disaster Facts and Information You Should Know

Summarizes the knowledge you need to know to deepen your understanding of disaster preparedness, such as how disasters such as earthquakes and wind and flood damage occur, knowledge about weather information necessary to respond to disasters, and symbols and signs that will be useful in the event of a disaster.

## First Aid

### CPR (Cardiopulmonary Resuscitation)



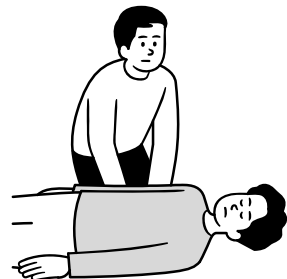
#### 1 Check the person's reaction

In the event of a disaster, ambulances will probably be late in arriving. If you find a person who has collapsed, gently tap them on the shoulder and ask loudly, "Are you OK?" Check to see if they respond, can move their hands and feet, if they are in pain from injuries, and whether they are conscious or not.



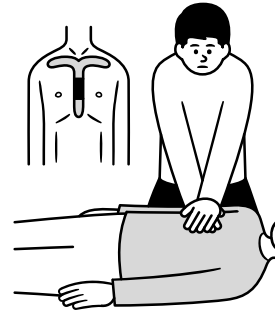
#### 2 Request cooperation from others around you

If there is no response, request the cooperation of people nearby by calling out in a large voice, "Someone, please come! There's a person here who needs help!" In addition, if the situation is safe, request someone to bring an AED (automatic external defibrillator) and give first aid.



#### 3 Check for breathing

Closely observe the movements of the person's chest and abdomen, and confirm within 10 seconds if his breathing is irregular. When there is no movement of the chest or abdomen, you can determine that the person is not breathing normally, and then begin chest compressions.



#### 4 Chest compression

Place your hands on the center of the person's chest, and press the chest down firmly about 5 centimeters for an adult. Do about 100 to 120 compressions per minute. When you are conducting both chest compressions and artificial respiration, repeat in cycles of 30 chest compressions and 2 breaths.



#### 5 Artificial respiration

Lift the person's chin to open the airway, and use the thumb and forefinger of your hand placed on their forehead to pinch their nose. Using a mouth-to-mouth resuscitation mouthpiece\*, cover the mouth so no air leaks, and breathe in for about 1 second. Check to see that their chest rises when you do so.



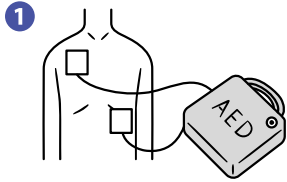
#### 6 AED

Switch on the AED. Apply the electrode pads directly to the chest, and if a shock is needed the AED will inform you with a voice prompt. Stand clear of the person and push the AED's button. Follow the device's instruction and immediately resume chest compressions

How to use an AED  
➡ Page 212

\*The risk of infection is said to be extremely low even when a mouthpiece is not used, however, from the perspective of preventing infection, it is safer to use one.

## AED



Switch on the AED and apply the electrode pads to the person's right chest and left side. (Wipe down these areas if they are wet with sweat, etc.)

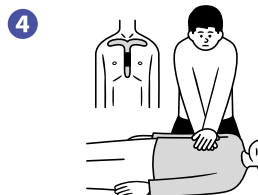


The AED will automatically perform an analysis of whether an electric shock is necessary (do not touch the person while the electrocardiogram analysis is being performed). If an electric shock is required based on the results of the electrocardiogram analysis, charging will start automatically and audio instructions will be given.



Once you are sure no one is touching the person, press the shock button.

\* How to turn on an AED varies depending on the model, such as those that turn on when the lid is opened and those that have a power button.



After the shock, resume chest compressions, leave the electrode pads attached, do not turn off the power and follow the AED's instructions. Continue doing this until emergency personnel take over or until the person gives some kind of response or purposeful gesture, or until they are breathing normally.



An AED is to be used when the person's heart is for some reason not beating in a normal rhythm. An AED can be used if the electrode pads can be applied directly to the person's bare skin, for example by moving their underwear to apply them. After the electrode pads are applied, clothing may be placed on top.



AED installation locations (provided by the National AED Map Foundation)

Source: Tokyo Fire Department "How to perform CPR if you see someone collapse"  
<https://www.tfd.metro.tokyo.lg.jp/life/kyuu-adv/life01-2.html>

\*Created with reference to Tama Fuchū Health Center, "Don't hesitate to use an AED on women"

## How to Stop Bleeding

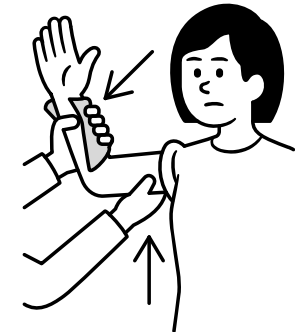
### Direct pressure to stop bleeding

Directly apply sterile gauze or a clean cloth to the bleeding area and compress strongly with your hand or a bandage. The size of the cloth should be large enough to completely cover the wound. In order to prevent infection, always wear rubber gloves or use a plastic bag, and be careful to not come in contact with the blood.



### Indirect pressure to stop bleeding

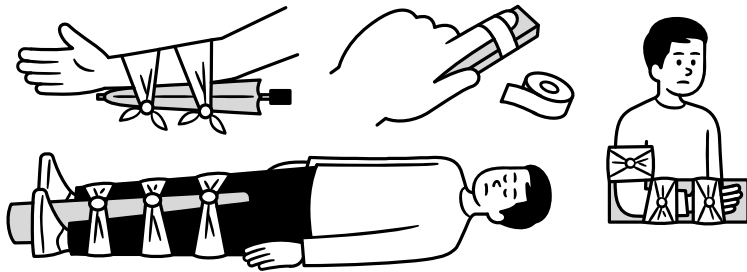
When it is difficult to stop the bleeding through the direct pressure method, try indirect pressure. Temporarily stop the flow of blood by pressing down on the artery between the injury and the heart, compressing it against the bone. For bleeding from the lower portion of the arm, use your thumb to strongly press the artery at the center of the inner side of the upper arm. For leg bleeding, straighten the bleeding leg and strongly press down at the groin using your fist.



### Severe bleeding can be life threatening

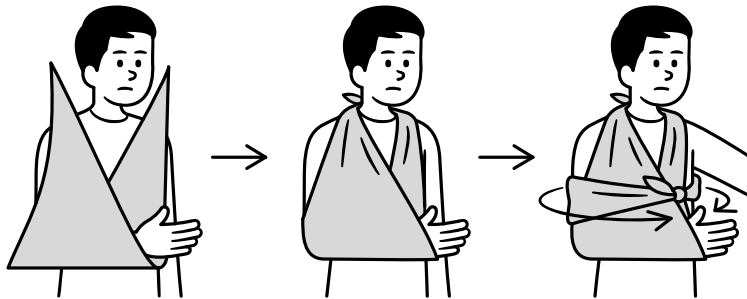
The total amount of blood in the human body makes up about 7 to 8% of the body's weight, and losing one-third of this blood can be life threatening. Arterial bleeding with bright red spurts of blood must be stopped immediately. Bleeding from capillary veins will, in most cases, stop naturally.

## First Aid for Fractures and Sprains



### Secure with a splint

Try not to move the part that has been broken and is painful. Prepare something that can serve as a splint to support the broken bone, and immobilize the injury by binding the splint and the joints on both sides of the fracture with a cloth, etc.



### Triangular bandage

A triangular bandage can be used on any part of the body and scarves, furoshiki, and large handkerchiefs can also serve as triangular bandages. Use it after rinsing the wound clean with water and applying a sterile gauze, etc. Do not tie the knot right over the wound.

## First Aid for Cuts

Things to prepare

Cloth, bandages, water, sterile gauze

1



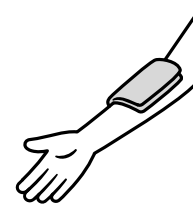
Prepare large pieces of cloth or bandages that can cover the wound.

2



If the wound has dirt or other debris, wash clean with water.

3



If the wound is bleeding, protect the wound by applying sterile gauze, etc.

4



Wrap a bandage.

## First Aid for Burns



### Cool minor burns with water

If the burn covers less than 10% of the body (the area of the palm of your hand is about 1% of the body surface), as soon as possible, cool with clean water for over 15 minutes until the pain eases.

## Bandage Substitutes

Things to prepare

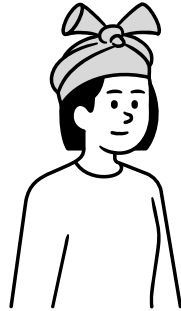
Gauze, tights

1



Use tights as a substitute for a bandage. First, place gauze, etc., over the wound and then cover with the body portion of the tights.

2

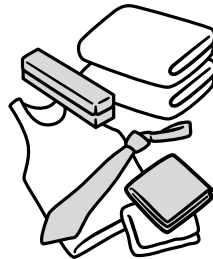


Wind the leg portion of the tights around the head and tie the ends. If they are washed and kept clean, they can be used repeatedly.

### Other items that can be substitutes for bandages

- ▣ Bandana
- ▣ Handkerchief
- ▣ Tenugui towel
- ▣ Necktie
- ▣ Towels
- ▣ Curtains
- ▣ Underwear
- ▣ Disposable diapers
- ▣ Sanitary napkins
- ▣ Plastic wrap

\*Only items that are clean

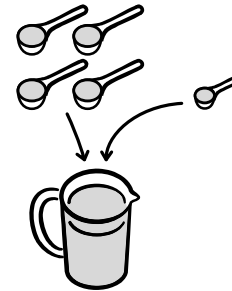


## Treating Dehydration and Heatstroke



### 1 Loosen clothing

Place the person in a comfortable position and gently loosen their clothes, belt, and other constricting items.

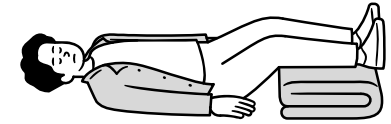


### Prevent dehydration

Things to prepare

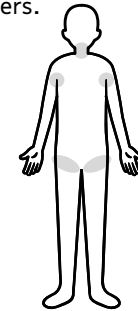
Water, sugar, salt

In order to prevent dehydration, it is a good idea to prepare an oral rehydration solution, which has an absorption rate that is about 25 times higher than water. The only things necessary are water, sugar and salt. Dissolve 4 tablespoons of sugar (about 40 grams) and 0.5 teaspoons of salt (about 4 grams) in 1 liter of water.



### 2 Elevate their legs

Lay the person face up and place cushions under their feet to raise their legs about 15 to 30 centimeters.



### Body parts that should be cooled

You can adjust your body temperature by heating or cooling the back of your neck, under your arms, and your groin.

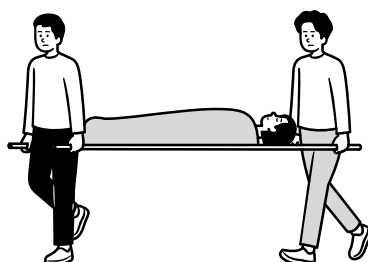
# ! Transporting the Injured or Ill

## ① When carrying



### ① Carry on your back

Lean the person on your back and catch their legs by passing your hands under their knees, and hold both of their arms firmly. This is not suited to injured people who have disorders of consciousness, broken bones, or internal injuries.



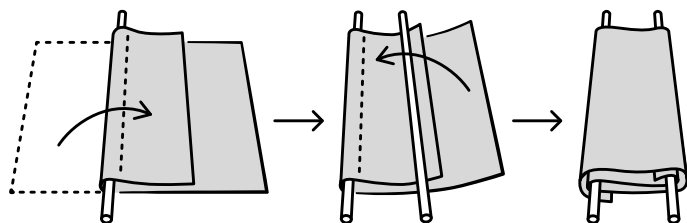
### ② Using a stretcher, etc.

When carrying a person on a stretcher, have his legs point forward and try to avoid shaking the stretcher or causing it to vibrate. This is very important to prevent the condition of the victim from worsening.

## If there is no stretcher

Things to prepare

Sturdy sticks (2m x 2), blanket (1)

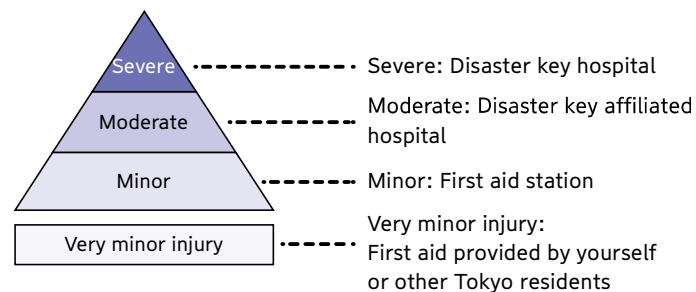


Spread out the blanket and place a stick one-third in from the side. Fold the blanket over so it wraps the stick. Place the other stick at the edge of the blanket and fold the rest of the blanket over so that the stick is wrapped. You can also use a sturdy plank as a substitute.

## ② Where to carry them

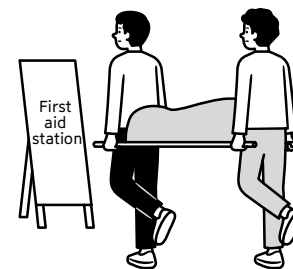
### Hospitals are in chaos during a disaster

It is expected that many injured people will need to be treated when a large-scale earthquake occurs, so hospitals will be overflowing with people. For this reason, first aid stations are set up in front of hospitals and schools.



### Go to a first aid station first

At first aid stations set up in front of hospitals and schools, first aid teams consisting of doctors, dentists, pharmacists, nurses, ward staff, etc. will perform triage (classifying the sick and injured). Information on where first aid stations will be set up in the event of a disaster can be found on each municipality's website, so be sure to check in advance. However, transport the person directly to a hospital in an emergency such as loss of consciousness or heavy bleeding.



Source: Tokyo Fire Department homepage "Transporting the Injured or Ill"  
<https://www.tfd.metro.tokyo.lg.jp/inf/bfc/leader/cp8/index.html>

## ! Safely Positioning the Injured or Ill



### The basic position is laying face up

Place the person in a comfortable position and gently loosen their clothes, belt, and other constricting items.



### Vomiting or back injury

Lay the person on their stomach, facing one side. Take care that they do not choke on their vomit.



### Head injury or labored breathing

Lay the person on their back and use cushions, etc., to lift their upper body.



### Abdominal pain or injury to the abdomen

Raise the upper body with cushions, etc., and also place a cushion under the knees to bend them.



### Labored breathing or chest pain

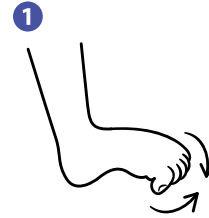
Put the person in a sitting position with their legs extended and place cushions, etc., between their legs and chest to support their upper body.



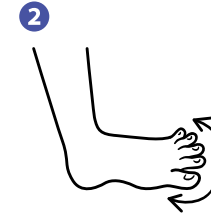
### Is breathing but unconscious

To secure an airway, place the person on their side with their top leg bent at a right angle at the knee.

## ! How to Prevent Economy Class Syndrome



1 Curl your toes.



2 Spread out your toes.



3 Raise your heels up and down and stand on your toes.



4 Stretch your toes up.

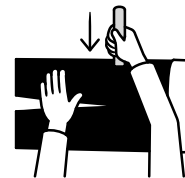


5 Hold your knee with both hands, relax your leg, and rotate your ankle.



6 Lightly massage your calves.

## ! Treating Anaphylaxis



A severe allergic reaction can occur after coming into contact with or ingesting an allergen such as food or medicine. Lay the person straight and inject an adrenaline autoinjector into their thigh. Inject it perpendicular to the thigh.

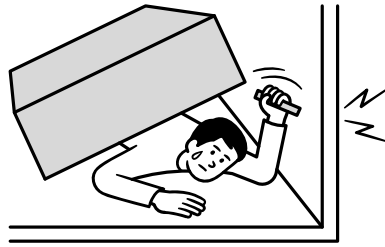
Source: Ministry of Health, Labor and Welfare "How to prevent economy class syndrome"  
<https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000170807.html>  
"Serious side effect and disease treatment manual"  
<https://www.mhlw.go.jp/topics/2006/11/dl/tp1122-1h01.pdf>

# ! Rescue Methods

## How to Call for Help if You Are Trapped

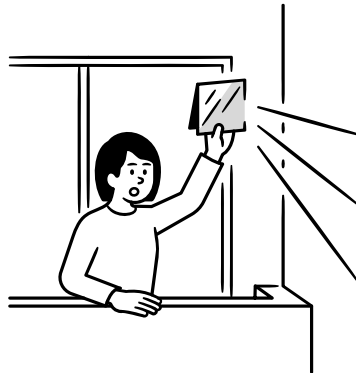
### If you cannot move

If you are trapped inside a room or unable to move, don't keep on shouting as this could exhaust you and endanger your life. Instead, make large noises by, for instance, using something solid to hit the door or walls to let others realize that you are in the room.



### Stranded on an upper floor

If you are stranded on an upper floor of a condominium or building, don't keep on shouting as you will get tired. Reflect light with a mirror, write your location and SOS on a piece of paper and drop it toward the ground, and make noises. It is also a good idea to practice whistling with your fingers on a regular basis.

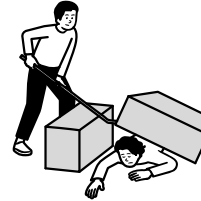


“Crush syndrome” is a condition that occurs when a person’s limb or buttocks are released after being continuously compressed for a long period of time. When the pressure is removed after a long period, an irregular heartbeat may occur and could cause death. It is necessary to seek help as soon as possible to prevent “crush syndrome.” Also, when there is a possibility that “crush syndrome” may occur, it is dangerous to move the person yourself.



## How to Use Rescue Goods: (1) Crowbar

A crowbar is a tool that can move heavy objects using leverage. It can be used to rescue people trapped in buildings or cars during a disaster. Rescue equipment such as crowbars and jacks are sometimes stocked in local emergency supplies storerooms.



### Removal of debris

Help people who are trapped under furniture, pillars, etc.



### Prying open doors

Pry open doors and windows that cannot be opened due to an earthquake to rescue the people who are inside.



### Rescue from vehicles

Break a window of a car that has become stuck to rescue the people who are inside.

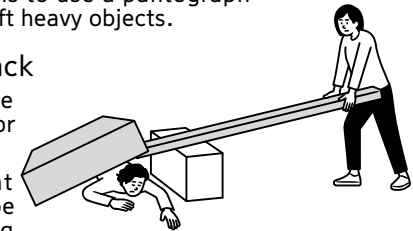
## How to Use Rescue Goods: (2) Jack

Another option in an emergency is to use a pantograph jack stored in a passenger car to lift heavy objects.

### Precautions when using a jack

If there is no space between the object to be lifted, use a crowbar or other item to create space.

Lift the object only to the height necessary to rescue people, and be careful of the heavy object falling back down.



Use the jack on a strong, flat surface, and place a block of wood or similar in the space opened by the jack to prevent the heavy object from falling back down if the jack moves.

Source: Toyonaka City Fire Department “Disaster Prevention Training Handbook” [https://www.city.toyonaka.osaka.jp/krashi/bosai/toyonakafiredept/license/sonota/hyoshi\\_handbook\\_files/4-1bar\\_bosaihandbook.pdf](https://www.city.toyonaka.osaka.jp/krashi/bosai/toyonakafiredept/license/sonota/hyoshi_handbook_files/4-1bar_bosaihandbook.pdf)  
Kameyama City “Citizens’ Firefighting Training Manual” [https://www.city.kameyama.mie.jp/shobo/article/2015031600035/file\\_contents/rescue.pdf](https://www.city.kameyama.mie.jp/shobo/article/2015031600035/file_contents/rescue.pdf)



# + Water and Toilet Measures

## How to Carry Water

### Items to carry water easily

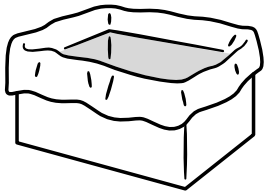
A polyethylene tank or water tank and a carrying cart will be convenient in carrying water from an emergency water supply station. Putting water in plastic bottles and carrying them in backpacks, etc., will also help when walking over rough roads.



### Using plastic bags and cardboard boxes

#### Things to prepare

Cardboard box, plastic bag, adhesive tape

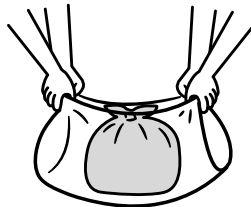


Spread a polyethylene bag inside a cardboard box, and firmly reinforce this by putting cloth adhesive tape on the bottom and sides before use.

### Using plastic bags and furoshiki wrapping cloth

#### Things to prepare

Plastic bag, furoshiki wrapping cloth



Place water in a plastic bag and tie the mouth. Place this in the center of a furoshiki wrapping cloth that has its adjacent corners tied together. If two people each hold one of the knots, the water can be easily carried.

## How to Use the Toilet When Water Supply Is Cut Off

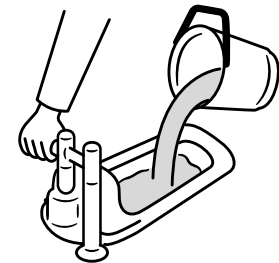
### Western toilet

For a western toilet, if the toilet can be flushed even though the water supply is interrupted, you can do this by pouring a bucket of water into the toilet bowl. Don't flush down toilet paper but throw it away as trash.



### Japanese toilet

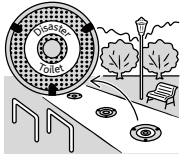
For a Japanese toilet, if the toilet can be flushed even though the water supply is interrupted, you can do this by pouring a bucket of water all at once into the toilet bowl while pressing down the flush lever. Don't flush down toilet paper but throw it away as trash.



In principle each person must provide their own containers to receive water. It is convenient to have a collapsible water tank.

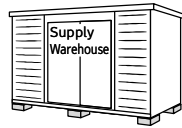
## How to Set Up a Manhole Toilet

1



Find a manhole labeled (for example) “Disaster Toilet” at a designated evacuation center or a park that serves as an evacuation area.

2



Retrieve the parts for assembling the manhole toilet from the emergency supplies storeroom.

3



Check that there are no abnormalities in the surrounding ground before opening the manhole cover.

4



Install the partitions and toilet.

5



Use it like a regular toilet and dispose of toilet paper directly into the manhole. Excrement will flow directly into the sewer.

### Precautions during installation

- Check the information from the Tokyo Metropolitan and municipal governments regarding locations.
- Not all manholes can be used as toilets.
- Please do not open public septic tanks, private septic tanks, or manholes on roads without permission, as it is extremely dangerous and may result in a fall accident!

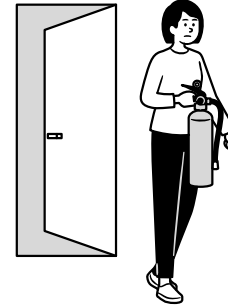
Source: Ministry of Land, Infrastructure, Transport and Tourism “Toilets in Times of Disaster”  
<https://www.mlit.go.jp/common/001180224.pdf>



## How to Use Firefighting Equipment

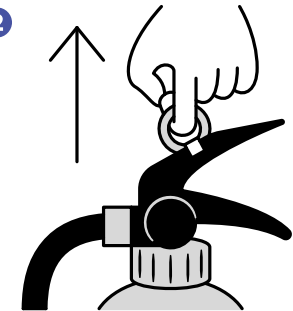
### How to Use a Fire Extinguisher

1



First, confirm the source of the fire. Stand so the exit is behind you.

2



Remove the safety pin on the top of the extinguisher.

3



Hold the nozzle and aim it at the flame.

4

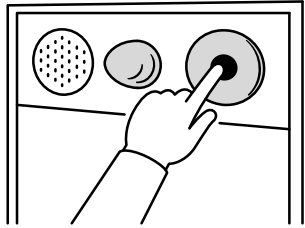


Squeeze the handle and spray the agent directly on the source of fire.

\*If the flames reach the ceiling, stop trying to extinguish the fire and evacuate.

## How to Use an Indoor Fire Hydrant

1



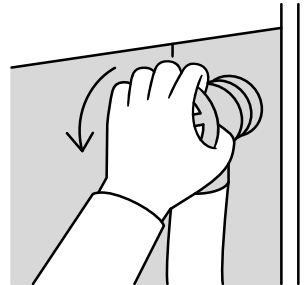
Press the start button. When the red light starts to blink, the pump will begin operating.

2



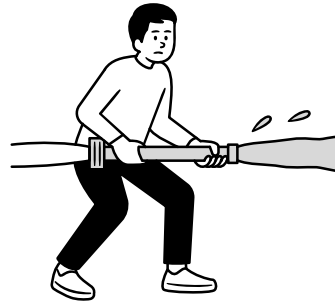
Open the cabinet and extend the hose.

3



Another person opens the valve.

4



Aim the nozzle at the source of the fire and spray water.

\*The No. 1 model fire hose is to be manned by more than one person. Here it is assumed that there are two people.

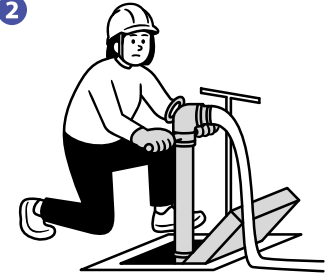
## How to Use a Standpipe

1



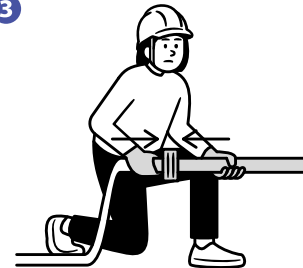
This is effective in places like narrow roads inaccessible by fire trucks. First, insert the key, bend your knees to take a low position, and lift the lid.

2



Join the standpipe to the water outlet. Turn the spindle driver, and after confirming that water is flowing, extend the hose joined to the pipe.

3



Join the hose to the nozzle. Insert it firmly until you hear a noise.

4

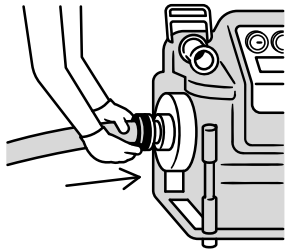


Straighten the hose, and after signaling, spray the water. Point the nozzle at the target, and hold it firmly at the height of your hip.

\*This is a fire extinguishing tool that uses the fire hydrant or drain valve in the road. Prior training is required to use it.

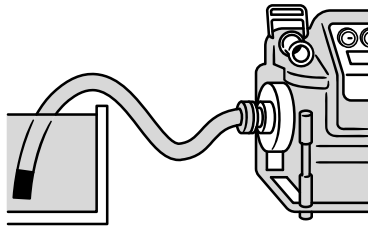
## How to Use a Portable Fire Pump

1



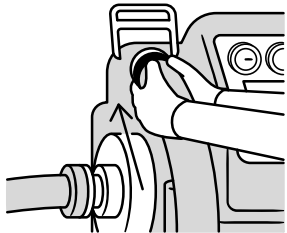
Close the drain cock and water hose outlet valve, and attach the suction pipe to the pump's water inlet.

2



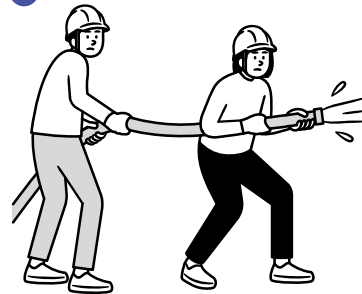
Place the suction pipe in a fire cistern, pool, etc.

3



Start the pump, attach the hose to the outlet, and extend the hose to the source of fire.

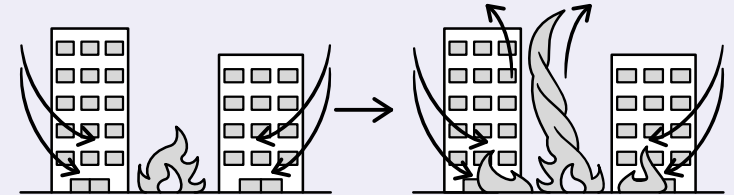
4



Spray water in the direction of the fire source.

\*This is a fire pump of a size that can be carried by people. This is to be manned by more than one person. Prior training is required to use it.

## Firestorms Can Occur in a Disaster



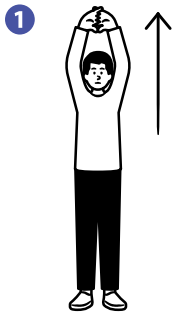
When a large-scale fire occurs in an urban area, a tornado-like vortex of air called a “whirlwind” can occur, causing great damage. This wind not only can blow people and objects away, but can also cause the rapid spread of the fire due to the ferocious winds, and can even create a tornado-like vortex of flames called a “firestorm”. In the Great Kanto Earthquake of 1923, a firestorm occurred at the site of a factory where many people had evacuated to, resulting in approximately 38,000 deaths. When a fire occurs in an urban area, it is assumed that the strong eddies of wind around high buildings will have a strong influence on the fire, making it more likely that a firestorm will occur.

# ✚ Maintaining Your Physical and Mental Health

## Exercises for Evacuation Life

These are exercises that people living in evacuation centers or temporary housing can do to help maintain or restore their physical and mental capabilities.

### Stretch exercises (3 minutes)



Hands overhead



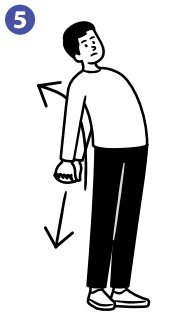
Side extensions (left/right)



Opening shoulder blades



Upper body twist (left/right)



Chest extension



Lower back extension

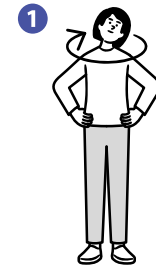


Leg stretch (left/right)

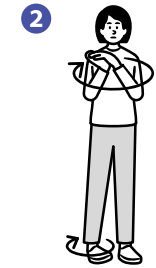


Calf/Achilles tendon (left/right)

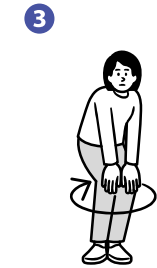
### Joint circles and bends/extensions (3 minutes)



Neck circles (right and left, 4 times)



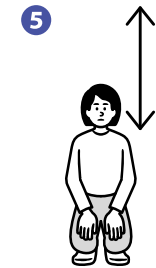
Wrist and ankle circles (right and left, 5 times)



Knee circles (right and left, 10 times)



Hip circles (right and left, 10 times)



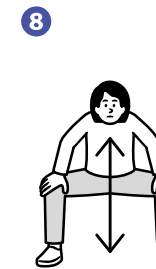
Knee bends (10 or more)



Leg/knee side extensions (left/right)



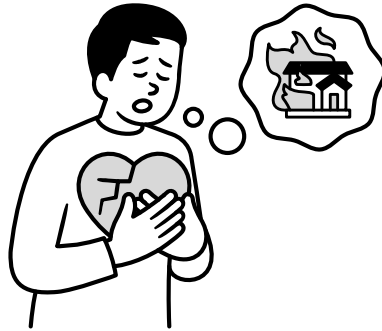
Ground stamp (right and left, 10 times)



Wide squat (10 times)

## PTSD (Post-Traumatic Stress Disorder)

PTSD (Post-Traumatic Stress Disorder) is a condition that begins to develop around one month after a disaster occurs. If the symptoms of acute stress disorder (ASD) do not subside, the possibility of PTSD occurring increases.



### What is ASD?

After a disaster, a person may feel like they are not themselves, have dissociative symptoms that make them feel like they are in a dream, experience temporary forgetfulness, or become extremely depressed.

A variety of symptoms may appear after a disaster, including insomnia, depression, headaches, and loss of appetite.

## Caring for PTSD

### For those affected by a disaster

- ⦿ Try to communicate with others.
- ⦿ Understand that anyone can feel anxious and worried, but they will gradually recover.
- ⦿ Even if you can't sleep, simply lying down is still good.
- ⦿ It is important not to try and “cure” painful feelings, but to support each other.
- ⦿ Don't push yourself too hard and consult with someone close to you or a specialist.

### If someone around you is experiencing anxiety

- ⦿ Stay close to the person and give them a sense of security.
- ⦿ Look them in the eye and speak slower than usual.
- ⦿ Speak clearly and use short sentences.
- ⦿ Do not force them to talk about painful experiences.
- ⦿ Listen to them if they want to talk about any problems they have.

### Pay special attention to children!

- ⦿ Avoid leaving the child alone as much as possible to ensure their safety and give them peace of mind.
- ⦿ Increase the amount of physical contact with the child.
- ⦿ Accept that they may become more childish, dependent, and selfish.

### Where to seek help if you're feeling anxious

#### Tokyo Metropolitan Government Chubu General Mental Health & Welfare Center

2-1-7 Kamikitazawa, Setagaya Ward, 156-0057  
Main line: 03-3302-7575; Consultation line:  
03-3302-7711  
(Minato, Shinjuku, Shinagawa, Meguro, Ota, Setagaya,  
Shibuya, Nakano, Sugiyama, and Nerima Wards)



#### Tokyo Metropolitan Mental Health & Welfare Center

1-1-3 Shitaya, Taito Ward, 110-0004  
Main line: 03-3844-2210; Consultation line:  
03-3844-2212  
(Chiyoda, Chuo, Bunkyo, Taito, Sumida, Koto, Toshima,  
Kita, Arakawa, Itabashi, Adachi, Katsushika, and  
Edogawa Wards, island areas)



#### Tokyo Metropolitan Government Tama General Mental Health & Welfare Center

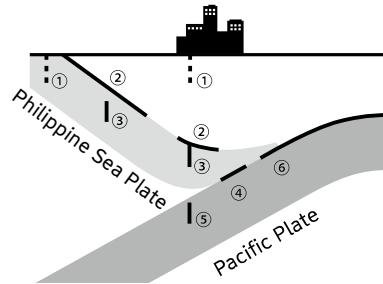
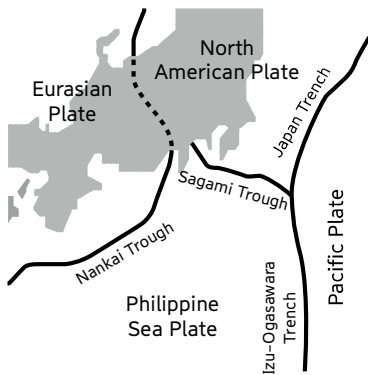
2-1-3 Nakazawa, Tama City, 206-0036  
Main line: 042-376-1111; Consultation line:  
042-371-5560  
(Tama area)



Reference materials:  
National Information  
Center of Stress and  
Disaster Mental Health,  
National Center of  
Neurology and Psychiatry,  
“Psychological first aid:  
Guide for field workers”  
[https://saigai-kokoro.ncn.p.go.jp/images/upload/files/whopfa\\_jpn.pdf](https://saigai-kokoro.ncn.p.go.jp/images/upload/files/whopfa_jpn.pdf)

# Disaster Facts and Information You Should Know

## **i** Knowledge of Earthquakes



Locations of earthquakes that occur in the southern Kanto region

- ① Shallow earthquakes within the earth's crust (North American Plate or Philippine Sea Plate)
- ② Earthquakes along the boundary between the Philippine Sea Plate and the North American Plate
- ③ Earthquakes within the Philippine Sea Plate
- ④ Earthquakes along the boundary between the Philippine Sea Plate and the Pacific Plate
- ⑤ Earthquakes within the Pacific Plate
- ⑥ Earthquakes along the boundary between the Philippine Sea Plate, the North American Plate, and the Pacific Plate

### Mechanism of earthquakes

Earthquakes occur when slabs of underground rock (plates) slip away or toward each other. Around Japan, oceanic plates subduct below the land plates, and when the land plates can no longer resist this stress and slip, an earthquake occurs at the plate boundary (interplate earthquake). An earthquake that occurs inside the tectonic plate is called an intraplate earthquake.

### Active faults

These have been active in the most recent period of geological time (within the last two million years), and are faults that can become the source of future earthquakes.

### Seismic intensity and magnitude

Seismic intensity describes the degree of shaking. Seismic intensities announced by the Japan Meteorological Agency are ranked into 10 levels from “0” to “7” (see the table below). Magnitude (M) is an index that describes the energy of the earthquake. Even an earthquake with a small magnitude could have a large seismic intensity in areas near the source.

| Seismic intensity | Situation   |
|-------------------|---|
| 0                 | Imperceptible to people.  |
| 1                 | Felt slightly by some people keeping still in buildings.  |
| 2                 | Felt by most people keeping still in buildings.   |
| 3                 | Felt by almost all people inside buildings.   |
| 4                 | Almost all people are startled. Hanging objects such as lights sway significantly. Unstable objects/figurines may fall.   |
| 5 Lower           | Most people feel the need to hold onto something stable. Things such as dishes or books on shelves may fall. Unsecured furniture may move and unstable objects may topple over.   |
| 5 Upper           | Walking is difficult without holding onto something stable. More things such as dishes or books on shelves fall. Unreinforced concrete block walls, etc., may collapse.   |
| 6 Lower           | It is difficult to remain standing. Most unsecured furniture move and more start toppling over. Wall tiles and windows may sustain damage and fall. For wooden houses with low earthquake resistance, roof tiles may fall, and the houses may tilt or collapse. |
| 6 Upper           | People need to crawl to move, and may be thrown through the air. Almost all unsecured furniture move and more start toppling over. Large cracks may form in the ground, and large-scale landslips and massive collapse may occur.                               |
| 7                 | There are even more cases of wooden houses with low earthquake resistance tilting or collapsing. Even buildings with high earthquake resistance could tilt. More reinforced concrete buildings with low seismic resistance collapse.                            |

## Liquefaction

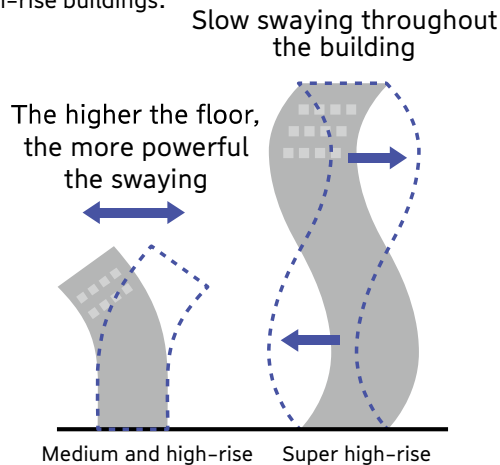
Liquefaction is a phenomenon in which soil behaves like a liquid due to the occurrence of an earthquake. It could cause damage such as the tilting or sinking of houses and other buildings. It could also result in the uplifting of items that have a lower specific gravity than water, such as sewage manholes.

## Long-period ground motion

When a large-scale earthquake occurs, a slow, large shaking (ground motion) occurs for a long period. This kind of ground motion is called “long-period ground motion.” Here, “period” means the time it takes for the ground to move back and forth to complete one cycle.

## Swaying characteristics of tall buildings

Buildings have what is called a natural period—the rate at which they sway back and forth. When this natural period and the seismic wave period match up, the subsequent resonance will make the building shake significantly. Tall buildings tend to resonate with the seismic waves of long-period ground motion and sway largely for a long period. The higher floors also tend to sway more than the lower floors. Due to these characteristics, the standard for issuing earthquake early warnings is when Grade 3 long-period ground motion or higher is predicted, as damage may occur in high-rise buildings.



## Long-period ground motion observation information

Long-period ground motion observation information refers to the information that is announced approximately 10 minutes after an earthquake occurs, in circumstances when Grade 1 long-period ground motion class or higher has been observed, and includes the grade of the long-period ground motion that has been detected at observation points. More information can be found on the Japan Meteorological Agency’s website.



Long-period ground motion observation results

## Long-period ground motion levels

Long-period ground motion is ranked according to situations inside tall buildings, such as human perception and reaction, and the movement or toppling over of furniture.

| Level   | Human perception and reaction  | Situation  |
|---------|--|--|
| Grade 1 | Almost everyone can feel the shaking. Some are startled.   | Blinds and other hanging objects swing significantly.  |
| Grade 2 | People feel large shaking and want to hold onto something stable. They have problems moving, such as having difficulty walking without holding onto something. | Furniture and fixtures on casters move slightly. Dishes and books on shelves may fall.   |
| Grade 3 | It becomes difficult to remain standing.   | Furniture and fixtures on casters move significantly. Unsecured furniture may move, and unstable items may topple over.                              |
| Grade 4 | People cannot remain standing, have to crawl to move, and are tossed about by the shaking.   | Furniture and fixtures on casters move significantly, and some may topple over. Most of the unsecured furniture will move and some will topple over. |



## Earthquake Early Warnings

Earthquake Early Warning is information on the estimated seismic intensity and arrival time of strong tremors, which is provided as soon as possible after the occurrence of an earthquake. When an Earthquake Early Warning is issued by the Japan Meteorological Agency, notifications are issued through media including television, radio, and the Internet.

### Types of Earthquake Early Warnings

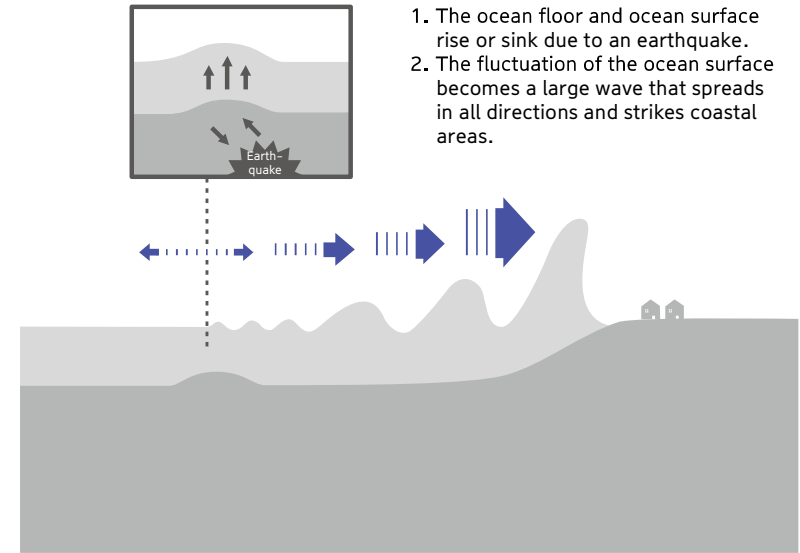
There are two main types of Earthquake Early Warnings: forecasts and alerts. An Earthquake Early Warning forecast is issued when an earthquake with a maximum seismic intensity of at least 3, long-period ground motion of at least Grade 1, or a magnitude of at least 3.5 is expected to occur. An Earthquake Early Warning alert is issued for areas that will have tremors with a seismic intensity of at least 4 or long-period ground motion of at least Grade 3 when an earthquake with a maximum seismic intensity of at least 5 Lower or long-period ground motion of at least Grade 3 is expected to occur. When the maximum seismic intensity is expected to be at least 6 Lower or long-period ground motion of at least Grade 4, the Early Warning alert is positioned as an emergency warning.

| Type                          | Name of Earthquake Warning Issued                          | Issuance Criteria   |
|-------------------------------|--|---|
| Ground motion forecast        | Earthquake Early Warning forecast                          | Maximum seismic intensity 3 or higher, long-period ground motion of Grade 1 or higher, or magnitude 3.5 |
| Ground motion alert           | Earthquake Early Warning or Earthquake Early Warning alert | Maximum seismic intensity 5 Lower or higher, long-period ground motion of Grade 3 or higher             |
| Ground motion emergency alert | Earthquake Early Warning alert                             | Maximum seismic intensity 6 Lower or higher, long-period ground motion of Grade 4 or higher             |

### Mechanism of Earthquake Early Warning system

When an earthquake occurs, the P waves that cause small shaking are followed by the S waves that cause large shaking. After detecting the first P wave by the seismometers, the Earthquake Early Warning is issued to warn people of the approaching S wave. However, in areas close to the epicenter, the Earthquake Early Warning may not be issued in time.

## **i** Knowledge of Tsunami



1. The ocean floor and ocean surface rise or sink due to an earthquake.
2. The fluctuation of the ocean surface becomes a large wave that spreads in all directions and strikes coastal areas.

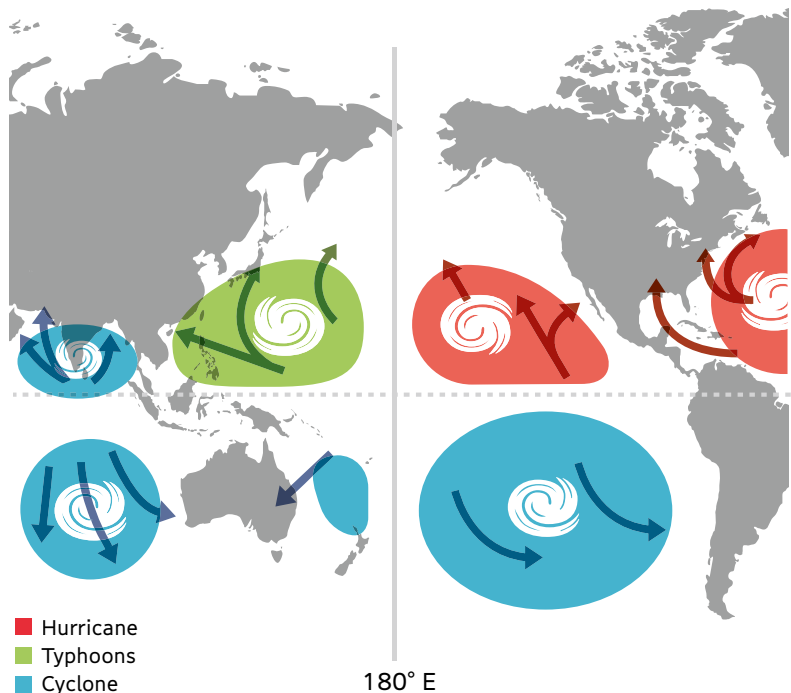
### Mechanism of a tsunami

When a large earthquake occurs below the surface of the ocean floor, fault movements make the ocean floor rise or sink. This results in a fluctuation of the ocean surface, which becomes a large wave that spreads in all directions, i.e. a tsunami. The deeper the water depth, the faster the tsunami travels, and the more shallow the water, the higher the tsunami becomes. A tsunami flows powerfully inland at a speed that most people will not be able to outrun. It also recedes very strongly, taking everything that floats out to sea. It is also important to know that multiple tsunamis may hit.



Types of tsunami alerts and warnings  
Japan Meteorological Agency homepage

# i Knowledge of Climate Change, Typhoon and Heavy Rain



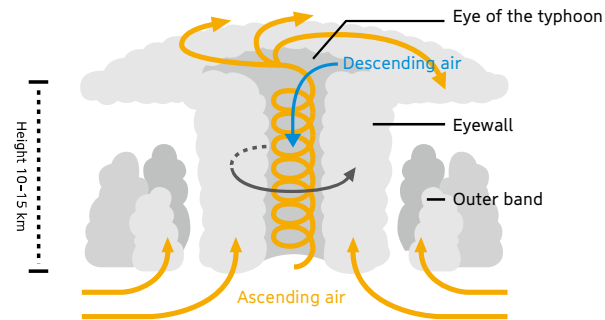
## Typhoons and tropical cyclones

Low-pressure systems forming over tropical waters are called tropical cyclones. Of these tropical cyclones, those in the northwestern Pacific or the South China Sea that have a maximum wind speed (10-minute average) of at least 17 m/s are called typhoons. Upper level winds push the typhoon, which is disposed to moving north due to the effect of earth's rotation. Because of this, in low latitudes where east winds normally blow, the typhoon moves north while being steered to the west. When the typhoon reaches the middle and high latitudes where strong west winds (prevailing westerlies) are blowing in the upper level, typhoons move northeast at a high speed.

## Typhoon structure

|                    |   |
|--------------------|---|
| Eye of the typhoon | Air descends, with no clouds, and weakening wind and rain. The eye has a diameter ranging from around 20 to 200 km.   |
| Eyewall            | The eye of the typhoon is surrounded by the eyewall, a ring of dense cumulonimbus clouds. This is where the strongest wind and rain of the storm occurs.                              |
| Spiral band        | A somewhat thick spiral band (inner rainband) around the eyewall, which produce strong and continuous rainfall.   |
| Outer band         | Outer rainbands around the spiral band, forming about 200 to 600 km from the center of the typhoon, which intermittently produce strong rain, thunderstorms, and at times, tornadoes. |
| Above the clouds   | Air is released clockwise.  |

Cross section of a typhoon



## Typhoon and heavy rain warnings

|                     |  |
|---------------------|--|
| Heavy rain warning  | Issued when there is the risk that heavy rain will cause serious flooding or sediment disasters. The warning continues to be issued even after the rain has stopped if there is still the risk of serious sediment disasters, etc. |
| Storm warning       | Issued when there is the risk of serious disasters occurring from violent winds.   |
| Flood warning       | Issued when there is the risk of serious disasters such as rising levels and flooding of rivers, and damage to or collapse of levees, due to heavy rain, long rain, snowmelt, etc.   |
| High wave warning   | Issued when there is the risk of serious disasters occurring due to high waves. High waves are completely different from tsunamis occurring from earthquakes.  |
| Storm surge warning | Issued when there is the risk of serious disasters occurring through the abnormal rise of the ocean surface due to typhoons, low pressure systems, etc.  |



Information regarding disaster prevention weather information and alert levels  
Japan Meteorological Agency homepage

## Typhoon and heavy rain emergency warnings

|                               |   |
|-------------------------------|---|
| Heavy rain emergency warning  | Issued when heavy rainfall of an intensity observed only once every few decades is forecasted due to typhoons or torrential rain. When a heavy rain emergency warning is issued, it is expected that there is an extremely large risk of serious damage such as inundation and sediment disaster occurring. The emergency warning continues to be issued even after the rain has stopped when there is still a significantly large risk of serious sediment disaster, etc. occurring. |
| Storm emergency warning       | Issued when it is forecasted that a powerful typhoon with a level of intensity observed only once every few decades or an extratropical cyclone of comparable intensity will produce violent winds.   |
| High wave emergency warning   | Issued when it is forecasted that a powerful typhoon with a level of intensity observed only once every few decades or an extratropical cyclone of comparable intensity will produce high waves. High waves are completely different from tsunamis occurring from earthquakes.  |
| Storm surge emergency warning | Issued when it is forecasted that a powerful typhoon with a level of intensity observed only once every few decades or an extratropical cyclone of comparable intensity will result in storm surge.   |

## Other typhoon and heavy rain bulletins and forecasts

|                                    |   |
|------------------------------------|---|
| Record-time heavy rain information | If short-term heavy rain that only occurs once every few years is observed or analyzed during a heavy rain warning, and if the "Danger" (purple) level has appeared on the KIKIKURU (danger level distribution) map, the Japan Meteorological Agency will make an announcement.   |
| Sediment-disaster alert bulletin   | If the conditions are such that a life-threatening sediment disaster could occur at any time after a heavy rain warning (sediment disaster) has been announced, the municipalities at risk will be identified and jointly announced by the prefectural government and the Japan Meteorological Agency. Locations at risk of sediment disasters, warning and evacuation districts, and emergency warning districts can be confirmed on the Tokyo Metropolitan Government's Sediment Disaster Risk Map. |

Source: Japan Meteorological Agency "Types of weather warnings and advisories" from the Japan Meteorological Agency website

## i Various Weather Information

### Heavy snow warning, emergency warning

|                              |  |
|------------------------------|--|
| Heavy snow warning           | Issued when there is the risk of serious disasters occurring due to heavy snow.                      |
| Heavy snow emergency warning | Issued when heavy snow with a level of intensity observed only once every few decades is forecasted. |

### Snowstorm warning, emergency warning

|                             |   |
|-----------------------------|---|
| Snowstorm warning           | Issued when there is the risk of serious disasters occurring from gales accompanying snow. In addition to serious disasters occurring from violent winds, warnings are also given about the risk of serious disasters resulting from reduced visibility due to snow.  |
| Snowstorm emergency warning | Issued when it is forecasted that a powerful typhoon with a level of intensity observed only once every few decades or a extratropical cyclone of comparable intensity will produce violent winds accompanying snow. In addition to serious disasters occurring from violent winds, warnings are also given about the extremely high risk of serious disasters resulting from reduced visibility due to snow. |



Information regarding disaster prevention  
weather information and alert levels  
Japan Meteorological Agency homepage

Source: Japan Meteorological Agency "Types of weather warnings and advisories" from the Japan Meteorological Agency website

## i Large-Scale Disasters in the Past

### Earthquakes since the Great Kanto Earthquake that wrought enormous damage

| Year | Scale | Disaster name                  | Damage  |
|------|-------|--------------------------------|---|
| 1923 | M7.9  | Great Kanto Earthquake         | Deaths/missing: Over 105,000  |
| 1927 | M7.3  | Kita Tango Earthquake          | Deaths: 2,925   |
| 1943 | M7.2  | Tottori Earthquake             | Deaths: 1,083   |
| 1944 | M7.9  | Tonankai Earthquake            | Deaths/missing: 1,223   |
| 1945 | M6.8  | Mikawa earthquake              | Deaths: 2,306   |
| 1946 | M8.0  | Nankai Earthquake              | Deaths: 1,330   |
| 1948 | M7.1  | Fukui Earthquake               | Deaths: 3,769   |
| 1995 | M7.3  | Great Hanshin-Awaji Earthquake | Deaths: 6,434   |
| 2011 | M9.0  | Great East Japan Earthquake    | Deaths: 19,747<br>Fire and Disaster Management Agency, Ministry of Internal Affairs and Communications, 2021 Firefighting White Paper |

\*Earthquakes that caused more than 1,000 deaths

### Major volcanic eruptions that had an impact on Tokyo

| Year | Disaster name               | Damage etc.                             |
|------|-----------------------------|---|
| 1707 | Hoei-Eruption of Mount Fuji | Large quantities of volcanic ash        |
| 1902 | Izu-Torishima Eruption      | Deaths: 125                             |
| 1940 | Miyakejima Eruption         | Deaths: 11                              |
| 1983 | Miyakejima Eruption         | Damage from lava flow, etc.             |
| 1986 | Izu-Oshima Eruption         | All residents evacuated from the island |
| 2000 | Miyakejima Eruption         | All residents evacuated from the island |

## Recent major storm and flood damage that had an impact on Tokyo

| Date               | Disaster name                    | Main damage   | Laws that applied  |
|--------------------|----------------------------------|---|--|
| October 15, 2013   | Typhoon Wipha                    | Deaths: 37<br>Missing: 3<br>Serious injuries: 10<br>Minor injuries: 15<br>Houses totally destroyed: 52<br>Houses partially destroyed: 27<br>Houses destroyed to some degree: 183<br>Inundation above floor level: 58<br>Inundation below floor level: 103 | Disaster Relief Act  |
| February 8, 2014   | Heavy snow and rain              | Serious injuries: 5<br>Minor injuries: 61<br>Houses destroyed to some degree: 5   |  |
| February 14, 2014  | Heavy snow and rain              | Serious injuries: 6<br>Minor injuries: 50<br>Houses partially destroyed: 1<br>Houses destroyed to some degree: 332  |  |
| September 8, 2015  | Kanto/Tohoku heavy rain          | Minor injuries: 1<br>Houses partially destroyed: 1<br>Inundation above floor level: 8<br>Inundation below floor level: 14   |  |
| August 21-22, 2016 | Typhoon Mindulle                 | Minor injuries: 2<br>Houses partially destroyed: 1<br>Houses destroyed to some degree: 9<br>Inundation above floor level: 178<br>Inundation below floor level: 228  |  |
| October 22, 2017   | Typhoon Lan                      | Minor injuries: 1<br>Houses partially destroyed: 20<br>Inundation above floor level: 18<br>Inundation below floor level: 26   |  |
| September 8, 2019  | Typhoon Faxai                    | Deaths: 1<br>Minor injuries: 6<br>Houses totally destroyed: 14<br>Houses partially destroyed: 73<br>Houses destroyed to some degree: 1,743<br>Inundation above floor level: 24<br>Inundation below floor level: 13  | Disaster Relief Act  |
| October 12, 2019   | Typhoon Hagibis                  | Deaths: 3<br>Minor injuries: 10<br>Houses totally destroyed: 36<br>Houses partially destroyed: 667<br>Houses destroyed to some degree: 1,204<br>Inundation above floor level: 320<br>Inundation below floor level: 531                                    | Disaster Relief Act<br>Establishment of disaster response headquarters |
| October 25, 2019   | Typhoon Bualoi                   | Serious injuries: 1<br>Houses totally destroyed: 1<br>Houses partially destroyed: 2<br>Houses destroyed to some degree: 21  |  |
| October 8-11, 2020 | Typhoon Chan-hom and storm front | Houses destroyed to some degree: 5  | Disaster Relief Act  |
| August 8, 2021     | Typhoon Mirinae                  | Minor injuries: 2<br>Houses destroyed to some degree: 2   |  |



1923  
1923 Great Kanto Earthquake  
(from the archives of the Tokyo Metropolitan Government Memorial Hall of Reconstruction)



2000  
Miyakejima Eruption



2011  
Great East Japan Earthquake



2013  
Typhoon Wipha sediment disaster on Izu Oshima Island



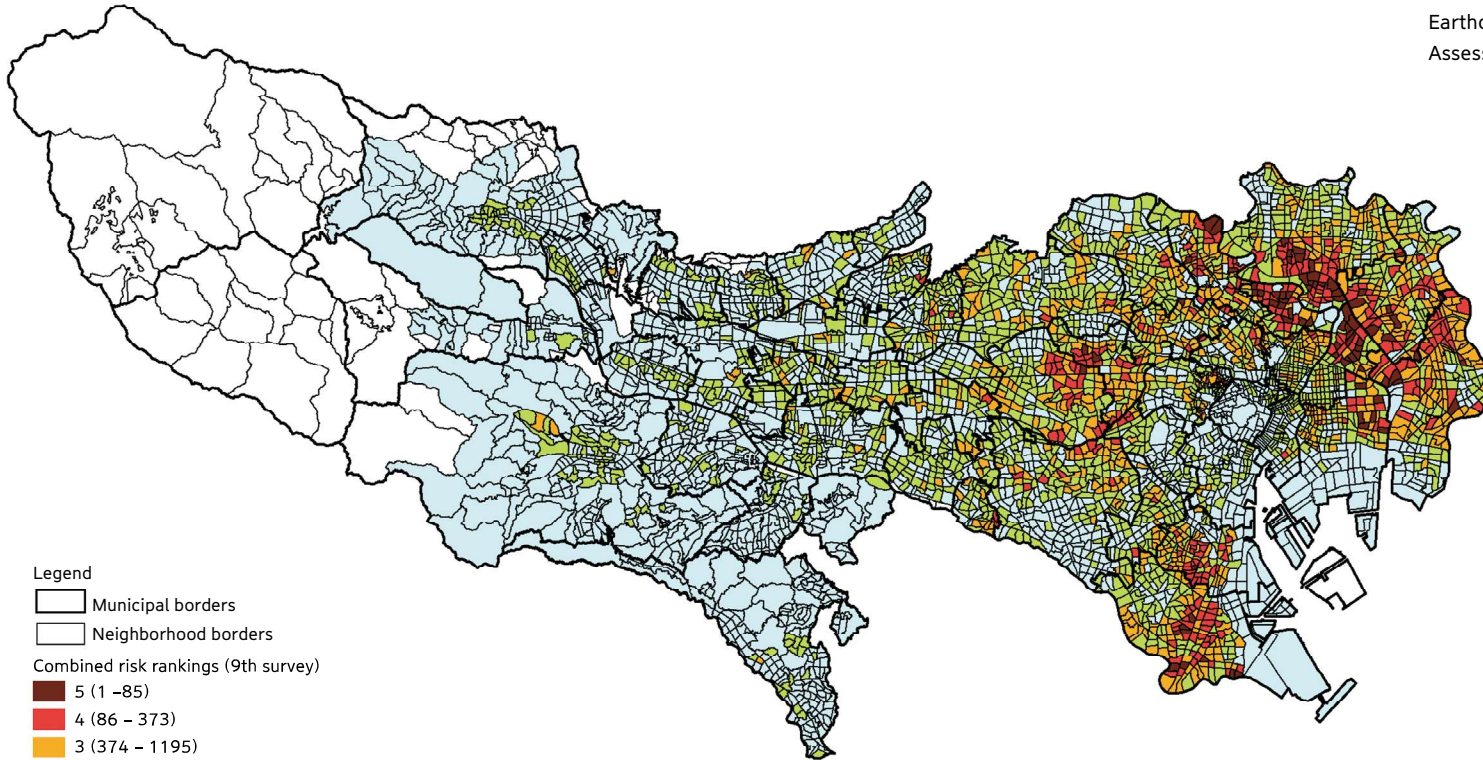
# i Community Earthquake Risk Assessment Survey

Combined risk ratings were determined by aggregating a community's building collapse risk ranking and fire risk ranking, and then ranking this sum. Communities with high combined risk need to develop measures tailored to the characteristics of each area. The "combined risk in light of emergency response difficulty" rating takes into account the difficulty of emergency response such as evacuation and fire/rescue activities

## Combined Risk Ratings

in addition to overall combined risk. This data assesses the status of the development of roads that will serve important roles when a disaster strikes such as community roads and city-planned roads. More detailed information about combined risk ratings published by the Tokyo Metropolitan Government is available from the Bureau of Urban Development by scanning the QR code below.

Community Earthquake Risk Assessment Survey



- Legend**
- Municipal borders
  - Neighborhood borders
  - Combined risk rankings (9th survey)
    - 5 (1 -85)
    - 4 (86 - 373)
    - 3 (374 - 1195)
    - 2 (1196 - 2848)
    - 1 (2849 - 5192)



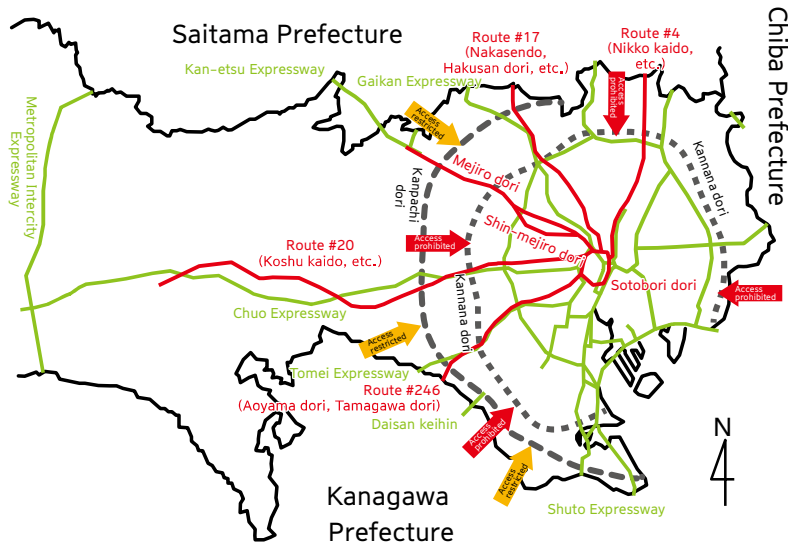
\*White areas indicate areas not subject to assessment.

(Tokyo Metropolitan Government Bureau of Urban Development, September 2022)

# i Traffic Restrictions Following

Directly following a major earthquake, traffic restrictions (stage 1 restrictions) will be implemented in order to prevent danger on roads, as well as to ensure the smooth passage of emergency vehicles engaged in activities such as rescue and firefighting, based on the Road Traffic Act (Act No. 105 of 1960). Emergency access roads are then secured (stage 2 restrictions) to ensure that emergency response can be carried out

## Stage 1 restrictions



| Legend                                   |                                      |   |       |
|--|--------------------------------------|---|-------|
| Kannana dori                             | ■■■■■                                | Kanpachi dori   | ●●●●● |
| Routes for Authorized Emergency Vehicles | <span style="color: red;">█</span>   | Route #4, Route #17 (Hakusan dori, etc.),<br>Route #20, Route #246, Mejiro dori/<br>Shin-mejiro dori, Sotobori dori |       |
|  | <span style="color: green;">█</span> | Expressway national highways, Shuto Expressway, etc.  |       |

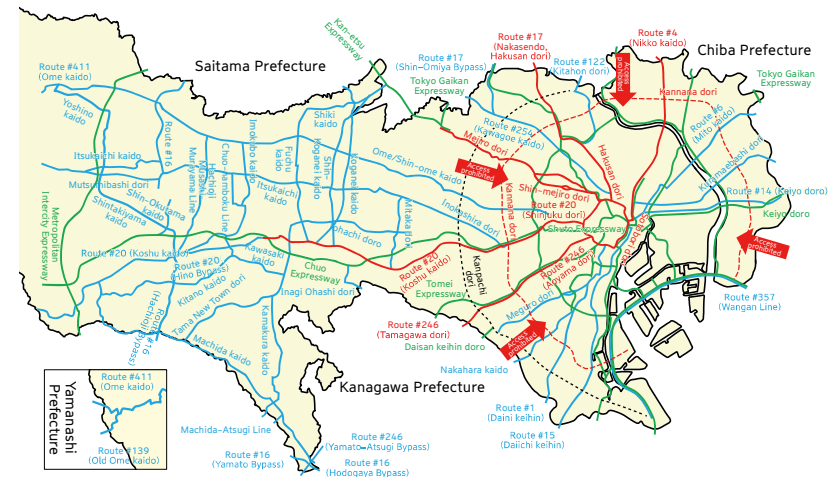
# a Major Earthquake

accurately and smoothly based on the Disaster Countermeasures Basic Act (Act No. 223 of 1961). Furthermore, if an earthquake measuring a 5 Upper occurs, even though it does not qualify as a massive earthquake, traffic restrictions may be put into place based on the Road Traffic Act.

Metropolitan Police Department, Traffic Restrictions Following a Major Earthquake



## Stage 2 restrictions



- █ Regular roads designated as Routes for Authorized Emergency Vehicles
- █ Expressways designated as Routes for Authorized Emergency Vehicles
- █ Key road routes to be designated, if necessary, as Emergency Access Roads

"Routes for Authorized Emergency Vehicles" are given priority designation as "Emergency Access Roads" and vehicles are prohibited from entering.  
\*Only vehicles engaged in disaster response measures are allowed access.

Designated routes may be changed depending on the damage and traffic conditions.

# i Support Systems

## Rebuild your life using support systems

There are various systems in place to help you rebuild your life when you have incurred damage from a natural disaster such as an earthquake. Some of the systems may require that you present a damage certificate (risai shomeisho), which certifies the degree of damage to your home or office, etc., caused by the earthquake, etc. File for this certificate at your municipality. Following this, you can apply for various systems that can help you rebuild your life. In addition, if you were insured for earthquakes, etc., you can receive insurance money.

|   |   |   |
|---|---|---|
| Death of a parent or child, etc.                          | ➔ | Disaster Sympathy Money   |
| Disability from injury or disease                         | ➔ | Disaster disability compensation money                                    |
| Need money for the time being to live and to rebuild life | ➔ | Support fund for disaster victims to rebuild their lives                  |
|   | ➔ | Disaster Relief Fund  |
| Wish to get a tax reduction or exemption                  | ➔ | Income tax casualty loss deduction  |
|   | ➔ | Income tax disaster exemption   |
| Wish to rebuild your house                                | ➔ | Disaster reconstruction housing loan                                      |
| Wish to resume work                                       | ➔ | Public vocational training  |
|   | ➔ | Job seeker support training   |
|   | ➔ | Vocational training allowance   |
| Wish to continue studies                                  | ➔ | Scholarship loan or grant from the Japan Student Services Organization    |
| Wish to resume school                                     | ➔ | Education loan under the Government's disaster special measures           |
| Wish to rebuild my business                               | ➔ | Disaster reconstruction loan  |
|   | ➔ | Loan system for SMEs and agricultural, forestry, and fisheries businesses |

## Damage certificate

A damage certificate is issued by the head of the municipality to certify the degree of damage to a person's residence due to disasters such as earthquakes, wind and floods. It will be necessary to use this certificate to receive benefits, loans, disaster relief money, extension and/or reduction/exemption of payment of taxes, national health insurance, etc., reduction/exemption of fees for public services, to file for insurance benefits, and apply for residence in emergency temporary housing.

\*The criteria for the issuance of a damage certificate are unrelated to the results of the emergency risk assessment (page 116).

## Criteria for the damage certificate

The damage certificate is widely used as material to determine eligibility for various disaster victim support measures. It is classified according to the degree of damage to the dwelling (owned housing, rented housing) determined by a municipal official, as shown in the table. For details, inquire at your local municipality office.

| Degree of damage                               | Percentage destroyed |
|--|----------------------|
| Total destruction                              | 50% or more          |
| Significant partial destruction                | 40% to under 50%     |
| Moderate partial destruction                   | 30% to under 40%     |
| Partial destruction                            | 20% to under 30%     |
| Quasi-partially destroyed                      | 10% to under 20%     |
| Not quasi-partially destroyed (partial damage) | Less than 10%        |

## Flow of damage certificate process

- ① Take photos of the damage to your house
- ② Apply to your local municipality office
- ③ Receive an on-site investigation of the damage
- ④ Damage certificate is issued

\*In addition to the damage certificate, there is also a "disaster victim certificate." This applies to buildings other than residences (stores, factories, gates, etc.), so be sure to apply for the correct one.



## Disaster sympathy money

The families of those who lost their lives or are missing due to the disaster can receive sympathy money. For details, inquire at your local municipality office.

|           |  |
|-----------|--|
| Recipient | <ul style="list-style-type: none"><li>▫ Family of the deceased<br/>(1. Spouse, 2. Child, 3. Parent, 4. Grandchild, 5. Grandparent)</li><li>▫ When there are none of the above family members, a sibling of the deceased<br/>(Lived with the deceased at the time of death, or lived under the same household budget)</li></ul> |
|-----------|--|

## Disaster disability compensation money

Those who became severely disabled due to the disaster can receive disaster disability compensation money, depending on the degree of disability. For details, inquire at your local municipality office.

|           |   |
|-----------|---|
| Recipient | <ul style="list-style-type: none"><li>▫ Those who have been blinded in both eyes</li><li>▫ Those who have lost the ability to chew and speak</li><li>▫ Those who are left with serious impairment in their nervous system function or in the psyche and require continuous nursing care</li><li>▫ Those who are left with serious impairment in the functions of the thorax and abdominal organs and require continuous nursing care</li><li>▫ Those who have lost both upper limbs above the elbow joint</li><li>▫ Those who have completely lost the use of both upper limbs</li><li>▫ Those who have lost both lower limbs above the knee joint</li><li>▫ Those who have completely lost the use of both lower limbs</li><li>▫ Those with multiple physical or mental impairments that are equivalent to the above</li></ul> |
|-----------|---|

## Support fund for disaster victims to rebuild their lives

A support fund will be provided to households that suffered significant damage to their livelihoods through the disaster, depending upon the degree of damage suffered, such as total destruction of their residence. For details, inquire at your local municipality office.

## Disaster relief fund

Those who have suffered injury or damage to their residence or property are eligible to borrow funds for disaster relief. However, income limits apply. For details, inquire at your local municipality office.

## Income tax casualty loss deduction

When a disaster results in damages to your property such as housing and household possessions, which are needed for daily life, you can deduct a certain amount (casualty loss deduction) from income when filing your tax returns.

## Income tax disaster exemption

When your income in the year of the disaster does not exceed 10 million yen, and damages to your home or household possessions (excluding amounts that were covered by insurance) were 50% or more of the current value, and if the income tax casualty loss deduction does not apply to such loss, you can receive an income tax exemption/reduction under the Disaster Exemption Act.

## Other reductions/exemptions from taxes, etc.

The more beneficial out of the casualty loss deduction or disaster exemption may be chosen. Inquire at your local tax office regarding procedures for applying and calculation methods.

|                                    |   |  |
|------------------------------------|---|--|
| Tax office                         | → | ▫ Inheritance tax, gift tax, etc.  |
| Nearby municipal office            | → | ▫ Inhabitant tax, fixed asset tax*, etc.   |
|                                    | → | ▫ National health insurance / long-term care insurance premiums                          |
| Metropolitan Tax Office            | → | ▫ Business tax on individuals  |
| Japan Pension Service              | → | ▫ National pension   |
| Relevant utility service or office | → | ▫ Electricity, gas, water supply and sewerage, telephone bills, NHK reception fees, etc. |

\*For fixed asset tax within the 23 wards, contact the Metropolitan Tax Office in the ward where the house is located.

## Disaster reconstruction housing loan

Those who own or reside in dwellings that were damaged by the disaster can receive a disaster reconstruction housing loan to rebuild their homes. The residence must meet the criteria set by the Japan Housing Finance Agency to be eligible for this loan. For details, inquire at the Japan Housing Finance Agency, which provides the loan.

|                           |   |
|---------------------------|---|
| Implementing organization | Japan Housing Finance Agency  |
| Eligible borrowers        | People who have been issued a damage certificate stating that their house suffered “total destruction,” “significant partial destruction,” “moderate partial destruction,” or “partial destruction” due to a disaster are eligible if they meet certain conditions. |

(as of July 2023)

## Emergency temporary housing

Emergency temporary housing is for people who have lost a place to live because their home was total destroyed (collapsing, burning, swept away) in a disaster, and who do not have the financial means to secure housing on their own. Depending upon the situation, the Tokyo Metropolitan Government plans to promptly and appropriately provide disaster survivors with emergency temporary housing by using public housing such as metropolitan housing, renting private housing, and constructing temporary housing.

## Emergency repairs for damaged homes

Under this system, in cases where a house has suffered partial destruction, partial destruction by fire, or damage to an extent that is equivalent to partial destruction due to a disaster, and it is not possible to carry out emergency repairs with your own financial resources, or if the house cannot be lived in without extensive repairs, the Tokyo Metropolitan Government and municipal government will cooperate to carry out the minimum necessary repairs within a certain financial limit. This applies to all owner-occupied homes, including detached houses and condominiums, but please note that in principle, people who enter into emergency temporary housing will not be able to use the system.

\*For details, inquire at the local municipality office you lived in at the time of the disaster.

## Earthquake insurance (natural disaster mutual aid)

Earthquake insurance is insurance which provides compensation for damage to property by fire, destruction, immersion or being swept away, caused by an earthquake or volcanic eruption or a subsequent tsunami. Damage from liquefaction caused by earthquakes is also covered.

\*For information on purchasing earthquake insurance, refer to “How to purchase earthquake insurance” below.

### Fire insurance

Fires are especially likely to occur as a secondary disaster after a large earthquake, so check the coverage for natural disasters and purchase the most suitable plan.

### Home contents insurance

This insurance covers moveable items inside your home, such as furniture and appliances. Purchasing this insurance is recommended in case your property is damaged in a disaster.

### How to purchase earthquake insurance

Having fire insurance is required in order to purchase earthquake insurance. The scope of coverage varies depending on the type of residence, such as condominium, rental apartment, or detached house. Check the conditions carefully before purchasing.

### Receiving earthquake insurance

Insurance will be paid according to the degree of damage to the building or household possessions. Even if you do not have the insurance papers with you due to fire or tsunami, as long as you can prove who you are, you can take the procedures to receive insurance.

## Support for daily life

### Resuming work

Those who have lost work can look for a job at Hello Work (the national government’s employment service center) or receive support such as vocational training. Please inquire with Hello Work for details.

|                               |           |  |
|-------------------------------|-----------|--|
| Public vocational training    | Recipient | Those receiving unemployment benefits.   |
| Job seeker support training   | Recipient | Those who cannot receive unemployment benefits because they were self-employed or were not participating in the employment insurance program, etc. |
| Vocational training allowance | Recipient | Those who cannot receive unemployment benefits and who are instructed by Hello Work to receive training, and fulfill certain conditions.           |

### Continuing studies, returning to school

Those with drastic changes in household finances can receive emergency scholarships to help cover matters such as school tuition. Applications for scholarships and JASSO disaster relief funds can also be submitted to the Japan Student Services Organization. For details, please inquire with the Japan Student Services Organization.

In addition, if your home was damaged by the disaster, preferential treatment in relation to applications and loan interest rates is available for the National Education Loan handled by the Japan Finance Corporation. For details, please inquire with the Japan Finance Corporation.

## Disaster reconstruction loan

This is a disaster reconstruction loan to support small and medium-sized companies that were affected by the disaster in rebuilding their business. The repayment period is longer than regular loans, and it also has benefits such as a long grace period. For details, please inquire with the Japan Finance Corporation or Shoko Chukin Bank.

|             |  |
|-------------|--|
| Eligibility | <ul style="list-style-type: none"> <li>▫ Small and medium-sized business operators who suffered damage due to a designated disaster</li> </ul> |
|-------------|--|

## Loan system for SMEs and agricultural, forestry, and fishery businesses

The Shoko Chukin Bank provides loans to small and medium-size companies that have suffered damage, and Credit Guarantee Corporations serve as guarantors for loans from financial institutions. The Japan Finance Corporation also loans operating funds and management funds to agricultural, forestry, and fisheries operators who suffered damages. Business funds are also loaned at low interest rates to agricultural cooperatives and other cooperatives.

|                   |  |
|-------------------|--|
| Main loan systems | <ul style="list-style-type: none"> <li>▫ Credit guarantee corporations around Japan provide credit guarantee to SMEs</li> <li>▫ Support by the Japan Finance Corporation for agricultural, forestry, and fishery businesses</li> <li>▫ Natural calamity loan system for agricultural, forestry, and fisheries businesses provided by the local municipality</li> </ul> |
|-------------------|--|

# i

## Inquiries About Disaster Preparedness

| Type  | Office in charge  | Telephone  |
|---|---|--|
| Disaster preparedness (general inquiries)   | Management Section, Disaster Prevention Division, Bureau of General Affairs, Tokyo Metropolitan Government<br>S0000040@section.metro.tokyo.jp   | 03-5388-2453   |
| River-related floods  | Disaster Prevention Section, Rivers Division, Bureau of Construction, Tokyo Metropolitan Government<br>S0000386@section.metro.tokyo.jp  | 03-5320-5164   |
| Community risk ratings (Bureau of Urban Development)  | Disaster Management Section, Urban Development Projects Division, Bureau of Urban Development, Tokyo Metropolitan Government<br>S0000357@section.metro.tokyo.jp                                     | 03-5320-5142   |
| Subsidies for seismic evaluation of buildings, seismic retrofitting and reinforcement (Bureau of Urban Development)           | Building Planning Section, Urban Buildings Division, Bureau of Urban Development, Tokyo Metropolitan Government   | 03-5388-3362   |
| Subsidies for seismic evaluation of condominium buildings, seismic retrofitting and reinforcement (Office for Housing Policy) | Condominiums Section, Private Housing Division, Office for Housing Policy, Tokyo Metropolitan Government<br>S1090503@section.metro.tokyo.jp   | 03-5320-4944   |
| Tokyo Todomaru Condominiums   | Condominiums Section, Private Housing Division, Office for Housing Policy, Tokyo Metropolitan Government<br>S1090503@section.metro.tokyo.jp   | 03-5320-5007   |
| Water supply (Bureau of Waterworks)   | Customer Service Center, Bureau of Waterworks   | Navi dial:<br>0570-091-100<br>Landline phone number:<br>03-5326-1101<br>or<br>042-548-5110 |
| Police  | Natural Disaster and Accident Rescue Division, Tokyo Metropolitan Police Department   | 03-3581-4321   |
| Fire department   | Tokyo Fire Department:<br>tfdinfo@tfd.metro.tokyo.jp<br>* Cannot be used for emergency calls such as to call 119.<br>* Emails are limited to text format.<br>(Please do not attach any attachments) | 03-3212-2111   |
|   | Inagi City Fire Department Headquarters   | 042-377-7119   |
|   | Oshima Town Fire Department Headquarters  | 04992-2-0119   |
|   | Miyake Village Fire Department Headquarters   | 04994-6-0119   |
|   | Hachijo Town Fire Department Headquarters   | 04996-2-0119   |
| Volunteering  | Tokyo Volunteer and Citizens Activity Center<br><a href="https://www.tvac.or.jp/toiawase.html">https://www.tvac.or.jp/toiawase.html</a>   | 03-3235-1171   |

\*Residents of Musashino City, Akishima City, Hamura City, Hinohara Village, and the islands should contact the municipality where you live with questions in regard to water supply.

\*Please direct inquiries related to electric, gas, or telephone service to your service provider.

# i Pictograms Legend



Quoted from JIS Z8210, 2022

## Evacuation Center

A place to live for a certain period of time if your home is damaged and is difficult to live in. These are schools, community centers, etc.



Quoted from JIS Z8210, 2022

## Evacuation Area

A place for emergency evacuation to protect your life from approaching dangers such as earthquakes, fires, and tsunami immediately after a disaster. They include large parks, plazas, university campuses, and school grounds.

## Temporary Evacuation Area

Places where evacuees gather temporarily to grasp the situation prior to moving to an evacuation area. These are school yards, neighborhood parks, and other places with enough space to secure the safety of the people gathered there. The same pictogram as for evacuation areas may be used, or depending on the region, unique signs may be posted.

## Temporary Shelter

A facility where people who are unable to return home following a disaster can temporarily stay. Approximately 1,200 facilities, including public and private, have been designated.



Quoted from JIS Z8210, 2022

## Support Stations for those attempting to return home during a disaster

Facilities (convenience stores, fast food shops, casual restaurants, gas stations, and other establishments) that will support people who have become stranded following a disaster and are attempting to return home on foot. Support stations will provide road information, drinking water, toilet facilities, a place to rest, and other assistance.



Quoted from JIS Z8210, 2022

## Tsunami Evacuation Area

This sign indicates a safe location or elevated ground where people can evacuate to when a tsunami occurs.

## Tsunami Evacuation Building

This sign indicates a reinforced concrete building that has at least three floors where people can evacuate to if there is no elevated ground nearby when a tsunami occurs.



## Emergency Water Supply Station

Water will be distributed at emergency water supply stations when the water supply has been cut. Emergency water supply stations include facilities that store water under locations such as water supply facilities and parks, and where faucets are connected to fire hydrants near evacuation centers.

# i Symbols for People Who Need Special Care in an Emergency



## Help Mark

A mark used by people with conditions that are not outwardly apparent, such as a prosthetic limb or joint, internal medical condition, intractable disease, or the early stages of pregnancy. The mark is displayed to inform those around them of their need for special consideration.



## Help Card

A card created to help those with disabilities or other conditions inform the people around them about their disability or condition when an emergency or disaster occurs. Information such as emergency contact numbers and details on the type of support they require is printed on the card. Please contact your local government if you require one.



## International Symbol of Access

This symbol is the universal symbol that indicates a building, form of public transportation, etc., is accessible to people with disabilities. This symbol is not for wheelchair users only, but for all people with disabilities.



## International Symbol of Access for Individuals Who Are Blind

Designated as the universal symbol by the World Blind Federation in 1984, this symbol is displayed on buildings, facilities, equipment, and other objects developed with special consideration for the safety and accessibility of the visually impaired. The symbol is used on crosswalk signals, voice guidance devices, international mail containing materials in braille, books, printed materials, etc.



## Mark for the Hearing Impaired

This mark indicates that the holder has a hearing impairment and is used in situations such as when requesting consideration with regard to how to communicate. It is also used at institutions such as local governments, hospitals, and banks to indicate that assistance is provided to people with hearing impairments.



## Mark for Expectant Mothers

This mark is worn by expectant mothers when they go out to make it easier for people around them to show consideration.



## Mark for Assistance Dogs

This mark is to raise awareness of the Act on Assistance Dogs for Physically Disabled Persons. Facilities used by a large number of people, such as department stores and restaurants, are required to accept assistance dogs (guide dogs, assistance dogs, hearing dogs).



## Ostomate Mark

This symbol, representing an ostomate (someone who has an ostomy or an artificial bladder), is displayed to indicate that a facility has toilet facilities for ostomates, etc.



## Heart Plus Mark

This mark is used to represent people with internal conditions that are not readily apparent to others such as those associated with the heart, respiratory functions, kidneys, bladder, rectum, small intestine, liver, and immune system.

# i Index of Glossary Terms

## Weather radar 59

A system that uses a rotating antenna to emit radio waves (microwaves) to observe rain and snow over a wide area with a radius of several hundred kilometers.

## Temporary shelter 11, 120, 121, 122, 123, 264

A facility that temporarily accommodates people who have trouble returning home due to a disaster.

## Temporary evacuation area 110, 111, 113, 193, 264

An area to which you evacuate temporarily when evacuation orders are given, or when the danger of fire approaches. Temporary evacuation areas include local elementary schools, junior high schools, and parks.

## First aid station 201, 202, 203, 219

A place established by a municipality in the event of a disaster based on a local disaster prevention plan to carry out first aid and other medical relief activities. They are mainly classified into emergency first aid stations, which are established near disaster key hospitals, and evacuation first aid stations, which are established in evacuation centers.

## AED (automated external defibrillator) 209, 210, 211, 212

A device that gives an electric shock to a person in cardiopulmonary arrest to restore the heart's ability to pump blood. Installed at public places such as railway stations and schools.

## Firestorm 11, 231

A phenomenon in which a tornado-like vortex of air, called a whirlwind, which is caused by a large-scale fire turns into a vortex containing flames.

## Emergency toilet 42

A toilet that can be assembled using material such as cardboard as a toilet seat. It is usually used together with a bag and coagulant for a portable toilet.

## Earthquake-tripped circuit breaker 80, 82, 83

A device that prevents fires from breaking out in electrical equipment due to the shaking of an earthquake and fires that can occur when power is restored after an outage. It detects strong shaking from an earthquake and automatically cuts off the electricity.

## Stranded commuters and others 8, 11, 120, 123, 265

People who become stranded due to an earthquake or other natural disaster that occurs when they are at a place other than their home.

## Emergency safety measures 156

Action to be taken when a local government issues a Level 5 alert based on disaster prevention information released by the Japan Meteorological Agency. By the time the order is issued, there is an extremely high possibility that some kind of disaster has already occurred, and all residents should immediately ensure their personal safety as their lives are in danger.

## Earthquake Early Warning 108, 238, 240

Information on the estimated seismic intensity and arrival time of strong tremors or long-period ground motion, which is provided as soon as possible after the occurrence of an earthquake.

## Portable toilet

12, 37, 39, 40, 41, 42, 43,  
69, 70, 71, 73, 94, 121, 191

A portable toilet that can be attached to a toilet bowl or used as is if there is no toilet seat.

## Evacuation of the elderly, etc.

156, 174, 175, 193

Action to be taken when a local government issues a Level 3 alert based on disaster prevention information released by the Japan Meteorological Agency. When the order is issued, it is necessary to evacuate the elderly, people with disabilities, young children, and their support people from dangerous areas.

## Individual evacuation plan

192, 194

A plan that describes in advance information including who will provide support for people who require assistance to evacuate, such as the elderly and people with disabilities, and where they will be evacuated to. The plan is prepared by the municipality in principle.

## Support Stations for those attempting to return home during a disaster

265

Facilities (convenience stores, fast food shops, casual restaurants, gas stations, and other establishments) that will support people who have become stranded following a disaster and are attempting to return home on foot. They provide road information, drinking water, toilet facilities, a place to rest, and other assistance.

## Emergency water supply station

91, 224, 265

A place where water is distributed when water supply has been cut due to a disaster.

## Shelter at home

12, 33, 34, 66, 69, 70, 112, 118, 135

Staying at home, as opposed to going to an evacuation center, when the building where you live was not damaged by the disaster and there is no danger of tsunami or fire.

## J-Alert

180, 181

The National Early Warning System, through which the national government transmits information about situations where there is little time to respond, such as ballistic missile information, earthquake early warnings, and major tsunami warnings, through emergency alert emails sent to mobile phones and wireless emergency alert systems.

## Earthquake directly hitting Tokyo

3, 6, 7, 8, 10, 14, 30, 32, 60,  
100, 120, 142

An earthquake that directly hits the Greater Tokyo Area, which is predicted to occur within the next 30 years with a 70% probability.

## Flood risk map

59, 152, 153

A map created by the Tokyo Metropolitan Government that allows you to visually check predicted flood risks in Tokyo, including from rivers, storm surges, and sediment disasters, using the Disaster Preparedness Tokyo app. The national government is progressing the dissemination of such maps as new flood damage information.

## Evacuating upstairs

159

To evacuate by moving upstairs to the second floor or higher when flooding has begun and evacuating to a different location is dangerous



## Rainbands 15, 151

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A meteorological phenomenon that causes heavy rain when cumulonimbus clouds form in a line and pass over or stagnate in generally the same place.

## Long-period Ground Motion 9, 67, 108, 238, 239, 240

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Earthquake-induced slow shaking with a period of a few seconds or more, which travels far from the earthquake focus.

## Disaster Preparedness Tokyo app 17, 58, 122, 123, 153, 180

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This is the Tokyo Metropolitan Government's official disaster preparedness app, which is useful in daily life and also in an emergency.

## Tokyo Metropolitan Government Disaster Prevention Map 57, 123, 124

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A map provided on the Tokyo Metropolitan Government disaster prevention website. You can find the location of disaster prevention facilities, support stations for people returning home following a disaster, and other relevant facilities.

## Tokyo Stockpiling Navi 17, 36

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A Tokyo Metropolitan Government website that informs you of the items and quantities needed for "daily stockpiling" and also allows you to purchase them.

## Tokyo My Timeline 17, 59, 153

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A tool for creating a timeline that allows each person to decide in advance what actions to take in preparation for evacuation due to wind and flood damage.

## Tokyo My Predicted Damage 14

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A web tool from the Tokyo Metropolitan Government that allows you to create an individual damage prediction tailored to you by inputting attributes such as where you live, the degree of the disaster, conditions about your building, and your household composition.

## Designated route for improvement 86, 87

---

Planned roads that are effective in improving disaster prevention, including stopping the spread of fires and allowing for evacuation and rescue, in order to create "cities in which fires do not spread," especially in developed areas where severe damage is expected in the event of an earthquake.

## Emergency warning 157, 240, 245, 246

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An emergency warning is issued by the Japan Meteorological Agency when there is a very high risk of a severe disaster.

## Sediment Disaster Hazard Area Map 165

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A map showing areas where there is a risk of a sediment disaster

## Nankai Trough mega earthquake 6, 7, 9, 14, 32

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The ocean trench mega earthquake that is predicted to occur with an epicenter in the Nankai Trough, which stretches from the Tokai region to Kyushu.

## Hazard map

62, 63, 152, 153, 165, 206

A map that contains information, such as areas predicted to suffer damage, evacuation areas, and evacuation routes, for use in mitigating damage from a natural disaster and for disaster preparedness.

## Emergency bag

40, 43, 69, 165

A bag that contains the essential goods to take with you when you have to evacuate.

## Evacuation order

110, 156, 175

Action to be taken when a local government issues a Level 4 alert based on disaster prevention information released by the Japan Meteorological Agency. Once an order is issued, all residents in the target area should immediately evacuate from dangerous areas.

## Evacuation center

33, 110, 111, 113, 124,  
125, 126, 127, 193, 194

A place to live for a certain period of time if your home is damaged and is difficult to live in. A nearby school, community center, etc.

## Evacuation area

33, 110, 111, 113, 120,  
125, 165, 175, 193, 194

A place for emergency evacuation to protect your life from approaching dangers such as earthquakes, fires, and tsunamis immediately after a disaster. They include large parks, plazas, university campuses, and school grounds.

## Manhole toilet

226

A type of toilet for use after a disaster that can be quickly set up by installing a simple toilet seat or panel over a manhole in a sewer pipe.

## Damage certificate

254, 255, 258

A certificate issued by municipalities on the degree of damage to dwellings, etc., caused by disasters such as earthquakes, floods, and wind.

## Disaster Preparedness Tokyo

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Cooperation by:

Committee for the Study and Editing of “Disaster Preparedness Tokyo” and “Disaster Readiness Guide”

Mikiko Ikegami, Director, SHIMIN BOSAI KENKYUJO

Hajime Kagiya, Professor, Faculty of Tourism and Community Studies, Atomi University

Hidehiro Suzuki, Professor, Graduate School of Risk Management, Nihon University

Mami Tomikawa, Director and Representative of Active Disaster Prevention Project, MAMA-PLUG

Chie Nakajima, Hanako Editorial Department, Magazine House Co., Ltd.

Itsuki Nakabayashi, Professor Emeritus, Tokyo Metropolitan University

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\*Situations during actual disasters may not necessarily be the same as in this book.

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Let's get prepared.  
Do everything to protect yourself.



TOKYO METROPOLITAN GOVERNMENT