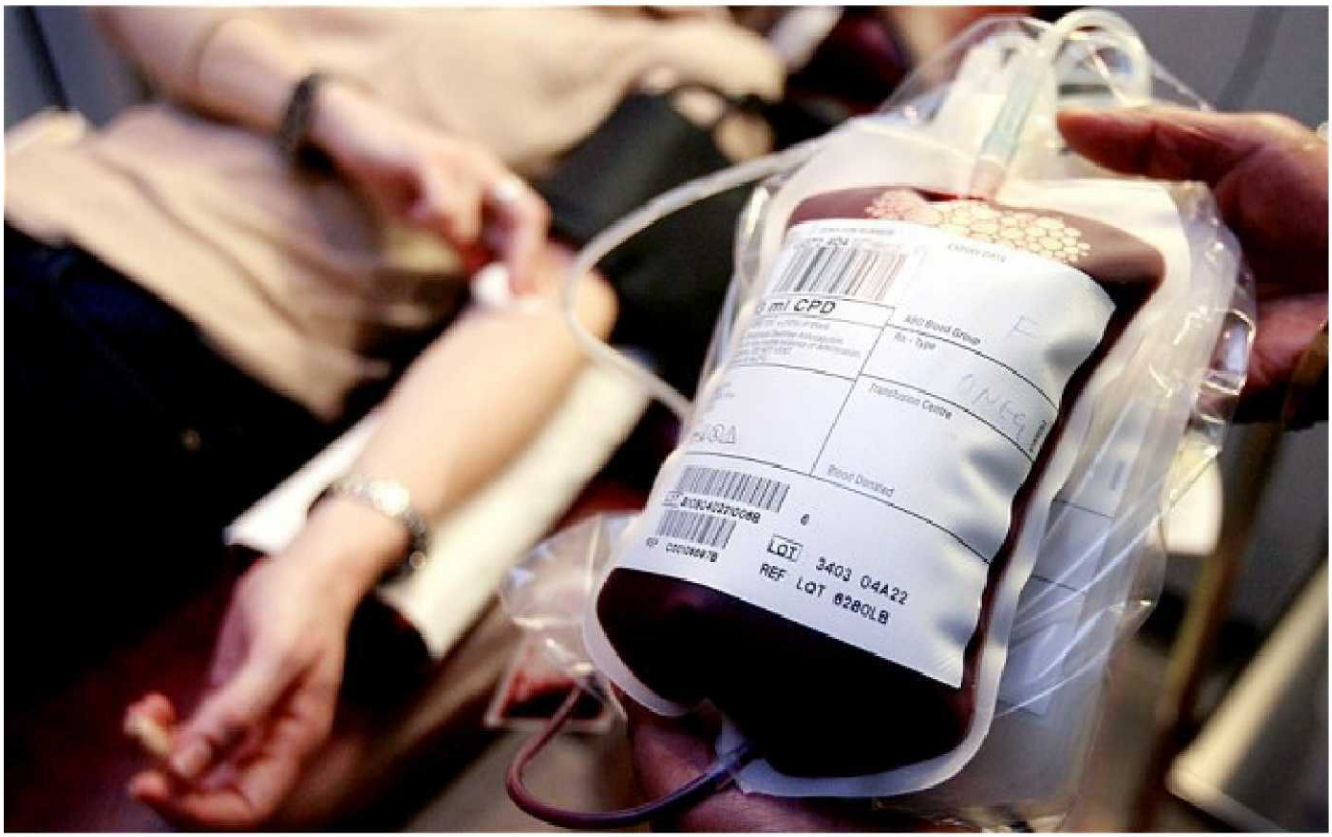
Transfusion of young blood could delay onset of diseases like Alzheimer's

Giving middle-aged people a transfusion of young blood could keep their brain healthy in old age and delay the onset of diseases like Alzheimer's, scientists claim.



Dr Villeda said older people's blood may damage the brain because it contains a greater number of inflammatory proteins in its plasma Photo: Toby Melville/ REUTERS

By Nick Collins, Science Conespondent, New Orleans

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Changes in the composition of our blood as we age may cause the deterioration of memory and other brain functions by damaging connections in the brain.

Filtering younger blood into an older body could combat the problem by rejuvinating old tissue and keeping nerve cells in good working order, according to a new study.

It means people in their 40s or 50s could in future be given blood donated by someone in their early twenties to prevent their brain from deteriorating and stave off diseases like Alzheimer's.

Researchers from Stanford University found that old mice given transfusions of younger blood performed better in a memory task than those left to age natw-ally.

They also began to re-grow connections in their brains which had previously begun to disappear as part of the aging process and which affect memory.

A previous study had already established the opposite -that young mice given a transfusion of blood from older mice began to show signs of premature aging in their brains.

Dr Saul Villeda, who led the research, said he now plans to test the therapy on a mouse model of Alzheimer's disease, in which brain com1ections break down and cause loss of memory and learning ability.

Speaking at the Society for Neuroscience conference in New Orleans on Tuesday he said: "I think any sort of disease that has that component, there is a chance this might help.

'What I am thinking is if we can address it earlier, when ow· body still has the control to prevent this from happening, then we might not have to cure Alzheimer's, we might just be able to stop it."

Dr Villeda said older people's blood may damage the brain, and other parts of the body such as the muscles and vital organs, because it contains a greater number of inflammatory proteins in its plasma.

He gave a group of 18-month old mice, which were nearing the end of their lifespans, eight transfusions of younger mice's plasma over the course of a month, adding up to five per cent of their total blood supply.

They were then put in a water maze where they had to learn the route to a hidden platform on which they could stand. Untreated mice usually made two or three wrong turns but the treated group were able to find the right path most of the time.

'They were 18 months old but they were acting much younger, like a four to six-month-old," Dr Villeda said.

He also found that mice given a younger blood supply began to sprout new synapses in their brains, which carry messages between nerve cells, giving them 20 per cent more than the untreated mice on average.

Fm·ther trials will attempt to discover exactly which inflammatory proteins in older people's blood cause the damage, which could enable doctors to solve the problem with a drug.

Researchers will also examine the possibility of using blood transfusions for protection against

disease in the elderly.

Dr Villeda said: 'Do I think that having young blood could have an effect on a human? I am thinking more and more that it might.

'We have blood transfhsions all the time after chemotherapy and for surgery. I think now we know something happens, you can start treating it more as a therapy."