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Health

A youthful brain and immune system may be key to a long life



YADID LEVY/ROBERTHARDING/ALAMY

It seems that some of our organs are more important for longevity than others

WHEN it comes to living a long life, not all organs are created equal – having a youthful brain or immune system seem to be crucial.

We already knew that organs age at different rates. To find out which have the biggest effect on lifespan, Hamilton Se-Hwee Oh at the Icahn School of Medicine at Mount Sinai in New York and his team analysed the levels of nearly 3000 proteins in blood samples collected from more than 44,000 people who enrolled in the UK Biobank study when they were between 40 and 70 years old.

The researchers first looked at where these proteins were abundant in the body, indicating where they had important functions. They then created machine-learning models trained on protein-level data from half the participants, and used these to predict organ and immune system ages for the other half.

The team found that having one prematurely aged organ, or an aged immune system, was linked to a 1.5- to 3-fold increased risk of death during the follow-up period, which lasted for an average of 11 years.

Having younger organs wasn't generally linked to a reduced risk of death, with the exception of a young brain or immune system, where the risk of death declined by about 40 per cent – rising to 56 per cent if both of these parts of the body were youthful (*Nature Medicine*, doi.org/pvvx).

"The brain and immune system coordinate a lot of other things around the body, so if those go wrong, it's not too surprising they might have outsized effects on lifespan," says Alan Cohen at Columbia University in New York.

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