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 31P 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.

**DIAGNOSING BIPOLAR DISORDER USING MAGNETIC RESONANCE SPECTROSCOPY**

**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
- Issued US Utility Patent
  - Brain Phosphorus Spectroscopy in Bipolar Disorder
  - US8897854B2

**LEARN MORE**
- Reference Number: U-5135
- Technology & Venture Commercialization
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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 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**

**INVENTOR PROFILE**
- Perry Renshaw, Ph.D., Professor - Psychiatry
- Douglas Kondo, M.D., Associate Professor - Psychiatry