COMPASSION

Navigating Mental Health Pathways

Transforming Mental Health Care

OCTOBER 2022

Disclaimer

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We’re living through a global mental health crisis.

One billion people live with a mental health condition globally.

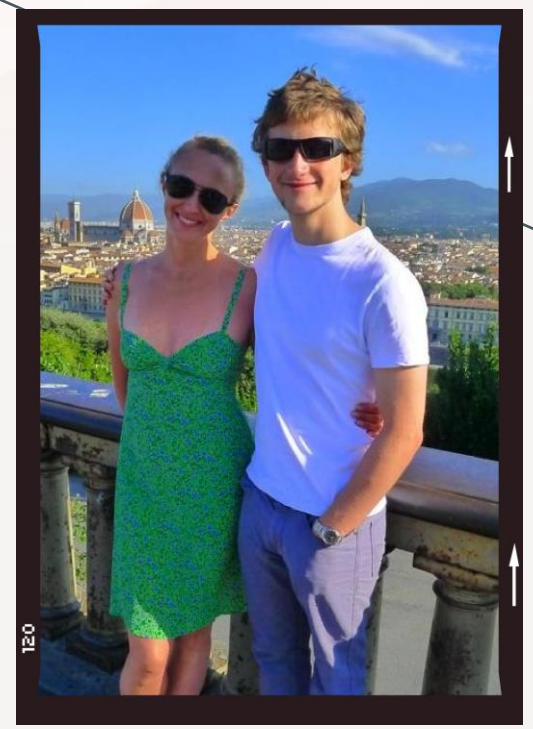
Billions more feel the pain.

We can and must do better.

We're a mental health care company.

We’re committed to developing innovative, evidence-based therapies that help patients and their families, and ease the burden on our healthcare systems.

For us, this is personal.

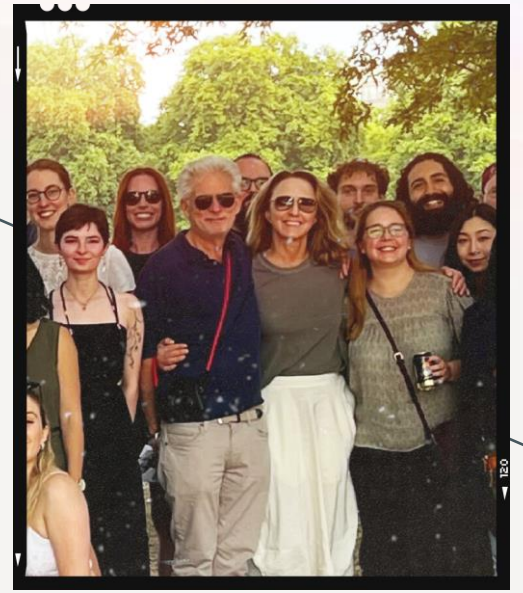


“When our son was diagnosed with depression, we couldn’t find the help he needed.”

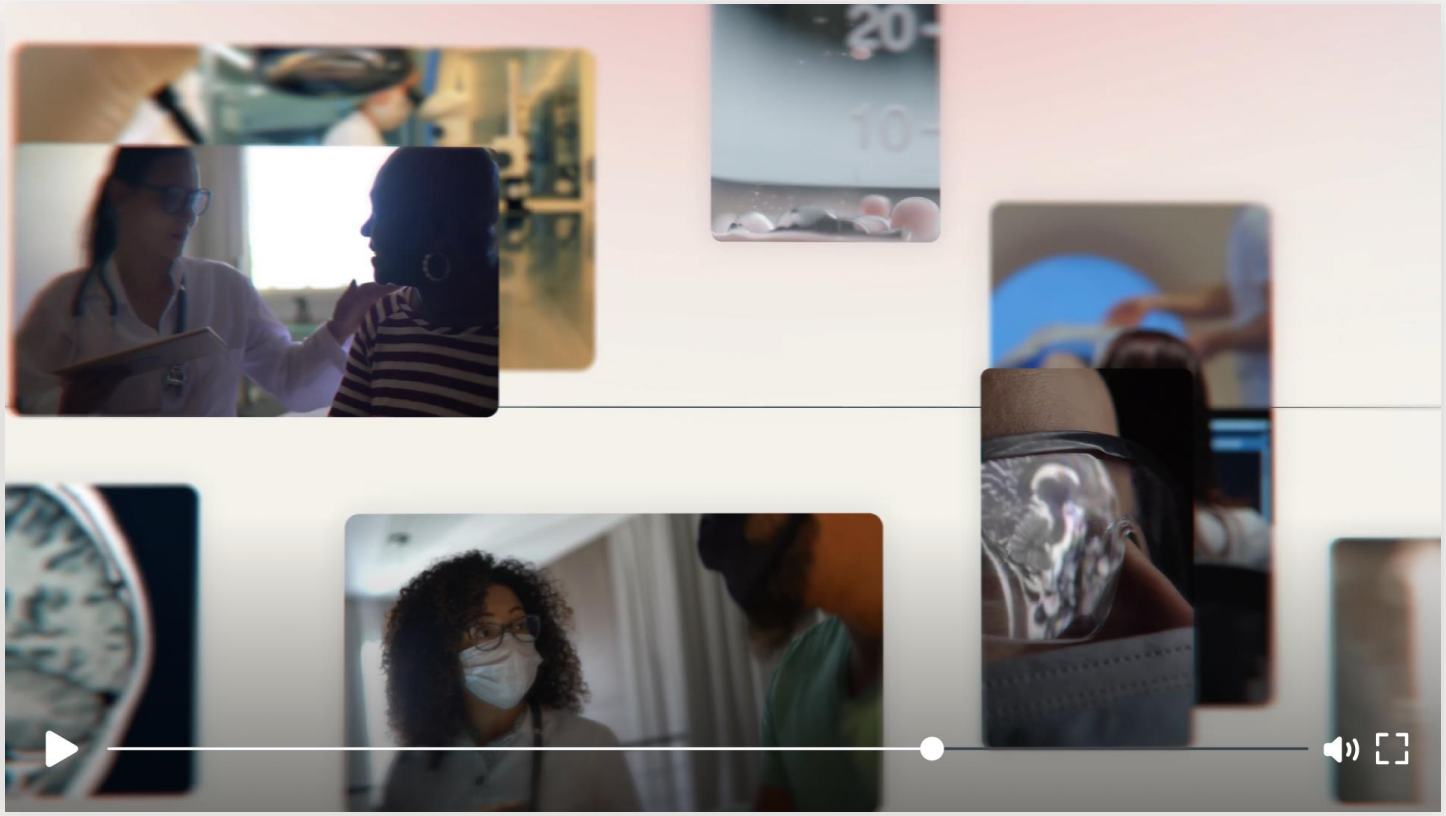
“We've seen first-hand the devastating effect trauma, depression and substance abuse can have on people and their families.”

“I lost my father and two very close friends to suicide.”

This passion runs through our entire team of builders, innovators and experts.



Meet our leadership



Our vision in 2 minutes

Click to play video

We address suffering at scale…

320m

people live with depression globally

30%

of people living with depression are not helped by first- and second-line treatments

$48B in the US

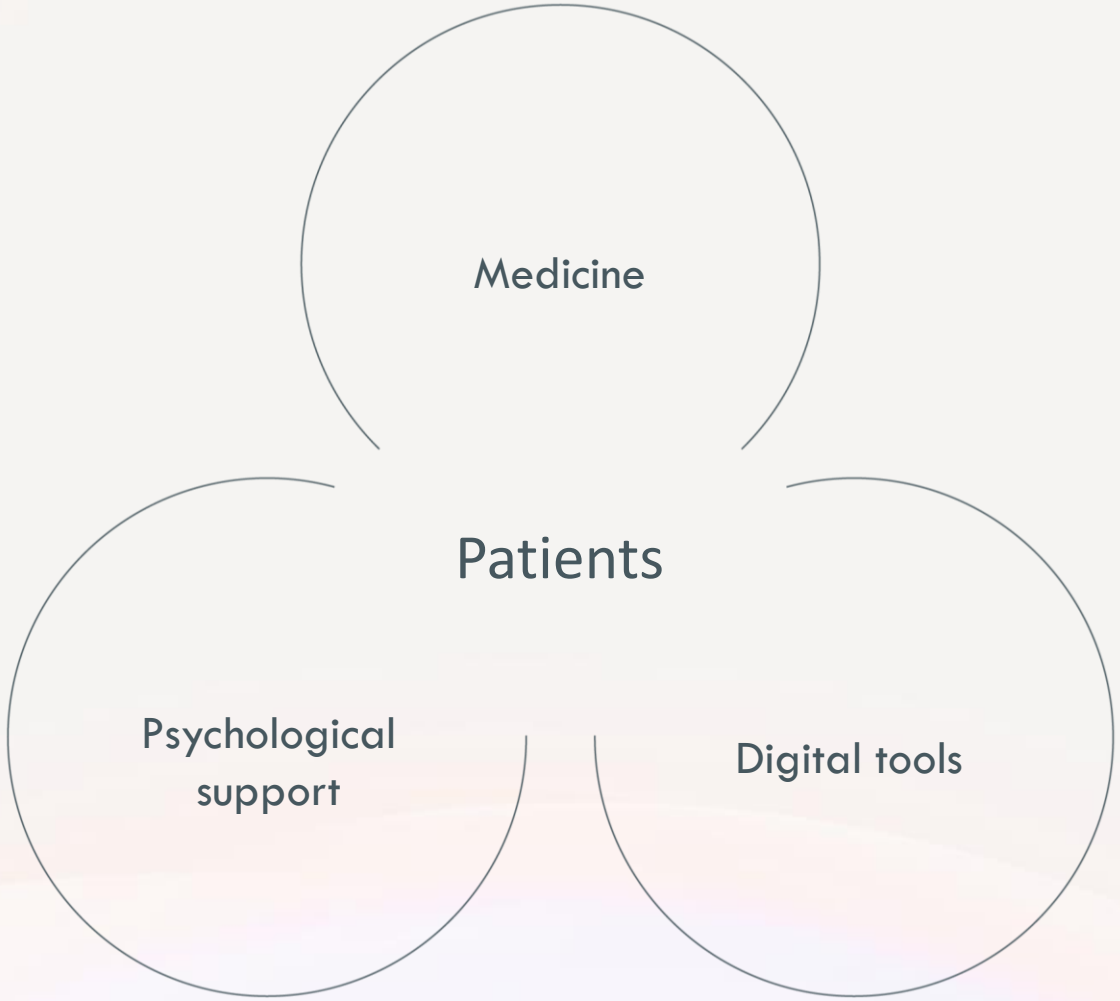
Treatment-resistant depression costs payers and employers an estimated $29 billion-$48 billion yearly in the US

SOURCE: WHO, 2017; STAR*D; Amos, et al., 2017

…by creating an innovative care model…

We're developing care pathways that combine medicine, psychological support, and digital tools.

We base every decision, and every hope, on rigorous evidence.



…and joining forces to drive impact.

We know the problem is bigger than all of us. We partner with health innovators to forge new pathways together.

King's College London — Institute of Psychiatry, Psychology & Neuroscience

NHS South London and Maudsley NHS Foundation Trust

40+ Clinical institutions across Europe and North America

Sheppard Pratt

Clinical and care delivery research

Discovery

MiHKAL GmbH

Medical College of Wisconsin

USciences University of the Sciences

UC San Diego School of Medicine

COMP360 psilocybin therapy is our first innovative treatment in development, aiming to bring hope to the 100 million people who suffer with treatment-resistant depression (TRD).

COMP360 psilocybin therapy includes three elements

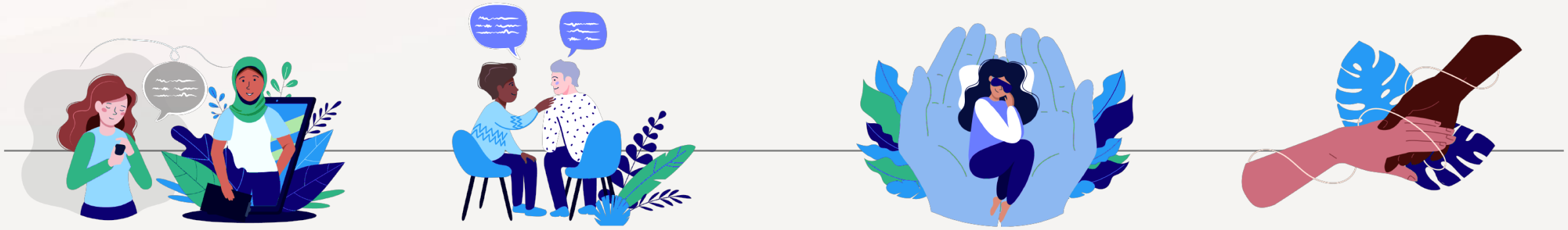
See how psilocybin works

COMP360 psilocybin is backed-up by a comprehensive data set, supporting our progress towards FDA submission

	NOW	NEXT
Safety	COMP360 psilocybin has been generally **well-tolerated by 500+ participants.**	We continue to prioritize safety and track safety data through our own studies and broader research community.
Efficacy	Our **Phase 2b trial in TRD showed positive results** for a single dose of COMP360 psilocybin administered in conjunction with psychological support to 233 participants at 22 sites in 10 countries.	We will start a Phase 3 program by the end of 2022.
Quality	COMP360 psilocybin is produced in compliance with cGMP regulations and, upon submission, **ready to be manufactured at scale.**	

NOTE: cGMP = current Good Manufacturing Practice; FDA = Food and Drug Administration; TRD = treatment-resistant depression

Our psychological support model puts the patient first at every step



Assessment

The patient is assessed by a psychiatrist to see if they are eligible for COMP360 psilocybin therapy.

Preparation

The patient and therapist build trust and understanding of the psychedelic experience, supported by the myPathfinder app, which details the process, logistics and pre-requisite information for informed consent to treatment.

Psilocybin session

The patient arrives to the therapy center, where they receive an oral capsule of COMP360 psilocybin. This is the start of a 6–8-hour non-directive session, overseen by their therapist.

Integration

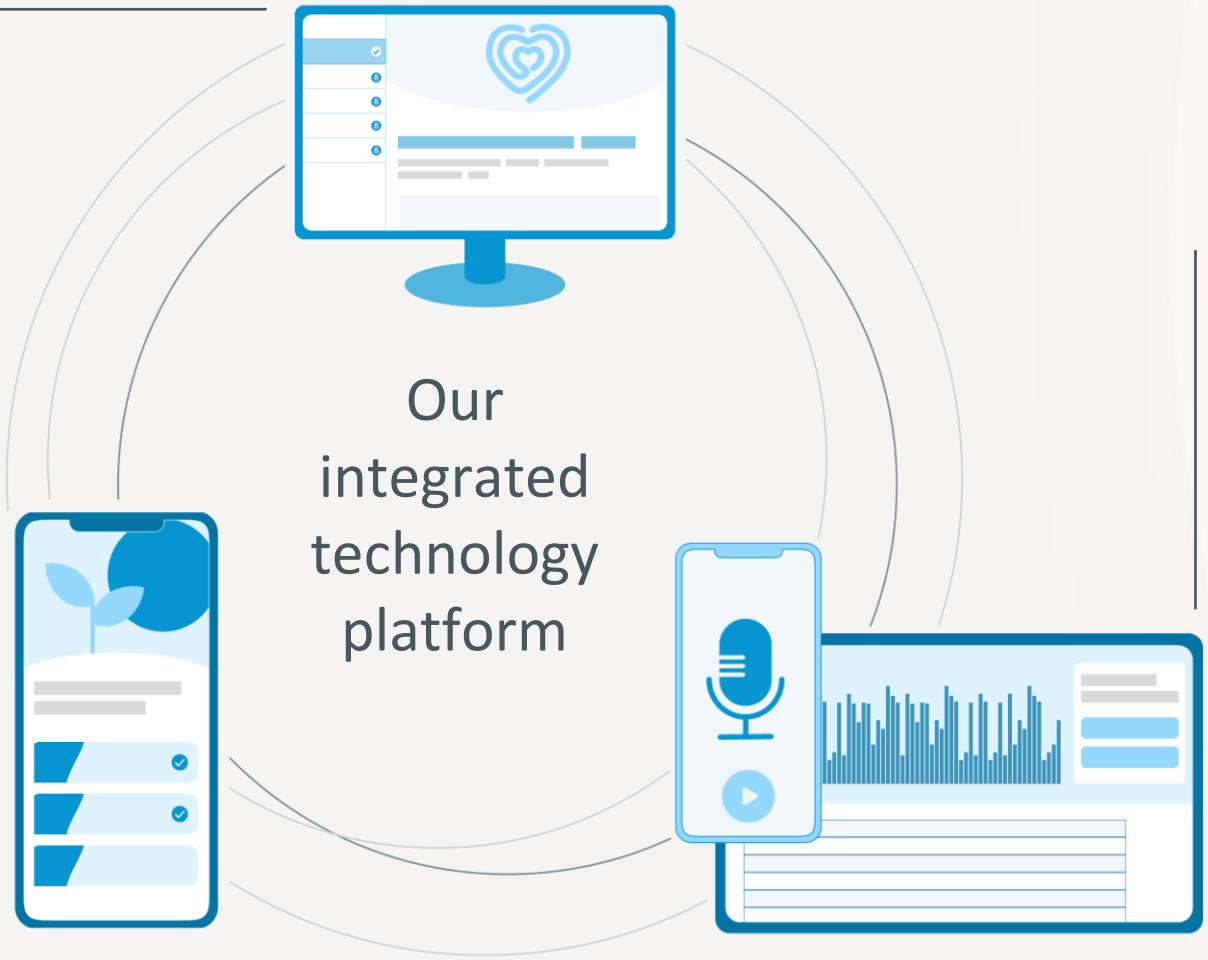
With their therapist, the patient reflects on their experience during the psilocybin session, confirming insights and defining actions to create new emotional and behavioral patterns.

Our digital tools provide educational support and guidance for patients and therapists, enabling the scalability and continuous optimization of our care model

Therapist COMPanion
Web-based portal supporting therapists through all phases of patient care

myPathfinder
Patient-facing app providing guidance throughout COMP360 psilocybin therapy

View demo



Chanterelle
AI & analytics infrastructure for continuous optimization

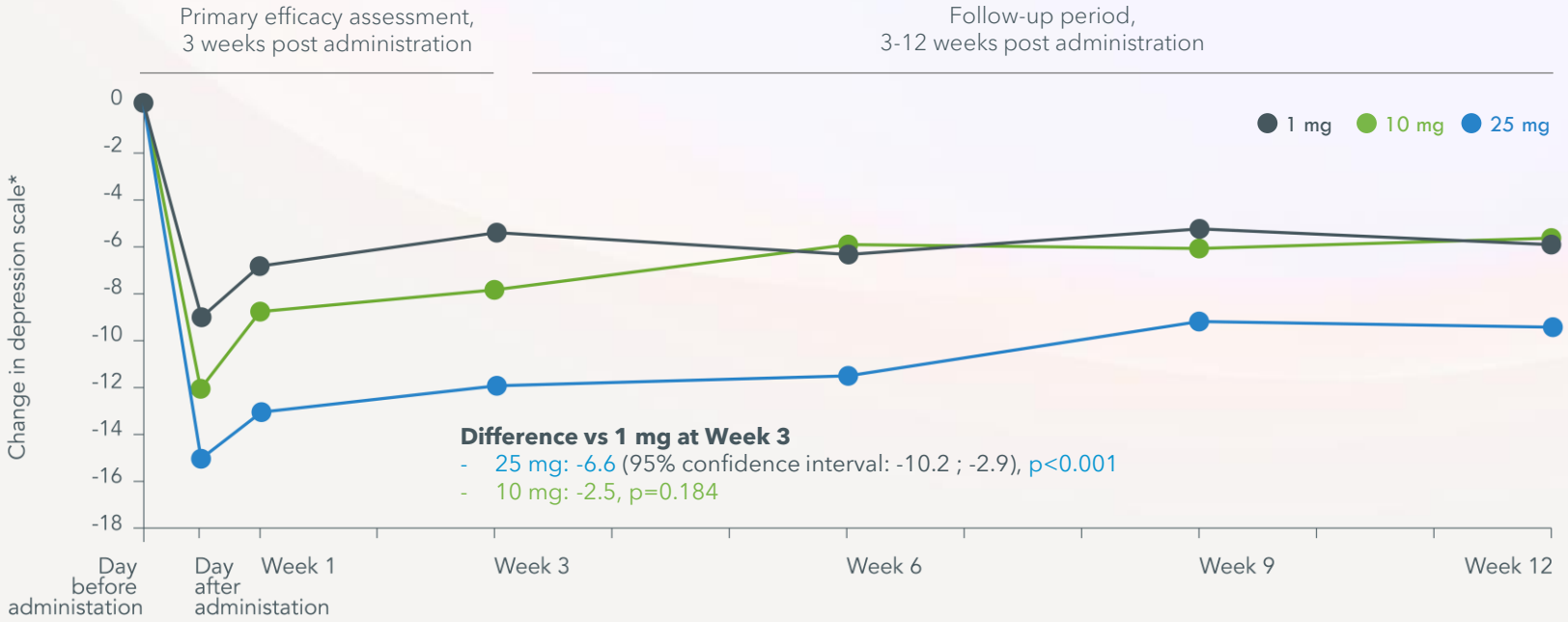
More details on Chanterelle

Phase 2b trial: Results demonstrate the potential for a rapid, sustained response in TRD

In a randomized, controlled, double-blind trial, three groups of participants were given a single dose (either 1mg, 10mg or 25 mg) of COMP360 psilocybin alongside psychological support.

Results were measured as a change on the MADRS depression scale from baseline (a day prior to administration) over a 12-week period.

The primary endpoint of this study was the change from baseline in MADRS total score at week 3.



Efficacy: We saw a statistically significant and clinically meaningful reduction in depression symptoms.

Rapid onset of action: The effect occurred the day after the administration.

Durability: We saw a sustained response at week 12 – a positive indication for high potential as a monotherapy.

View detailed P2b results

NOTE: *Least square mean change from baseline in MADRS total score; MADRS = Montgomery-Åsberg Depression Rating Scale

Phase 2b trial: Those participants who showed a sustained response also showed signs of improvement beyond the reduction of depression symptoms

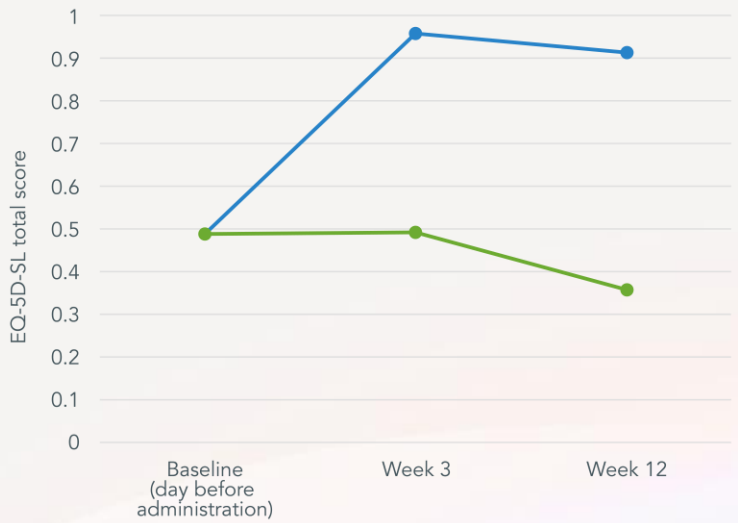
Sustained responders are participants who responded (≥50% change in MADRS total score from baseline) at weeks 3 and 12, and at least one visit out of week 6 and 9, and who did not start new treatments for depression.

Sustained non-responders are participants who did not respond (<25% change in MADRS total score from baseline) at weeks 3 and 12, and at least one visit out of week 6 or 9.

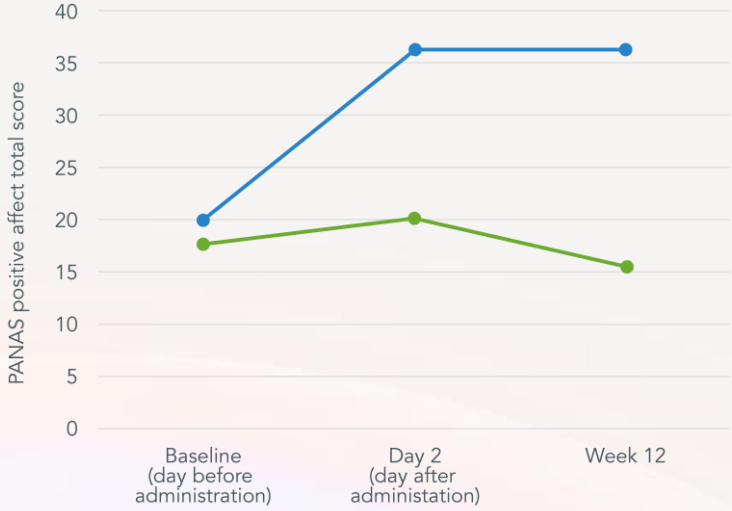
● Sustained responders (n=19)

● Sustained non-responders (n=21)

Quality of life: Sustained responders were found to have a clinically meaningful increase in quality of life from baseline at week 3 and week 12 with scores in the normal range after treatment



Positive affect: Sustained responders were found to have a clinically meaningful increase in positive affect from baseline on the day after the psilocybin session and at week 3



View detailed P2b results

NOTE: EQ-5D-3L= EuroQoL 5-Dimensions 3-Levels; PANAS= Positive and Negative Affect Schedule; SD= standard deviation

Phase 2b trial: COMP360 psilocybin therapy was generally well-tolerated

Treatment-emergent adverse events (TEAEs)

>90% of TEAEs were of mild or moderate severity.

5 most frequent TEAEs across the 10mg and 25mg doses were headaches, nausea, fatigue, insomnia and anxiety.

>77% of TEAEs occurring on the day of administration resolved on the same or next day; most were mild or moderate.

View detailed P2b results

There were no concerns with vital signs, ECG or clinical laboratory data in any of the treatment groups

TEAEs involving hallucinations (which only occurred in the 25mg and 10mg groups) and illusions (all groups) started and resolved on the day of administration.

TEAEs of suicidal ideation, suicidal behavior and intentional self-injury were seen in all groups, as is regularly observed in a TRD population.

- All patients who experienced these events during the trial had said during screening that they had had suicidal thoughts prior to the trial.
- Case-by-case analysis of safety data found no evidence to suggest a causal relationship between these TEAEs and administration of COMP360 psilocybin. The majority occurred more than a week after the psilocybin session.

Our Phase 3 program will launch by the end of 2022

Key clinical aspects to address in Phase 3

- Replicability of treatment response seen in Ph2b
- Safety profile of COMP360 psilocybin vs placebo

→ **Pivotal trial 1**

Single dose monotherapy

(COMP 005)

- Impact of a second dose on number of responders and/or quality of response seen in Ph2b
- Characterisation of treatment response from 2 x 10mg doses

→ **Pivotal trial 2**

Fixed repeat dose monotherapy

(COMP 006)

Phase 3 program will also include a long-term follow-up trial.

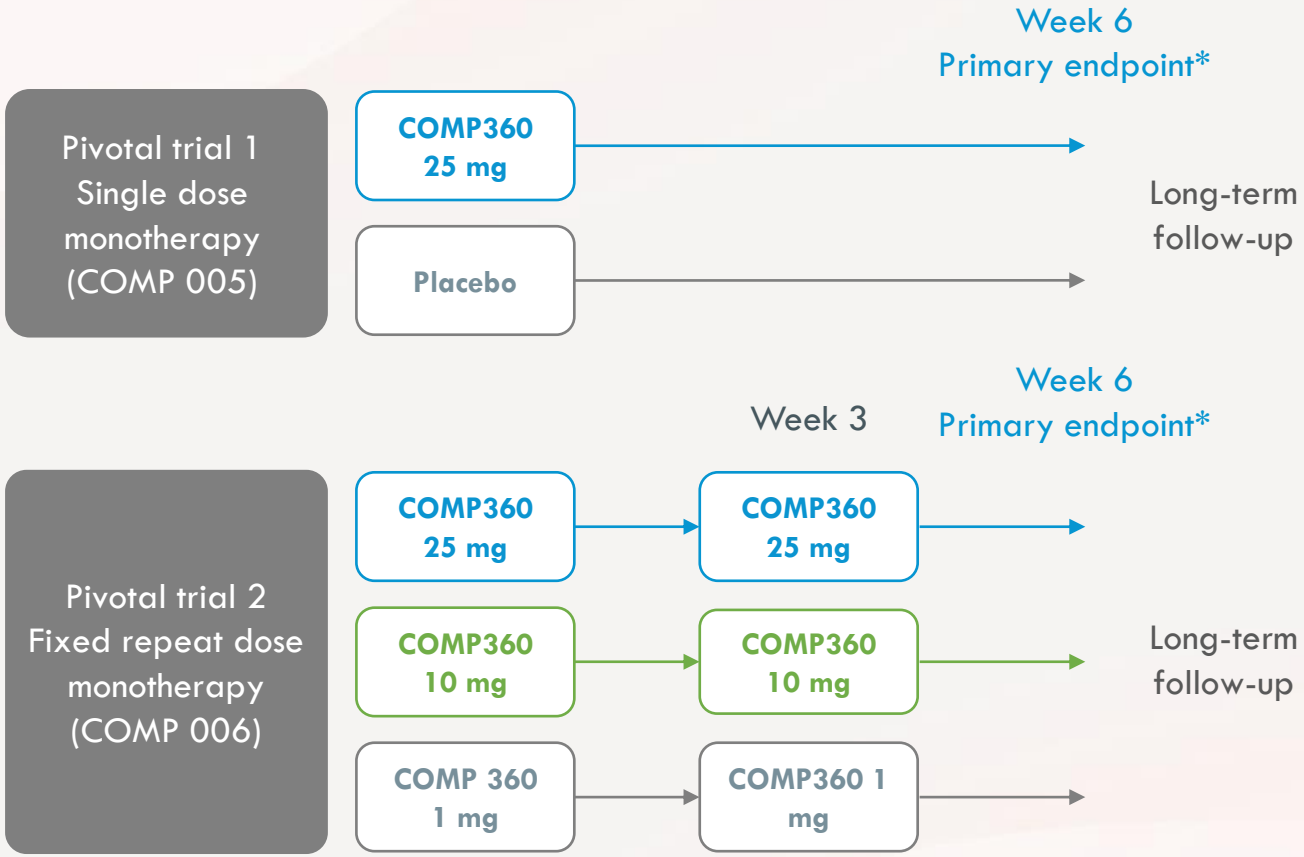
✓ End-of-Phase 2 meeting with FDA conducted

✓ Design of Phase 3 pivotal trials aligned with FDA

✓ Phase 3 will launch by the end of 2022

It will be conducted across approximately 150 sites in 14 countries

Phase 3 program: Overview of pivotal trial designs



Randomisation = 2:1
n = 378 (252:126)

Top line data expected end 2024

Randomisation = 2:1:1
n = 568 (284:142:142)

Top line data expected mid 2025

*Primary endpoint - change from baseline in MADRS total score at Week 6
The participant population (TRD definition and core inclusion/exclusion criteria) remains unchanged compared to Phase 2b

Phase 3 program: We will build on our experience from Phase 2b to execute Phase 3 successfully

Utilizing key performing sites with COMP360 psilocybin therapy experience

- 25% of sites selected for Phase 3 participated in Phase 2b
- Experienced sites across US, Canada and Europe
- Expedited start-up at experienced sites

Clustering experienced sites with new sites to maximize learnings from Phase 2b

- Increase patient screening throughput
- Optimize therapist availability
- Minimize therapist variability
- Maintain quality

We're joining forces to bring
COMP360 psilocybin therapy to patients at pace.

Should COMP360 psilocybin therapy be approved, it will bring a unique value proposition

For patients: a treatment experience that provides new insights and improves mental wellbeing and functioning.

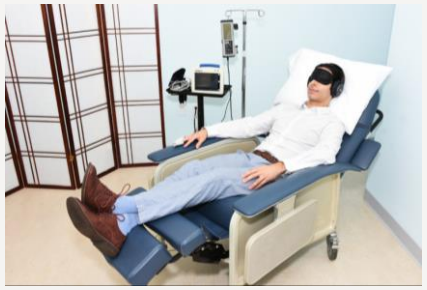
For healthcare professionals: a novel, rapid-acting and durable treatment that improves outcomes in TRD.

For payers: a less burdensome treatment option for TRD.

COMP360 psilocybin therapy shows promising signs as a less invasive and burdensome alternative to other interventions for TRD

COMP360 psilocybin therapy
6-8h administration + 4-6h psychological support; est. 1-3 administrations over 6 months

Patient time: **20-40h**
HCP time: **20-50h**



IV Ketamine
2h infusion, 12-15 sessions over 6 months + education (and therapy)

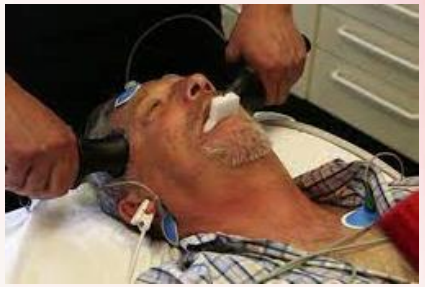
Patient time: **30-50h**
HCP time: **50-70h**

(r)TMS
Up to 1h / day for 30-40 days + screening, education, evaluation

Patient time: **20-30h**
HCP time: **40-50h**

Esketamine
3h (including observation); twice weekly for 1 month, then bi-weekly

Patient time: **90-160h**
HCP time: **120-240h**



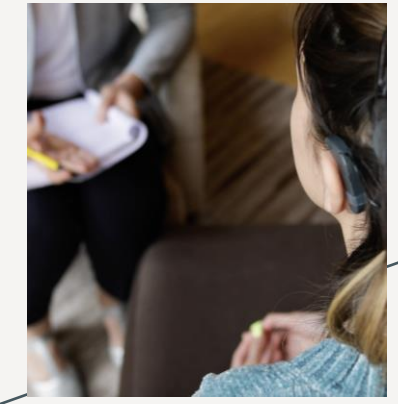
ECT
4h procedure under general anaesthetic, 6-12 sessions

Patient time: **30-50h**
HCP time: **80-160h**

NOTE: HCP = Healthcare professional; IV = intravenous; (r)TMS = repetitive Transcranial Magnetic Stimulation; ECT = Electroconvulsive therapy
SOURCE: ICER, 2019; Ross, 2018; Petrides, 2011; Thirthalli, 2020; Voigt, 2017

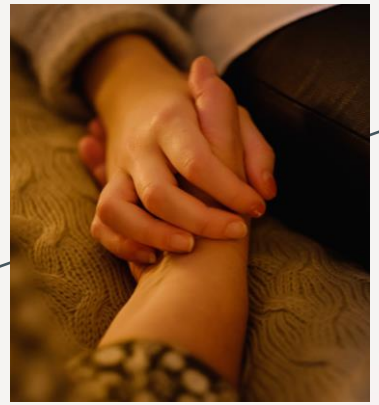
We aim to create impact for patients responsibly. Should COMP360 psilocybin therapy be approved, it will be:

A new clinical care standard

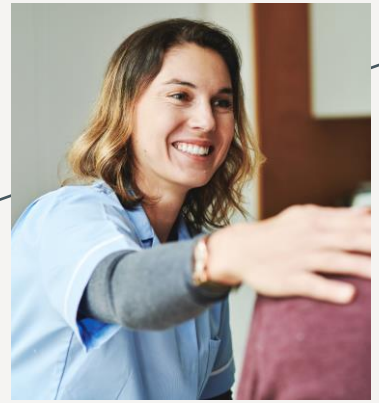


Prescribed to eligible patients

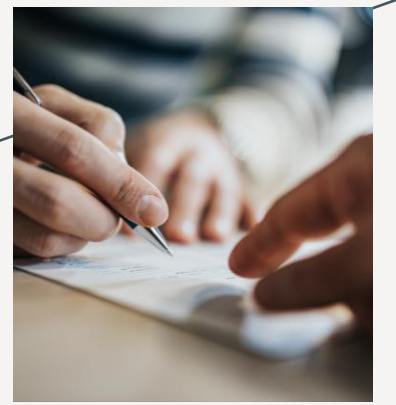
Conducted in a clinical setting



Overseen by licensed, specially trained therapists



Reimbursed by payers



We anticipate a REMS (risk evaluation and mitigation strategy) will be implemented at launch.

We aim to maximize uptake and patient access by commercializing COMP360 psilocybin together with enabling services.

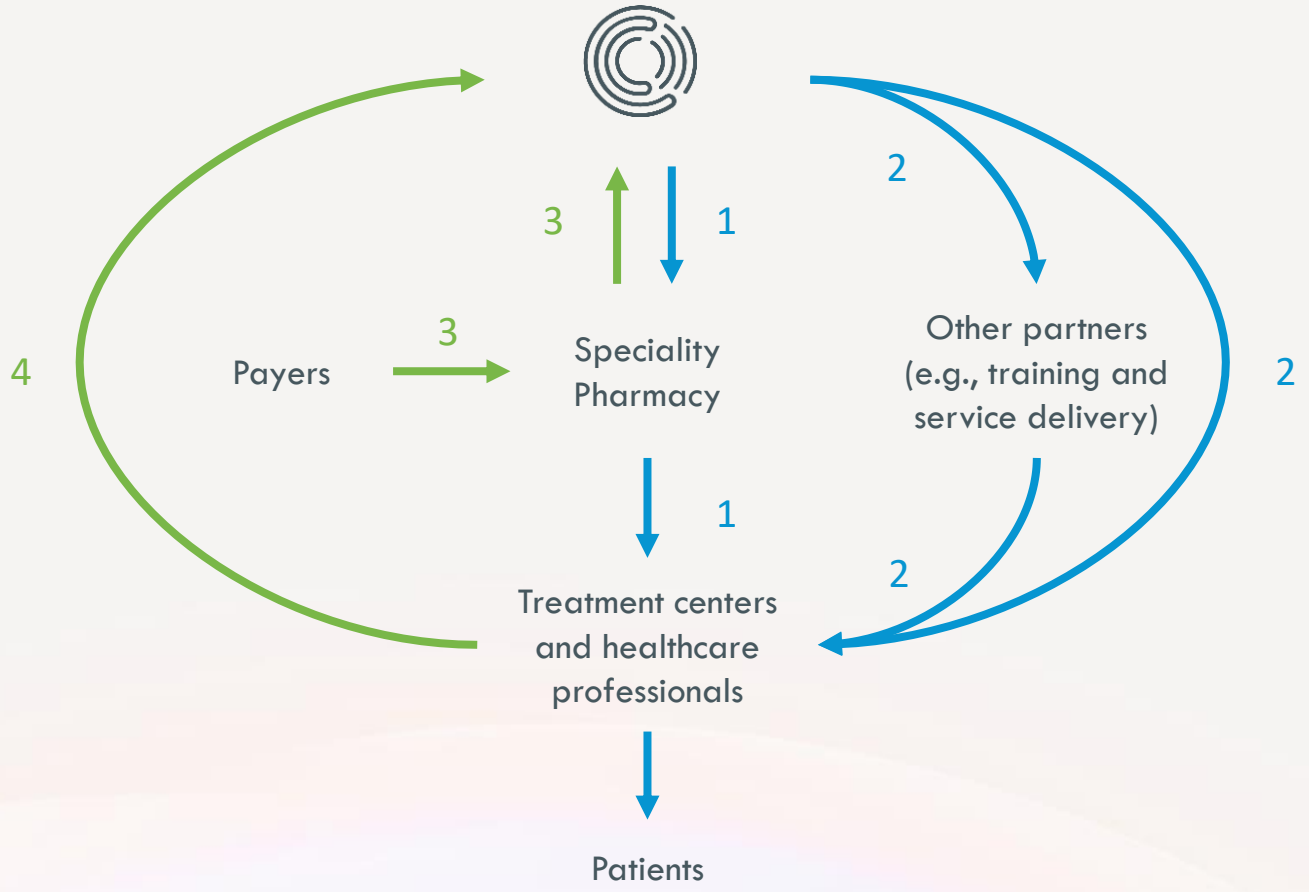
Our initial launch model

Our offering

1. We will deliver COMP360 (medicine) to treatment centers through speciality pharmacy channels.
2. We will offer training, site activation services and digital solutions to treatment centers.

Our revenue streams

3. When reimbursed by payers, we will sell COMP360 (medicine) to specialty pharmacy.
4. We're assessing the potential for additional revenue streams from licensing our training and digital solutions to treatment centers.



To be successful at launch, COMP360 psilocybin therapy must be…

Desirable

We're engaging with patient associations to incorporate their perspectives on unmet needs, and with healthcare professionals to understand the infrastructure needed to deliver COMP360 psilocybin therapy.

Accessible

We're engaging with payers and professional societies to generate payer-relevant evidence and to create a viable coding and reimbursement framework.

Scalable

We're setting up research collaborations with clinic networks, helping us to continuously improve the scalability of our delivery model.

COMP360 IP protection and regulatory exclusivity

Regulatory exclusivity

Upon approval

- US: Benefit of 5 years New Chemical Entity (NCE) protection.
- EU: Benefit of 8+2 years New Active Substance (NAS) protection.

IP protection

COMPASS has US patents covering COMP360 (including composition of matter, formulation, methods of treatment, and methods of manufacture) that expire in 2038 (20-year term) as well as pending patent applications covering COMP360 in major markets such as US, UK, and EU.

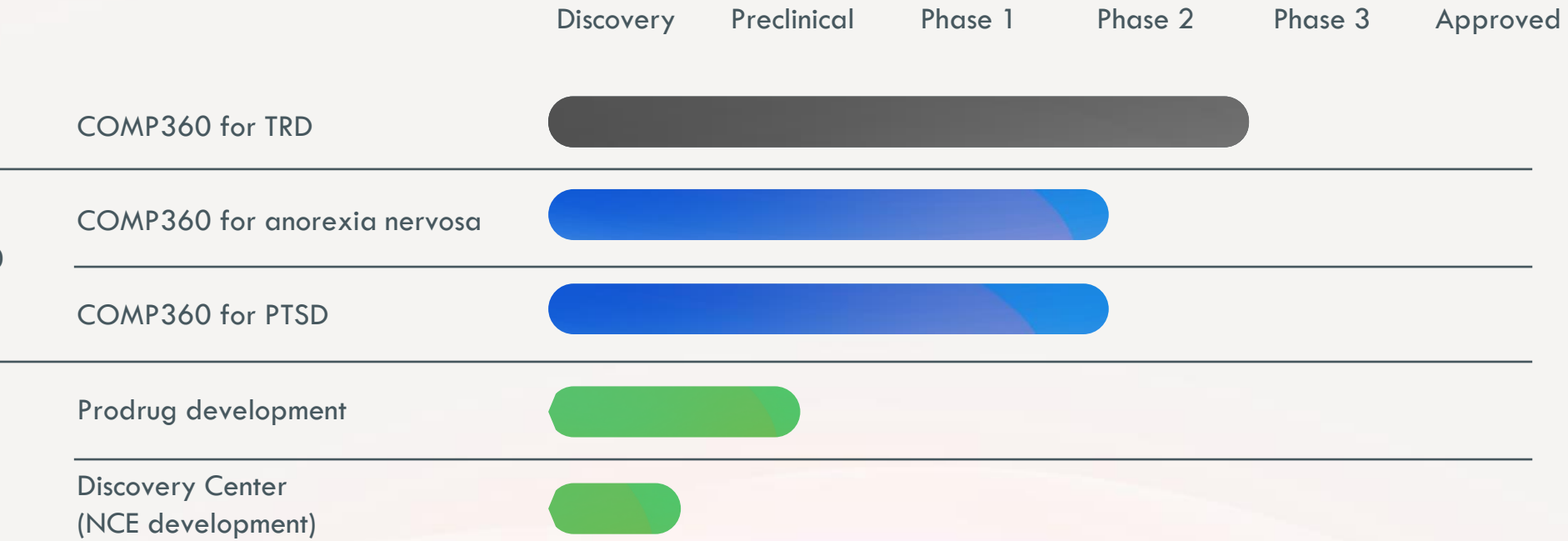
COMPASS to seek Patent Term extension and Supplementary Protection Certificates, where available, that may extend the term of patents that cover the approved product potentially up to five years depending on the date of regulatory approval and patent grant date.

A third party challenged the validity of three US patents (US 10,519,175; US 10,647,257; and US 10,954,259) at the USPTO. The USPTO has denied institution of all three challenges, upholding the validity of these patents.

Treatment-resistant depression is just the start.

We’re also addressing other serious unmet needs in mental health care.

We’re continuing to develop a balanced and differentiated pipeline



- **Beyond TRD:** We’re assessing the safety and efficacy of COMP360 psilocybin therapy for anorexia nervosa and PTSD.
- **Beyond COMP360 psilocybin**: We’re investigating prodrugs and novel psychedelic and non-psychedelic chemical entities.

ⓘ Learn more about our target indications

NOTE: NCE = new chemical entity; PTSD = post-traumatic stress disorder; TRD = treatment-resistant depression

We provide support to research institutions conducting investigator-initiated studies with COMP360 psilocybin

Listed here are signal-generating studies looking at indications in areas of serious unmet need with COMP360 psilocybin.

These studies may provide signals for new potential indications for COMP360 psilocybin that we can explore further and bring into our development pipeline.

COMPASS owns or has a license to new IP generated around COMP360 psilocybin.

● Complete ● Ongoing

Indication	Institution	Status
MDD in cancer patients	Aquilino Cancer Center	●
MDD	University of Zurich	●
Chronic cluster headache	University of Copenhagen	●
Severe TRD	Sheppard Pratt	●
Anorexia nervosa	UC San Diego	●
Bipolar disorder II	Sheppard Pratt	●
Body dysmorphic disorder	Columbia University	●
Suicidal ideation	Sheppard Pratt	●
Autism	King's College London*	●
TRD	Stanford	●
Rumination	Massachusetts General Hospital	●

NOTE: MDD = major depressive disorder ; *A research scientist employed by COMPASS Pathways who is a PhD student at King's College London is conducting the study

COMPASS Financial Overview

Cash and cash equivalents

$207.2 million

Issued shares

42 million

Covering analysts

- *Berenberg*
- *BTIG,* Robert (Bert) Hazlett
- *Canaccord Genuity,* Sumant Kulkarni
- *Cantor Fitzgerald,* Charles Duncan
- *CITI,* Neena Bitritto-Garg
- *Cowen,* Ritu Baral
- *EvercoreISI,* Josh Schimmer
- *HC Wainwright & Co,* Patrick Trucchio
- *Maxim Group,* Jason McCarthy
- *Oppenheimer,* Francois Brisebois
- *ROTH,* Elemer Piros

NOTE: as of June 2022

We will make this happen.

Together, let’s build the future of mental health care.

For any queries please contact:
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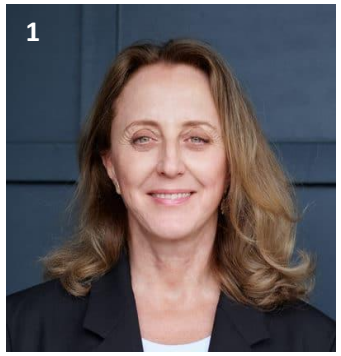
Appendix

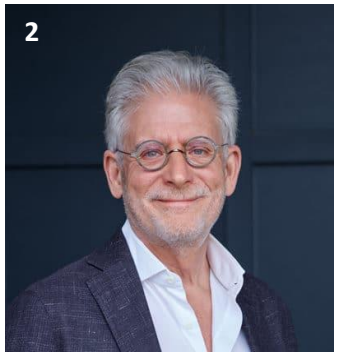
1. Our leaders
2. Psilocybin mechanism of action
3. Detailed results from our phase 2b clinical trial for TRD
4. Our digital tools
5. Target indications

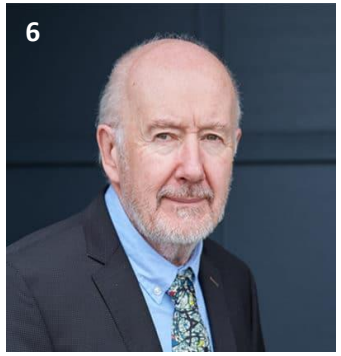
Our leaders

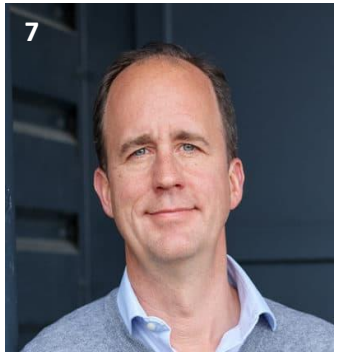
Go back

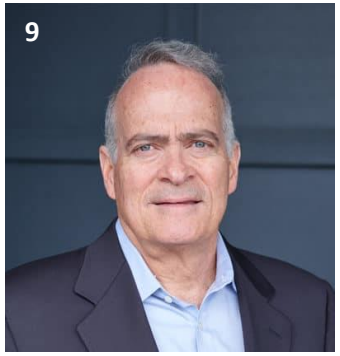
Our team of leaders and experts has a track record of delivering visionary innovation in health care and beyond











1. **Ekaterina Malievskaia MD**
   Chief Innovation Officer and Co-founder
2. **George Goldsmith**
   Executive Chairman and Co-founder
3. **Kabir Nath**
   Chief Executive Officer
4. **Trevor Mill**
   Chief Development Officer
5. **Matt Owens**
   General Counsel and Chief Legal Officer
6. **Dr Guy Goodwin**
   Chief Medical Officer
7. **Marco Mohwinckel**
   Chief Commercial Officer
8. **Anne Benedict**
   Chief People Officer
9. **Mike Falvey**
   Chief Financial Officer
10. **Greg Ryslik**
    Executive Vice President, AI, Engineering, Digital Health Research & Technology

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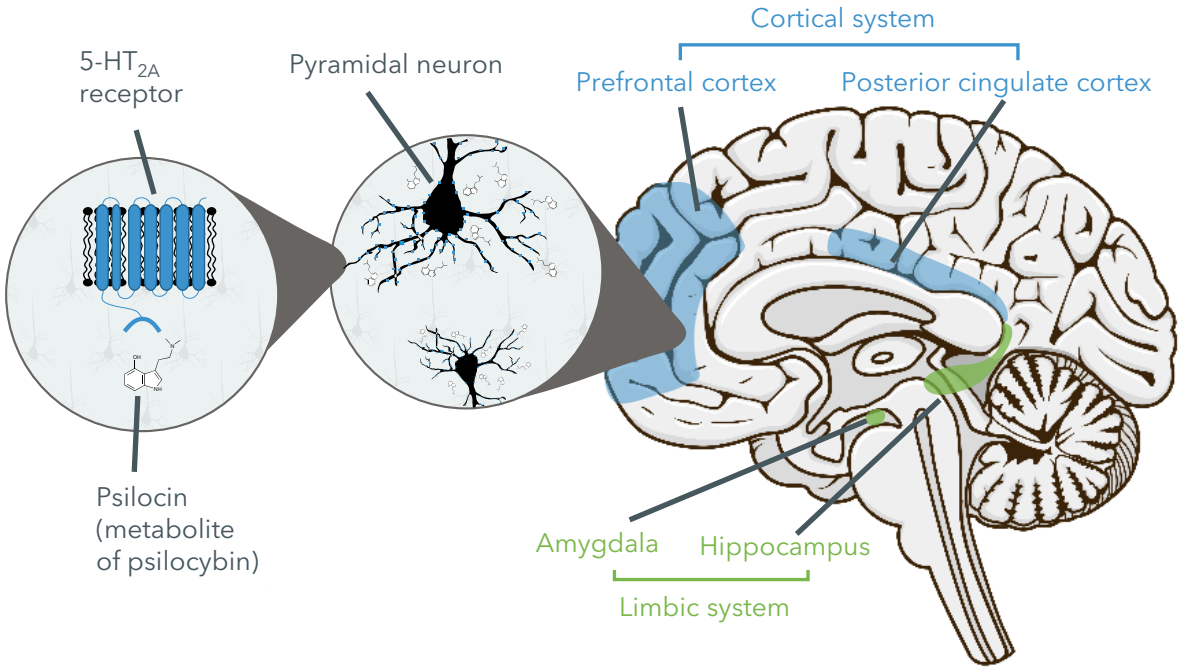
Learn more about our leadership on our website

Psilocybin mechanism of action

Go back

Psilocybin mechanism of action



1. Stimulation of 5-HT_{2A} receptors[1] results in downstream cascades via G-protein signalling[2].

2. Altered extracellular release of dopamine[3,4] leads to enhanced positive mood.

3. Downregulation of the DMN[5], de-synchronization of cortical activity, and emergence of new patterns of functional connectivity across the brain[6].

4. Sustained cellular changes leading to neuroplasticity[7] and "window of opportunity" for therapy.

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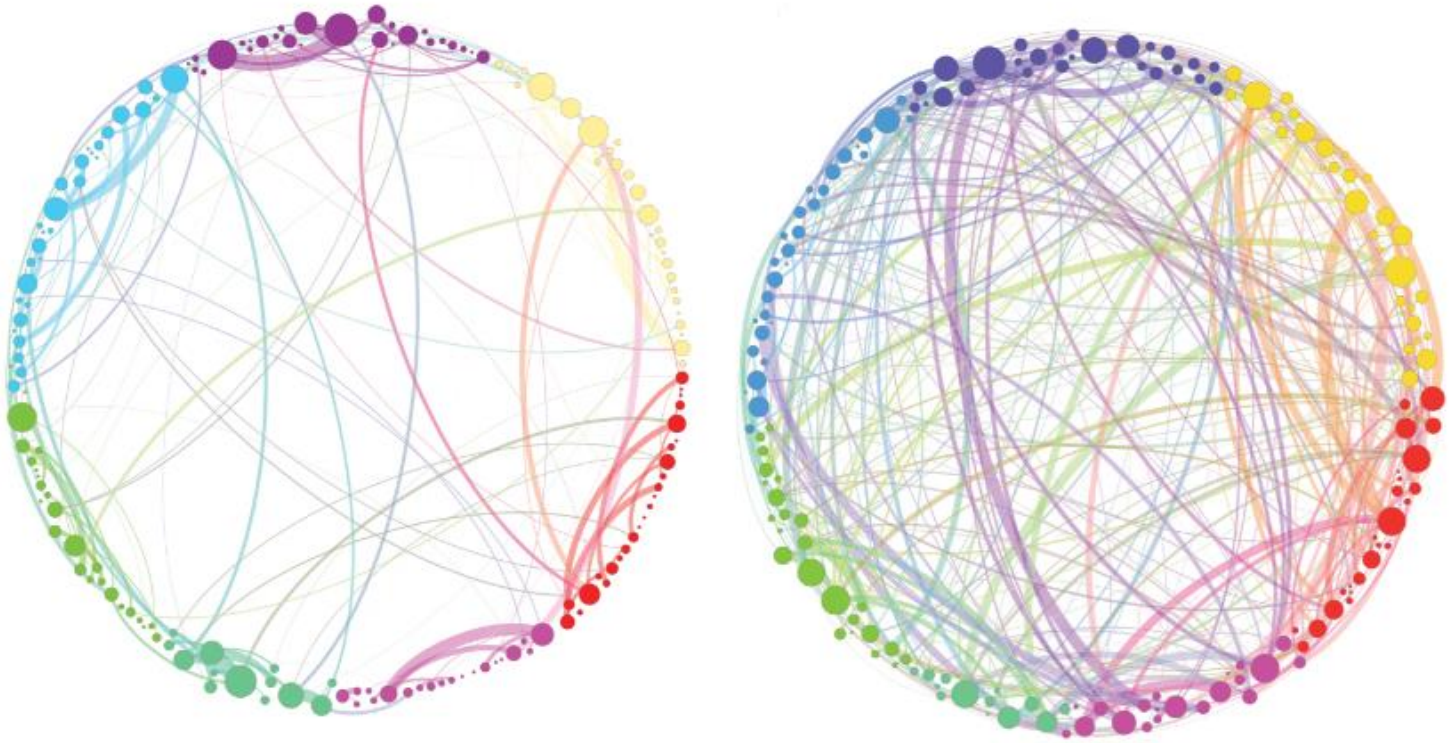
Modulation of cortical and limbic systems via 5-HT2A receptors

NOTE: understood mechanism of action based on studies of psilocybin (not COMP360); 5-HT2A = 5-hydroxytryptamine 2A; DMN = default mode network

SOURCE: 1. Halberstadt et al., 2011; 2. Lopez-Gimenez et al., 2018; 3. Vollenweider et al., 1999; 4. Sakashita et al., 2015; 5. Carhart-Harris et al., 2012; 6. Petri, 2014; 7. Ly et al., 2018

Simplified visualization of the acute changes in brain network connectivity



Placebo

Psilocybin

Brain network alterations may indicate the emergence of novel patterns of connectivity, following downregulation of the default mode network

NOTE: Figure adapted from Petri et al., 2014; study analyzed fMRI (functional magnetic resonance imaging) data from healthy volunteers to compare resting-state functional brain connectivity after intravenous infusion of placebo and psilocybin (not using COMP360)

SOURCE: Petri, 2014 - Homological scaffolds of brain functional networks

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Detailed results from our phase 2b clinical trial for TRD

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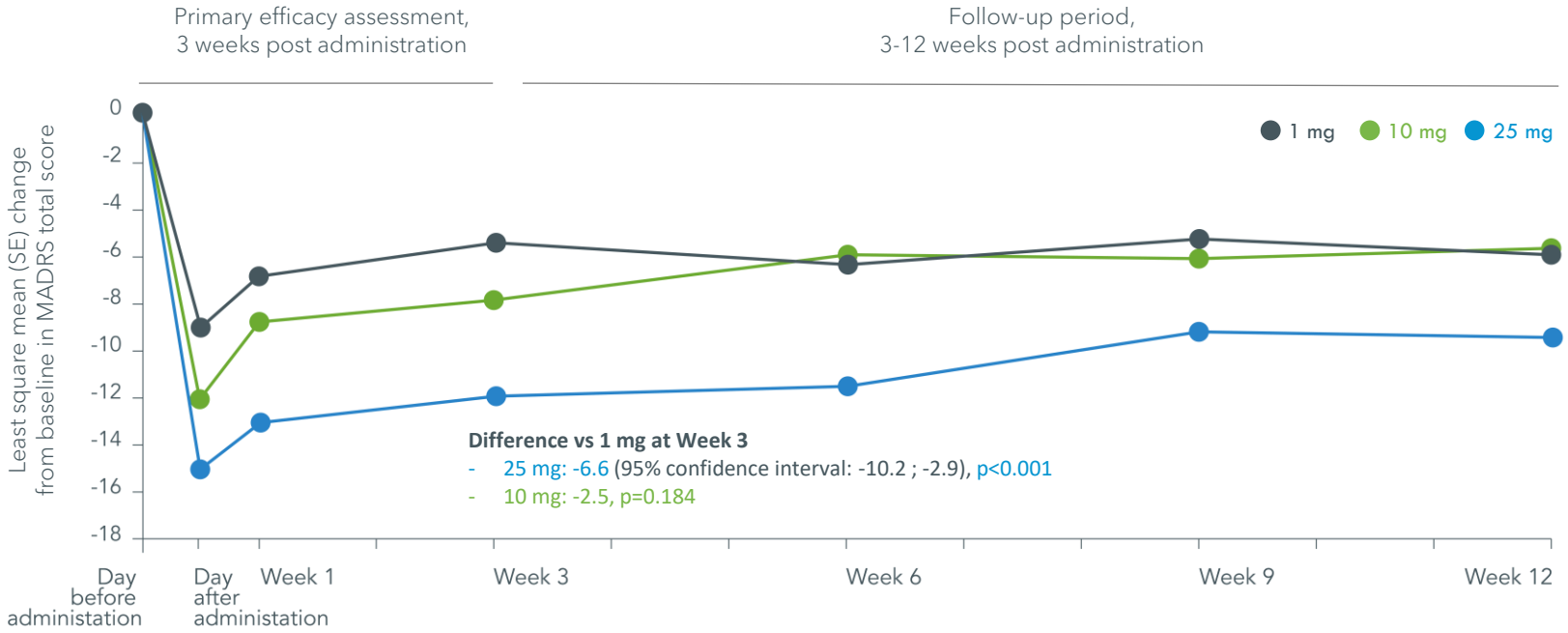
Primary endpoint – change from baseline in MADRS total score



Baseline mean (SD): 25mg (n=79) = 31.9 (5.41); 10mg (n=75) = 33.0 (6.31); 1mg (n=79) = 32.7 (6.24)

Statistically significant primary endpoint (p<0.001) at week 3 (25mg vs 1mg).

There was a rapid onset of action and durable effects with treatment differences between the 25mg vs 1mg group apparent from the day after COMP360 psilocybin administration.

NOTE: MADRS = Montgomery-Åsberg Depression Rating Scale; n = number observed; SE = standard error; SD = standard deviation; p = p-value

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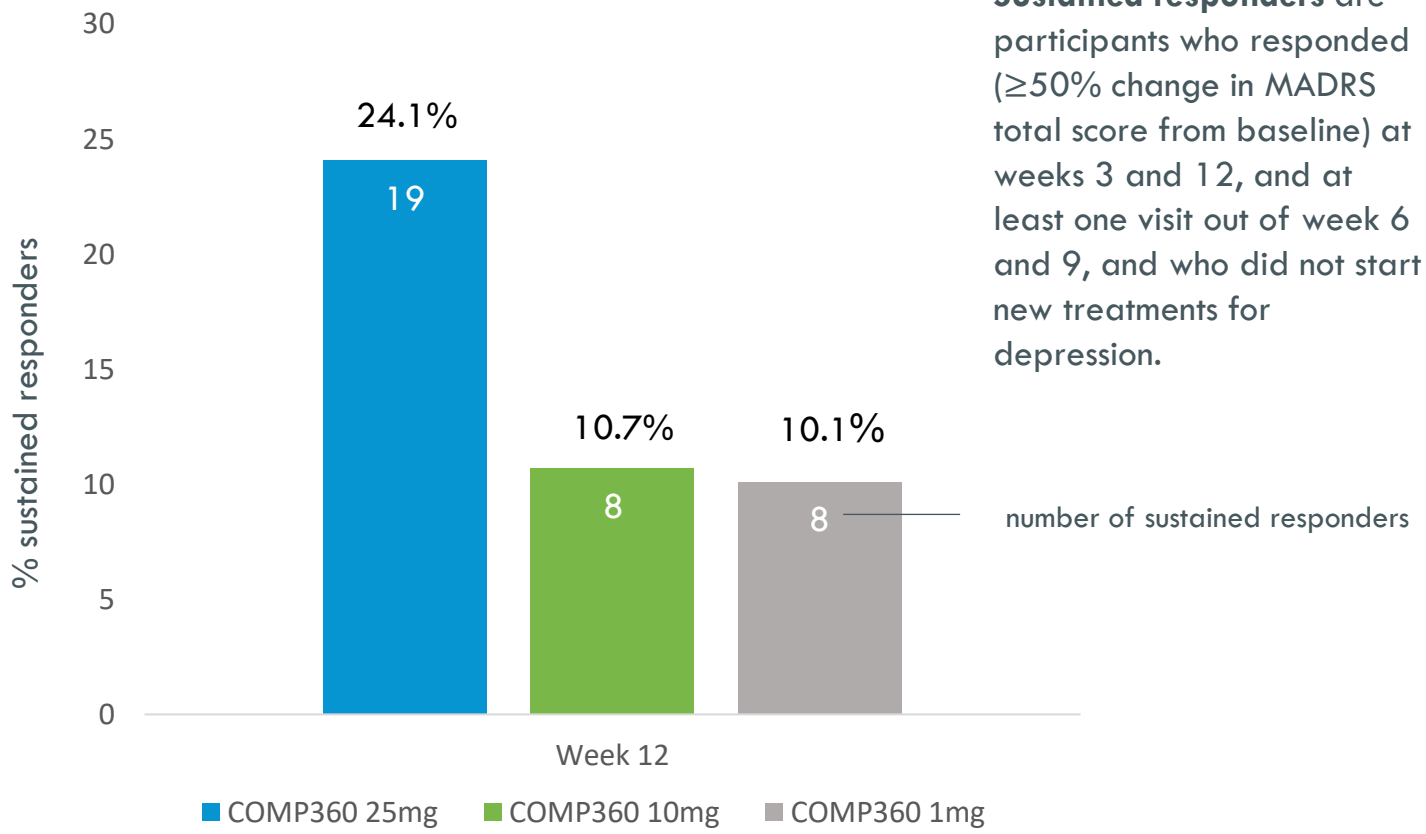
MADRS sustained responders at week 12



Sustained responders are participants who responded (≥50% change in MADRS total score from baseline) at weeks 3 and 12, and at least one visit out of week 6 and 9, and who did not start new treatments for depression.

Higher proportion of sustained responders found in the 25mg vs 1mg arm.

NOTE: MADRS = Montgomery-Åsberg Depression Rating Scale; Statistical significance cannot be claimed on secondary endpoints due to hierarchical testing being broken for the 10mg vs 1mg dose on the primary endpoint

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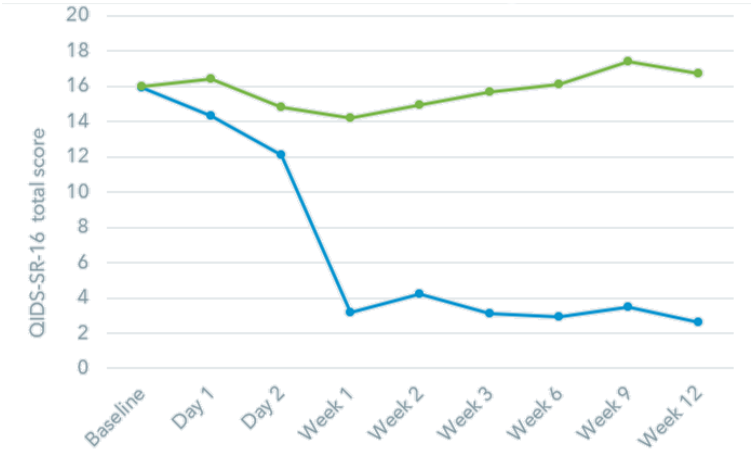
Key secondary endpoints: sustained responders and sustained non-responders for COMP360 25mg

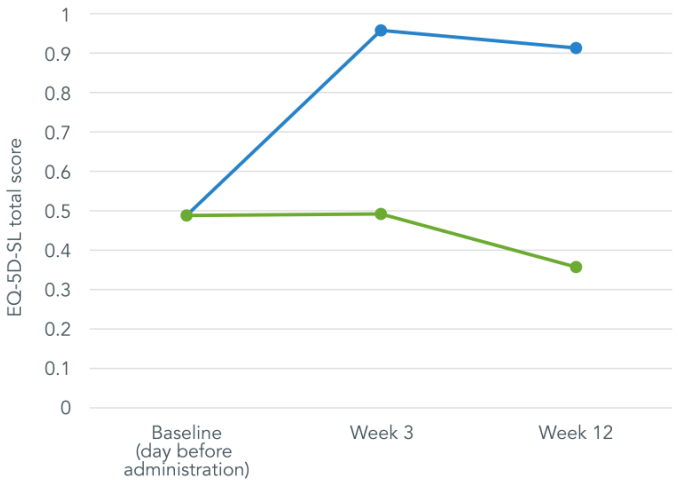
Sustained responders
Sustained non-responders

Sustained responders were found to have clinically meaningful reductions on the QIDS-SR-16 from baseline at week 1 through to week 12 with mean scores moving from the moderate/severe range at baseline to subthreshold at week 1 onwards



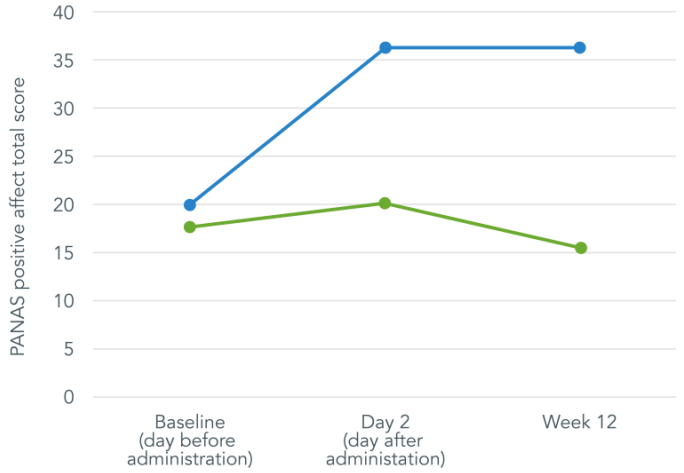
Baseline mean (SD): Sustained responders 25mg (n=19) = 15.9 (3.48); sustained non-responders 25mg (n=21) = 16.0 (4.77)

Sustained responders were found to have clinically meaningful increases in quality of life from baseline at week 3 and week 12 with scores in the normal range after treatment



Baseline mean (SD): Sustained responders 25mg (n=19) = 0.49 (0.249); sustained non-responders 25mg (n=21) = 0.49 (0.223)

Sustained responders were found to have clinically meaningful increases in positive affect from baseline at day 2 and week 3



Baseline mean (SD): Sustained responder 25mg (n=19) = 20.1 (7.53); Sustained non-responder 25mg (n=21) = 18.2 (4.77)

Go back

NOTE: QIDS-SR-16= 16-item Quick Inventory of Depressive Symptomatology – Self Report; n = number observed; EQ-5D-3L= EuroQoL 5-Dimensions 3-Levels; PANAS= Positive and Negative Affect Schedule; n = number observed; SD = standard deviation. 12 sustained non-responders in 25mg arm took treatment for depression at some point in the study. Sustained responders are defined as participants who responded (≥50% change in MADRS total score from baseline) at weeks 3 and 12, and at least one visit at week 6 or 9, and who did not start new treatments for depression. Sustained non-responders are defined as participants who did not respond (<25% change in MADRS total score from baseline) at weeks 3 and 12, and at least at one visit at week 6 or 9.

COMP360 psilocybin therapy was generally well-tolerated

Treatment-emergent adverse events (TEAEs)

>90% of TEAEs were of mild or moderate severity.

5 most frequent TEAEs across the 10mg and 25mg doses were headaches, nausea, fatigue, insomnia and anxiety.

>77% of TEAEs occurring on the day of administration resolved on the same or next day; most were mild or moderate.

There were no concerns with vital signs, ECG or clinical laboratory data in any of the treatment groups

TEAEs involving hallucinations (which only occurred in the 25mg and 10mg groups) and illusions (all groups) started and resolved on the day of administration.

TEAEs of suicidal ideation, suicidal behavior and intentional self-injury were seen in all groups, as is regularly observed in a TRD population.

- All patients who experienced these events during the trial had said during screening that they had had suicidal thoughts prior to the trial.
- Case-by-case analysis of safety data found no evidence to suggest a causal relationship between these TEAEs and administration of COMP360 psilocybin. The majority occurred more than a week after the psilocybin session.

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Most frequent TEAEs ordered by the 25mg arm

(at least 5% in any treatment group)

MedDRA TEAE preferred term	COMP360 25mg	COMP360 10mg	COMP360 1mg	Overall
	N=79	N=75	N=79	N=233
	n (%)			
Headache	27 (34.2)	16 (21.3)	20 (25.3)	63 (27.0)
Nausea	18 (22.8)	7 (9.3)	4 (5.1)	29 (12.4)
Fatigue	12 (15.2)	5 (6.7)	7 (8.9)	24 (10.3)
Insomnia	8 (10.1)	11 (14.7)	14 (17.7)	33 (14.2)
Anxiety	7 (8.9)	13 (17.3)	3 (3.8)	23 (9.9)
Mood altered	7 (8.9)	3 (4.0)	1 (1.3)	11 (4.7)
Back pain	6 (7.6)	0	3 (3.8)	9 (3.9)
Dizziness	6 (7.6)	1 (1.3)	1 (1.3)	8 (3.4)
Suicidal ideation	5 (6.3)	5 (6.7)	4 (5.1)	14 (6.0)
Myalgia	5 (6.3)	2 (2.7)	1 (1.3)	8 (3.4)
Euphoric mood	4 (5.1)	5 (6.7)	4 (5.1)	13 (5.6)
Depression	4 (5.1)	6 (8.0)	5 (6.3)	15 (6.4)
Abdominal pain upper	4 (5.1)	2 (2.7)	1 (1.3)	7 (3.0)
Irritability	4 (5.1)	2 (2.7)	1 (1.3)	7 (3.0)
Panic reaction	4 (5.1)	1 (1.3)	1 (1.3)	6 (2.6)
Depressed mood	3 (3.8)	5 (6.7)	4 (5.1)	12 (5.2)
Paraesthesia	3 (3.8)	4 (5.3)	1 (1.3)	8 (3.4)
Thinking abnormal	0	4 (5.3)	0	4 (1.7)

Go back

TEAE incidence is higher in the 25mg group overall

Key mood-related TEAEs (euphoric mood, depression, depressed mood, suicidal ideation) do not have a higher incidence in the 25mg arm.

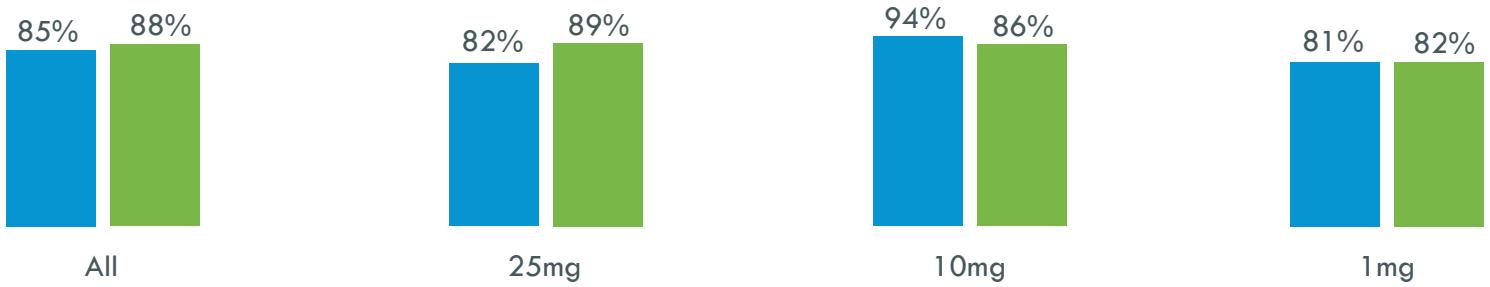
NOTE: MedDRA = Medical Dictionary for Regulatory Activities; TEAE = treatment emergent adverse event; N = number of participants in the population; n = number of participants reporting the adverse event

Our digital tools

Go back

Our AI models on Chanterelle can predict patient outcomes from the day after administration, potentially enabling future personalized care

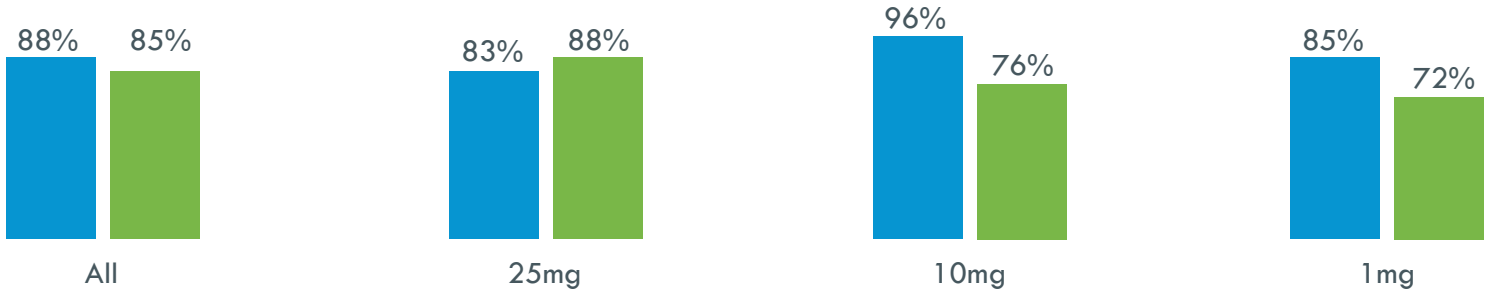
Week 3 Responder



85%

accuracy in predicting Week 3 responders

Sustained Responder



88%

accuracy in predicting sustained responders

Accuracy AUC (Area under the curve)

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NOTE: Results to be further validated with Phase 3 data set. Responder = MADRS score drop at week 3 post administration of at least 50%; Sustained Responder = MADRS score drop at weeks 3, 6, 9 and 12 post administration of at least 50%

Scan the QR code to view our paper

Psilocybin Therapy for Treatment Resistant Depression: Prediction of Clinical Outcome by Natural Language Processing

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Abstract

Background: Therapeutic administration of psychedelic drugs has shown significant potential, both in historical accounts and in recent clinical trials in the treatment of depression and other mood disorders. A recent randomized double-blind phase-IIb study demonstrated the safety and efficacy of COMP360, COMPASS Pathways' proprietary synthetic formulation of psilocybin in participants with treatment resistant depression (TRD). While promising, the treatment works for a portion of the population and early prediction of outcome is a key objective.

Methods: An audio recording and transcript were made of the psychological support session that took place between participant and therapist one day post COMP360 administration. A zero-shot machine learning classifier based on the BART large language model was then used on the transcript to compute two-dimensional sentiment, measured by valence and arousal, for both the participant and therapist. These scores, combined with the Emotional Breakthrough Index (EBI) and treatment arm were then used to fit a multinomial logistic regression model predicting treatment outcome as measured by MADRS scores.

Results: Several multinomial logistic regression models were fit to predict responder status accounting for time points between three and twelve weeks. These models resulted in Area Under the Curve (AUC) values of 85-88% (depending on whether the 3 or 12 week time-points were used to measure outcome) with corresponding accuracy of approximately 85-88%.

Conclusions: This study shows that a machine learning algorithm can use NLP and EBI scores to accurately predict long-term patient response. This allows for both faster visibility into the therapeutic outcome as well as insight into how one might optimize the therapeutic model. Further research is required to understand if

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Target indications

Go back

Treatment Resistant Depression (TRD)

TRD is a form of depression that doesn't improve after two or more adequate anti-depressive treatments prescribed within a single depressive episode. About half of TRD patients are unable to perform a full range of daily tasks and experience a much lower quality of life compared to those suffering with less severe depression.

100M

Patients suffering with TRD worldwide.

30%

attempt suicide at least once during their lifetime.

$48B

TRD costs payers and employers an estimated $29 billion-$48 billion yearly in the US

Go back

SOURCE: WHO, 2017; STAR*D Trial; Weissman, et al. 2021; Amos et al., 2017

TRD treatment pathway: significant unmet need for 100 million patients

Treatment pathway stage	New onset depression Major depressive disorder (MDD)	Persistent depression Major depressive disorder (MDD)	Treatment-resistant depression (TRD)
Line of therapy	First line	Second line	Third line +
Estimated number of patients (worldwide)	320 million	200 million	100 million (~1 in 3 of total) US health care cost approx $17-25k per patient/year
Available treatments	– Antidepressants – Psychological interventions, e.g., CBT*	– Antidepressants – Antidepressant combinations – Psychological interventions	– Antidepressants – Augmentation therapy (antidepressants, mood stabilizers, anticonvulsants, atypical antipsychotics, esketamine) – Ketamine – Somatic therapy (rTMS, tDCS, ECT, DBS) – High-intensity psychological interventions
% relapse	60-70%	50-75%	80-90%

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NOTE: CBT = cognitive behaviorial therapy; rTMS = repetitive transcranial magnetic stimulation; tDCS=transcranial direct current stimulation; ECT=electroconvulsive therapy; DBS=deep brain stimulation
SOURCE: Hasler et al., 2004 - Acute psychological and physiological effects of psilocybin in healthy humans: a double-blind, placebo-controlled dose effect study

Post-traumatic stress disorder (PTSD)

PTSD can occur in people who have experienced or witnessed a traumatic event (eg, natural disaster, serious accident, war, rape). Some people with PTSD experience symptoms from immediately after the event while for others symptoms may appear years later.

311M

People will experience PTSD at some point in their lives.

20-30%

of patients treated with currently approved pharmacological interventions for PTSD will reach full remission.

$17K

Direct medical costs per patient per year in a large veteran population in the US.

Where we are at…

Latest trial

P2 (ongoing), 20 participants

Multi-national, multi-center, open label study

Single dose of 25mg COMP360 psilocybin administered with psychological support

Primary endpoint

Safety and tolerability

Secondary endpoints

Symptoms reduction, functionality, quality of life, response and remission

Go back

SOURCE; Kautz et al., 2017; Kessler et al., 2005; Van Ameringen et al., 2008; Koenen et al., 2017; Berger et al., 2009; Wang et al., 2016
NOTE: SSRI = selective serotonin reuptake inhibitor; FDA = Food and Drug Administration

Anorexia nervosa (AN)

AN is an eating disorder characterized by weight loss or difficulties maintaining a healthy body weight, usually associated with distorted body image. People with AN generally restrict their caloric intake, types of food they eat, and might engage in purging behaviors (eg, strenuous exercise, vomiting, laxatives/diuretics misuse).

3.9M

people suffer with AN; it has a lifetime prevalence up to 4% in females.

20%

of deaths in AN are due to suicide; it's the deadliest of psychiatric disorders.

0

no pharmacological treatments approved; psychological treatments have relapse rates as high as 52%.

Where we are at…

Latest trial (ongoing)

P2a to determine proof of concept in AN

60 participants

Multi-national, multi-center, randomized, double-blind study

Single dose of 25mg COMP360 psilocybin vs 1mg administered with psychological support

Primary endpoint

AN symptoms reduction

Secondary endpoints

Change in obsessive-compulsive symptoms and change in weight at week 12

Go back

SOURCE: Our World In Data; NICE, 2019; Khalsa et al., 2017

Thank you

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