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Brain Imaging Data Highlights Relationship Between Weight and Brain Health in Children

A study, led by the University of Yale, assessed brain imaging data from 5,169 children between the ages of nine to ten years to examine the connection between weight and brain health. The findings were presented at this year's Radiological Society of North America.

Whilst previous studies have reported there is a link between childhood obesity and reduced cognitive function, the findings of this study help to indicate why this may be the case.

Using a very large dataset, the participants in the study very closely represented the U.S. population's sociodemographic, ensuring the results are generalisable to the population.

The team used several types of brain images to collect information on brain structure, the integrity of white matter and brain network activity.

Simone Kaltenhauser, a research fellow at Yale School of Medicine and lead author of the study, said "*Our main finding was that higher weight and body mass index in typically developing 9- to 10-year-olds are associated with poor brain health*".

The study found children with higher weight had a thinner outer layer of the brain a lower cortical thickness. Whereas children with lower weight had higher cortical thickness. The study further revealed children with higher weight their white matter was impaired, and their brain networks involved in reward and decision processes and cognitive control had reduced connectivity, hindering cognitive abilities.

The study was repeated with data collected from the same children two years later. After re assessing brain

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imaging data, the results were similar, illustrating there is a link between obesity and brain health.

Kaltenhauser summarised that, “At this point, we can’t yet say whether weight influences brain health, or if brain health influences weight, or if it’s a little of both. But we’re confident we will be able to do so in the future”.

Source:Universityof Yale

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