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*This figure was
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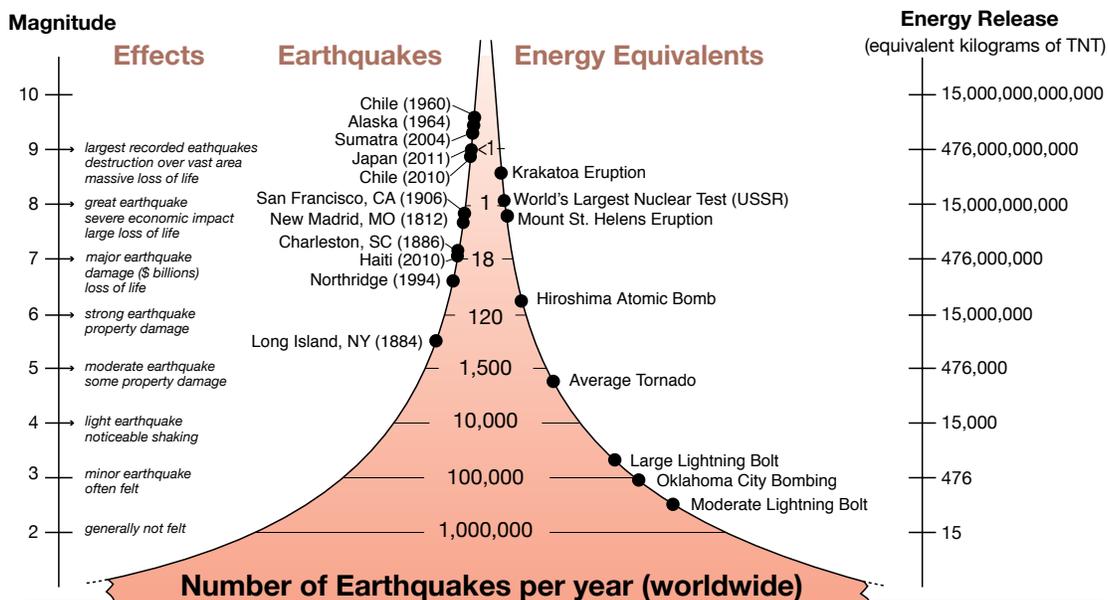
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How Often Do Earthquakes Occur?

Earthquakes are always happening somewhere.

Magnitude 2 and smaller earthquakes occur several hundred times a day world wide. Major earthquakes, greater than magnitude 7, happen more than once per month. “Great earthquakes”, magnitude 8 and higher, occur about once a year.



The left side of the figure above describes the effects of an earthquake by magnitude. The larger the number, the bigger the earthquake. Significant earthquakes are noted on the left side of the shaded tower. The shaded area indicates how many earthquakes of each magnitude occur every year. The events on the right side of the tower show equivalent energy release.

The 2004 earthquake in Haiti, for example, was magnitude 7.0. Earthquakes this size occur about 20 times each year worldwide. Although the Haiti earthquake is considered moderate in size, it caused unprecedented devastation due to poor building materials and construction techniques resulting in estimates of \$11 billion to reconstruct. The earthquake released the energy equivalent to 476 million kilograms of explosive, about 100 times the amount of energy that was released by the atomic bomb that destroyed the city of Hiroshima during World War II.

The largest recorded earthquake was the Great Chilean Earthquake of May 22, 1960, which had a magnitude of 9.5 on the moment magnitude scale. The great earthquake in 2004 in Sumatra, Indonesia measuring magnitude 9.1 produced tsunamis that caused widespread disaster in 14 countries. A magnitude 9.0 earthquake in Japan in 2011 also caused a tsunami that crossed the Pacific Ocean. All three were mega-thrust earthquakes on or near ongoing subduction-zone boundaries that, in a period of minutes, released centuries of accumulated strain and caused rebound in the overlying plates.