

Researchers find worries about elderly falls lead to preventive action

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Carnegie Mellon University's College of Engineering conducted a survey on falls among the elderly and discovered that Americans are very worried about an elderly parent falling—and that this worry leads to action.

Every 13 seconds, an older adult is treated in the emergency room for a fall. Every twenty minutes, an older adult dies from a fall-related trauma. Considering these statistics, it's understandable why the survey found that 54 percent of 1,900 U.S. adults are worried about an older parent falling, and why 81 percent of respondents expressed an interest in new sensor technology that can anticipate and prevent falls.

Pei Zhang, associate research professor of electrical and computer engineering, and Haeyoung Noh, assistant professor of civil and environmental engineering, are developing such active fall-prevention sensors for senior [care facilities](#) and private homes that can determine both who is in danger and where. Their technology monitors an individual's gait and can send mobile alerts not only to nurses and caregivers but also to the individual themselves, if their gait changes threateningly. While the goal is to anticipate and prevent falls, the technology is programmed to immediately notify someone, which can include emergency responders should an individual experience a sudden fall—even if the person is unconscious.

"Many older adults in senior care facilities are restricted to wheelchairs when not under the direct care of a nurse, but this technology could

allow them to regain some of their independence," said Noh, whose sensors are currently being tested at Vincentian Home in Pittsburgh and Lucas Physical Therapy and Fitness in Sunnyvale, Calif.

Of the 1,900 people surveyed, a little over 1,000 adults are concerned a parent may experience a fall, and 70 percent of these individuals worry at least every week, if not every day. The frequency and amount that people worry is not influenced by whether or not the parent lives alone, although they are slightly less troubled if the parent lives in an [assisted living](#) or senior care facility. Sixty-two percent of those with parents in assisted living or senior care facilities, however, still worry once a week or every day.

All of this anxiety explains why, according to the survey, people are very responsive about caring for their parents. They frequently visit their parents and also have neighbors or staff who look after them. Forty-four percent of respondents said they or a sibling check in on a parent daily, while 33 percent said they or a sibling check in every week. Another 12 percent said they stop by as needed. In addition, 56 percent of respondents reported that neighbors or staff physically check on their parent daily, while 27 percent said someone visits every week.

Although there was no difference among gender or age, the survey did find that those with higher education levels and higher incomes worry less. The survey does not suggest why this may be, but it does show that those with higher incomes are not more likely to have their parent in a senior care facility or assisted living facility, nor are they more likely to have a live-in caretaker for their parent. However, it does appear that more people with [higher incomes](#) have Life Alert for their parents—although only 15 percent of respondents have parents with Life Alert.

"Our sensors are designed to predict and anticipate falls so individuals

can worry less about their parents with the knowledge that our technology will discover their [parents](#) are not walking the way they normally do, whether because of medication or because they've become fatigued," Zhang said.

Provided by Carnegie Mellon University

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