Psychedelics & Eating Disorders

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Psychedelic Medicine & Other Innovative New Treatments for Eating Disorders

Center for Change Webinar
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"I’m tempted to say MDMA gave me ‘hope,’ but that word isn’t right: **the insight was more substantive than hope.** I’d held the sensation in my body; I understood, at a visceral level, what might someday be mine: the **sense of peace and joy within my body.** For me, the therapeutic process could unfurl from there."

MDMA study participant

Presentation Outline

- Challenges in Eating Disorder Treatment
- The Potential of Psychedelic Medicine for Eating Disorders
- Ketamine (Ketamine-Assisted Psychotherapy, G-KAP, EF-KAP, Spravato)
- MDMA-assisted Psychotherapy for AN & BED (with caregiver involvement)
- Psilocybin
- Ayahuasca

How I came to study Psychedelics…

- **First – I acknowledge that this is off the beaten path**
- **Ketamine clinical work & research since 2011**
  - Facilitated thousands of sessions since then, including >2500 Spravato doses since its approval in 2019, >5000 ketamine sessions
  - First research study in 2011 (Intermountain Foundation grant)
  - Led Janssen's IV ketamine study in SLC from 2011 - 2012
  - Group-based Ketamine-Assisted Psychotherapy pilot in 2018-2019 at Center for Change
  - Co-developed Emotion-focused Ketamine-Assisted Psychotherapy (EF-KAP) with Dr. Adele Lafrance
    - Completed Anorexia study in 2020
- **Ayahuasca retreat work since 2019**
  - Found it while exploring new potential ED treatments -- got more than I bargained for
  - Therapeutic retreats in legal jurisdictions (i.e. Costa Rica)
  - Publishing ceremonial leader perspectives on ayahuasca preparation & integration
  - Developing medical & psychiatric expert consensus guidelines for ayahuasca screening, preparation & integration
- **MDMA research since 2018**
  - Coordinating investigator for MAPS MED1 study of MDMA-assisted psychotherapy for AN & BED

Global access to psychedelic medicines

- Novamind is growing a network of specialized psychedelic clinics and retreats
- Treatment is provided by blending evidence-based principles with psychedelic medicines
- We guide individuals through their entire healing journey, both at home and abroad

Section 1

Challenges in Eating Disorder Treatment

Challenges in Eating Disorder Treatment

- Eating Disorders are in desperate need of new treatments
  - No FDA-approved medications exist for Anorexia
- We need a sense of urgency with screening/dx/tx—we often don't act quickly enough:
  - "Ok you've missed one period, why don't you come back if you've missed another period or two…" ← We don't do that in cancer treatment
  - We'd never dream of saying: "Ok your cancer is a stage 1. Why don't you come back when it's stage 2 or 3." *And yet we do that with eating disorders.*
- These are serious conditions and sometimes immediate care is needed.
- Don't wait to treat until full medical workup is done and diagnosis is crystal clear
  - "We're still waiting for thyroid tests, celiac disease, etc etc. But I need to be clear that the most common reason that your child is having these symptoms is an eating disorder."
- Sometimes we need to think outside the box and venture into the unknown in search of new treatment options for our clients

Hope on the Horizon...

- There has been a remarkable resurgence of research in psychedelic medicine in the past two decades that supports the therapeutic use of psychedelic medicines in the treatment of emotion-based disorders including PTSD, major depressive disorder, and addictions to name a few.
- Psychedelic-assisted psychotherapy is now emerging as a promising new treatment paradigm, where the use of psychedelics, paired with psychotherapy, has the potential to yield significant breakthroughs for individuals with difficult-to-treat mental health conditions, including eating disorders.

Section 2

The Potential of Psychedelic Medicine for Eating Disorders

The future looks bright for psychedelic medicine.

Favorable safety profiles

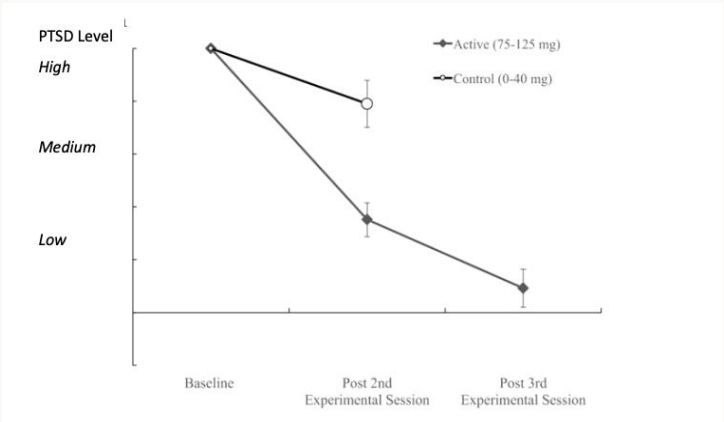
- Cases of mental health complications following a psychedelic are rare (<0.1%), even in vulnerable populations (<0.2%), and rarer still with proper screening (Studerus et al., 2011)

- No evidence of increased rates of mental health problems, and psychedelic use has been associated with reduced psychological distress and suicidality (Krebs et al., 2013; Hendricks et al., 2015; Sexton et al., 2019)

- Studies examining use patterns in humans & self-administration in animals suggests that classic psychedelics possess little or no abuse liability, and may even be anti-addictive (Heal et al., 2018; Winkelman 2014)

Up to 12 months after treatment,

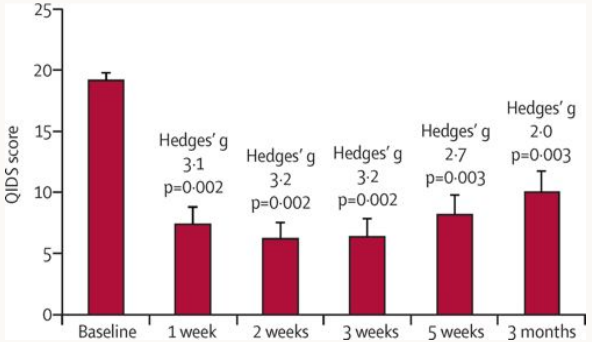
- 67% of individuals treated with MDMA-assisted psychotherapy no longer met criteria for PTSD
  (Mithoefer et al., 2019)



In a treatment-resistant depression study,

- 2 doses of psilocybin plus psychological support lead to improvements in mood within 1 week, with lasting benefits still seen at 3 and 6 months
  (Carhart-Harris et al., 2016)

Depression decreases after psilocybin treatment



How do psychedelics change your mind?

How Might Psychedelics Help with Eating Disorders?

Though theoretical mechanisms of action of psychedelic medicines are still being investigated, a growing body of research points towards the following ways psychedelics might help individuals with eating disorders in particular:

1) The potential to alleviate symptoms that relate to serotonergic signaling and cognitive inflexibility

2) The induction of desirable brain states that might accelerate therapeutic processes.

Psychedelics are like fresh coat of powder. **They provide a break from the everyday patterns**, and let the brain reset the ruts, so we get to choose the next set of tracks, and end up **consciously arriving at new destinations**.

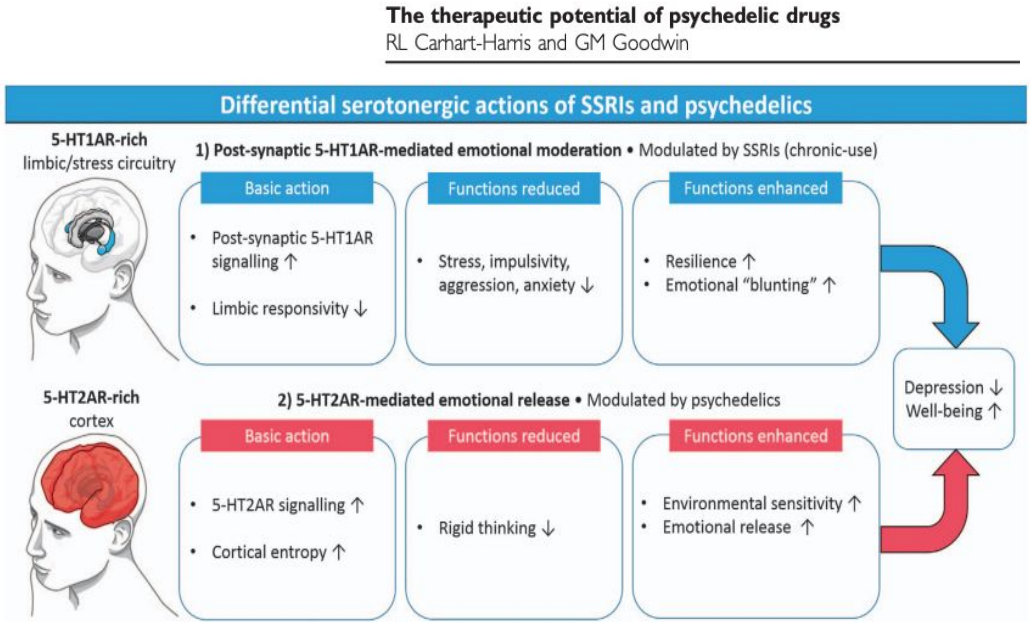
Psychedelics vs. Prozac

SSRIs

5-HT1A receptor signaling --> reduced limbic responsiveness, aka emotional blunting.

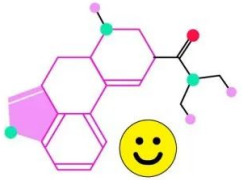
PSYCHEDELICS

5HT2AR signaling → enhanced sensitivity + emotional release, combined with psychological support = therapeutically potent

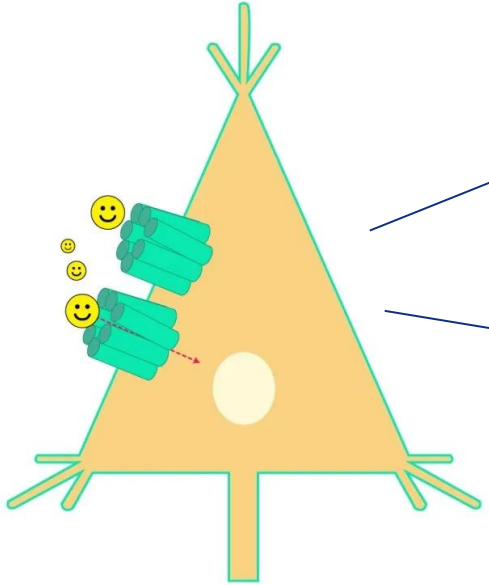


The **serotonin 5-HT2AR** receptor is expressed all over the brain, particularly in regions associated with cognitive functions and social interactions. Stimulation of this receptor has been directly linked to cognitive flexibility, enhanced imagination, and creative thinking.

LSD
(LYSERGIC ACID DIETHYLAMIDE)



5-HT2AR
(SEROTONIN 2A RECEPTOR)



Initial blast of serotonin yields the short term “psychotomimetic” effects (i.e. trippin’)

The longer-term effects produce a “loosening” of the mind, and a general increase in optimism and well-being.

HIGHTEN AWARENESS

CAUSE MOOD CHANGES

DISTORT PERCEPTION

DISTORT SENSE OF TIME

ENHANCE TACTILE EXPERIENCES

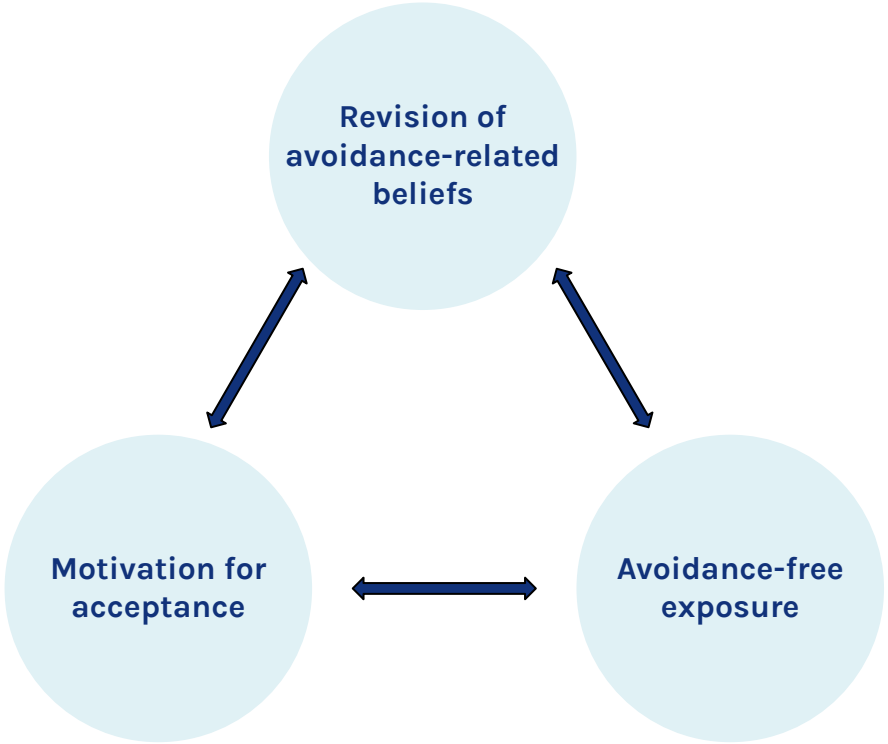
Psychedelics can create desirable brain/psychological states that can **accelerate therapeutic processes** & make eating disorder interventions **easier to receive.**

REBUS: RElaxed Beliefs Under pSychedelics

- How the brain works (aka the hierarchical predictive coding model of cognition).
  - The brain generates mental models that predict upcoming sensory input (“priors” or “prior beliefs”)
  - These predictive models are layered on top of eachother in a hierarchy
    - The higher levels send predictions **down the hierarchy**
    - The lower levels report sensory input data **up the hierarchy**
  - When the top down predictions don’t match the bottom-up sensory input, the model either:
    - Updates its “priors” based on the new sensory information, or
    - Ignores the sensory inputs and maintains its “prior beliefs”
- Initial ‘blast’ of 5-HT2AR stimulation has a residual influence on brain network dynamics and associated cognition.
  - This is thought to have a ‘loosening’ or ‘lubricating’ influence on rigid thinking and this is hypothesized to be conducive to improved psychological wellbeing (Carhart-Harris 2016)

REBUS & How Psychedelics “Relax” Tightly-held Prior Beliefs

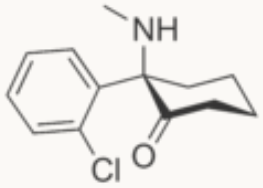
- Psychedelics relax the weight of held beliefs/rules/restrictions, allowing them to be more readily changed
  - Psychedelics “heat up” the brain, increasing plasticity and weakening the influence of prior beliefs
  - As the brain “cools”, the hierarchy re-forms, though perhaps in a new configuration than before
    - Explains how lasting changes may persist after the substance is gone
- Psychedelics show particular promise for conditions associated with too-rigid thought patterns
  - i.e. "disorders that may rest on particularly rigid high-level priors that dominate cognition."
  - In these conditions, new information can't revise the existing story of how things are, because strong priors suppress the new info before it can update anything.
- Psychedelics relax the strong top-down “prior beliefs” (i.e. ‘I can’t eat that because it will make me fat’) and boost the bottom-up sensory inputs (i.e. intuitive, mindful eating)


Revision of avoidance-related beliefs
Motivation for acceptance
Avoidance-free exposure

Section 3

Ketamine

First – what is ketamine?



1962 Developed by Calvin Stevens at Parke Davis Labs

1965 Professor Edward Domino conducts 1st human studies

Calls ketamine a potent psychedelic; coins the term “dissociative anesthetic”

1970 Approved for human use by the US FDA in 1970 for anesthesia

Widely used in Vietnam war as a battlefield anesthetic

2000 First controlled study of ketamine for major depressive disorder (MDD)

2019 Spravato (esketamine) nasal spray FDA approved for treatment-resistant depression (TRD)

Ketamine as a mental health treatment

on label uses

- Anesthesia

off label uses

- Chronic Pain
- Major depressive disorder
- Suicidality
- Post-traumatic stress disorder (PTSD)
- Bipolar I and II depressive phases
- Obsessive-compulsive disorder (OCD)
- Psychological reactions to physical illness
- Personality disorders
- Substance use disorders

“Recent data suggest that ketamine, given intravenously, **might be the most important breakthrough** in antidepressant treatment in decades.”

Thomas Insel, MD
Director National Institute of Mental Health

NMDA Receptor Blockade

Mechanism

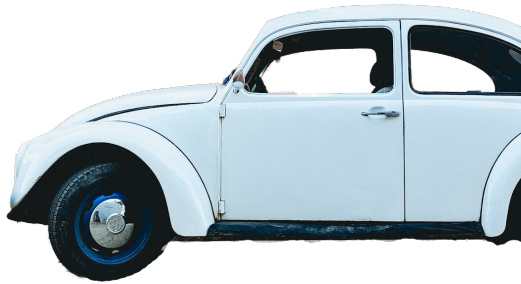
Blocks NMDA receptors, leading to GABAergic inhibition and a surge of glutamate release.

Effect

Rapid improvements in mood by restoring glutamatergic signaling

Analogy

Wakes up dormant neurons like jump starting a car battery; lets them communicate freely



Lateral Habenular Burst Mode

Mechanism

Turns off “burst mode” in the lateral habenula (the “anti-reward” center)

▶

Effect

A break from stress mode: facilitates emotion processing, reduces avoidance of negative affective states

Analogy

Giving a dose of ketamine is like extinguishing the “fire” of stress in the brain

BDNF & Neuroplasticity

Mechanism

Stimulates BDNF, leading to neurogenesis & new connections

Effect

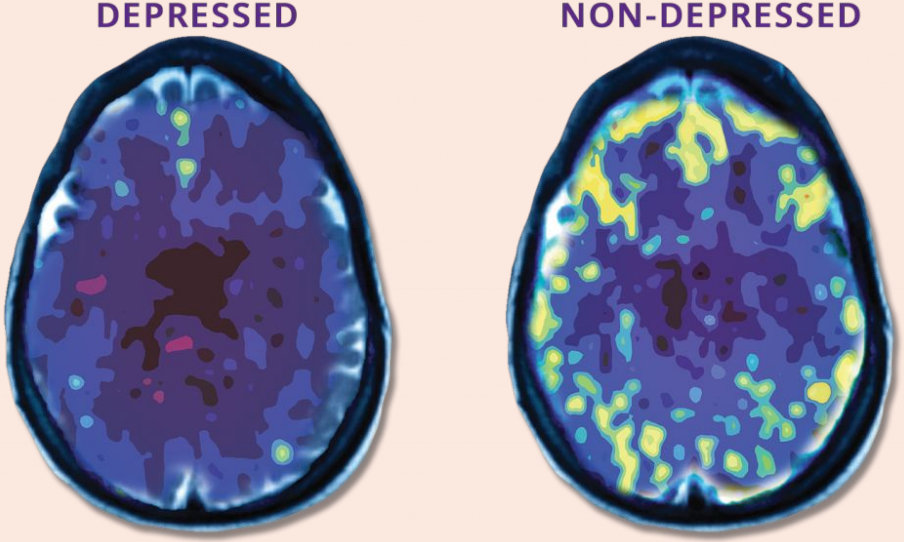
Neuron growth & a window of opportunity for deep therapeutic work* (neuroplasticity), including: making new connections and strengthening connections.

Analogy

Ketamine is like fertilizer for neurons

*Ideally done during the 24-48 hour window of optimal neuroplasticity after ketamine dosing

Brain activity is reduced in depression.



A PET scan measures vital functions such as blood flow, oxygen use, and blood sugar (glucose) metabolism.

Source: Mark George M.D. Biological Psychiatry Branch
Division of Intramural Research Programs, NIMH 1993

Limbic/Cortical Interruption

Mechanism

Interrupts connection between cortex & limbic system

Effect

Time out from ordinary mind (decreased rumination), down regulation of default mode network (DMN), increased cognitive flexibility

Analogy

Rebooting your computer

Section 3.1

Ketamine-Assisted Psychotherapy (KAP)

“We do not view ketamine as a stand-alone medicine fitting all possibilities. The encounter here is with practices addressing the human gamut with **all the available tools of psychiatry and psychotherapy**.”

How ketamine works - The psyche

- Facilitates processing of emotions / memories
  - Reducing fear of painful emotions/memories
  - Release of unprocessed “stuck” emotions
  - Moving through layers of emotions (secondary / primary)

- Activates the inner healing intelligence
  - Similar to other substances used as medicines like classic psychedelics (LSD, psilocybin, ayahuasca, etc) and empathogens like MDMA
  - Analogy of a cut or a scrape

What is Ketamine-Assisted Psychotherapy

- As a therapy aid:
  - At low doses, ketamine can facilitate expanded states of awareness, including new ways of viewing issues and a break from the usual mode
  - KAP-therapy aid involves the administration of ketamine within a psychotherapy session
  - This can lead to accelerated growth and change
  - Sessions last longer than traditional therapy (2 hours), and are conducted with medical supervision / support

What is Ketamine-Assisted Psychotherapy

- As a psychedelic:
  - In moderate doses, ketamine has psychedelic effects, which can lead to transpersonal experiences, clarity and insight into one's struggles, spiritual experiences, including a sense of meaning and interconnectedness
  - KAP-psychedelic involves the administration of ketamine as part of a session made up of three parts, pre-ketamine preparation; ketamine experience with eye-shades/music; post-ketamine debriefing
  - Dosing sessions lasts approximately 2 hours and are conducted with medical support
  - It should be followed by psychotherapy within next 24-48 hours to deepen the change process
- EF-KAP is an evolution of this second version of KAP

Components of Ketamine-Assisted Psychotherapy

- Preparatory Session
  - Medical/Psychiatry screening (if not done previously)
  - Establish rapport, consent & psycheducation
  - Treatment goals

- Dosing session (4-6 sessions)
  - Intention setting prior to dosing
  - Brief/limited processing afterwards

- Integration sessions
  - Ideally within 1-2 days of dosing session
  - Explore material that emerged / draw connections, insights, meaning related to intentions and day-to-day life

Sample Outline of Family-Based Ketamine-Assisted Psychotherapy “Intensive Retreat”

Day 1	AM	Orientation, goals & intention setting
	PM	Family & individual psychotherapy
Day 2	AM	Intention setting Ketamine #1 Post-ketamine processing
	PM	Recovery Personal integration practices
Day 3	AM	Family & individual psychotherapy
	PM	Family activity Personal integration practices
Day 4	AM	Intention setting Ketamine #2 Post-ketamine processing
	PM	Recovery Personal integration practices
Day 5	AM	Family & individual psychotherapy
	PM	Closing session Recommendations /Treatment Planning

Section 3.2

Group-Based Ketamine-Assisted Psychotherapy (G-KAP)

Group-Based Ketamine-Assisted Psychotherapy Pilot

- **Group-based Ketamine-assisted psychotherapy pilot project done on RTC unit (2018-2019)**
  - n=15, residential clients (all with primary dx of eating disorder)
  - Once weekly intramuscular (IM) ketamine for 4 weeks
    - Starting ~0.5mg/kg and increasing as tolerated in a range of ~0.5-1.5mg/kg
      - RN & physician present; vitals checked q15 mins
  - Group-based intention setting before & brief processing after
  - Individual and group psychotherapy in between
  - Primary outcome measures: PHQ-9 & GAD-7
    - Measured pre-dose, post-dose, 4 hr later, 24 hrs later, 1 week later
    - Other variables collected available including dietary progress, LOS, safety parameters
- **Results & manuscript in preparation (case series)**
  - Most participants had a significant reduction in depression score
  - Most reported positive benefits in their eating disorder; none reported harm or negative outcomes

Leveraging the healing power of groups

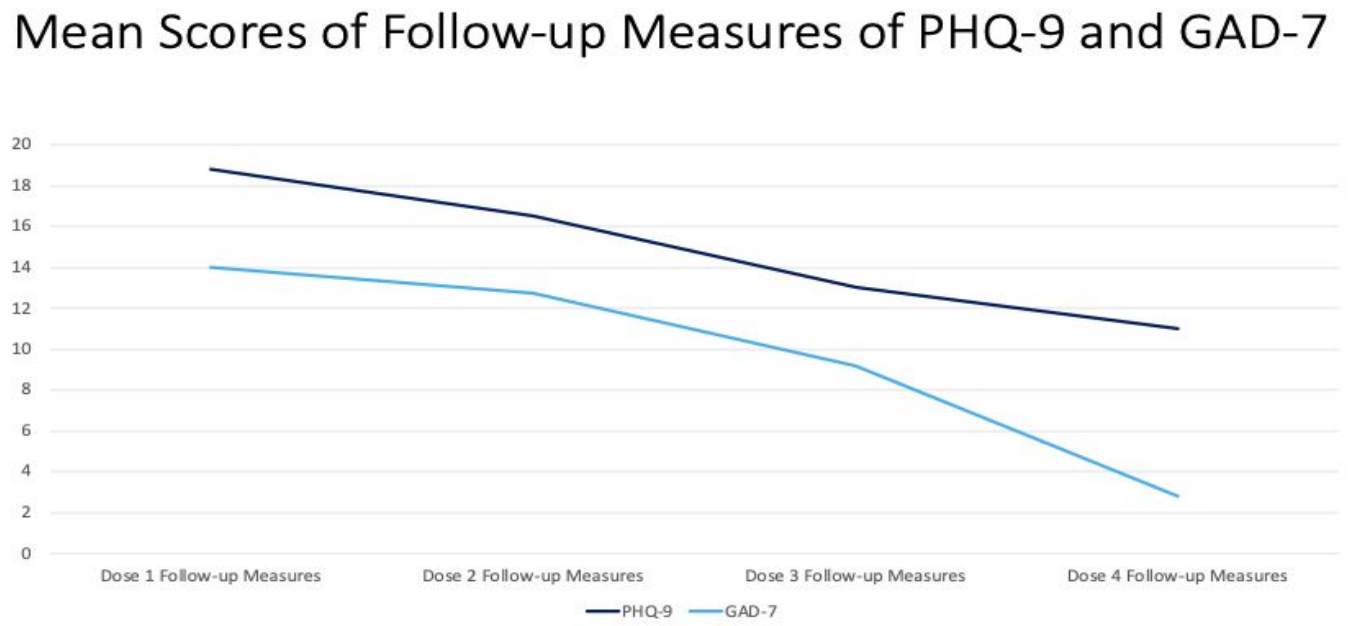
Unique healing properties in group-based psychotherapies for individuals

People also learn to co-exist and co-construct. The development of such skills has major implications for life outside the group / can act as a social change agent. These include:

- Being tuned to the non-verbal and meta-communication
- Being verbally able to respond to others rather than keeping reactions internally focused
- Practising the skills of problem-solving / conflict resolution while respecting others
- Communicating disagreement with others without resorting to problematic patterns of behaviour
- Being able to take a different perspective on a situation
- Expressing accurate empathy towards others - the foundation of interpersonal intimacy
  (Ken McMaster, 2016)

Combine these potential effects with the power of psychedelics & broader change is possible

Group-based Ketamine-Assisted Psychotherapy (G-KAP)



Depression & anxiety response over time, in individuals with eating disorders in a residential treatment setting receiving weekly ketamine sessions over 4 weeks

“Trying ketamine allowed me to see the possibility of a life I could have. While the effects did not last, my very first experience snapped me out of a state of life-long, deep disconnection that I didn't even know I had been experiencing. **Suddenly, I was able to live in the world in the way people had always described it.** Though I am still trying to figure out how to attain that level of connection after catching a glimpse, that one experience was so essential. **I could finally feel hunger and fullness cues.** I felt what it's like to live in a body, instead of living a short distance from it. I felt connected to others and genuinely cared about their well-being. **I felt human for the first time in a long time.”**

G-KAP Study: Participant Feedback

Section 3.3

Emotion-Focused Ketamine-Assisted Psychotherapy (EF-KAP)

Emotion-Focused Ketamine-Assisted Psychotherapy

(Lafrance & Robison, 2020)

Emotion-Focused Ketamine-Assisted Psychotherapy is an extension of KAP / a treatment model informed by emotion-focused theory and techniques to facilitate healing and growth

Every aspect of the treatment is guided by two principles:

1. **Supporting the emotional health of the patient (inspired by elements of Emotion-Focused Therapy)**
    a. By focusing on the development of skill and confidence with emotion processing
    b. By focusing on transforming emotion with emotion
2. **Leveraging the healing power of family (inspired by elements of Emotion-Focused Family Therapy)**
    a. By providing education and skills to a support person thereby:
    b. Strengthening meaningful relationships
    c. Creating a recovery-friendly environment outside of the therapy office
    d. Extending healing beyond the individual

Supporting the emotional health of the patient

Focusing on the development of skill and confidence with emotion processing increases self-efficacy with moving through stress / distress

- Promoting a sense of agency
  - Of being the engineer of one's own experience
- Allowing the person to be guided by the wisdom of adaptive emotion
- Making symptoms less necessary to cope

The only thing worse than
feeling a painful feeling
is **not** feeling it.

Steps of Emotion Processing

A) Accessing Emotion

1. Increase awareness
2. Label or Express

B) Modulating and Understanding Emotion

3. Regulate
4. Reflect/Symbolize/Identify the need

C) Transforming Emotion

5. Transform through corrective experience / riding the wave
6. Transform emotion with emotion

Models of Caregiver Involvement in KAP

1. **Caregiver supports**
    a. Involves recruitment of caregivers who learn specific skills to support their loved one throughout the course of psychedelic-assisted psychotherapy, creating an optimal home environment for healing and growth, and reducing the likelihood of problematic relational patterns that could interfere with treatment outcomes.
2. **Caregiver co-participation**
    a. Involves the recruitment of caregivers who participate in medicine sessions alongside their loved one, thereby leveraging the neurobiological bond to deepen the process of healing and growth, including attending to relationship patterns that may be reinforcing symptoms.
3. **Caregivers as surrogate healers**
    a. Involves caregivers who participate in psychedelic-assisted psychotherapy on behalf of their loved one, who may not be able to participate themselves (i.e. for medical/psychiatric reasons)

EF-KAP 15-day (short-term) protocol post-screening / assessment

Visit 1	**Monday**	Preparation session – Psychoeducation re: emotion focus and ketamine (+SP)
Visit 2	**Wednesday**	Dosing session #1 (similar to KAP)
Visit 3	**Thursday**	Psychotherapeutic integration (with a focus on self-interruption or self-criticism)
Visit 4	**Monday**	Dosing session #2 (similar to KAP) (+SP – optional)
Visit 5	**Tuesday**	Psychotherapeutic integration (with a focus on healthy anger/assertion)
Visit 6	**Thursday**	Dosing session #3 (similar to KAP) (+SP – recommended)
Visit 7	**Friday**	Psychotherapeutic integration (with a focus on self-compassion)
Visit 8	**Monday**	Closing session (+SP – for full or half-session)

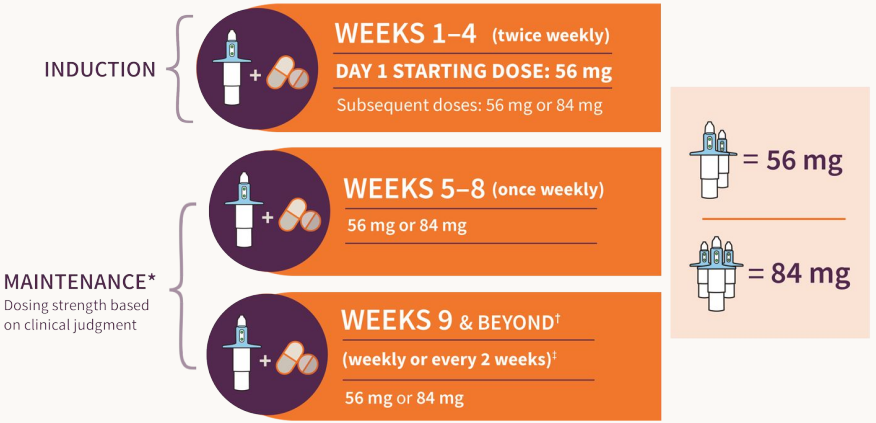
Support person also views a video on “advanced emotional support strategies” informed by EFFT & participates in two coaching sessions with an EFFT therapist, practising strategy in high-impact scenarios

Section 3.4

Spravato (esketamine)

Spravato (esketamine) Now FDA-Approved for TRD & MDD-SI

- Finally, a psychedelic medicine covered by insurance (under the right conditions)
  - FDA-approved for treatment-resistant depression (TRD) since 2019
    - Usually defined as 2+ failed trials of traditional antidepressants
  - FDA-approved for major depressive disorder and acute suicidal behavior since 2020
    - First approved medicine to take effect within 24 hours, with sustained effects beyond dosing day



Section 4

MDMA-Assisted Psychotherapy for Anorexia and Binge Eating Disorder

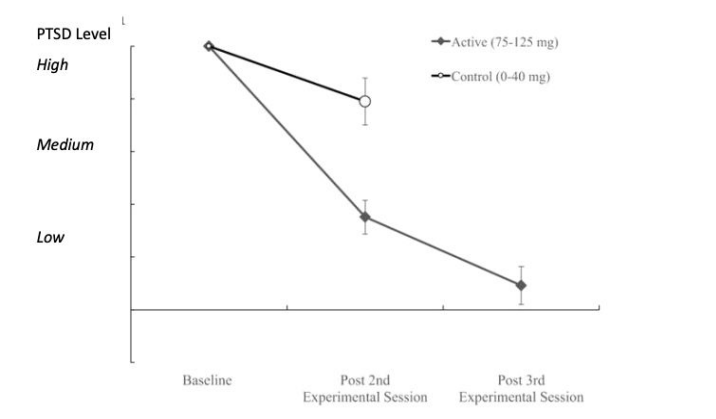
Why MDMA for Eating Disorders?

- MDMA, while not a classic psychedelic, is unique among consciousness-altering substances in its ability to promote acceptance of and empathy for self and others.
    - In addition to elevating oxytocin levels, MDMA stimulates the release of the monoamines serotonin, norepinephrine and dopamine, resulting in an improved mood and increased sociability.
    - Brain imaging after administering MDMA shows decreased amygdala activation, and the reduced fear response that follows allows the client to emotionally engage in therapy without becoming overwhelmed by anxiety or negative affective states.

Up to 12 months after treatment, 67% of individuals treated with MDMA-assisted psychotherapy no longer met criteria for PTSD

(Mithoefer et al., 2019)

MDMA-assisted psychotherapy for the treatment of PTSD



Binge Eating Disorder (BED): A High Level Overview

Occurrence

1-4% of the general population

20-40% of individuals with obesity (and **>40%** of individuals with BED have obesity)

*Most prevalent eating disorder, yet underdiagnosed and undertreated (i.e. only **3%** of those with BED are formally diagnosed and of those who do receive treatment for BED, **half do not fully respond** (Cossrow 2016; Linardon 2018)

Key characteristics

1. Rapid consumption of a large amount of food in a discrete period of time

2. A feeling of lack of control over eating behavior during binges

3. Guilt and/or shame after binge eating

4. Binge Eating occurs, on average, at least once a week for 3 months.

Negative consequences

Cognitive and Emotional

Depression, anxiety, irritability

Difficulty concentrating

Self-criticism, shame

Social

Financial

Isolation from family and friends

Decreased productivity/attendance at work/school

Medical

Obesity

Metabolic syndrome

Type 2 diabetes

Unique Challenges in Binge Eating Disorder

1. The habitual binge-eating cycle resembles dependence on a chemical, but unlike chemical dependency where one ceases to use the chemical, one cannot stop eating.

2. Binge eating may reduce unpleasant emotions, and may be relaxing, stress reducing, or in some way reinforcing.
    - When binge eating is discontinued, individuals may experience emotional dysregulation and negative affective states, and other symptoms.
    - Without a clear understanding, support and treatment plan, stopping binge eating behaviors may become exceedingly stress

3. Binge eating is maintained because positive consequences from binge-eating are more immediate than the negative consequences.

BED Treatment **Goals**

- interrupt binge-eating
- establish healthy eating patterns
- identify and restructure maladaptive thoughts
- emotion processing & regulation
- identify more effective coping strategies

Anorexia Nervosa: A High Level Overview

Key Characteristics

1. Refusal to maintain weight at or above what would be considered minimally healthy

2. Restriction of needed energy intake leading to significantly low body weight.

- *Extreme control over what they eat (restriction), therefore extreme weight loss*
- *Body is denied crucial nutrients, it slows down to conserve. (Slow heart rate, loss of bone density, hair loss, muscle weakness, dehydration, low BMI)*

3. Intense fear of gaining weight or persistent behavior that interferes with weight gain.

- Body dysmorphism or persistent lack of recognition of the seriousness of their low weight

Two Main Subtypes

Restricting *Binge/Purge*

~1% of women in the US in their lifetime

~70% heritability

> 1/3 have mood disorder (more common in binge/purge subtype)

~1/2 have anxiety disorder (including OCD, social phobia, etc.)

Anorexia Nervosa

Section 5

Psilocybin

Psilocybin 101

- Naturally occurring tryptamine alkaloid
- Principal psychoactive component of the Psilocybe genus of mushrooms
    - Used for centuries within various cultures in structured manners for religious, divinitory, and healing purposes.
- Short acting drug (effects wear off by the end of the day), but the memories of the experiences endure.

Occasioning Mystical Experiences

- After a month of high-dose sessions, 80% of people say this experience is among the 5 most personally meaningful experiences of their life.
- Another 80% say it among the 5 most spiritually significant experiences in their life.
- Respondents reported: large increases in positive mood, attitudes about life and self, behavior, social effects, and spirituality - effects were sustained through at least 14 months.

Psilocybin History

16th Century Mexico Spanish missionaries document Aztec's ritualistic use of psilocybin mushrooms and force all aspects of mushroom ceremonies into secrecy (they viewed it as pagan idolatry)

1955 Gordon Wasson rediscovers indigenous use of psilocybin, ingests mushrooms in Mexico, and publishes his account in Life Magazine in 1957.

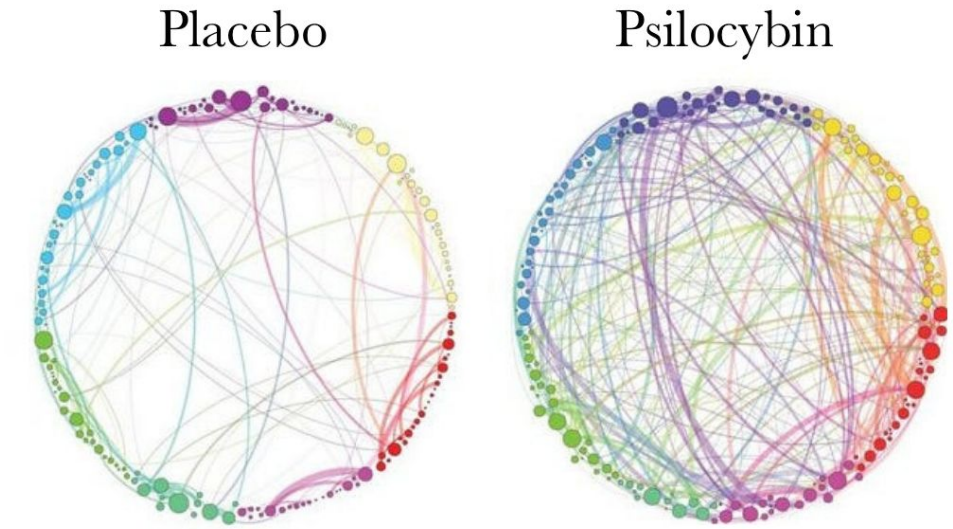
1958 Chemist Albert Hofmann isolates psilocybin. The next year, clinical research begins.

1960 Timothy Leary and Richard Albert at Harvard Psychology Dept. study the powerful influence of set and setting in determining effects of psilocybin

1962 Good Friday Experiment at Harvard Divinity School

1960s Widespread use of psychedelics explodes

1990s A few laboratories in Europe renew psilocybin research. Johns Hopkins initiate first trial.



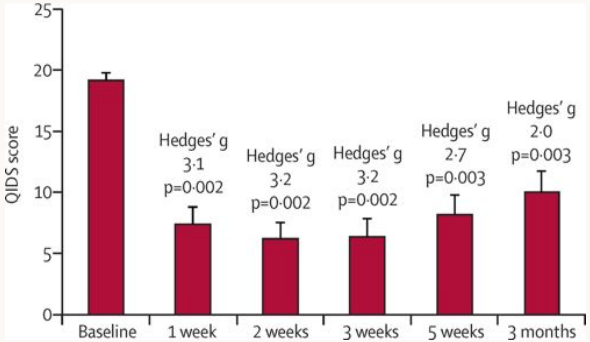
Side by side images showing the connections made between distinct areas of the brain on psilocybin compared to placebo.

Petri G, Expert P, Turkheimer F, et al. Homological scaffolds of brain functional networks. J R Soc Interface. 2014;11(101)

Psilocybin for treatment-resistant depression

- 2 doses of psilocybin plus psychological support lead to improvements in mood within 1 week, with lasting benefits still seen at 3 and 6 months
  (Carhart-Harris et al., 2016)

Depression decreases after psilocybin treatment



Psilocybin for End-of-life Anxiety

- Few people leave this life without significant turmoil
- 2 sessions of psilocybin-assisted psychotherapy
    - At 6-month follow-up, these changes were sustained, with about 80% of participants continuing to show clinically significant decreases in depressed mood and anxiety.
    - Participants attributed improvements in attitudes about life/self, mood, relationships, and spirituality to the high-dose experience, with >80% endorsing moderately or greater increased well-being/life satisfaction.

UCSD Anorexia Trial

Current study at University of California, San Diego exploring the safety, tolerability, and preliminary efficacy of psychedelic-assisted psychotherapy for anorexia.

Participants will partake in a maximum of 7 study visits, lasting from 4-8 weeks. On dosing day, participants will receive a single 25 mg dose of psilocybin along with psychotherapeutic support, which includes preparation and integration sessions surrounding the experience. There will be a follow-up period of one month following the psilocybin session during which a range of psychological measures (questionnaires and interviews) will be collected.

Section 6

Ayahuasca

What the Heck is Ayahuasca?

To make the **Ayahuasca** brew, shamans boil together two Amazonian plants:

1. ***Psychotria viridis*** leaves (containing the DMT (dimethyltryptamine), mixed with
2. ***Banisteriopsis caapi*** vine (containing the monoamine oxidase inhibitor, or MAOI).

Normally when people ingest DMT — a not-uncommon compound in nature — the monoamine oxidase (MAO) in our gut knocks it out. But the Banisteriopsis (MAO inhibitor) allows it to the hallucinogen to stick around long enough to reach the brain.

The Transcendental Cycle of an Ayahuasca Journey

1. Ingestion of Ayahuasca

2. Visuals begin (30-45 mins later)

- ➔ Altered perception, shaking, vibrations
- ➔ Time altered, synesthesia, vibrations, kaleidoscopes
- ➔ Visions of people, snakes, jungle animals

3. Challenges

- ➔ Confusion, paranoia, fear
- ➔ Psychological defenses diminished
- ➔ Re-processing traumatic memories
- ➔ Insight into personal matters

4. Purging

- ➔ Movement of energy through various forms of purging
- ➔ Nausea/vomiting, diarrhea, yawning, burping
- ➔ Shaking, crying, emotionality

5. Expansive State

- ➔ Contact with higher power
- ➔ Enter spiritual realm
- ➔ Peace, ecstasy, new understandings
- ➔ Meet plant/animal spirits or guides
- ➔ Oneness with universe
- ➔ New idea of death & afterlife
- ➔ New understandings
- ➔ Musical prowess

6. Reintegration (2-4 hours later)

- ➔ New perspective
- ➔ New sense of self
- ➔ Visuals fading, physically drained
- ➔ Self-confidence
- ➔ Reveal intimate truths
- ➔ Reinterpretation of intrapsychic conflicts

Ayahuasca & Eating Disorders

- **We've also been analyzing data gathered from interviews of individuals with eating disorders who participated in ceremonial ayahuasca use.**
  - When asked to describe the positive effects of this traditional amazonian tea, similar themes emerged in that individuals shared that participation led to an ability to face and work through challenging emotions and memories.
  - They also reported decreases in symptoms of anxiety and depression, including urges to self-harm and suicidal ideation.
- **Several respondents also shared that they benefited from increased capacities for mindfulness, improved body image, and strengthened relationships with important others, including a new or deeper connection with nature and/or God or Spirit.**
  - Participants even described an "embodied knowing" of self-love, where they were able to recognize from a deeper place that: "I am worthy. I am beautiful as I am inside and out", a powerful antidote to the harsh inner critic so common in eating disorders.

"I seem to think about myself and talk about myself a lot more kindly than I previously did. And **I’m a lot gentler [to myself]**."

Ayahuasca Participant

"I still experience periods of feeling anxiety but I feel like **they don’t last as long**, whereas before I would spiral downward and get depressed and then start to restrict and start to purge and binge and all of that. I feel like **I can notice when my energy is changing**, and then I am more able to be with it and sort of resist it and then it moves after."

Ayahuasca participant

Section 7

Concluding Thoughts

The Potential of Psychedelics for Eating Disorders

- Psychedelics, psychotherapy & psychotropics don't need to be mutually exclusive in Eating Disorder treatment
    - Consider them adjunctive, to reduce fears related to recovery, increase flexibility and openness so that ED-specific interventions are easier to receive
- Though psychedelics may be generally safe from a medical perspective, careful medical and psychological screening and monitoring is important
- In my opinion, it's a worthwhile pursuit:
    - I've witnessed first-hand the powerful healing that can occur for those suffering from mental health issues and for whom conventional methods have not been effective

New Possibilities along the Road to Full Recovery

- I've witnessed time and time again the extent to which the field is made up of caring, compassionate and hardworking clinicians working hard on behalf of those suffering and their families.
    - And one thing we can all agree on is that despite our best efforts, there remains a need for innovative treatment strategies to serve those for whom conventional treatments have been insufficient, ineffective or even harmful.
    - Although much more research is needed to better understand the safety and efficacy of psychedelic medicines in eating disorders, we feel it is a very worthwhile pursuit.
- One thing is clear to us, however, and that is the importance of coordinating these efforts with conventional treatment approaches.
    - By doing so, we can build on the decades of research and clinical practice that have shaped treatment delivery across the spectrum of eating disorders, including psychedelic psychotherapy as another treatment ingredient for those for whom it might be appropriate.
- I have tremendous hope that psychedelic medicine can alleviate suffering for many along the continuum of recovery and their families and we look forward to sharing the results of our studies as they become available.

Questions?

Thank you for listening.

APPENDIX