

## Youthful blood may not be a miracle elixir against aging, despite hopeful research

For decades, scientists have sought to understand the anti-ageing effects of parabiosis, a technique in which researchers sew a young mouse and an old mouse together so that they share a circulatory system. The young mouse's blood seems to rejuvenate the old mouse, regenerating its wasting muscles and restoring its cognitive abilities.

In 2013, a team led by Amy Wagers, a stem-cell researcher at Harvard University in Cambridge, Massachusetts, seemed to offer an explanation for this blood-doping effect. The scientists found that levels of a protein called GDF11 decreased in the blood of mice as they grew older. When the researchers injected the protein into the heart muscle of old mice, it became 'younger' — thinner and better able to pump blood.

Those results quickly made GDF11 the leading explanation for the rejuvenating effects of transfusing young blood into old animals. But that idea was confusing to many because GDF11 is very similar to the protein myostatin, which prevents muscle stem cells from differentiating into mature muscle — the opposite effect to that seen by Wagers and her team.

David Glass, executive director of the muscle diseases group at the Novartis Institutes for Biomedical Research, and his colleagues set out to determine why GDF11 had this apparent effect. When the Novartis team used a more specific reagent to measure GDF11 levels in the blood of both rats and humans, they found that GDF11 levels actually increased with age — just as levels of myostatin do. That contradicts what Wagers' group had found.

**The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: [‘Young blood’ anti-ageing mechanism called into question](#)**