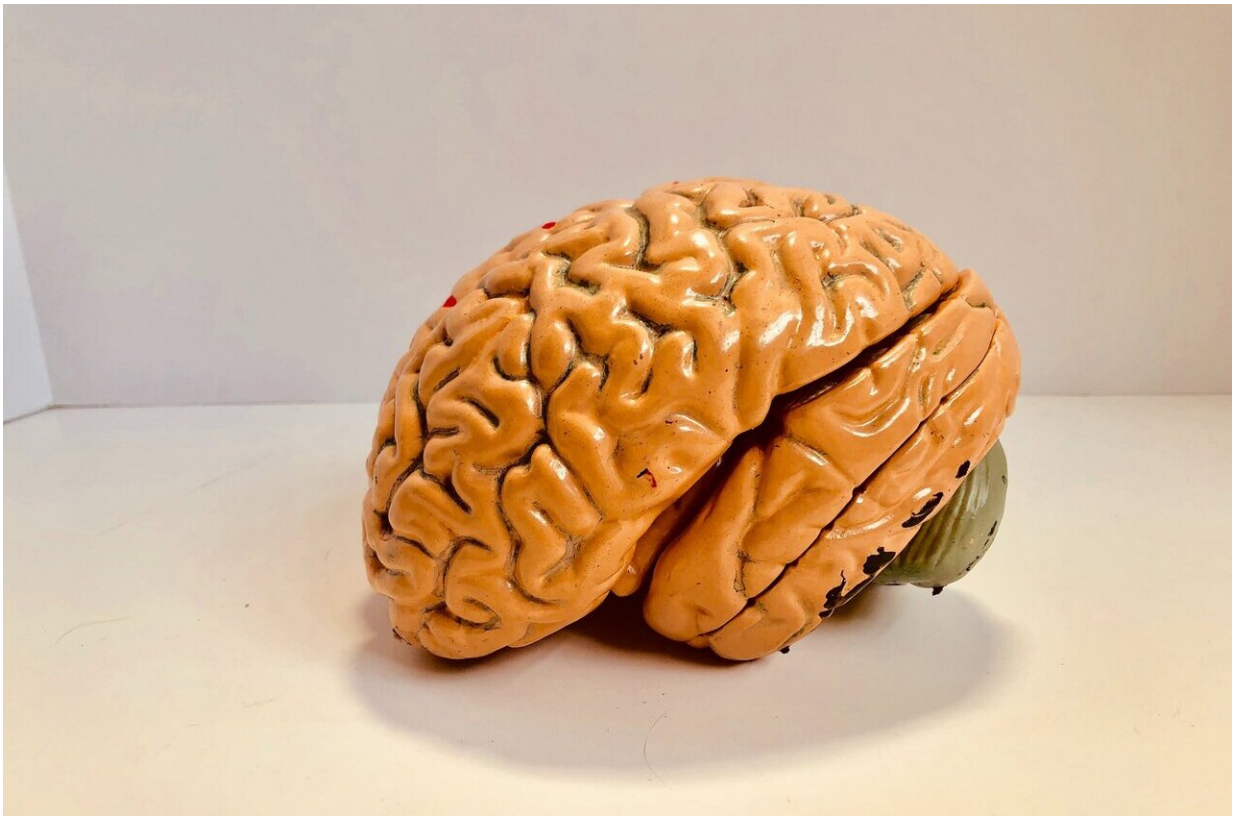


Human brain and testis found to have the highest number of common proteins

June 2 2021, by Bob Yirka



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A team of researchers from the University of Aveiro and the University of Porto, both in Portugal, and the University of Birmingham in the U.K. has found that for humans, the brain and testis have the highest number

of common proteins. In their paper published in the journal *Royal Society Open Biology*, the group describes their study of protein similarities between tissues.

In this new effort, the researchers noted that evidence from other studies has found some signs of similarities between testis and the [human brain](#). Intrigued, they initiated a study that involved analyzing the proteins produced by different parts of the body and then comparing them to see similarities. The researchers found the greatest similarities between the brain and testicles—13,442 of them. This finding suggests that the brain and the testicles share the highest number of genes of any organs in the body.

The team next focused on the shared proteins and found that most of them were involved in the development of tissue and communications. They suggest this finding was not surprising, considering that proteins from both organs consume high amounts of fuel—one to process thinking, the other to produce millions of sperm every day. They also note that testis and nerve cells are both involved in moving material created inside of them to an outside environment—sperm cells move fertilization factors and neurons move neurotransmitters. Both are part of processes known as exocytosis. Additionally, as part of exocytosis, sperm allow parts of themselves to fuse with an egg. With neurons, exocytosis involves creating neurites that allow for communication between cells.

The researchers also took a step back from their work, noting that there may be a reason for the similarities between the proteins produced by the two organs. They note, for example, that prior research efforts have shown a link between [brain](#) disorders and sexual dysfunction. And some have even found a link between the quality of [sperm](#) produced and intelligence. They suggest more research is required to better understand the connections between the two organs, if there are any.

More information: Bárbara Matos et al, Brain and testis: more alike than previously thought?, *Open Biology* (2021). [DOI: 10.1098/rsob.200322](https://doi.org/10.1098/rsob.200322)

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