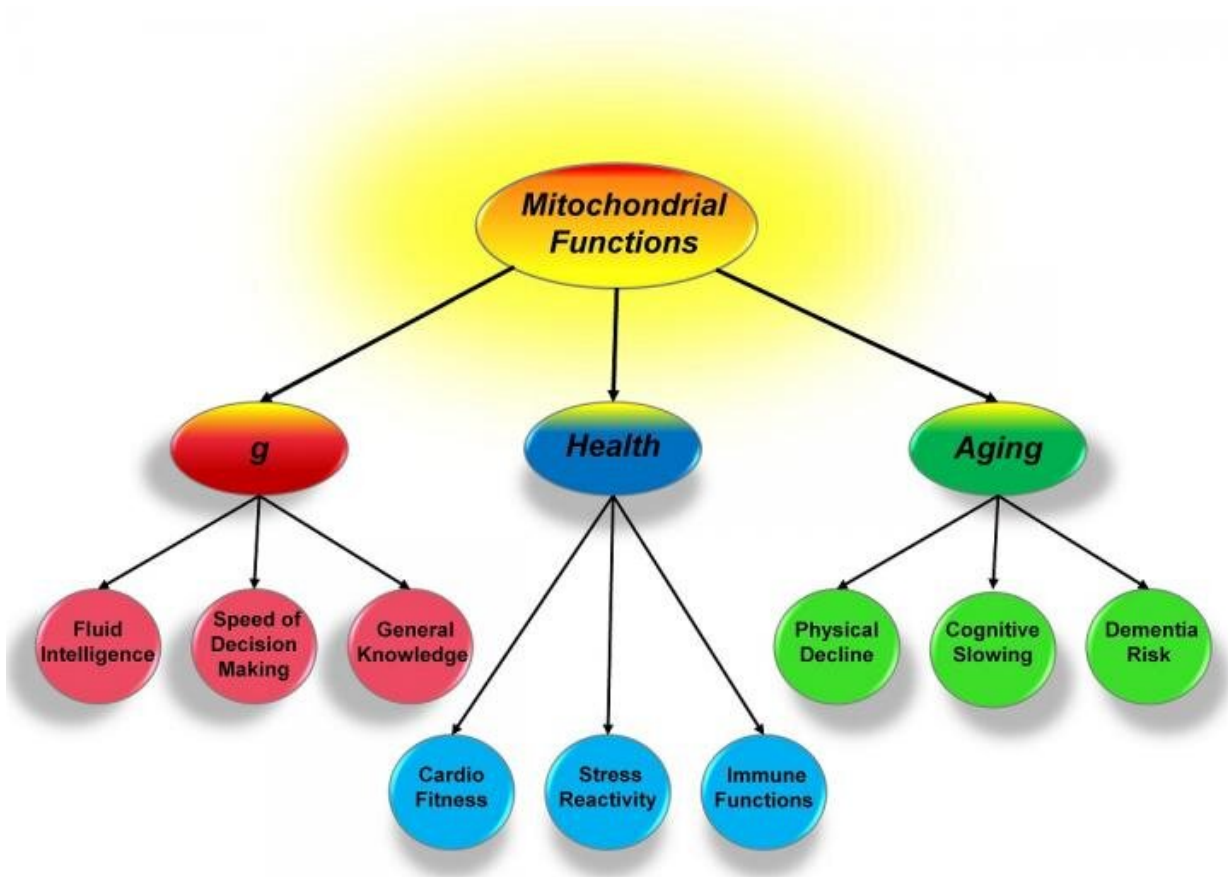


Intelligence can link to health and aging

May 8 2019, by Eric Stann



In a new study, a University of Missouri scientist suggests a model where mitochondria, or small energy producing parts of cells, could form the basis of what links a person's general intelligence, health and aging. This insight could provide valuable information to researchers studying various genetic and environmental influences and alternative therapies for age-related diseases, such as Alzheimer's disease. Credit: University of Missouri

For over 100 years, scientists have sought to understand what links a person's general intelligence, health and aging. In a new study, a University of Missouri scientist suggests a model where mitochondria, or small energy producing parts of cells, could form the basis of this link. This insight could provide valuable information to researchers studying various genetic and environmental influences and alternative therapies for age-related diseases, such as Alzheimer's disease.

"There are a lot of hypotheses on what this link is, but no model to link them all together," said David Geary, Curators Distinguished Professor of Psychological Sciences in the MU College of Arts and Science.

"Mitochondria produce cellular energy in the [human body](#), and energy availability is the lowest common denominator needed for the functioning of all biological systems. My model shows mitochondrial function might help explain the link between [general intelligence](#), health and aging."

Geary's insight came as he was working on a way to better understand gender-specific vulnerabilities related to language and spatial abilities with certain prenatal and other stressors, which may also involve mitochondrial functioning. Mitochondria produce ATP, or cellular energy. They also respond to their environment, so Geary said habits such as regular exercise and a diet with fruits and vegetables, can promote healthy mitochondria.

"These systems are being used over and over again, and eventually their heavy use results in gradual decline," Geary said. "Knowing this, we can help explain the parallel changes in cognition and health associated with aging. Also with good mitochondrial function, the aging processes will occur much more slowly. Mitochondria have been relatively overlooked in the past, but are now considered to relate to psychiatric health and neurological diseases."

Geary said [chronic stress](#) can also damage mitochondria that can affect the whole body—such as the brain and the heart—simultaneously.

The study, "The spark of life and the unification of intelligence, health and aging," was published in *Current Directions in Psychological Science*.

More information: David C. Geary, The Spark of Life and the Unification of Intelligence, Health, and Aging, *Current Directions in Psychological Science* (2019). [DOI: 10.1177/0963721419829719](https://doi.org/10.1177/0963721419829719)

Provided by University of Missouri-Columbia

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