

A Look Into the Brain

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Many people in the world live with mental health conditions, and researchers are constantly figuring out ways to monitor these conditions. Mental health is affected by changes in the brain. Currently, there isn't a non-invasive way to monitor the brain. This has made it difficult for doctors to discover how exactly the brain is changed by different diseases, specifically psychological illnesses.

A study was done recently involving mRNA from the brain. mRNA is similar to DNA, and its purpose is to deliver instructions to make proteins. In this study, researchers studied extracellular vesicles (EV) released by the brain. EVs are sacs of genetic material that carry mRNA and are in the blood around the brain. EVs carry genes from the brain but are outside of it, which allows researchers to see the changes occurring in the brain without entering it.

To test whether this would work, the researchers identified EVs in the blood of women during and after pregnancy. The EVs in women who were pregnant had mRNA that is only present during pregnancy. This proved that EVs can be used to determine genetic changes in a tissue from outside of a tissue. The researchers then used the EVs released by the brain to discover changes in the brain.

The results of the study showed that the mRNA from the brain contained genes that applied to specific brain functions. The mRNAs were enriched for genes associated with mood, schizophrenia, and epilepsy. This likely means that these mRNAs can be used to identify those conditions.

In the future, doctors are hoping to use these findings to create a test that detects changes in the mRNA from the EVs that come from the brain. These changes would connect to mental health conditions occurring in the brain. This would advance the way doctors diagnose and monitor patients with psychological disorders. Currently, doctors diagnose patients by having a conversation and recognizing symptoms. This study is extremely exciting because it could be the first method of identifying these conditions using blood.

References:

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