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Psychedelic Medicine – History and Clinical Research

Medstar Georgetown University Hospital
Grand Rounds

January 30, 2025

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Research Director, Psychedelics, Adventist HealthCare

Outline

- Introduction
- History
- Current Research
- Psychedelic Treatment 101
- FDA Guidance and a Little Philosophy
- Current Issues
- Q&A

What Your Patients Are Up To…

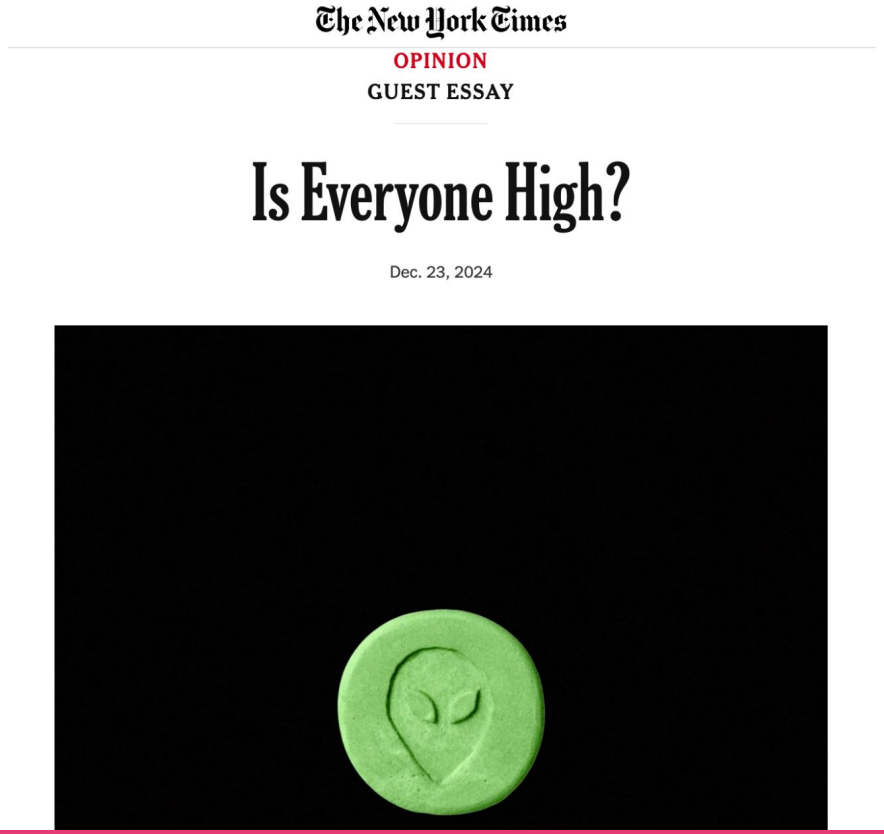
Medical

vs

Recreational

vs

Religious use



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Psychedelic substances have been used by indigenous cultures around the world for thousands of years.

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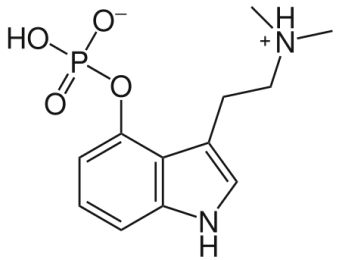
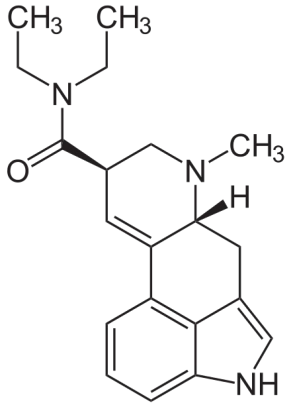
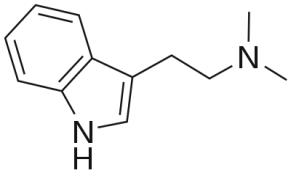
"Classic" Psychedelics
(work through 5-HT receptor)



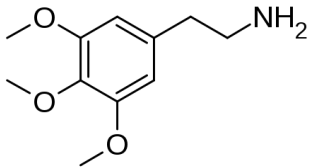
Psilocybin



LSD



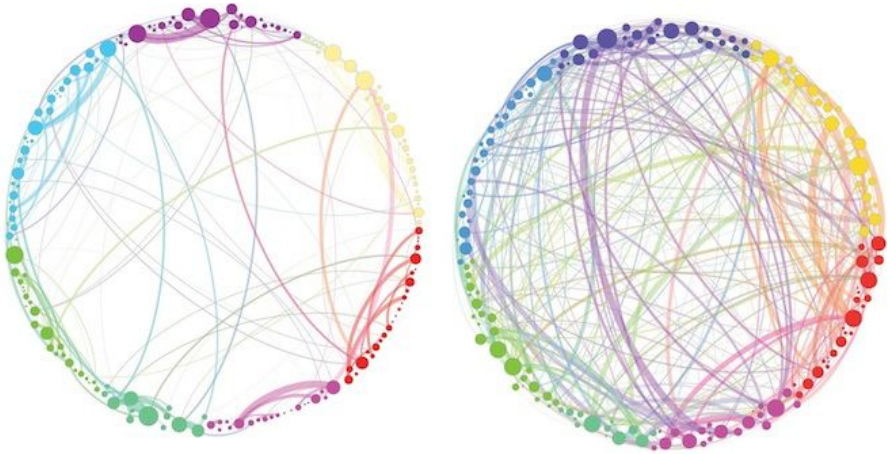
DMT



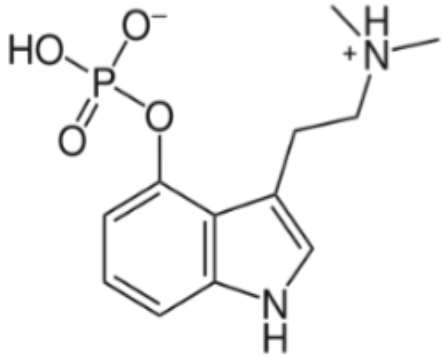
Mescaline

While sometimes lumped together with psychedelics, the mechanisms of ketamine and phencyclidine (NMDA antagonism) and MDMA, aka "Ecstasy","Molly" (monoamine reuptake inhibition), do place them in a different class. They are each being studied to treat psychiatric illness and are worthy of discussions on their own.

How it Works



Left, the stable brain activity in a normal brain.
Right, under the influence of psilocybin, diverse brain regions not normally in communication become strongly linked.



- **Tryptamine-based 5-HT2A Serotonin Receptor agonist**
- **Downregulation or disintegration of Default Mode Network in Cortex: “Self-referential process,” effects on Thalamus, Amygdala.**

Psychedelic = "mind manifesting"

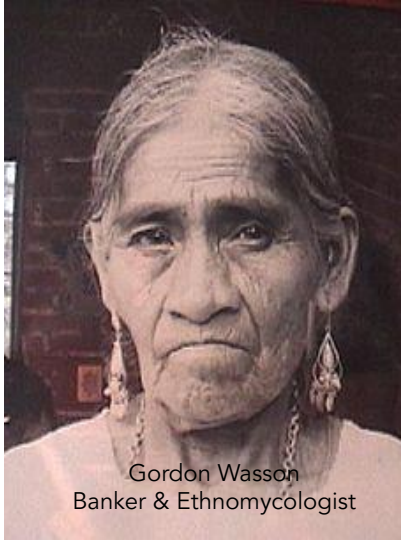
Coined by psychiatrist Humphry Osmond in 1956 at a meeting of the New York Academy of Sciences.

From "mind"(psyche), and "manifest" (delos)

Pre-Prohibition Psychedelic Research

1950 – 1970:

- Maria Sabina introduces Westerners to “veladas”- sacred healing rituals with psilocybe mushrooms. In 1955 Gordon Wasson participates in velada and in 1958: Psilocybin was isolated and synthesized by Albert Hoffman, Marketed by Sandoz as Indocybin
- From 1950 to the mid-1960s, there were more than 1,000 clinical papers published about the sessions of some 40,000 patients, scores of books and six international conferences on psychedelic-assisted psychotherapy
- In psychiatry and medicine, some considered psychedelics to be tools that could be used to better understand how the brain works and could reveal underlying psychodynamic processes; illuminating the pathogenesis of the condition
- Lacked scientific rigor by today’s standards: 1) anecdotal evidence; 2) inadequate assessment procedures; 3) insufficient follow up; 4) naive statistical treatment; 5) lack of controls.



Gordon Wasson
Banker & Ethnomycologist

Maria Sabina
Curandera from Oaxaca

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Pre-prohibition clinician-reported psychedelic phenomenology

- Psychedelics induce a phenomenology that encompassed biological, psychological, interpersonal, and spiritual dimensions.
- Reported effects appeared dose-dependent and included sensory distortions, synesthesia, mystical-type experiences, intensification of affect, and increased suggestibility.
- **Meaning-making capacities also appeared to intensify**, with the memorable subjective effects produced by psychedelics appearing necessary to clinical gains
- Patients' interpretation of psychedelics' phenomenology seemed to highly depend on the nature and quality of the treatment's non-pharmacological factors
- The therapist's unique role: the clinician is compelled to work alongside and follow the patients' responses to the psychedelic effects, promoting a sense of safety, rather than directing the patient toward insight

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Broad Clinical Application & Experimentation

Psychotic Disorders and Psychedelics (1950-1970):

- Early trials with LSD and mescaline in schizophrenic patients often worsened symptoms.
- Key studies: Busch and Johnson (1950), Hoch et al. (1952), Denber and Merlis (1955).

Neurotic Disorders and Psychedelics:

- Promising results in treating anxiety, depression, and OCD.
- Significant studies: Sandison et al.(1954), Sandison & Whitelaw (1957), Chandler and Hartman (1960), Whitaker (1964).

Alcoholism Treatment with Psychedelics:

- More systematic approach with some controlled trials showing improvement.
- Notable findings: Maclean et al.(1961), Jensen (1962), Smart et al. (1966), Hollister et al. (1969), Ludwig et al. (1969).

Methodological Challenges and Insights:

- Common methodological issues: inconsistent treatment application, lack of control groups, and subjective outcome measures.
- Despite flaws, evidence suggested psychedelics' potential in treating non-psychotic disorders, though further rigorous research was needed

Contents lists available at ScienceDirect

Neuropharmacology

journal homepage: www.elsevier.com/locate/neuropharm

Invited review

Psychiatry & the psychedelic drugs. Past, present & future

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Politicization

As the 1960's progressed, the Hippies/Counterculture movement overlapped with those interested in equal rights and opposition to the Vietnam War and came to greater attention of the Government when they began burning draft cards at public protests. In 1966, Senate hearings occurred with a goal of stopping the psychedelic use by making the substances illegal.

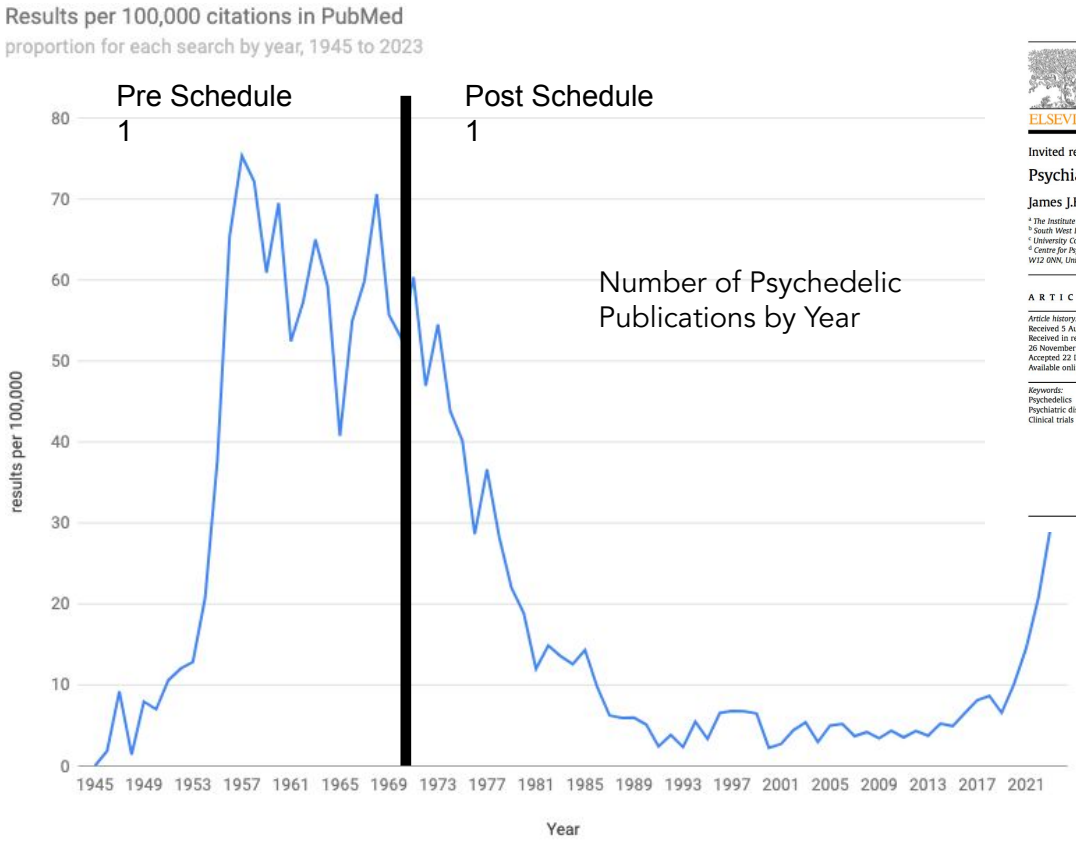
Controlled Substances Act

Passed by the 91st United States Congress as Title II of the Comprehensive Drug Abuse Prevention and Control Act of 1970 and signed into law by President Richard Nixon.[53]

Psychedelics were listed as Schedule I drugs and all research was immediately ordered to be stopped.

Schedule I substances are described as those that have the following findings:

- The drug or other substance has a high potential for abuse.
- The drug or other substance has no currently accepted medical use in treatment in the United States.
- There is a lack of accepted safety for use of the drug or other substance under medical supervision.



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ABSTRACT

The classical psychedelic drugs, including psilocybin, lysergic acid diethylamide and mescaline, were used extensively in psychiatry before they were placed in Schedule I of the UN Convention on Drugs in 1967. Experimentation and clinical trials undertaken prior to legal sanction suggest that they are not helpful for those with established psychotic disorders and should be avoided in those liable to develop them. However, those with so-called 'psychoneurotic' disorders sometimes benefited considerably from their tendency to "loosen" otherwise fixed, maladaptive patterns of cognition and behaviour, particularly when given in a supportive, therapeutic setting. Pre-prohibition studies in this area were sub-optimal, although a recent systematic review in unipolar mood disorder and a meta-analysis in alcoholism have both suggested efficacy. The incidence of serious adverse events appears to be low. Since 2006, there have been several pilot trials and randomised controlled trials using psychedelics (mostly psilocybin) in various non-psychotic psychiatric disorders. These have provided encouraging results that provide initial evidence of safety and efficacy, however the regulatory and legal hurdles to licensing psychedelics as medicines are formidable. This paper summarises clinical trials using psychedelics pre and post prohibition, discusses the methodological challenges of performing good quality trials in this area and considers a strategic approach to the legal and regulatory barriers to licensing psychedelics as a treatment in mainstream psychiatry.

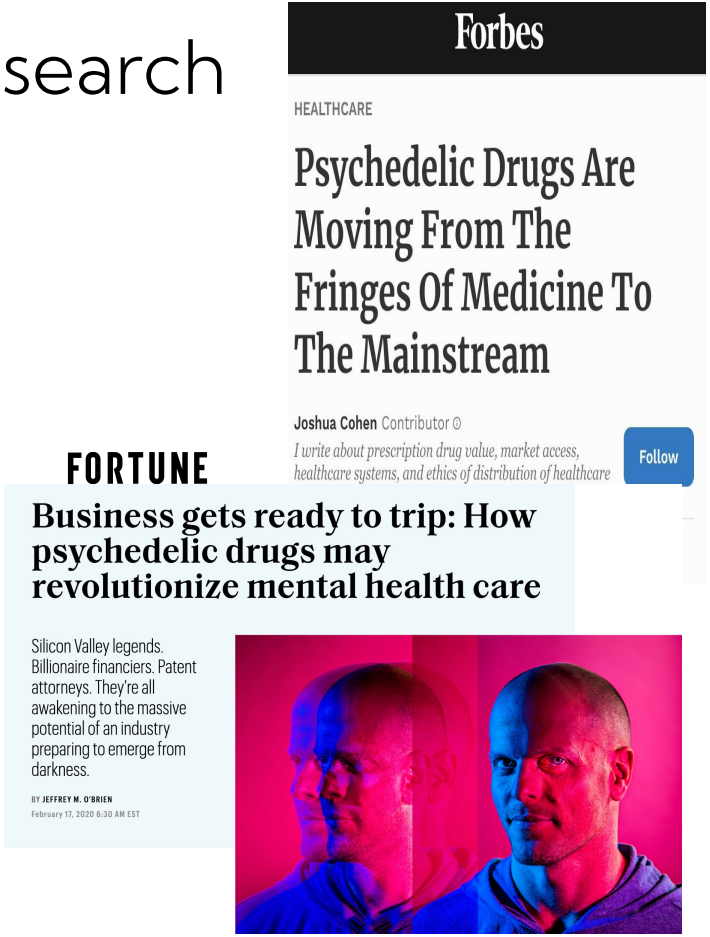
Post-Controlled Substance Act Era

- Early 2000s saw a resurgence of psychedelic research. Group of researchers in the late 90s/early 2000 were able to convince the FDA to permit reinitiating this type of research
- Funding from private donors (public funding not available)
- Last 10 years that trickle has become a stream of research that is quite exciting in terms of what it could offer not only to the field of psychiatry, but potentially other areas of medicine
- Coverage of studies has decreased stigmatization of these substances.

Modern Medical Psychedelic Research

Studies span across the spectrum of mental health:

Major Depressive Disorder	Alcohol
PTSD	Smoking Cessation
OCD	Cancer related anxiety & depression
Suicidal Ideation	Chronic Pain
Bipolar II	Cluster Headaches
Anorexia Nervosa	
Anxiety	
Mild Cognitive impairment/Alzheimer's	



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Modern Medical Psychedelic Research

Efficacy of Psilocybin therapy for MDD / TRD (phase II)

- 26% of participants (n=233) who received a single dose of 25 mg of psilocybin were in remission at the 12-week mark. (Goodwin et al., NEJM 2022)
- 33% of participants who received two dose (10mg and 25mg) a week apart were still in remission at six-month mark. (Carhart-Harris et al., NEJM 2017)
- 58% of participants who received two doses of psilocybin, 58% were in remission at the year mark. (Gukasyan et al., JAMA 2022)

Efficacy of MDMA-AT for PTSD (phase III)

- 67% of participants no longer qualifying for a PTSD diagnosis after 3 treatment sessions, compared to 32% in the control arm
- *FDA rejected Lykos' application in August 2024 - requesting additional phase III studies.*

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NEWS | 14 September 2023 | Correction 15 September 2023

Psychedelic drug MDMA moves closer to US approval following success in PTSD trial

Long-awaited trial data show drug is effective at treating post-traumatic stress disorder in a diversity of people.

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Compass Phase 2 – Goodwin et al., (2022)

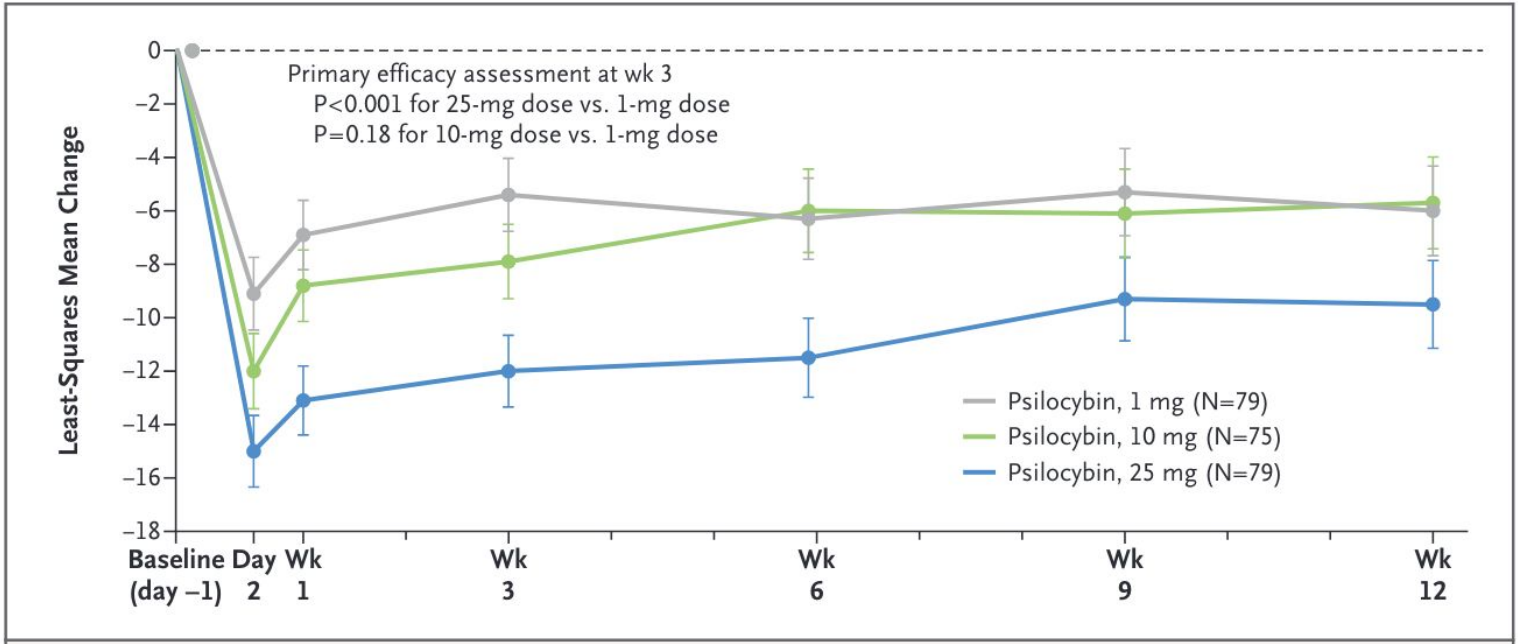

Figure 2. Change from Baseline in MADRS Total Score (Modified Intention-to-Treat Population).

Total scores on the Montgomery–Åsberg Depression Rating Scale (MADRS) range from 0 to 60, with higher scores indicating greater severity of depression. I bars represent standard errors.

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Compass Phase 2– Remission

Drug	Remission (%) 3-week	Remission (%) 12-week
Psilocybin 25mg	29%	27%
Psilocybin 10mg	9%	7%
Psilocybin 1mg	8%	11%

Raison et al., (2023)

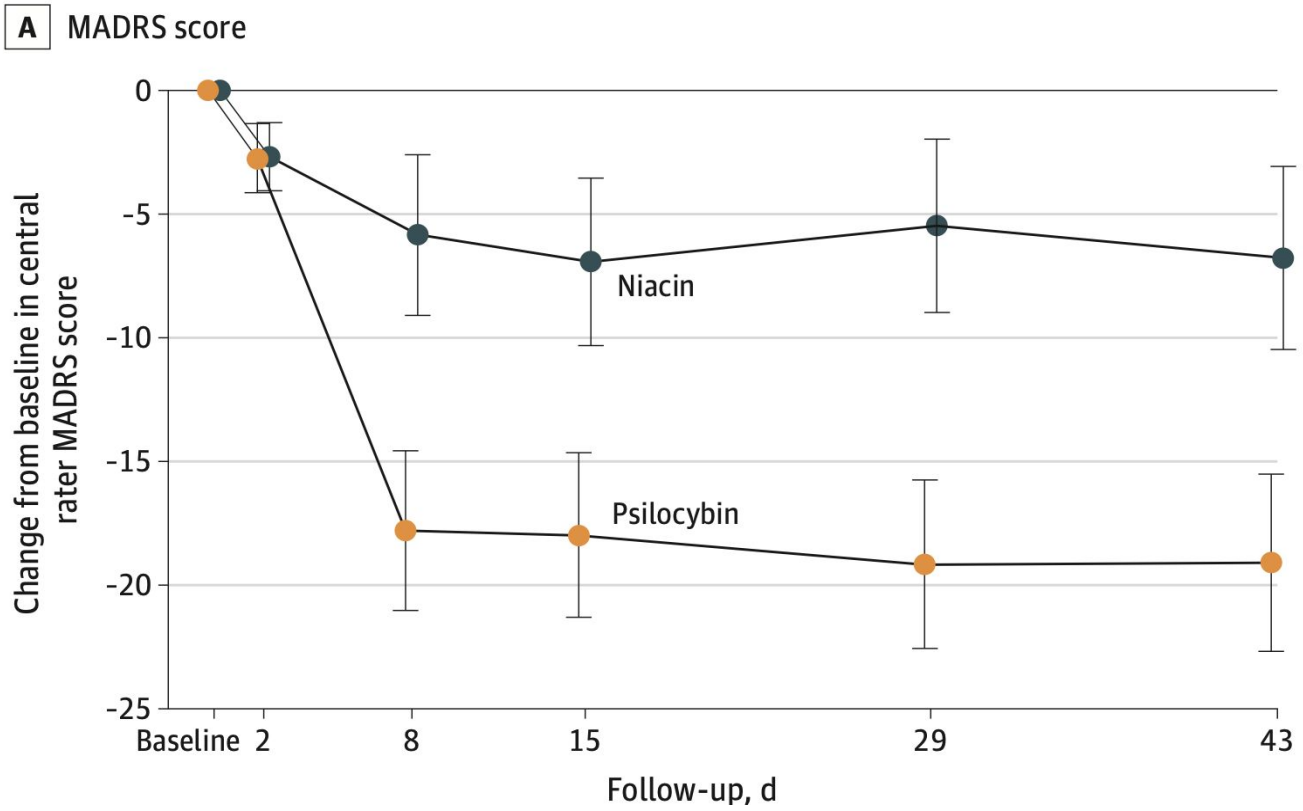
JAMA | Original Investigation

Single-Dose Psilocybin Treatment for Major Depressive Disorder
A Randomized Clinical Trial

Charles L. Raison, MD; Gerard Sanacora, MD, PhD; Joshua Woolley, MD, PhD; Keith Heinzerling, MD; Boadie W. Dunlop, MD, MS; Randall T. Brown, MD, PhD; Rishi Kakar, MD; Michael Hassman, DO; Rupal P. Trivedi, MD; Reid Robison, MD; Natalie Gukasyan, MD; Sandeep M. Nayak, MD; Xiaojue Hu, MD; Kelley C. O'Donnell, MD, PhD; Benjamin Kelmendi, MD; Jordan Sloshower, MD, MSc; Andrew D. Penn, RN, MS, NP; Ellen Bradley, MD; Daniel F. Kelly, MD; Tanja Mletzko, MA; Christopher R. Nicholas, PhD; Paul R. Hutson, PharmD; Gary Tarpley, PhD; Malynn Utzinger, MD; Kelsey Lenoch, BS; Kasia Warchol, BS; Theraysa Gapasin, MS, aMFT; Mike C. Davis, MD, PhD; Courtney Nelson-Douthit, BS; Steffanie Wilson, PhD; Carrie Brown, MA; William Linton, BS; Stephen Ross, MD; Roland R. Griffiths, PhD

- n = 104 MDD
- Single dose psilocybin (25 mg) vs placebo
- 6-week primary outcome

Raison et al., (2023)



Raison et al., (2023) – 6 week

Drug	Remission (%)
Psilocybin 25mg	44%
Niacin	11%

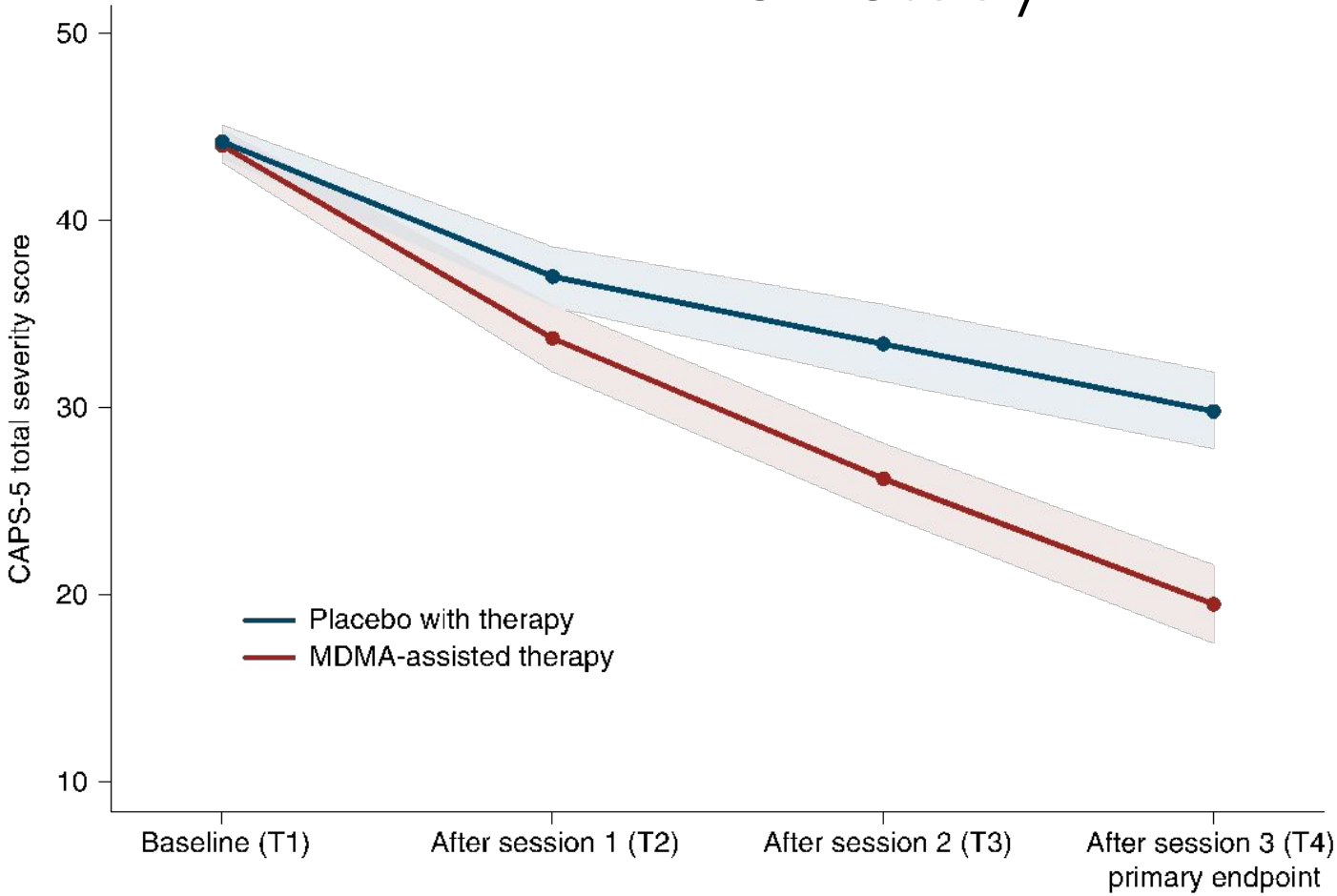
	Davis (2021)	Carhart-Harris (2021)	Compass (2022)	Von Rotz (2023)	Raison (2023)
Remission difference	45%	29%	21%	42%	33%

Ongoing Phase 3 Studies –Psilocybin for Depression

- **Compass Pathways**– Treatment resistant depression
- **Usona** – MDD

These studies are expected to be submitted to FDA in 2026

MDMA–PTSD Study



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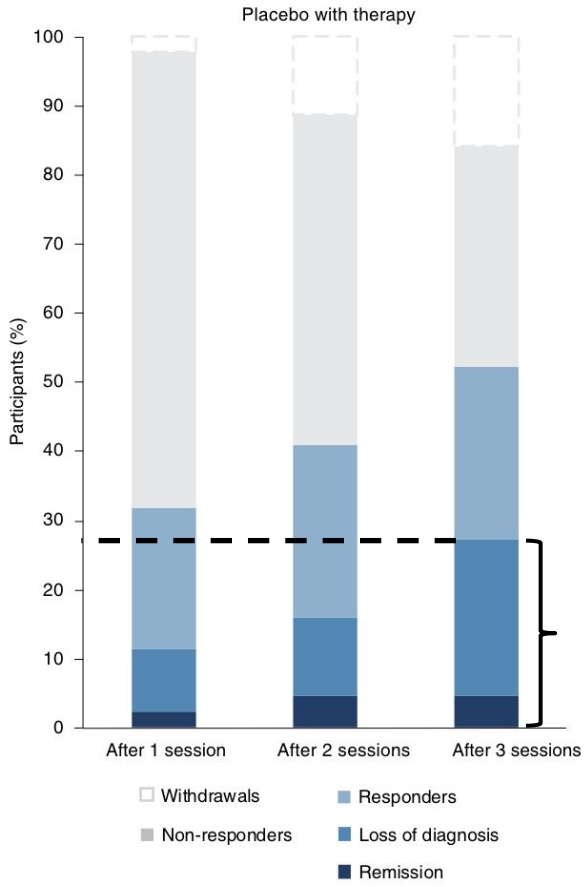
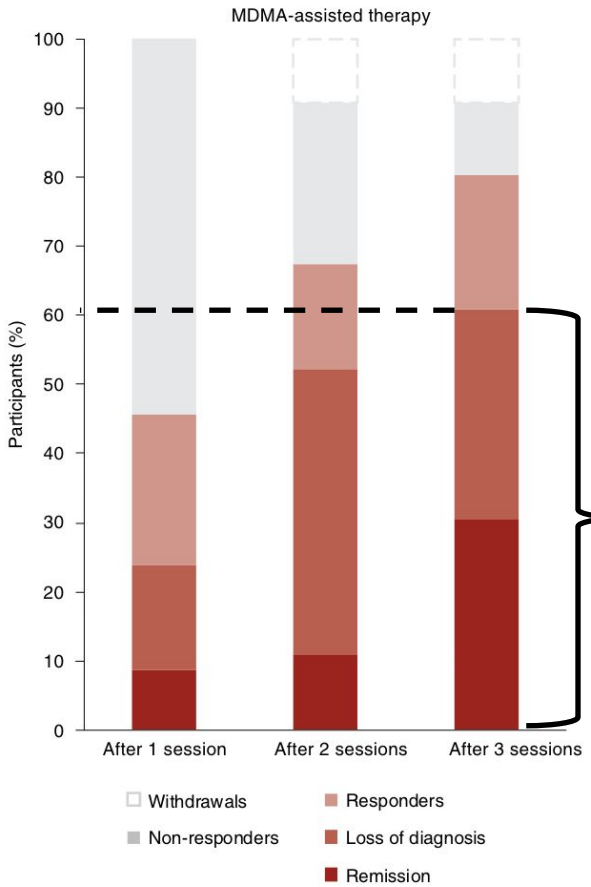
MAPS Phase 3 (#1)





Loss of diagnosis

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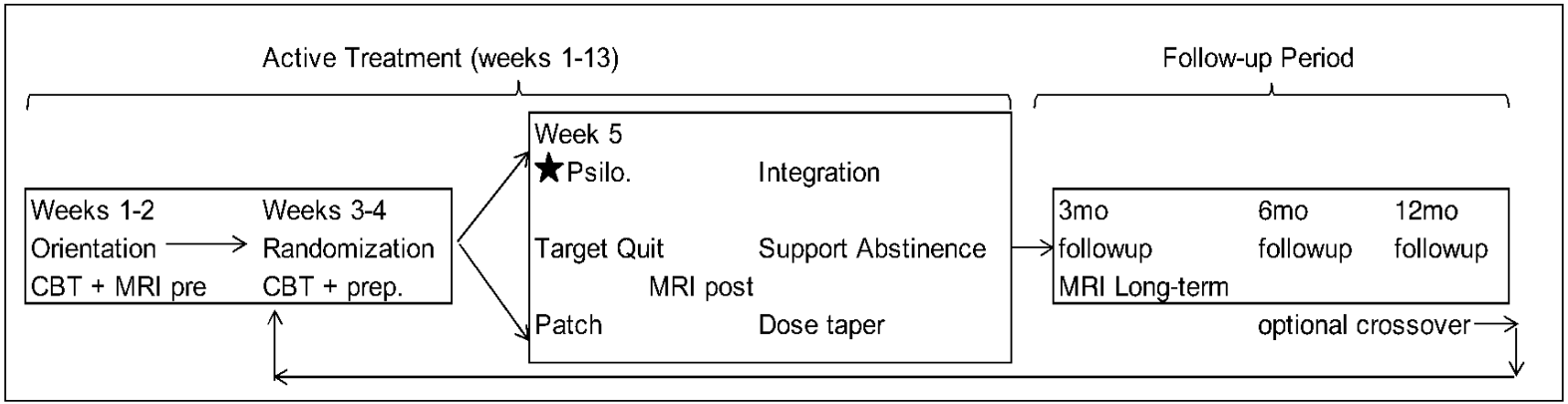
Substance Use Disorders – Randomized Trials of Psilocybin

- Tobacco
  - Hopkins study (completed, not published)
  - NIDA grant multi site
- Cocaine
  - UAB
- Opioid
  - multiple sites
- Alcohol Use Disorder
  - NYU
- Methamphetamine
  - Portland VA
  - n = 30
  - 25mg -> 30mg vs treatment as usual in residential rehab program

Ongoing Open-Label Comparative Effectiveness Trial – Tobacco Smoking



4 weeks CBT

Randomize

Psilocybin vs Nicotine patch

Long-term follow-up

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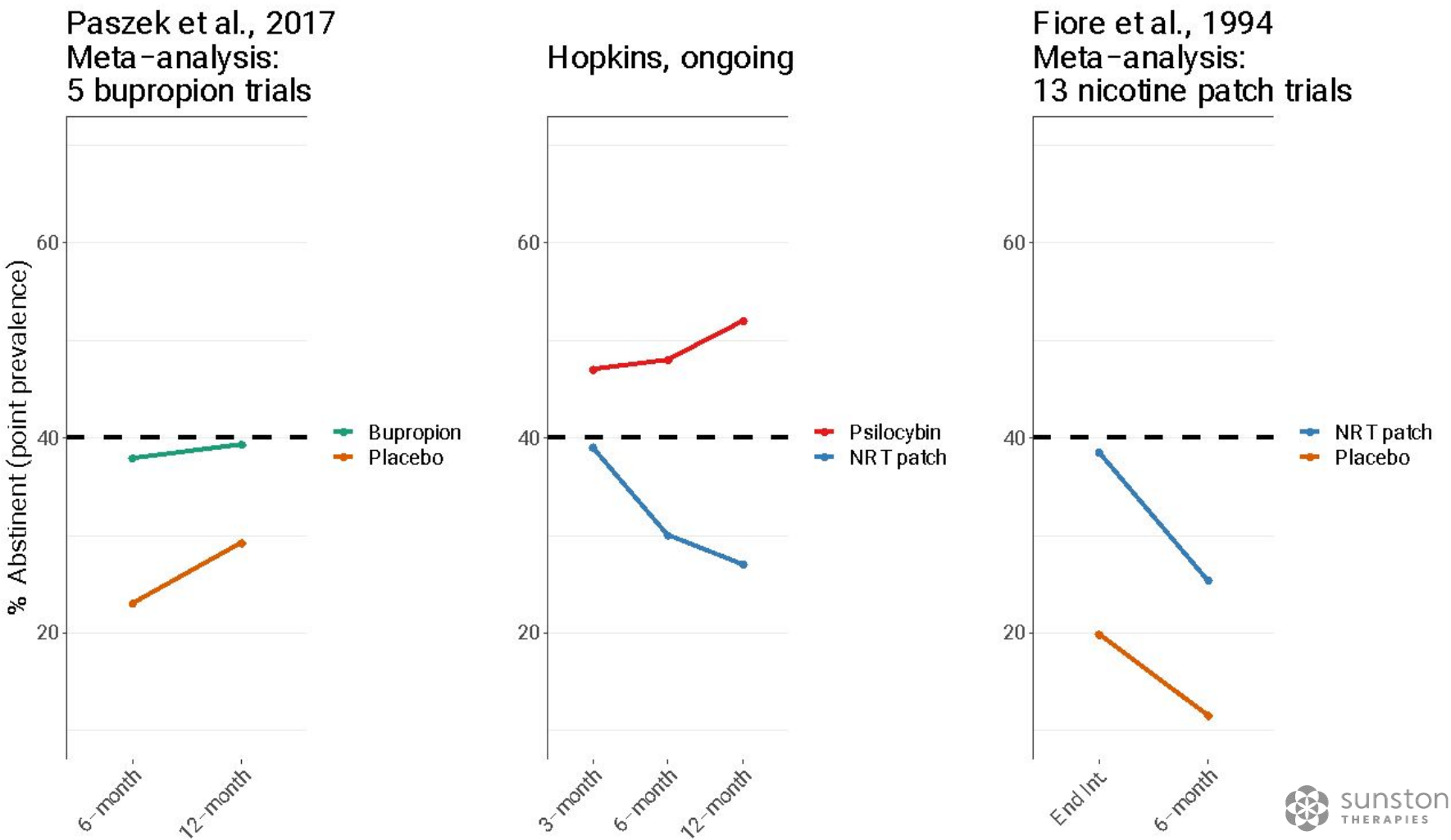
	Categories	Psilocybin n=27	NRT n=29	Total sample n=56
Sex , *n* (%)	Female	10 (37%)	9 (31%)	19 (34%)
	Male	17 (63%)	20 (69%)	37 (66%)
Age (years)	Mean (SD); Range	45 (11); 27 – 70	46 (12); 26 – 65	46 (11); 26 – 70
Race / Ethnicity *n* (%) [a]	White	24 (89%)	25 (86%)	49 (88%)
	Black / African American	3 (11%)	0 (0%)	3 (5%)
	Hispanic / Latino	1 (4%)	0 (0%)	1 (2%)
	Asian / South Asian	0 (0%)	2 (7%)	2 (4%)
	Biracial	0 (0%)	2 (7%)	2 (4%)
Education, *n* (%)	High School / G.E.D.	1 (4%)	2 (7%)	3 (5%)
	Some College / Trade School	10 (37%)	7 (24%)	17 (30%)
	Bachelor's Degree	10 (37%)	6 (21%)	16 (29%)
	Graduate Degree	6 (22%)	14 (48%)	20 (36%)
Prior Hallucinogen	No	8 (30%)	6 (21%)	14 (25%)
	Yes	19 (70%)	23 (79%)	42 (75%)
Cigarettes per Day	Mean (SD); Range	17 (6); 5 - 30	16 (8); 5 - 40	17 (7); 5 - 40
Years Smoking	Mean (SD); Range	25 (9); 8 - 52	26 (13); 4 - 48	26 (11); 4 - 52
Previous quit attempts	Mean (SD); Range	8 (6); 3 - 25	6 (4); 2 - 20	7 (5); 2 - 25

- About 1 pack a day
- Mean duration 26 years
- Mean 7 quit attempts



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Bogenschutz et al., (2022)

JAMA Psychiatry | Original Investigation

Percentage of Heavy Drinking Days Following Psilocybin-Assisted Psychotherapy vs Placebo in the Treatment of Adult Patients With Alcohol Use Disorder

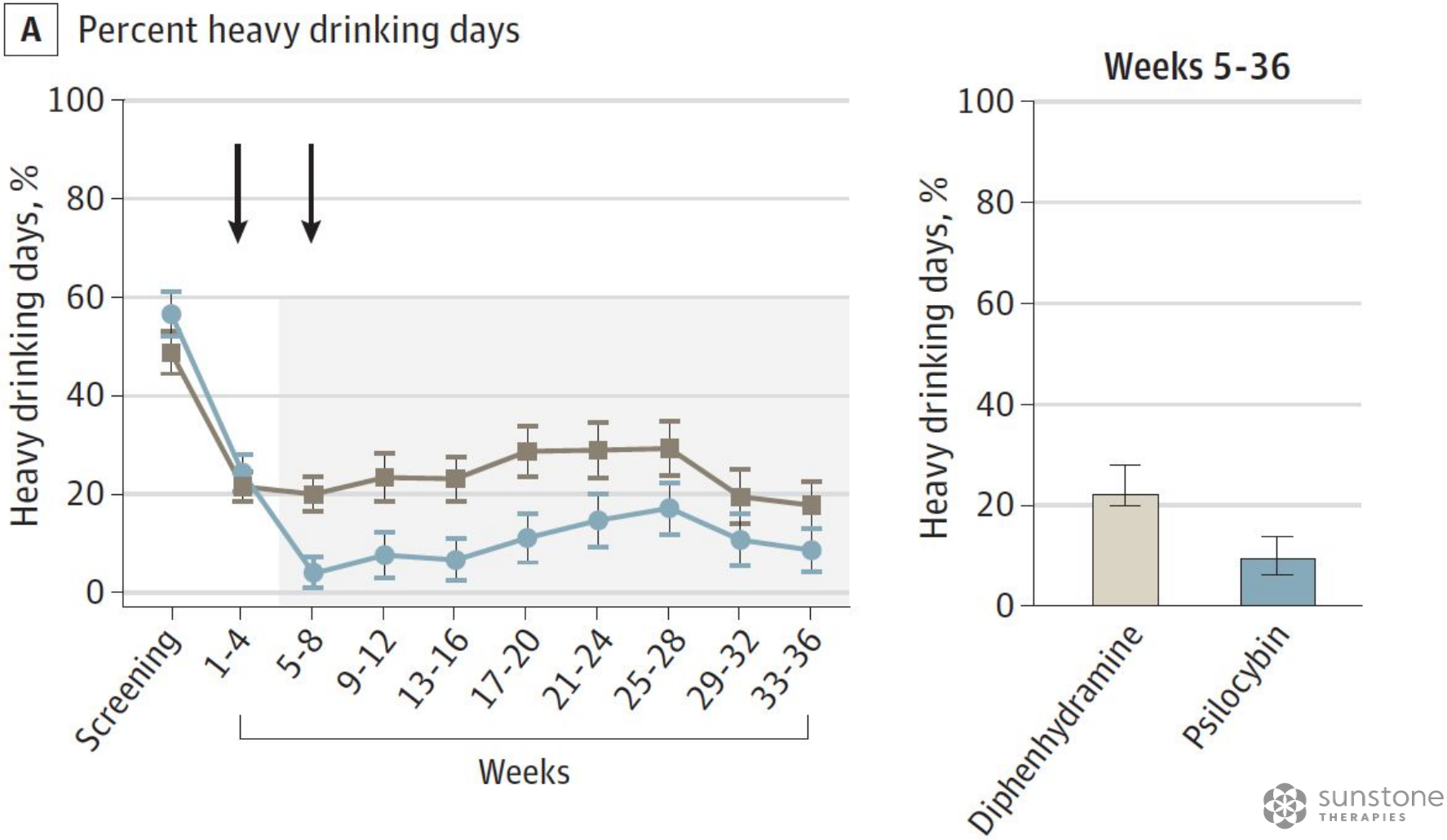
A Randomized Clinical Trial

RCT (N = 95)

- Psilocybin 25mg/70kg - 40mg/70kg x 2 vs
- Diphenhydramine 50mg-100mg x 2
- Psychological support throughout for both

- Primary outcome % heavy drinking days over 32 wk period

Baseline	%
% Drinking days	75%
% Heavy drinking days	53%
Drinks per day	4.8
Drinks per drinking day	7.1
Years dependent	14.2


A
Percent heavy drinking days
Heavy drinking days, %
100
80
60
40
20
0
Screening
1-4
5-8
9-12
13-16
17-20
21-24
25-28
29-32
33-36
Weeks
Weeks 5-36
Heavy drinking days, %
100
80
60
40
20
0
Diphenhydramine
Psilocybin

Cocaine Use Disorder

- University of Alabama Birmingham
- n = 40
- Psilocybin 25mg/70kg
- Diphenhydramine 100mg
- Cocaine abstinence outcome at 24 weeks

Psilocybin Misc Conditions

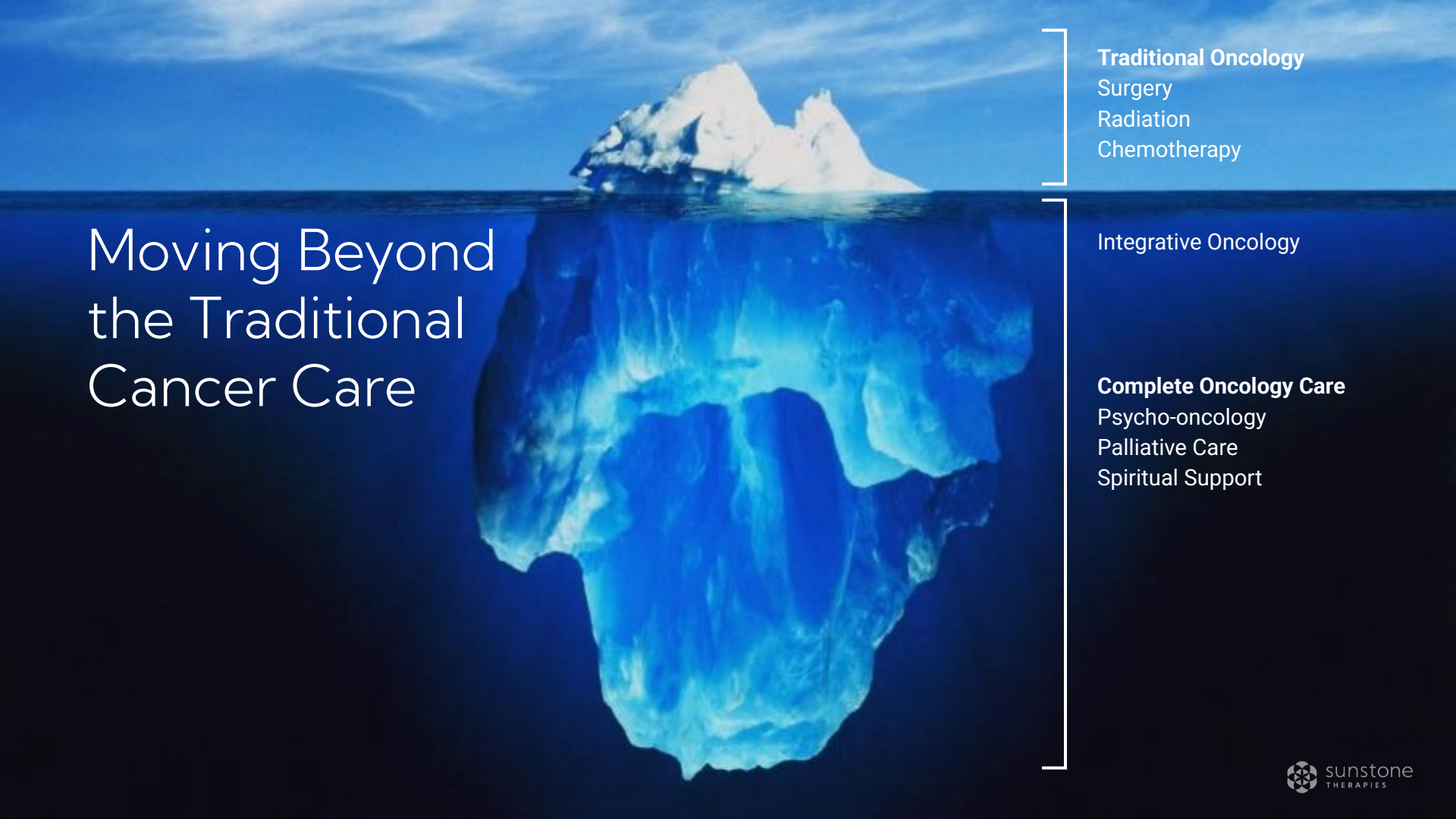
- Anorexia
  - UCSD n = 10 pilot study (Peck et al., 2023), single dose
    - Baseline BMI normal - 19.7
  - Hopkins (completed, not published)
  - Imperial (completed, not published)
- PTSD
  - Multisite Study
- OCD
  - Yale
- Chronic pain
  - Hopkins - chronic lower back pain
  - Fibromyalgia - multiple sites
- Chronic Lyme
  - Hopkins

Government Funding

- NIDA
  - Multisite psilocybin for tobacco use disorder
- NIAA
  - Yale IV DMT for AUD
- NCI
  - NYU psilocybin for advanced cancer-related psychiatric distress
- NCCIH
  - Hopkins psilocybin for chronic lower back pain
- DoD
  - Hopkins ALS

The Aquilino Cancer Center

Moving Beyond the Traditional Cancer Care



Traditional Oncology
Surgery
Radiation
Chemotherapy

Integrative Oncology

Complete Oncology Care
Psycho-oncology
Palliative Care
Spiritual Support

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The first purpose built space dedicated to psychedelic research

Sunstone has conducted over 250 psychedelic sessions in the last 12–18 months.

We have gained significant insight into the delivery of PAT.

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Wide Breadth of Clinical Trials

6 Psychedelic Medicines

- MDMA
- Psilocybin
- 5-MeO-DMT
- LSD
- Methylone
- RE104

9 Treatment Indications

- PTSD — Post-Traumatic Stress Disorder
- MDD — Major Depressive Disorder
- TRD — Treatment-Resistant Depression
- AD — Adjustment Disorder
- GAD — Generalized Anxiety Disorder
- Cancer & MDD
- Cancer & AD
- Advanced Illness
- Postpartum Depression

8 Open Trials

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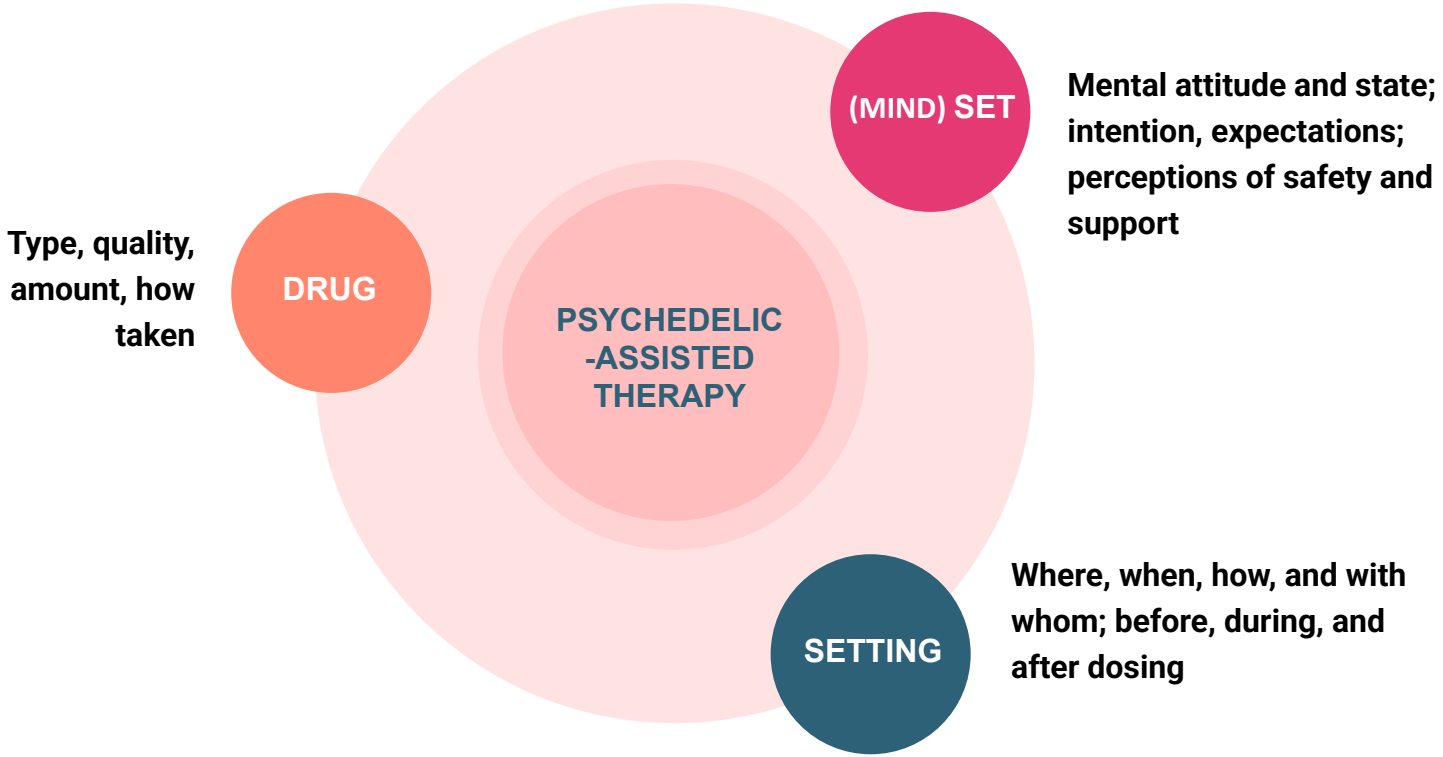
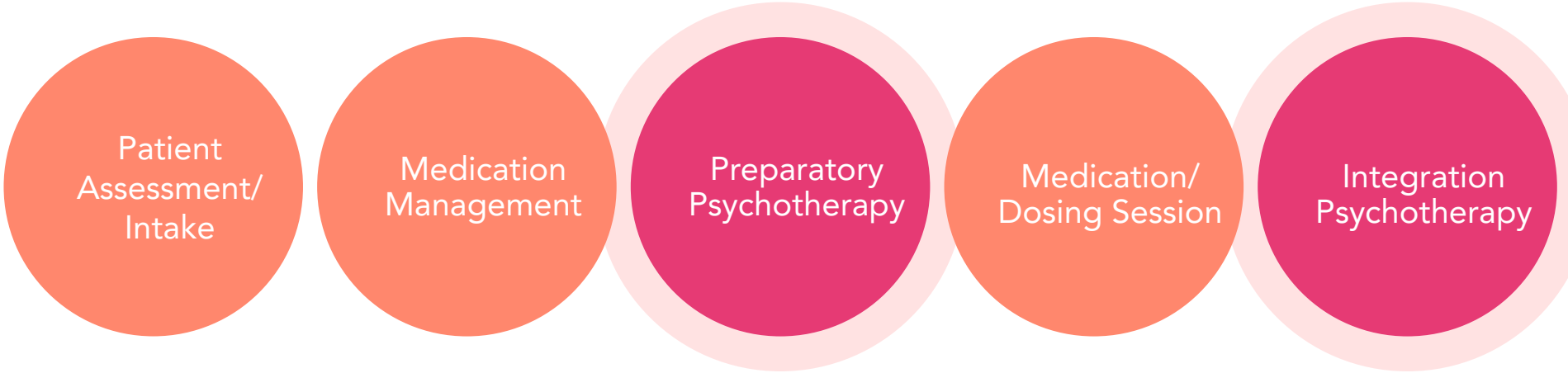
PAT Therapy = Drug + Set + Setting



PAT Clinical Model of Care



Set and setting are a central aspect of every contact, throughout the entire psychedelic-assisted therapy process. The therapeutic envelope of safety, trust and accountability are prerequisite to a more meaningful and transformative experience.

rockingstone group

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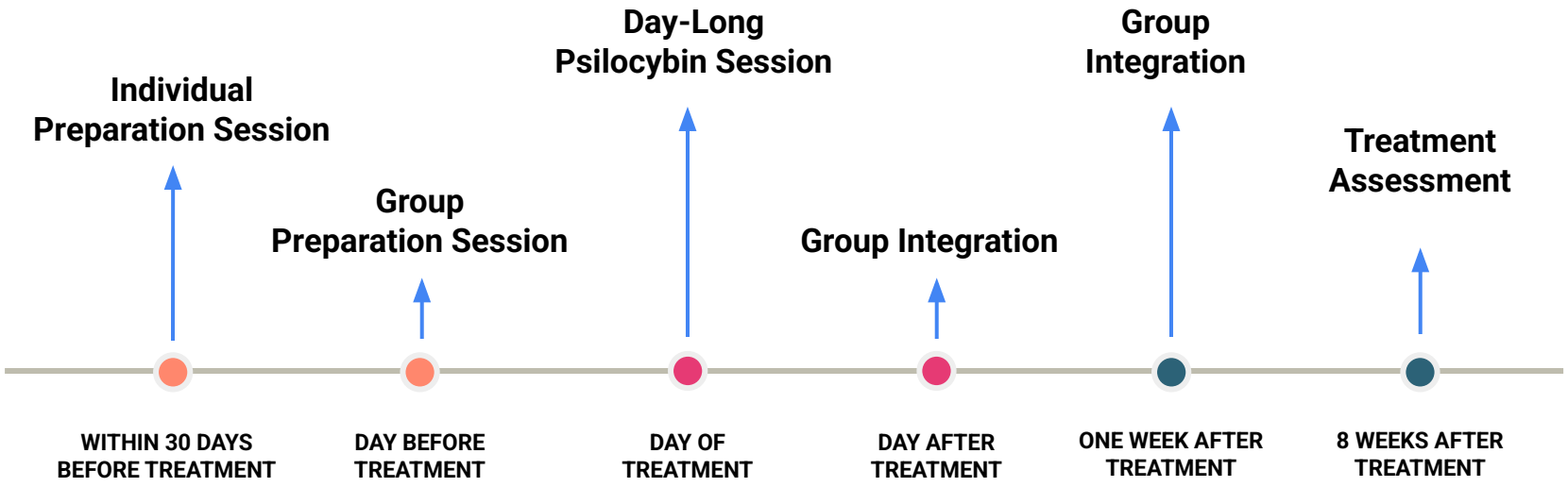
Individual Preparation

Dosing
(Psychedelic Experience)

Group Integration

Trial Design: The Safety and Efficacy of Psilocybin in Cancer Patients with Major Depressive Disorder Using COMP360



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Demographic & Clinical Characteristics of Study Participants

CHARACTERISTIC	CATEGORIES	TOTAL (N=30)	%
Age: mean (SD)	Range 30-78	56.1	(12.4)
Gender	Female	21	70.0
	Male	9	30.0
Ethnicity	African American/Black	3	10.0
	Asian, Asian American, Pacific Islander	2	6.70
	Caucasian	24	80.0
	Hispanic, Latin	1	3.30
Marital Status	Married	20	66.7
	Divorced/Separated	5	16.7
	Never Married	5	16.7

JAMA Oncology

Agrawal M, Emanuel E, Richards B, Richards W, Roddy K, Thambi P. Assessment of Psilocybin Therapy for Patients With Cancer and Major Depression Disorder. JAMA Oncol. Published online April 13, 2023.

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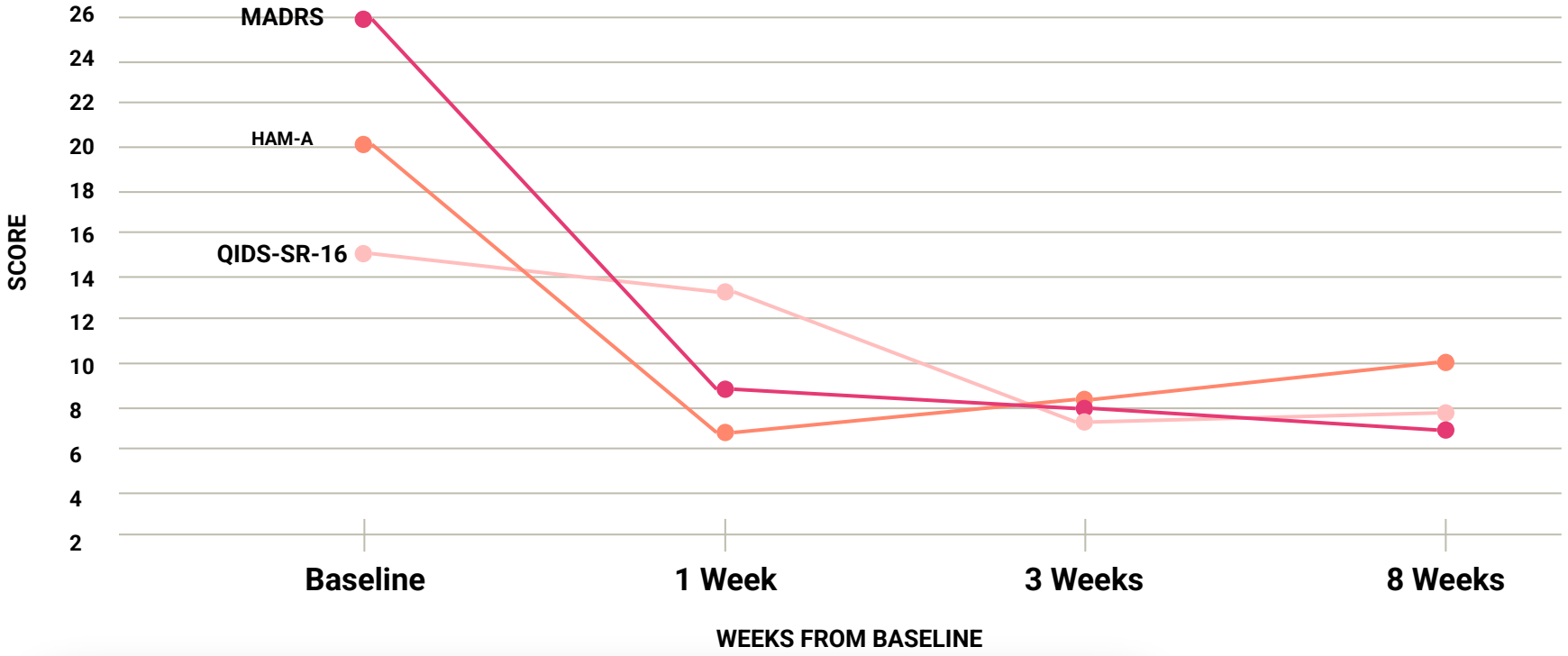
MADRS, HAM-A, and QIDS-SR-16 Average Scores



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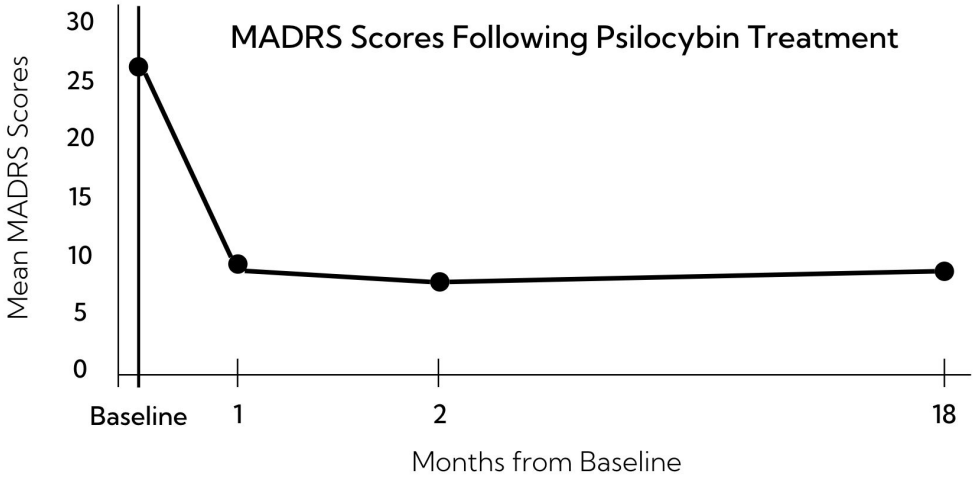
Long Term Efficacy at 18 Month Follow-Up



RESULTS

- Depression severity
  - 64% had significant reduction for up to 18 months
  - 57% in complete remission for up to 18 months

Follow-up Visit	Clinical Response	Remission
2 month follow-up	24/30 (80%)	15/30 (50%)
18 month follow-up	18/28 (64%)	16/28 (57%)

Single psilocybin treatment led to long-term remission from depression in >50% of cancer patients

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Safety Data

Most common categories of Adverse Events (AEs) for all 30 patients (all are Grade I):

- **Headache**
- **Body symptoms**
  - Body pain, paresthesia, sensations, muscle cramps, perception of body temperature change, rhinorrhea
- **Psychomotor impairment**
- **Mood/Affect changes**
  - Altered mood, affect change – euphoria, crying, sadness most common
- **GI symptoms**
  - Nausea, GI upset
- **Fatigue**
- **Insomnia**

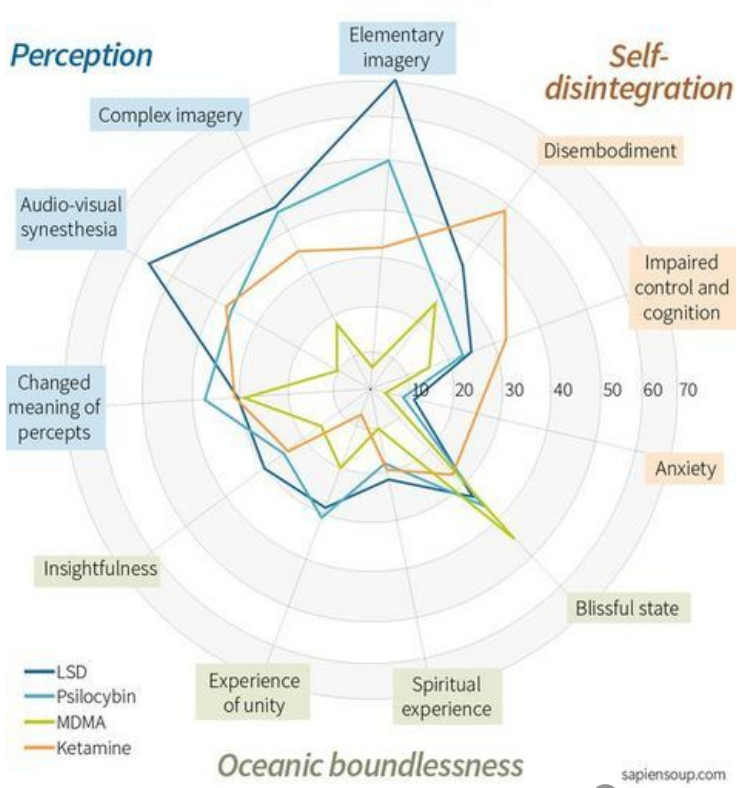
The Psychedelic Experience & State

Commonly reported transient psychedelic effects include:

- heightened perception of sensory input
- distorted sense of time
- euphoria, and a sense of well-being
- perception of being a passive observer of events or being outside one's body
- feelings of expansiveness
- enhanced mystical or spiritual experiences
- synesthesia (i.e., a blending of the senses)

Individuals may also experience:

- fear & other intensely felt 'negative' emotions
- panic reactions
- dysphoria
- frightening imagery
- nausea
- fatigue
- headache



FDA Guidance (June 2023)

- A landmark piece of guidance from the FDA
- First time FDA had weighed in a public way on this topic
- Targeted at scientist and researchers who do not much about psychedelics given they've been stigmatized for so many years
- Contains routine things like requiring the manufacturer to provide detail information on the chemistry and manufacturing of the psychedelic drug manufactured in compliance with good manufacturing practices.

FDA Guidance

Psychological Support

This additional variable both complicates the assessment of effectiveness and presents a challenge for any future product labeling.

- The contribution of the psychotherapy component to any efficacy observed with psychedelic treatment has not been characterized.
- Sponsors should plan to justify the inclusion of a psychotherapy component and describe any trial design elements intended to reduce potential bias or to quantify the contribution of psychotherapy to the overall treatment effect.
- It is preferable that the in-session monitor is not involved in post-session psychotherapy because their knowledge of the treatment could bias the delivery of subsequent therapy.

Clinical & Research Context

In clinical trials, we are currently studying if what our current models of support work *NOT* whether they are the most suited to support psychedelic forms of therapy

Individuals have been advocating for CBT, IFS, ACT, psychospiritual approaches as default

Australia, Oregon and numerous retreat centers worldwide administering psychedelics

FDA Issues First Draft Guidance on Clinical Trials with Psychedelic Drugs

- Many of the psychedelic drug development programs involve administering the investigational drug and then engaging in psychological support or psychotherapy either while the subject is experiencing the acute effects of the drug or in a subsequent session. This additional variable both complicates the assessment of effectiveness and presents a challenge for any future product labeling.
  - As of the publication date of this guidance, the contribution of the psychotherapy component to any efficacy observed with psychedelic treatment has not been characterized.
  - Psychotherapeutic interventions have the potential to increase expectancy and performance biases. Sponsors should plan to justify the inclusion of a psychotherapy component and describe any trial design elements intended to reduce potential bias or to quantify the contribution of psychotherapy to the overall treatment effect. A factorial design may be useful for characterizing the separate contributions of drug and psychotherapy to any observed treatment response.
  - The therapist monitoring the session can usually deduce the treatment assignment by observing the subject's behavior. Therefore, it is preferable that the in-session monitor is not involved in post-session psychotherapy because their knowledge of the treatment could bias the delivery of subsequent therapy.

Lack of robust comparative research investigating models of psychological support or psychotherapy AND lack regulation / professional body accreditation

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Current Challenges for Psychedelic Research

- Current studies are so restrictive in their inclusion/exclusion requirements that they do not represent the general population
- **Lack of good biomarkers for mental health/psychiatry**
  - Recognizing the limitation of the current DSM and diagnostic categories
  - Current outcome measures may not capture the full picture
- Combining therapy + medicine (new paradigm)
  - Functional unblinding
  - Expectancy bias
- Impossible to say with certainty if a general patient group with the same clinical diagnosis will benefit without considering patients on an individual level

What is Lacking in Psychedelic Research

Primary Focus for 90% of Current Studies

- Are these drugs safe? What are their risks?
- Do they work? And if so, how effective are they?

Very Little Focus on

- Who is best suited for this treatment?
- What is the role of the therapist and psychological support?

New Paradigm of Treatment–Raises Old Questions

What to do with Subjectivity?

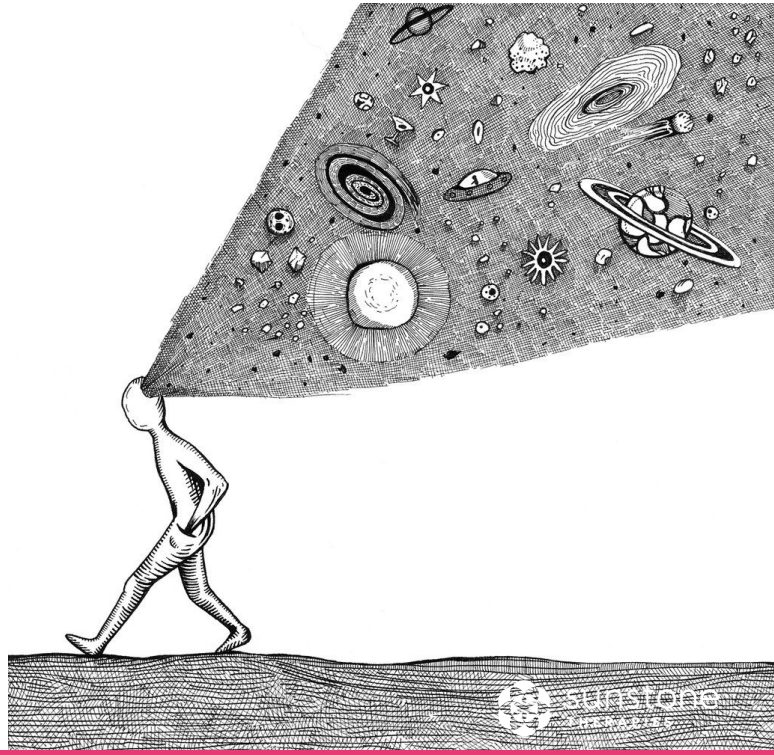
- Unlike most medical interventions, PAT evokes more subjective and psychological experiences that are very intense and for a long time.
- There are no good objective measures for an inherently subjective experience.
- Raises questions around role of meaning in care of patients, relationships, growth through pain which is not traditionally in medicine.

Inherent Tension: Objectivity vs Subjectivity

- This is different then measuring BP, Hct, tumor size for which we have instruments to measure. This is an internal state of a person's mind that we are trying to quantify but cannot truly capture
- Unlike most medical interventions, **PAT evokes more subjective and psychological experiences** that are very intense and for a long time
- There are no good objective measures for an inherently subjective experience

New Paradigm of Treatment: *What to do with Subjectivity?*

This tension is not new to psychedelics or psychiatry–it has long been debated by philosophers of mind and science including Thomas Nagel, Edmund Husserl, William James to name a few



Hard Problem of Consciousness

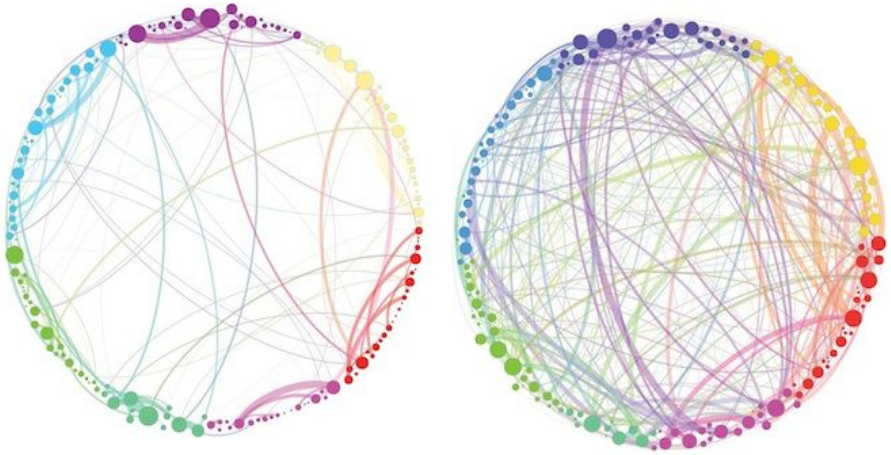
The hard problem of consciousness is a term coined by philosopher David Chalmers to describe the challenge of explaining why and how subjective experience, arises from physical processes in the brain.
It contrasts with the easy problems of consciousness, which involve understanding brain functions like perception, memory, and behavior that can, in principle, be explained by neuroscience and computational models.

The Core Tension

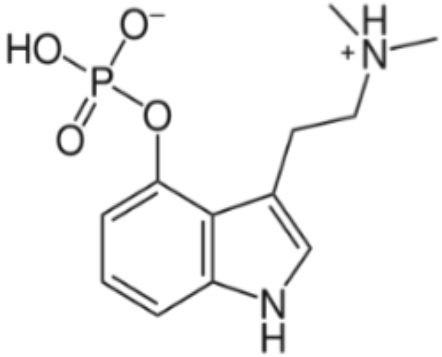
- Core Tension:
  - **Objective science** seeks universal truths and measurable data, while **subjective experience** is deeply personal, qualitative, and resistant to generalization.
  - Can a scientific, objective framework ever fully account for the richness, complexity, and personal meaning of subjective experience?
  - Reductionists may argue yes, while critics argue no—subjectivity contains something **irreducible**.

"Subjectivity is not a weakness but a source of insight and value."

How it Works



Left, the stable brain activity in a normal brain.
Right, under the influence of psilocybin, diverse brain regions not normally in communication become strongly linked.



- **Tryptamine-based 5-HT2A Serotonin Receptor agonist**
- **Downregulation or disintegration of Default Mode Network in Cortex: “Self-referential process,” effects on Thalamus, Amygdala.**

Potential Mechanisms of Change in Patients

- Connection to a new narrative about their own lives, a new way of relating to their motivations, urges, and behaviors

- Seeing their mental health struggles or diagnosis as something separate from their perception of ‘self’

- The author of their own life, able to enact meaningful change, feel empowered to make changes and feel a sense of agency and independence

"Not everything that can be counted counts.
Not everything that counts can be counted."

–Albert Einstein

How Meaning Relates to the Debate

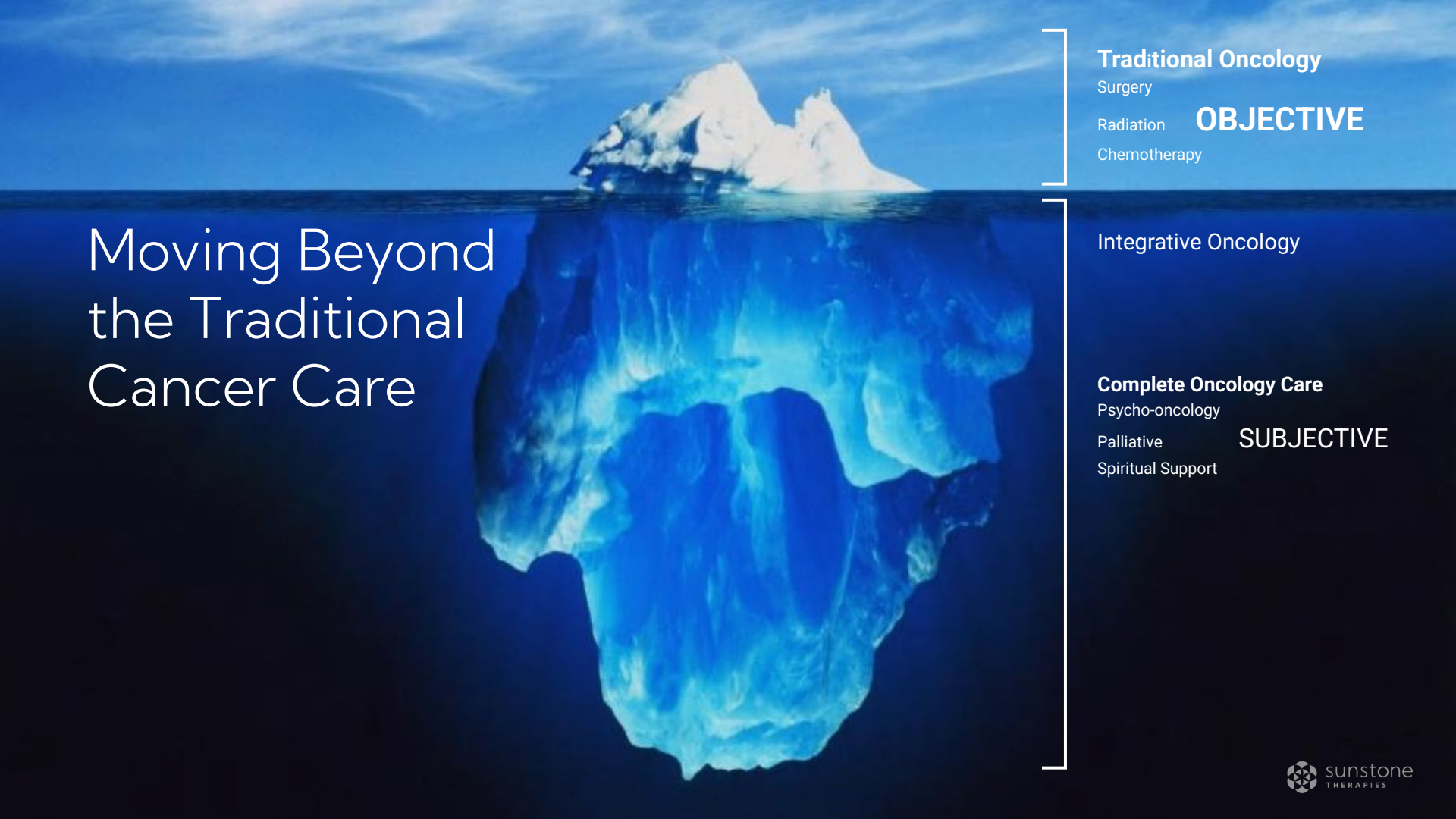
- **Science and Objectivity**:
  - Science often avoids discussing **meaning** because it is subjective and not measurable. Instead, it focuses on causal explanations (e.g., why neurons fire or how the universe works).
  - From this perspective, **meaning** is either a byproduct of brain activity or an illusion created by evolution to help us survive.
- **Subjectivity and Meaning**:
  - Critics argue that meaning is central to human experience. For James, the value of an idea or experience lies in its **pragmatic impact**—does it help people find purpose, moral guidance, or happiness?
  - Meaning is **intrinsically subjective**—it arises from personal experiences and interpretations. Science alone cannot fully account for it.

How Meaning Relates to the Debate

Conflict:

- Reductionists might argue that meaning itself can be explained as a neurochemical process. For example, the "meaning" of love could be reduced to oxytocin and dopamine levels.
- James or Nagel would counter that this approach misses the **lived reality** of meaning—what it feels like to love or to find purpose in life cannot be captured by describing brain states.

The tension between subjectivity and objectivity is ultimately a tension between **human experience** and **scientific explanation**. While science seeks universal truths, meaning is deeply personal and contextual. Thinkers like James and Nagel remind us that both perspectives are essential to understanding the richness of human life.


Moving Beyond the Traditional Cancer Care
Traditional Oncology
Surgery
Radiation
Chemotherapy
OBJECTIVE
Integrative Oncology
Complete Oncology Care
Psycho-oncology
Palliative
Spiritual Support
SUBJECTIVE
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Know you are working from a Paradigm

We are not going to resolve this debate today, which has consumed some of the most brilliant minds for the entirety of their lives.

It’s more to have awareness that there is more than one view, to know if you are a flat world or round world person, and how that carries over into your life and work.

Thomas Kuhn–Structure of Scientific Revolution

"The transition from a paradigm … to a new one… is far from a cumulative process; rather, it is a reconstruction of the field from new fundamentals that changes some of the field's most elementary theoretical generalizations as well as many of its paradigm methods and applications.

When the transition is complete, the profession will have changed its view of the field, its methods and its goals, much like "**picking up the other end of the stick," a process that involves "handling the same bundle of data as before, but placing them in a new system of relations with one another by giving them a different framework."**

(Kuhn, 1962, p. 84–85) --- Kuhn , T. S. (1962) *The Structure of Scientific Revolutions.*

“ All truth passes through three stages:
First, it is ridiculed.
Second, it is violently opposed.
Third, it is accepted as self-evident. ”

– Arthur Schopenhauer

Bedside Implications

> “Know all the theories, master all the techniques, but as you touch a human soul, be just another human soul.”
>
> - Carl Jung

Integrating Psychedelics into Mainstream Healthcare

Challenges:

- Overcoming stigma
- Understanding subjective experience
- Identifying & acknowledging risks
- Setting appropriate expectations
- Outlining the role of therapy and best practice in therapist training

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Questions? Contact me

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Thank You