# Disaster Information Obtaining emergency information on disasters

Imabari City provides emergency information at the time of disaster in multiple ways. Check the information regularly.

# Disaster management radio system

Emergency information is provided from speakers installed outside. If you hear the sound from the disaster management radio system, take actions to protect yourself, and turn on the TV or radio for more information.

\*You may not be able to hear the disaster management radio system if you are inside, due to weather conditions, etc. The content of the broadcast can be confirmed over the phone.

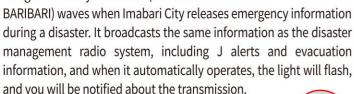
Dedicated phone number for checking emergency notification broadcasts

TEL. 0898-23-6010

緊急告知ラジオ

# **Imabari City emergency** notification radio

The radio automatically operates using community FM station (FM Radio



# TV (data broadcast)

By pressing the "d" button on the remote for a TV that supports terrestrial digital broadcasts, you can check information on weather reports and disasters through data broadcasts.

# Information obtainable from a computer or smartphone

# Imabari City web site

Municipal disaster information, evacuation information https://www.city.imabari.ehime.jp/



# Imabari City disaster information portal

Municipal disaster information, information on the operation of evacuation shelters, etc. https://city-imabari.secure.force.com/



Imabari City social media City administrative information, disaster information, etc. **Imabari City** 

Imabari City @imabari bousai

**Facebook** @i.i.imabari

**Imabari City** official LINE @imabari-city





**MLIT Center for the Provision of Disaster** Management Information Disaster information, etc.



# https://www.mlit.go.jp/saigai/bosaijoho/ JMA website

Weather information, typhoon information, etc. https://www.jma.go.jp/



# **Ehime Prefecture disaster e-mails**

Disaster information sent through e-mail





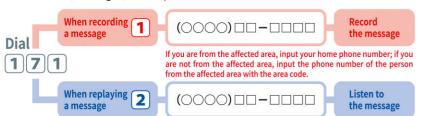
# Contact information in case of emergency ▶Fire 119 ▶Police 110 ▶Japan Coast Guard 118

d

Name	Phone number	Name	Phone number	Name	Phone number		
Disaster information line (Imabari City Disaster Response Headquarters)	0898-36-1630	Hakata Police Station	0897-72-0110	Chugoku Electric Power Transmission & Distribution Co., Inc. Onomichi Network Center	0120-512-169		
Imabari City Hall	0898-32-5200	Imabari Coast Guard	0898-32-4999	Chugoku Electric Power Transmission & Distribution Co., Inc. Higashihiroshima Network Center	0120-519-730		
Imabari City Fire Department Headquarters	0898-32-6666	NTT West Japan	113	Shikoku-Gas Imabari Branch	0898-32-5056		
Imabari Police Station	0898-34-0110	YONDEN T & D Imabari Office Service Center	0120-410-633	LP gas (retailer for the gas that you use)			

# **Disaster Emergency Message Dial**

Disaster Emergency Message Dial can be used to record or replay safety information (messages) over a phone.



For cellphones and smartphones, there is a Disaster Message Board. Check the registration method in advance.

# **Online disaster map**

The online disaster map was created based on this guide so that you can view disaster information in an online map. The online disaster map can be enlarged and shrunk, and you can print an individualized disaster map for the area around your home.

Imabari City online disaster map https://city-imabari.secure.force.com/





For home use 2022

# General disaster map





An online disaster map is being created by Imabari City. You can check hazardous areas and evacuation shelters from a computer or smartphone.

### **Table of contents** Introduction Preparing for natural disasters (2) 9 • Alert levels and evacuation information • Targets of evacuation information Community disaster management and mitigation Roles and activities of volunteer disaster management organizations Preparing for natural disasters (1) 2 Participate in disaster management workshops and disaster drills. • Flowchart for Determining Evacuation Actions The hazard maps 10 3 Landslides ● Conditions behind preparation of the maps ● Index ● Legend • Types of landslides and their precursors • Points for evacuating from a landslide Floods / Surface water flooding **Tsunami Hazard Map** 11~50 • Surface water flooding and river flooding • Reducing damage caused by wind and water **Storm Surge Hazard Map** 5 **Earthquakes Surface Water Hazard Map** 51.52 • Estimated seismic intensity of Nankai megathrust earthquakes • Increase safety in your home by preparing for earthquakes. List of designated evacuation shelters and Tsunami / Storm surges 53 designated welfare evacuation shelters ● Patterns of action to protect yourself during a tsunami ● Tsunami warnings and advisories ● Tsunami inundation depth ● Mechanisms of storm surges **Cautions for evacuation** 54 Create an escape plan for your home 7.8 • Designated evacuation facilities • Actions to protect one's life • Escape plan for your home • Evacuation preparations Managing your health

# Alert levels and evacuation information

Evacuation information is issued through five alert levels. Take appropriate evacuation actions according to the alert level, and protect yourself from wind, water, and landslide disasters.

Alert level	Conditions	Action to take	Evacuation information, etc.			
5	Disaster occurring or imminent	Danger to life. Take immediate safety measures!	Emergency safety measures *1 (Issued by the city			
•••••		Evacuate when or before Alert Level 4 is issued				
4	High possibility of disaster	Total evacuation from dangerous areas	Evacuation instruction Issued by the city			
3	There is a possibility of disaster	Evacuate the elderly, etc., from dangerous areas *2	Evacuation of the elderly, etc. Issued by the city			
2	Worsening weather conditions	Check what evacuation actions to take	Heavy rain, flood, and storm surge advisories			
1	Possibility of worsening weather conditions	Increase disaster preparedness	Early advisory information (Issued by JMA)			

<sup>\*1</sup> Alert Level 5 may not always be issued as disaster conditions may not be fully known.

# Targets of evacuation information

Evacuation information issued by the city is generally issued by school / regional district for those that include flood inundation or landslide risk areas (e.g.: Alert Level 4. Evacuation instruction for OO school district). The targets are individuals in the regions that are in flood inundation or landslide risk areas. Check the hazard map in advance to confirm whether your home is in a flood inundation risk area or landslide risk area.

# Flowchart for Determining Evacuation Actions

In preparation for typhoons and heavy rain, refer to the Flowchart for Determining Evacuation Actions to determine when to evacuate. Also, when considering where to evacuate, check the hazard map and whether your area requires evacuation away from your home. Set multiple suitable evacuation points in advance.

# **Flowchart for Determining Evacuation Actions**

No

# Start

Is the location of your home colored on the hazard map?

Even if the area is not colored, if the ground above which you live is lower than the surrounding area or near a cliff, evacuate based on the information from the city.

There is a risk of disaster, and evacuation to a safe location is generally required.

Will it take time for you or the people with you (the elderly, the disabled, infants, etc.) to evacuate?

# In some cases

# It is possible to stay safe by remaining in your home.

- (1) If you are located above the inundation depth and not in an area where your home could collapse or be swept away during a flood even if inundation occurs.
- (2) Even if inundation occurs, you can wait until the water recedes or you have sufficient water and food supplies.
- (3) Even if there is a risk of landslides, you live on a high floor in a apartment or other sufficiently sturdy building.

Do you have relatives or acquaintances who live in a safe location where you can take shelter?



At Alert Level 3,

evacuate to the safe

home of a relative or

acquaintance.

At Alert Level 3,

evacuate to the

designated evacuation

shelter run by the city.

Do you have relatives or acquaintances who live in a safe location where you can take shelter?

At Alert Level 4, evacuate to the safe home of a relative or acquaintance.

les.



At Alert Level 4, evacuate to the designated evacuation shelter run by the city.

- At Alert Level 3 or Alert Level 4, evacuate from dangerous locations.
- To evacuate means to avoid danger. People in safe locations do not need to go to an evacuation point.
- Evacuation points are not limited to elementary schools and community centers. Consider evacuating to the safe home of a relative or acquaintance or a hotel or ryokan.

<sup>\*2</sup> When Alert Level 3 is issued, individuals other than the elderly, etc., should also start to postpone their regular activities and voluntarily evacuate as needed if they sense danger.

# Types of landslides and their precursors

When heavy rain, typhoons, or earthquakes occur, the ground loosens, which could cause disasters such as slope failures, debris flows, or landslides. Areas with a risk of harm to the lives or bodies of residents in case of a landslide are referred to as "landslide alert areas". Also, areas with a risk of building collapse or significant harm to the lives or bodies of residents in case of a landslide are referred to as "landslide special alert areas".



# Slope failure (failure of steeply-sloped land)

This is where water seeps into the ground and causes the sudden collapse of a steep slope. The fatality rate is high because these occur suddenly, and if near the home, many people do not get away in time.



# **Landslides**

This refers to the gradual, large-scale movement of land that has been raised by the force of water generated by rainwater that has seeped into the ground during heavy or prolonged rain.



# **Debris flows**

Points for evacuating from a landslide

This is when stones and sand from mountains or rivers mix with water due to prolonged rain or localized downpours, and it flows powerfully downstream all at once.

# Look for these precursors!

- The water coming from a cliff is muddy.
- Water is gushing from a cliff or slope.
- A slope is cracked or deforming.
- Small rocks are falling.
- Sounds are coming from a cliff.
- There is an unusual smell.

# Look for these precursors!

- There are cracks in the ground.
- The water in wells or streams is muddy.
- The groundwater or spring water stops.
- The groundwater of spring water stops.
   There are cracks in homes or retaining walls.
- Homes, retaining walls, trees, or electrical poles are leaning

# Look for these precursors!

- There is a rumbling sound from mountains.
- River levels fall despite continued rain.
- River water is muddy or includes driftwood.
- The soil smells rotten.

# Be cautious of prolonged or heavy rain

If an advisory is issued for heavy rain, consider evacuating early.

# Be aware of precursors



Precursors may appear before a landslide occurs. If any of the above occurs, promptly evacuate.

# Leave the alert area

If you are concerned, even if you do not go to a designated general evacuation shelter, you should leave the landslide alert area.

# If a debris flow occurs



The debris flow is rapid, and if you run along the flow with it behind you, you may get caught in it. Escape by running perpendicular to the debris flow.

# If your evacuation is delayed



If it is difficult to evacuate outside of the alert area, make an emergency evacuation to the 2nd floor or higher of a nearby sturdy building or evacuate to a safer location in your home (room further from a cliff, 2nd floor, etc.).

# Do not return home until it is confirmed to be safe



Landslides can occur even after the rain starts to weaken.

Therefore, do not return home until the evacuation alert has been lifted and the area has been confirmed safe.

# Surface water flooding and river flooding

# Surface water flooding



This is inundation that occurs when heavy rainfall flows into drainage systems and the rainwater cannot be fully drained, resulting in an outflow from manholes and roadside ditches.

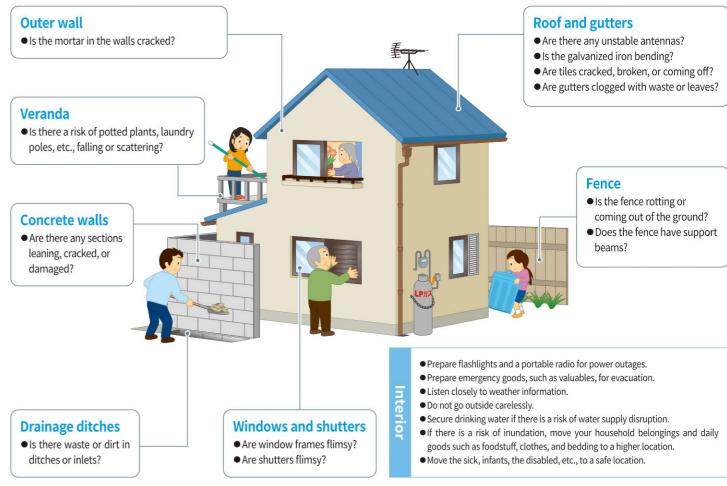
# River flooding (flooding)



This is inundation caused by rising water levels in rivers due to typhoons or heavy rain where the water level exceeds expectations and flows over or destroys embankments.

# Reducing damage caused by wind and water

In order to reduce damage to the home caused by wind and water, perform regular maintenance, repair, and reinforcement on and around your home, and develop sufficient countermeasures.



4



The figure on the right shows the distribution of estimated seismic intensity if a maximum intensity earthquake were to occur with the Nankai Trough as the epicenter. The maximum seismic intensity estimated for Imabari City is 6 upper.

# Seismic intensity and shaking conditions (list of seismic intensity classes)

# 6 upper

- Inability to move without crawling. Objects could be thrown through the air.
- Almost all unsecured furniture will move, and many things will fall over.
- Many wooden buildings with low earthquake resistance will lean or collapse.
- Large cracks in the ground could form, and large-scale landslides or sector collapse could

# 6 lower

- It is difficult to stand.
- Most unsecured furniture will move, and things may fall over. Doors may be unable to be opened.
- Wall tiles or window glass could break and fall.
- Tiles could fall from wooden buildings with low earthquake resistance, and these buildings could lean. They could also collapse.

# 5 upper

- It is difficult to walk without grabbing onto something.
- Many items such as dinnerware or books will fall from shelves.
- Unsecured furniture could fall over.
- Concrete walls that have not been reinforced could collapse.

# Seismic intensity 6 upper 6 lower 5 upper

# Increase safety in your home by preparing for earthquakes.

# **Devise storage solutions**

• When placing objects in cabinets or on book shelves, put heavy objects at the bottom and lighter objects at the top.



Transparent sheets

# **Devise layout solutions**

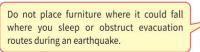
- Place boards to prevent furniture from falling forward, and place furniture against the wall.
- Avoid placing luggage in entrances or walkways.

To prevent glass scattering

Apply film that prevents broken

glass from scattering.

• Consider the layout of furniture so that it does not fall where you sleep.





Use earthquake-resistant fittings



# Fall prevention fittings There are types for securing furniture to walls, pillars, lintels, or the ceiling. Use fittings that are

suitable for the furniture and room conditions.

You can prevent foot injuries during

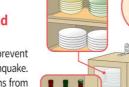
a disaster by keeping sneakers, etc.,

in an easy-to-access

location.

## Fittings for stacking

Secure stacked furniture to prevent the upper furniture from falling.



# Fittings to keep doors and drawers closed Secure doors and drawers to prevent

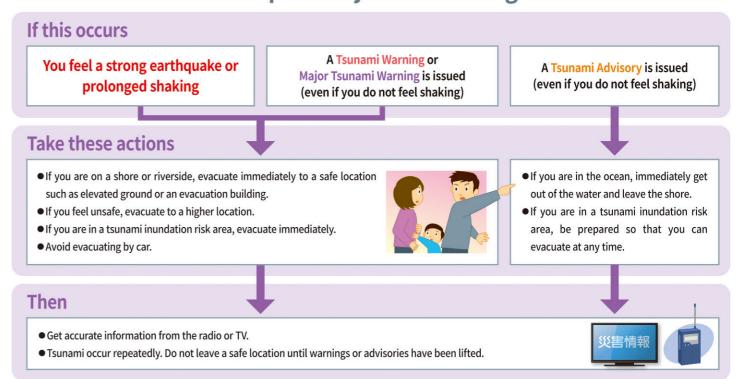
them from opening during an earthquake. Additionally, to prevent stored items from falling, place cloths on shelves, and to prevent items from flying, install frames with wooden or aluminum rods.



# Reinforce lighting equipment

 Secure hanging fluorescent lights with a chain, etc.

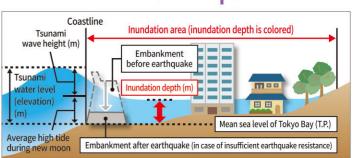
# Patterns of action to protect yourself during a tsunami



# **Tsunami warnings and advisories**

Warning and	Expected tsunami heights								
advisory categories	Height classifications	Quantitative expression (announcement criteria)	Expression in case of huge earthquake						
Major	Greater than 10 m	More than 10 m							
Tsunami Warning	Greater than 5 m up to 10 m	10 m	Huge						
(Emergency Warning)	Greater than 3 m up to 5 m	5 m							
Tsunami Warning	Greater than 1 m up to 3 m	3 m	High						
Tsunami Advisory	From 20 cm to 1 m	1 m	(None)						
Tsunami Advisory	From 20 cm to 1 m	1 m	(None)						

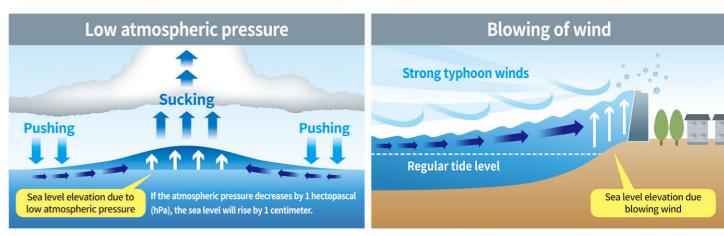
# **Tsunami inundation depth**



\*The tsunami water level takes subsidence into account

# Mechanisms of storm surges

A storm surge is when the sea level near a coast abnormally increases due to a typhoon or low atmospheric pressure and causes flood damage. There are two main causes of storm surges.



If the peak of a storm surge coincides with high tide during a spring tide, it is more likely that the sea level will rise. Additionally, if the water level of a river is elevated due to heavy rain, the water level around the mouth of the river could be elevated even further.

# Community disaster management and mitigation

If a large disaster occurs, the activities of government bodies (public help) may not provide a sufficient response due to disruptions to the traffic network or the simultaneous occurrence of fires. Therefore, it is important for you to be prepared for disaster (help yourself) and to work with your community (help others) to manage disasters.





# Public help Assistance provided to citizens by the city, prefecture, country, or disaster management groups

Cooperate to improve your community's ability to manage disasters.

# Roles and activities of volunteer disaster management organizations

Volunteer disaster management organizations are organizations created through the cooperation of the community to protect itself from disaster. They regularly perform various disaster management activities and activities to minimize damage if a disaster occurs.

# Regular activities Spreading awareness and knowledge of disaster management Checking disaster management conditions in the community Inspecting and maintaining disaster management equipment Implementing disaster drills Discussing evacuation plans Checking individuals who require special considerations



# Participate in disaster management workshops and disaster drills.



Regularly participate in workshops and disaster drills and acquire knowledge and skills on disaster management so that you can stay calm and act correctly if an emergency occurs. Disaster drills are performed every year in cities and communities. You should participate as these are a good opportunity to acquire knowledge and skills related to disaster management activities. Visiting lectures are also held by the city on disaster management. These are provided to groups expected to have ten or more participants. Feel free to apply.

# **Conditions behind preparation of the maps**

- The tsunami and landslide hazard map shows the estimated tsunami inundation risk areas and areas where landslides could occur if the maximum intensity earthquake were to occur with the Nankai Trough as the epicenter. In Imabari City, a 1+ m tsunami could occur as soon as 161 minutes after an earthquake. The tsunami's water level could be up to 3.3 meters high (T.P.), and tsunami could continue to occur for over 8 hours. Sufficient caution is required.
- The storm surge and landslide hazard map shows the estimated storm surge inundation risk areas and areas where landslides could occur if a typhoon equivalent to the strongest on record were to occur. The map assumes a central pressure equivalent to typhoon Muroto (900 hpa), a radius and movement speed equivalent to typhoon Isewan (radius of maximum cyclostrophic wind speed = 75 km, movement speed = 73 km/h), and the destruction of embankments when levels exceed the design specifications.
- Be aware that inundation can occur outside of inundation risk areas shown on the map and that landslides can occur outside of landslide
  alert areas.

# 

# **Estimated depth of inundation**

Index

# 3.0 m to less than 5.0 m 1.0 m to less than 3.0 m 0.5 m to less than 1.0 m 0.3 m to less than 0.5 m Less than 0.3 m

# Facilities Landslide alert areas

Designated general evacuation shelter

Designated emergency evacuation site

Debris flows

Designated welfare evacuation shelter

Landslides

O City hall or branch office

Police station or koban

Fire department

! Underpass

HighwaysMain evacuation routes

Landslide special alert areas

Steep slopes

Debris flows

10

# Designated general evacuation shelter (As of April 1, 2022)

			Usability for disaster									Usability for disaster					
			Soja River flood			Surface war flooding						Soja River flood			Surface	5277200	
No.	Facility name	Facility name  Storm scale Maximum scale Maximum Tsunami  Tsunami		Landslides	Planned scale	Maximum scale	Storm surges	Recorded maximum	Expected maximum	Tsunami							
1	Yoshiumi Elementary School	0	_	-	3	_	_	2	22	Hakata Community Center	0	_	-	0	-	_	0
2	Oshima Junior High School	×	-	-	3	s—s	_	2	23	Kamiura Elementary School	×	_	-	0	a-		0
3	Yoshiumi Learning Exchange Center	0	-	-	×	_	-	2	24	Omishima Junior High School	0	-	-	2	-	_	0
4	Former Yoshiumi Geriatric Welfare Center	0	-	-	0	_	<b>7</b> —9	0	25	Kamiura Certified Nursery School and Kindergarten	0	-		×	-	-	0
5	Yoshiumi Certified Nursery School and Kindergarten	0	-	-	×	-	-	2	26	Kamiura General Development Center	0	-	-	2	-	-	0
6	Miyakubo Elementary School	×	=	-	0	-	_	0	27	Former Kamiura Sakari Research Center	0	=		0	-	=	0
7	Miyakubo Community Center	0	-	_	2	_	_	0	28	Kamiura Health Center	0	-	_	×	-	-	0
8	Miyakubo Certified Nursery School and Kindergarten	×	-	-	0	-	_	0	29	Omishima Community Center	0	-	-	2	0	0	2
9	Miyakubo Stone Culture Museum	0	-	_	0	-	-	0	30	Omishima Shonen Shizen-no-ie	0	-	-	×	-	-	0
10	Miyakubo Health Center	0	_	_	0	_	-	0	31	Omishima Certified Nursery School and Kindergarten	0	-	_	×	-	-	×
11	Murakami Kaizoku Museum	0	-	-	0	_	_	0	32	Omishima Elementary School	×	-	-	3	0	0	0
12	Hakata Junior High School	×	-	=	0	_	_	0	33	Former Omishima Geriatric Welfare Center	0	-	-	×	-	_	×
13	Hakata Certified Nursery School and Kindergarten	0	_	_	0	_	_	0	34	Okamura Elementary School	×	_	_	0	_	-	0
14	Hakata Elementary School	×	-	-	0	5 <u>—</u>	-	0	35	Sekizen Junior High School	×	-	-	0	-	-	0
15	Hakata Welfare Center	×	-	-	2	s <del>=</del> i	=	0	36	Sekizen General Development Center	×	-	-	2	-	-	0
16	Imabari Nishi High School Hakata Annex	0	_	_	2	-	_	0	37	Okamura Elementary School Rural Assembly Hall	0	_	_	2	_	_	0
17	Hakata General Development Center	0	-	-	2	_	-	0	38	Oge Region Agricultural Goods Processing Plant	0	-	-	×	-	-	2
18	Former Nishi Hakata Regional Citizen's Learning Center	0		-	2	_	_	0	39	Oge Assembly Hall	×	-		×	-		×
19	Hakata Noson Kankyo Kaizen Center	×	-	_	0	_	-	0	40	Kooge Dispatch Clinic	0	-	-	0	-	-	0
20	Former Hakata Kitaura Gymnasium	×	-	-	×	-	-	0	41	Kooge Regional Citizen's Center	0	-	-	×	-	-	0
21	Shimanami Community Plaza	×	-	-	0	_	_	0	*○: Usable (If there is a number in the circle, the floors at or above the number can be used), ×: Cannot be used, →: Area outside the scope expected for Soja River flooding or surface water flooding								

# Designated welfare evacuation shelter (As of April 1, 2022)

No.	Facility name	No
1	Asyokaen	8
2	Seaside	9
3	Hakatakotobukien	10
4	Hanamizuki Group Home	11
5	Oide Ya Asunaro Small Multifunction Assisted Living Facility	12
6	Asunaro Geriatric Health Service Facility	13
7	Tatara-no-sato	

No.	Facility name					
8	Nanpuen					
9	Yui-no-sato Group Home					
10	Yui-no-ie Group Home					
11	Yui-no-mura Small Multifunction Care Facility					
12	Imabari City Geriatric Living Support House					
13	Sekizen Group Home					

# **Designated evacuation facilities**



# Designated general evacuation shelter ▶ e.g.: Community centers, schools, gyms

These facilities are for citizens who evacuate due to disaster risks and who stay as long as required until the risk is gone or for citizens who stay temporarily because they are unable to return home due to damage. The evacuation shelters to be opened will be determined based on the type of disaster and the conditions.





# Designated emergency evacuation site ▶ e.g.: Ground, park, facility parking lot

These are locations for emergency evacuation to ensure physical safety and escape danger if a disaster occurs or could occur.



# **Designated welfare evacuation shelter** ▶ e.g.: Facilities for the elderly or the disabled

These are evacuation facilities for the elderly, the disabled, pregnant women, and other individuals that require special considerations and for whom continuous communal living in a designated general evacuation shelter would be difficult. Each facility specifies the groups of people who are accepted.

# Actions to protect one's life

Try to avoid evacuating in dangerous situations, and make finding safety your top priority. If danger is imminent, it may be necessary to take actions to protect your life, such as vertical evacuation (moving to a 2nd floor, room further away from a cliff, or otherwise safer location) in addition to horizontal evacuation.

# Horizontal evacuation



# Vertical evacuation



# In the following cases, going outside is dangerous.

- It is night or it is difficult to see dangers in evacuation routes due to sudden rain.
- Water reaches your knees (50 cm or higher).
- Water reaches 20 cm and flows guickly.
- Water reaches 10 cm and there is a risk of falling because the locations of waterways are unclear.

# Evacuate vertically.

If there is no risk of building collapse due to inundation, etc., immediately evacuate temporarily to a higher floor in the building and consider waiting for help.

# Managing your health

# Infection

Infections such as influenza, COVID-19, and norovirus are likelier to spread during communal living in an evacuation shelter.

## **Prevention measures**

- Regularly gargle and wash your hands with hand soap or sanitizer.
- Always wear a mask.
- Try to drink plenty of fluids to avoid dehydration.

# **Economy class syndrome**

This is a condition where a blood clot forms in a vein of the legs due to the legs not being moved for a long period of time, and the clot then plugs a blood vessel of the lungs or heart.

# Prevention measures ·

- Individuals who sleep in their vehicle and elderly individuals who stay seated for long periods of time should exercise caution.
- Try to keep your body active.
- Get a sufficient amount of fluids to avoid symptoms of dehydration.
- Wear loose clothing at the designated general evacuation shelter.

# Carbon monoxide poisoning

If you evacuate in your vehicle and the air conditioner is run for a long period of time, there is a higher risk of carbon monoxide poisoning. The same is true for the use of a kerosene heater in a confined area. It is important to let fresh air in.

# Prevention measures ·

- Regularly ventilate the space by opening a window, etc.
- Confirm that the exhaust vent of the heater functions

53 54