

## Introduction



When someone hears the word tsunami, the first thing that comes to their mind is a towering wall of water cruising over the ocean's surface at an incredible rate. Tsunamis are a series of powerful ocean waves generated by intense underwater activity (namely, earthquakes, volcanic eruptions, underwater landslides, etc). Their waves can reach tens of hundreds of feet and travel at more than 500 miles per hour (approximately the same speed as jet planes)! These fast, strong, and enormous waves can have devastating effects. Tsunamis have the potential to destroy buildings and infrastructure, as well as cause injury or death. These natural disasters can sweep you away in seconds! It is crucial to recognize the warning signs of an approaching tsunami and take action to ensure your own safety as well as the safety of others.

### Identify the signs of an approaching tsunami

First and foremost, you need to know when a tsunami might occur and identify the early warning signs of an approaching tsunami. There are various signs that can indicate a tsunami has transpired and is coming towards the coast, nevertheless, you are incapable of directly predicting tsunamis. Usually, most tsunamis occur after a powerful earthquake takes place. Hence, it is necessary for you to protect yourself from an earthquake first.

The most efficient and effective way for you to protect yourself from an earthquake is to drop, cover, and hold down. Drop down on your hands and knees (to ensure that the earthquake doesn't knock you down), cover your head and neck (and try to cover the rest of your body to prevent being hit by falling objects), and hold on to a sturdy object and remain covered. It is important that you stay away from glass, windows, outside doors and walls, and anything that could fall on you and cause injury. A strong earthquake is one prominent indicator of an oncoming tsunami, however, there are numerous other ways to identify the signs of an approaching tsunami.

Many natural warning signs can indicate the presence or arrival of a tsunami such as a loud ocean roar and/or water receding from the coast below the expected low tide, which in turn, exposes the sea floor. These signs indicate that a tsunami might occur. Additionally, consider any notifications from emergency alerts/information, NOAA (National Oceanic Atmospheric Administration) weather radios, outdoor sirens, warning centers, and so forth. Make sure to follow the directions of emergency personnel that inform you of an approaching tsunami - it is vital to listen and follow instructions from emergency managers.

## **Take action and protect yourself**

Once you recognize these signs, the tsunami may be arriving within minutes or even seconds! As soon as you identify these warning signs it is essential for you to know what to do. If you are in a boat and far from the coast, do not return back to the coast. Instead, go further from the shore and into deeper water as quickly as possible. Tsunamis do the most damage at bays and harbors. Because of the violent currents that they generate, tsunamis are the least destructive in deep and open ocean waters. However, if you are in a boat and relatively close to the coast or in a harbor, get out of the water and head to higher ground while simultaneously getting further from the coast.

Likewise, if you are on the coast or in the water, evacuate the coast as fast as possible and get to higher ground while getting further and further away from the coast. Essentially, higher ground is the safest place to be during a tsunami, and getting to higher ground as fast as possible immensely increases your chances of survival. If you are in a low-lying area, proceed to a tall building with a strong foundation (preferably concrete and/or reinforced steel). Regardless, there are instances when none of these options are viable and there is not enough time to respond to the approaching tsunami - or that the tsunami has already reached the coast. If this is the case and you are in the water - grab on to something that floats (i.e. a car container, tree trunk, raft). Wearing a life jacket increases the chances of your survival as well.

## Surviving the aftermath of a tsunami



Surviving a tsunami wave is a marvelous feat, however, surviving one is simply not enough. A tsunami is a sequence of multiple waves and the first wave is not always the strongest. A tsunami can last anywhere from a few minutes to a couple of hours, and maybe even a few days! It is essential to listen to notifications from emergency alerts/information, radios, and weather officials to make sure that it is safe. Do not return home until authorities have deemed it safe to do so. Tsunamis leave an extensive amount of wreckage and debris, so some areas may not be safe. If you or anyone around you has been injured and needs medical attention, call an emergency service to get medical help immediately. When returning, stay away from damaged buildings, roads, and bridges as they can fall and cause injury or death. Furthermore, avoid fallen power lines as they can cause electrocution. With all things considered, it is critical for you to identify the early warning signs of tsunamis and take action to protect yourself as well as others.