

# 7



## Other Disasters

# 1 Take a Bath Safely in Winter



Often called the invisible killer, carbon monoxide (CO) is an odorless, colorless gas that are hardly detected, which is created when fuels in water heater burn incompletely. People who expose too much to CO would often show symptoms of fatigue and dizziness only, and therefore pass away in sleeping without knowing they are poisoned.

National Fire Protection Association (NFPA) of the United States has a list of the various influences of different levels of CO concentration toward human body (as list below).

## Carbon monoxide is highly dangerous to the human body

According to the Fire Protection Handbook compiled by NFPA, the various concentration of CO, the time of exposure, and the symptoms demonstrated are as bellowed.

	Carbon monoxide content	Human exposure time and physiological symptoms
1	0.01%(100ppm)	Symptoms of headache, drowsiness, nausea, muscle weakness, loss of judgment with 6-8 hours of exposure.
2	0.02%(200ppm)	Mild headache after 2-3 hours of exposure.
3	0.04%(400ppm)	Headache intensified after 2.5-3.5 hours of exposure.
4	0.08%(800ppm)	Dizziness, Nausea, and cramp after 45 minutes of exposure.
5	0.16%(1,600ppm)	Headache and dizziness with 20 minutes of exposure; danger of death with 2 hours of exposure.
6	0.32%(3,200ppm)	Headache, dizziness, nausea with 5-10 minutes of exposure; danger of death with 30 minutes of exposure.
7	0.64%(6,400ppm)	Headache and dizziness with 1-2 minutes of exposure; danger of death with 10-15 minutes of exposure.
8	1.28%(12,800ppm)	Danger of death with 1-3 minutes of exposure.

## Follow “5-must” principles to avoid the poison of CO

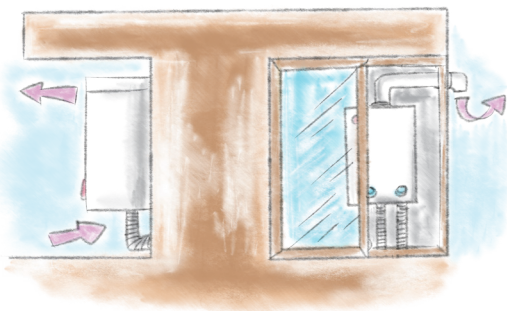
### Keep the environment 「ventilated」

Avoid installing the balcony against regulations such as installing extra windows and doors, dirty screen windows, or hanging too many clothes.



### Use a safe brand

Choose water heaters with the label of Chinese National Standards (CNS).



### Select the correct 「Type」

Rooftop Flue (RF) type of water heater should be installed outside with good ventilation. Indoor combustion types of water heater such as Forced Exhaust (FE) type and Forced Draft Direct Vent (FF) type should be installed with proper exhaust pipes.

### 「Installed」 by Certified Technicians

The installation of combustion water heater and the pipe arrangement should be carried out by certified technicians. Construction labels should be attached to the heater after the installation as the regulation instructed.



### Daily 「maintenance」

Regular service and replacement shall be performed on water heaters. If there is unstable water temperature or change of the location or the components of water heater, all procedures should be performed by certified technicians.

## Emergency Steps Taken for CO Poisoning

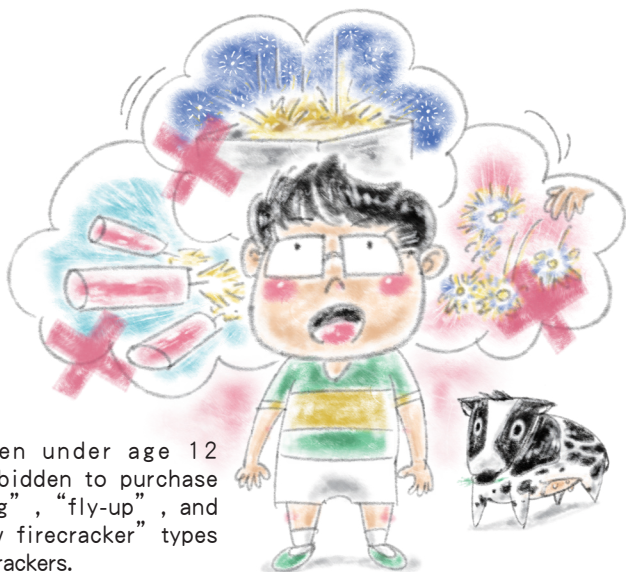


1. Open the windows ASAP.
2. Call 119 for help.
3. Perform CPR on the victim without breath and heartbeat.

## 2 Let off Firecrackers Safely

### How to Choose Safe Fireworks

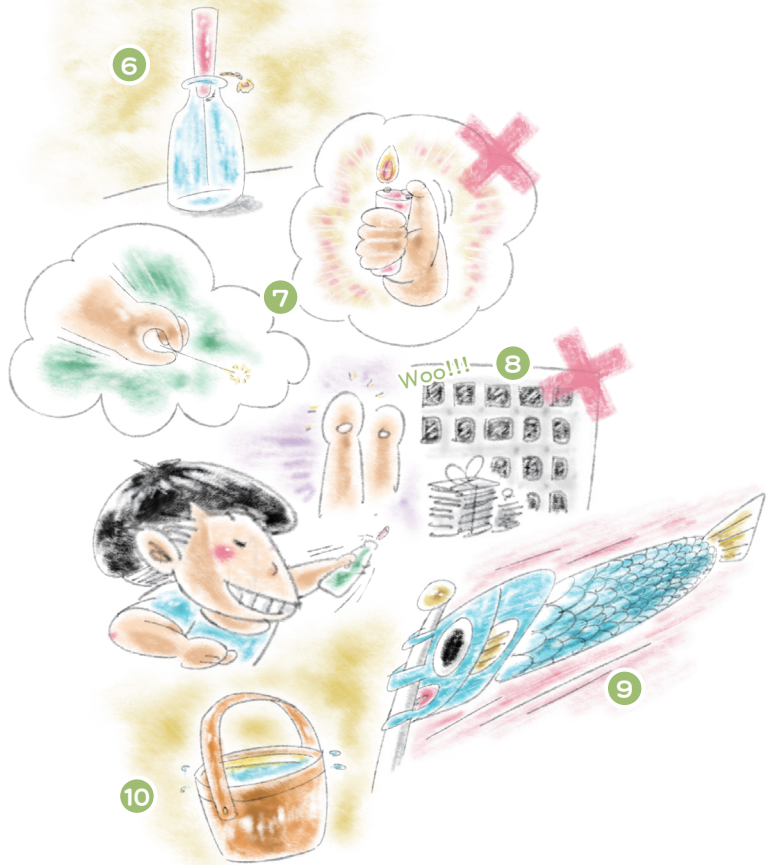
Purchase approved firecrackers only.



## Tips for Letting off Firecrackers



1. Let off in an open space.
2. Do not line up or stack up firecrackers.
3. Children under age 12 are forbidden to purchase common “flying”, “fly-up”, and “throw firecracker” types of firecrackers.
4. Children who let off firecracker should have the company of adults.
5. Let off the firecrackers by following its instructions.



6. When it comes to flying type, fasten first.
7. Light with incense sticks instead of lighters.
8. Do not target people, building, or the flammables.
9. Do not let off fire crackers if there's strong wind, in case of uncertain wind direction.
10. Prepare a bucket of water, and put out the fire after playing.



### 3 Use Gas Tank Safely

#### What is gas ?

Gas can be divided into natural gas and liquefied petroleum gas (LPG). Natural gas is commonly transported via pipelines in urban area, mainly composed of methane. LPG is transported in tanks, mainly composed of propane and butane. Both are colorless, odorless gases. Therefore, an odorant is added to the gas in order to alert users about the leaking.



#### What guarantees do I get when I sign a standard contract (terms) with the gas company?

Good cooperation!!!!



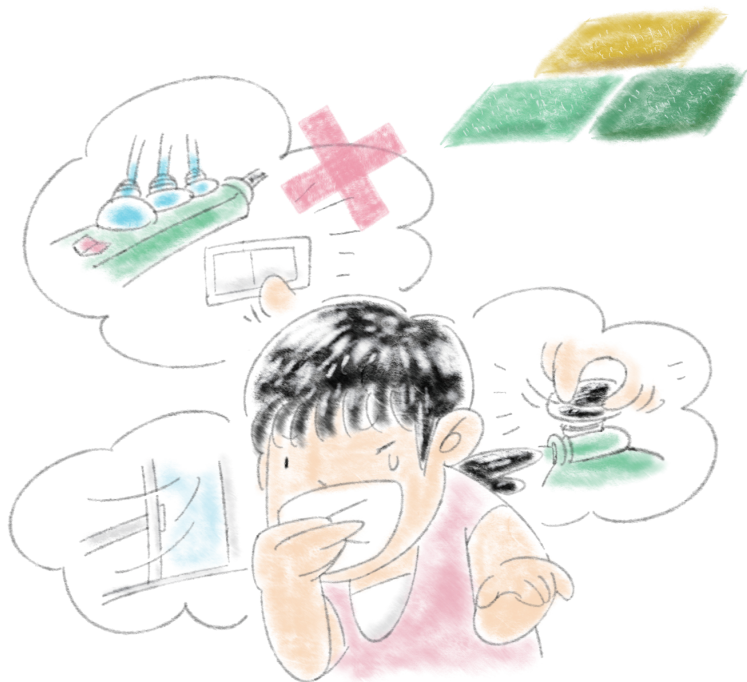
1. Guaranty of the quality and the quantity of the gas.
2. When returning the gas tank, the unused LPG inside the tank is refundable by the ratio of the weight.
3. When returning the gas tank, the gas company has to return the security deposit.
4. Guaranty of the safety in use since the gas tanks are in accordance of regulation.
5. Security of the Consumer Rights and means to complain in a dispute.

## After installation, check safety lists



1. Place the gas tank vertically in a cool place with excellent ventilation.
2. Keep it a distance from the flammables.
3. The length of the pipe should not be longer than 1 meter, and be checked annually for any damage.
4. Check regularly for any leak at the pressure valve and the end that links the stove.
5. Check if there is a certified label on the inside of the tank and if the label is intact without alteration.
6. Check if the next inspection date on the certified label is expired.
7. Turn off the gas when going out, sleeping, or not using it.

## Emergency Procedures for Gas Leak



1. Do not engage any behavior that might spark such as using electrical appliances, turning on lights or using telephone.
2. Remain calm and turn off the gas ASAP.
3. Slowly open the window/door to let the air flow.
4. Stay alert and leave the site ASAP; inform the gas company to deal with it.
5. If a fire occurs accidentally, leave ASAP, and do not try to turn off the switch or put out the fire.

## Safety Guidelines for Water Activities

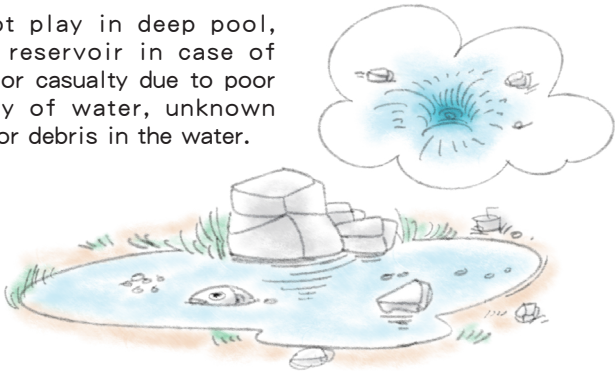
### 1 Choose Wisely the Location of Water Activities

1. Choose the water that has lifeguards on duty and follow their instructions.



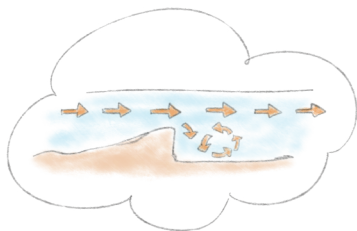
2. Do not play in the water or engage in any water activity when seeing signs of "No Playing in the Water" or "Danger: Deep Water".

3. Do not play in deep pool, pond, reservoir in case of injury or casualty due to poor quality of water, unknown depth or debris in the water.



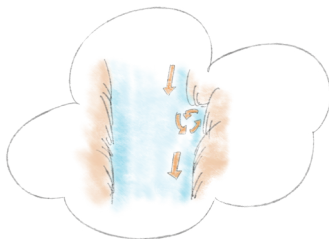
4. The surface of river seems calm often, but turbulence surges underneath. Once trapped, it is hard to get out. These are the common types of danger water:

## Eddy



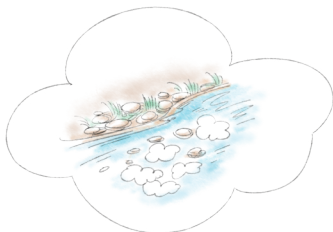
When the current encounters sudden drop of terrain (e.g. low dam, check dam), it will form a turbulent phenomenon that sucks and tumbles any people or objects trapping or bringing casualty. It is usually easier to detect an eddy in a shallow river, but hard to recognize in a deep river.

## Vortex



When the current passes by the curve of the shore or encounters obstacles, it forms vortex, which sucks and endangers people.

## White water

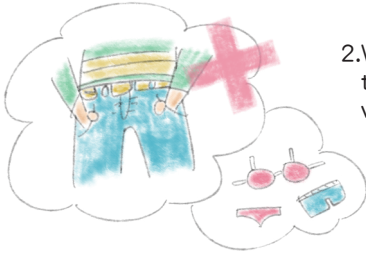


When the current encounters obstacles, it will create massive white bubbly and aerated current, where is usually situated at shoal. People would easily slip and injure themselves due to the algae on the riverbed or the impact of current.

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## Things to Know before Playing in the Water

1. Do warm-ups and stretches to prevent muscle cramps in the water.



2. Wear swimsuit, swimming trunks, and lifejackets; never wear jeans in the water.

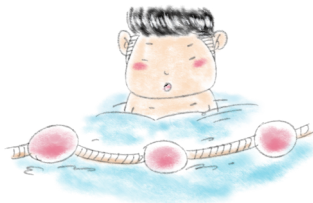
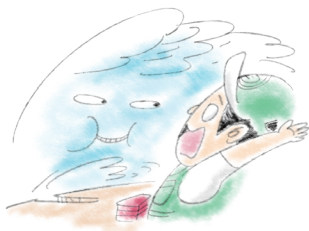
3. Take your body into consideration. If you are uncomfortable, hungry, too full, drunk, in a bad mood, or with the signs of hypothermia, do not play in the water.



4. Look out for the weather. If the weather is bad or it is raining with thunders, do not do any water activities.

### 3 Things to Know When Playing in the Water

1. When playing in a Beach Park, do not enter the warning zone. Learn about the tides of the water prior to the water activities.



2. When going seashore fishing, do wear a lifejacket, spiked shoes, and a helmet. Understand the waves and the tides well. If you see big waves coming, run at once.



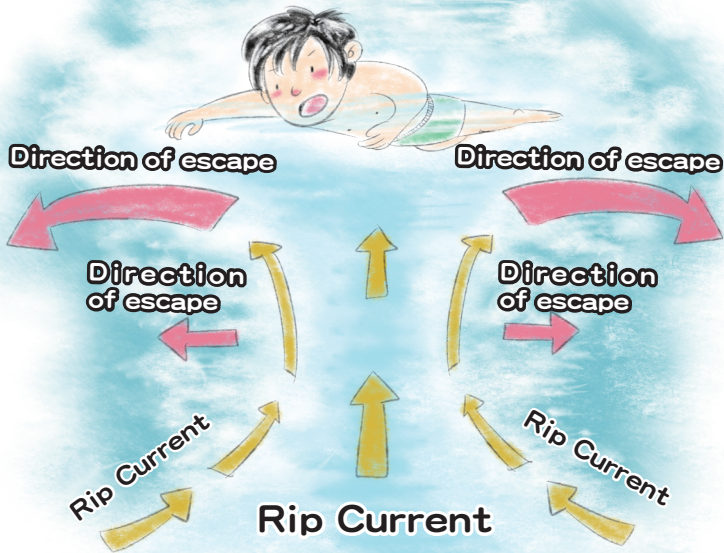
3. When playing in the river, if you find dark clouds in the mountains, roaring sounds coming from the upstream, changes of water color, or sudden rise of water, withdraw to high ground immediately for these are the signs of flooding.

4. If you see someone drowning, please follow the principles below.

- a Never risk rescuing alone in the water.
- b Shout out for help.
- c Call 118 or 119 for coastguards or fire bureau.
- d Check if there is lifeline, life ring, or any objects with buoyancy and try to rescue onshore.



## 4 How to Deal with a Rip Current



The rip current leaves the shore swiftly; it is a very strong current that even strong swimmers cannot fight against.

### When pulled away inadvertently by a rip current

1. Do not panic, and do not try to swim back to shore.
2. Swim parallel to the shore to leave the rip current, and then swim towards the shore.
3. If unable to escape, keep head above the surface.
4. When waiting for help, shout, or wave.



## 5 How to Save an Active Drowning Victim?



**step 1 Check** { Check for responsiveness and breathing in the patient

**step 2 Call** { Ask people nearby to call 119 and bring an AED

**step 3 Compress** { Perform continuous chest compressions

Note the safety of the surroundings; when using an AED, check whether the area is dry.

### 1 Basic Principles of Self-rescue in Water

1. When water levels rise and trap you on a rock or sandbar, do not panic, wait for rescue.

2. Conserve energy. Use methods that expend the least amount of energy so that you can stay in the water as long as needed. Use your body or items nearby to increase your buoyancy keeping your body afloat, and wait for rescue.



3. Breathe steadily, relax muscles, slow any movements.

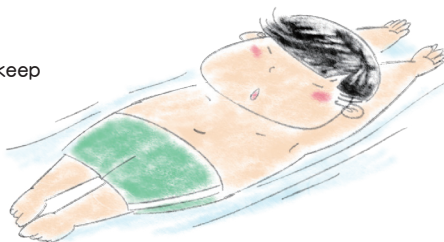


### 2 How to Prolong Survival during Waiting

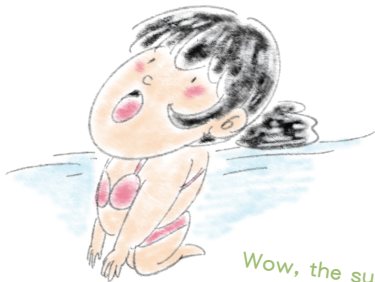
#### Back floating

Float on your back, and keep your mouth and nose above the surface.

The rest of the body should remain below water to maximize buoyancy.



## Basic positions for back floating



### a Perpendicular float

Relax the entire body and keep legs naturally closed and arms at your sides. Float in a standing position. Breathe in and tilt head back slowly so as to keep mouth and nose above water.

### b Back float

Relax the entire body. Take a deep breath and slowly tilt head your backwards. Spread your arms out to form a T shape with palms facing upwards.

Wow, the sun is bright!



### c Horizontal back float

Similar to the back float position, but slowly raise your arms above your head, and link your thumbs. Push the chest out and let the legs extend naturally.

## Tips for breathing while floating on your back

- a Breathe through the mouth.
- b Use the shortest time to breathe in and out.
- c Breathe in and out as deeply as possible.
- d Between breaths, hold your mouth tightly closed to prevent loss of air.

## Jellyfish float

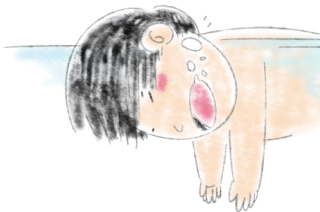


1. Take a deep breath and place face in water, let limbs hang naturally and slightly perpendicular to the water's surface; relax your body.

2. When you need to breathe, press down on water with your limbs and use the reactive force to raise your head up and inhale simultaneously with your body still in floating position; in this way, you can stay in the water for a very long period of time.



3. When practicing the jellyfish float, relax your body as much as possible so that your body has the largest possible contact with water; in this way, buoyancy is increased. At the same time, keep your eyes open to decrease panic. In addition, when your head is in the water, to conserve energy, let air out naturally instead of holding your breath.



If your calf or lower leg cramps, keep floating. Use one hand to hold your toe and the other to hold your knee joint. Pull hard on the toe to stretch out the gastrocnemius muscle, and then massage the muscle until it returns to its uncramped state.

