

Research group finds blood transfusions from young mice to old improves brain function

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Bags of blood collected during donation. Image: Wikipedia.

(Medical Xpress)—A research team from Stanford University has found that injecting the blood of young mice into older mice can cause new neural development and improved memory. Team lead Saul Villeda presented the groups' findings at this year's Society for Neuroscience conference.

The researchers were following up on work by another team also led by Villeda that last year found that when younger mice were given transfusions of blood from older mice, their mental faculties aged more quickly than non transfused young mice. In their paper published in the journal *Nature*, the team also noted that the reverse appeared to be true as well, namely that the older mice derived a degree of mental benefit

from the transfusions.

In this new research, the team connected the bloodstreams of an older mouse and a younger mouse, allowing their blood to comingle. Subsequent brain scans found that the number of [neural stem cells](#) in the brains of the older mice increased by 20 percent after just a few days, indicating that new [neural connections](#) were being made – a necessary occurrence for increased [memory retention](#).

To find out if such differences could be measured in a behavioral sense, the team gave transfusions of [blood plasma](#) from young mice to older mice and then tested them in a standard water maze; one that requires strong [memory skills](#). The team found that the transfused mice were able to perform as well as much younger mice, while a similar group of older mice that did not get transfusions were much less successful at solving the maze.

Villeda pointed out in his talk that his team's findings don't indicate that older people should try to obtain transfusions from younger people to stave off dementia or Alzheimer's disease, as it's not yet known if the same results might be had. What needs to happen, he said, is for researchers to look more closely at young mouse blood compared to the blood of older mice to discover what differences in it might account for the increased neural buildup it offers to older mice.

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