

Alzheimer's patients offered hope by Wits breakthrough

By TANYA FARBER

● A year ago this month, Eleanor Benton's husband, Matthew, died 70 years to the day that the couple first met.

In his final few years, she watched him disappear behind the curtain that is Alzheimer's disease. "It was so difficult to see such a strong person losing his memory and doing strange, uncharacteristic things," she said. "And people began avoiding him, which was very hurtful to us."

Now a new discovery by a group of South African researchers offers a glimmer of hope to the millions of people who share the Bentons' pain.

Within two years, it could appear in pharmacies as a simple nasal spray that slows down the progression of a disease that relentlessly kills brain cells and the connections between them when proteins clump together and deposit amyloid-beta plaque.

"To date there have been no substances that treat the Alzheimer's disease itself," said lead researcher Professor Stefan Weiss, from the University of the Witwatersrand.

"There are only substances to take the pain away, and there is palliative care. But this substance targets the actual protein aggregation itself, and that is a major breakthrough."

Weiss and his team nasally administered an antibody to mice that had been given the disease, and saw that within eight weeks they displayed significant improvement in memory and decreased amyloid-beta plaque formation.

The results of the research – funded by the South African Medical Research Council – were published last month in the biomedical journal *Oncotarget*.

The next step is an 18-month clinical trial in a hospital setting with human patients, and if all goes well, that will be followed by regulatory approval of the nasal spray,



Professor Stefan Weiss of the University of the Witwatersrand has been instrumental in groundbreaking research on Alzheimer's disease. Picture: Alon Skuy

Numbers & Facts

1

MILLION

People with Alzheimer's in South Africa

257

%

Anticipated growth of the disease by 2050 in sub-Saharan Africa

8

WEEKS

How long it took for vast improvement to be seen in the research mice

● Because Alzheimer's disease, the main cause of dementia, makes people behave strangely, they are often ostracised – either shut out socially, or seen as witches. A residential facility nurse who wanted to remain anonymous said: "When persons act in strange ways, the talk starts in villages and townships. They say: 'That one has been bewitched.' They go to those old people, vandalise their houses, burn their houses."

meaning it could be on pharmacy shelves in two years.

It has the potential to transform the lives of people with Alzheimer's and their caregivers, like Benton, who said Matthew – once a mountain club member – became terrified of sitting down because he felt like he was falling. "He was even terrified of sitting on the toilet," she said.

A woman from Umlazi, KwaZulu-Natal, who spoke to Alzheimer's Disease International for a sub-Saharan study of caregivers' experiences, said her husband disappeared after asking a stranger for a lift to Inchanga, where he grew up. On arrival, he had no idea where he was.

According to Alzheimer's South Africa, the disease is the most common cause of dementia and the risk of developing it "increases dramatically with age".

Symptoms include loss of memory, difficulty in finding the right words or understanding what people are saying, difficulty in performing routine tasks, and personality and mood changes. Eventually, sufferers are unable to care for themselves and "need help with all aspects of daily life".

One of the hardest aspects for caregivers is the behaviour of the patient. It "can cause a person to exhibit unusual and unpredictable behaviour... such as severe mood swings, verbal or physical aggression, combativeness, repetition of words, and wandering". As the disease progresses, it spreads to parts of the brain that control walking, swallowing and co-ordination. In this way, although Alzheimer's starts out as a problem with memory and thought, it eventually affects the functioning of the entire body and leads to death.



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Stefan Weiss

Lead researcher, Wits University