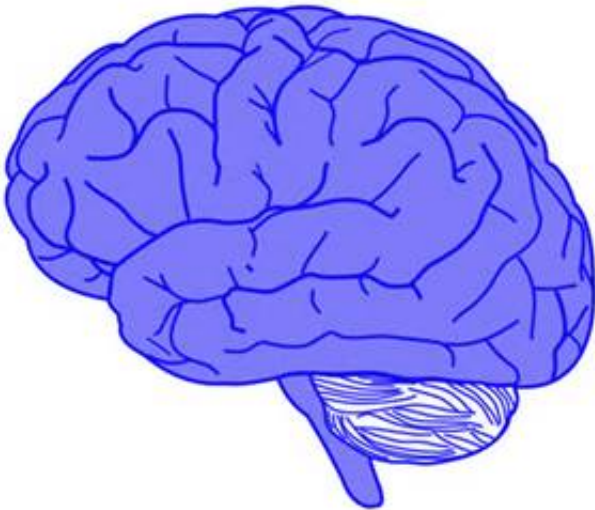


# Working memory positively associated with higher physical endurance and better cognitive function

December 5 2017

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Credit: public domain

Mount Sinai researchers have found a positive relationship between the brain network associated with working memory—the ability to store and process information relevant to the task at hand—and healthy traits such as higher physical endurance and better cognitive function.

These traits were associated with greater cohesiveness of the working

memory brain network while traits indicating suboptimal cardiovascular and metabolic [health](#), and suboptimal health habits including binge drinking and regular smoking, were associated with less cohesive working memory networks.

This is the first study to establish the link between working memory and physical health and [lifestyle choices](#).

The results of the study will be published online in *Molecular Psychiatry* on Tuesday, December 5, at 4 am EST.

The research team took brain scans of 823 participants in the Human Connectome Project (HCP), a large brain imaging study funded by the National Institutes of Health, while they performed a task involving working memory, and extracted measures of brain activity and connectivity to create a brain map of working memory. The team then used a statistical method called sparse canonical correlation to discover the relationships between the working memory brain map and 116 measures of cognitive ability, physical and mental health, personality, and lifestyle choices. They found that cohesiveness in the working memory brain map was positively associated with higher physical endurance and better cognitive function. Physical traits such as high body mass index, and suboptimal lifestyle choices including binge alcohol drinking and regular smoking, had the opposite association.

"Working memory accounts for individual differences in personal, educational, and professional attainment," said Sophia Frangou, MD, PhD, Professor of Psychiatry at the Icahn School of Medicine at Mount Sinai. "Working [memory](#) is also one of the brain functions that is severely affected by physical and mental illnesses. Our study identified factors that can either support or undermine the [working memory](#) brain network. Our findings can empower people to make informed choices about how best to promote and preserve [brain](#) health."

Provided by The Mount Sinai Hospital

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