

Chile quake: This was big but a bigger one awaits, scientist says

By Emma Lacey-Bordeaux, CNN

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(CNN) -- This one was big but it's not the Big One.

An [8.2-magnitude earthquake struck off the coast of northern Chile](#) Tuesday night, triggering small landslides, setting off a tsunami and killing at least five people.

But geologists say an even larger quake in the region is lurking.

"This magnitude 8.2 is not the large earthquake that we were expecting in this area," said Mark Simons, a geophysicist at Caltech in Pasadena, California. "We're expecting a potentially even larger earthquake."



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It could be tomorrow. Or it could be 50 years.

"We do not know when it's going to occur," he said.



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Here's why:

Chile sits on an arc of volcanos and fault lines circling the Pacific Ocean known as the "Ring of Fire." This area sees frequent earthquakes and volcanic eruptions.

The country itself has seen no shortage of seismic activity in recent years.

Since 1973, Chile has had more than a dozen quakes of magnitude-7.0 and above.

[Powerful earthquake strikes off Chile, triggers tsunami](#)

In 2010, about 500 people died when an 8.8-magnitude earthquake hit. That quake was so violent, it moved one whole city about 10 feet west.

Simons says Tuesday's quake is of interest because the fault line along Chile's coast has constantly shifted during the last 140 years.

In recent weeks, this area has seen a cluster of activity-- something like 50 to 100 smaller quakes.

Then, late last month, a 6.7 and a 6.1 magnitude quake struck.

When quakes happen, the surface ruptures. The two sides of the fault slip past each other.

But the area to the north and south of Tuesday's quake "did not rupture in this event," Simons said. And it's "still an area that hasn't ruptured in 140-odd years."

Given that it's an area of frequent quakes, and frequent ruptures, it may only be a matter of time.

"We expect another 8.8-8.9 earthquake here sometime in the future," Simons said.

The good news? "It may not occur for many, many years."

[What you need to know about earthquakes](#)

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