

Hana Hamam

"911 What's your Emergency?"

How the new crash detection
feature can potentially save
your life

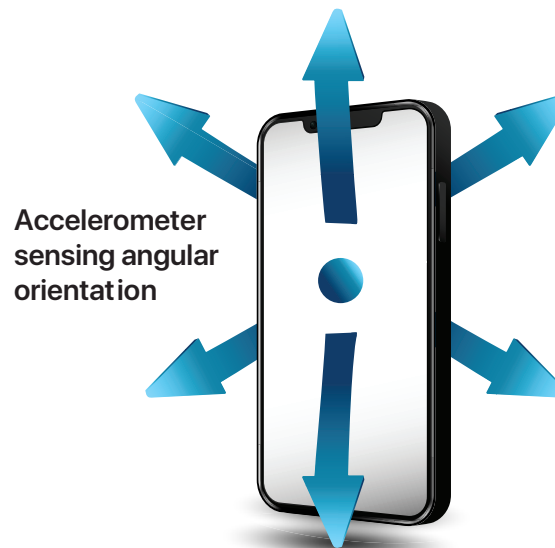
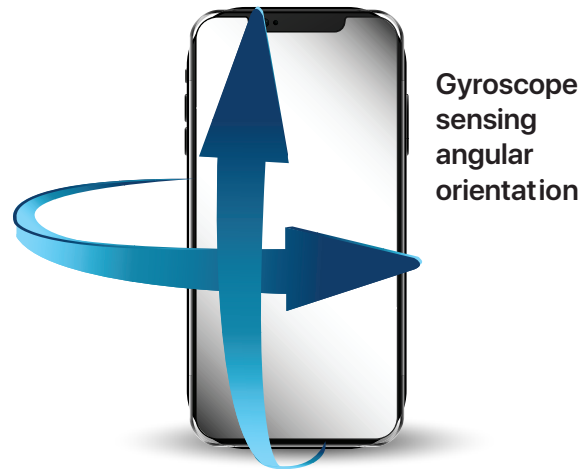


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During its Far out event, where Apple announced the latest iPhone 14 series, the company unveiled a new feature: Crash Detection. If a user experiences a severe vehicle crash and is possibly unresponsive, their iPhone 14 will be capable of alerting emergency services. Here is everything you need to know about Crash Detection, how it works, and which Apple Watch and iPhone models support it.

The new iPhone 14 models feature new hardware that can detect 256g of force - this should be plenty, considering the highest G-force endured by a person comes in at 214g, recorded in 2003 when an IndyCar racing driver crashed while travelling at 354km/h, according to the Guinness World Record. This means the device can detect the exact moment of impact and any change in motion or trajectory of the vehicle. Moreover, they have a high-dynamic range gyroscope and a new dual-core accelerometer. Thanks to these detectors, user's phones can



automatically notify emergency services, says Apple.

A three-axis gyroscope also monitors "drastic changes in a car's orientation," while the internal barometer can detect when airbags have been deployed due to the sudden irregularities in air pressure within the car cabin. Apple says the microphone monitors "extreme sound levels" that occur when a collision takes place. According to the company, if the user agrees, the microphones are only enabled when driving is detected, therefore no actual sound is recorded otherwise, maintaining user privacy. The GPS can determine sudden speed changes, before a crash and any sudden lack of movement, as well as inform the device that it's traveling on a road, measured by the built-in barometer.

If a device detects that a user was in a severe crash, an alert is triggered for ten seconds. Users can swipe the screen to either immediately call emergency services

or dismiss the alert if it is not an actual emergency. A ten-second countdown will start if the user does not respond to the prompt. Once the countdown ends, the device will call emergency services. When emergency services are contacted, Siri will play a looped audio message, played out from the speakers of the iPhone. When services answer the call, the message states: "The owner of this iPhone was in a severe car crash and is not responding to their phone".

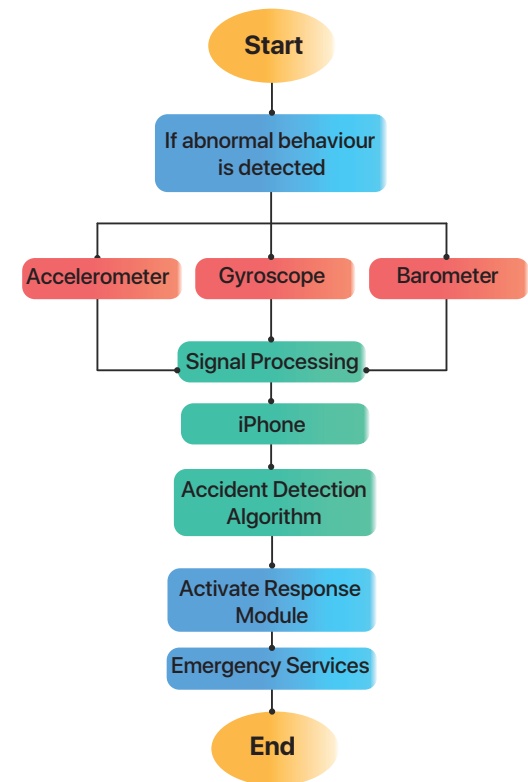
Additionally, the device will send their location with latitude and longitude coordinates and a suggested search radius. If the user adds emergency contacts, the iPhone sends a message to share their location and let those contacts know they've been in a severe car crash. If the user also set up a Medical ID, their iPhone will display critical information like their blood group that can be accessed by emergency medical services.

During its testing and development, Apple said it spent years studying vehicle impacts at crash test labs and focused on four types of severe car crashes: Front-impact, side impact, rear-end collision, and rollovers.

In each crash test, Apple captured data through its gyroscopes and accelerometers, and then it used machine learning to incorporate all these signals into its trained algorithms on over a million hours of real-world driving and crash record data, to be able to accurately detect when an accident has taken place. The result is Crash Detection, which Apple hopes you'll never have to use. The company states Crash Detection can work across the most popular types of vehicles, like passenger cars, SUVs, and pickup trucks.

Vehicle crash detection is a complex system, which explains why it is critical to have a high-performance AI model to forecast a car crash

as it can save the user's life. If it performs as advertised, it has the potential to save many lives by notifying emergency services on time. Data-driven approaches are continuously offering life-changing use cases.



References:

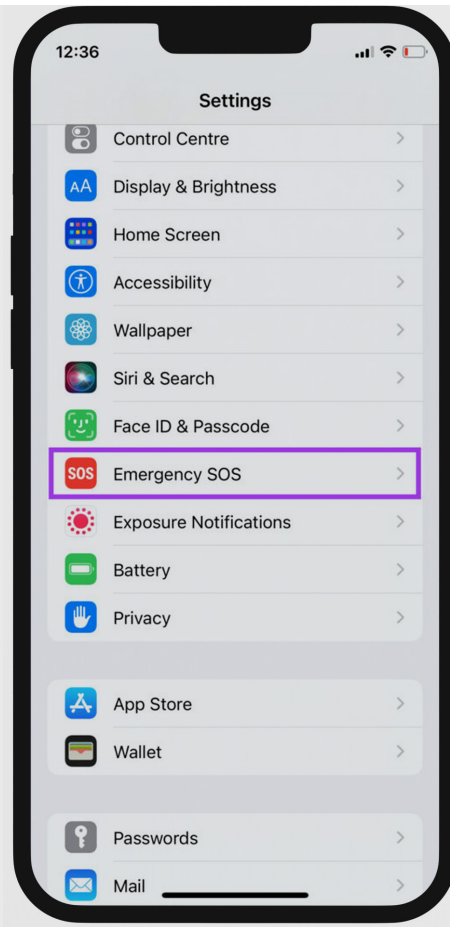
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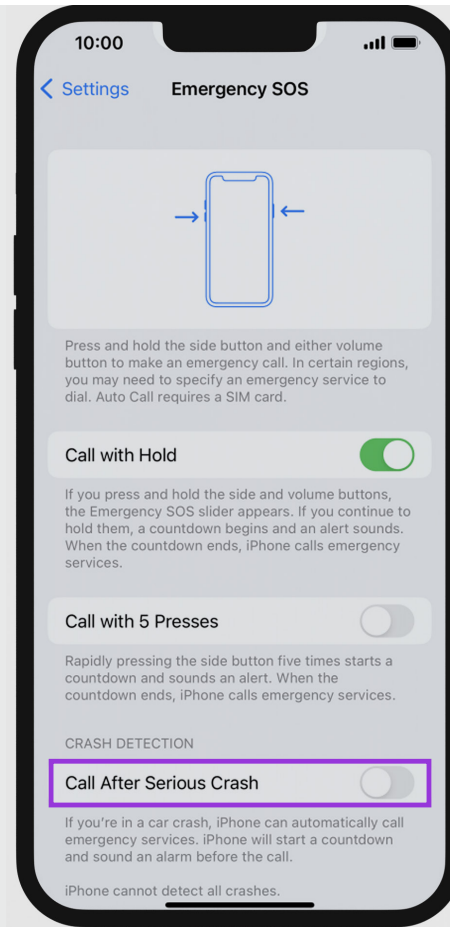
How to Enable Crash Detection:



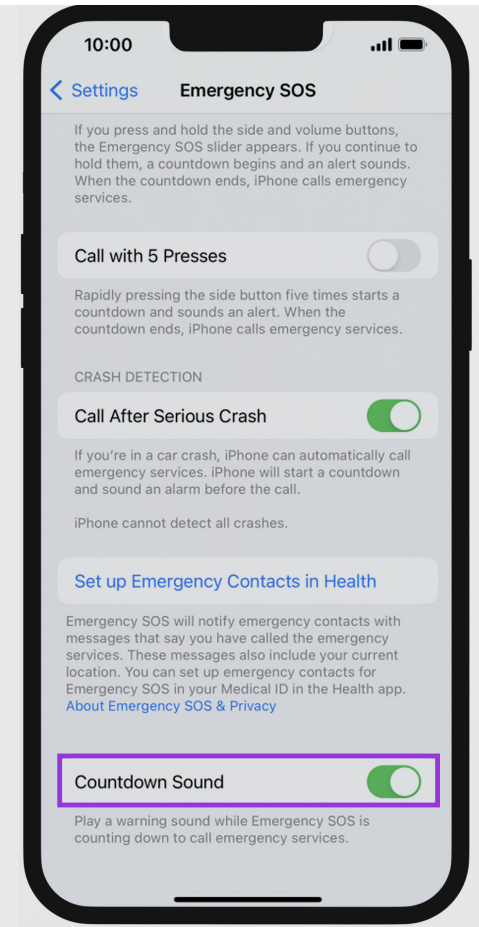
1. Select the Settings app on the home screen



2. Find "Emergency SOS" and select it



3. Turn on Crash Detection and press the indicator next to "Call After Serious Crash" to turn on the function



4. Turn Countdown Sound on or off and press the indicator next to "Countdown Sound" to turn the function on or off