

Mindfulness-based interventions for co-occurring mental health and addictive disorders

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September 13, 2014**

ASAM Disclosure of Relevant Financial Relationships

27th Annual Cape Cod Symposium on Addictive Disorders

Presentation: Mindfulness-based interventions for co-occurring mental health and addictive disorders

9/13/14

Name	Commercial Interests	Relevant Financial Relationships: What Was Received	Relevant Financial Relationships: For What Role	No Relevant Financial Relationships with Any Commercial Interests
Carl Fulwiler				X



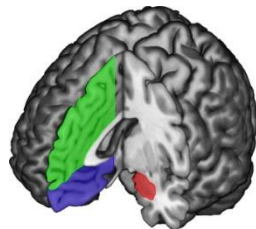
Emotion dysregulation in mental health and addictive disorders



What is mindfulness and how is it used in treating mental disorders and addiction?



Overview of the core elements of MBCT & MBRP and how they differ



How does it work?

Emotion regulation deficits



A person with social anxiety clenches her hands to avoid shaking as she tries to answer a professor's question. A person with alcohol dependence drinks himself into oblivion following a bitter divorce. A person with bulimia has a spat with a friend and then gorges herself, all the while feeling out of control. A person with obsessive-compulsive disorder feels intense anxiety and washes his hands until they bleed. A person with depression fights back tears during an unpleasant work meeting.

Werner & Gross (2009)

In Kring & Sloan (Eds) Emotion Regulation and Psychopathology. Guilford , NY

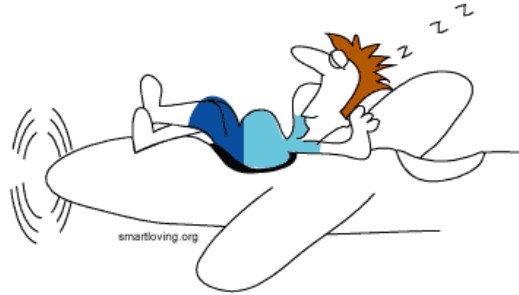
- **Mood and anxiety disorders, borderline and antisocial personality disorders, PTSD, alcohol and drug use disorders**
- **Nearly 200 DSM diagnoses involve emotion dysregulation**



Fad or breakthrough?

Habits of mind and behavior

Auto-pilot



Multi-tasking



Past ← ? → Future

A definition of Mindfulness

**The awareness that emerges from paying attention
on purpose and non-judgmentally
to the unfolding of experience from moment to
moment**

Mindfulness = Focused Attention + Open Monitoring

Focused attention – directing and sustaining attention on a chosen object, noticing when mind wanders – disengaging and redirecting to object of attention

Open monitoring – non-directed, non-reactive moment to moment awareness of all aspects of experience



Models of clinical interventions

Dialectical Behavior Therapy (DBT) and Acceptance and Commitment Therapy (ACT):

- **CBT-based with training in mindfulness skills**
- **Mindfulness one component among several**
- **Guided exercises vs. formal meditation**

Models of clinical interventions

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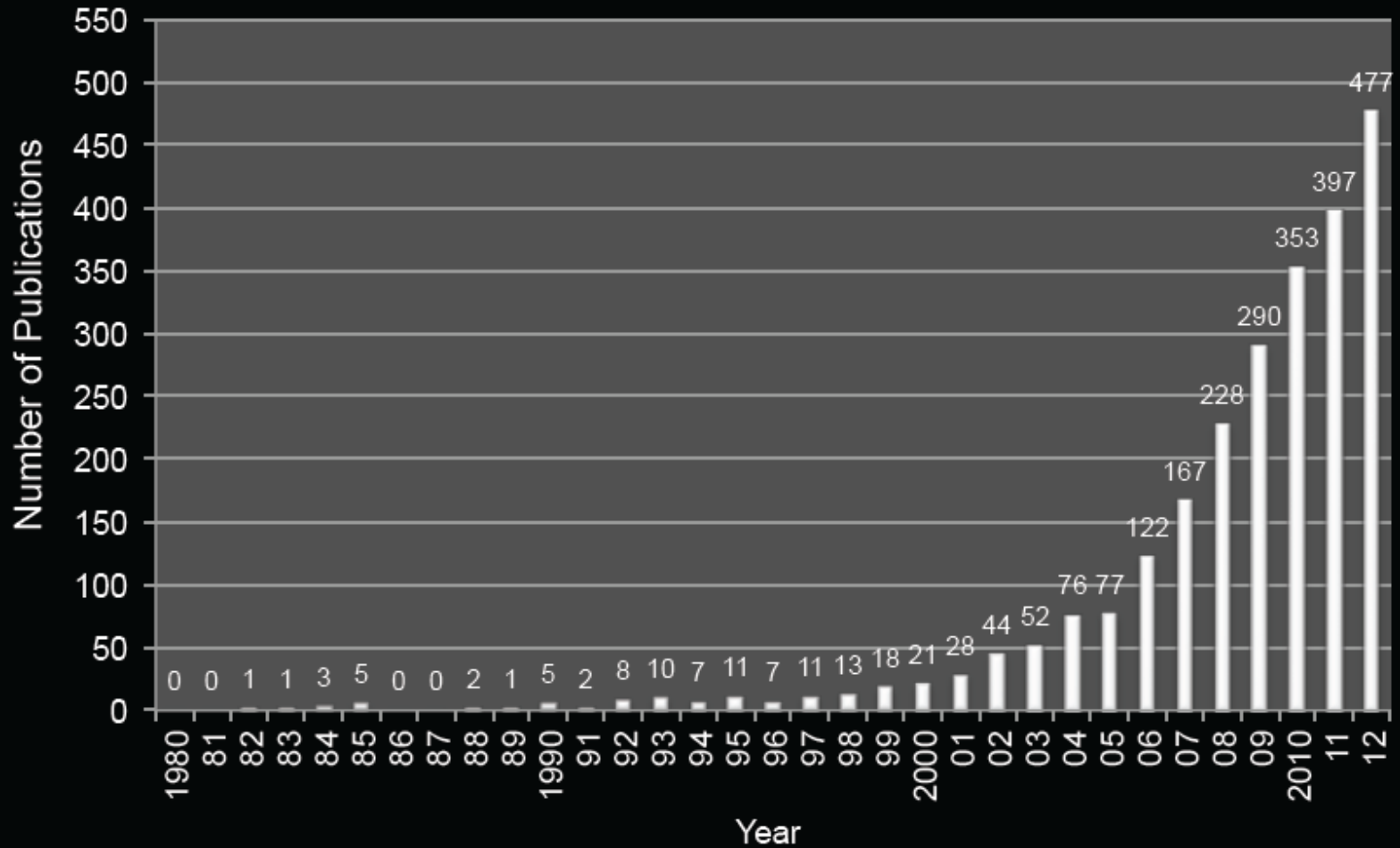
Practice is at the core of MBSR, MBCT, MBRP:

- **Teaching formal meditation practices**
- **Daily practice 30-45 min.**
- **Teachers have extensive personal practice & formal training in retreat setting**

Mindfulness-Based Stress Reduction



Mindfulness publications by year, 1980 - 2012



Source: DS Black (2013). Mindfulness Research Guide. www.mindfulexperience.org



Effective Health Care Program

Comparative Effectiveness Review
Number 124

Meditation Programs for Psychological Stress and Well-Being

Original Investigation

Meditation Programs for Psychological Stress and Well-being A Systematic Review and Meta-analysis

Madhav Goyal, MD, MPH; Sonal Singh, MD, MPH; Erica M. S. Sibinga, MD, MHS; Neda F. Gould, PhD;
Anastasia Rowland-Seymour, MD; Ritu Sharma, BSc; Zackary Berger, MD, PhD; Dana Sleicher, MS, MPH;
David D. Maron, MHS; Hasan M. Shihab, MBChB, MPH; Padmini D. Ranasinghe, MD, MPH; Shauna Linn, BA;
Shonali Saha, MD; Eric B. Bass, MD, MPH; Jennifer A. Haythornthwaite, PhD

JAMA Intern Med. 2014 Jan 6. doi: 10.1001/jamainternmed.2013.13018

Goyal et al. 2014 – Methods

- **Databases searched: MEDLINE, PsycINFO, EMBASE, PsycArticles, Scopus, CINAHL, AMED, Cochrane Library**
- **Tools used: Systemic review software; random-effects meta-analyses using standardized mean differences (effect size [ES]; Cohen d)**
- **Only included RCTs with active control groups**
- **Excluded studies in which meditation was not the foundation – yoga, tai chi, ACT, DBT**
- **18, 753 citations title-abstract reviewed, 1,651 full-text articles reviewed - 47 trials (N=3515) met inclusion/exclusion criteria**

Goyal et al. 2014 – Results

Mindfulness meditation programs had moderate evidence of improved anxiety, depression and pain

Outcome	8 weeks	Range	3-6 mos	Range
Anxiety	0.38	[0.12-0.64]	0.22	[0.02-0.43]
Depression	0.30	[0.00-0.59]	0.23	[0.05-0.42]
Pain	0.33	[0.03- 0.62]		

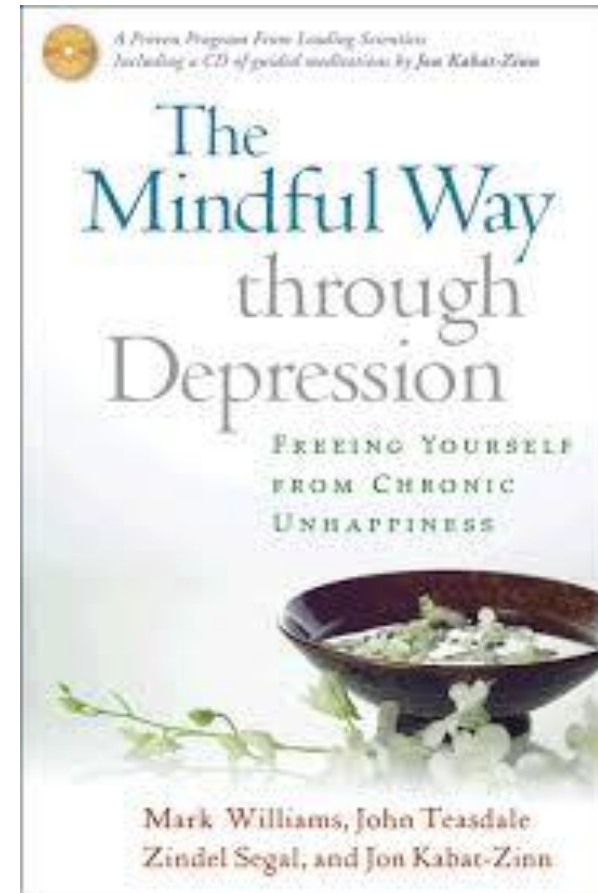
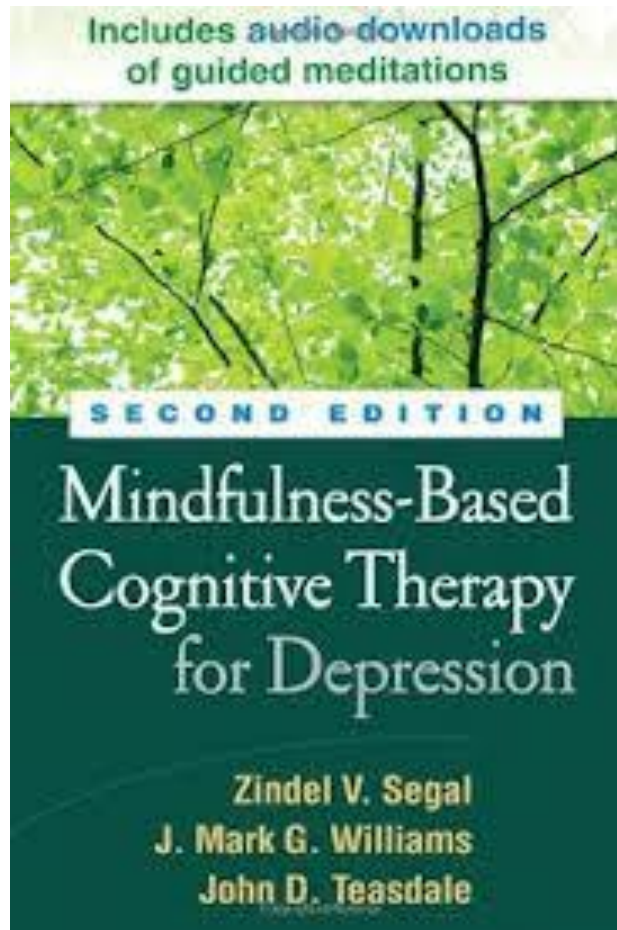
Goyal et al. 2014 – Results

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- **Insufficient evidence of effect on substance use***
- **No evidence mindfulness better than active treatment (drugs, CBT and other behavioral therapies)**

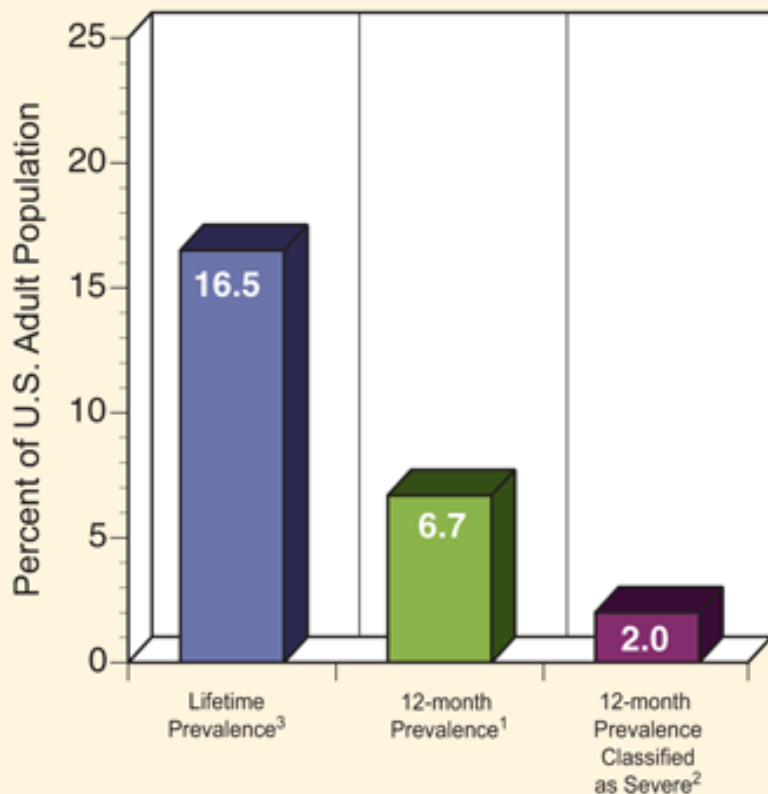
Mindfulness-based cognitive therapy for depression



Depression

Prevalence

- **12-month Prevalence:** 6.7% of U.S. adult population¹
- **Severe:** 30.4% of these cases (e.g., 2.0% of U.S. adult population) are classified as "severe"²



- The leading cause of disability in the U.S. for ages 15-44
- 2nd leading cause of disability worldwide

WHO The Global Burden of Disease, 2008

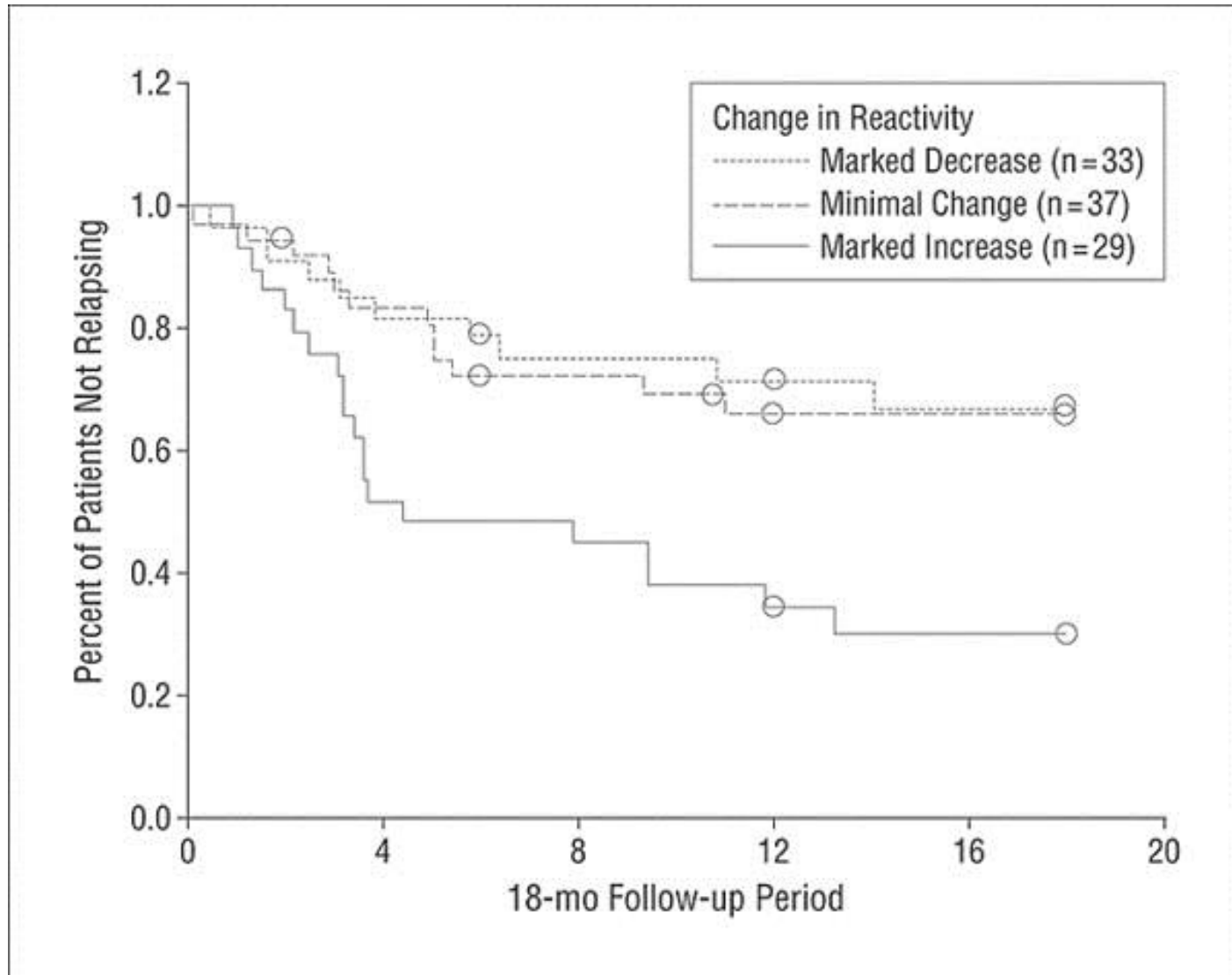
Depression treatment outcomes and recurrence

Majority have incomplete response, non-response, recurrence, or drop out of treatment

With each recurrence likelihood of future recurrence increases

Alternatives to long-term antidepressant medication?

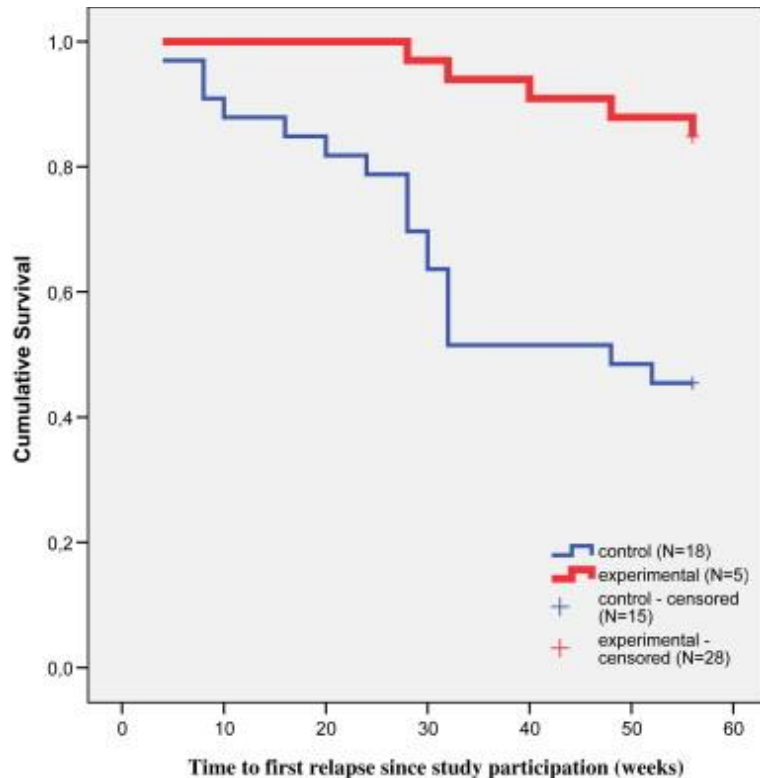
Emotional reactivity and Relapse





The effects of mindfulness-based cognitive therapy on recurrence of depressive episodes, mental health and quality of life: A randomized controlled study

K.A. Godfrin, C. van Heeringen*



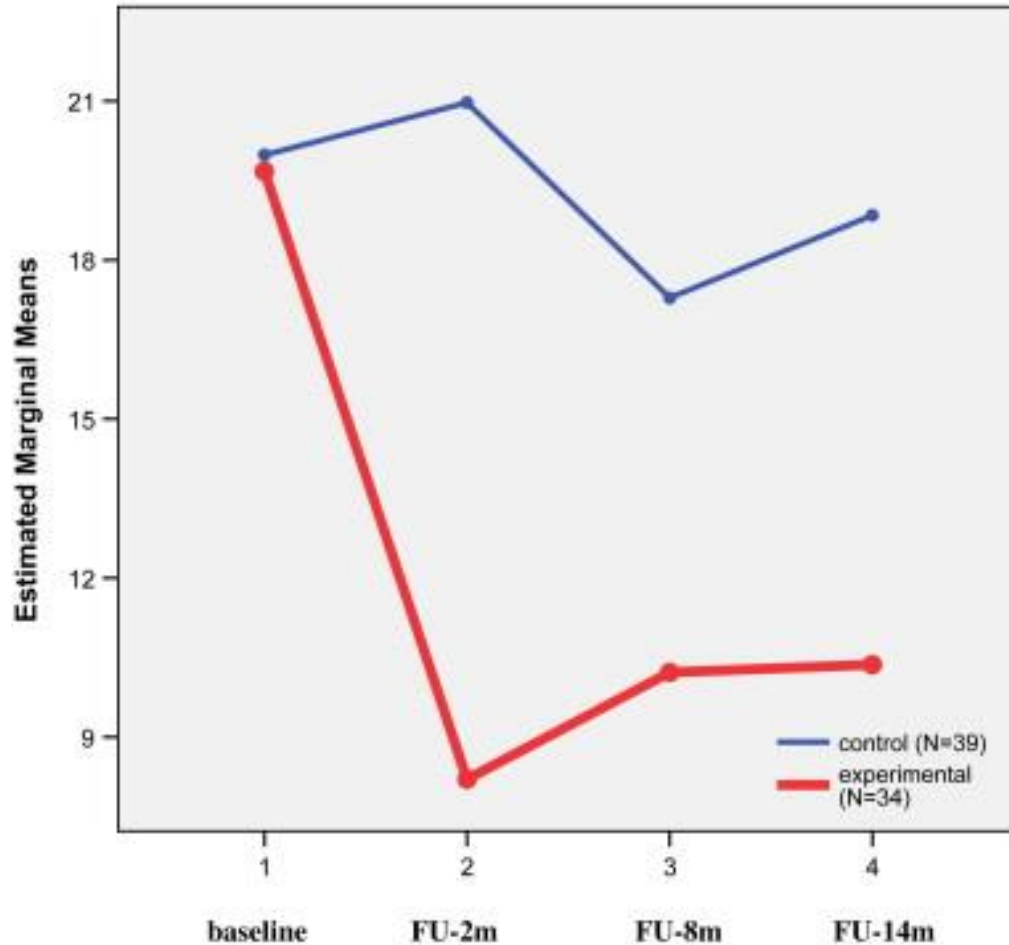
Survival Analysis

12/40 = 30%

32/47 = 68%

Improved depressive symptoms and quality of life

BDI

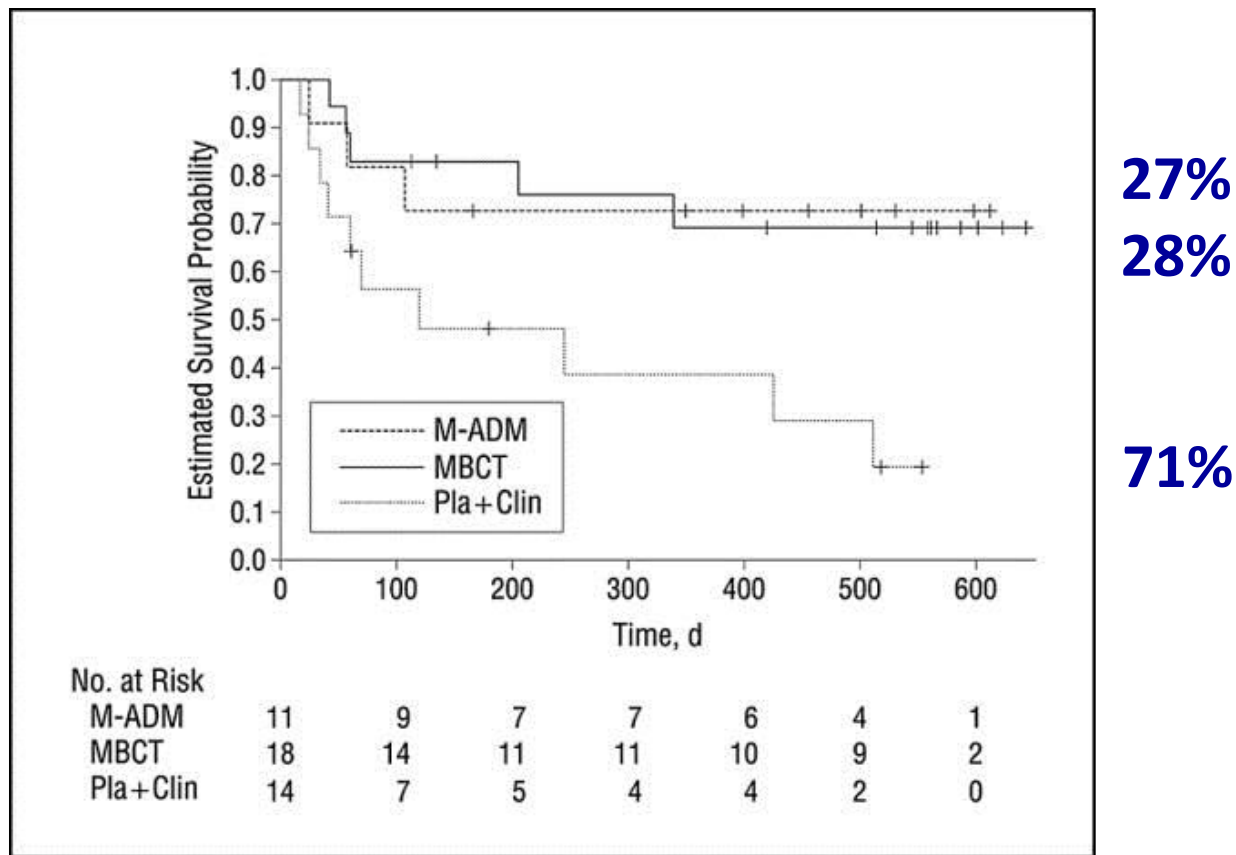


Controls

MBCT

Antidepressant Monotherapy vs Sequential Pharmacotherapy and Mindfulness-Based Cognitive Therapy, or Placebo, for Relapse Prophylaxis in Recurrent Depression

Zindel V. Segal, PhD; Peter Bieling, PhD; Trevor Young, MD; Glenda MacQueen, MD; Robert Cooke, MD; Lawrence Martin, MD; Richard Bloch, MA; Robert D. Levitan, MD



Emerging evidence for efficacy of MBCT for current episodes of depression

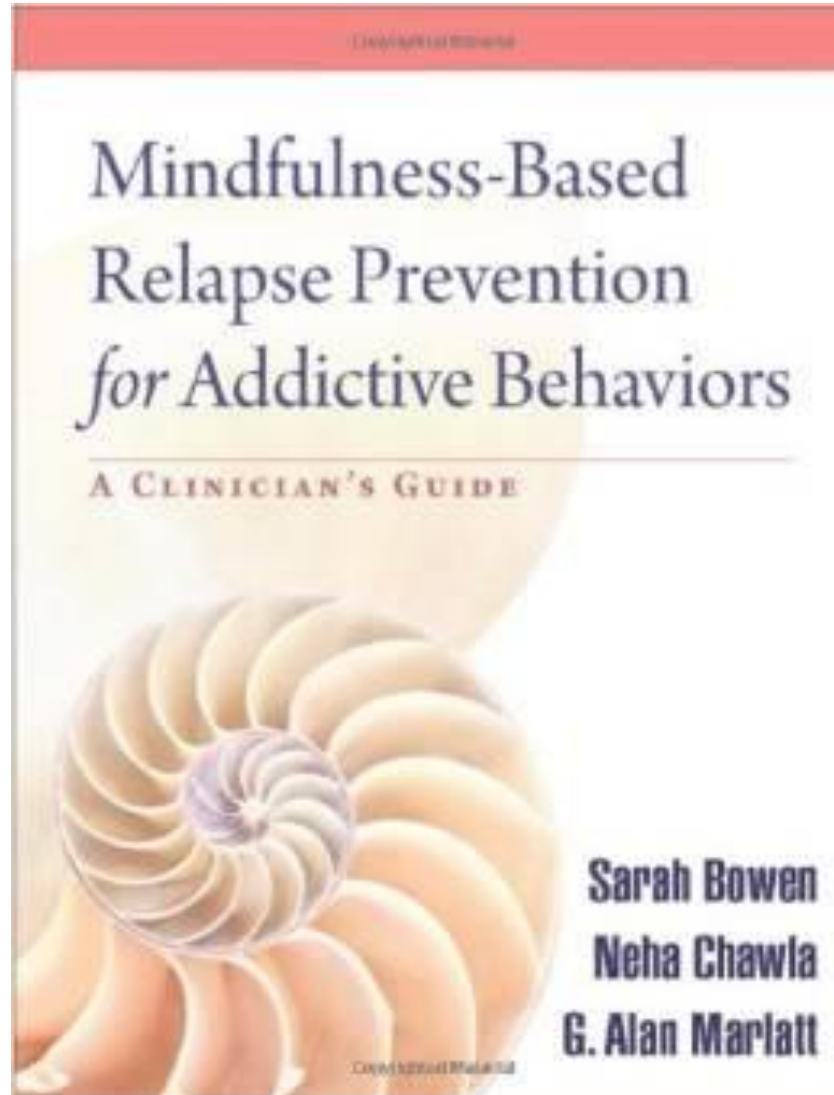
Geschwind 2012 Br J Psychiatry

- N = 130 randomized to MBCT vs. TAU
- Reduction in depression scores greater with MBCT: 30-35% improvement vs. 10%, $p < .001$

van Aalderen 2012 Psychol Med

- Subjects with recurrent depression randomized to MBCT+TAU (n=102) or TAU alone (n=103)
- MBCT as effective for patients who were currently depressed as for patients who were in remission

Addiction like major depression – a chronic, relapsing condition



Mindfulness-Based Relapse Prevention (MBRP)

- **Mindfulness practices with relapse prevention skills training**
- **Patterned after Mindfulness-Based Cognitive Therapy (Segal et al. 2002)**
 - **Group format, 8 weekly 2-2.5 hr. sessions**
 - **Daily home practice w/ CD**
- **Aftercare or post-detoxification/stabilization**

Goals of MBRP

- **Increased awareness of triggers and habitual responses**

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- **Cultivate present moment awareness and skillful responses to decrease likelihood of relapse**

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- Observe unpleasant thoughts and feelings and accept them without judgment
- **Change our relationship to discomfort, learning to recognize challenging emotional and physical experiences and responding to them in skillful ways**

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- Observe unpleasant thoughts and feelings and accept them without judgment
- Change our relationship to discomfort, learning to recognize challenging emotional and physical experiences and responding to them in skillful ways
- **Build a lifestyle that promotes mindfulness practice and recovery**

Research on MBRP – Populations studied

- **Adults in outpatient treatment**
- **Adults who recently completed detox or intensive outpatient treatment**
- **Incarcerated adults with a history of substance abuse**
- **Smokers**

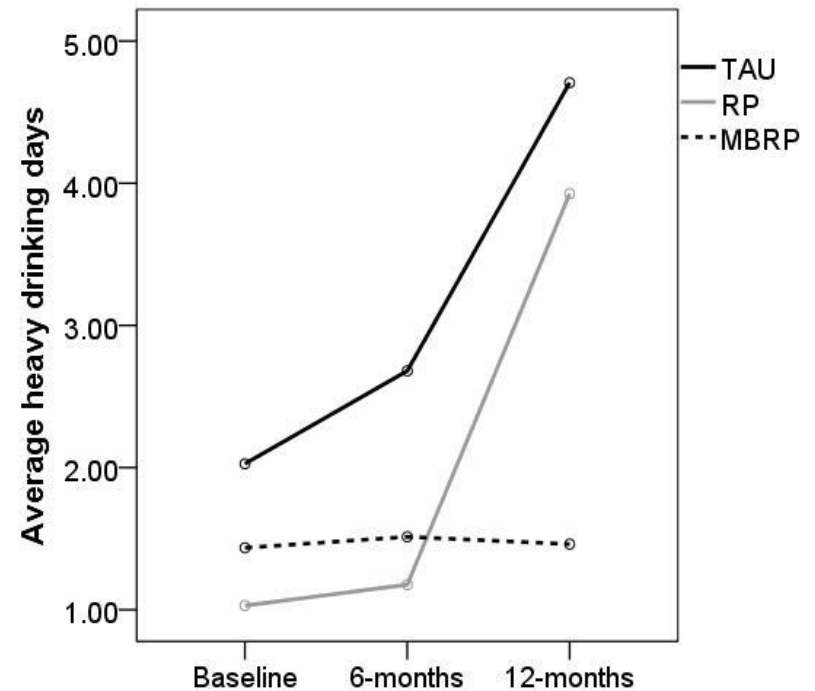
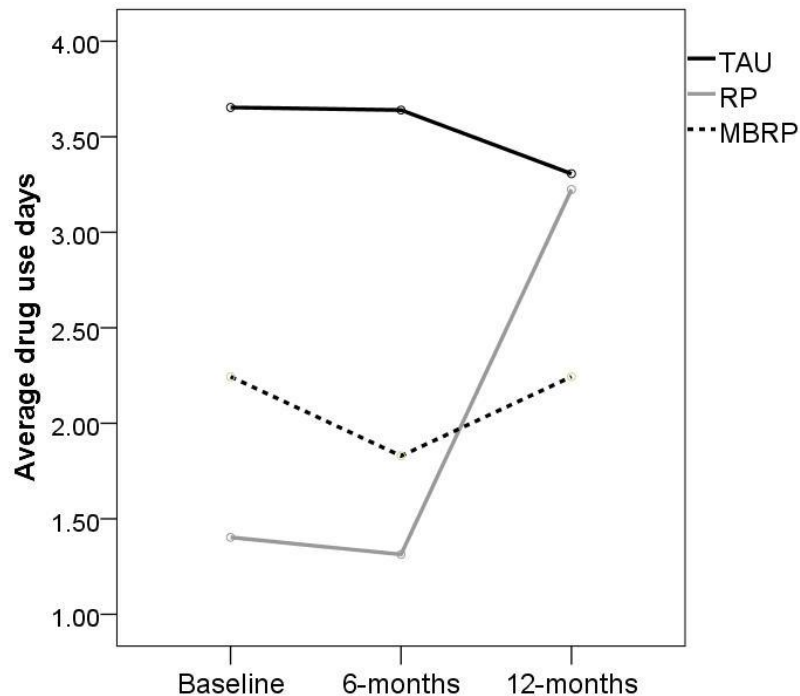
Research on MBRP:

First RCT – Pilot feasibility study (Bowen et al 2009)

- N=168 from community treatment facilities
- Avg. age 40; 71.5% male; 42.1 % ethnic/racial minority
- MBRP vs. RP post-intervention (detox or IOP) vs. TAU
- Pre-post, 2 and 4 month outcomes
- 54% reporting regular meditation practice at 4-month follow-up – 4.7 d/wk, 30 min/session
- 4 month outcomes:
 - days of use 2.1 vs. 5.4 (p = .02)

Research on MBRP: Full-scale RCT (Bowen 2014)

- RCT N=286 from community treatment facilities
- Avg. age 40; 71.5% male; 42.1 % ethnic/racial minority
- MBRP vs. RP post-intervention (detox or IOP) vs. TAU
- 6 and 12 month outcomes



Research on MBRP: Full-scale RCT (Bowen 2014)

6 months:

- MBRP & RP significantly longer time to first drug use and heavy drinking (vs. TAU)
- Significantly fewer days of drug use

12 months:

- MBRP significantly fewer days of drug use (vs. RP/TAU)
- Significantly lower probability of heavy drinking

* Self-report largely confirmed by drug screens

Common elements of MBSR/MBCT/MBRP

Switch out of:

- Automatic pilot
- Avoidance
- Thinking about
- Judging and fixing
- Reactivity
- Unhealthy habits

To:

- Awareness; Intentional mode
- Curiosity and acceptance
- Directly experiencing
- Non-doing and being
- Skillful responding
- Taking care of ourselves and staying well

Common elements of MBSR/MBCT/MBRP

Class structure:

- **Guided practice**
- **Inquiry**
- **Worksheets, handouts, homework**

Teaching style:

- **Embodied mindful presence – awareness, acceptance, compassion – reflects personal practice**
- **Experiential teaching emphasizes investigating experience directly**
- **Inquiry focuses on present-moment experience vs. story-telling and interpretation**

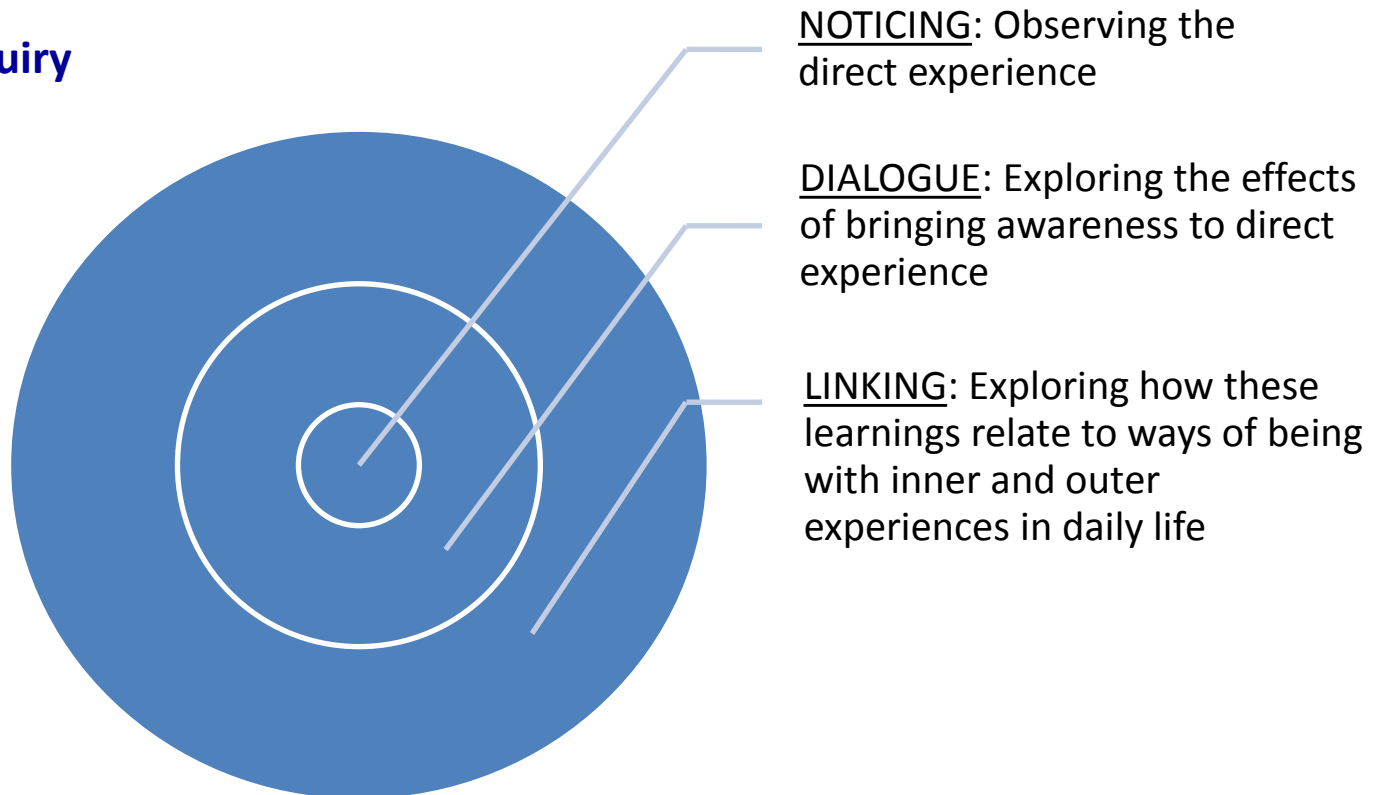
Common elements of MBSR/MBCT/MBRP

Inquiry

This requires the instructor to sharpen his/her ability to listen closely, allow space, refrain from the impulse to give advice, and instead, to inquire directly into the actuality of the participant's experience."

Jon Kabat-Zinn, Santorelli 2005

Three layers of inquiry
(Crane, R. 2009)



Common elements of MBSR/MBCT/MBRP

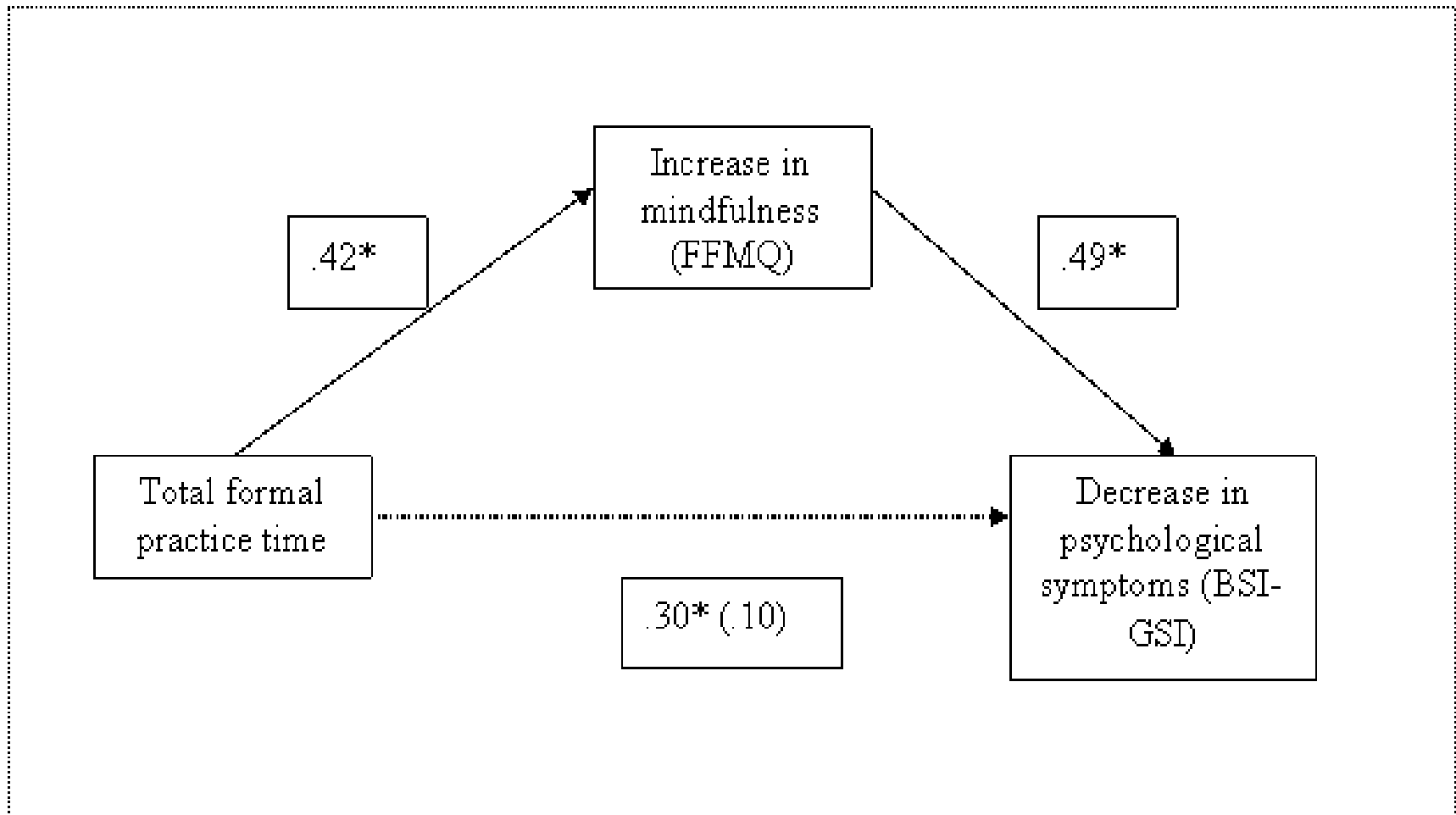
Formal practices:

- **Body scan**
- **Mindful movement/yoga**
- **Walking meditation**
- **Mindfulness of breath/body/sounds/thoughts**

Informal practices:

- **Mindfulness of daily activities**
- **Moment to moment awareness**

Practice, practice, practice – Formal meditation practice mediates improvement



Cultivating awareness of the link between activity and mood



Excessive focus on work or other stressors, gradually giving up of activities that we enjoy and nourish us, depletes our energy and resources and leaves us vulnerable to relapse

MBCT Sessions

- 1. Awareness and automatic pilot**
- 2. Living in our heads**
- 3. Gathering the scattered mind**



Developing
Awareness

MBCT Sessions

1. Awareness and automatic pilot
2. Living in our heads
3. Gathering the scattered mind
4. Recognizing aversion
5. Allowing and letting be
6. Thoughts are not facts



Developing
Awareness



Turning toward
the unpleasant

MBCT Sessions

1. Awareness and automatic pilot
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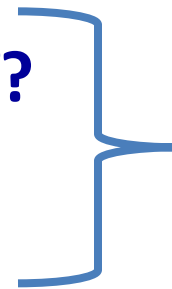
Developing
Awareness



Turning toward
the unpleasant

Day of practice

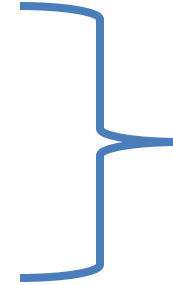
7. How can I best take care of myself?
8. Maintaining and extending
new learning



Staying well,
taking action
when mood is
low

MBRP Sessions

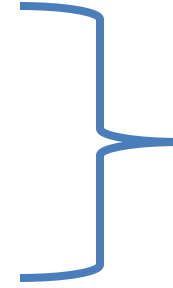
1. Automatic pilot and relapse
2. Awareness of triggers and craving
3. Mindfulness in daily life



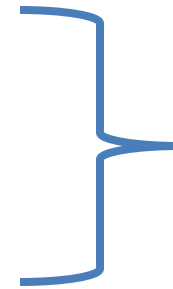
Awareness

MBRP Sessions

1. Automatic pilot and relapse
2. Awareness of triggers and craving
3. Mindfulness in daily life
4. Mindfulness in high-risk situations
5. Acceptance and skillful action
6. Seeing thoughts as thoughts



Awareness



Mindfulness
& relapse,
acceptance

MBRP Sessions

1. Automatic pilot and relapse
2. Awareness of triggers and craving
3. Mindfulness in daily life
4. Mindfulness in high-risk situations
5. Acceptance and skillful action
6. Seeing thoughts as thoughts

Day of practice

7. Self-care and lifestyle balance
8. Social support and continuing practice



Informal practices

MBCT:

- 3 step breathing space
- 3 step breathing space with difficulty

MBRP:

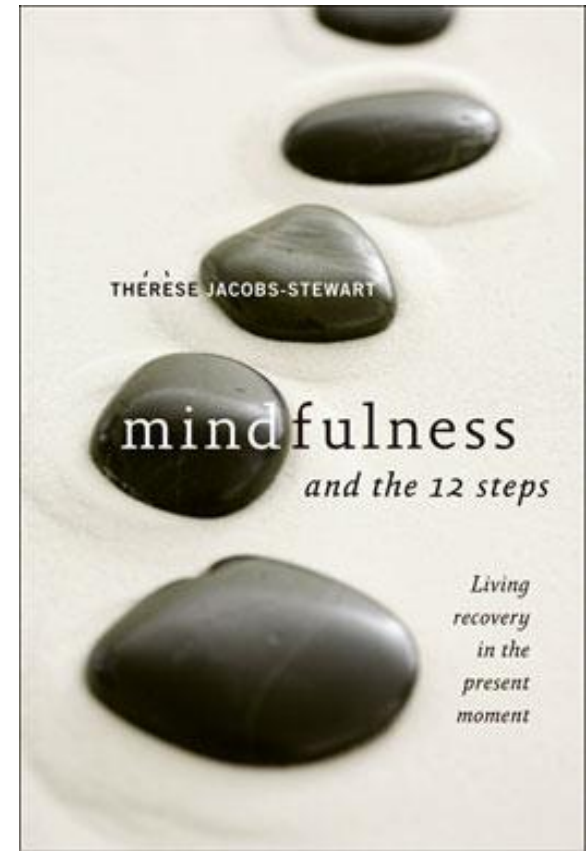
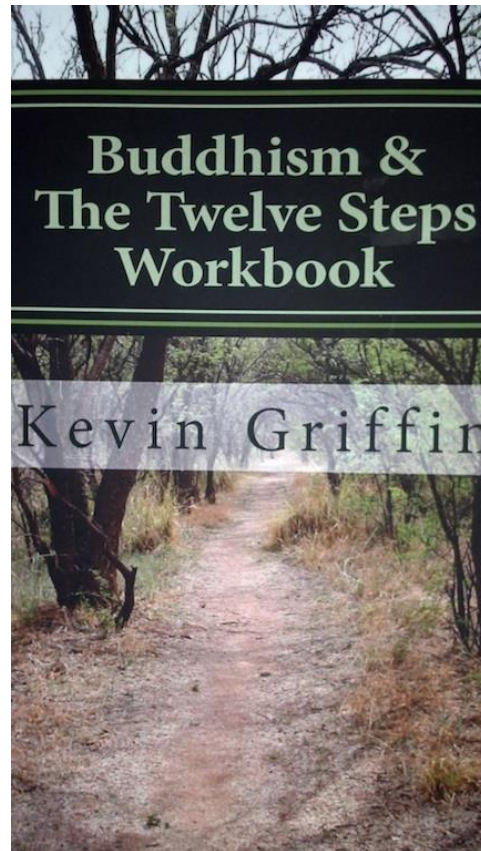
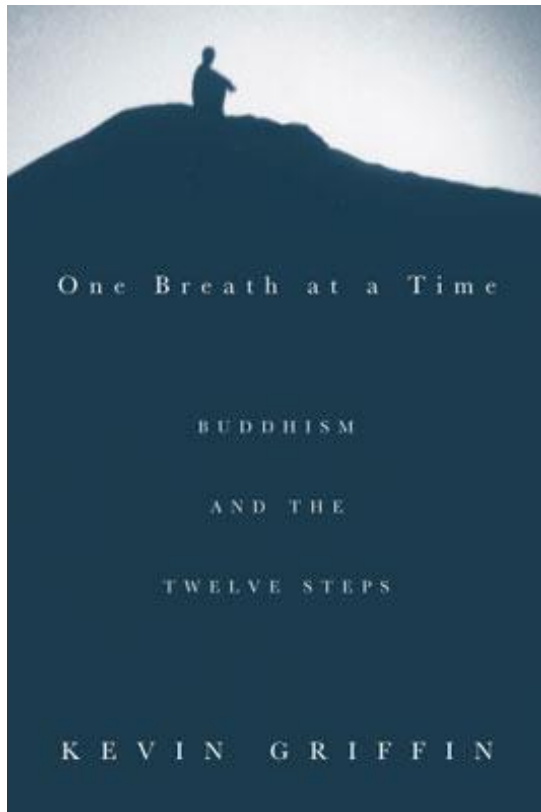
- S.O.B.E.R. breathing space
- Urge surfing

S.O.B.E.R. Breathing space

- S Stop: pause wherever you are**
- O Observe: what is happening in your body & mind**
- B Breath: bring focus to the breath as an 'anchor' to help you focus and stay present**
- E Expand awareness: to your whole body & surroundings**
- R Respond: mindfully vs. automatically**



Integrating Mindfulness and 12 Steps



Integrating Mindfulness and 12 Steps

Admitted we were powerless over alcohol...

Awareness that we are suffering – that we are the cause of our own suffering and have caused suffering in others

Integrating Mindfulness and 12 Steps

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Awareness that we are suffering – that we are the cause of our own suffering and have caused suffering in others

Came to believe that a Power greater than ourselves could restore us to sanity

Accessing deep inner sources of wisdom that we share with all beings

Integrating Mindfulness and 12 Steps

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Awareness that we are suffering – that we are the cause of our own suffering and have caused suffering in others

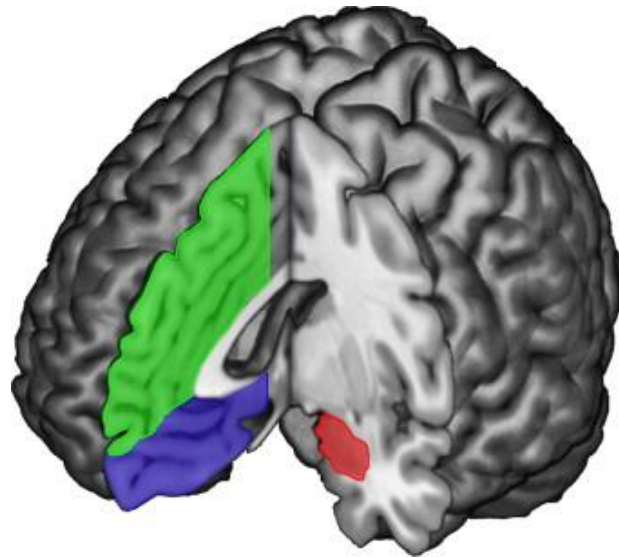
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Accessing deep inner sources of wisdom that we share with all beings

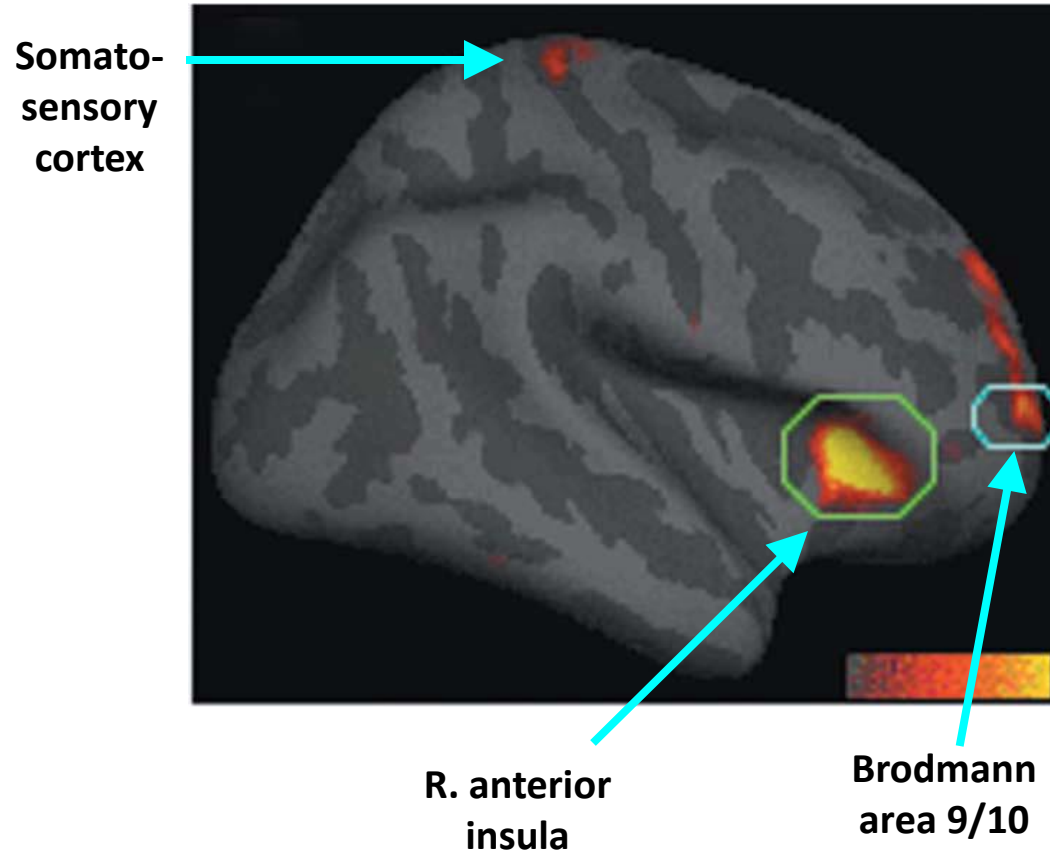
Decided to turn if over to a higher power

Letting go of delusions of control, following a wisdom path with an ethical foundation of generosity, compassion and loving-kindness

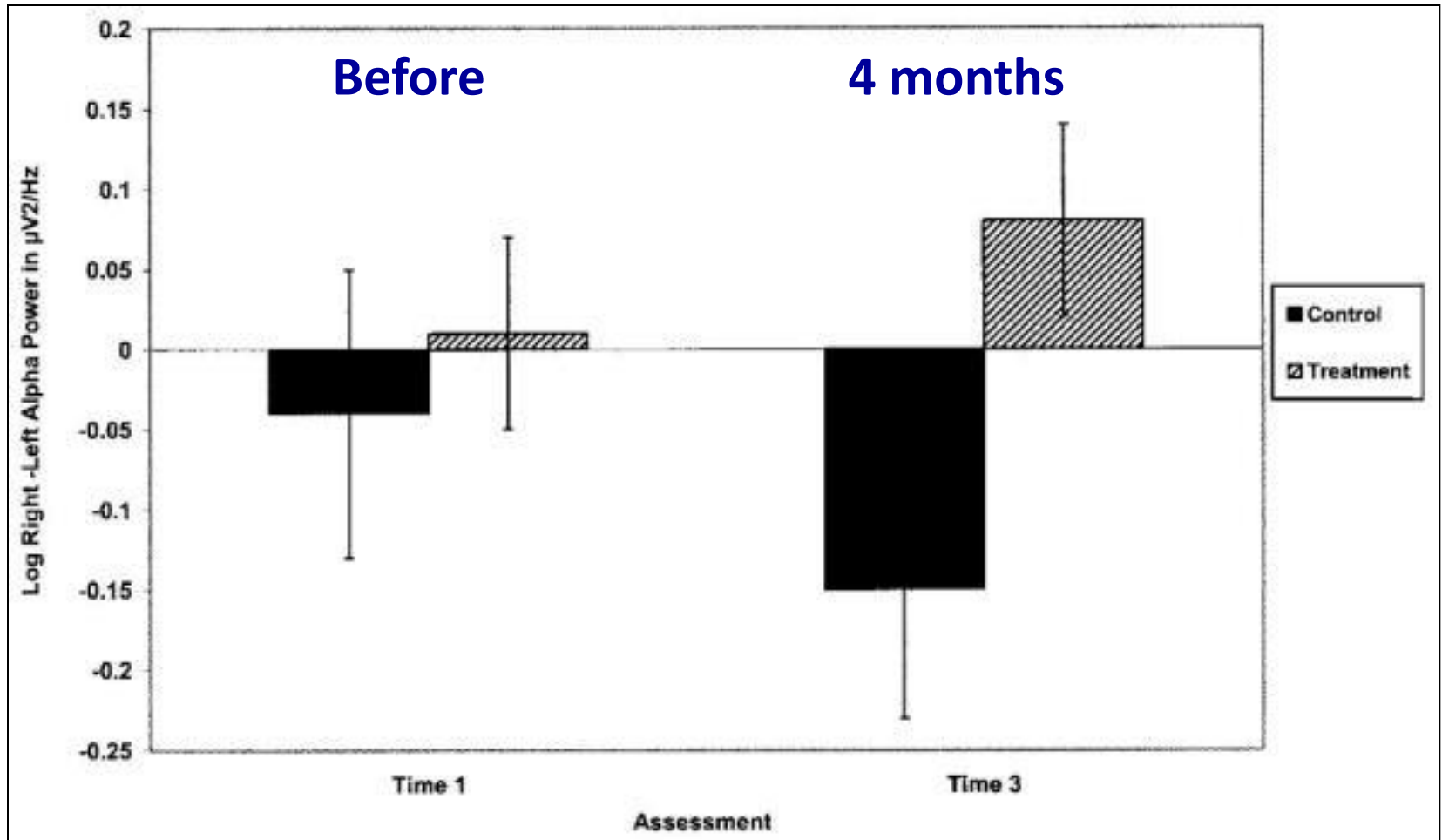
How does it work?



Meditation experience is associated with increased cortical thickness in specific areas

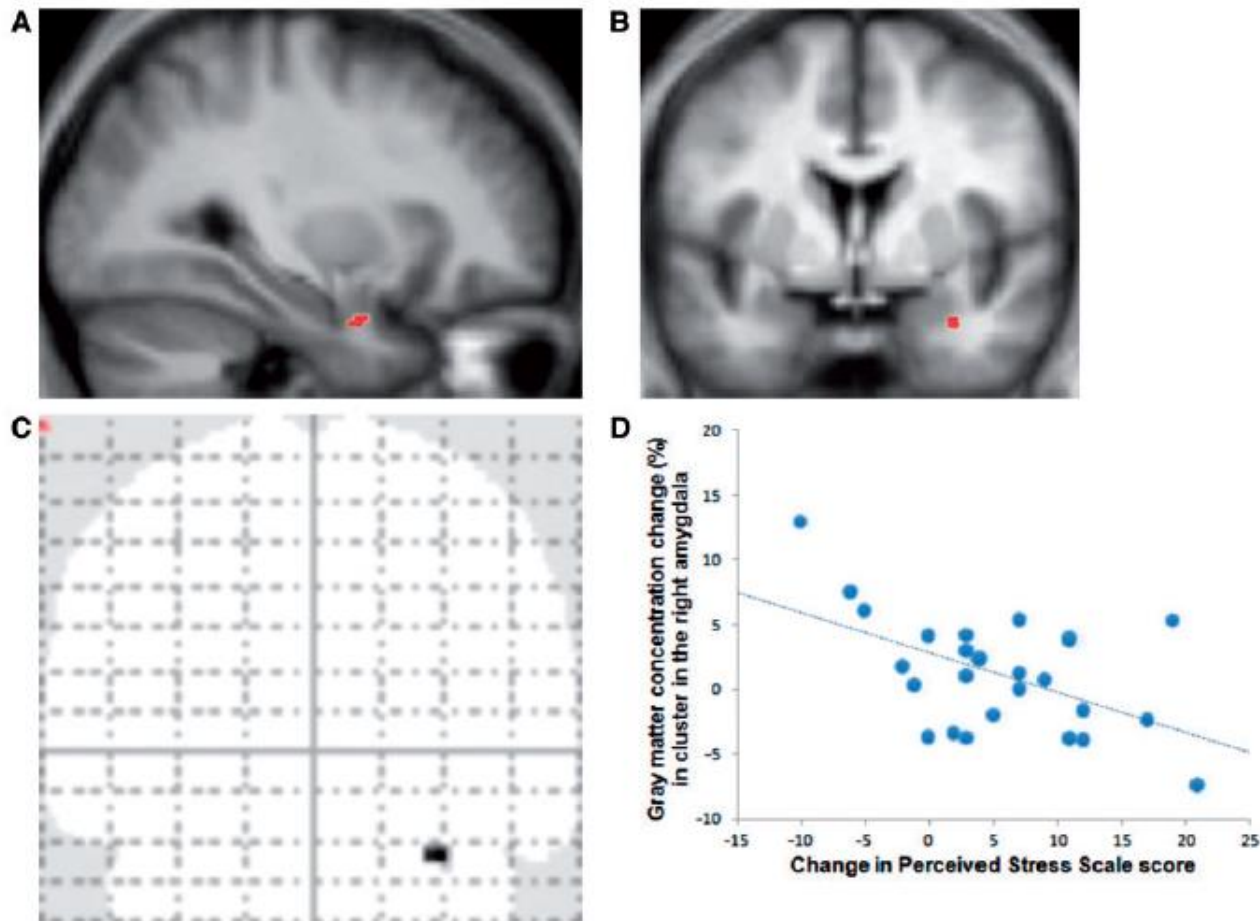


8-week MBSR training results in lasting changes in the brain



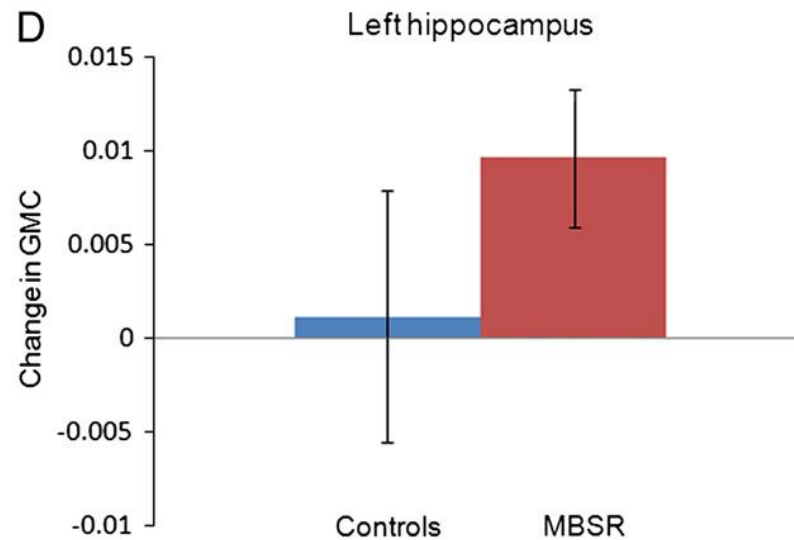
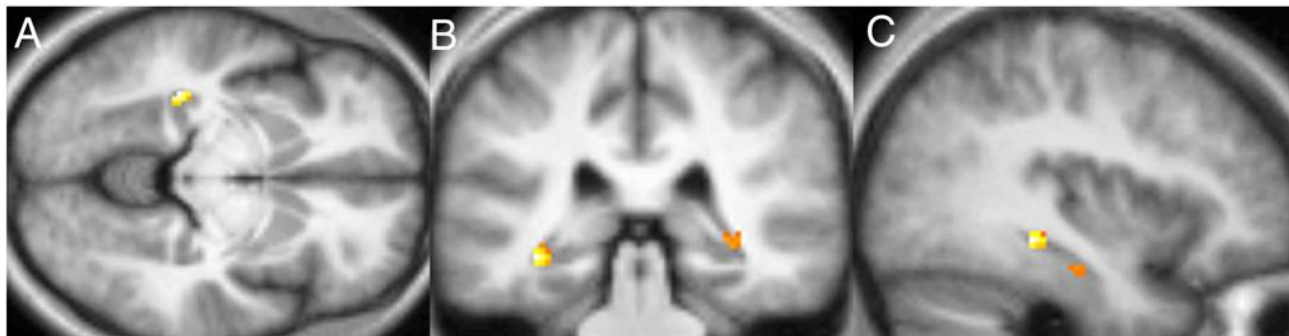
Stress reduction correlates with structural changes in the amygdala

Britta K. Hölzel,^{1,2} James Carmody,³ Karleyton C. Evans,¹ Elizabeth A. Hoge,⁴ Jeffery A. Dusek,^{5,6} Lucas Morgan,¹ Roger K. Pitman,¹ and Sara W. Lazar¹



Mindfulness practice leads to increases in regional brain gray matter density

Britta K. Hölzel^{a,b,*}, James Carmody^c, Mark Vangel^a, Christina Congleton^a, Sita M. Yerramsetti^a, Tim Gard^{a,b}, Sara W. Lazar^a



Minding One's Emotions: Mindfulness Training Alters the Neural Expression of Sadness

Norman A. S. Farb and Adam K. Anderson
University of Toronto

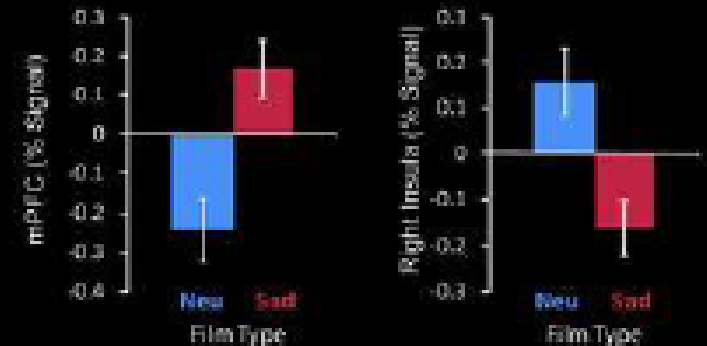
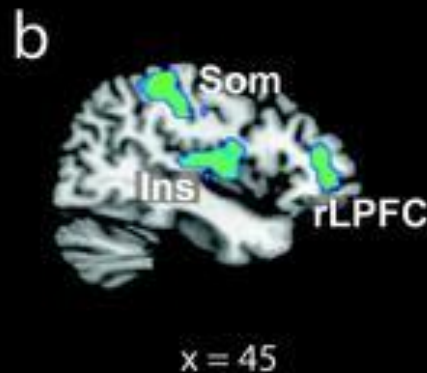
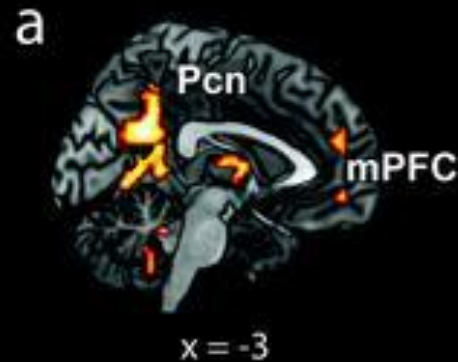
Helen Mayberg
Emory University

Jim Bean and Deborah McKeon
St. Joseph's Health Centre, Toronto, Canada

Zindel V. Segal
Centre for Addiction and Mental Health, Toronto, Canada
and University of Toronto

Sadness provocation elicits:
a) neural activation in midline self-referential processing areas,

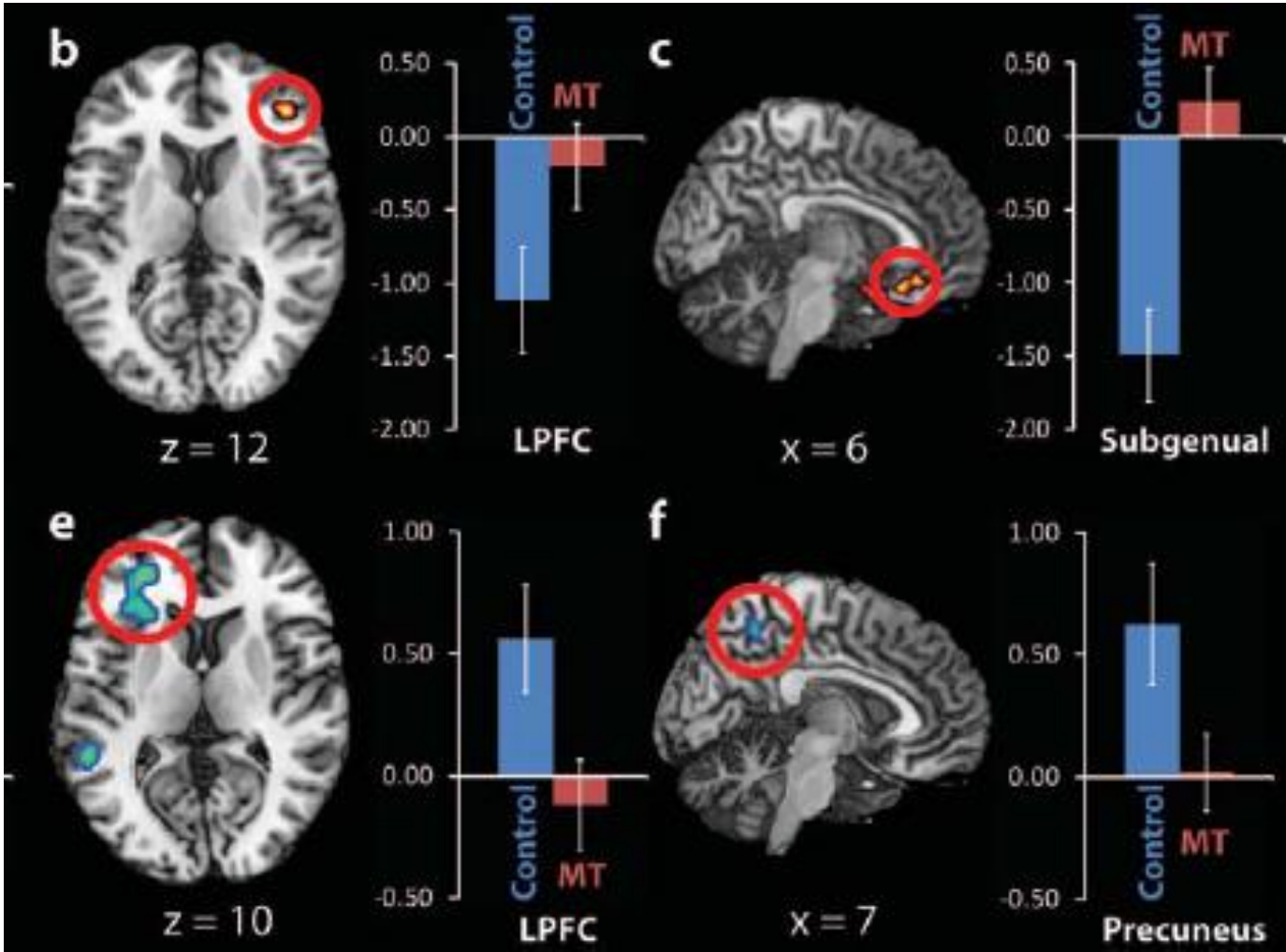
b) deactivation in visceral & somatic processing areas



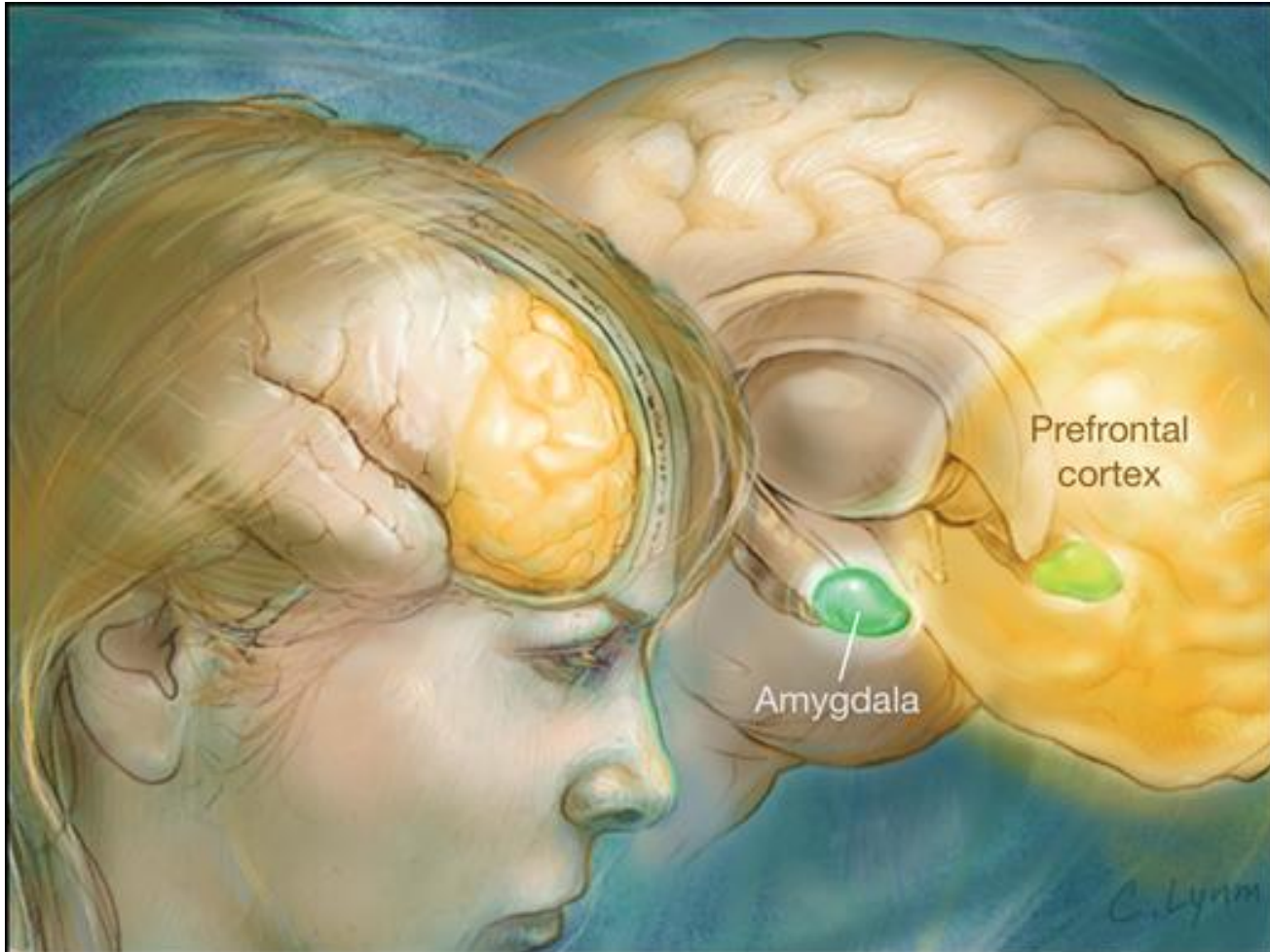
Mindfulness training reduces neural reactivity

Reduced deactivation (red = MT > control)

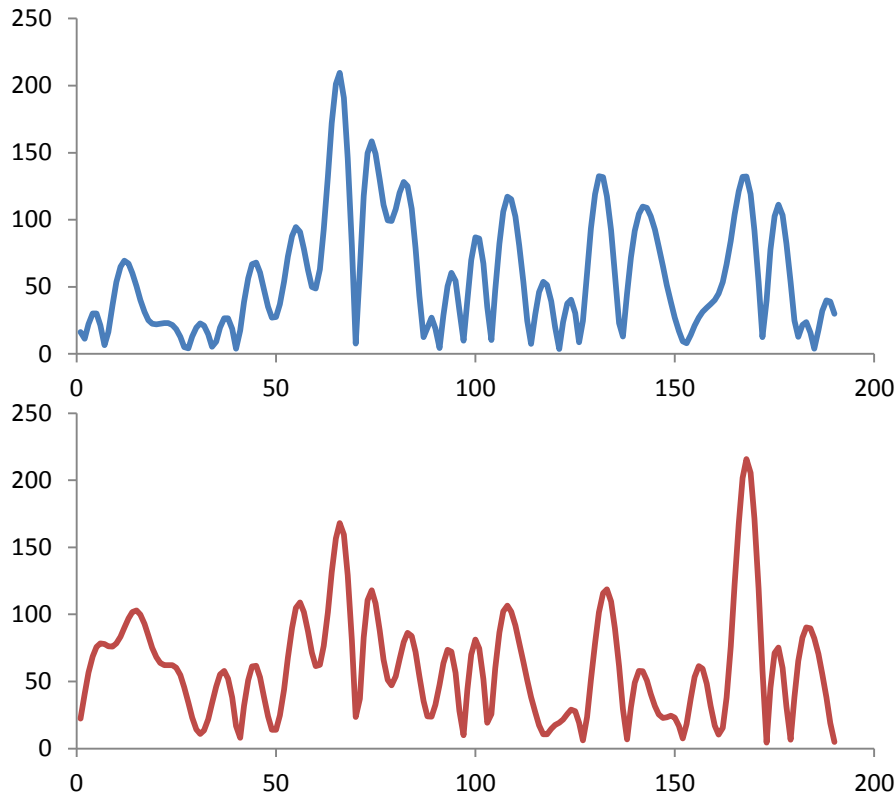
Reduced activation (blue = Control > MT)



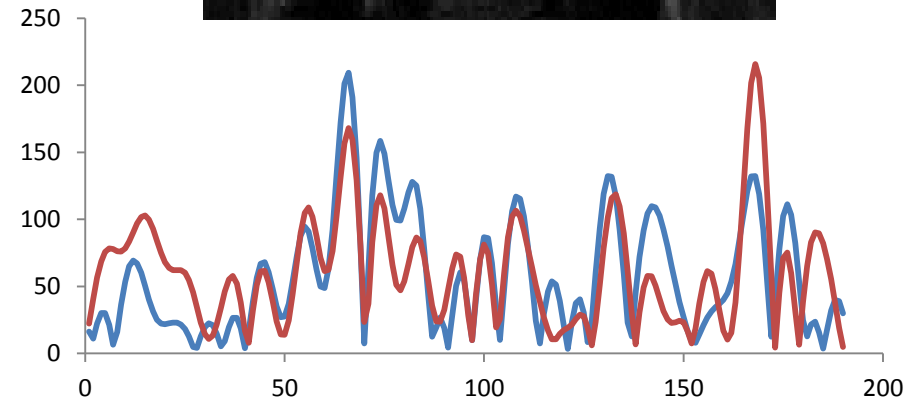
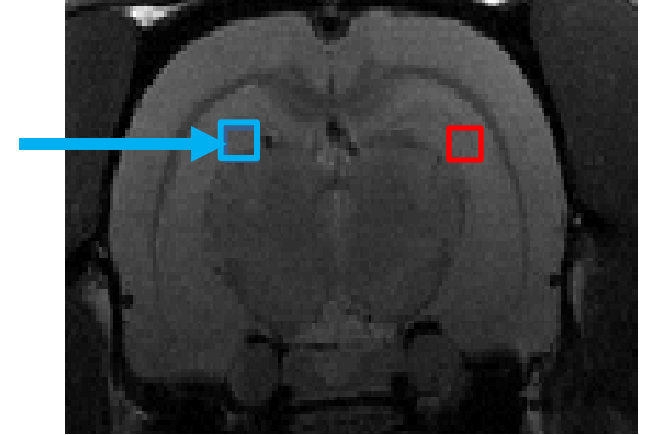
Emotion regulation pathways



Resting state fMRI provides a measurement of functional brain connectivity

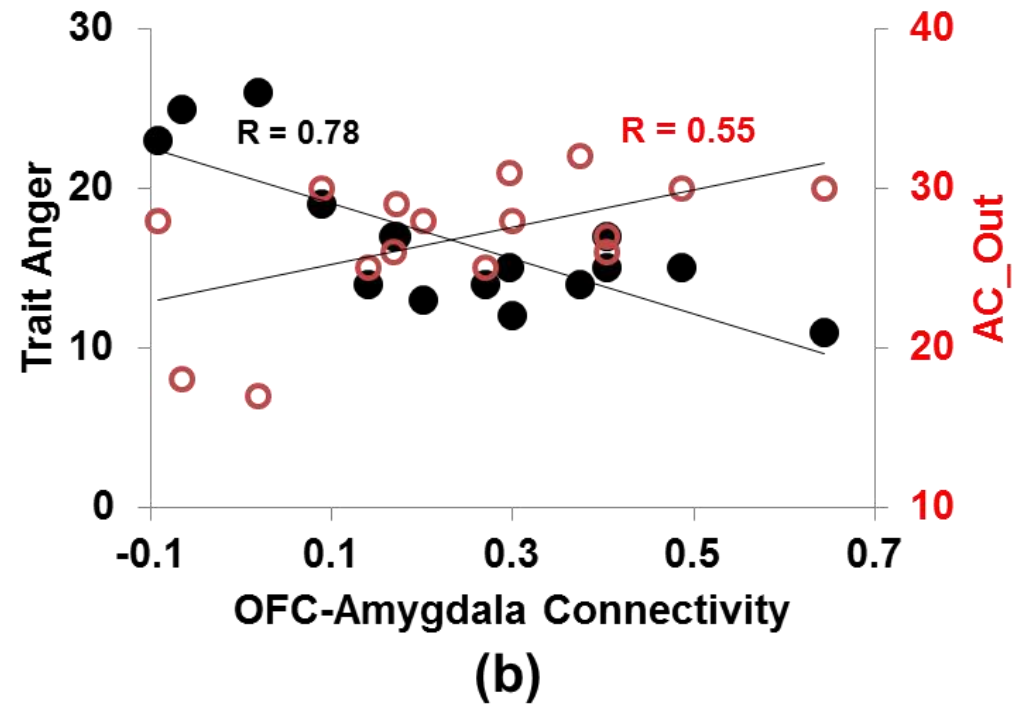
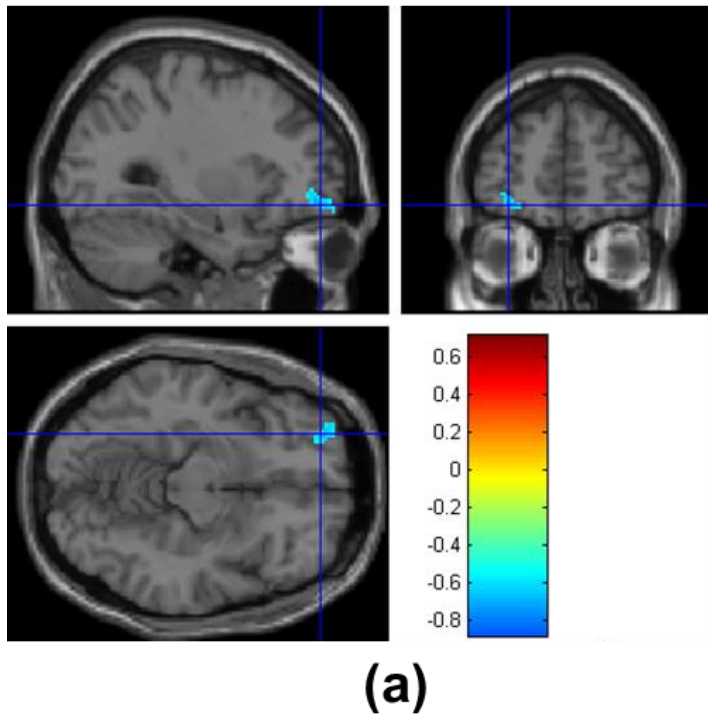


Seed ROI

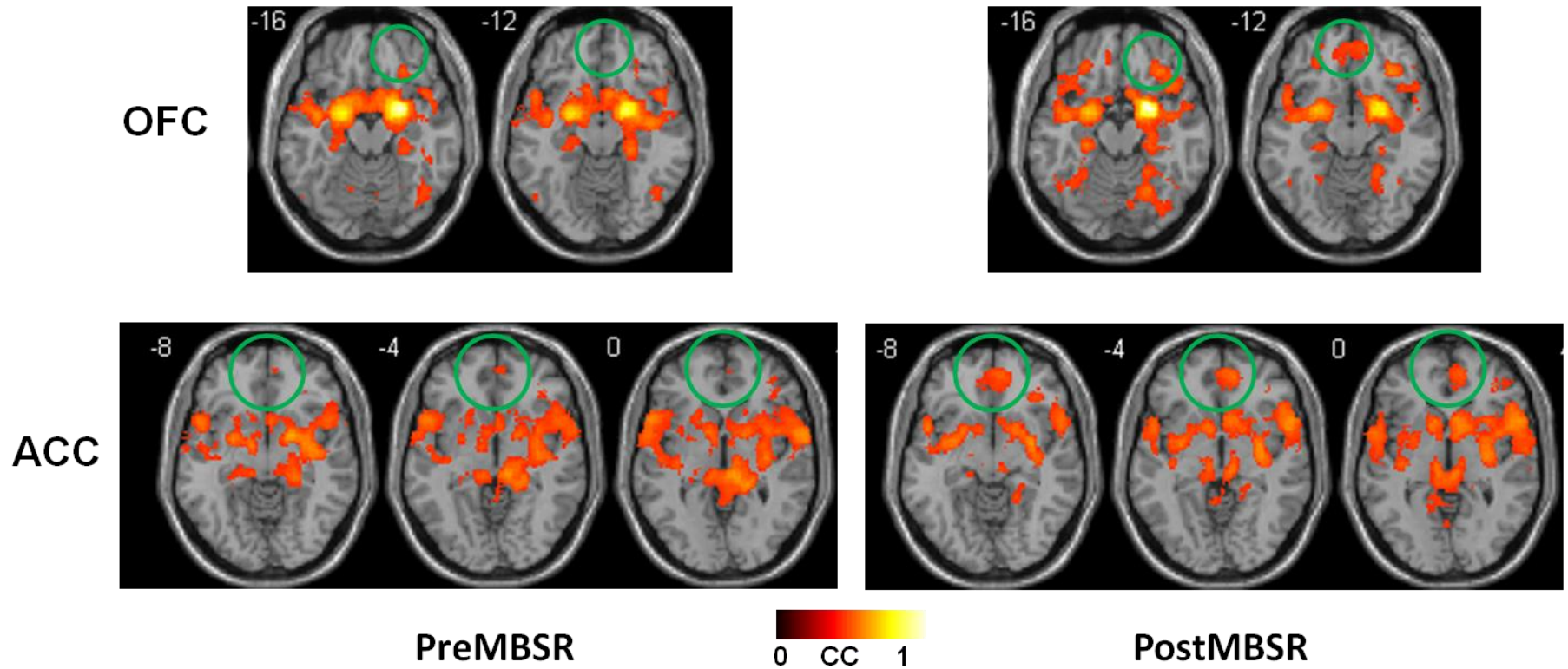


Correlation between seed ROI and other voxels

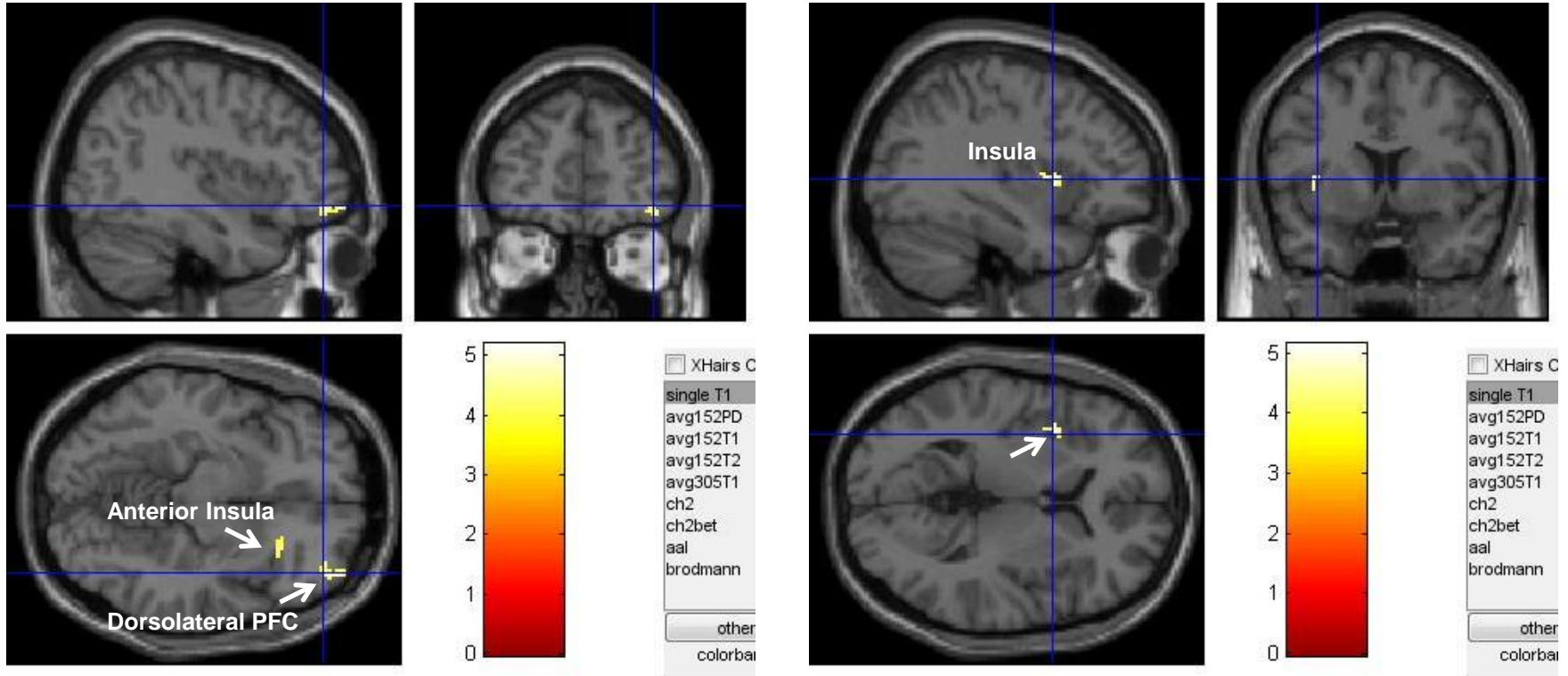
Amygdala-orbitofrontal functional connectivity is inversely related to trait differences in anger



MBSR training changes amygdala functional connectivity



Second sample: increased amygdala-prefrontal and amygdala-insula connectivity



Conclusions

- **To deliver a mindfulness-based intervention with fidelity, the teacher/therapist should have their own practice**

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- Improved emotion regulation achieved through sustained meditative practice depends on changes in the brain's emotion regulation circuitry

Conclusions

- To deliver a mindfulness-based intervention with fidelity, the teacher/therapist should have their own practice
- Rigorous clinical trials have demonstrated the effectiveness of mindfulness for depression, anxiety and prevention of relapse to addictive disorders
- Improved emotion regulation achieved through sustained meditative practice depends on changes in the brain's emotion regulation circuitry
- **A mindfulness approach is compatible with the 12 steps**

Additional information

MBSR UMass Center for Mindfulness

umassmed.edu/cfm

MBCT Oxford Mindfulness Center

oxfordmindfulness.org

Mindfulness-Based Relapse Prevention

mindfulrp.com

Professional training in MBCT and MBRP

- **UCSD Professional Training Inst.**
- **Omega Inst., Rhinebeck NY**

mbpti.org

eomega.org

12 steps and Mindfulness

- **Kevin Griffin**
- **Thérèse Jacobs Stewart**
- **Buddhist Recovery Network**

kevingriffin.net

mindroads.com

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Questions?

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