Depression treatment by dopamine control using Transcranial Current Stimulant by 3D MRI & AI

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***Abstract*— A neurotransmitter, or chemical, dopamine is produced and released by specific brain cells. It is involved in several crucial brain processes, including pleasure, learning, memory, and movement. Dopamine is a neurotransmitter that is released from certain brain cells and can bind to dopamine receptors on other cells to transmit signals that is help to control a variety of brain functions. The brain is a multi-channel complex, plastic, electrical network; neural processing is primarily mediated by structural and functional networks. Our understanding of how the brain works has advanced technique to the neurosciences. The bilateral occipital, left temporal, and left or right prefrontal networks have been implicated in probably simple cognitive task like object recognition. Network dysfunction, which may result from abnormality in many more isolated brain regions, is what causes neuropsychiatric disorders in the end. With the integration of 3D MRI scan, AI based technique and microscopy lens technique the new advanced Transcranial Current Stimulants technique will use of low electrical current can stimulate all brain functions and dopamine level and decreases the diseases of low of dopamine. These techniques with TCS technique can help us treat patients more effectively and control diseases that aren't responding to medication for depression. Are used to detect brain fluid and can also detect any tremors and diagnosis the disorder and increase newly released hormones in the brain.**

***Index Terms*—TCS, 3d MRI, AI based technique, microscopy lens advanced, fluorescence's, femtosecond laser, AI algorithm, increases dopamine.**

I. INTRODUCTION

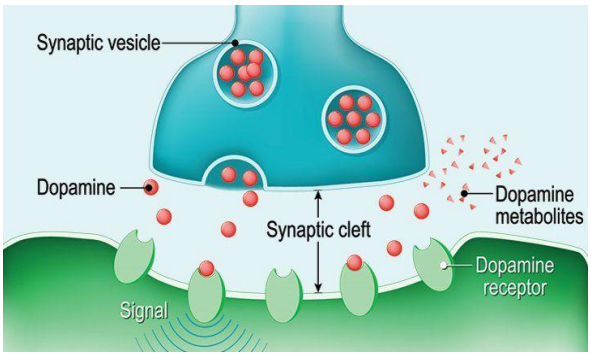
Dopamine is a neurotransmitter, a molecule that definite brain cells generate dopamine and release. It is involved in several crucial brain processes, including brain functioning, learning[28] memory, pleasure and movement. The SUBSTANTIA NIGRA and the VENTRAL TEGMENTAL[7] region of the brain both include cells that release dopamine. Dopamine is a neurotransmitter that is released from some particular brain cells and can attach to dopamine receptors on other cells to convey signals that assist control a variety of brain activities. The release of dopamine is regulated by a several different brain pathway. The major mesolimbic route, often known as the reward pathway, is one of the main pathways[16]. The nucleus leaning or reclining, a part of the brain involved in pleasure and reward, is released through this pathway, which originates in the VENTRAL TEGMENTAL AREA (VTA), a region of the brain. Dopamine is released from the VTA into the nucleus accumbens, when a person enjoys something or feels good, such as attract food, sex, or drugs. This reinforces the behavior and makes it more likely that it will be repeated in the future. SUBSTANTIA NIGRA, which connects to the basal ganglia, a set of structures which plays a key role in movement and coordination, also other important pathway implicated in the release of dopamine[2]. Conditions like Parkinson's disease, which is marked by tremors, stiffness, rigidity, and difficulty moving, have been related to NIGROSTRIATAL pathway dysfunction criteria.

I.A ABOUT DOPAMINE

Dopamine which is a neurotransmitter, or chemical, it is created and released by specific brain cells. It is involved in several crucial brain functioning processes, including pleasure, learning, memory, and movement. The SUBSTANTIA NIGRA and the VENTRAL TEGMENTAL region of the brain both include cells that release dopamine. Dopamine is a neurotransmitter or chemical that is released from brain cells and can attach to dopamine receptors on other cells to convey signals that assist control and regulates brain activities.

I.B MECHANISM OF ACTION OF DOPAMINE -

Dopamine has a role of neurotransmitter[5], which means that transfers chemical signals between brain neurons. Dopamine can carry a signal that helps to regulate a variety of brain activities when it is produced from neurons releases from one part of the brain and binds to dopamine receptors on other neurons. Dopamine functions in the brain through a variety of intricate and poorly understood mechanisms. Dopamine, however, is believed to be crucial for a variety of critical brain processes, such as: Learning, memory, movement, motivational. Dopamine play a key of role in the regulation of movement and coordination of neurons and if dopamine[26] causes decreases level in releases of dopamine occurs disorders like Parkinson's diseases[21] ,depression, have been related to disruption in dopamine pathways. Dopamine is postulate to contribute to learning and memory by assisting in the strengthening of the connections between the neurons engaged in process. Dopamine is supposed to help reinforce behavior activities that result in enjoyable experiences, such as eating, having sex, and using drugs. Dopamine is responsible to release in reaction to these pleasurable experiences. Dopamine is supposed to help motivate us to seek our objectives and rewards since it regulates motivation and drive also pursue goals. Dopamine is known to regulate emotional states, and disorders including sadness, anxiety and depression have been associated with dopamine level abnormalities due to imbalances level.

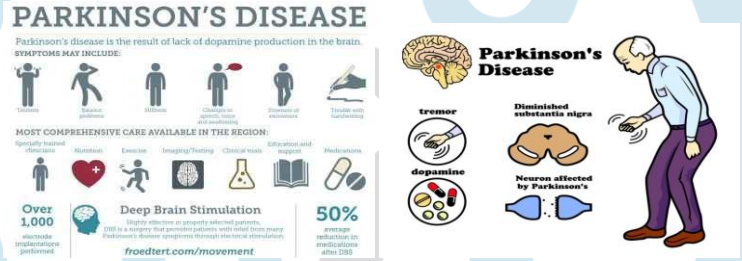


I.B Figure: mechanism of action of dopamine

I.C DISEASES DUE TO LOW LEVEL OF DOPAMINE

Disability or illness is brought on by the release of low levels of dopamine in the brain. Dopamine [17]deficiency in the brain can be brought on by a various factor, including genetics, environment, and way of life. Low dopamine levels have been connected to, among causes other things: Parkinson's complaint tremors, stiffness, and movement difficulties are signs of this deterioration neurological condition. It results from the death of dopamine-producing cells in the SUBSTANTIA NIGRA,[20] an area of the brain where movement is controlled in body .Diseases brought on by the release of low levels of dopamine in the brain causes:

- Parkinson's disease (PD)[19] is a progressive neurological condition of never cell damage that causes tremors, stiffness, and trouble moving. It is brought on by the death of cells that make dopamine level decreased in the SUBSTANTIA NIGRA a part of the brain that controls movement.



I.C. Figure: symptoms and care

- Schizophrenia-causes Hallucinations, delusions, and abnormal thinking and behavior, hallmarks of the complex mental disorder Schizophrenia has been linked to the onset of low dopamine levels in particular regions of the brain.
- Attention deficit Hyperactivity disorder; causes Inattention, impulsivity, and hyperactivity are the hallmarks of ADHD. This is a neuro-developmental condition disorder. The emergence of ADHD has been linked to low dopamine levels in brain.
- Depression; causes mental health condition marked by mournful sadness, hopelessness, and a lack of interest in activities. Many antidepressant drugs work by increased dopamine levels in the brain, and low dopamine levels have been linked to the emergence of depression.
- Substance abuse and addiction Dopamine levels in the brain can change as a result of abuse and addiction and due to low dopamine levels have been associated with a higher risk of developing addiction also causes memory problems.

I.D. DATA ANALASIS ON DEPRESSION PATIENTS

S.NO	DISEASES	SYMPTOMS	MEDICATION	RESPONSES	RATE OF RISK	%DEATH PEOPLE
1.	Parkinson's diseases	Tremor, rigid muscle, speech changes, writing changes, rhythmic shaking, loss of movement.	Co-beneldopa, co-careldopa, parmipexole, ropinirole entacapone, opicapone, procyclindine, apomorphine.	60-80% response during treatment	Increasing rate of dyskinesia, impulse loss of controlling, and also other more side effects.	60,000 people diagnosed in 1yr 1-2% death cases
2.	Schizophrenia	Delusions, hallucination, disorganized thinking, unusual	Aripiprazole, asenapine, brexapiprazole, cariprazine,	50-60% responding also not responding of among 40%.	Weight gain, metabolic changes, low white blood cell	21 million

		physical behavior.	clozapine, olazapine.		count, heart problem.	
3.	ADHD disorder	Excessive talking, acting without thinking, constantly fidgeting, excessive physical movement.	Methyl phenidate, most commonly used, there is no cured medicine.	40-60% is responding during treatment.	Increase heart rate, mood swings, trouble in sleeping.	9 million
4	Depression	Feeling of sadness, tearfulness, anger out bursts, sleep disturbances, including insomnia, loss of interest, unhappifulness.	Sertraline hydrochloride, citalopram, escitalopram, fluoxetine, paroxeline, vilazodone.	50% are responding.	Increasing high blood pressure, weight gain, dry mouth, suicidal thoughts.	6 million
5.	Substances ; Abuse of addiction	Drowsiness, slurred speech, lack of co-ordinate, irritability in mood, memory problems, lack of inhibition.	Opioids-methadone, naltrexone, Alcohol-haltrexone, acamprosate, disulfiram, tobacco-verenicline, bupropion.	30-50 % are responding	Flushing, headache, nausea, constipation.	3 million

II. EXISTING DISEASES TREATMENT

Treating depression with most effective novel dopaminergic[18] approaches. The best course of action for a particular person will depend on a number of variables, including the severity of their symptoms of a patient and depend on stage condition, the underlying cause of their depression. There are numerous treatment options available for depression. The following are a few types of treatments for depression:

Medications: Antidepressant medications, such as selective serotonin reuptake inhibitors (SSRIs) and Tricyclic antidepressants, can help to increase dopamine levels in the brain and improve symptoms of depression also most of initial condition can be treated by medication.

Psychotherapy: Consulting a mental health expert, such as a psychologist or certified therapist, can assist those suffering from depression in learning coping mechanisms and methods to control their symptoms. This was best way to treat depression patients at stage is increased in condition of patients.

ECT: Electroconvulsive Therapy In order to cause a seizure, electrical currents are delivered to the brain during this medical procedure. When other treatments have failed to relieve severe depression, ECT may be an effective option.

TMS: Using a magnet to stimulate brain cells is a non-invasive procedure known as TRANSCRANIAL MAGNETIC STIMULATE (TMS). TMS has shown promise as a depression treatment because it is thought to raise dopamine levels in the brain and also which not responding to treatment.

Regular exercise can also reduce depression symptoms and raise dopamine levels in the brain. Additionally PET, CT scan, EEG are use to detected the brain disorder and infections in body.

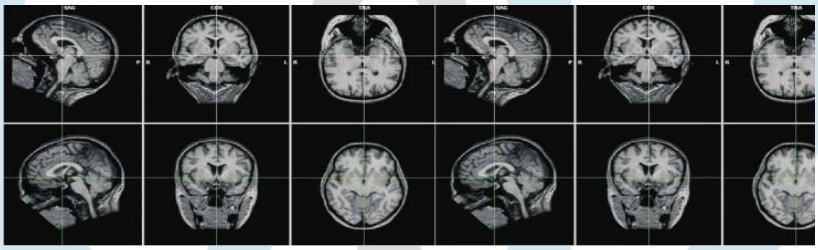
III. PROPOSED NEW TREATMENT FOR DIPRESSION

TCS TECHNIQUE[10] which is a noninvasive[22] method also to treat depression which is similar to TMS. Dopamine levels in the brain are thought to be balanced and controlled by TCS, which could help to lessen the symptoms of depression to determine the safety and efficacy of this treatment, more transcranial current stimulation of the dopaminergic system. A low-level electrical current which is applied to the scalp of brain electrodes repeated 30-40 minutes sessions transcranial current stimulation (TCS), which is a type of non-invasive sub threshold neuromodulatory[24] technique to brain stimulation, to stimulate particular brain regions. Transcranial direct current stimulation (TDCS) and transcranial alternating current stimulation are these two methods also used to treat for stimulation brain by of TCS (tACS)[15]. Its clinical application includes neuropathic chronic pain, major depression, stroke rehabilitation addictive disorder and epilepsy .TCS is the best course of treatment for you. These have been linked to several of cognitive function and pathologies The method of transcranial current stimulation is effective for treating dopamine depression. Transcranial current stimulation (TCS) is a method of treating depression that involves administering low-level electrical currents

to specific path of the brain. Transcranial direct current stimulation (tDCS)[27] and transcranial alternating current stimulation (tACS).

IV. a. Figure :Transcranial current stimulant method

A healthcare professional will apply electrodes to the scalp during treatment, and the brain will receive a low-level electrical current through these electrodes. Its helps to deeper understanding of effects of stimulants on inter connected neuronal population. A person's unique needs and symptoms are typically taken into account when adjusting the current's intensity and duration. Also developing strategies to personalize brain stimulants interventions.TCS is typically given over the course of several weeks in a series of the therapy sessions. Dopamine levels in the brain are thought to be raised by TCS, which could help to lessen the symptoms of depression. The challenges include identifying relevant network modeling effect of stimulation to determine define therapeutic strategies. To determine the efficacy of this treatment, more research is required. However, research on the effectiveness of TCS for the treatment of depression is still in its infancy. This TCS can handle with Parkinson's diseases, epilepsy, not only for depression. The neuro science has made significant advances[3] in our understanding of brain functions. For simple cognitive task such as shows involve network that include bilateral occipital the left temporal of frontal region. Working closely with a healthcare professional is crucial to determining whether TCS with integration of 3D MRI, ARTIFICAL INTELLGENCES, AND MICROSCOPY LENS.



III.b. Figure :3D MRI scanning method

The newly developed method known as 3Damplified MRI or 3D MRI reveals pulsating brain activity that may aid researchers in non-invasively visualizes brain disorders by scanning the brain and in developing better treatment plans for minute distort or disorders that obstruct the flow of brain fluid also can detected the brain functions. This technique is now available to the general public.

III.A. Method of treatment-----

The new technique for 3D amplified MRI [8]brain scanning. It was most advanced medical imaging techniques currently use. The recent development of magnetic resonance technique MRI technology for brain scanning is called 3D Amplified MRI. By boosting the signal-to-noise ratio of the MRI data and higher resolution images with better contrast and detail are produced. This is proficient by using complex innovation and post-processing procedures on the initial MRI data. Using this method, several neurological disorders can be better diagnosed and fine anatomical structures can be visualized by this technique.

III.B. Working of this 3d amplified

When performing an MRI scan, the brain produces weak magnetic signals they are amplified by the 3D Amplified MRI technique. The fundamental processes are summarized; An MRI scan is performed on the patient, during which the MRI machine produces singles and records magnetic signals. To eliminate noise and other distortions, specialized software processes the recorded signals. The signal-to-noise ratio of the MRI data is amplified using enlightened algorithms, upgrade image quality and increasing resolution. To meliorate the visualization of fine anatomical structures, post-processing methods like image registration and separation are applied to the amplified MRI data. A high-resolution 3D MRI image of the brain is the end result, which has better disparity and detail than traditional MRI scans. A more thorough and instructive view of the brain is provided by the 3D Amplified MRI technique, allowing for more unambiguous diagnosis of neurological disorders.

III.C. Entitlement for this 3DMRI scanning

The 3D Amplified MRI technique for brain scanning has the following benefits:

A more precise assessment of brain anatomy and function is possible thanks to the higher resolution images produced by the amplified MRI data, which have develops contrast and detail. Improved visualization of small structures: The method can improve visibility of tiny blood vessels, lumps, and other lesions that may not be visible on standard MRI scans in the brain. Increased diagnostic precision: With better image quality and the potentiality to see small structures, neurological disorders like strokes, brain

malignancy and degenerative diseases can be diagnosed more precisely. Reduced scan time: 3D Amplified MRI can shorten scan times by boosting the signal-to-noise ratio. This makes scans more effective and less stressful for the patient. Non-invasive: MRI is a non-invasive procedure that does not use ionizing radiation or call for the injection of radioactive dissimilitude agents, in contrast to other imaging procedure like CT or PET.3D Amplified MRI technique offers a more thorough and astute view of the brain than traditional MRI scans, making it a useful tool in the diagnosis and treatment of neurological disorders.

III.D. How it was supportive

The study of transcranial current stimulation (TCS), which uses weak electrical currents applied to the scalp to activated particular areas of the brain, can be assist by the 3D Amplified MRI technique. Preferable localization of stimulation: 3D Amplified MRI's improved determination and contrast can offer a more accurate and particular representation of the brain's anatomy, facilitating better localization of the stimulation target and better apprehension of the neural effects of transcranial magnetic stimulation (TCS). Better assessment of treatment outcomes: 3D Amplified MRI can help in the evaluation of treatment outcomes, such as changes in brain activity or anatomy after TCS, by providing comprehensive images of the brain. Gaining a better understanding of the neural mechanisms underlying TCS and how it affects brain function can be ingenious by combining 3D Amplified MRI with other imaging modalities, such as functional MRI or EEG. Finally 3D Amplified MRI can offer important cognizance into the effects of tCS on the brain and its potential as a therapeutic option, helping to develop and advanced tCS as a tool for treating numerous of neurological and psychiatric condition.

IV.New method of AI led brain scanning technology

Another new option for treating depression is ARTIFICAL INTELLGENCE based dynamics brain imaging, which could map the brain quickly with high speed, high resolution, and low coat. And neuro sciences have developing whole brain network models also relationship between brain functions and structure connectedness and brain stimulation, excitability or demonstrative and synaptic plasticity of brain.

Artificial intelligence (AI)[9] algorithms are used in AI-led brain scanning technology to analyze and interpret brain imaging data from MRI or CT scans. The fundamental procedure can be summed up as follows:

Brain imaging data is gathered during the patient's brain scan.

The imaging data is fed into a machine learning-based AI algorithm, which uses data analysis to find relevant features or patterns.

In order to help doctors identify psychiatric conditions, the AI algorithm generates a diagnosis and interpretation of the imaging data. There are several potential convenience to using AI in brain scanning: Increased consistency and accuracy: AI algorithms can examine vast amounts of data and spot patterns that may not be immediately obvious to human observers, resulting in diagnoses that are more dedicated and consistent. Reduced analysis time: AI-led brain scanning can speed up the diagnosis process and cut down on the amount of time needed to analyzed imaging data. Better patient results AI-led brain scanning can improve patient outcomes by delivering more precise and timely diagnoses, such as earlier treatment and better of neurological or psychiatric conditions. All things considered, AI-driven brain scanning is a rapidly evolving field that has the potential to completely change how we identify and treat neurological and psychiatric disorders.

IV.A. The working AI led scanning technique

Artificial intelligence (AI[4] algorithms are used to analyst and interpret brain imaging data from CT or MRI scans in AI-led brain scanning technology. The following steps and procedure:

Imaging data collection: A patient has a brain scan, during which imaging data is gathered and saved. The gathered imaging data is fed into an AI algorithm, which then analyses the data using machine learning methods. Analysis and interpretation: To find patterns in the imaging data, such as the presence of tumors', strokes, or other anomalies, the AI algorithm employs enlightened mathematical models. Creation of a diagnosis or anatomization of the imaging data: Based on the analysis, the AI algorithm creates a diagnosis or interpretation of the imaging data that can help doctors make a diagnosis of neurological or psychiatric conditions.

Including in clinical workflow integration: The clinical workflow can incorporate the AI-generated diagnosis or interpretation, giving doctors access to the data they need to decide how best to treat their patients. AI- abet brain scanning has the potential to enhance diagnosis speed, accuracy, and consistency, resulting in better patient outcomes and more efficient management of neurological and psychiatric conditions.

IV.B. Entitlement of AI led scanning of brain

Increased accuracy: AI algorithms can analyze vast amounts of data and spot patterns that human observers might not immediately notice, resulting in more accurate diagnoses.

Reduced analysis time: Automating the analysis of imaging data can speed up diagnosis and increase process regulation.

Increased consistency: AI-driven brain scanning can increase the consistency of diagnoses by using a standardized and repeatable process, lowering the risk of human error.

Earlier diagnosis: AI-driven brain scanning can result in earlier treatment and better management of neurological or psychiatric conditions by delivering more accurate and timely diagnoses

Better patient outcomes can include more effective treatment and better condition management as a result of increased accuracy, steadiness, and earlier diagnosis.

Large-scale analysis: Because AI algorithms can quickly analyze enormous amounts of data, they can be used to analyze[6] brain imaging data in order to find patterns and insights that can be used to develop new diagnostic and therapeutic strategies.

All things considered, AI-driven brain scanning technology has the potential to completely change how we identify and treat psychiatric conditions, improving patient outcomes and enhancing the management of these conditions.

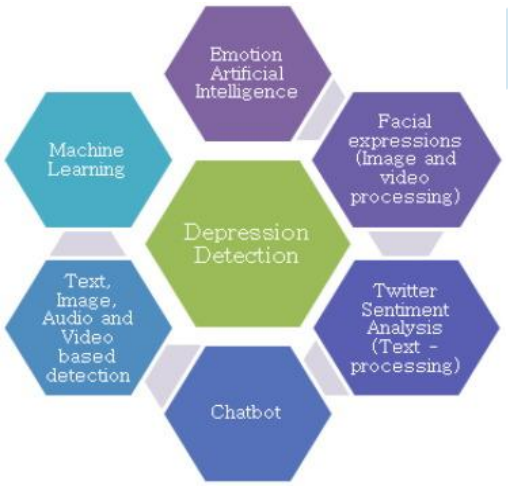
IV.C. AI led technique is helpful for transcranial current stimulant

Transcranial current stimulation (TDCS) can benefit from AI-driven brain scanning technology in a number of ways:

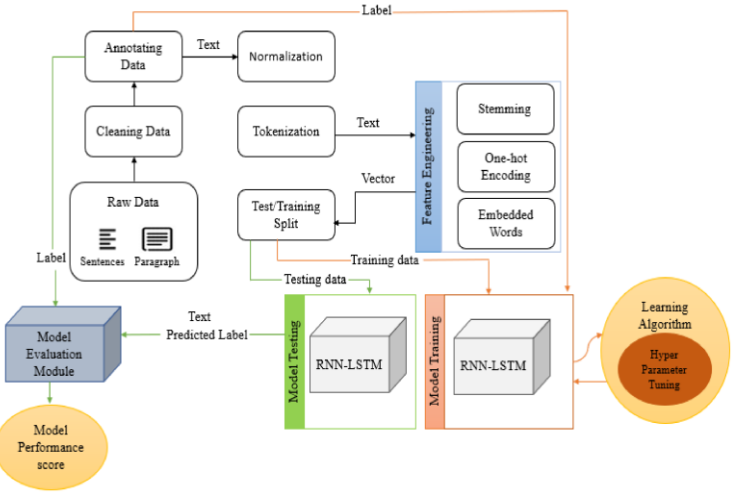
Targeting stimulation: AI algorithms can examine brain imaging data to pinpoint particular brain regions that would benefit from TDCS, enabling more focused and efficient stimulation.

Effects monitoring: Before and after tDCS brain imaging data can be analyzed using AI algorithms to determine the effects of stimulation, allowing for a more precise and unbiased assessment of the course of treatment.

AI algorithms can analyze brain imaging data to find patterns associated with the best tDCS[14] results, enabling the optimization of stimulation parameters and the creation of discreate tDCS treatment regimens. Enhancing safety: AI-led brain scanning can help to enhance the safety and effectiveness of tDCS by providing a more accurate and unbiased evaluation of the results, lowering the risk of side effects and improving patient outcomes.



IV.C. a. Depression detection techniques



IV.C. b. AI detection

Depression may develop as a result of decreased dopamine levels. This form of dopamine can be found using the most recent facial expression, emotional artificial intelligence, image and video processing, chatbot, machine learning, text imaging, audio, and video-based detection techniques.We are able to identify a disease's underlying factors by employing AI-based technology. Data that has been cleaned up from the raw data, such as phrases and paragraphs, can be annotated to perform text normalization. The data can be validated using feature engineering processes such stemming and one-hot encoding embedded words.

V.New microscopy technique lens makes deep in vivo brain imaging scanning

They would alter its propagation. It was a ground-breaking discovery that we could see neuronal In vivo brain imaging can now undergo deep analysis of brain to a new microscopy technique [30]. In order to focus light inside the living tissue during microscopy, a deformable mirror was used. cells in the brain in sharp, clear images.

V.A Working of new microscopy technique lens makes deep in vivo brain imaging method for brain scanning

Two-photon microscopy is a new method of microscopy that employs a lens for deep in vivo brain imaging. Fluorophores molecules that glow when excited—in the tissue are excited using a femtosecond laser. A high-resolution objective lens gathers the emitted fluorescence[23] and concentrates it onto detectors, which transform the light into electrical signals that can be processed to create images. The using one thousands of nano seconds for more detecting. The ability of two-photon microscopy to reach deep into tissue and produce high-resolution images of brain structures is its main benefit. A femtosecond laser is used to skilled one for this because it produces high-energy light pulses that can penetrate deep into tissue without significantly harming it. Furthermore, the fluorescence can be collected and focused thanks to the high-resolution objective lens. The structure and activity of individual neurons, the creation and destruction of synapses, and changes in blood flow that take place in response to neural activity have all been studied using two-photon microscopy. Additionally, it has been applied to research how diseases like Alzheimer's and Parkinson's affect the brain .two-photon microscopy has made significant progress in our understanding of the brain and its functions. It is a strong and versatile tool for deep in vivo brain imaging.

A "two-photon microscope" is the name of the lens used in the novel microscopy method for deep in vivo brain imaging[12]. It capture the fine details of neurons at unprecedented high resolution to detect the fluid in brain and can see the deep analysis of brain and conditions and brain function also treat depression. This particular kind of microscope is intended to record the fluorescence tissues emit when excited by a femtosecond laser[11]. The lens is an essential component of the two-photon microscope because it collection and concentrates the light that is emitted, enabling the development of high-resolution images[25] of deep brain structures .Typical components of the two-photon microscope[13] lens include the following: The objective lens is in charge of gathering and concentrating the fluorescence that the tissue emits .Scanning mirrors: Images can be produced by directing the laser beam across the tissue with the help of scanning mirrors. The Detectors: The detectors record the tissue's Fluorescence; finally the two-photon microscope lens is an essential component of the new microscopy technique for deep in vivo brain imaging, enabling the creation of high-resolution images of the living brain.

V.B. Advantages for microscopy lens technique scanning for brain

The following benefits of using a microscope to scan the brain include:

High resolution: Microscopy lens techniques can produce high-resolution images that reveal intricate details and structures within the brain, including individual neurons and their connections.

Non-invasive: Microscopy lens techniques are non-invasive and do not subject the brain to ionizing radiation, in contrast to other imaging techniques like CT or MRI scans.

In vivo imaging: Microscopy lens methods make it possible to image the brain while it is still alive and functioning, which is especially helpful for researching brain activity and behavior and the level of dopamine in brain function of brain

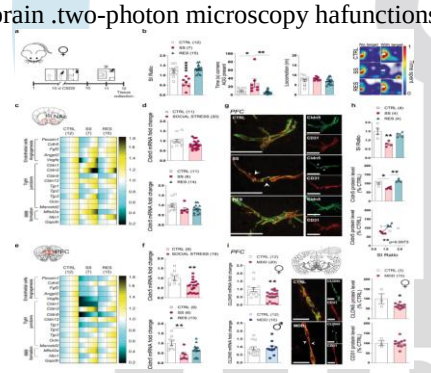
Deep imaging: Using microscopy lens techniques, deep brain structures up to several millimeters deep can be imaged. So we treat better for depression.

Longitudinal studies: Microscopy lens techniques can be used to perform repeated imaging of the same brain region over time, allowing for longitudinal studies of brain structure and function.

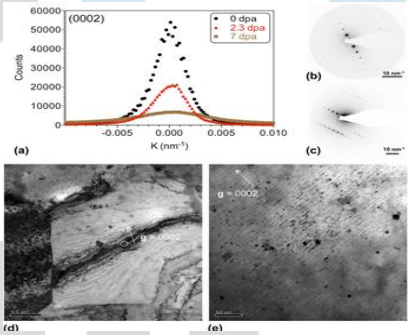
The microscopy lens technique is a powerful tool for brain imaging that has the potential to greatly advance our understanding of the brain and the treatment of neurological and psychiatric conditions.

V.C Working of new microscopy technique lens makes deep in vivo brain imaging method for brain scanning

Two-photon microscopy is a new method of microscopy that employs a lens for deep in vivo brain imaging. Fluorophores molecules that glow when excited—in the tissue are excited using a femtosecond laser. A high-resolution objective lens gathers the emitted fluorescence[23] and concentrates it onto detectors, which transform the light into electrical signals that can be processed to create images. The using one thousands of nano seconds for more detecting. The ability of two-photon microscopy to reach deep into tissue and produce high-resolution images of brain structures is its main benefit. A femtosecond laser is used to skilled one for this because it produces high-energy light pulses that can penetrate deep into tissue without significantly harming it. Furthermore, the fluorescence can be collected and focused thanks to the high-resolution objective lens. The structure and activity of individual neurons, the creation and destruction of synapses, and changes in blood flow that take place in response to neural activity have all been studied using two-photon microscopy. Additionally, it has been applied to research how diseases like Alzheimer's and Parkinson's affect the brain .two-photon microscopy hafunctions. It is a strong and versatile tool for deep in vivo brain imaging.



V.C. a. Figure; microscopy detection



V.C.b.Figure: microscopy focus lens

The image above demonstrates the use of high-resolution femtosecond laser microscopy to identify depression as a condition brought on by a lack of dopamine in the body. Deep in vivo treatment using femtosecond laser will also identify brain fluids and have the ability to penetrate deeply into tissues. NAC and PES can display imaging and tissue collection as well as RES RATE social stress and potential levels in the brain. The techniques used to measure brain activity and dopamine levels allow us to observe the neuronal connections between cells in the brain in visible detail and to identify the many stages of a problem.

V.D. New microscopy lens brain scanning technique is helpful for transcranial current stimulants

Targeting precision: Microscopy lens techniques can produce high-resolution images that can be used to direct TCS and make sure that the stimulation is delivered to the target area of the brain that is intended. Real-time monitoring of the brain's reaction to TCS is possible using microscope lens techniques, which enables the stimulation criterion to be modified as necessary. In order to better understand the mechanism by which TCS operates, researchers can combine TCS with microscopy lens techniques. This is a crucial for optimizing and improving the technique. Evaluation of safety: Microscopy lens techniques can be used to monitor TCS safety and make sure that the stimulation isn't harming the brain extemporaneous, a promising method for treating a variety of neurological and psychiatric conditions, has the potential to significantly increase its accuracy, efficacy, and safety with the addition of the new microscopy lens brain scanning technique.

VI.CONCULSION

We come to the conclusion that by implementing these three methods—AI-led brain scanning, 3D MRI scanning, and the microscopy lens method—we can advance the TCS technique and make it much simpler to treat depression patients. By using this technique, we can diagnose patients much more quickly. To forecast illnesses that affected patients because of low levels of dopamine that lead to depression. We can identify some brain disorders and treat them by using low potential electrodes of the TCS technique by detecting or analyzing which stages of the disorder are present in the brain. Treatment for this can reduce depression and maintain a healthy level of dopamine in the brain.

VII.FUTURE SCOPE

By implementing TCS and using these 3 techniques, we can identify diseases caused by a lack of dopamine and control other illnesses like epilepsy, Parkinson's disease, stroke, and depression. According to the most recent WHO report, the majority of patients receiving drug for epilepsy and other conditions do not respond. Therefore, those who are not responding to drugs or medication can be controlled by using low potential electrodes and this treatment. Epilepsy is a devastating, chronic diseases that severely affects the effect the quality of life 65 million people worldwide, 35% of whom do not respond to drug. Almost a third of patients 29% are untreatable in 19% million patients drug fail and surgery is not an option or has failed too .treatment – resistant epilepsies represent not only a considerable challenges for the health care system but also a tremendous burden at the individual, family, and community level .they are characterized by an epileptogenic network interconnecting community level, distant brain area located in one or two hemispheres. By this TCS and advanced technique can we improve excellent treatment of dopamine causes of depression and various diseases also. This was the best treatment for future. Mainly this treatment is help full for who does not react with medication or drug so the TCS with advanced can be treatable without and side effects also death cases can be decreased.

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