



Finally, flies have a point - unlocking the secrets to diseases such as Alzheimer's

By Michael Bradley

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Scientists have found a way of successfully treating flies that were given human degenerative brain diseases.

The Genetic Society of Australia conference in Melbourne yesterday heard how an insect best known for its insatiable appetite for rotting fruit has been catapulted to the forefront of attempts to prevent and cure conditions such as Alzheimer's, Parkinson's and Huntington's diseases.

US researchers have identified the human genes responsible for brain degeneration and put them into the humble vinegar fly.

Nancy Bonini, a biologist at the University of Pennsylvania, said: "What these mutant genes do is give the fly something which very much looks like Alzheimer's, Parkinson's or Huntington's disease.

"They exhibit the same fundamental features. They show signs of brain degeneration and they develop an abnormal accumulation of protein in their brain."

More importantly, Dr Bonini said she had identified compounds capable of controlling these conditions in the insects.

She said geldanamycin - a naturally occurring compound that is being trialled as an anti-tumour agent in humans - had been shown to stimulate genes in the fly that helped its body in times of high stress.

"We gave the flies these compounds and, as a result, it prevented the build-up of plaque in the fly's brain and stopped their degeneration," Dr Bonini said. "What we have really done is use fly genetics to prevent these diseases."

About 162,000 Australians suffer from some form of dementia or brain degeneration.

A report by Alzheimer's Australia titled *The Dementia Epidemic* estimates that more than 500,000 people will suffer from dementia by 2041.

Dr Bonini has spent more than six years working with the impaired flies.

"What we have done is demonstrate that by controlling and stimulating genes we can have a major impact. Our hope is that we can develop drugs capable of at least slowing down the progression of these diseases, and potentially their effect could be even bigger."

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