

Robots may soon join ranks of Alzheimer's caregivers

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MARIO and nursing home resident. Photo: NUI Galway

(HealthDay)—Robots work on assembly lines and assist doctors in the operating room. They manage inventory in warehouses and vacuum floors in homes.

And one day soon, they could help care for Alzheimer's [patients](#).

Several teams of scientists from around the world are investigating ways in which robots might help manage the daily living tasks of people with Alzheimer's disease.

Some robots help patients in and out of bed, remind them to take medication, measure their mood and provide regular updates to human caregivers.

A South Korean-made [robot](#) called Silbot3 has shown promise in this area, said researcher Elizabeth Broadbent. She's an associate professor of health psychology with the University of Auckland in New Zealand.

"It is designed to enable people to stay at home for longer before needing to go into a care home," Broadbent said.

"While a human could help with these things, the burden on caregivers of people with dementia is very high. Some people do not have a [caregiver](#) at home and caregivers often need a break during the day to get other things done. Robots can help provide extra care," she explained.

Other research teams have focused on using robots to combat the loneliness and isolation that can affect some Alzheimer's patients.

Broadbent and her colleagues have found that a Japanese baby seal robot called Paro can help calm people with dementia and keep them company.

"It can be good for people who cannot look after a real animal," Broadbent suggested.

Another team has taken this approach a step further, using a robot named MARIO.

MARIO has been built and programmed to "provide companionship and support the person with dementia to connect and/or remain connected to their family and friends, and stay engaged in activities and events that interest them," said researcher Dympna Casey. She's a professor with the National University of Ireland-Galway's School of Nursing and Midwifery.

The robot offers a number of individualized applications that promote social connectivity, Casey said.

These include more general offerings like game apps, news apps and apps that play music, as well as programs more specifically geared to helping the patient feel less lonely:

- The "My Memories" app presents photographs from the patient's past, with the robot prompting a conversation about the content of the photo.
- "My Family and Friends" gathers social media information to keep patients informed about loved ones and friends.
- "My Calendar/Events" reminds users of special events happening in their families or communities.

provide tools of support for the human caregiver, and we still have that human touch."

More information: The MARIO Horizon 2020 project has more about [the MARIO robot](#).

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Tests of MARIO in hospitals and residential care facilities have provided positive results, Casey said.

"People with dementia were overall very accepting of the robot, as were carers and relatives. They had positive perceptions toward MARIO, and of having [social robots](#) in [dementia care](#)," Casey said.

"People with dementia enjoyed their interactions with MARIO and they often referred to MARIO as he or she, and some referred to MARIO as 'a friend.'"

James Hendrix, director of global science initiatives for the Alzheimer's Association, said that robots could prove very useful in helping patients with dementia.

Robots could provide badly needed assistance for weary caregivers, he said.

"Caregivers of people with dementia carry a really heavy burden," Hendrix said. "If there's a way we can lighten that burden for folks a little bit, make it a little easier for them, that's going to help the person with dementia as well. Their care partner is just going to be that much more rested, that much more healthy, and that much more happy."

These robots also could help doctors better care for patients, by collecting data that tracks their mental decline and other health problems, Hendrix said.

On the other hand, Hendrix believes there should always be a role for human caregivers.

"I don't want to see that we totally impersonalize the care and support of people with [dementia](#), that we warehouse them somewhere and they're managed by robots," Hendrix said. "The robotics

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