Tech Reviews

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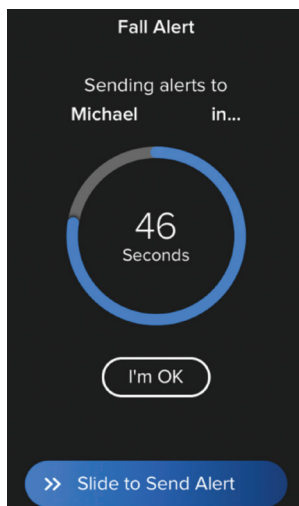
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> "In testing with the phone-based app (iOS), I found myself regularly triggering the alarm unintentionally"

Fall Alert

Sending alerts to
Michael   in…

46
Seconds

I'm OK

>> Slide to Send Alert

The future of fall detection

Falls are a major global health burden. According to the World Health Organization, they are the second leading cause of unintentional injury deaths worldwide, with adults older than 65 at the greatest risk of a fatal fall. For every death resulting from a fall, there are four cases of permanent disability [1].

For decades, the most common approach for in-home falls management has been a neck-worn pendant with an emergency button that connects directly to a dispatch service when needed. However, in addition to the steep monthly subscription fees for 24/7 monitoring, there may be a stigma attached to wearing these devices for some seniors (for North Americans, I suspect the ubiquitous 1990s "I've fallen, and I can't get up" commercials did not help with this).

Though pendant-style systems are still a great option for those who are willing to wear one, I was curious to know what alternatives are out there.

FallSafety Home

FallSafety Home is an app-based fall detection solution, available for iOS, Apple Watch and Android. The automatic fall detection system is triggered when a fall is detected, followed by inactivity. Once a fall is detected, a countdown begins along with an audio indicator. If the countdown is not cancelled before the timer runs out, alerts (voice, SMS and e-mail) are sent to the user's emergency contact(s) along with the user's location information. Users can set-up a single emergency contact for free or pay $4.99 monthly for up to five contacts.

The app is easy to set up and has a simple, logical interface for modifying preferences. Of course, for the fall detection system to work, the user must have a compatible device on-hand when a fall occurs. In testing with the phone-based app (iOS), I found myself regularly triggering the alarm unintentionally, especially when throwing my phone down onto a couch or tossing my lab coat (with phone in pocket) onto a chair. Users who are as cavalier with their devices as I am should be aware of the potential for false alarms.

Apple Watch

The Apple Watch (series 4 or later) has a built-in fall detection feature that automatically turns on when a user is age 55 or older. When a hard fall is detected and the user is still moving, the watch will tap the user on the wrist, produce an alarm, and will give the user the option to call emergency services or cancel the alert. If the user remains immobile for a minute following a hard fall, emergency services are called automatically. Once connected with emergency services, an audio message with details about the fall and the user's location will be shared in case the user is not able to communicate.

It is not exactly clear how the Apple Watch fall algorithms work, which raises concern around the possibility of inadvertent calls to emergency services. Additionally, not all seniors will welcome the use of high-tech gadgets like the Apple Watch.

Starkey Livio Edge AI Hearing Aid

Hearing loss is a known risk-factor for falls [2]. Starkey is the first hearing aid company to launch hearing aids with a built-in fall detection and alert system. Users receive the normal benefit from hearing aid amplification plus the added benefit of an ear-level fall detection device. Of course, all of this technology comes with a high price tag and would not be an appropriate solution unless the user has measureable hearing loss.

With the Livio Edge AI, users can select up to three contacts, who are notified automatically with GPS data when a fall occurs. An accompanying app (Thrive, available for iOS) can be used to maintain contacts and set other preferences. **- CF**

References

1   Yoshida, S. A Global Report on Falls Prevention Epidemiology of Falls. World Health Organization. 2007. https://www.who.int/ageing/projects/1.Epidemiology%20of%20falls%20in%20older%20age.pdf Last accessed November 2020.

2.   Lin FR, Ferrucci L. Hearing loss and falls among older adults in the United States. *Archive of Internal Medicine* 2012;**172**:369-71.

> "Users receive the normal benefit from hearing aid amplification plus the added benefit of an ear-level fall detection device"