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DIAGNOSING BIPOLAR DISORDER USING MAGNETIC RESONANCE SPECTROSCOPY

DIAGNOSTICS

Diagnostic test for Bipolar Disorder that uses 31-Phosphorous Magnetic Resonance Spectroscopy to determine mitochondrial function levels in the brain.

TECHNOLOGY TYPE

Imaging
Magnetic Resonance Spectroscopy
Neuroimaging
Bipolar Disorder
Psychiatry

STAGE OF DEVELOPMENT

- Prototype in use at the U of U.

- Additional studies and reimbursement strategy required.

IP PROTECTION

Registered Copyright

U.S. Utility Patent Issued

Brain Phosphorus Spectroscopy in Bipolar Disorder
US8897854B2

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Reference Number: U-5135

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TECHNOLOGY SUMMARY

Bipolar Disorder (BD) is the fourth leading cause of disability among young people ages 10 to 24 globally. BD severely impacts quality of life by causing shifts in mood, energy, behavior, and ability to function. Many people suffer for years before obtaining an accurate diagnosis. New evidence links mitochondrial dysfunction in the brain to Bipolar Disorder.

Indicators of mitochondrial function in the brain can be measured using 31- Phosphorus Magnetic Resonance Spectroscopy (31P-MRS). A novel algorithm that compares mitochondrial function, as determined by 31P-MRS scans, to normal levels provides objective and reliable diagnoses. Additional scans could assess efficacy of prescribed treatments by comparing current mitochondrial function to patients' initial levels.

FEATURES AND BENEFITS

- Provides consistent, reliable, and objective diagnosis of bipolar disorder.
- Decreases time required to obtain accurate diagnoses.
- Improves patient outcomes by enabling quicker delivery of treatment.
- Facilitates objective tracking of treatment efficacy.

RECENT PUBLICATIONS

Shi, X.F., Kondo, D.G., Sung, Y.H., Hellem, T.L., Fiedler, K.K., Jeong, E.K., Huber, R.S., Renshaw, P.F. (2012). Frontal lobe bioenergetics metabolism in depressed adolescents with bipolar disorder: a phosphorus-31 magnetic resonance spectroscopy study." *Bipolar Disorders*. 14(6): 607–617. doi: [10.1111/j.1399-5618.2012.01040.x](https://doi.org/10.1111/j.1399-5618.2012.01040.x)

INVENTOR PROFILE

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