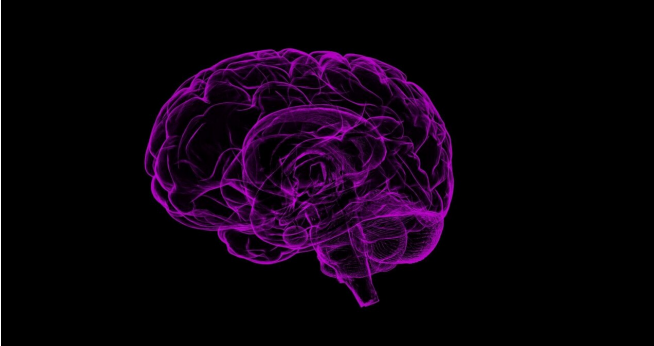


Video: Human brain scan

9 December 2020



More information: You can learn more about Ahmad Hariri's work at haririlab.com/.

Provided by Duke University School of Nursing

Credit: Pixabay/CC0 Public Domain

This colorful brain scan is a 3-D model created by tractography, which uses data collected with diffusion weighted MRI to map the brain's white matter. Each line represents a bundle of nerve fibers wrapped in a myelin sheaths, which insulate the fibers thereby speeding up the rate of communication between brain regions.

The colors aren't just for show. Each color represents a different direction of the fibers.

- Red indicates directions in the X axis: right to left or vice versa.
- Green indicates directions in the Y axis: front to back or vice versa.
- Blue indicates directions in the Z axis: foot-to-head direction or vice versa.
- The other colors indicate fibers that are crossing in different directions.

Neuroscientists are using tractography to better understand a range of disorders including depression, schizophrenia, and traumatic brain injury. Duke professor Ahmad Hariri uses tractography and other neuroimaging measures in the search for biological pathways mediating [individual differences](#) in behavior and related risk for psychiatric and neurological disorders.

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