

Some gains but many mysteries as Alzheimer's epidemic looms

September 17 2012, by Mariette Le Roux

More than 100 years after it was first caught in the act of decaying a patient's brain, Alzheimer's remains one of medicine's greatest challenges as it robs ever more people of their memory and independence.

Researchers make halting progress, reporting small steps forward along with many frustrating setbacks.

And while care for Alzheimer's sufferers has improved since former US president Ronald Reagan and British fantasy author Terry Pratchett helped lift the [stigma](#), the key workings of the illness remain a riddle.

Alzheimer's disease causes two-thirds of dementia cases—attacking one in 200 people—and finding a cure has never been more pressing as the world's population grows and ages.

"There is going to be a tsunami in terms of (cost) burden," Dean Hartley, director of science initiatives at the US Alzheimer's Association, told AFP ahead of World Alzheimer's Day on September 21.

A door to hope slammed shut last month when drug giants Eli Lilly, [Pfizer](#) and Johnson & Johnson stopped tests of eagerly-anticipated therapies that failed in clinical trials.

On September 6, French researchers announced plant extract ginkgo biloba, widely marketed as a natural Alzheimer's remedy, did not

actually prevent dementia.

Blaming insufficient funding, at least in part, researchers say they still do not know quite what to make of the plaques and tangles that German doctor Alois Alzheimer first spotted in the brain of a dementia patient who died in 1906.

Little follow-up work was done until the 1960s, partly because fewer people were then living to an age when the disease shows up.

Today, the sole drugs in our arsenal treat some symptoms but are powerless to slow the progression of Alzheimer's.

"People are absolutely desperate for medicines—people suffering from the disease, and people close to them," said Eric Karran, research director at Alzheimer's Research UK.

"Where we are at the moment is a critical period for this disease," he added.

"The pharmaceutical industry has had a range of very, very expensive failures. I worry they might be thinking: 'this is very difficult and we will just have to wait until the science is more evolved'."

Hartley and Karran said Alzheimer's received a fraction of the money governments spend on disease research despite being one of the costliest illnesses in terms of suffering and spending.

- Costs and complexity -

Alzheimer's Disease International (ADI) projects the number of people with [dementia](#) will rise from 35.6 million in 2010 to 65.7 million by 2030 and 115.4 million by 2050.

The cost, including hospital and home care, drugs and clinic visits, is expected to soar some 85 percent by 2030 from about \$600 billion (480 billion euros) in 2010—roughly the GDP of Switzerland.

But money is not the only problem.

The disease is a particularly complicated one to crack, not least because its effect on humans is nigh impossible to replicate in lab animals.

Its slow progression is an added hurdle.

"The disease seems to be present in people's brains maybe 15 years prior to... suffering symptoms," said Karran.

Alzheimer's normally becomes apparent around the age of 70, when family members observe a loved-one becoming forgetful and confused.

"When patients are available to be studied in clinical trials, you are actually looking at a disease that has been going on for 15 years," by which stage neurons would already have died, said Karran.

Scientists disagree on the respective roles of beta amyloid plaque build-ups and of a protein called tau which forms tangles inside these brain cells.

Most test therapies have targeted beta amyloids, but some now suggest it is actually tau killing the braincells.

"We still do not understand the relation between the structural damage and cognitive symptoms exactly," Dutch neurophysiology PhD student Willem de Haan told AFP.

Researchers are aiming for a treatment that will halt the disease at an

early stage—even before the onset of symptoms.

And while they have not succeeded, their work is throwing up some valuable clues along the way.

Already known is that a small percentage of people, more women than men, are genetically predisposed to developing Alzheimer's. A family history of the disease boosts the risk.

Some studies suggest healthy living may reduce the chances of those people who do not carry Alzheimer's-related genes of developing the disease.

Diagnostics, too, are improving: new research shows that a simple eye-tracking test and sleep disruption may be early indicators, helping victims make lifestyle choices before the disease steps into higher gear.

The experts believe that if governments, researchers and drug companies work together efficiently, a treatment may be available within 20 years.

But they also warn against giving false hope to desperate people.

"Finding a medicine for a chronic disease is far, far more complicated than, say, putting a man on the Moon," said Karran.

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