This book is a commentary about the situation of damage and advanced preparation about earthquakes occurring directly beneath the Tokyo Metropolitan Area. It uses illustrations that can remain specifically in the imagined memory of residences from elementary school students to the elderly.

There is no 'answer' in disaster prevention. However, it leads to disaster reduction and improves judgment at the time of a disaster. It thinks specifically about 'what might happen 'and 'how to prevent them', and encourages people to talk about and share those ideas with family and experts.

Your local community architect* will help the town development to prepare for the disaster specifically in daily life by using this book for lectures of disaster prevention and disaster reduction. Please contact to your local architect.

The community architects who support the town development from a professional stand point help local people when they face regional issues and try to solve the problem.

An architect in your town

Name

Contact Information

ぼう　さい　ぼん

防　災　本 Book of Disaster Prevention

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Planning : Tokyo Society of Architects & Building Engineers
Supervision : Town Planning Committee of The Tokyo Society of Architects & Building Engineers
Writing : The Tokyo Society of Architects & Building Engineers Youth Committee, Disaster Reduction Education WG
Second edition : March 2015
Website : http://www.tokyokenchikushikai.or.jp/ Disaster prevention Tender
Download this book online : http://www.tokyokenchikushikai.or.jp/jigyo_event/bousaibon.pdf

ぼうさいぼん　bousai book

b o u s a i　b o o k

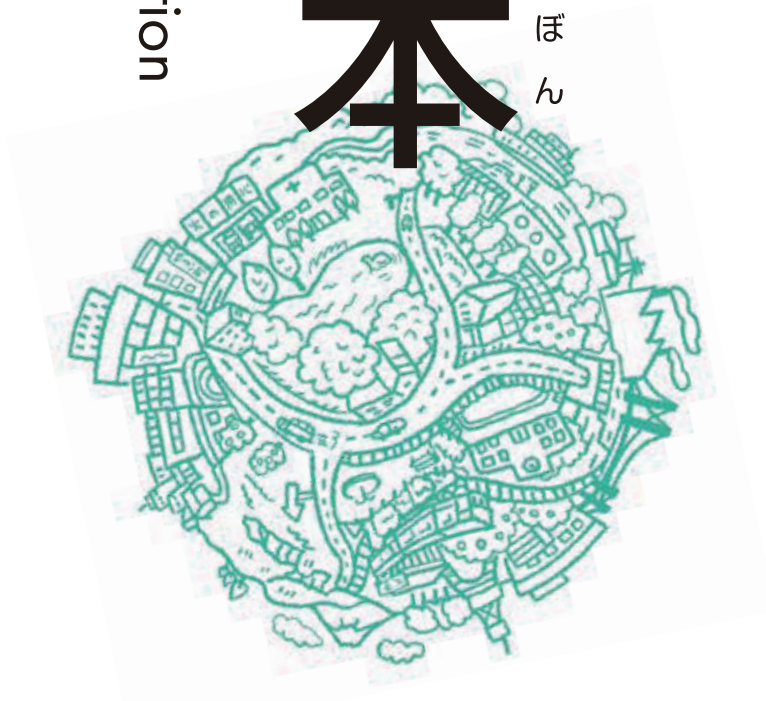
ぼうさいって、なんだろう。

防災本

ぼう　さい　ぼん

What Disaster Prevention is.

Book of Disaster Prevention



Tokyo Society of Architects & Building Engineers

Introduction

What Disaster Prevention is.

'Disaster Prevention' is literally, how to prevent disasters.
JAPAN is a highly seismic country and suffers from
many earthquake disasters.

Is it really possible to prevent disasters.
What can we do towards natural threats.

We may not able to prevent the disaster completely.
However, it is possible to minimize the damages when each of us
learns the appropriate knowledge of disasters
and prepares effectively in advance.
These efforts are called 'Disaster Reduction'.

When a big earthquake occurs, the damages are not only directly caused
from its shock but also fire, tsunami, traffic paralysis,
and information confusion. In this book we,
the Tokyo Society of Architects & Building Engineers,
assume earthquakes that happen mainly in the Kanto metropolitan area,
and gather the information which each person can commonly prepare
from the point of view of architects and disaster reduction.

Please discuss disaster prevention and disaster reduction with your family,
school,
and neighbors by using this book as a guide.
We as architects, will help to make your town planning safe and secure.
Let's think about it together.

大きな地震(じしん)が おきると・・・

Fire

Traffic paralysis

Overturning of furniture

Deterioration of public order

Tsunami

Many injured

Landslides

Difficulty of getting in touch with family

Collapse of building

Housing

What to do when an earthquake occurs

Move to a safe place.
Find the safe place from daily life before the earthquake happens

An earthquake occurs suddenly. It is difficult to conduct yourself on your will during the big shaking. See to your own safety first.
Move away from any furniture or places that things could fall on you.
If you are boiling water or frying tempura in the kitchen, move away from the place. Otherwise there is a danger to get burned.
Take cover under a table or desk to protect your head. Stay calm and wait until the shaking subsides. Do not rush outside. Glass or tiles may fall on you.

Once the shaking subsides. Extinguish fires

But in conducting such activities,
remember that your safety comes first

Once the shaking subsides, extinguish fire immediately.
There is the danger of fire if the stove or range is on, but there is also the risk to get burned if you get close to the fire, hot pot, hot water, and oil during the shaking.
The big shaking doesn't last for long, and it is possible to extinguish the fire in the early stage, even if the fire has spread. Handy types of fire extinguishers are also sold.
In the case that the fire has spread to the ceiling, give up self-extinguishing it and evacuate. Let others know by shouting it out loudly.

Glass is dangerous

Protect yourself from the broken glass

Watch out for splinters of glass and windows on the floor.
It is very dangerous to move around with your bare feet in rooms where the things are scattered. The risk is increased after a power outage during the night.
To prepare for earthquakes, take measures in advance for cupboard doors with stoppers and for windows with shatterproof film to prevent glass from flying.
It is better to prepare shoes and slippers beside your bed in case of need to evacuate.

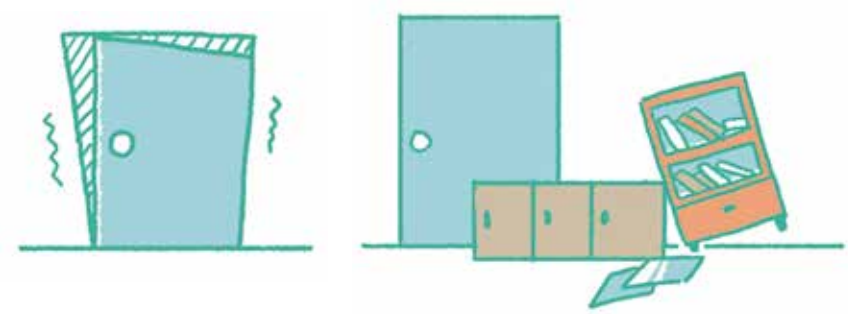
If an earthquake occurs in the midnight

**Whole town is covered in black.
Put a flashlight where it is easy to take out.
You never know what is on the floor...**

We never know when an earthquake will strike. Imagine if the earthquake occurs in the midnight and causes a power outage. The whole town is covered in black.
It is very dangerous to move under the situation that you don't know what the room condition is. It is better to prepare a flashlight not only in the bedroom but also in each room. It is needless to say, the flashlight should be settled in the place where you can easily take it out even in the darkness.
It is better to check home centers or other shops that you can find many different types of lights. For example, a light which turns on when you demount it or a hand-cranked generator flashlight. Check it regularly to make sure it's not discharged.

Ensure an evacuation route

On a routine basis confirm an evacuation route.
Do not put the things that block the evacuation route



A door or a window frame may be deformed by shaking, and the door may be blocked by fallen furniture. In this situation, it is dangerous if the building collapses or causes fire. You need to secure an evacuation route immediately. But you may get seriously injured if you strain to secure an evacuation route while shaking. Keep your eyes on everything around and act carefully.
Also do not go outside right away. Be careful of objects such as glass or tile that may be falling from above. Confirm safe conditions around the exit before you go out.
A front door is not only the exit; windows also can be used as an evacuation route. Be careful of glass when you use them.

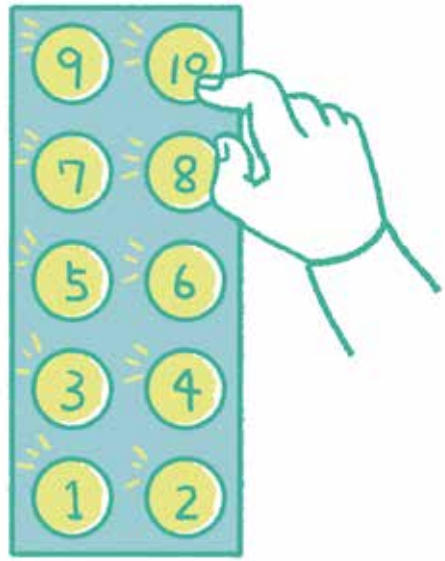
In a big earthquake, furniture flies!

Settle the furniture.

During a big earthquake, furniture and home electronics can sometimes become a weapon to hurt you as there is the testimony that "The shelf and TV flew and attacked me'. Heavier products are more dangerous.
You need to settle the furniture and home electronics in the living room and bed room where you spent most of your time, and install braces to keep furniture, bookshelves and cabinets which may block the exit by falling over.
Many types of retainers of furniture are sold at home centers. Please read the manuals and use them properly, otherwise it has very little effect with its wrong use.
If the furniture or electronics cannot be restrained, you can change their disposition to reduce the risk.

If you are in the elevator!

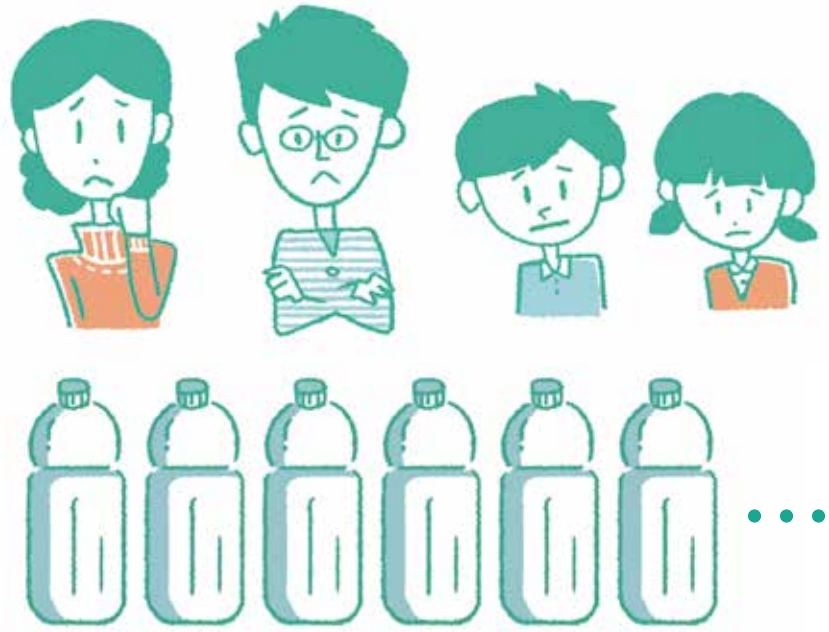
Press the button for every floor and leave the elevator wherever it stops.
If you become trapped, use the emergency contact button to call for help



If the earthquake strikes when you are in the elevator....
We never know when an earthquake will occur. You should assume this situation seriously.
When you feel big shakes, press the buttons for every floor and leave the elevator wherever it stops.
Then, do not us the elevator until its safety is assured. If you are trapped in an elevator, react calmly and use the emergency contact button to call for help.
In case of power outage, there are emergency lighting systems to avoid darkness and ensure you do not choke. However, under the big seismic disaster, there is the case that it takes a long period of time to be rescued. It is also an idea to always carry a portable toilet in your bag.

Unable to flush the toilet

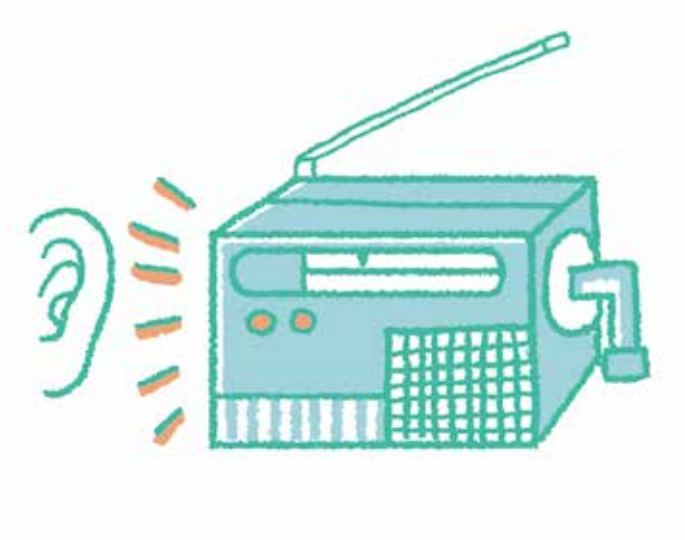
It is a serious problem.
Make a habit to ensure the water



When people are asked what was the most serious problem in the time of a seismic disaster, many of them answered the toilet is the biggest one. Water is distributed for drinking, but not for the toilet. You should save the water in the bathtub regularly.
After the earthquake happens, there is the possibility of suspension of the water supply. You should secure the water when it has supply. There is also the way to prepare for a portable toilet which doesn't use water.
* Please check each vendor's instruction manual or website on how to flush the toilet during suspension of water supply. The amount of water for flushing differs by the model in that one needs from 3 to 8 liters at one time. (reference from TOTO website)

Gather correct Information

Get the proper information from radio or others.
Trying to confirm the credibility of information



Recently it is getting easier to exchange the information since the development of social media such as TV, radio, internet and mobile phone.
They have played a major role in the context of difficult phone connections in recent years of a major disaster. But on the other hand uncertain word-of-mouth and misinformation are also delivered. Unfortunately, those caused the hoarding at stores and confusion in the past.
Make sure that the information has credibility with its information source, whether it has reason to be believed and scientifically supported, and information sender can be reliable.
Getting information of the radio with a public nature is essential. In a time when we can get information easily, each of us needs to develop our sense to judge the proper information from misinformation.

Turn off the circuit breakers when you evacuate

There may have been disconnection or leakage somewhere...
It may cause a fire when power is restored.

When you come back home after re-energization, reset the breakers one by one while checking the room situation.

Seismic fires are caused not only because of the kitchen or stove which uses fire. Based on past data, electricity also become a major factor of seismic fires. There cases of fire when power is restored, if you leave the electric stove or tropical fish aquarium heater on, or electrical cord with damage even if nothing happens during the black out. This is called a re-energization fire.
When you evacuate and leave the home, make sure you turn off circuit breaker. In the same way, turn off the gas main before you evacuate.
When you come back home after re-energization, reset the breakers one by one while checking the room situation.

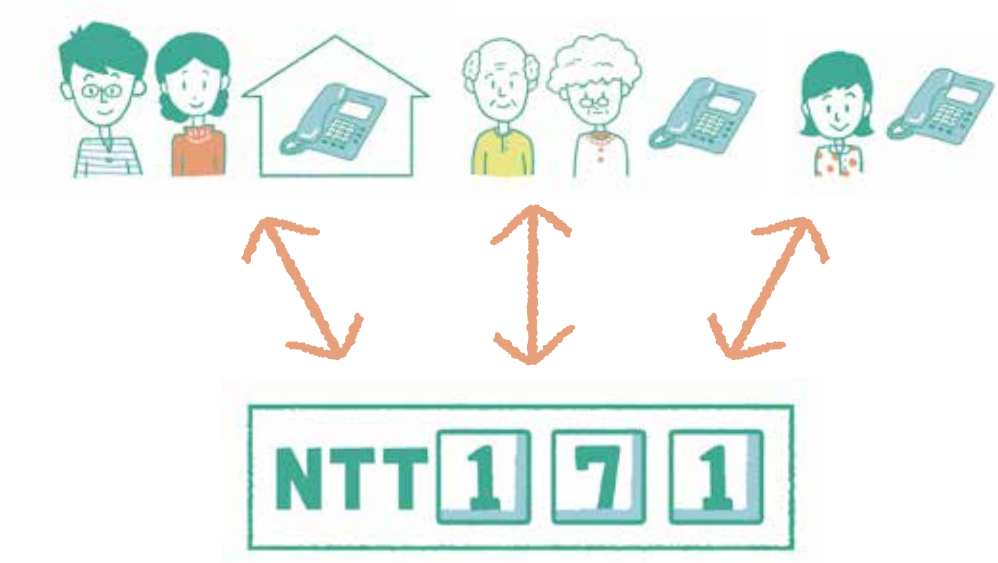
Where is your emergency evacuation place

Talk among your family in advance.
Decide on second evacuation places just in case

Decide the family meeting place in the case you get separated from your family.
Also in the case that the meeting place cannot be used for gathering because of its hazardous circumstance, you should decide a second choice for your evacuation place. When you evacuate to the evacuation center, leave a message to your family who come later.

Do you know how to use Disaster messaging hotline

Remember the usage of 171.
Check your families' school or company contact address

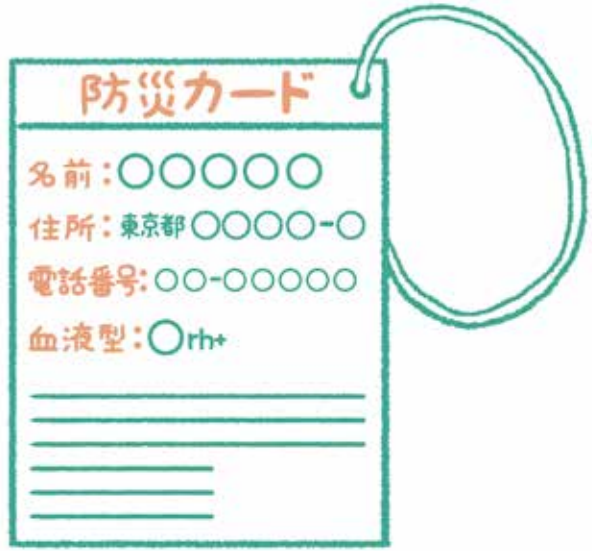


Decide a rule of the safety confirmation of family members. It is better to confirm how to use the disaster messaging hotline 171, NTT East and West provide the service that people can record and check the safety by using the disaster-stricken area phone number as a key. Each mobile phone company also provides similar services.
Also, you can ask your relatives or friends of the non-affected areas to make contact, since it is sometimes much easier to get through more than contact between stricken areas.
And you should keep your family's contact address of their school or working place.
In some cases, social media such as twitter and Facebook are effective for safety confirmation. You should have several choices for contacting others.

Prepare for disaster prevention cards

Write down your information such as contact number, blood type, chronic disease.
When you are injured and lose consciousness this will help others know important information about you.

Disaster prevention cards



Name:

Address: Tokyo:

Phone number:

Blood type:

You never know what condition you may be in when you suffer from a disaster. You may be in the situation of losing consciousness or not able to talk. To run a quick relief activity, you should carry an information card which helps the rescue or emergency activities such as Name, Address, Phone number, family doctor, blood type, presence or absence of allergies, and medicines you are using.
Furthermore, at the time of disaster, you may become panicked and cannot remember the family contact number or area for evacuation. Please list the information of family members' school and company contact number, and decided area for evacuation.
In the local area, it is better to talk with elderly people or a home healthcare person to always keep the cards on them, which can smoothly help each other at the time of disaster.

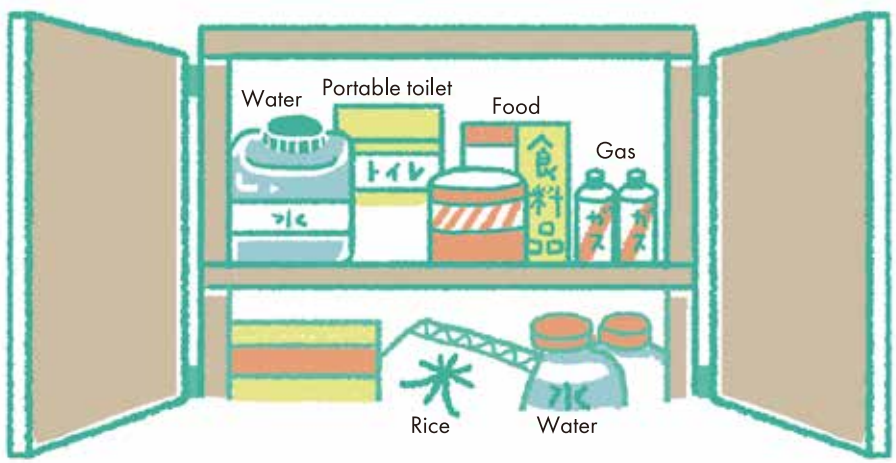
Prepare an emergency kit

Decide where to put it and what to put in.

You need to prepare an 'emergency kit' or 'disaster management kit' to bring during the evacuation, the appropriate equipment and your own supplies of use for a day or few days until relief activities begin.
Do not greedily put everything, since you must carry them when you evacuate.
Make it the basic necessities that you need to stay alive until rescue activities begin.
Also, it makes no sense to put it in the back of storage. It is important to keep it somewhere easy to reach such as an entrance.
If you have chronic disease, it is necessary to prepare medicine that you always take, antiseptic drugs for hygiene control, daily commodities, and infant equipment for families with small children.

Prepare stock of water, food, batteries and portable toilet

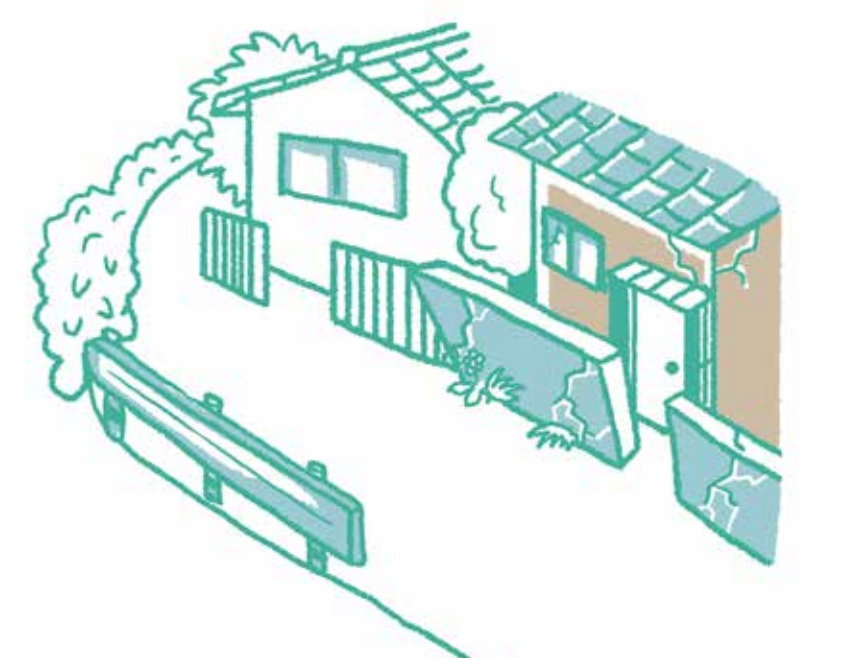
Prepare the place and amount by assuming the situation after the disaster



Prepare the stockpile by assuming the situation when the lifelines such as electricity, water, gas, phone, railway, and car transportation will be stopped.
Stockpiling at home, it is on the premise that the house doesn't collapse and you can take them out. If there is any possibility of your home collapsing by the assumed disaster such as the area of dense wood frame houses with danger of a big fire, it may difficult to make use of stockpiling. In that case, an emergency bag is important. It is necessary to list priorities of the stock-pile by considering your living location and family structure; how much of the items you need for the number people and for how many days. You should manage them by listing their expiration date.

Do a safety check around your house

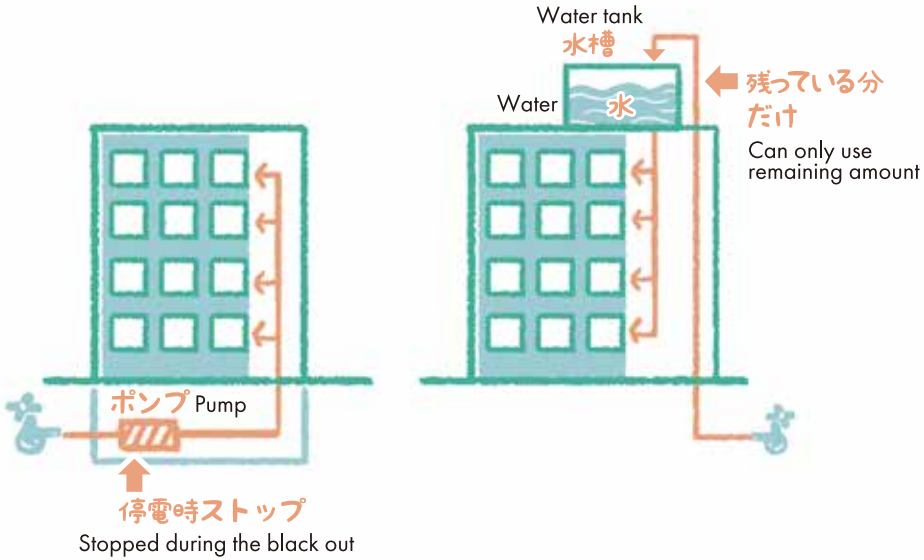
Aren't there any outdated fence, garden lanterns, wall, or equipment which is about to come off.



Isn't there anything blocking your evacuation from the entrance when it falls?
Aren't there any old ramshackle walls or block walls which may collapse?
Do you stabilize the outdoor unit of an air conditioner or hot water heater in outside?
You may discover new things, if you go around your family home and see by view point of disaster prevention. Take measures immediately when you find a dangerous place.

Three water feeding systems in a condominium building

Check your house water feeding system.

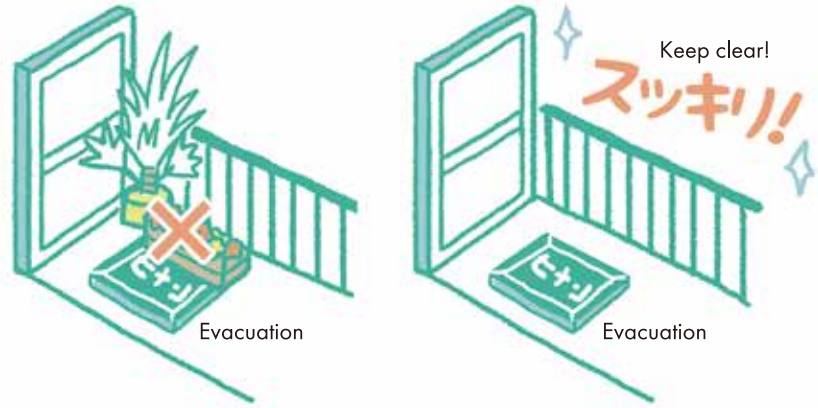


There are three water feeding systems in an apartment. Depending on the water feeding system, the situation will have changed in the black out. You should check what your system is.

1. In-line direct connection boost water supply system: Under the power outage, pumps stop and cannot supply water. Low level floors (first to about the third floor) can get water supply by pressure of water pipes.
2. Elevated water tank system: You can get water supply until the high-level water tank becomes empty even in the power outage.
3. Pressure water tank system: Under the power outage, you cannot get supply water, but you can bail water out of the tank and use it.

Do you know where and how to use escape equipment and fire extinguishers? Is the evacuation route clear?

Check the escape equipment and fire distinguishers in the corridor and balcony



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Colum1

Further helpful disaster -related terms (earthquakes and weather)

Seismic intensity scale table

Seismic intensity will be announced as emergency earthquake bulletins and earthquake information such as from television, radio, and mobile terminals.
In cases the seismic intensity has been observed, it shows what kind of phenomenon or the damage actually occurs.

震度0 shindo-rei	Seismic intensity 0	Imperceptible to people.
震度1 shindo-ishi	Seismic intensity 1	Felt slightly by some people keeping quiet in buildings.
震度2 shindo-ni	Seismic intensity 2	Felt by many people keeping quiet in buildings. Hanging objects such as lamps swing slightly.
震度3 shindo-san	Seismic intensity 3	Felt by most people in buildings. Dishes in cupboards may rattle.
震度4 shindo-yon	Seismic intensity 4	Most people are startled. Hanging objects such as lamps swing significantly. Unstable ornaments may fall.
震度5弱 shindo-go-jaku	Seismic intensity 5-lower	Many people are frightened and feel the need to hold onto something stable. Dishes in cupboards and items on bookshelves may fall. Unsecured furniture may move, and unstable furniture may topple over.
震度5強 shindo-go-kyou	Seismic intensity 5-upper	Many people find it hard to move. Dishes in cupboards and items on bookshelves are more likely to fall. Unsecured furniture may topple over. Unreinforced concrete-block walls collapse.
震度6弱 shindo-roku-jaku	Seismic intensity 6-lower	It is difficult to remain standing. Many unsecured furniture moves and may topple over. Doors may become wedged shut. Wall tiles and windows may sustain damage and fall. With low earthquake resistance wooden houses, tiles may fall, and buildings may lean or collapse
震度6強 shindo-roku-kyou	Seismic intensity 6-upper	It is impossible to move without crawling. People may be thrown through the air. Most unsecured furniture moves, and is more likely to topple over. Low earthquake resistance wooden houses are more likely to lean or collapse. Large cracks may form. Landslips are more likely to occur; large landslides and massive collapses may be seen.
震度7 shindo-nana	Seismic intensity 7	Low earthquake resistance wooden houses are even more likely to lean or collapse. High earthquake resistance wooden houses may lean in some cases. Low earthquake resistance Reinforced-concrete buildings are more likely to collapse

Refer to Tables explaining the JMA Seismic Intensity Scale of Japan Meteorological Agent http://www.jma.go.jp/jma/en/Activities/inttable.html

Weather-related terms

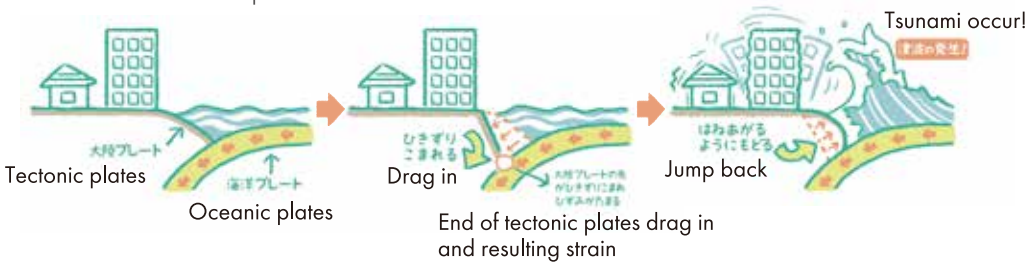
大雨 ooame	Heavy rain	**震源地** shingenchi	Seismic center
洪水 kouzui	Flood	**崖崩れ** gakekuzure	Landslide
暴風 boufuu	Storm	**余震** yoshin	Aftershock
ゲリラ豪雨 guerrilla-gouu	Unpredictable and unexpectedly strong rain	**噴火** funka	Eruption
鉄砲水 teppoumizu	Flash flood	**台風** taifu	Typhoon
土石流 dosekiryu	Debris flow	**竜巻** tatumaki	Tornado
注意報 tyuihou	Advisory	Forecast of warning to the effects that could occur with a disaster. Example: Heavy rain advisory, Tsunami advisory.	
警報 keihou	Warning	Forecast of warning to the effect that could occur with a serious disaster. Example: Heavy rain warning, Storm warning, Tsunami warning, Big-tsunami warning.	
特別警報 tokubetu-keihou	Emergency Warning	Forecast of warning in the case that expected phenomenon is particularly extraordinary and very likely to occur in a serious disaster. Immediately there is a need to take action to protect life. Example: Heavy rain emergency warning.	

Earthquakes and buildings・ground

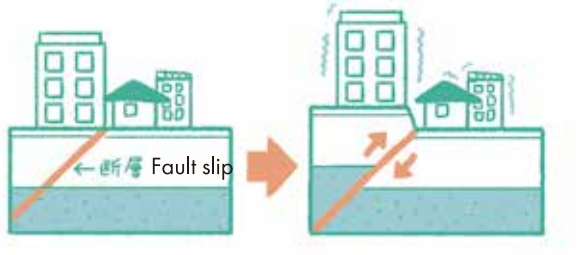
Different types of Earthquakes

Difference between subduction-zone earthquake and Epicentral earthquake

Subduction-zone earthquake



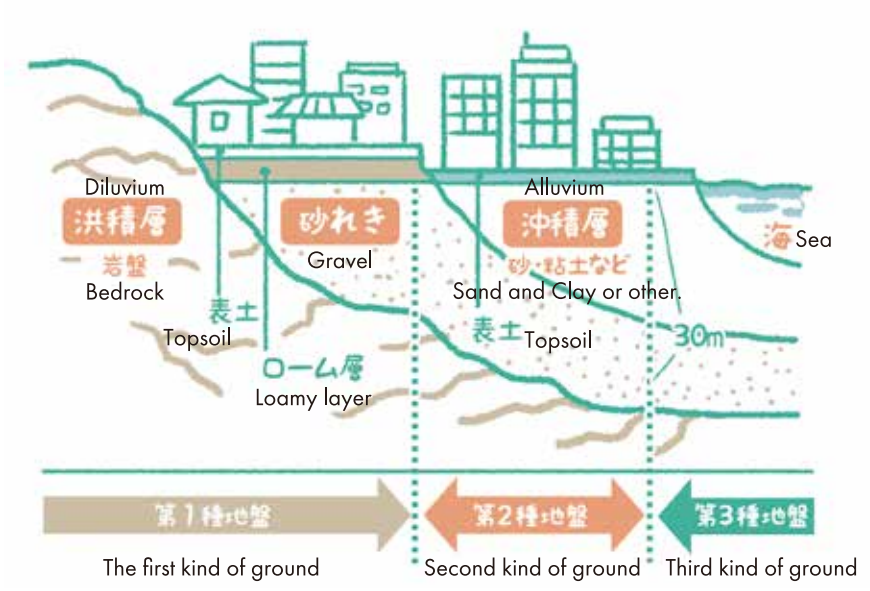
Epicentral earthquake



Earth's surface is covered by a number of rock areas which called tectonic plates. Each of those move different directions and they sometimes collide and one plate sinks beneath the other. Earthquakes occur in those parts which get pressure.
Subduction-zone earthquakes occur where oceanic plates subduct under the continental plate. Many of them occur in the ocean and epicenter will be far from the city, but its scale is large and it is possible to generate a tsunami.
Epicentral earthquake is caused when the plate of the niche get pressured where called fault slips. It is on a small scale, but when the epicenter is shallow, it causes actual damage to the direct above area.

Do you know the ground classification

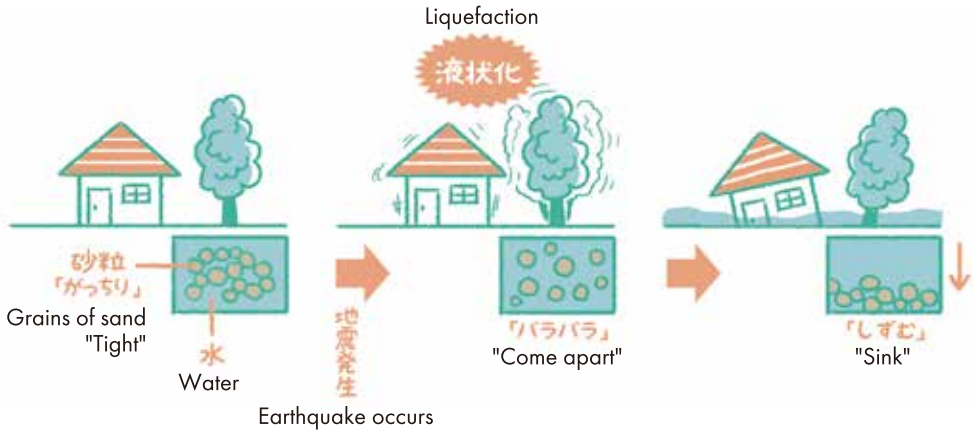
Ground solidarity can be classified into three



The biggest factors of the earthquake shake is the scale of it and the distance from the epicenter. But the size of shake can be changed not only be the difference of the types of earthquake which we already explained, but also the ground situation.
Even when the scale of the earthquake (magnitude) or distance from the epicenter is the same, the soft ground shaking becomes bigger than the solid ground.
The Building Standards Act classifies the ground solidarity into three. Many of the buildings in the capital region are built on the third class ground which categorizes the poorest subsoil. Therefore, they take measures of piling to the solid ground level.
Depending on its solidarity classification, architectural structures must take proper countermeasures against earthquakes.

What is soil liquefaction

The street where you usually walk can be move as liquid by earthquake shaking.



In the Great East Japan Earthquake, the capital region in coastal areas suffered damage of liquefaction. Liquefaction is a phenomenon in which ground with sand saturated with water changes to a liquid state by earthquake shaking.
When the ground liquefies, the surrounding ground level goes down and building entrances causes gaps, and houses and walls lean. Furthermore, sewage pipes and gas pipes underground may be severed. It is said that the area of filled-up land, used to be marshes or swamp, near waterways are easy to liquefy. Recently, many countermeasures against the liquefaction have been developed.

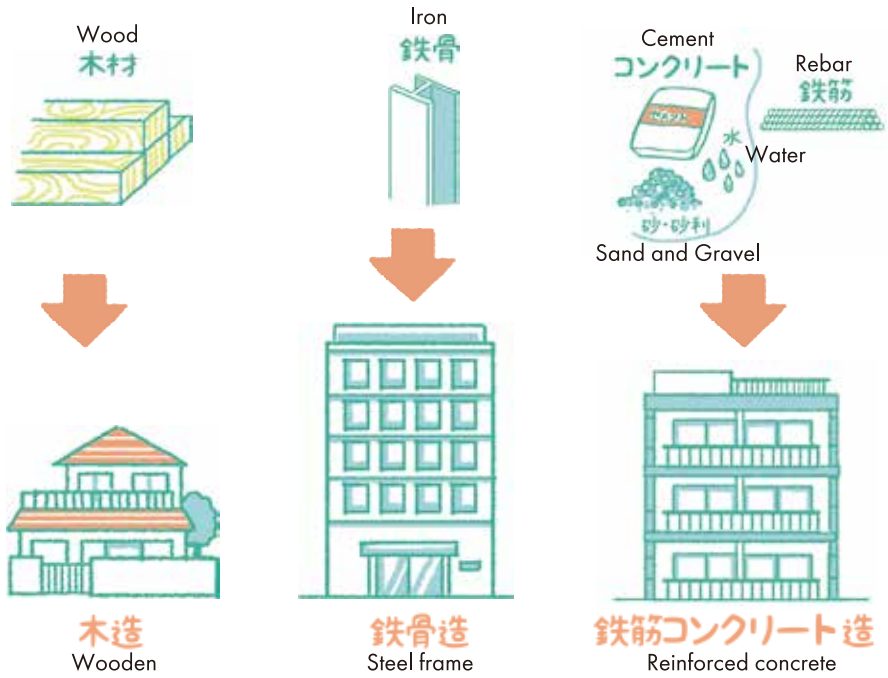
Swaying way is different from the next building

Swaying differs depending on its building height. Which floor are you on?

Tall buildings will sway big slowly. In contradiction, short buildings sway jiggly. The building has its own period to easily sway and it is called its natural period.
When the building sways in its own natural period, shaking will be amplified. This is called the resonance phenomena.
Due to this fact, super tall buildings tend to sway largely with the seismic waves of long-period ground motion which sway slowly, and short buildings sway in short-period ground motion with a jiggly sway. As pictured in the figure, when super tall buildings sway in a long-period, the higher floors are distorted in shape and the furniture tend to fall more than lower floors.

Three main building materials are wood, iron, and cement

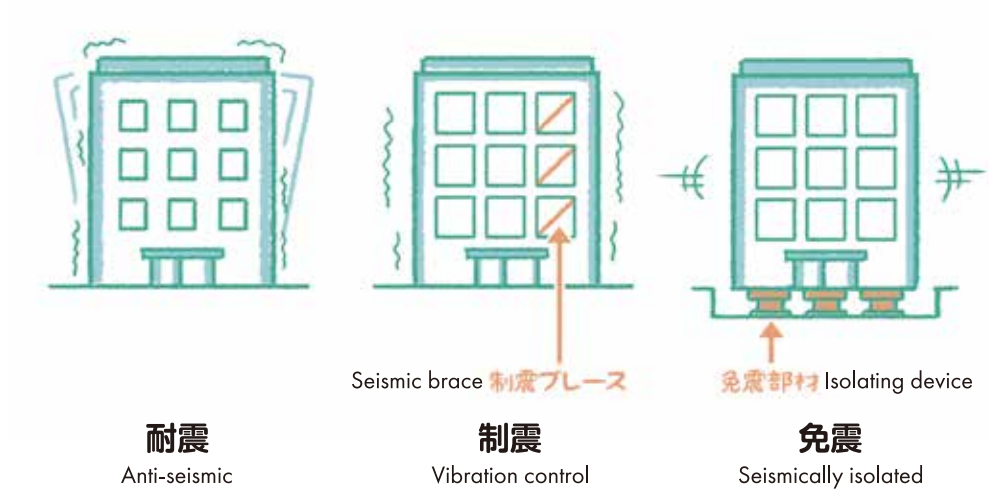
Do you know what is your house structure made from?



Current main materials for building structures are wood, iron, and cement. Wood has been widely used in the general housing because it is cheap and flexible to process. But, it has weakness for fire and insects, corrosion by water so that the provision for insect and water on its structure are needed. Iron is tenacious and solid and used for office building and super high-rise apartment buildings. But this material is also weak for fire and corrosion so that fireproofing protection and rustproofing are necessary. Reinforced-concrete is superior in terms of highly fire-resistant, airtightness, sound insulation that is mainly adapted for condominium building. But of course, it is the most expensive and heavy material. It is important to consider the building scale and purpose, and what is the appropriate material to use.

What are earthquake resistant, vibration control, seismic isolation?

Three main constructions to protect buildings from earthquakes



Since JAPAN is a highly seismic country, there are many constructions to protect buildings from earthquakes which can divided in three main types. They are 'anti-seismic structures', 'vibration control structures', 'seismically isolated structures'.

'Anti-seismic structures' are construction methods to withstand earthquakes in the robustness of the building. To strengthen the building, increase the thickness of the posts and walls and attach more diagonal braces to resist earthquakes.

A 'Vibration control structure' is a construction method to control the seismic waves energy which reach up to buildings by a device such as a damper.

A 'Seismic isolated structure' is a structure that disconnects the building and the ground by trucking such as the rollers or rubber between them, so that shaking of the ground is not transmitted to the building directly.

"Seismic Reinforcement" after the "earthquake-resistant diagnosis"

The buildings built before the 1981 may be weak for earthquakes, because its design was based on the old standard.

In the Great Hanshin- Awaji Earthquake, many people died by building collapse. There are lives that can be protected by taking measures in advance. One is to make the building in a condition of sufficient earthquake resistance.
First, check the earthquake resistance of buildings where you spend a long period of time such as home, school, and working place. It is called " earthquake-resistant diagnosis " and it requires professional knowledge that you need to consult with experts such as architects. If the result of earth-quake-resistant diagnosis shows seismic resistance is not sufficient, it needs reinforcement to improve the earthquake resistance. This is called a " seismic reinforcement ". You can also utilize subsidies of local governments for the costs.
Actively pursue earthquake resistance with a strong will to defend your life by yourself.

Architects will give a judgment!

After the earthquake, determine the degree of the risk of the building by "Post earthquake Quick Inspection of Damaged Buildings"

Even the building didn't collapse in a large earthquake, it may have under-gone a fatal impact and not able to survive the next aftershocks. "Emergency risk assessment " is a government -lead investigation of buildings hit by a large earthquake with a voluntary cooperation of architects that have mastered the professional knowledge. To prevent secondary accidents which are fatal to humans, this system is to determines the risk of collapse, dropping of exterior walls and window glass, and falling of accessory equipment by the aftershocks.
A qualified architect who has mastered the emergency degree of risk judgment knowledge has been registered in each municipality as a volun-teer.

Colum2

Further helpful disaster-related terms (in chronological order)

Disaster mitigation (pre-disaster)

防災訓練 bousai-kunren	Emergency training	Training to prepare for disasters such as an earthquake or fire.
防災倉庫 bousai-souko	Disaster prevention warehouse	Warehouses for items such as supplies and consumables are stored in coordination with regional disaster prevention.
防災無線 bousai-musen	Disaster prevention radio communication system	Communication system that broadcasts disaster prevention information to all residents. Conveys the information by means such as speakers that have been installed in various places in local areas.
避難準備情報 hinanjyunbi-jouhou	Evacuation Advisory	Announcement delivered in the case of the situation in which a disaster is likely to cause human suffering and damage. Start preparing for the evacuation. A person who needs time to escape should start the evacuation.
避難勧告 hinan-kankoku	Evacuation Warning	Announcement delivered in the case of the situation in which a disaster is more likely to cause human suffering and damage. Start the evacuation. If you determine the evacuation order is dangerous, take actions which have high potential of life preservation.
避難指示 hinan-siji	Evacuation Order	Announcement delivered in the case of the situation in which a disaster very likely to cause human suffering and damage. Evacuate immediately. If you determine the evacuation order is dangerous, take actions which have high potential of life preservation.

The time of disaster

緊急地震速報 kinkyu-jishinsokuhou	Earthquake Early Warning	Immediately after the occurrence of an earthquake, you will be informed of the arrival time and intensity of the shaking in various locations, as soon as possible.
津波避難場所 tunami-hinanbasyo	Tsunami evacuation location	A safe haven from the tsunami. Places such as upland and sturdy buildings have been specified.
災害時帰宅支援ステーション saigaiji-kitakusien station	Support stations for getting people home	In the time of disaster, these places offer tap water, the use of toilets, help such as road information by using maps. These are places such as convenience stores, restaurants, gas stations and others.

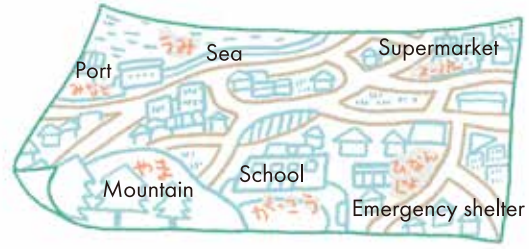
倒壊 toukai	Collapsed	**家具に挟まれる** kagunihasamareru	Trapped between the furniture
火事 kaji	Fire	**閉じ込められる** tojikomerareru	Trapped
停電 teiden	Black-out	**断水** dansui	Water outage

Actions (after the disaster)

安否確認 anpikakunin	Confirmation of the safety	**病院** Byouin	Hospital
炊き出し takidasi	Food distribution	**充電** jyuden	Charging
給水 kyusui	Water supply	**り災証明書** risaisyoumei	Afflicted certification
トイレ toire	Toilet	**仮設住宅** kasetujyutaku	Temporary housing

Symptoms

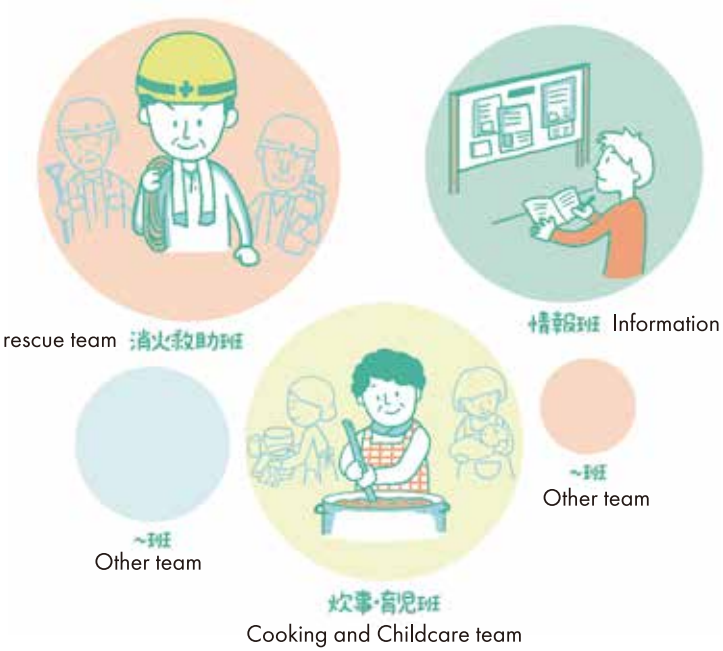
熱 netu	Fever	**怪我** kega	Injury
風邪 kaze	Catch cold	**やけど** yakedo	Burn
下痢 geri	Diarrhea	**骨折** kossetu	Break bones
腹痛 fukutu	Stomach ache	**空腹** kufuku	Hunger



Town

Protect our town by ourselves!

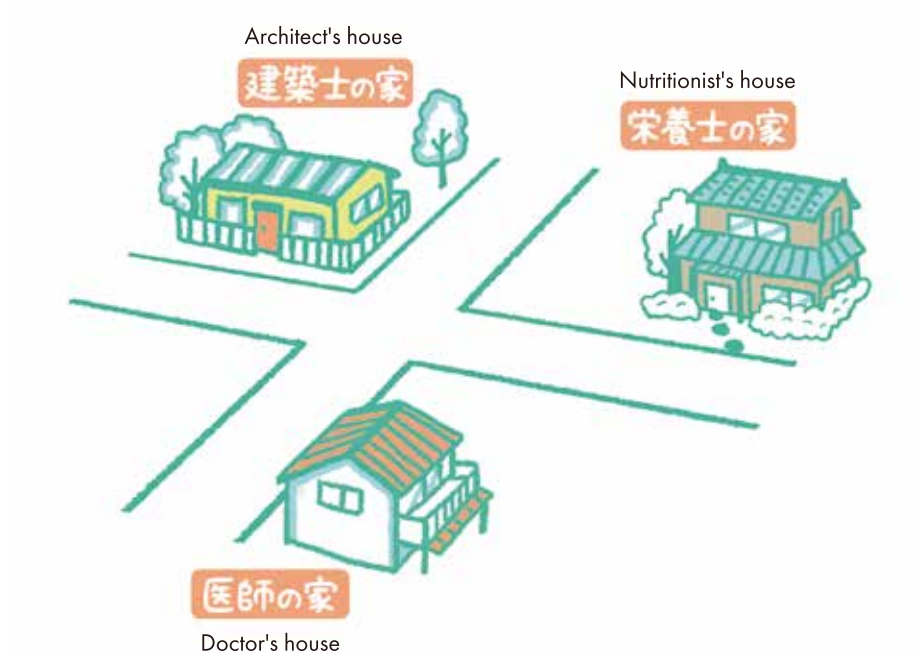
Cooperate with the locals to make a disaster prevention organization



In order to minimize the damage caused by disasters, cooperation system of "self-assistance", "Cooperation", and "public assistance" are very important.
" Voluntary disaster prevention organization" is voluntarily organized by locals that based on the "Cooperation" spirit that the idea of " protect our town by ourselves'.
Regional basis voluntary disaster prevention activities such as Initial fire-fighting, information gathering and transmitting, evacuation guidance, rescue and relief of victims, first aid, food service, water supply, and implementation of infants childcare, will lead to control the damages.
"Self-assistance"... protect your life by yourself
"Cooperation"...protect our town by ourselves
"Public assistance"... rescue and aid by the government of prefectures and municipalities and disaster management agencies.

Do you know experts in your area?

Nurses, nutritionists, architects....
Let's start from acquaintance



In order to improve the disaster prevention force of the region, it is important to create a framework that the local residents take the initiative and government and regional experts will support it.
To ask specialists such as administrative staff, doctors, nutritionists, firefighters and architects in the region to participate in everyday disaster prevention training and Disaster Prevention Council of areas and to become acquainted with them, it leads to achieve the specialized disaster prevention knowledge and smoothly communicate in an emergency.
Let's have a relationship with the experts in your town.

Help each other to cooperate in the area

Are there any people who can not evacuate on their own in time of a disaster.
The elderly, handicapped, sick people, people who are injured ...

There is a case that people such as the elderly, wheelchair bound, pregnant women, infants, the victims, and foreigners who lack Japanese language ability may not able to take an immediate evacuation in the time of emergency.
It is important to be conscious of and build an assistance system based on mutual support among local residents during normal times as an assistance person of the people who have difficulty to evacuate immediately in the time of disaster.
Exchange greetings and speak briefly about daily lives with neighbors to know what kind of people live around will lead to quick safety checks at the time of emergency.
Help each other and aim for town development with mutual support.

Let's make a local disaster prevention map

Town stroller will help you to rediscover your town!

Do you know the place for evacuation, dangerous locations, useful shops and facilities in your area?
"regional disaster prevention map" is made by local residents in order to use as an important source of information in the time of disaster and also use as a basic knowledge to consider the disaster prevention from daily life.
Make up the team with local residents and walk the town from the perspective of disaster prevention.
Surely you will rediscover of your town and find the issue with local disaster prevention.
In addition, it may also be the way to obtain valid information on disaster prevention by listening to elderly the about the local history and experience.

This or that about an area for evacuation

Name of the area for evacuation differs from each area

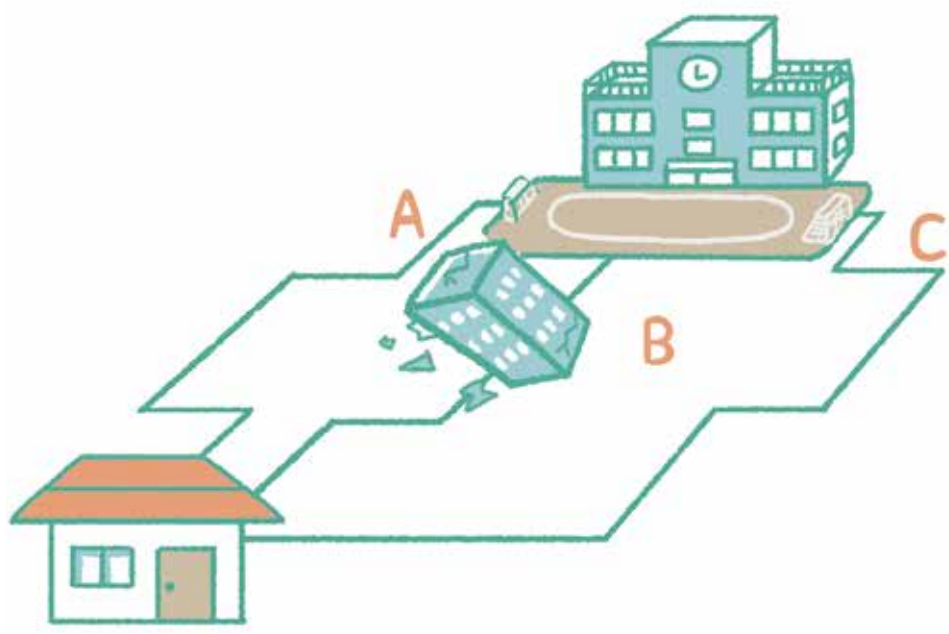
The name it is called differs from the area

- Ichiji shugo basho (Temporary gathering place) - Ichiji hinan basho (Temporary evacuation shelter)
- Hinan Basho (Evacuation site) - Kouiki hinan basho (Evacuation Area)
- Hinannjyo (Shelter) - Hinannjyo shisetsu (Shelter facility)

Places such as parks and schools in the area may be used as a place of refuge in time of a disaster.
Please check your own evacuation location in the region.
In the case of temporarily evacuation when the imminent danger to the neighborhood such as with fire spreading, you need to evacuate to "temporary gathering location".
If the fire has expanded and even the temporary gathering location is threatened, evacuate to Emergency shelters. Shelters in the region will be activated by the situation of damage.
After your area recovers from the fire, you can go back home if your house didn't get damaged. But in the case your house gets damaged and you are not able to go back home, you will have to take refuge in the shelters.

Need two or more Evacuation routes

You may not able to use the usual way



In an emergency, it is safe to use a way which you are familiar, but it is not always available. The way you usually use may be blocked by the building collapse and fire by the earthquake.
Think of two or more routes to the temporarily meeting place and shelter, so that you can quickly switch even in such situations.
You need to be careful about roads with dangers such as old buildings or fences. It is better to choose wide streets and avoid narrow alleys and dense residential areas.
Let's consider the route by using a "regional disaster prevention map"

When you have difficulties returning home

If the place is safe, refrain from returning home

When people try to return home all at once at the time a large-scale earthquake occurs, congestion occurs in the road and sidewalk which may interfere with emergency activities such as ambulances and fire engines.
In this concentration of the people on the way home, there is a possibility of secondary damages such as crowds of people falling down, fire caused by aftershocks, danger of building collapse, the city functions recovery delay by emergency transport and emergency activities delayed.
If large-scale earthquake occurs when you are in such as a company or school, refrain from returning home and wait in the place where you are, if you can confirm its safety. There is no need to return home if there is no emergency.
In the Tokyo Metropolitan Government has been enforced "Metropolitan Tokyo Ordinance on Measures for Stranded Persons".

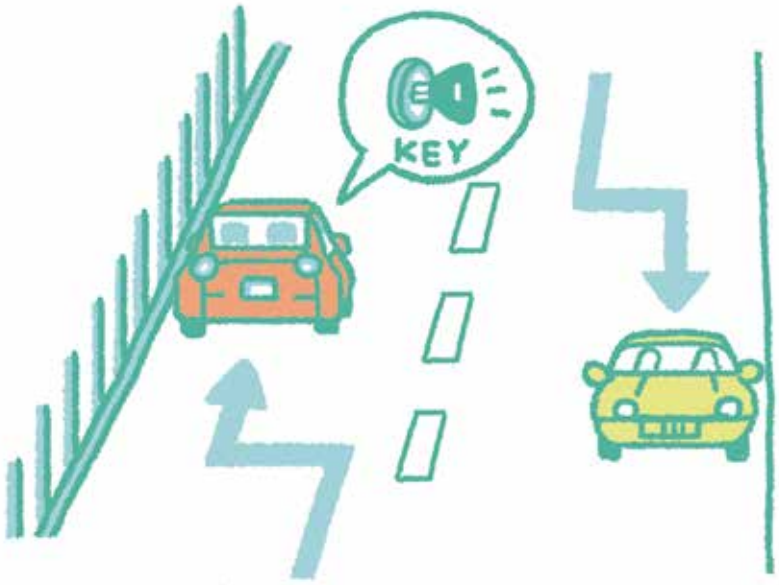
Inside train or bus

**Once earthquake occurs, it will make an emergency stop.
Stay calm and follow the instructions of the train crew and driver.**

You never know when the earthquake will occur. There is the possibility to hit by the earthquake when you are commuting by transportation.
Train and bus will make an emergency stop. It may come to a sudden stop, you should firmly grab a handrail or strap and retain posture. Protect yourself from falling objects from overhead racks.
When the shaking subsides, follow to the instruction of the train crew and driver. Never go onto the tracks if you are on the train. There is a risk of getting shocked by high-tension electric current or hit by an oncoming train.

Driving in the car

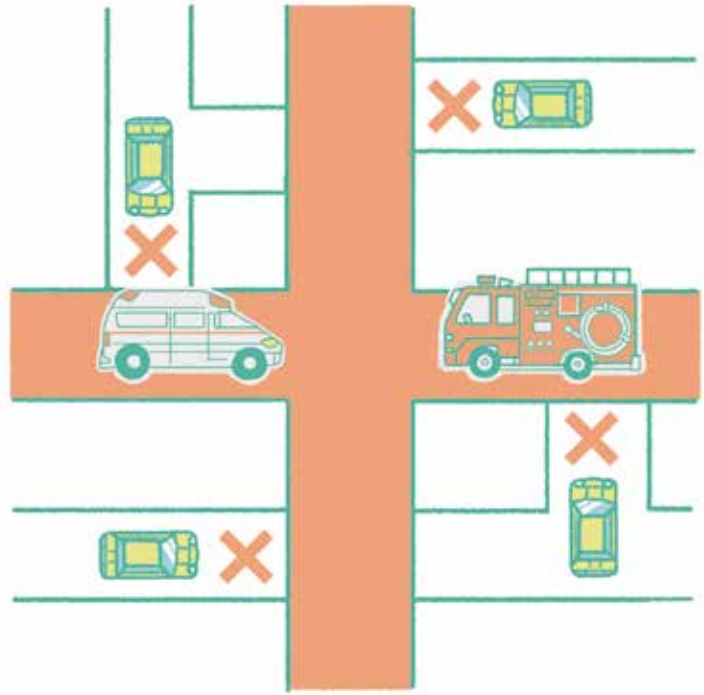
Gradually slow down and stop on the left side of the road.
Leave you key in the car



The earthquake may happen while you are driving. During then, the car shakes left and right and you feel you lost control of the steering wheel.
Avoid sudden lowering your speed or abrupt steering, and gradually slow down and stop on the left side of the road.
After you stop your car, listen to the earthquake information or traffic report such as on the radio, and conduct yourself depending on the information and situation around you.
When evacuating by leaving the car on the road, leave your key in the car, close the window, do not lock the car door and evacuate with your valuables. In this situation, it is better to leave a note with your contact information.

Do you know an emergency transportation route?

The way of saving lives



Emergency transport roads is the main road to be the aorta to use for situations such as evacuation and rescue, fire-fighting, first-aid activities, and critical material transport in the time of disaster.
In the Great Hanshin- Awaji Earthquake, there were problems with the traffic of the emergency vehicles
by the road blockade and traffic congestion by building collapse.
Based on these lessons learned, in the big cities, earthquake resistance of roadside buildings is promoted in order to prevent the building collapse which caused the blockade.
Also, in principle, the transit of private passenger vehicles is prohibited.

Trying to evacuate immediately from dangerous places with the signs and billboards

Try to be actively aware of the risk information

Tsunami Caution

Rockfall Caution

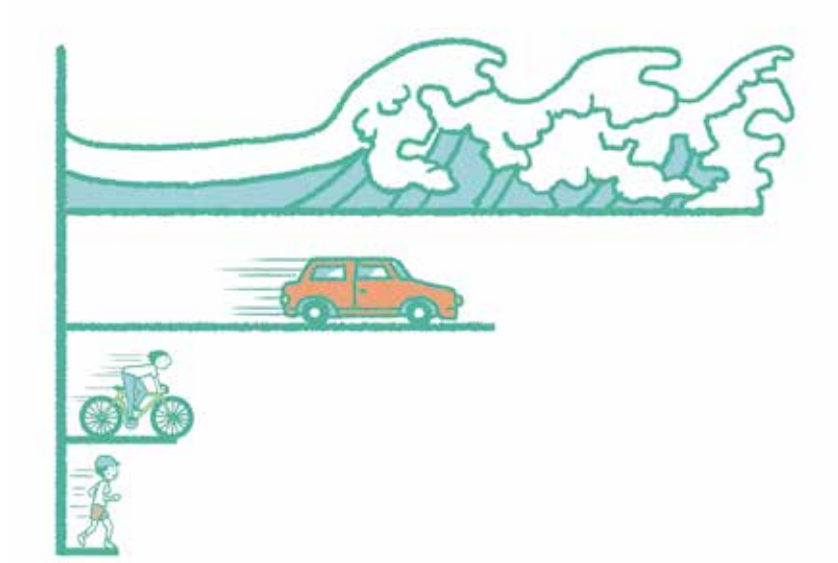
Tsunami
evacuation location

Tsunami
evacuation building

It is most important to know the information about the disaster hazard in advance as a means of preventing the damage. There is the case that a caution sign has been posted in the place that has suffered damage in the past such as falling rocks, landslides, flood disaster, and Tsunami disaster.
Take a look consciously and check the signs in local hazard areas.
Make sure of the possibility of danger in that place and how to act in the time disaster occurs.

Speed of tsunami is very fast!

It is too late to evacuate after you see a tsunami



When he ocean is deeper, Tsunami is transmitted faster.
Offshore, it will be transmitted at the speed of a jet.
Speed becomes slower as water depth becomes shallow, and it will be the speed level of a train at water depth 100m. However, since the wave coming after will catch up to the previous wave as the tsunami approaches the land , wave height will be getting higher.
Even though the water depth is shallower and the speed become slower, it is unable for normal people to run away since the speed is same as the short-range runner in the Olympic games.
In addition, the impact force of the tsunami is enough to crush even a car, so human beings do not have a chance against it.
Check the place to evacuate such as pre-hills and evacuation buildings from tsunami in advance.
If you feel any shake in the coastal area or a tsunami warning is announced, evacuate immediately even if the tsunami is not visible.

Conclusion

there are no correct answer for disaster prevention.
We never know when the disaster will attack.
In that case, each of you has to judge the situation and make an act.

To that end, you need to talk about the disaster prevention and disaster reduction with many people to share the experience, knowledge and ideas.

There are things that adults can know, children can notice, or you can come up with.
When you find them,
please add that information to this book and make changes.

The experience of talking and thinking about disaster prevention and disaster reduction will be a part of our lives as a usual preparation,
and it will help you to calm down and act appropriately in emergencies.