

Welcome!!!

COMMUNITY EDUCATION DAY FOR PSYCHOSIS

Compassion Focused Therapy

for distressing experiences in psychosis

Dr Charlie Heriot-Maitland



University
of Glasgow



BALANCED
MINDS



THE
Compassionate Mind
FOUNDATION

with thanks to

Dr Eleanor Longden, Prof Paul Gilbert, Dr Chris Irons (**clinical**)

Dr Emmanuelle Peters, Prof Til Wykes, Prof Andrew Gumley (**research**)

Published in final edited form as:

IEEE Signal Process Mag. 2008 January 1; 25(1): 176–174.

Buddha's Brain: Neuroplasticity and Meditation

Richard J. Davidson [Director] and Antoine Lutz [Associate Scientist]

Waisman Laboratory for Brain Imaging and Behavior, University of Wisconsin-Madison

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Social Cognitive and Affective Neuroscience Advance Access published May 9, 2013

doi:10.1093/scan/nst060

SCAN (2013) 1 of 7

Differential pattern of functional brain plasticity after compassion and empathy training

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Compassion (bio-psycho-social) Safeness

ann. behav. med. (2009) 37:141–153
DOI 10.1007/s12160-009-9101-z

ORIGINAL ARTICLE

Heart Rate Variability, Prefrontal Neural Function, and Cognitive Performance: The Neurovisceral Integration Perspective on Self-regulation, Adaptation, and Health

Julian F. Thayer, Ph.D. • Anita L. Hansen, Ph.D. •
Evelyn Saus-Rose, Cand. Psychol. •
Bjorn Helge Johnsen, Ph.D.

Psychological Bulletin
2014, Vol. 140, No. 1, 256–282

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0893-3200/14/\$12.00 DOI: 10.1037/a0032671

Psychobiological Mechanisms Underlying the Social Buffering of the Hypothalamic–Pituitary–Adrenocortical Axis: A Review of Animal Models and Human Studies Across Development

Camelia E. Hostinar
University of Minnesota

Regina M. Sullivan
New York University Langone Medical Center

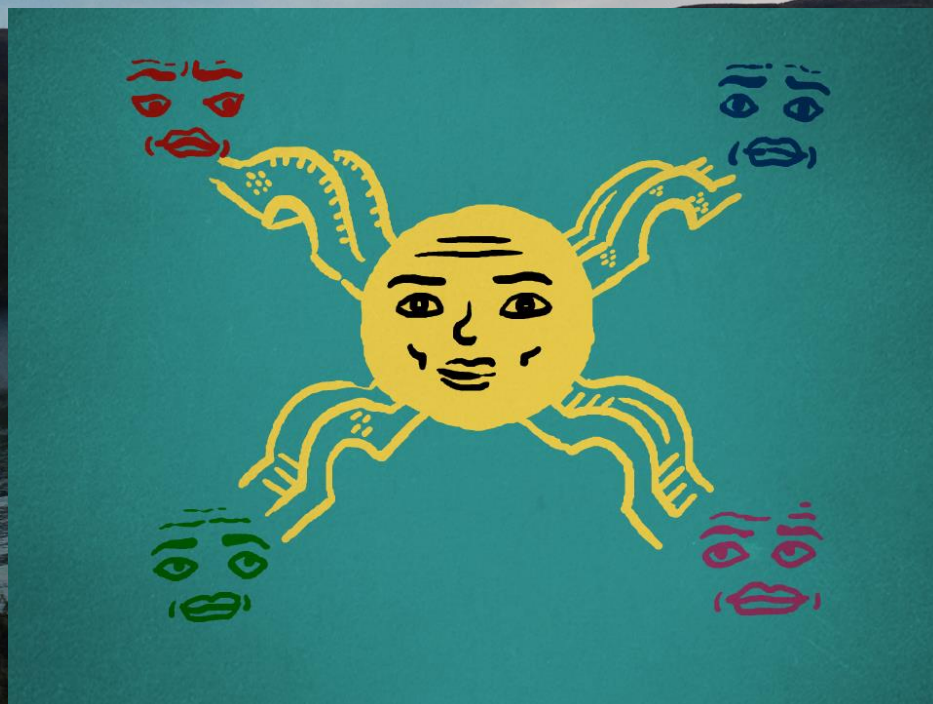
Megan R. Gunnar
University of Minnesota



COMPASSION FOR VOICES

A TALE OF COURAGE AND HOPE

<https://www.youtube.com/watch?v=VRqI4IxuXAw>



Caring motives
-self ↔ self
-self ↔ others

**Wisdom
Strength
Courage**

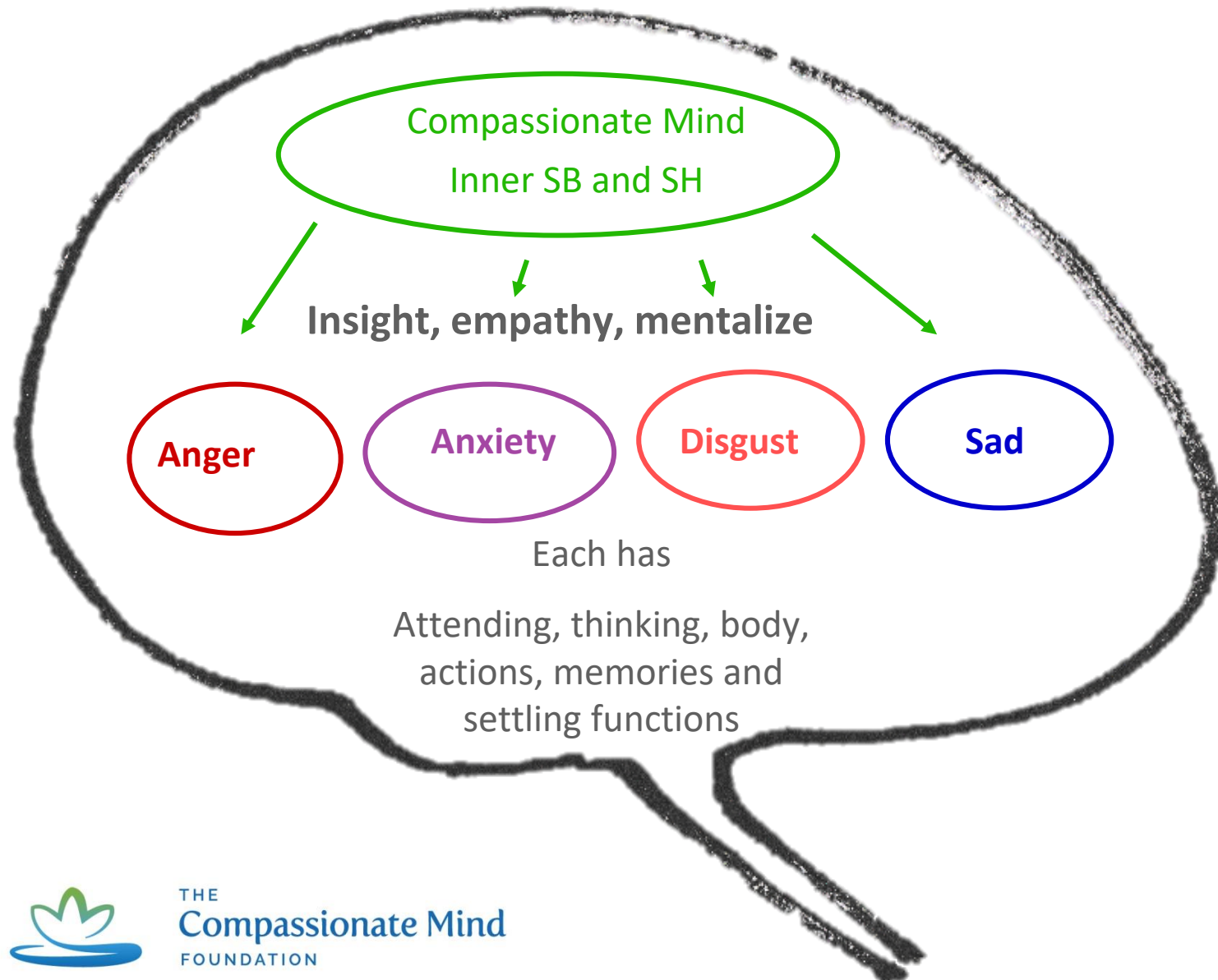
Attributes & skills
-To engage
-To alleviate

**Posture
Voice ton
Facial exp**

Affiliative emotions
-Calm threat
-Frontal cortex

‘compassionate self’

Differentiated and integrated





“The conductor of the orchestra”
(CFT client)

Compassionate relating to voices

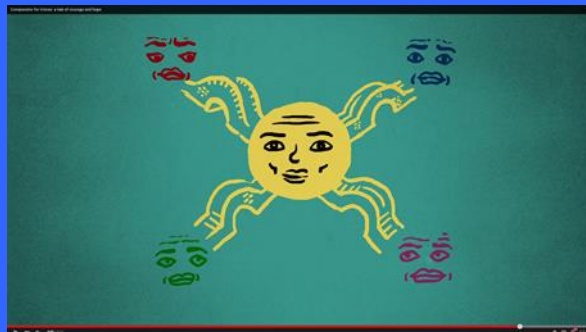


Longden (2013):

“When other voices warned me not to leave the house, then I would thank them for drawing my attention to how unsafe I felt – because if I was aware of it I could do something positive about it – but then go on to reassure both them and myself that we were safe and didn’t need to feel frightened anymore”



“I realised that the most hostile, aggressive voices actually represented the parts of me that had been hurt the most profoundly – and as such, it was these voices that needed to be shown the greatest compassion and care”





"Pay No Attention to the Man Behind the Curtain..."

From the MGM movie, the "Wizard of Oz"

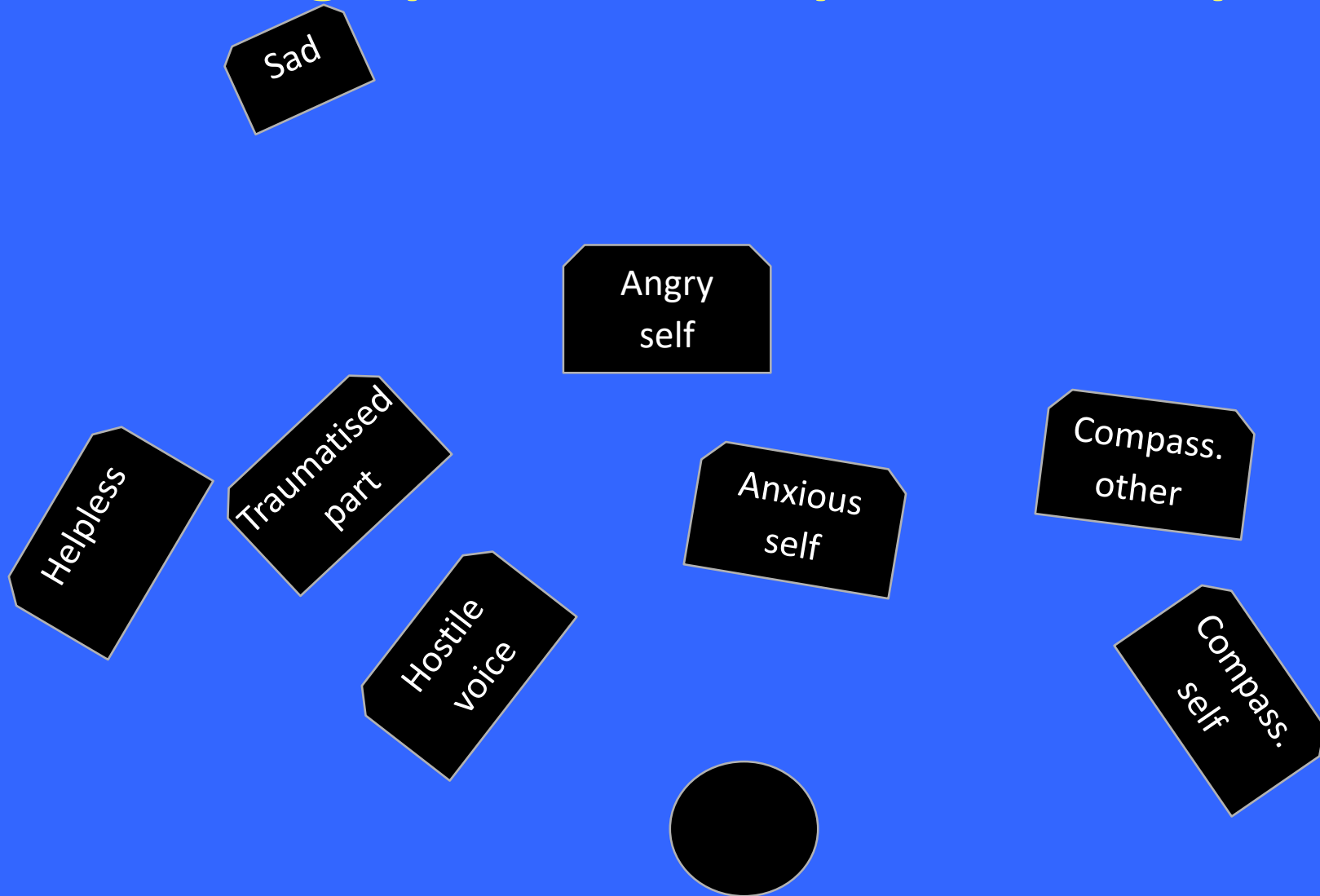
<https://www.youtube.com/watch?v=ublpOPjBUds>

Compassionate relating in chair work



<https://www.youtube.com/watch?v=Z8BuycRglVc>

Setting up relationships between parts



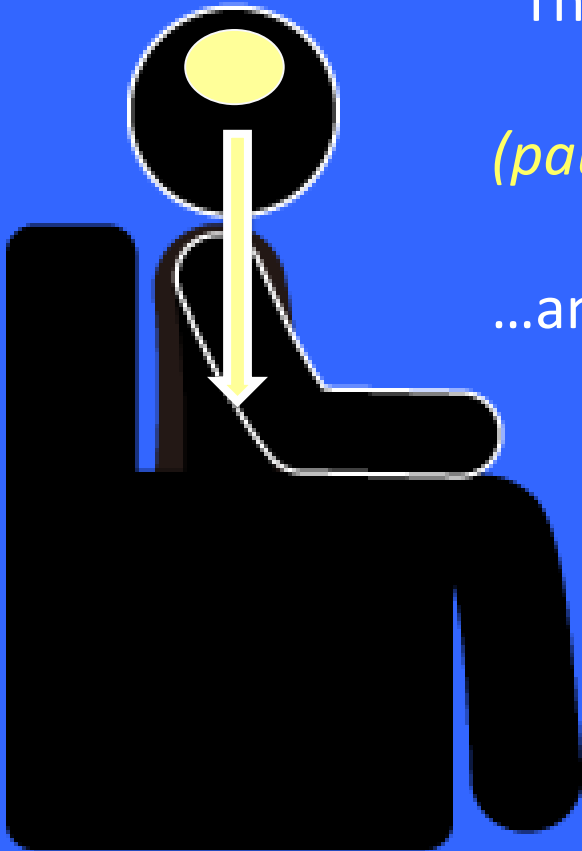


“That must be really difficult for you,
... but another way of looking at it is...”

“That must be really difficult for you...

(pause... hold the space... drop into body)

...and where do you feel that?”



Case series

Is it feasible for individual CFT for psychosis to make targeted changes (↑ social safeness/affiliation & ↓ social rank threat) with desired effects (↓ dissociative/psychotic states, ↓ depression)?

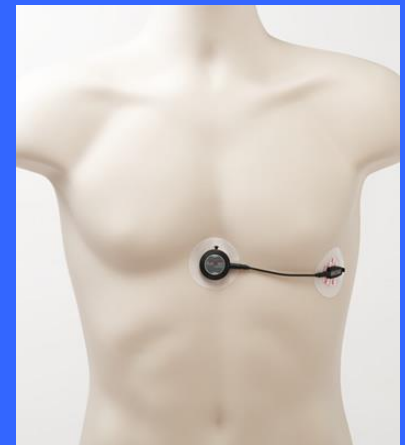
- Case series (n=7). Randomised multiple baselines (2/4/6 weeks)

Sessional (weekly) measures:

- Social safeness/connectedness
- Dissociation

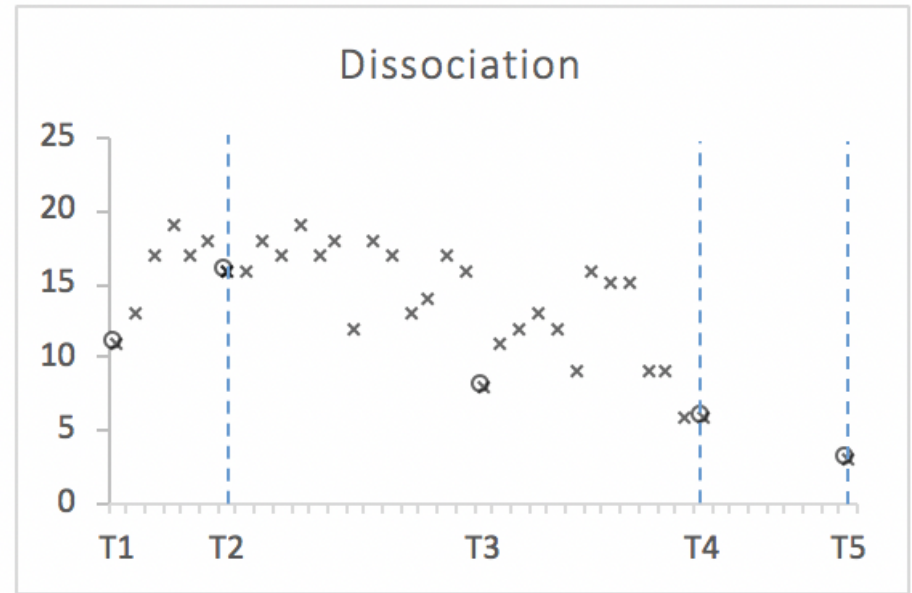
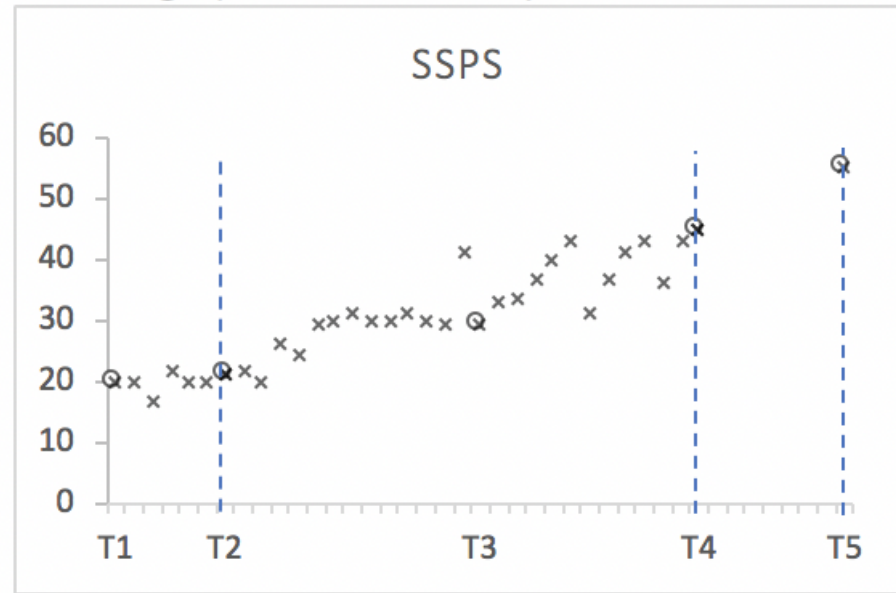
5 assessment points:

- Process (shame, self-criticism, self-reassuring, HRV)
- Outcomes (emotional, 'symptoms')

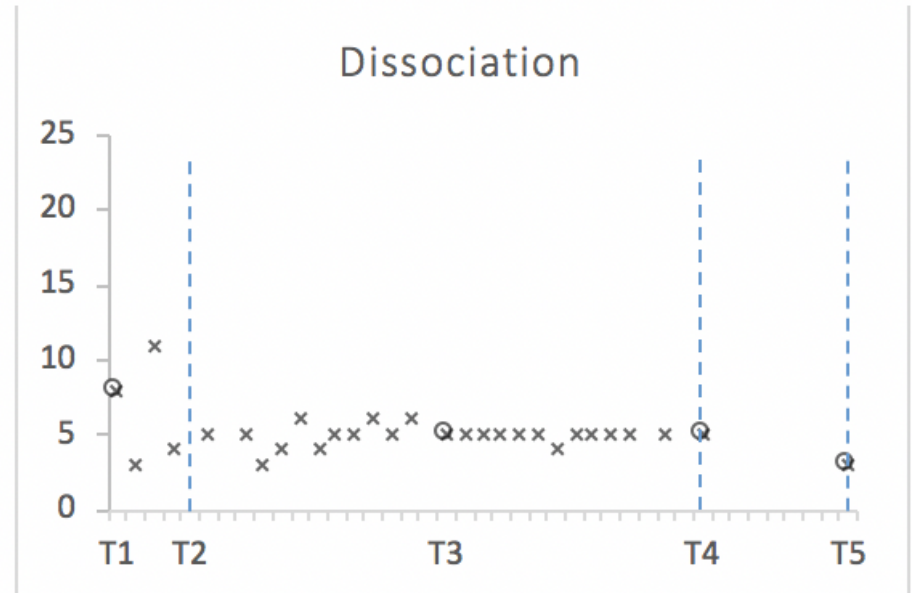
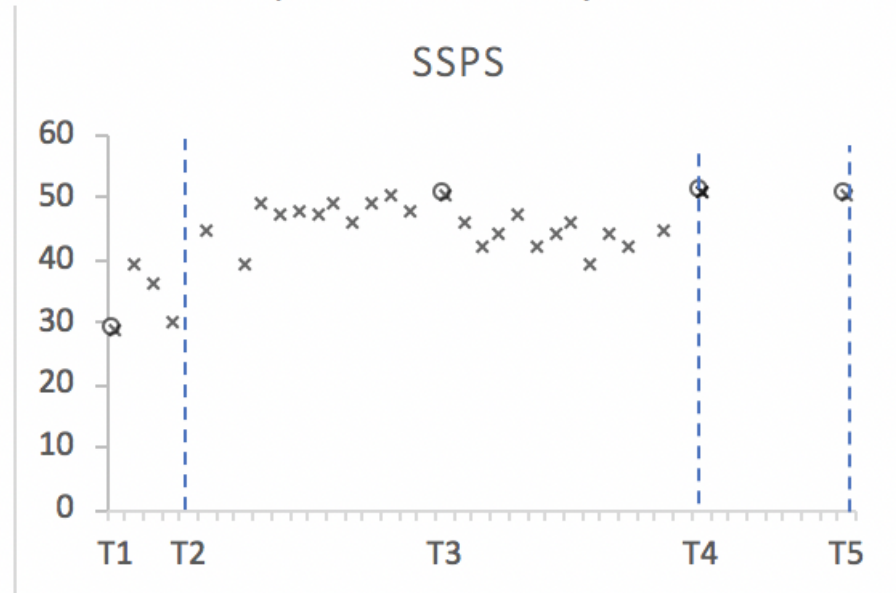


Heart Rate Variability

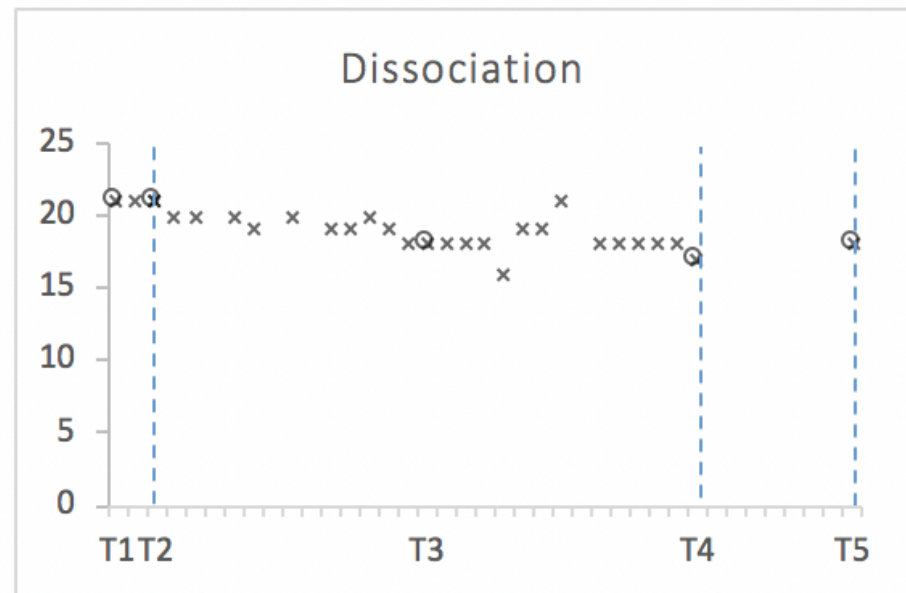
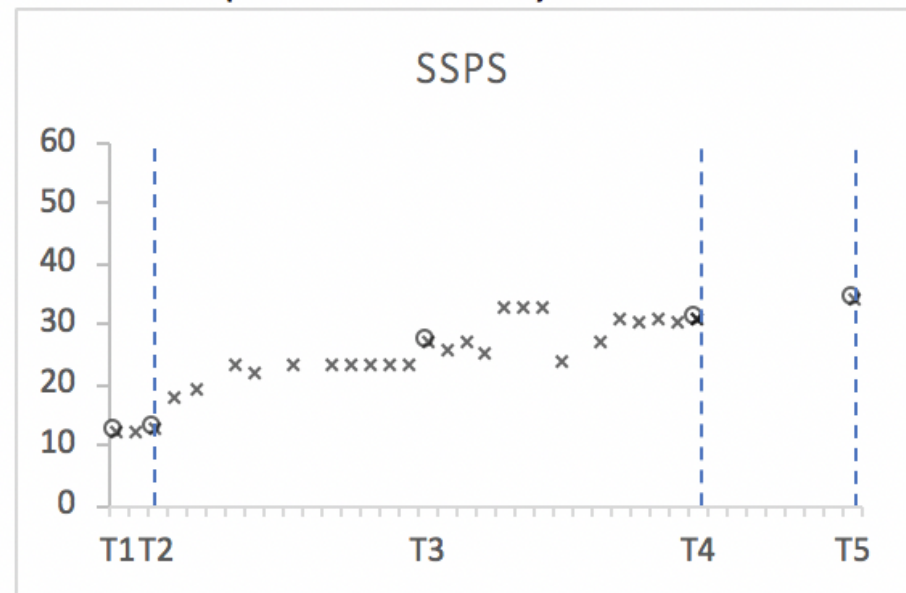
P2 "Greg" (6-week baseline)



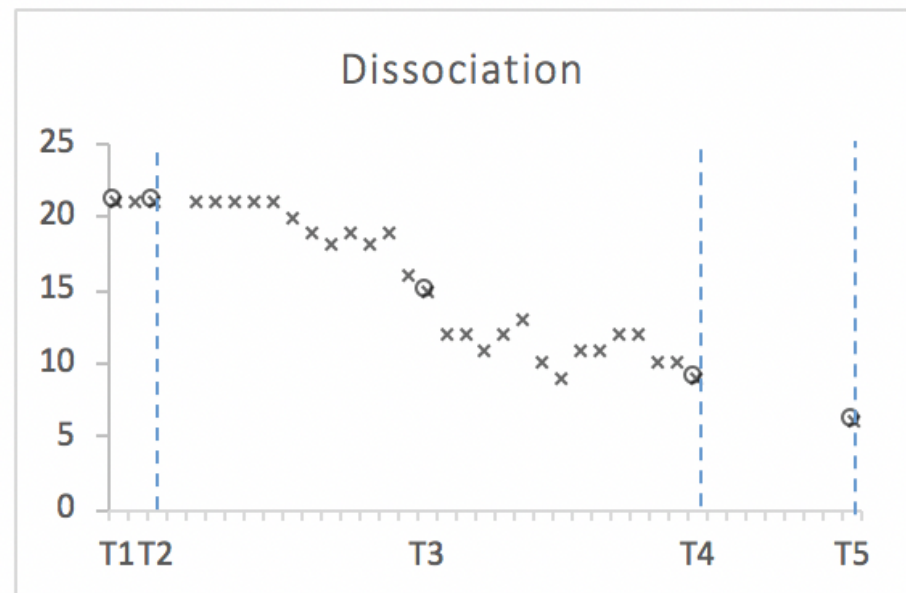
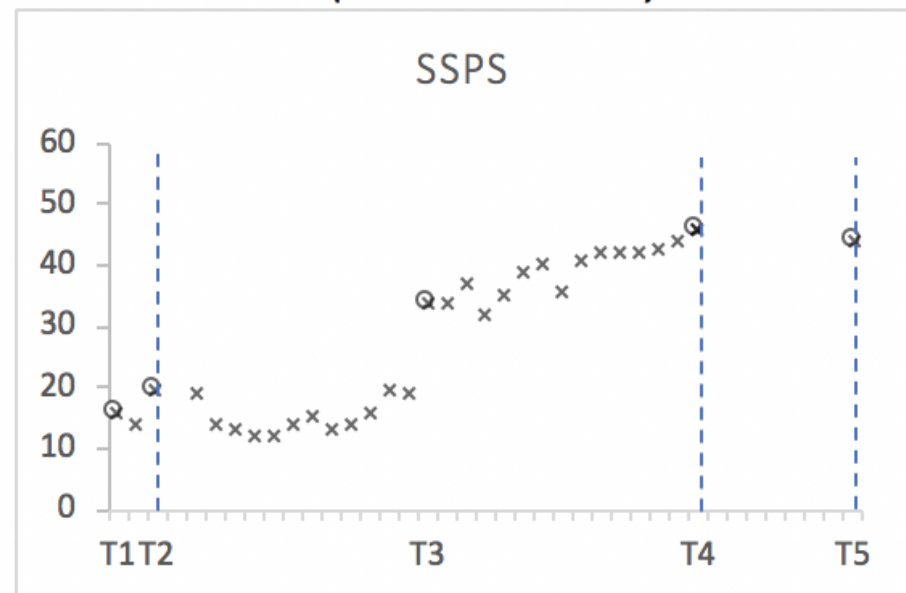
P3 "Thomas" (4-week baseline)



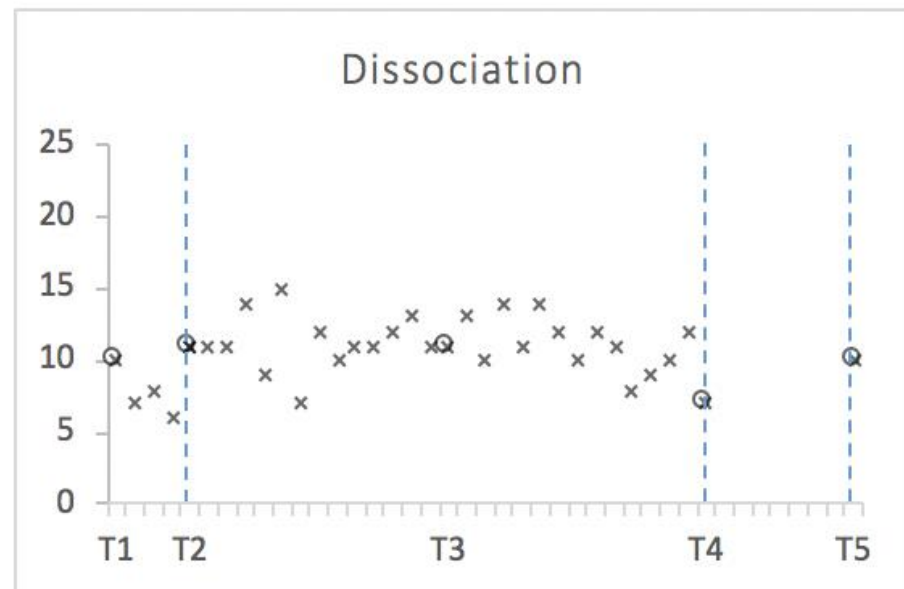
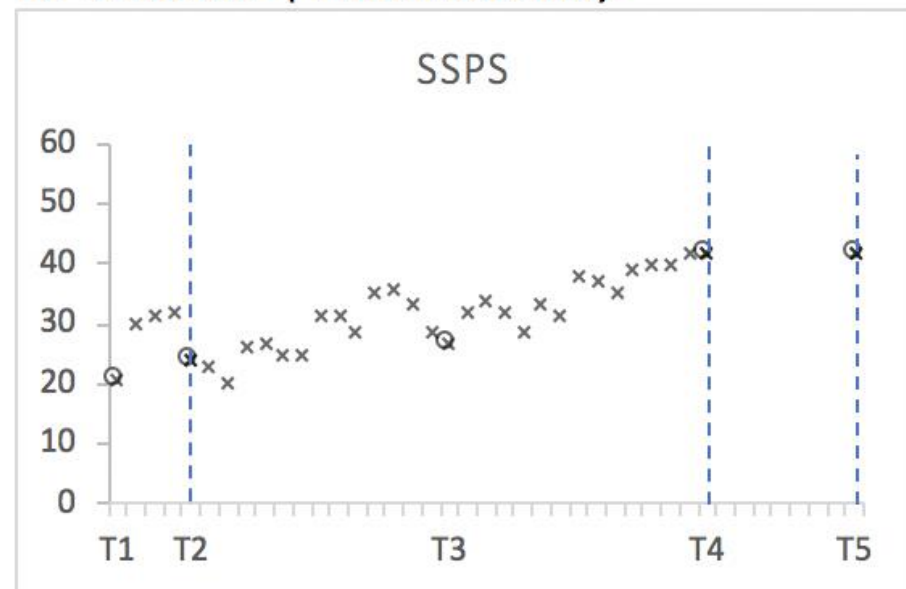
P4 "Tosin" (2-week baseline)



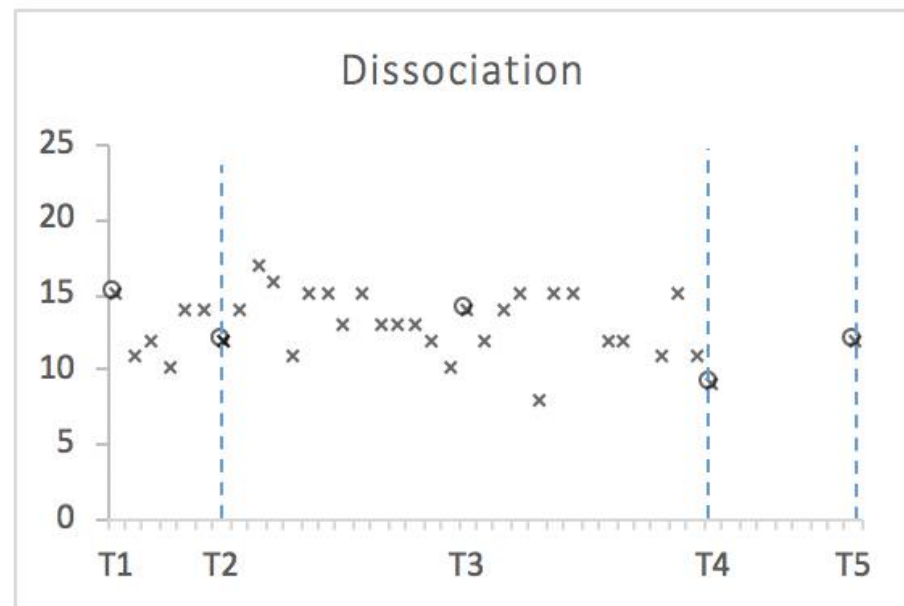
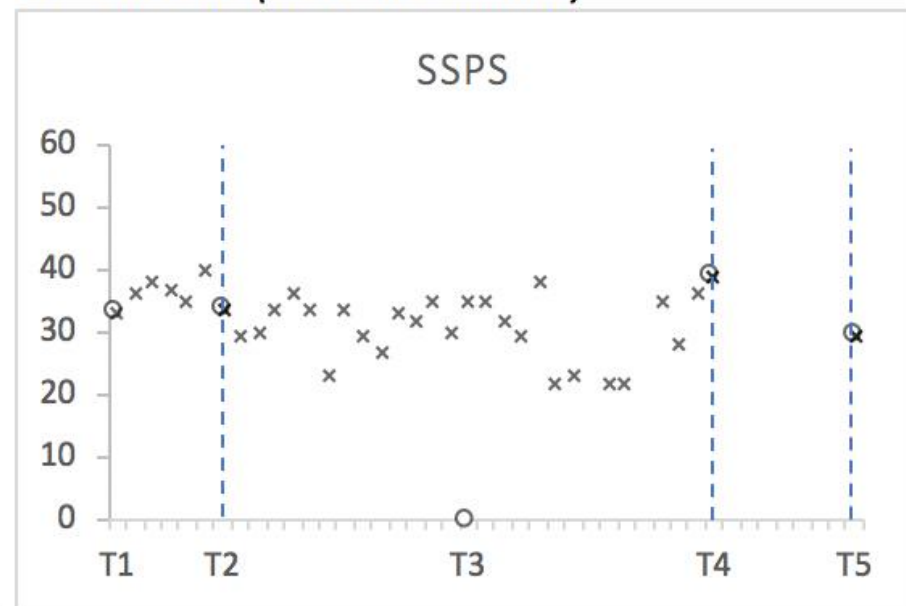
P5 "Charmaine" (2-week baseline)



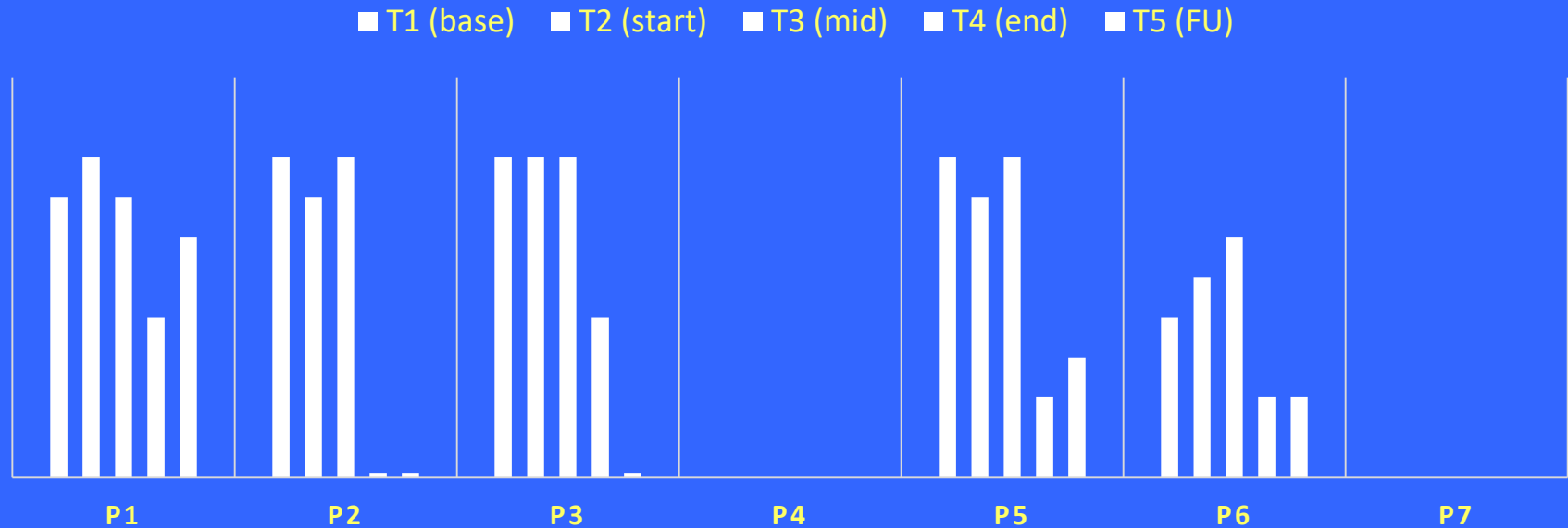
P6 "Amanda" (4-week baseline)



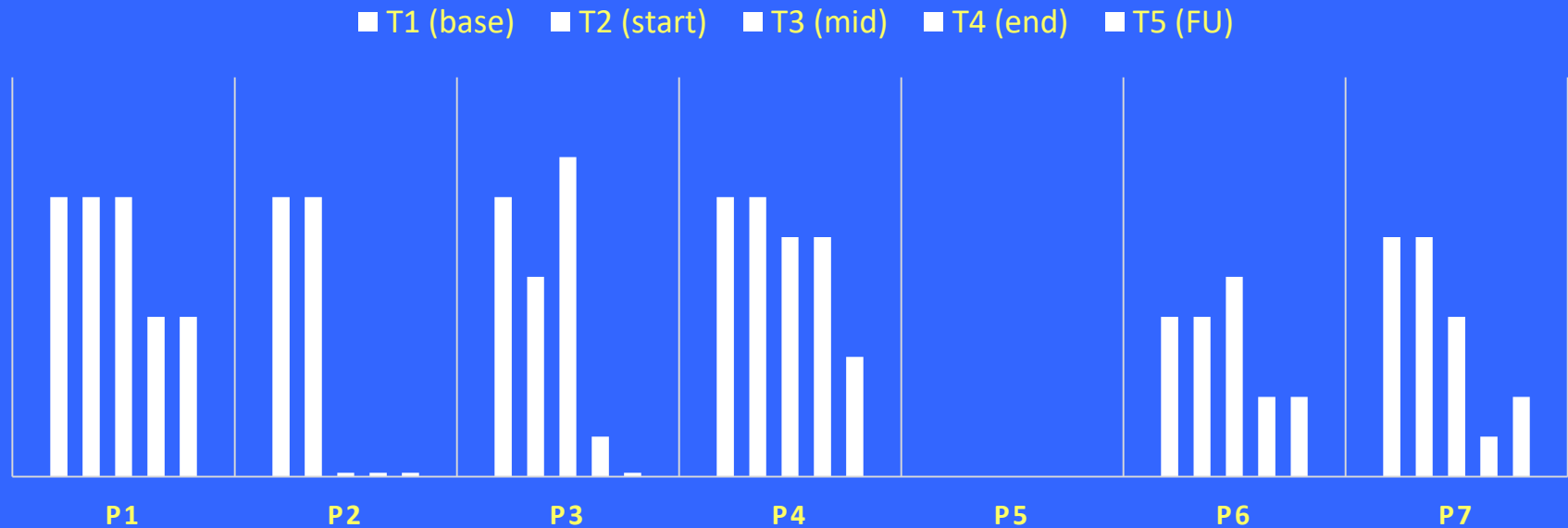
P7 "Gareth" (6-week baseline)



PSYRATS voices - distress



PSYRATS delusions - distress



Group mean changes

	Baseline phase (T1→T2)		1 st half phase (T2→T3)		Intervention phase (T2→T4)		Follow-up (T2→T5)	
	Z	sig	Z	sig	Z	sig	Z	sig
Outcome measures								
PSYRATS-V	-.378	.705	-2.032	.042*	-2.023	.043*	-2.023	.043*
PSYRATS-D	-1.000	.317	-1.084	.279	-2.207	.027*	-2.232	.026*
DASS-Dep	-.172	.863	-1.947	.051	-2.124	.034*	-1.859	.063
DASS-Anx	-.255	.799	-1.472	.141	-1.614	.106	-1.153	.249
DASS-Str	-.412	.680	-2.032	.042*	-2.371	.018*	-1.876	.061
CORE	.000	1.000	-2.028	.043*	-2.366	.018*	-2.366	.018*
DES-II	-1.018	.309	-1.185	.236	-1.352	.176	-1.859	.063
Process measures								
SocC	-1.214	.225	-2.201	.028*	-2.366	.018*	-1.690	.091
FSCSR-Inad	-.734	.463	-2.201	.028*	-2.207	.027*	-2.197	.028*
FSCSR-Reas	.000	1.000	-.314	.753	-2.371	.072	-.426	.670
FSCSR-Hate	-1.625	.104	-2.371	.018*	-2.371	.018*	-2.201	.028*
OAS	-.847	.397	-2.028	.043*	-2.371	.018*	-2.366	.018*
SCS-SF	-.511	.610	-.762	.446	-2.028	.043*	-2.117	.034*
PBIQ-R	.000	1.000	-2.371	.018*	-2.366	.018*	-2.371	.018*
RMSSD (ms)	-.365	.715	-.734	.463	-1.753	.080	-.674	.500

Gerry:

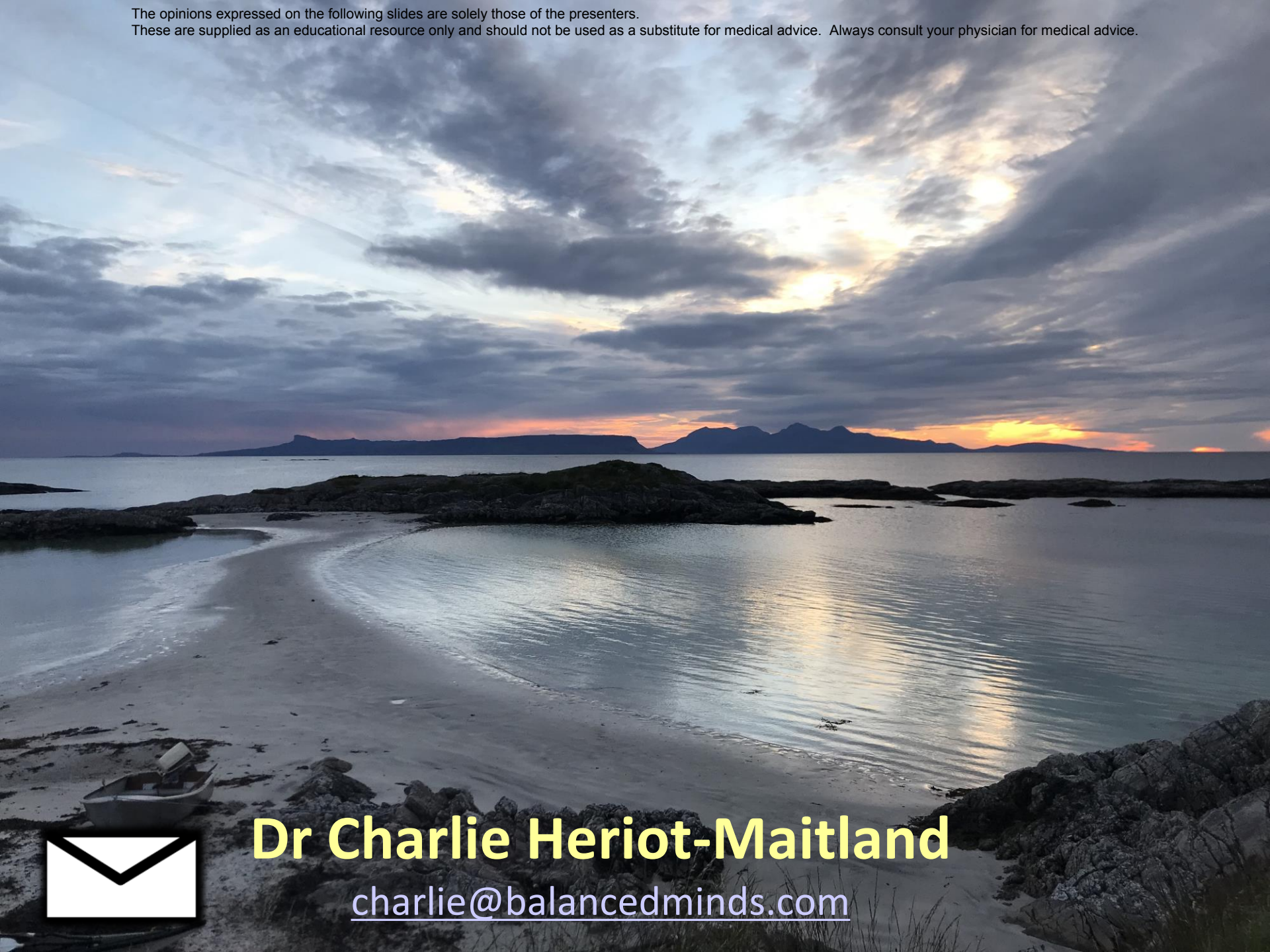
Thank God I went for this therapy. It lasted six months, and in that time I learnt so much about “voices”. With the new knowledge I gained, I realised that being at war with the voices was the completely wrong thing for me to be doing. I was actually making war with myself. I was fighting my own consciousness; a self-defeating arrangement.

I went through my life experiences and forgave every person in every scenario I could find in my memories. I also forgave myself of any blame for any actions I may have taken in the past that might have harmed anyone. I was defragmenting my brain, trying to reset it, and it has worked!

I know it's hard to accept that to love and care for these evil voices is the correct way to go. But think about it, by giving this caring love to them you are really giving yourself this love. The voices are you, they are not external they are part of you. Be compassionate to yourself.

I'm back to normal, whatever that means, but after 10 years on the drugs, I learnt some things about myself and this has been added to my new self. I feel I am enhanced and I'm full of the energy I used to have, but I am a bit more tolerant with myself and other people. I love life again!

The opinions expressed on the following slides are solely those of the presenters.
These are supplied as an educational resource only and should not be used as a substitute for medical advice. Always consult your physician for medical advice.



Dr Charlie Heriot-Maitland

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Cognitive Behavioral Therapy for Psychosis:

Individual, Group, and Family

INSPIRE CLINIC

Kate Hardy, Clin.Psych.D
Co-Director, INSPIRE Clinic

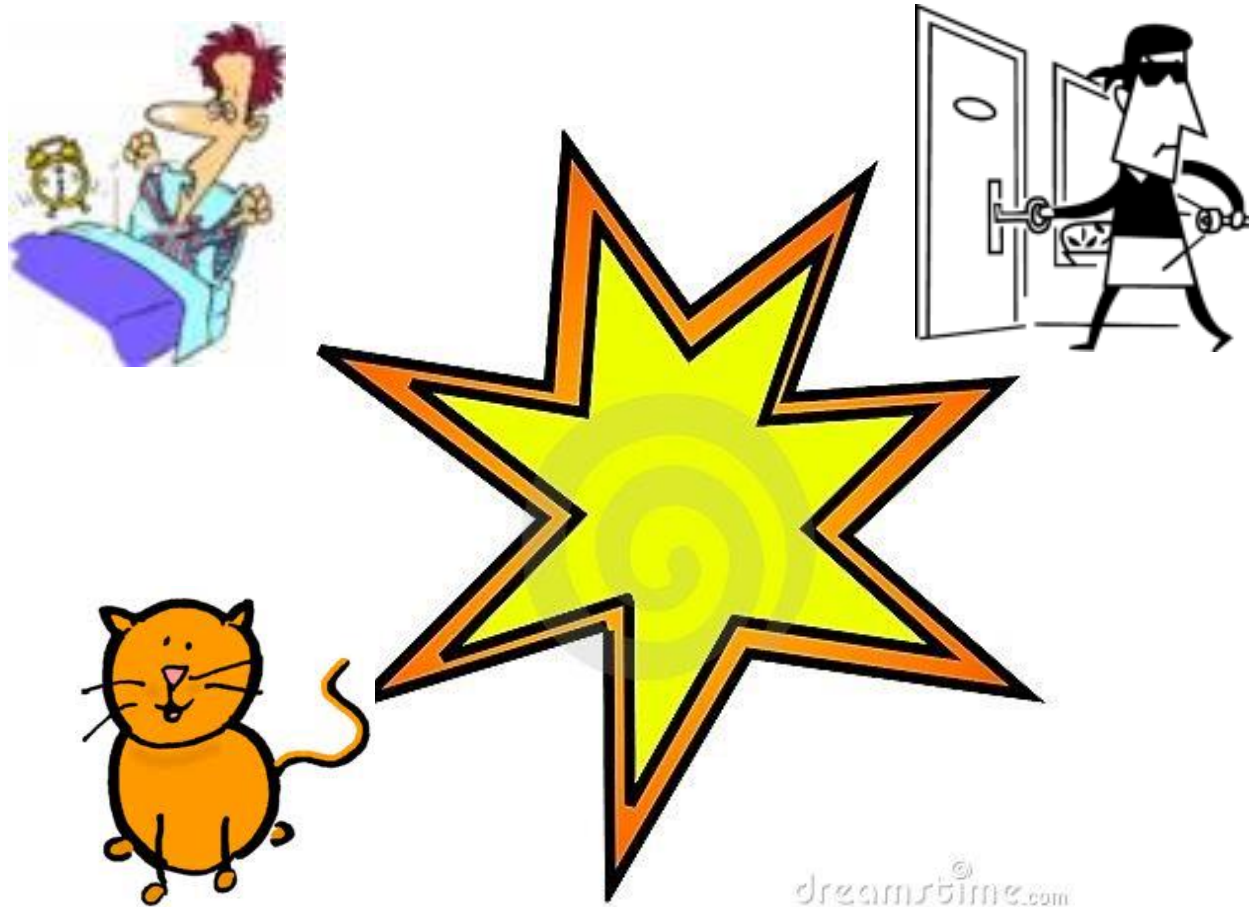
Objectives:

- Provide overview of the general principles of CBT for psychosis
- Describe individual CBTp and group CBTp
- Introduce CBTp skills for families



What is Cognitive Behavioral Therapy anyway?





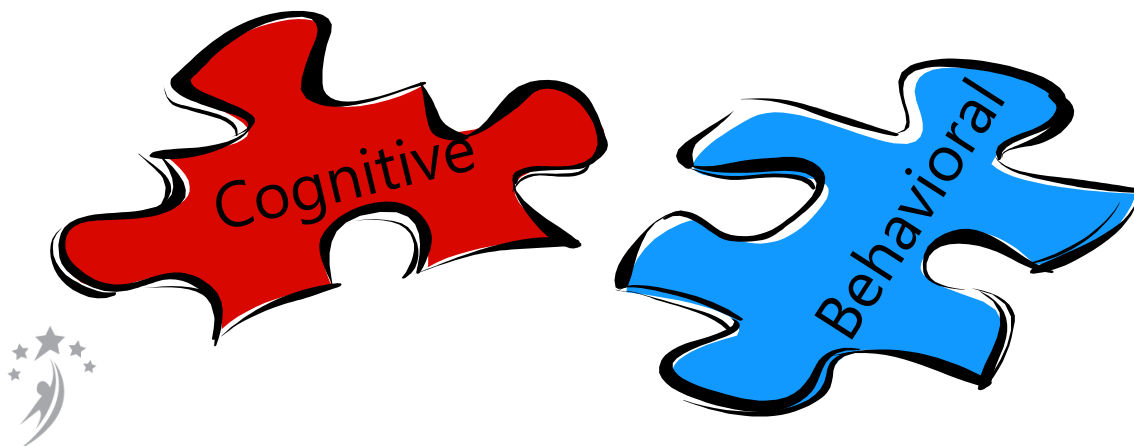
What is CBT?

- How you think leads to changes in how you feel and what you do.
- Thinking includes how you think about:
 - Yourself
 - The world
 - Other people
- Here and now focus though draw upon past experiences to explain beliefs are formed



History of CBT

- Behavioral Therapy
 - Behavior is shaped through reinforcement
- Cognitive Therapy
 - Thoughts influence behavior and emotion
- CBT is a combination of these two approaches



History of CBTp

First described by Beck (1952)



However ...

Largely overlooked as an intervention for psychosis

- › Prominence of biological/medical models
- › Studies in the 80's that reported talking therapies as damaging to people with psychosis
- › Long held assumption psychosis lies outside of realm of 'normal psychological functioning'



How does CBT apply to psychosis?



CBT for psychosis

- Focus is on reducing the *distress* caused by positive symptoms including hallucinations and unusual thoughts and increasing *functioning* by addressing negative symptoms

Thoughts

- Interpretation of the event that causes distress rather than the event itself
- Need to check the accuracy of the interpretation

Behaviors

- How are current behaviors maintaining the problem?
- Need to check the helpfulness of current behaviors



CBT for psychosis

Other target areas:

- Symptoms of depression and anxiety
- Past traumatic events
- Social skills
- Negative symptoms including lack of motivation
- Problem solving and decision making
- Developing coping skills
- Wellness planning



Is there any evidence that CBTp is useful?



Evidence Base for CBTp

- Highly acceptable to consumers (Morrison et al, 2004; Byrne et al, 2013)
- Reductions in positive, negative, and general symptoms (Burns et al, 2014; Turner et al, 2014)
- Reduction in transition to psychosis at 12-month follow-up (Stafford et al, 2013)
- Generalization of skills following therapy (Sarin et al, 2011)
- Long term brain changes following CBTp? (Kumari et al, 2011)



Rationale for training CBTp in Early Intervention

- CBTp should be offered adjunctive to medication management (Dixon et al., 2010; NICE, 2013; NICE, 2014; British Psychological Society, 2014)
- Evidence to suggest CBTp most effective in UHR, early phase psychosis, and stable chronic symptoms (Birchwood et al., 2014)



Why provide CBTp for early psychosis?

Early Intervention Principles *	CBTp
Provide interventions with demonstrated efficacy	Evidence Based
Provide services that actively partner with young people (Shared Decision Making)	Client generated problem list Collaborative approach (the “collaborative fence”) Development of shared understanding (formulation)
Challenge stigmatizing and discriminatory attitudes	Normalization
Generate optimism and expectation of positive outcomes and recovery	Problem list and goals Focus on functional recovery (not symptom reduction)
Respect the right to recovery and social inclusion	Development of skills and tools to support and maintain recovery Wellness Planning
Culturally Sensitive Services	Individualized formulation
Respect the right for family & friends to participate in treatment	Include family and important support people in wellness planning

*based on values and vision described in Bertolote and McGorry (2006)



What can I expect from individual CBTp?



CBTp occurs over three phases

1. Engagement and socialization to the model
2. Formulation development and skill acquisition
3. Relapse prevention planning and generalization of skills



What else can I expect from CBTp?

- Collaborative
- Client driven agenda
- Goal directed
- Structured
- Jointly develop a formulation (explanation) of current difficulties
- Time limited
- 'Homework'



Group CBTp



Group CBTp

- Based on same model as individual CBTp
- Group size of 6-10
- Rolling admission
 - As each new module commences new participants may enter the group
- Topics include
 - Managing voices
 - Managing unusual beliefs
 - Worry
 - Social skills
 - Coping skills
- May draw on other models including DBT



CBTp Skills for Family Members



FIRST skills to introduce framework

- Core CBTp skills
 - › Falling back on the relationship
 - › Inquiring curiously
 - › Reviewing the information
 - › Skill Development
 - › Trying out the skill

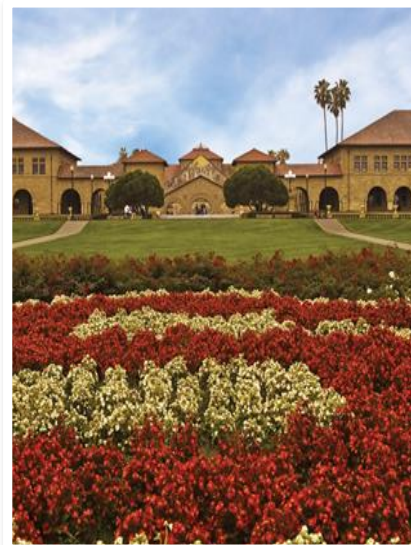


Psychosis REACH model to further develop:

- Understanding of models of psychosis
- Befriending and normalizing
- Questioning styles
- Basic formulation
- Addressing hallucinations, delusions, negative symptoms
- Discussing medications
- Red flags



Questions?
Khardy@Stanford.edu



Treatment of Psychosis

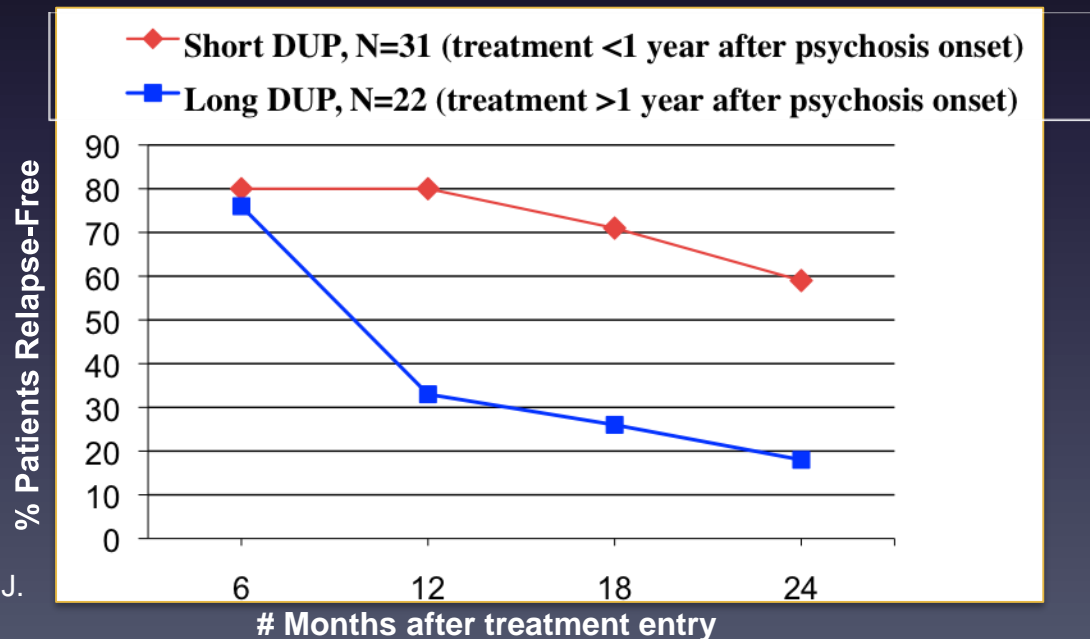
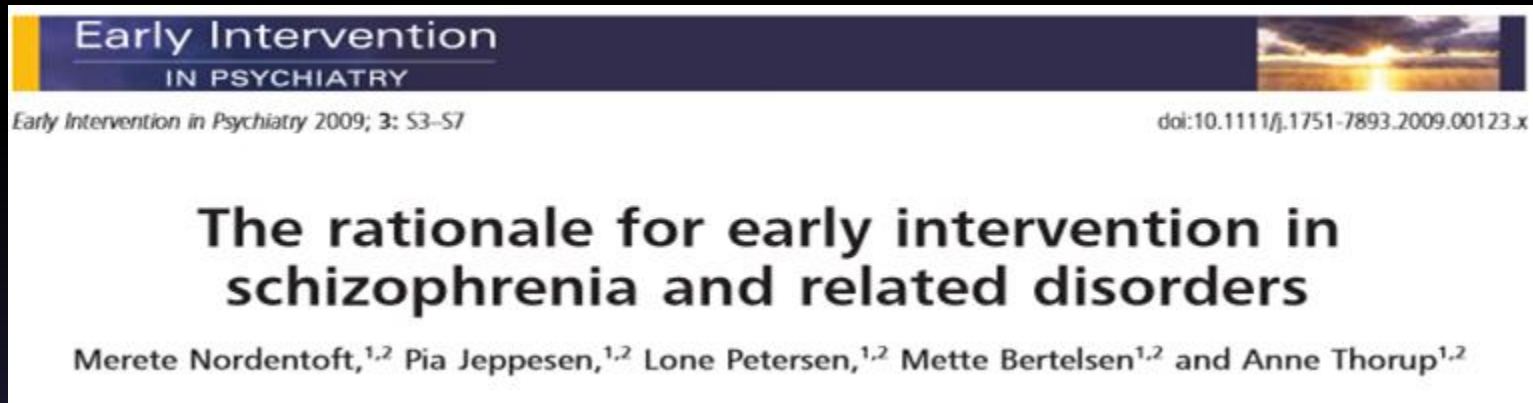
Anti-psychotic medication

Daniel H. Mathalon, Ph.D., M.D.

Department of Psychiatry
University of California, San Francisco
VA San Francisco Healthcare System



Why is Early Intervention Important?



Adapted from Crow et al. (1986). Brit J. Psychiatry, 148, 120-127.

What are the psychotic symptoms that anti-psychotic medications can help with?

- The experience of hearing voices (hallucinations)
- Ideas that are distressing and don't seem to be based in reality (delusions)
- Difficulty in clear thinking (thought disorder)

Do anti-psychotic medications help with other kinds of symptoms?

- Can stabilize extreme mood swings of bipolar disorder, and can reduce mania.
- Can help with severe depression, especially as occurs in bipolar disorder.

What is the main neurotransmitter affected by anti-psychotics?

- Dopamine
- What does dopamine do?
 - Flags experiences as salient, significant, important, or interesting.
 - Released in response to reward/satisfaction.
 - Subserves motivation; anticipation of future reward.

What else does dopamine do?

- Controls cognitive functions including executive control, working memory, focused attention, planning.
- Controls muscle movements via extra-pyramidal motor neuron tracts.
- Mediates prolactin release from pituitary gland.

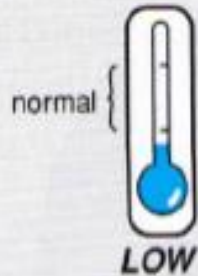
Dopamine Output - Untreated Schizophrenia

Mesolimbic Pathway



positive symptoms

Mesocortical Pathway to DLPFC

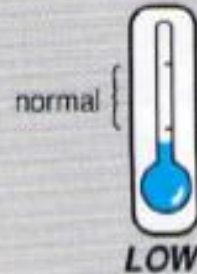


cognitive symptoms



negative symptoms

Mesocortical Pathway to VMPFC

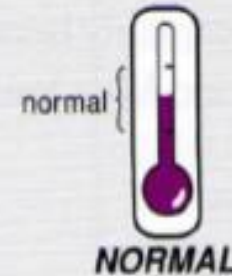


affective symptoms

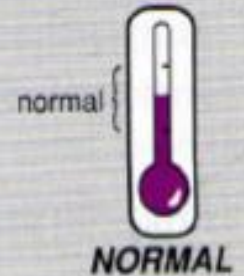


negative symptoms

Nigrostriatal Pathway



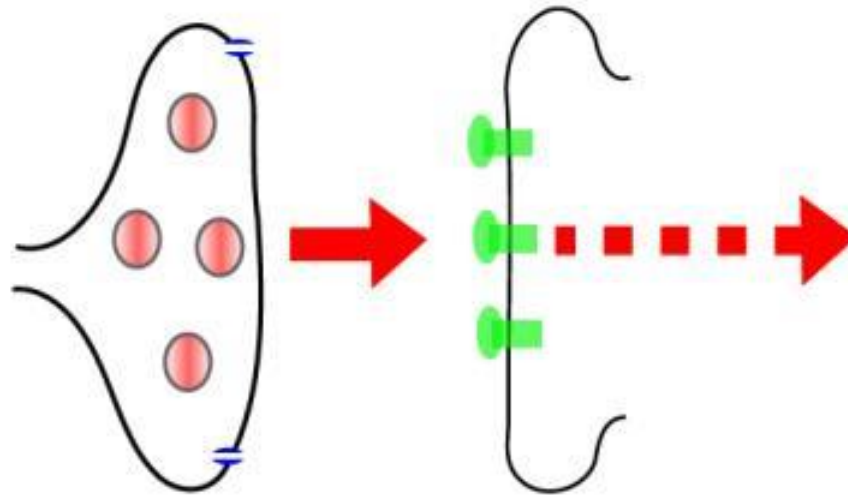
Tuberoinfundibular Pathway



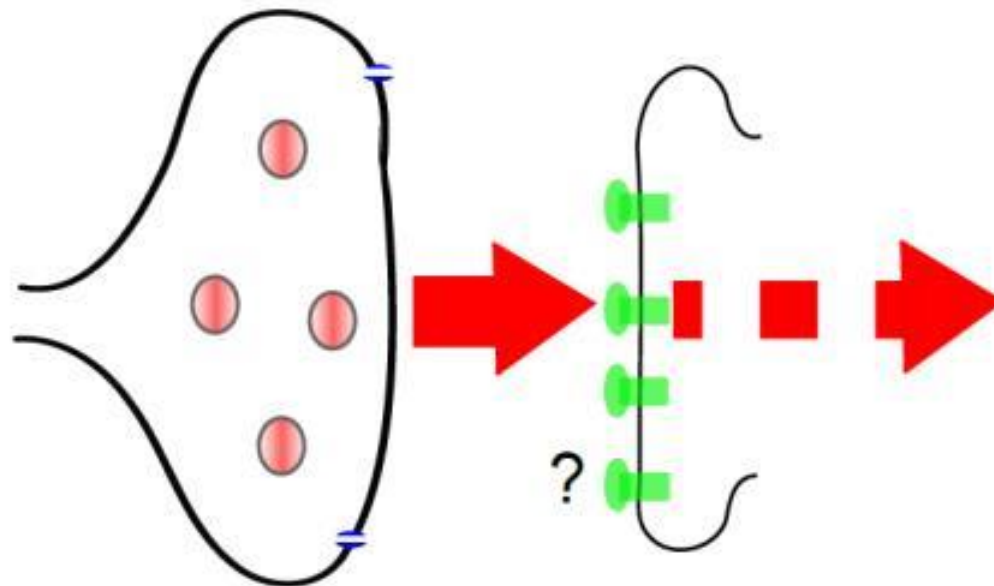
What is the problem with dopamine in psychosis?

- Excessive dopamine release in pathways that regulate salience.
 - Contributes to hallucinations, delusions, and thought disorder.
- Deficient dopamine release in pathways that regulate cognition, reward, motivation.
 - Contributes to cognitive deficits and “negative symptoms” (deficits in motivation, emotional withdrawal, blunted emotion expression)

Healthy controls



Schizophrenia



Increased
presynaptic
dopamine synthesis
capacity and release

How do anti-psychotic medications affect dopamine?

- Block a specific sub-type of dopamine receptor: D2 receptor.
- Help reduce effects of excessive dopamine release in pathways that regulate salience processing.
 - Reduces hallucinations, delusions, thought disorder.
- Do not help, and may worsen, effects of deficient dopamine release in pathways that regulate cognition, reward, motivation.
 - Do not help cognitive deficits, negative symptoms.

What antipsychotic medication side effects are produced by dopamine D2 receptor blockade?

- Extra-pyramidal or “Parkinsonian” side effects.
 - Tremor, muscle stiffness (cogwheeling; dystonic reactions), slowed gait.
 - Akathisia- uncomfortable feeling of restlessness.
- Tardive Dyskinesia

Are extra-pyramidal side effects reversible and treatable? YES!

- Go away when switched to another antipsychotic, dose is lowered or medication is stopped.
- Tremor, muscle stiffness (cogwheeling; dystonic reactions), slowed gait.
 - Cogentin, Benadryl
- Akathisia- uncomfortable feeling of restlessness.
 - Propranolol

Long term risks of anti-psychotic medication: Tardive Dyskinesia

- Late developing involuntary movements of mouth, tongue, jaw, neck, limbs.
- May subside or resolve weeks/months after stopping anti-psychotics.
- Sometimes irreversible.

Long term risks of anti-psychotic medication: Tardive Dyskinesia

- New onset TD in patients taking anti-psychotics
 - Typical or first generation APs: 5.5% per year.
 - Atypical or second generation APs: 3.9% per year
 - Clozapine: 0%?
- Risk of persistent TD increases with AP treatment duration:
 - After 1 years: 3%
 - After 5 years: 20%
 - After 10 years: 34%

Long term risks of anti-psychotic medication: Tardive Dyskinesia

- Treatment of TD?
 - Clozapine
 - Recently received FDA approval.
 - Valbenazine
 - Deutetrabenazine

Choosing among anti-psychotic medication:

- Most are equally good at treating psychotic symptoms (exception clozapine).
 - 1/3 good response/remission
 - 1/3 partial response/but symptoms not completely eliminated.
 - 1/3 poor or no response.
- Mainly differ in their side effect risks.

Older “Typical” or “First Generation” Antipsychotics

- Thorazine first antipsychotic introduced in 1950s.
- All subsequent antipsychotics work by same mechanism: blockade of dopamine D2 receptors.

Clozapine: The first atypical “second generation” anti-psychotic

- Approved in USA in 1990 after it was shown to improve symptoms in up to 2/3 of patients who failed to respond to 3 prior trials of older typical antipsychotic medication.
- No significant risk of EPS, akathisia, or TD.
- Improves TD in patients who developed it from exposure to other antipsychotics.
- Decreases suicidal feelings in patients with psychosis.
- May improve negative symptoms as well as positive psychotic symptoms.

Clozapine: Side effects

- Drop in a type of white blood cell, which is part of our immune system (agranulocytosis)
 - 1% risk;
 - risk greatest in the first 6 months
 - Requires weekly blood monitoring x 6 months, followed by bi-weekly for 6 months, then if no problems, goes to monthly monitoring.
- Weight gain
- Sedation
- Excessive salivation at night
- Increased heart rate
- Constipation
- Risk of myocarditis

Newer “second generation” or “atypical” anti-psychotics

- All developed by drug companies to try to be like clozapine in terms of benefits and reduced risk of EPS and TD.
- Made educated guesses about what made clozapine special.

Newer “second generation” or “atypical” anti-psychotics

- Unlike clozapine, none of the second generation anti-psychotics have been shown to help patients who fail to respond to other anti-psychotics.
- Relative to first generation anti-psychotics:
 - Less EPS and risk for TD, but still have some risk.
 - Greater risk of weight gain, high cholesterol, diabetes, sexual dysfunction.

Newer “second generation” or “atypical” anti-psychotics: Managing side effects

- Weight gain, high cholesterol, increase in blood sugar
 - May be prevented or minimized by treating with Metformin
- Increase in prolactin: gynecomastia and galactorrhea
 - Many second generation APs don't produce this side effect, so can switch to a different medication.

How long should you take an anti-psychotic ?

- After first episode of psychosis that completely remits, 25% will not have a recurrence.
- General guidelines:
 - Treat with lowest possible effective dose.
 - After 1 year, if symptom-free, try to slowly taper off of the medication and monitor closely for signs of impending return of psychotic symptoms.
 - After 2nd episode, most will have a recurrence of psychosis within 6 months if treatment is discontinued.
 - recommend maintenance treatment with lowest effective dose.
 - Strategy of trying to stop anti-psychotic then restart when signs of recurrence resulted in much higher rate of relapse and re-hospitalization.

Maintenance treatment with anti-psychotic medication

- For most patients, psychotic symptoms will continue or come and go over the years.
- Some may find AP medication to completely eliminate symptoms; more will experience reduced intensity of symptoms, making them easier to cope with.
- Have to balance benefits against side effects and risks.
- Risks for decline in function are greatest in first 5 years after psychosis onset.
 - May be the most important period to adhere to medication regimen to prevent decline in function.

Adherence to anti-psychotic medication regimen

- Sometimes hard to remember, or to want to, take AP medication every day.
- Some patients benefit from injectable forms of some anti-psychotics that are given every 2 – 4 weeks, depending on the medication, reducing risk of recurrence due to missed doses.

General AP Medication Guidelines:

- Benefits can take as long as 4-6 weeks to emerge.
- Many side effects often decrease or resolve after several weeks.
- Best if each trial with an anti-psychotic includes sufficient time (4-6 weeks) at a sufficiently high dose before making a judgment about its benefits or lack of efficacy.
- Use lowest effective dose, and use adjunctive medications to manage side effects.

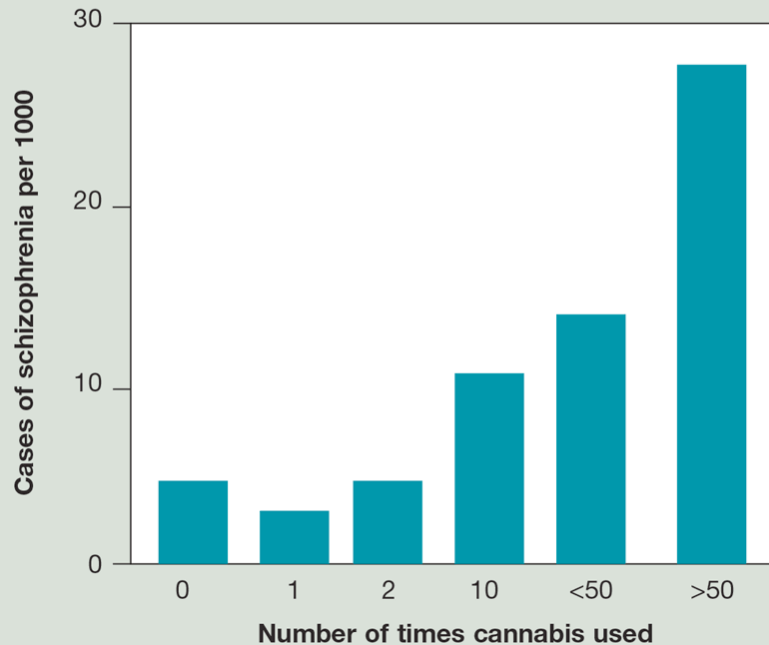
Stopping an anti-psychotic

- Patients may wish to discontinue AP medication against recommendation of doctor and family.
- If patient decides to proceed anyway, recommend:
 - Gradual taper over weeks to months.
 - Monitor for return of symptoms:
 - Make a list of feelings/thoughts/behaviors that might warn him/her that symptoms are returning.
 - Make similar list with someone he/she knows and trusts about what others might notice if symptoms start to return.
 - Continue visits with doctor to monitor for symptoms and to have possibility of early re-initiation of treatment if early signs are identified.

END

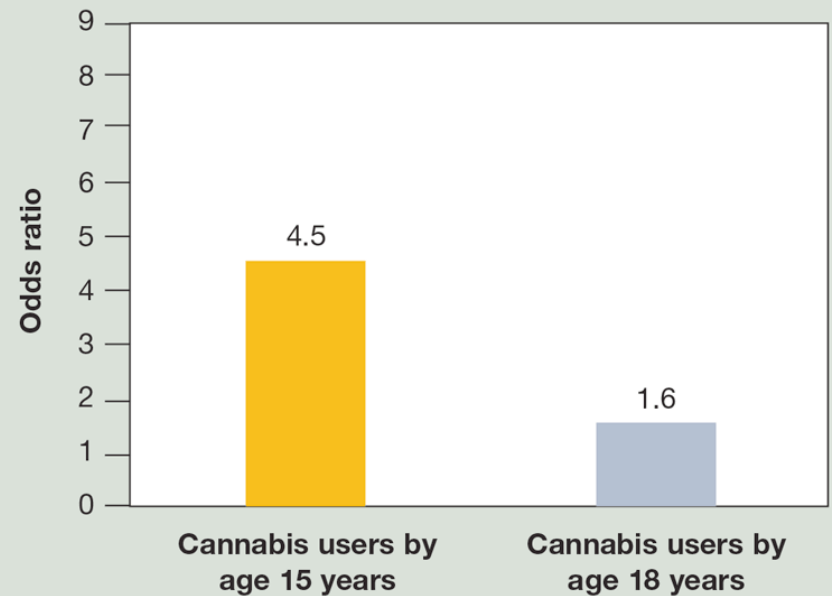
Cannabis and Psychosis Risk

Figure 1. Risk of schizophrenia in conscripts followed up to 15 years⁵



Andréasson S, Allebeck P, Engström A, Rydberg U. Cannabis and schizophrenia: a longitudinal study of Swedish conscripts. *Lancet* . 1987;2:1483-1486.

Figure 2. Risk of schizophrenia-like psychosis by age 26 years⁶



Arseneault L, Cannon M, Poulton R, et al. Cannabis use in adolescence and risk for adult psychosis: longitudinal prospective study. *BMJ* . 2002;325:1212-1213.

Cannabis: THC and CBD

Danger increases with high potency forms high in THC and low in cannabidiol.

Family conflicts about cannabis use may increase risk of psychosis recurrence more than cannabis use itself.

If abstinence not realistic, then try to limit to occasional use, and try to use forms relatively high in cannabidiol.

CBD does not produce a high, and offsets some of the effects of THC.

Cannabidiol may show promise as an augmentation treatment when antipsychotics are only partially effective.

Cannabidiol (CBD) as an Adjunctive Therapy in Schizophrenia: A Multicenter Randomized Controlled Trial

Philip McGuire, F.R.C.Psych., F.Med.Sci., Philip Robson, M.R.C.P., F.R.C.Psych., Wieslaw Jerzy Cubala, M.D., Ph.D., Daniel Vasile, M.D., Ph.D., Paul Dugald Morrison, Ph.D., M.R.C.Psych., Rachel Barron, B.Vet.Med., M.R.C.V.S., Adam Taylor, Ph.D., Stephen Wright, F.R.C.P.(Edin), F.F.P.M.

Objective: Research in both animals and humans indicates that cannabidiol (CBD) has antipsychotic properties. The authors assessed the safety and effectiveness of CBD in patients with schizophrenia.

Method: In an exploratory double-blind parallel-group trial, patients with schizophrenia were randomized in a 1:1 ratio to receive CBD (1000 mg/day; N=43) or placebo (N=45) alongside their existing antipsychotic medication. Participants were assessed before and after treatment using the Positive and Negative Syndrome Scale (PANSS), the Brief Assessment of Cognition in Schizophrenia (BACS), the Global Assessment of Functioning scale (GAF), and the improvement and severity scales of the Clinical Global Impressions Scale (CGI-I and CGI-S).

Results: After 6 weeks of treatment, compared with the placebo group, the CBD group had lower levels of positive psychotic symptoms (PANSS: treatment difference=-1.4,

95% CI=-2.5, -0.2) and were more likely to have been rated as improved (CGI-I: treatment difference=-0.5, 95% CI=-0.8, -0.1) and as not severely unwell (CGI-S: treatment difference=-0.3, 95% CI=-0.5, 0.0) by the treating clinician. Patients who received CBD also showed greater improvements that fell short of statistical significance in cognitive performance (BACS: treatment difference=1.31, 95% CI=-0.10, 2.72) and in overall functioning (GAF: treatment difference=3.0, 95% CI=-0.4, 6.4). CBD was well tolerated, and rates of adverse events were similar between the CBD and placebo groups.

Conclusions: These findings suggest that CBD has beneficial effects in patients with schizophrenia. As CBD's effects do not appear to depend on dopamine receptor antagonism, this agent may represent a new class of treatment for the disorder.

Am J Psychiatry 2018; 175:225-231; doi: 10.1176/appi.ajp.2017.17030325

Research

- UCSF faculty are actively engaged in research to increase our understanding of psychotic disorders.
- Partnership with patients and families in research is critical for advancing knowledge about psychosis and its treatment.

UCSF Researchers

- BIEEGL Lab- (Mathalon, Ford, Fryer, Hamilton)
 - MRI and EEG based studies of brain function.
- BAND Lab (Woolley)
 - Oxytocin to improve social cognition and social function in psychosis
- PART Lab (Loewy)
 - Computerized cognitive training studies

Cannabis and Psychosis Risk

Demian Rose, MD, PhD

Learning Objectives

- Understand the rates and types of cannabis use in young people in the Bay Area
- Understand the risks of heavy cannabis use and its main psychoactive component, THC
- Try to define “risky” cannabis use
- Briefly discuss the parallel CBD story

Learning Objectives

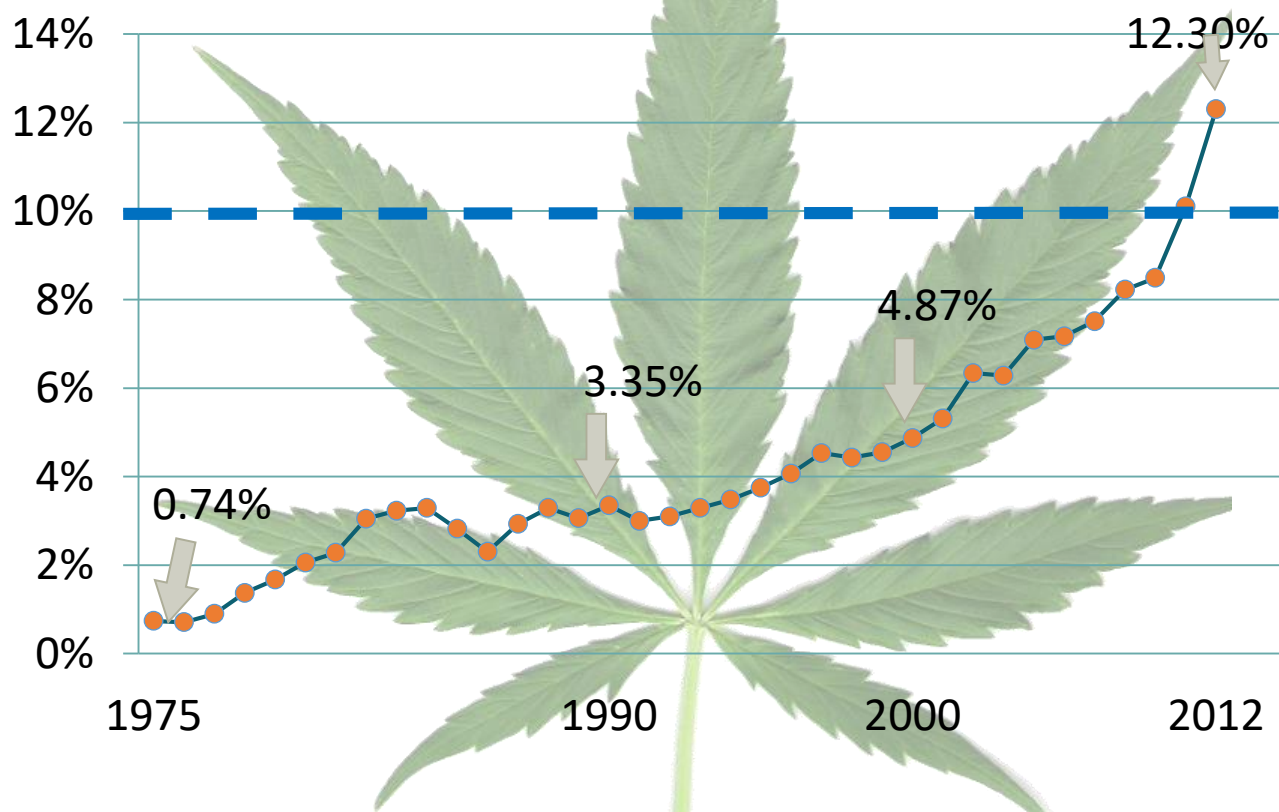
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Cannabis 101

- Plant or “bud” form
 - Most common form in the US, tend to derive from hybrid “skunk” strains



Marijuana Delta-9 THC Levels



Cannabis 101

- Edibles
 - Slower onset of action, ER data suggests common cause of accidental OD



Cannabis 101

- Vapes
 - Cartridges that contain variable “dissolved” amounts of THC or CBD, often flavored like nicotine vapes



Cannabis 101

- Dabs, resins, extracts, waxes, etc
 - “paste” form that can be lit and vapors captured or absorbed (“chapstick”)



Cannabis 101



- Plant or “bud” form
 - Most common form in ER. 70% of cases derive from hybrid “skunk” strains
- Edibles
 - Can be used like butter or syrup in baked good and candies
 - Slower onset of action, ER data suggests common cause of accidental OD
- Dabs or waxes
 - “paste” form that can be lit and vapors captured or absorbed (“chapstick”)

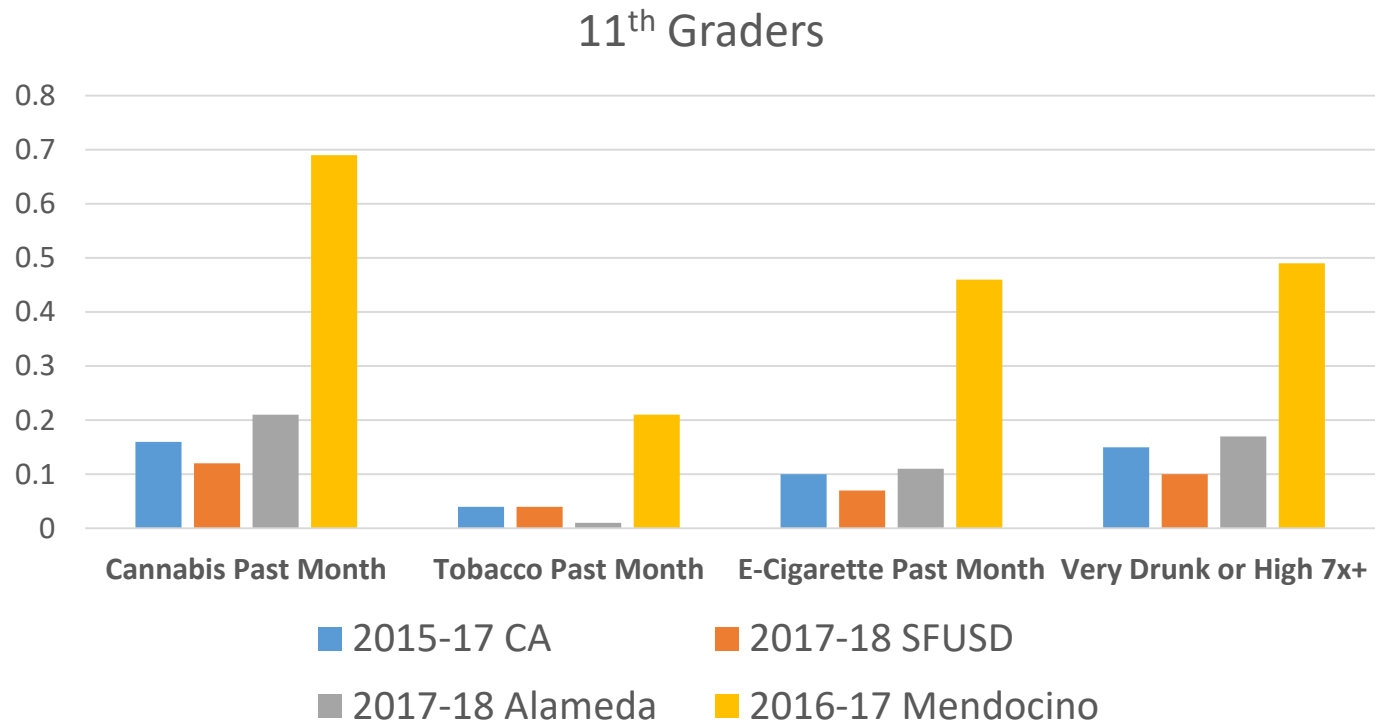
Bay Area vs. California

Adolescent Marijuana Use

2013-2014 California Healthy Kids Survey

- Used marijuana one or more times in the past year:
 - 9th grade: 30% Bay Area vs 26% California
 - 11th grade: 60% Bay Area vs 45% California
- Heavy use in the past month:
 - 9th grade: 11% Bay Area vs 8% California
 - 11th grade: 27% Bay Area vs 14% California
- 73% of 9th graders say it is fairly or very easy to get.
- 84% of 11th graders say it is fairly or very easy to get

Wide Variation by School District

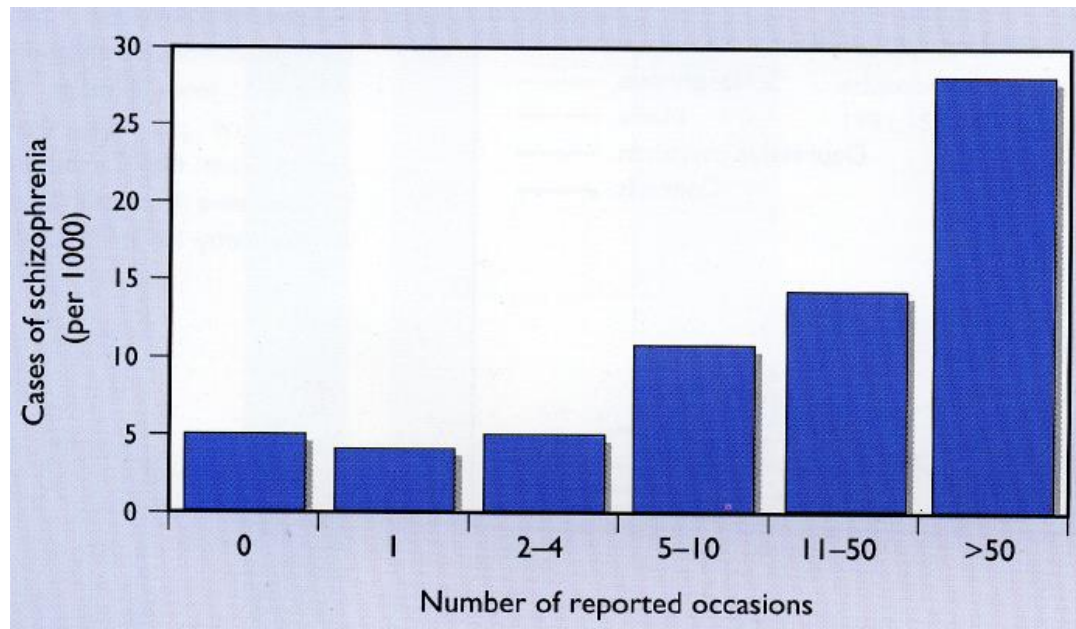


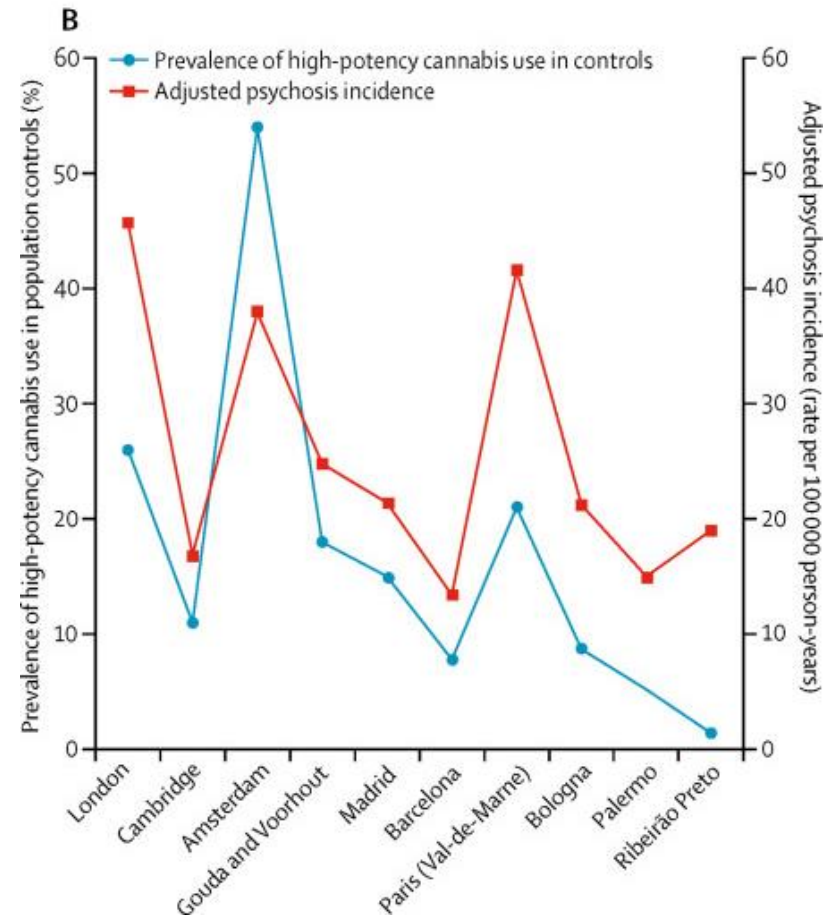
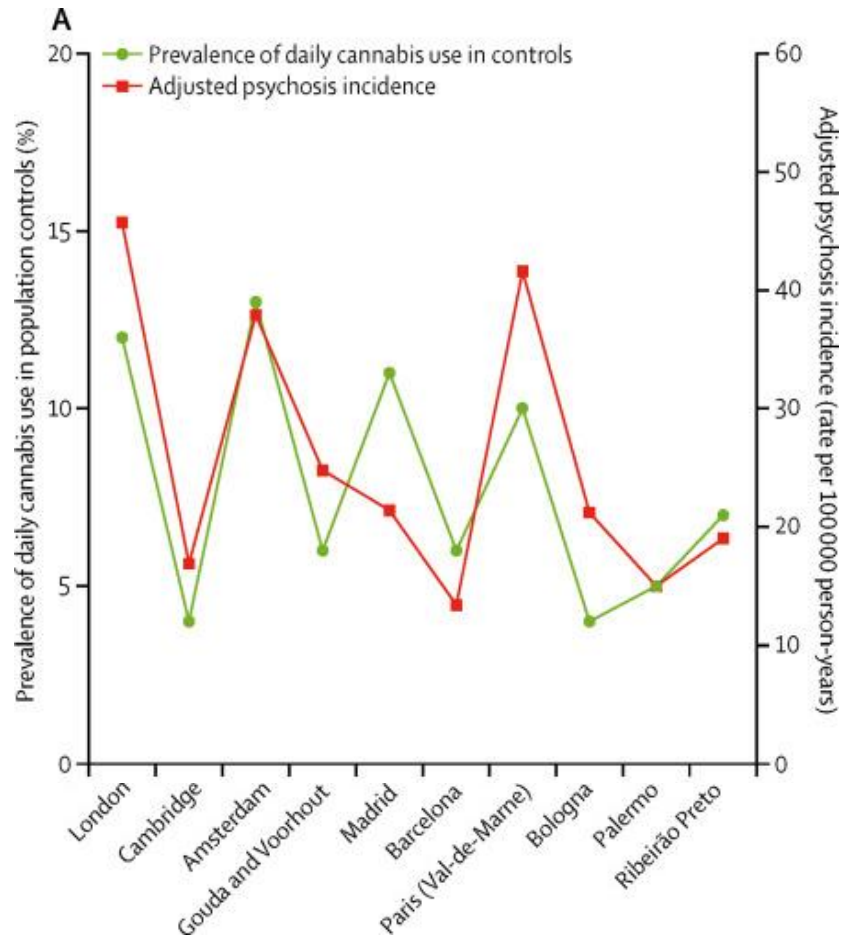
Learning Objectives

- Understand the rates and types of cannabis use in young people in the Bay Area
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- Try to define “risky” cannabis use
- Briefly discuss the parallel CBD story

First hints of a causal relationship

- Early cannabis use >50 times = ~6X risk



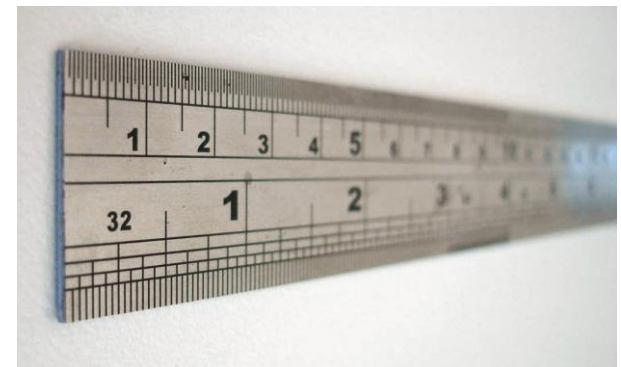


Learning Objectives

- Understand the rates and types of cannabis use in young people in the Bay Area
- Understand the risks of heavy cannabis use and its main psychoactive component, THC.
- Try to define “risky” cannabis use
- Briefly discuss the parallel CBD story

Motivation begins with a measurement

- Harm reduction necessarily hinges on there being a “harmful” dose of a drug
- Motivating people to reduce harmful use therefore requires a contextual risk/benefit discussion linked to a measurement



Alcohol Screening

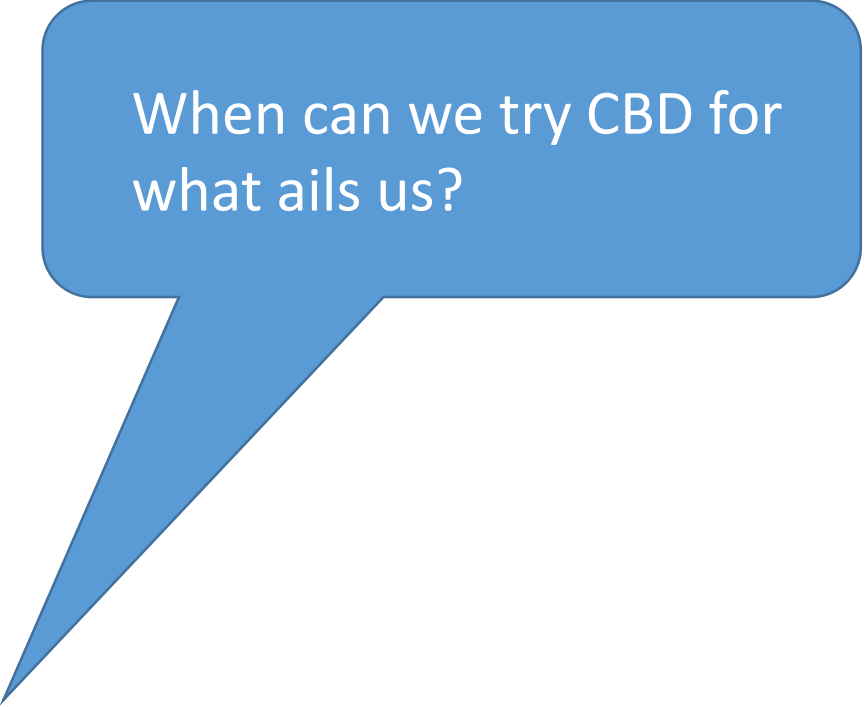
- One standard drink = ?
 - One 12oz beer (5% EtOH)
 - One 5oz glass of wine (10-15%) – ~5 per 750ml bottle
 - One 1.5oz shot of liquor (40%) – ~15 per 750ml bottle
- Binging = ?
 - Men = 5 or more per day
 - Women/elderly = 4 or more per day
- Moderate “Medically Safe” Drinking = ?
 - Men = avg 2 or less per day w/o binging
 - Women/elderly = avg 1 or less per day w/o binging

Cannabis Screening

- Moderate use = ?
 - 25mg of THC (?)
 - ¼ gram of plant/bud (10-15% THC)
 - 50mg of dab or wax (50%+ THC)
 - “edibles” are highly variable
- Binging = ?
 - For people without tolerance, doses over 25mg THC (2.5mg IV) are associated with potential negative effects, would assume a “binge” is 50+mg (?)
- Moderate “Medically Safe” THC =?
 - Not daily, using no more than 1-2g plant per week, i.e. no more than 100-200mg THC per week

Learning Objectives

- Understand the rates and types of cannabis use in young people in the Bay Area
- Understand the risks of heavy cannabis use and its main psychoactive component, THC
- Try to define “safe” cannabis use
- Briefly discuss the parallel CBD story



When can we try CBD for
what ails us?



Right now!
...sort of...

- The FDA has approved *cannabidiol* oral solution for treatment of seizures associated with Dravet syndrome or Lennox-Gastaut syndrome.
- It is the first *natural* marijuana product to be approved by the FDA for any indication.

Schedules of Controlled Substances: Placement in Schedule V of Certain FDA-Approved Drugs Containing Cannabidiol; Corresponding Change to Permit Requirements

A Rule by the [Drug Enforcement Administration](#) on 09/28/2018



PUBLISHED DOCUMENT



AGENCY:

Drug Enforcement Administration, Department of Justice.



ACTION:

Final order.



DOCUMENT DETAILS

Printed version:

[PDF](#)

Publication Date:

[09/28/2018](#)

Agencies:

[Drug Enforcement Administration](#)

Dates:

Effective September 28, 2018.

The opinions expressed on the following slides are solely those of the presenters. These are supplied as an educational resource only and should not be used as a substitute for medical advice. Always consult your physician for medical advice.



PAPA & BARKLEY
1:3 CBD BATH SOAK

CBD 1 DOSES

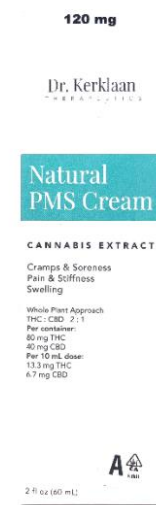
\$ **14.88**



PAPA & BARKLEY
1:3 THC RELEAF BALM 50ML

CBD 50 DOSES

\$ **74.40**



DR. KERKLAAN
NATURAL PMS CREAM 2:1 THC:CBD

CBD 8 DOSES

\$ **62.00**



"Good parents don't use Children's Tylenol"



Use products only as directed.

*Applies only to pediatric TYLENOL® or pediatric MOTRIN® products. Limit 1 per household. Purchase by 6/1/19. Request must be rec'd by 7/1/19. US only. Must be 18+. Max value up to \$13 USD, incl. tax. Allow 6-8 weeks for delivery of refund check by mail. Refund will be paid in cash or cash equivalent. See offer for Terms/Restrictions/Redemption instructions.



"Good people don't
smoke marijuana."

Right now!



...sort of...

$\leq 0.1\%$ THC is a
very strict
standard



“In the eyes of the DEA, every other form of [CBD or cannabis] remains a Schedule I drug -- on par with heroin and LSD.”

—editor at Leafley

20mg/kg is *a lot*
of purified CBD
(~1000-2000mg
for adults)





Exercise and Wellness

Jacob S. Ballon, M.D., M.P.H.

Clinical Associate Professor

Department of Psychiatry and Behavioral Science

Stanford University

Disclosures:

- Research Funding: NIMH, Otsuka, Janssen, Alkermes, Pear Therapeutics, Roche, Corcept
- Consulting: Alkermes, Pear Therapeutics, Indivior, Alto



Warmup

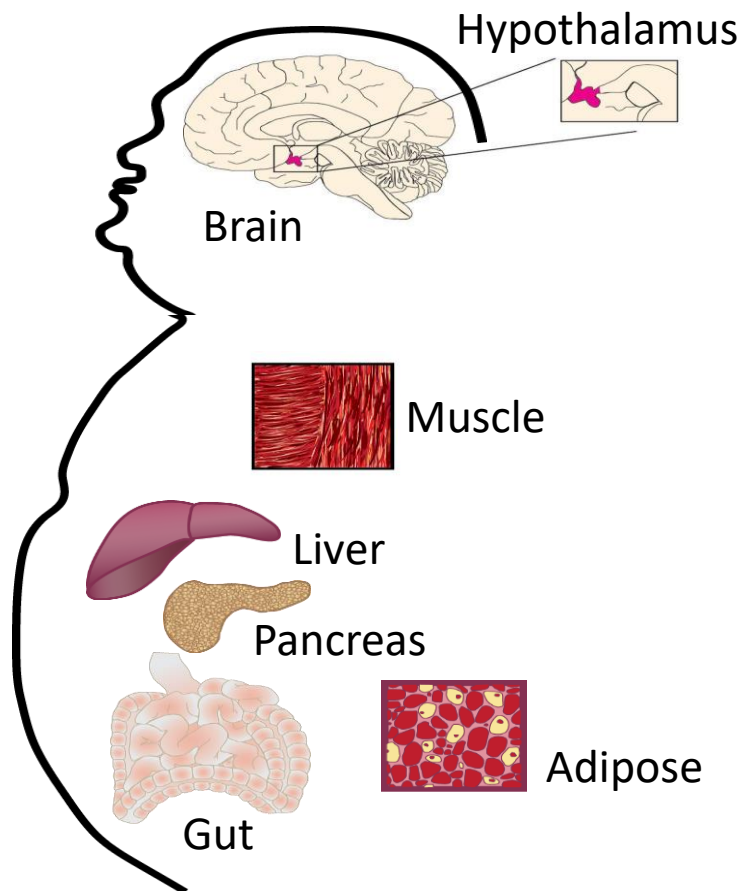


Schizophrenia as Systemic Disorder

- **MULTIPLE SYSTEMS AFFECTED**
 - Genetic
 - Metabolic
 - Cardiovascular
 - Immune
 - Microbial

How do these systems shed light on schizophrenia pathology?



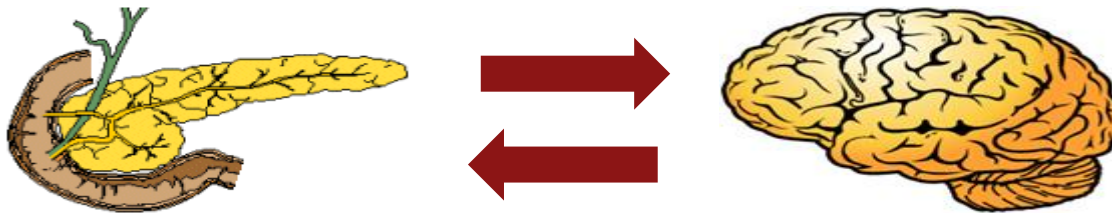


- Hypothalamus
 - Appetite Regulation/Satiety
 - Control of hepatic glucose production
- Liver
 - Hepatic Glucose production
 - De Novo lipogenesis
 - *Dopamine receptors*
- Pancreas
 - Insulin/Glucagon secretion
 - *Dopamine/Insulin co-localize – relationship?*
- Gut
 - Insulin/Glucagon regulation
- Muscle
 - Glucose uptake
- Fat
 - *Inflammatory state*
 - Glucose uptake
 - Adipokine activity



Dopamine role in the pancreas

- L-DOPA triggers hyperglycemia
- Dopamine inhibits glucose-stimulated insulin release
 - D₂R-dependent



- To date, it is unclear if these effects are primarily modulated in the pancreas, CNS or both



Dopamine Agonist Pilot Study

- Questions:
 - Can we change course or reverse IR?
 - Central vs. Peripheral Targets for APD-induced IR?
- Approach:
 - 6 weeks bromocriptine 2.5 -5mg
 - Clinical and Metabolic assessments

Now Recruiting!



INSPIRE Exercise Survey

- 68% identified themselves as "exercisers" (n=41)
 - Running and resistance training most popular
- Compared pre/post exercise with pre/post gaming
 - Gaming and exercise
 - ↓negative sx, anxiety; ↑positive well being
 - Gaming
 - ↑ Fatigue, exhaustion afterwards
 - Exercise
 - ↑cognitive clarity, energy

Noordsy DL et al, Early Intervention in Psychiatry, 12(Supplement S1):166, 2018



Improving Cognition via Exercise Study

- Poor neurocognitive functioning is associated with low aerobic fitness.
- Individuals with schizophrenia display both poor neurocognitive functioning and highly sedentary lifestyle.
- Aerobic exercise improves both aerobic fitness and neurocognitive functioning.

Model:



Pilot Study Attendance

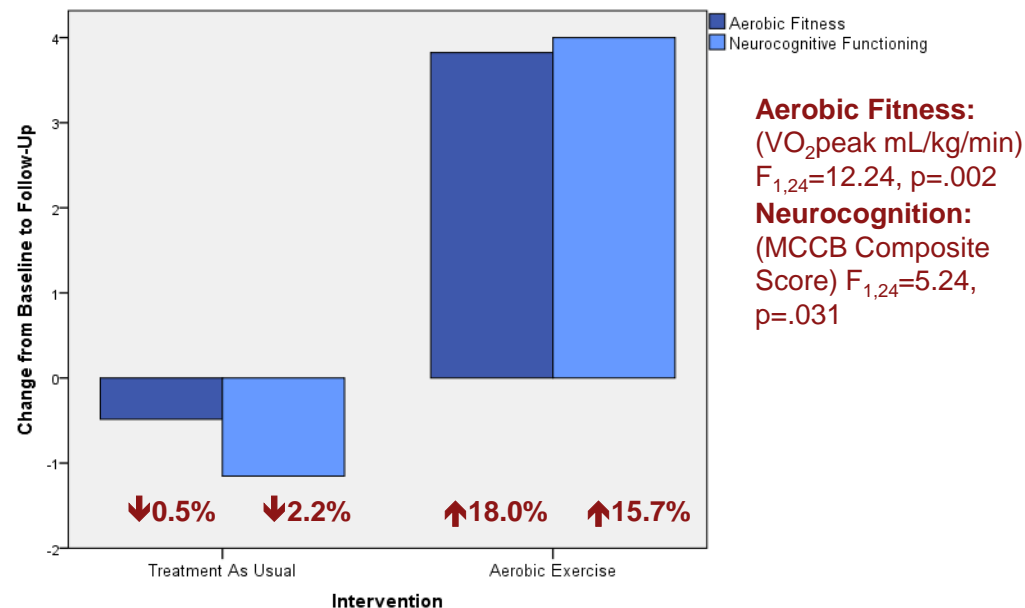
- Aerobic Exercise - 81% (13/16) of the participants completed the 12-week training program.
- Participants attended on average 28.5 of the 36 sessions (79%).
- Missed sessions were due to holidays (46%), inclement weather (23%; e.g., Hurricane Sandy), trainer's vacation (5%) and other (26%).
- Participants traveled on average 4.80 miles (SD=5.51 miles; range 1.03-19.37 miles) to attend the AE sessions. The average travel time was 37 min (SD=21.91 min; range 16-81 min).



Kimhy et al., *Schizophrenia Bulletin*, 2015; Kimhy et al., *Psychiatric Services*, 2016



Aerobic Exercise vs. Treatment As Usual

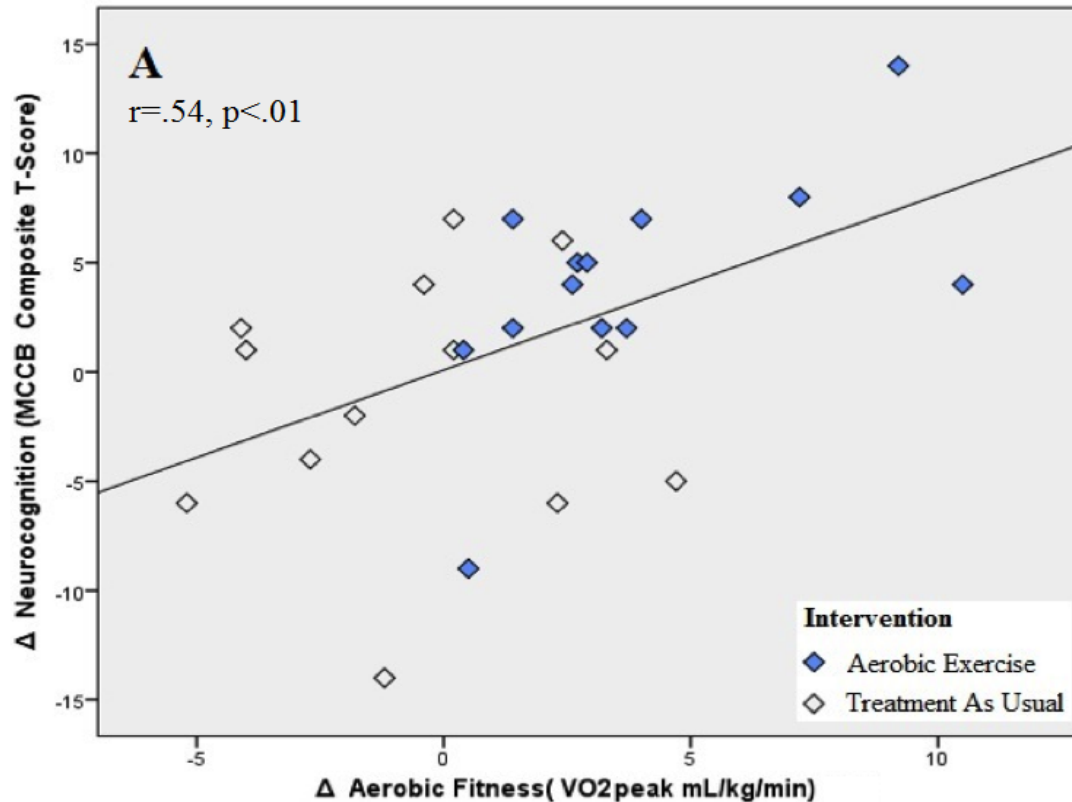


n=26 (TAU=17, AE=16); Changes in aerobic fitness are indexed by VO₂peak (mL/kg/min); Changes in neurocognition are indexed by MATRICS Consensus Cognitive Battery composite T-scores.

Kimhy et al., *Schizophrenia Bulletin*, 2015



Changes in Fitness and Cognition



* Controlling for changes in antipsychotic and antidepressant medications; Aerobic Fitness – VO₂peak (mL/Kg/min); Cognitive Functioning - MCCB Composite score

Kimhy et al., *Schizophrenia Bulletin*, 2015



Aerobic Exercise

- Improve neurocognitive functioning.
- Safe.
- Minimal side-effect-free.
- Non-stigmatizing.
- Easy to administer.
- Inexpensive.
- Provide multiple physical-health benefits.
- Supported by extensive converging animal and human research literatures.



ICE 2.0

- Target n=200
- 4 Sites: Mount Sinai/Columbia, Stanford, UNC, MCG
- Aerobic Exercise vs Stretching and Toning
 - 3x/week for one hour
 - Trainer led
- ENROLLING NOW



CLINICAL CASE CONFERENCE

From Stanford University

Therapeutic Potential of Physical Exercise in Early Psychosis

Douglas L. Noordsy, M.D., Jonathan D. Burgess, B.A., Kate V. Hardy, Clin.Psych.D., Lynn M. Yudofsky, M.D.,
Jacob S. Ballon, M.D., M.P.H.



Incorporating Physical Exercise in the Treatment Plan

- Assessment
 - › Lifetime history
 - › Current activity
- Education about potential benefits
 - › For the psychiatric disorder(s)
 - › For comorbid medical conditions
- Inquiry about which physical activities the patient finds most enjoyable
 - › Make certain that the recommended activity is accessible to the patient, and, if not, try to find opportunities available to the patient
 - › Clear recommendation to exercise



Adding Exercise

- Start
 - › Start slowly
 - › Take into account medication side effects and mental status
- Goal setting using the SMART acronym—**S**pecific, **M**easurable, **A**ttainable, **R**ealistic, **T**imely
- Think of motivational supports
 - › Exercise group, partner, training for an event
 - › Recommended reading, videos, web sites, apps
- Use a behavioral monitoring plan
 - › Exercise log, paper or electronic/app
 - › Follow-up with your clinician



Exercise Recommendations

- Consider current capacity and titrate to target
- Set a Goal:
 - 30–60 minutes of exercise, 3 to 7 days per week
 - More is better (if safe)
 - Up to 180 minutes per week
- A mix of strength training and aerobic exercise is ideal
- Intensity: 60%–85% of maximum heart rate ($220 - \text{age}$)
- You choose the activity
 - Access, cost, familiarity, enjoyment
 - Preference for variation versus repetition



Assessing Response to Exercise

- Adherence to plan
- Changes in core symptoms
- Changes in sleep, appetite, energy, well-being
- Changes in physical health
- Assess barriers to adherence
- Triggers to lapses in exercise



INSPIRE Clinic

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Trauma and Psychosis

NICHOLE OLSON, PHD

Trauma and Psychosis Agenda

Review the rates of psychosis and trauma, trauma pathways, and consequences of comorbidity

Provide an overview of treatment for individuals with psychosis and trauma histories

Highlight clinical considerations



Impacts of Trauma

What is trauma? PTSD?

Trauma impacts how people view themselves, others, and the world

- Shapes interpretation of internal and external stimuli



Trauma, PTSD and Psychosis

Rates of trauma are high among people with psychosis

(Morgan & Fisher, 2007; Neria et al., 2002; Read, Morrison & Ross, 2005)

Rates of PTSD are also high (30% vs 7.8% lifetime prevalence for those in the general population)

- This is likely an underestimate: As much as 96% of PTSD is undiagnosed amongst people with psychosis (van den Berg et al., 2016)
- Psychosis increases the likelihood of PTSD following exposure to trauma (Bendall et al., 2012; Mueser & Stanley, 2003)



Trauma, PTSD and Psychosis

One plus one does not equal two...

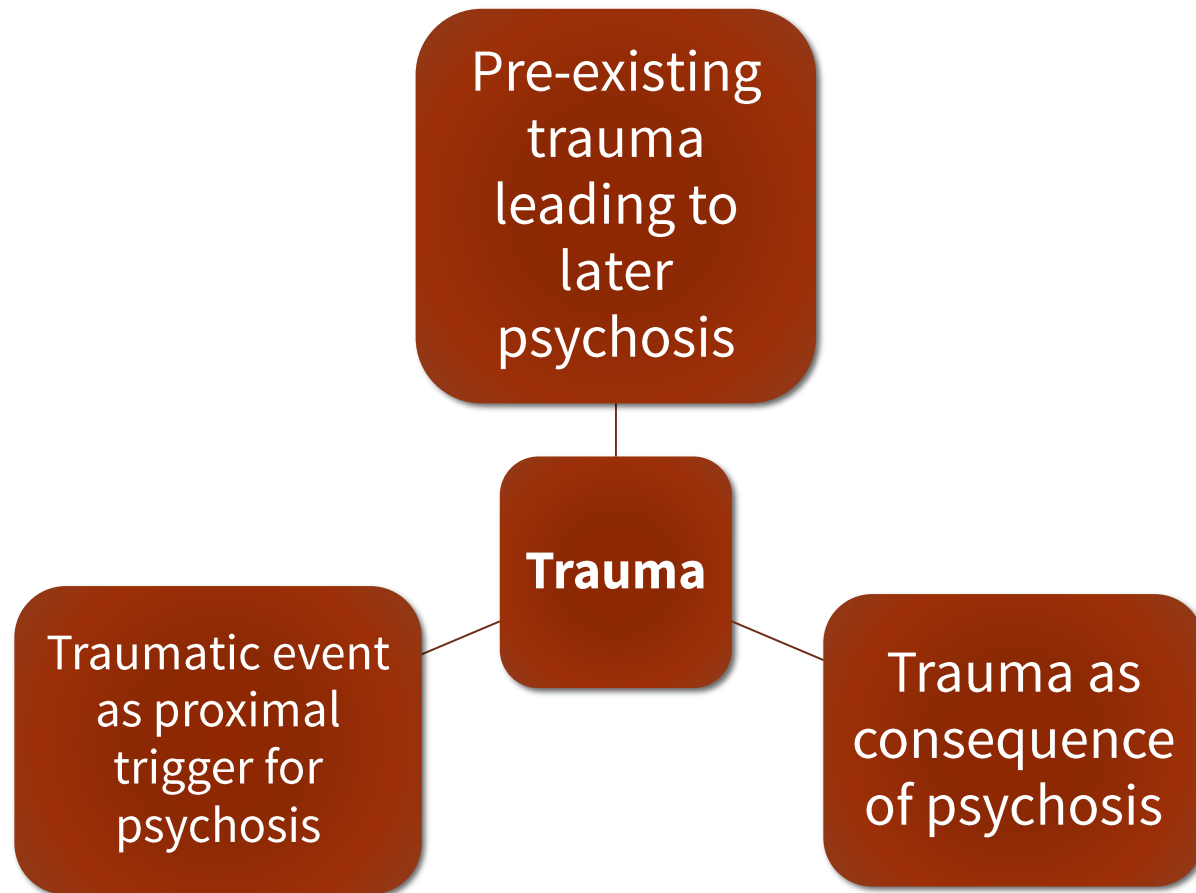
- Trauma worsens the prognosis of psychosis (Janssen et al., 2004; Spauwen et al., 2006)
- Individuals with SMI are more likely to be revictimized than those in general population (Maniglio, 2009)

Trauma can shape experience of psychosis. There is often congruence between life experience and content of psychosis experiences (Hardy et al., 2005; Raune, Kuipers, Bebbington, 1999; Freeman & Fowler, 2009; Trauelsen et al., 2015)

- For example:
Being bullied in childhood →
Derogatory, cruel or critical voice, themes of persecution



Multiple Pathways to Trauma and Psychosis



Pathways to Trauma and Psychosis

Pre-existing trauma (Morgan & Fisher, 2007)

- Individuals with psychosis are 2.72x more likely to have been exposed to childhood adversity (Varese et al., 2012)
- Dose-response relationship between childhood trauma/adversity and psychotic symptoms (Janssen et al., 2004; Kelleher et al., 2011; Shevlin, Dorahy & Adamson, 2007)

Trauma as proximal cause of psychosis

- Symptoms of PTSD can exacerbate stress, leading to a psychotic experience (Mueser et al., 2002)
- 70% of voice hearers began experiencing voices following traumatic event (Romme and Escher, 1989)

Trauma as a result of psychosis (Morrison, Frame, & Larkin, 2003)

- Trauma can result from hospitalization or even the experience of the psychotic symptoms themselves (Frame & Morrison, 2001; McGorry et al., 1991; Morrison et al., in press; Shaw et al., 2001)



Treatment

There are several gold standard, evidence-based, cognitive behavioral therapies for PTSD and trauma, utilizing *exposure* and *cognitive restructuring* based techniques:

- Prolonged Exposure
- EMDR
- Cognitive Processing Therapy

The majority of studies of trauma-focused treatment exclude individuals with psychosis



Treatment

HOWEVER, studies have found that trauma-focused CBT is safe to use with individuals with psychosis (de Bont, van Minnen & de Jonah, 2013; van den Berg et al., 2016)

- Does *not* increase psychotic symptoms
- Does *not* increase likelihood of adverse events (van den Berg et al., 2016)

AND, is effective

- Does decrease trauma related symptoms (de Bont, Minnen & de Jonah, 2013; Meuser et al., 2008; Meuser et al., 2015)
- Does decrease likelihood of revictimization (van den berg et al., 2016)



Psychosis Specific Treatment: Trauma Integrated Psychotherapy for Psychosis (TRIPP)

- Engagement
- Screening (including brief trauma account)
- Safety
 - Address suicidal thoughts, self-harm, risky behavior
 - Develop skills to notice and communicate distress
- Psychoeducation
- Timeline
- Formulation
- Strengths based intervention



Clinical Considerations

Trauma history and PTSD symptoms should be part of an initial evaluation

- If not asked about in early sessions, will likely not be evaluated
- If not asked, the information is rarely volunteered
(Read and Fraser, 1998)
- Should also ask about the experience of psychosis and assess for trauma as a result of psychosis

Providers should be trained in how to ask about trauma and respond to trauma disclosure

- Fear is one of the primary reasons people don't ask
(Read et al., 2007)



Clinical Considerations

Referral for trauma-focused treatment needs to be made, as appropriate

- Those with psychosis are less likely to be referred than those without - 5% vs 67% (Read and Fraser, 1998)

Interventions need to consider and address trauma, as appropriate

- Formulations should integrate how trauma has shaped interpretation/experience
- Utilize existing trauma protocols (PE, EMDR, etc.), cognitive restructuring techniques, imaginal exposure and re-scripting

