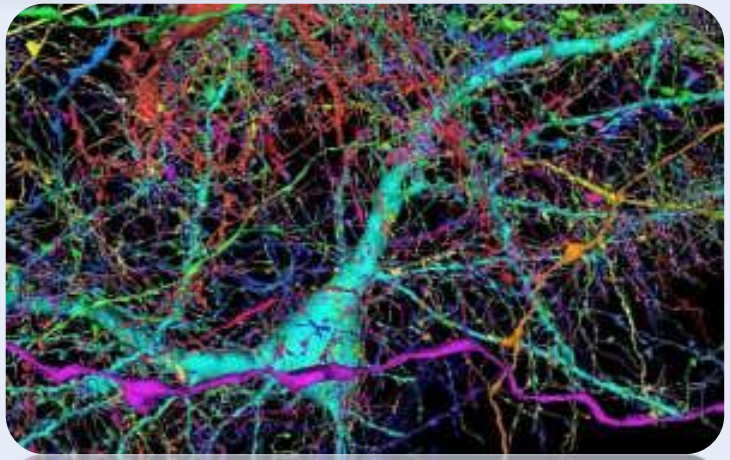
Transcendent Life Sciences, Inc®

Hyder Ali Khoja, PhD.
Founder and CSO

The Brain is the most complex organ in the body and is probably the most complex system known to humankind.

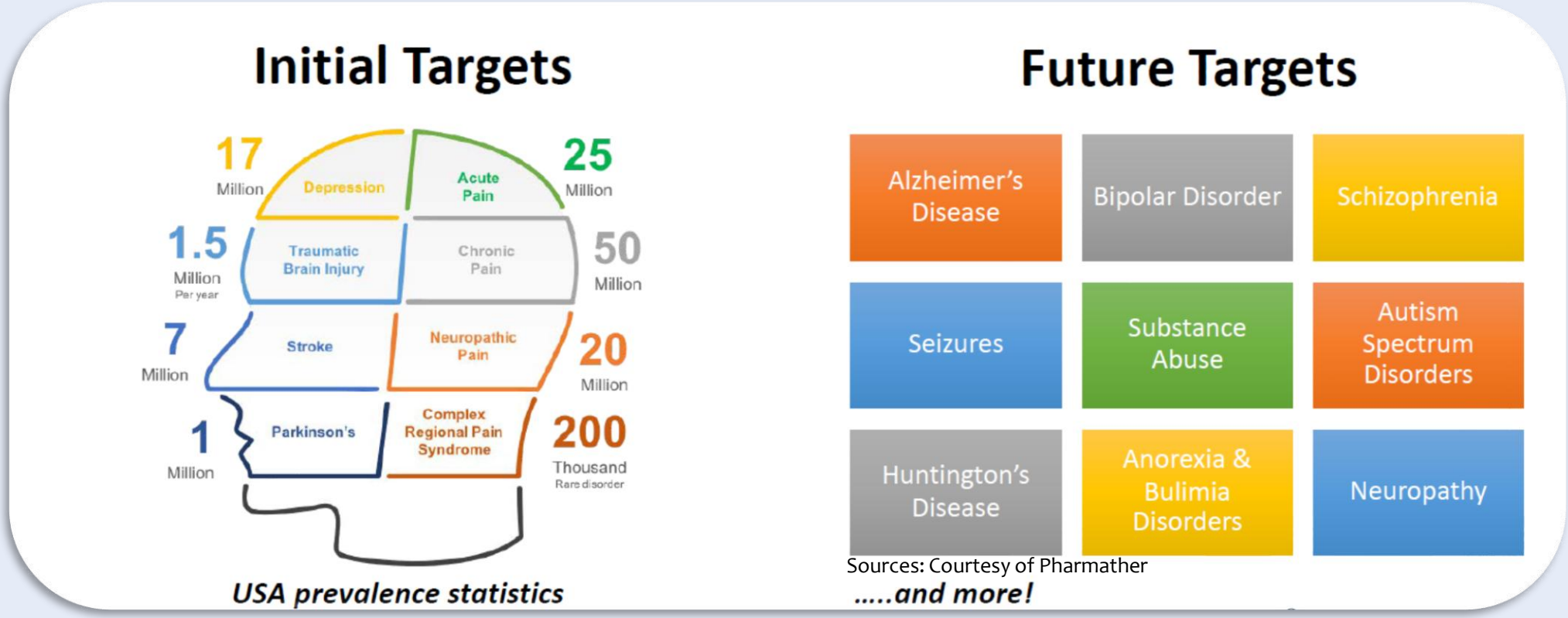
- It comprised of 50,000 cells. Are joined together by hundreds of millions of spidery webs.
- With an estimation of about 86 billion neurons.
- Those neurons communicate by passing over 130 million messages at the synapse, in a process called neurotransmission.
- The data set measures **roughly 700 times the storage capacity of an average modern computer**.



Google has helped create the most detailed map yet of the connections within the human brain. It reveals a staggering amount of detail, including patterns of connections between neurons, as well as what may be a new kind of neuron.

U.S. Statistics on Mental Health

If any or all mental condition led to any form of unconscious, this could sum-up to approx. 121.5 Million



Sources: Courtesy of Pharmather

Market Potential

The Treatment of various psychological indications presents a massive opportunity

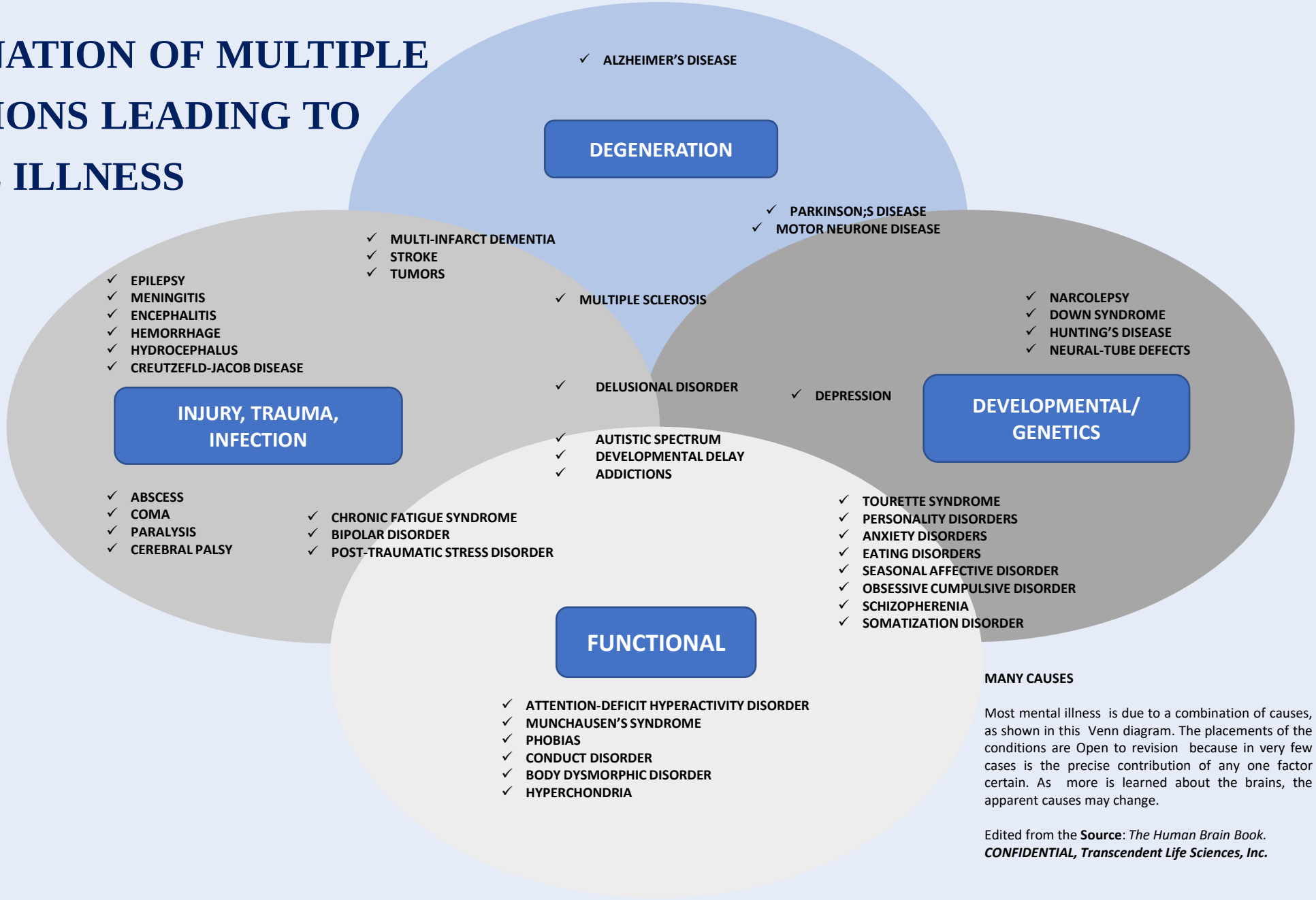
ADHD	Addiction	Anxiety	Depression
$9.1B	$42B	$4.5B	$4.0B
Global Annual ADHD Drug Sales [1]	Global Substance Treatment Market [2]	Global Annual Anxiety Drug Sales [1]	Global Annual Depression Drug Sales [1]

Beyond those listed above, there **remains a host of medical indications** that are currently underserved

Note: Figures are in US$

1. IQVIA Global Annual Sales Report (IQVIA, 2020)
2. Opioid Addiction (Azadfard M, Huecker MR, Leaming JM, 2020)

COMBINATION OF MULTIPLE CONDITIONS LEADING TO MENTAL ILLNESS



MANY CAUSES

Most mental illness is due to a combination of causes, as shown in this Venn diagram. The placements of the conditions are Open to revision because in very few cases is the precise contribution of any one factor certain. As more is learned about the brains, the apparent causes may change.

Edited from the **Source**: *The Human Brain Book.*
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Treating Traumatic Brain Injuries in Children and Adolescent Patients

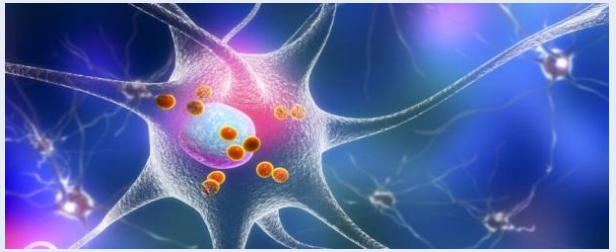
- Birth injuries are among the most catastrophic of all personal injuries including **cerebral palsy**.
- According to the U.S. Centers for Disease Control and Prevention (CDC), more than 475,000 young people suffer traumatic brain injuries every year.
- Traumatic brain injuries (TBI) cause neurological deficits in children and adolescents and can disrupt the mind's normal cognitive functions. Catastrophic head trauma causes these acquired, non-degenerative brain injuries. These devastating injuries can have long-term impacts on affected people.

Sources:
http://www.tampabaybraininjuryblog.com/2018/11/treating-traumatic-brain-injuries-in-children/

Common Causes of Traumatic Brain Injuries

Comas and other traumatic brain injuries can originate from a variety of sources. Some of the most common causes of severe traumatic brain injuries include the following:

- ✓ Slip and fall accidents
- ✓ Motor vehicle accidents
- ✓ Motorcycle and moped accidents
- ✓ Accidents that occur on the job (e.g., working on heavy machinery)
- ✓ Sporting accidents (e.g., tackle football, wrestling, or other contact sports)
- ✓ Assaults



There is also something called a "**non-traumatic brain injury**," which is a type of acquired brain injury that is not the result of a traumatic event, examples of non-traumatic brain injuries include the following:

- Brain tumors and cancer
- Meningitis
- Stoke
- Aneurysm, or
- Hemorrhage

Although non-traumatic brain injuries, if left untreated, can eventually result in a coma, most patients find themselves in a non-medically induced coma as the result of a severe traumatic brain injury.

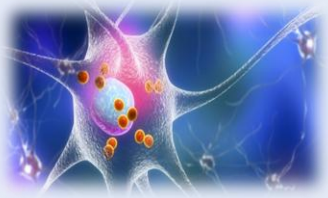
WHAT IS COMATOSE?

- It is a prolonged state of unconsciousness. During a coma, a person is unresponsive to his or her environment. The person is alive and looks like he or she is sleeping. However, unlike in a deep sleep, the person cannot be awakened by any stimulation, including pain
- Anything from being in a road accident to having a stroke can result in a comatose state. And while many of these patients manage to ‘wake’, some stay in this state indefinitely, unable to be roused into awareness
- When an individual has traumatic disturbances in the brain's circulating system, it damages the (RAS) Reticular Activating System, a part of the brain that is responsible for awareness, the patients lose control over their entire body and fall into an unconsciousness stage of life

Brain tumors

- Meningitis
- Aneurysm, or
- Hemorrhage

Unconscious state



Stoke

Costs of Treating a Coma Patient and Recovering Compensation

- While the costs of treating a coma patient for a week can be high because it requires overnight hospital care, the estimated cost of caring for patients in vegetative states is nearly **$150,000** per year.

- This likely does not include medications, lost wages, second opinions, private physicians, and specialized medical equipment. If that is multiplied by the average life expectancy of those in such a state, which can range from 1-10 years, it can result in **millions of dollars** in future expenses that you may not anticipate when speaking with an insurance company about your claim.

The Cost of ICU Delirium and Coma in the Intensive Care Unit Patient

Delirium is a manifestation of acute brain dysfunction characterized by alterations in attention, consciousness, and cognition.[1,2] Delirium is associated with a number of poor outcomes including long-term cognitive impairment[3,4], mortality[5,6], and increased healthcare costs.[7,8] Over a decade ago, *Milbr and et al*. examined the association between delirium prevalence and total ICU costs.[9] Understanding this relationship is critical considering that critical care services account for almost 1% of the entire U.S. gross domestic product.[10] Furthermore, as ICU survival increases[11], patients and the healthcare system may be increasingly exposed to costs previously avoided by early mortality.

- The **costs of traumatic brain injuries in the United States come to approximately $76.5 billion on an annual basis**. Included in that amount is the cost of hospitalization, which includes caring for comatose patients, and costs associated with fatalities.

- The costs of caring for survivors of severe traumatic brain injuries can range anywhere from **$600,000 to $1.9 million** or more, depending upon the nature and extent of the injuries sustained.

Estimates of the 30-day cumulative incremental effects of ICU delirium & Coma divided into portions attributable to intensity and mortality.

Cost Type*	Incremental cost attributed to intensity of utilization (95% CI)	Incremental cost attributed to mortality (95% CI)
Total Cost	US$17838 (11132, 23497)	US$4654 (2056, 7869)
Pharmacy	US$4018 (2582, 5020)	US$843 (334, 1396)
Laboratory	US$1185 (539, 2047)	US$270 (14, 604)
Diagnostic Radiology	US$665 (373, 1028)	US$142 (45, 244)
Respiratory, Physical Therapy, and Occupational Therapy	US$904.3 (520, 1339)	US$324 (138, 536)
Central Supply	US$2434 (1592, 3229)	US$399 (−47, 766)
Professional, Bed Expenses, and Dialysis	US$13965 (8698, 19457)	US$4564 (1666, 7872)

The cumulative incremental cost of delirium is broken down into two unique costs. The first column represents the adjusted cumulative incremental cost that is attributable to the intensity of resource utilization due to delirium. The second column represents the increased cost that would be incurred if not for delirium-associated early ICU mortality reducing the costs (since death stops any further costs of care). Costs include the 95% confidence intervals that were obtained using 250 bootstrap iterations.

*Total costs of **US$17,838** indicates the incremental cost attributed to intensity of resource utilization and were it not for early mortality associated with delirium, the costs would be an additional **US$4654**, thus total costs would be **US$22,492**.

Are Psychedelics secret for coma patients?

Zolpidem (Brand name: Ambien) may bring a possibly for life-threatening sleep behaviors. In addition to amino acids, monoamine systems such as dopamine are essential to cognition and motor function. Their depletion or the suppression of brain regions in which they function, are proposed as contributors to disorders of consciousness.

The most relevant Psychedelics:

- **Psilocybin (*Magic Mushroom*)**
- **5-MeO-DMT**
- **LSD (*Lysergic acid diethylamide*)**
- **MDMA**
- **Ayahuasca**
- **Mescaline**
- **Ketamine**
- **DMT (*Dimethyletripamine*)**
- **Cannabinoids**

Clinical Trial > Am J Med Sci. 2014 Mar;347(3):178-82. doi: 10.1097/MAJ.0b013e318287c79c.

Zolpidem arouses patients in vegetative state after brain injury: quantitative evaluation and indications

Bo Du [1], Aijun Shan, Yujuan Zhang, Xianliang Zhong, Dong Chen, Kunhao Cai

Affiliations + expand

PMID: 23462249 DOI: 10.1097/MAJ.0b013e318287c79c

Abstract

Background: To investigate the efficacy and indications of zolpidem, a nonbenzodiazepine hypnotic,

Neurotransmitters in Coma, Vegetative and Minimally Conscious States, pharmacological interventions

- After a brain injury, an immediate response inside the brain constitutes a surge of amino acids such as glutamate, GABA and others.

- It is due to a depletion of oxygen reliant neurotransmiters based in two biochemical axes, the amino acid axis (glutamate/GABA) and the monoamine axis (dopamine/noradrenalin and serotonin)

- The inhibitory response dominates, and the brain becomes suppressed, leading to a loss in consciousness which reduces oxygen requirements

- In time, GABA depletes after increased usage and leakage from the brain into the blood. If it cannot be restored sufficiently in some parts of the brain, a secondary response in these regions occurs which makes GABA receptors oversensitive to GABA, so that decreased GABA levels can maintain their suppressive effect.

- This leads to a prolonged disorders of consciousness as in the Vegetative State.

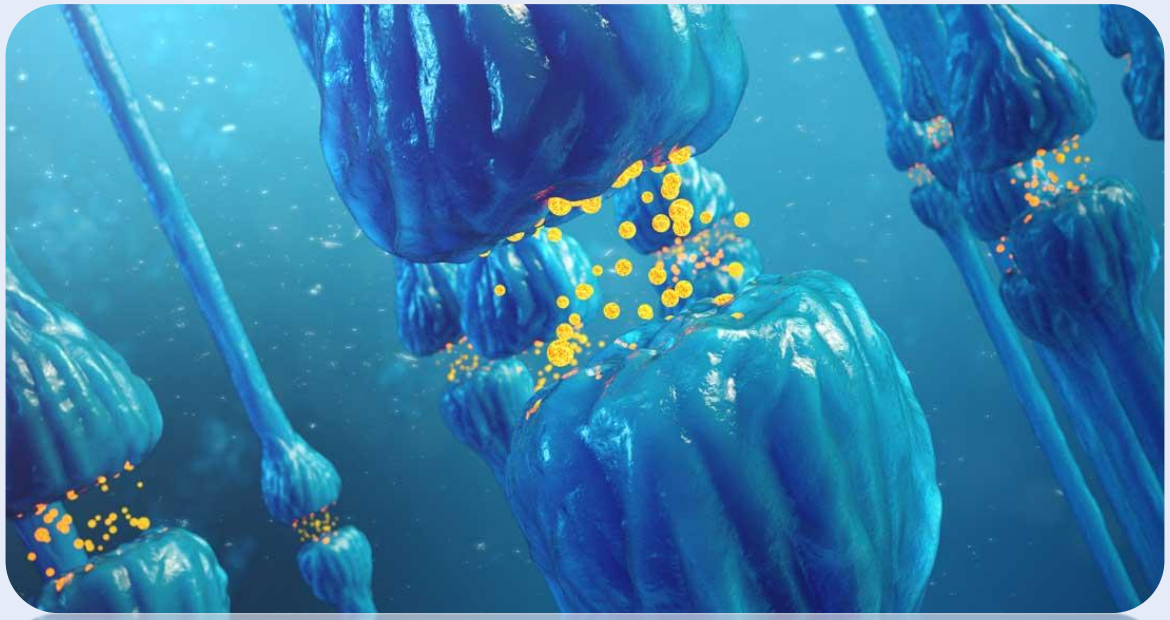
Reference:

Neurotransmitters in coma, vegetative and minimally conscious states, pharmacological interventions https://pubmed.ncbi.nlm.nih.gov/20347531/

Glutamate and GABA Imbalance Following Traumatic Brain Injury
https://link.springer.com/article/10.1007%2Fs11910-015-0545-1

NEUROTRANSMITTER CHANGES AFTER SERIOUS BRAIN INJURY

Serotonin is a neurotransmitter that's partly responsible for governing many of the signals which perceives in brain



Spark Plug

Drugs interfere with the way neurons send, receive, and process signals via neurotransmitters. Some drugs, such as marijuana and heroin, can activate neurons because their chemical structure mimics that of a natural neurotransmitter in the body. This allows the drugs to attach onto and activate the neurons.

Advanced Approach Leveraging Highly Promising Psychedelic Compounds

- Currently, we have over ***59 clinical studies*** registered from all over the world that plan to use psilocybin to treat mental health issues

- While many of clinical trials are focusing on mental disorders like depression, PTSD, and anxiety, Transcendent Therapeutic, Inc has partnered with ***My Fungi Inc.*** to access EuGMP grade supply of Psychedelic Compounds (upon HC approval) to use them for something completely different: **To re-ignite consciousness in unresponsive coma patients.**

Encapsulating a succinct therapeutic potentials from psychedelic for Coma. Innovating towards (CRT) Coma Resurrection Therapy.

Hyder A. Khoja, PhD.
Chief Life Science Officer | Founder @ Transcendent | Founder @ LeoFric | Co-Founder @ GeneCodr | CSO @ My Fungi, Inc | Director @ Beyond

Med Hypotheses. 2010 Sep;75(3):287-90. doi: 10.1016/j.mehy.2010.03.005. Epub 2010 Mar 27

Neurotransmitters in coma, vegetative and minimally conscious states, pharmacological interventions

R P Clauss [1]

Psychedelics Promote Structural and Functional Neural Plasticity

Calvin Ly,[1] Alexandra C. Greb,[1] Lindsay P. Cameron,[2] Jonathan M. Wong,[2] Eden V. Barragan,[2] Paige C. Wilson,[3] Kyle F. Burbach,[4] Sina Soltanzadeh Zarandi,[1] Alexander Sood,[5] Michael R. Paddy,[3] Whitney C. Duim,[1] Megan Y. Dennis,[4,6,7] A. Kimberley McAllister,[5,8,9] Kassandra M. Ori-McKenney,[3] John A. Gray,[5,8] and David E. Olson[1,5,6,10,*]

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Psilocybin Could Kickstart Brains in Comas, Study Suggests

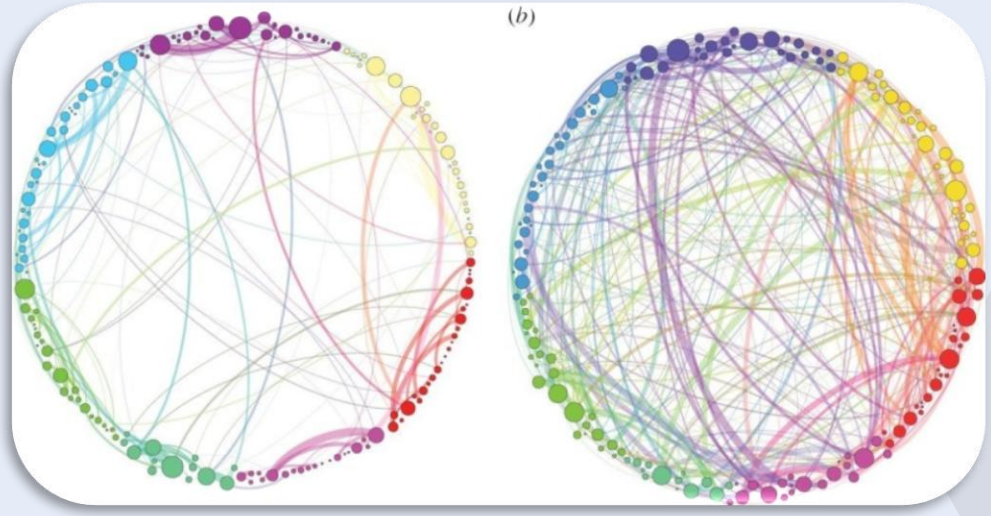
merryjane.com - Randy Robinson • 762d

A group of doctors recently proposed using psilocybin from "magic mushrooms" to awaken certain patients from comas. However, doing so not only raises ...

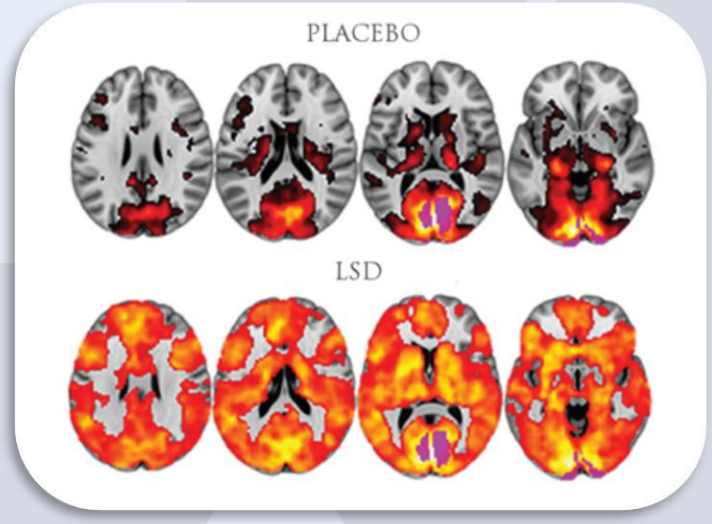
Read more on merryjane.com

PSYCHEDELICS DRUGS CREATE A "HIGHER STATE OF CONSCIOUSNESS"

- Psychedelics are famously said to "expand consciousness." And, when mapped by (fMRI) functional Magnetic Resonance imaging, they do, in fact, light up the brain and individuals in a coma.
- This create an argument that, this may allow patients to jump from a non-conscious to conscious state.



A drawing shows how the brain activity on psilocybin (magic mushrooms), shown at right, is more complex than a normal brain, shown at left.

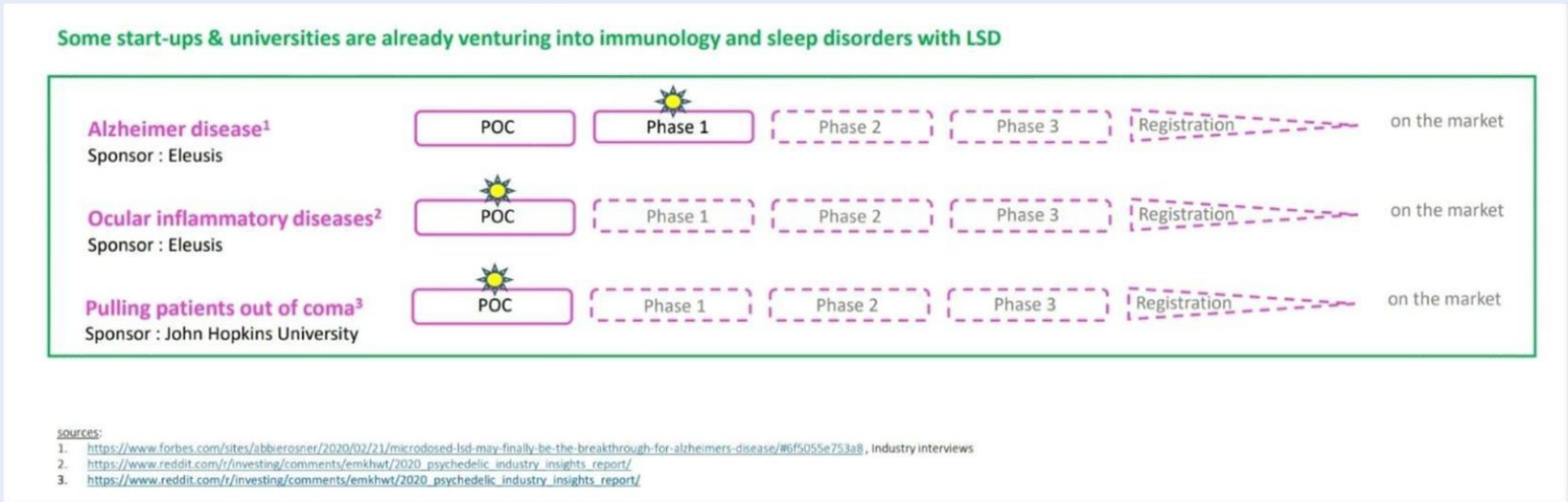


- ✓ Brain becomes more interconnected
- ✓ Mind enhancing, gives more clarity
- ✓ Access to deeper emotions

Reference:

Psychedelics as a treatment for disorders of consciousness Gregory Scott1,* and Robin L. Carhart-Harris1,2_Neuroscience of Consciousness, 2019, 5(1): niz003.

Some Start-ups and academic institutions are already venturing into the auto-immune Space and beyond



Functional and psychedelic medicine has played a vital role in human culture for centuries, with ancient practices demonstrating an intuitive understanding of their profound therapeutic benefits.

Transcendent Life Sciences, Inc. is dedicated to advancing the frontiers of mental health treatment by developing purified, health-promoting, and restorative therapies. By harnessing the power of psychedelics and psychotropic molecules, the company aims to revolutionize care for individuals suffering from chronic mental illness and depression.

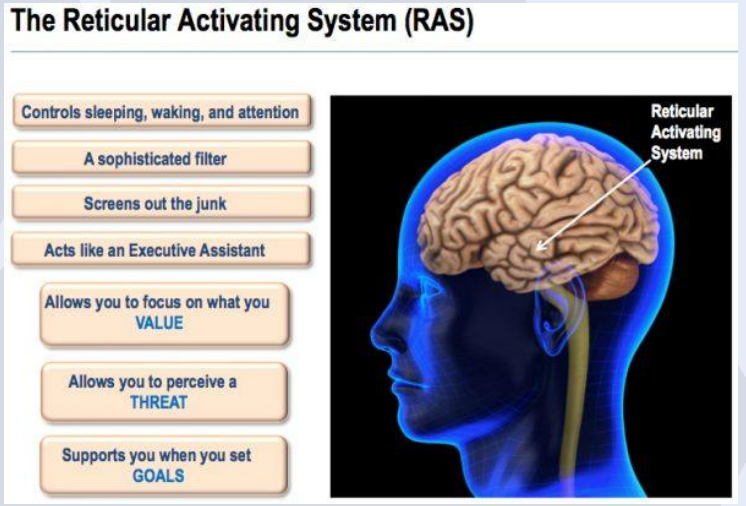
Our pioneering studies focus on how specific neurotransmitters interact with brain receptors, investigating the potential role of psychotropic compounds in enhancing treatments for patients in a ventilative state.

Our research aims to unlock the therapeutic potential of these compounds in coma recovery, an area of medicine that has long been underserved. We are developing therapies to enhance treatments for mental health targeting coma, dementia, and patients with cerebral palsy, studying neuron signals to brain receptors, validating psychotropic compounds' therapeutic benefits target molecules' efficacy.

Transcendent Life Sciences, Inc®

TRANSCENDENT IS ELUCIDATING THE REAL UNDERSTANDING OF THE CONSCIOUSNESS

- We are exploring the association of neuron signals to the brain receptors to evaluate the "Brain death, Consciousness, Sub-consciousness and comparing with awareness as well as deep sleep."



- When an individual has traumatic disturbances in the brain's circulating system, it damages the (RAS) Reticular Activating System, a part of the brain that is responsible for awareness, the patients lose control over their entire body and fall into an unconsciousness stage of life

- Thus the intended is to understand the therapeutic benefits of nano molecule formulations of selective compounds such as **Psilocybin, Ketamine, Ibogaine, LSD, DMT, MDMA, Cannabinoid**, etc., from these potential medicinal Mushrooms, plants, herbs, and other medicinal organisms in controlled, quantifiable laboratory settings and micro-dosed API or ANI (Active Pharma or Active Nutraceutical Ingredients) to support and conduct multi façade research and development and to validate the need and efficacy of these compounds and their potential therapeutic benefits for coma and many unmet medical needs

OPPORTUNITY

This is a our patent pending research which relates and describes association of neuron signals to the brain receptors to evaluate the "Brain death, Consciousness, Sub-consciousness and comparing with awareness as well as deep sleep."

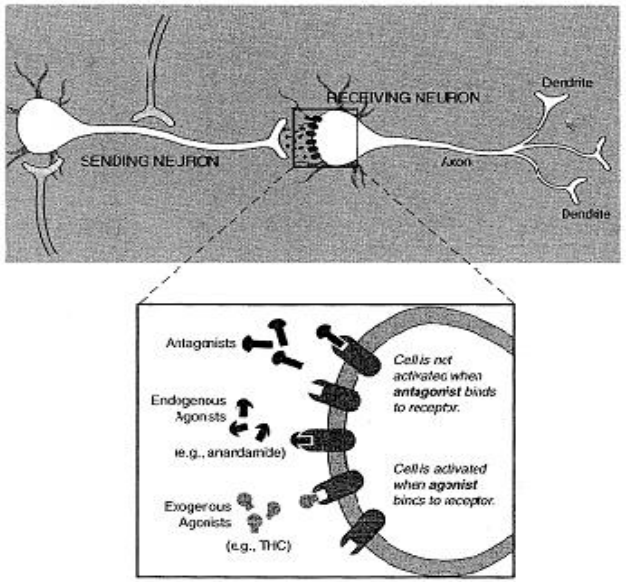


Diagram if Neuron With Synapse

Individual nerve cells, or neurons, both send and receive cellular signals to and from neighboring neurons, but for the purposes of the previous diagram, only one activity is indicated for each cell. Neurotransmitter molecules are released from the neuron terminal and move across the gap between the 'sending' and 'receiving' neurons. A signal is transmitted to the receiving neuron when the neurotransmitters have bound to the receptor on its surface.

Sources:

Marijuana and Medicine: Assessing the Science Base, IOM 1999

Assembling inspired medicines for FDA clinical trials & commercialization

PSYCHEDELICS AS MEDICINES?

Schedule I Drugs (Psychedelics)

Ibogaine

Ketamine **Psilocybin** (Magic Mushrooms)

MDMA (Ecstacy) **LSD** (Acid) **Mescaline** (Peyote)

5-Me0-DMT **DMT**

Transformative Medicines

Historical data and new scientific studies suggests therapeutic benefits of psychedelics in many areas:

Drug Addiction

Alcoholism

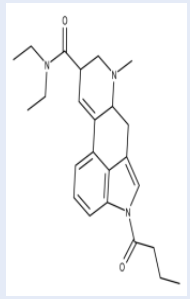
Depression

Migraines

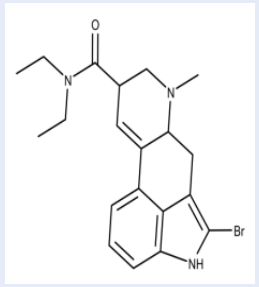
PTSD

Smoking Cessation

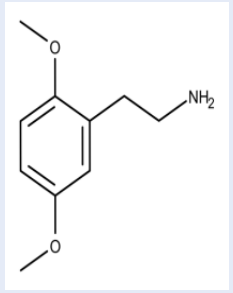
Development: Novel Combinations



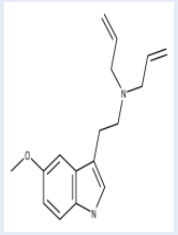
LSD



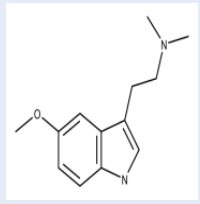
Bromo LSD



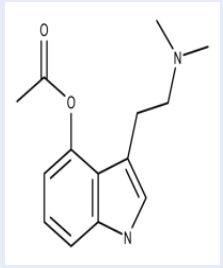
2C-H



5-MeO-DALT



5-MeO-DMT



AcO-DMT

+ FDA

Psychedelic Compounds Approved Drugs Novel Drug Development

Over 2'000 trials already underway with small inroads in "high-risk/high-reward areas

Compound	Reported trials	Status	Explored indications (examples)
Cannabis	944	■■■■	Dravet Syndrome, Epilepsy, MS Spasticity, Schizophrenia…
Ketamine	920	■■■■	Major depressive disorders, PTSD…
LSD	103	■■□□	Major depressive disorders, cluster headache, Anxiety…
MDMA	85	■■■□	PTSD, Anxiety, Addiction…
Psilocybin	45	■■□□	Depression, Addiction, Cluster Headaches…
Ibogaine	5	■■□□	Addiction, Leishmaniasis infection…
Non-hallucinogenic Ibogaine	N/A	■■□□	Addiction
Salvinorin A	5	■□□□	N/A (currently exploring effects on brain function)
LSD in Alzheimer's	N/A	■□□□	Alzheimer's

■■■■ On market ■■■□ Phase III ■■□□ Phase II ■□□□ Phase I

Source: Clinicaltrials.gov, Company websites

Details in Case Study

"Low-Hanging Fruits"

"High-Risk/High reward"

(CRT) Resurrection Therapy for Coma (Psychedelics for Coma)
Patent pending: US PTO-1971144
Inventor: Dr. Hyder A. Khoja

- The US Provisional Patent focuses on restoring brain functionality in coma patients, addressing injuries to the brain.

- This groundbreaking invention examines the relationship between neuron signals and brain receptors to assess "Brain death, Consciousness, Sub-consciousness," and their comparison with awareness and deep sleep.

- The invention seeks to explore the therapeutic benefits of nano-molecule formulations derived from plants, fungi, and other living sources in controlled laboratory settings.

- Compounds like Ketamine, Ibogaine, LSD, Psilocybin, DMT, MDMA, and others will be utilized to conduct extensive research and development.

- The goal is to validate the necessity and effectiveness of these compounds in providing therapeutic benefits for traumatic coma patients and restoring their brain function.

A JOURNEY TOWARDS SUCCESS

PRODUCT DISCOVERY

Investigating Product Candidates and new Psychoactive Compounds.

FORMULATION SUPPLY

cGMP and API manufacturing and supply

Investigating manufacture, Import and supply of traditional and novel psychoactive compounds; LSD, MDMA, Ketamine, Psilocybin and DMT.

CLINICAL RESEARCH

Delivery of Psychedelic Therapy, Evaluating potential research programs, protocols, and supportive infrastructure to drive research seeking optimal outcomes and safety.

Psychedelics Driving a Paradigm Shift

- The medical community is increasingly open to exploring the therapeutic potential of psychedelics in neuroinflammatory conditions.
- “Regardless of receptors-level pharmacology, the really interesting changes that occur with these compounds are in brain network dynamics-the way different areas of the brain communicate with each other”

JOHNS HOPKINS UNIVERSITY

Dr. Mathew Johnson-Professor of Psychiatry & Behavioral Sciences. John Hopkins School of Medicine (2017)

Contact:

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Further Read:

https://psychedelicspotlight.com/psychedelics-coma-patients/

https://psychedelicspotlight.com/interview-with-dr-hyder-a-khoja/

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