NATIONAL REGISTER
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CLINICAL WEBINARS

FOR HEALTH SERVICE PSYCHOLOGISTS

TRANSLATING RESEARCH TO PRACTICE

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Recent Advances in the Treatment of PTSD

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Dr. Mark Powers is a licensed clinical psychologist and the Director of Trauma Research at Baylor University Medical Center. His research is funded by NIH, DoD, DARPA, and HHS spanning three areas: a) treatment and prevention of PTSD, b) resilience training, and c) non-opioid pain management. Dr. Powers was certified in prolonged exposure therapy for PTSD at the University of Pennsylvania with Dr. Edna Foa and he was a Beck Scholar at the Beck Institute for Cognitive Therapy and Research. He has over 150 publications and is the Editor-in-Chief of the journal *Cognitive Behaviour Therapy.*

Disclosures/Conflicts of Interest

- Dr. Powers receives book royalties from Oxford University Press and Academic Press.

Learning Objectives

At the conclusion of this webinar, participants will be able to:

- Describe the nature and causes of PTSD
- Discuss the efficacy of Prolonged Exposure Therapy (PE) for PTSD
- Apply the principles of Prolonged Exposure Therapy in trauma focused care

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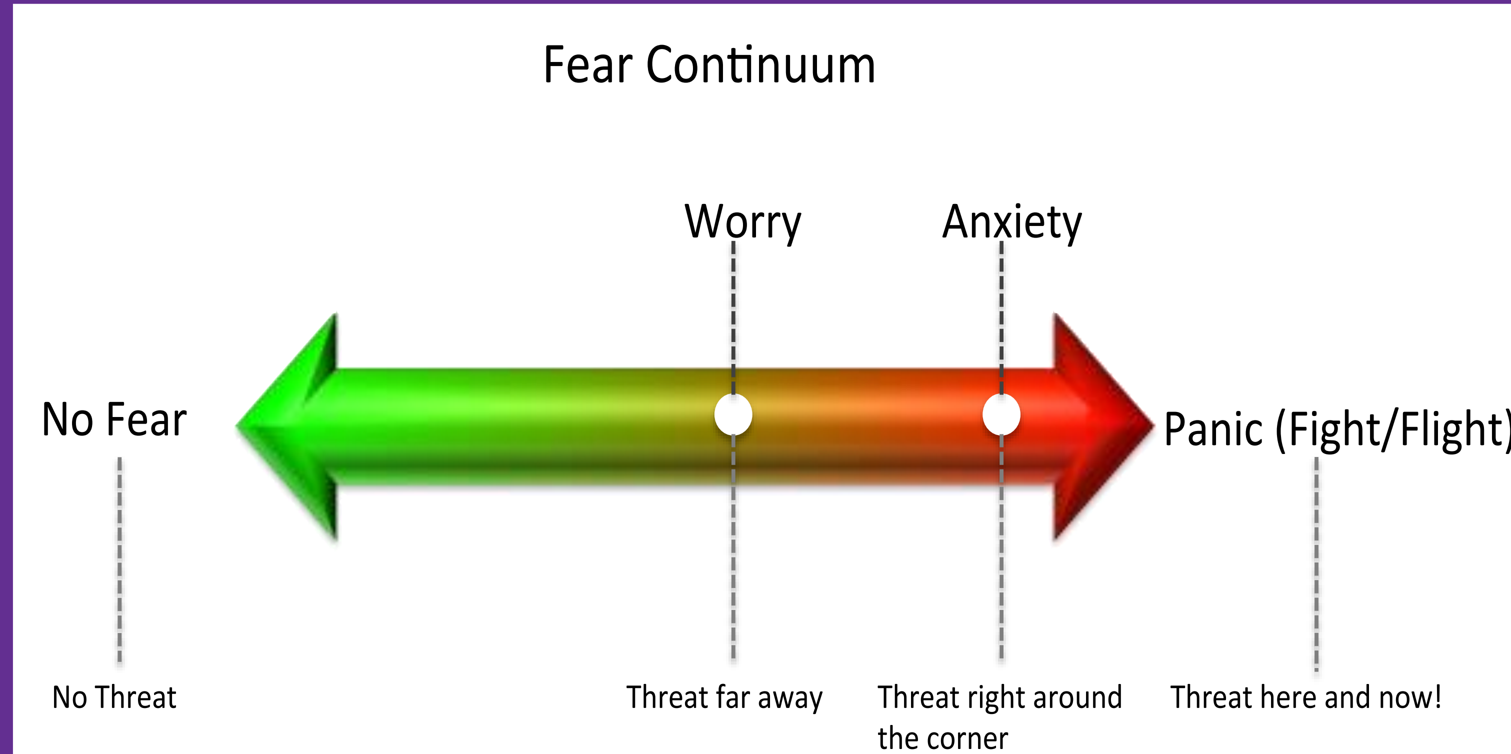
Overview

- A word about anxiety
- PTSD Past, Present, Future
  - Definition of “Trauma”
  - PTSD Symptoms & Diagnosis
  - What causes/maintains PTSD?
  - What are the most effective treatments for PTSD?
  - Therapy augmentation strategies
  - PTSD prevention
- Summary

A word about anxiety



Disorders:

- PTSD
- Panic Disorder (and agoraphobia)
- OCD
- Social Anxiety Disorder (& public speaking)
- Generalized Anxiety Disorder
- Specific Phobias (e.g. storms, dark, spiders, heights, flying, claustrophobia)

Introduction to PTSD

- How PTSD is Unique
  - Only disorder we know how/when it started
    - Criterion A
  - Only disorder with Re-experiencing
  - PTSD & OCD = “Specific Phobia with a much cooler story”

Trauma Definition: Criterion A

- Exposure to actual or threatened death, serious injury, or sexual violence in one of the following ways
  - Direct experience
  - Witnessing the event
  - Learning that the trauma occurred to a close family member or friend
  - Experiencing repeated or extreme exposure to details of traumatic events (e.g. trauma surgeons, first responders, police officers).

Example Traumas

- Natural Disasters
- Collisions (e.g. motor vehicle, motorcycle)
- Physical Assault
- Molestation
- Rape
- Combat
- Working directly with child suicides, homicides, sex trafficking
- NOT
    - Mental/Verbal Abuse
    - Difficult Childhood
    - Parental Divorce
    - Extreme Disappointments
    - Difficult breakups
    - Television Coverage of Traumas (unless informing you of a loved one etc.)

Most People will Experience a Trauma

- PTSD Diagnosis first appears in DSM-III (1980)
- DSM-III & DSM-III-R
  - **"Outside the range of usual human experience"**
  - **Removed now (DSM IV & 5)** given **80-90% of Americans will experience a Trauma**

  - (Kilpatrick, Resnick, Milanak, Miller, Keyes, & Friedman, 2013; Sledjeski, Speisman, & Dierker, 2008 from the NCS-R)

PTSD Symptoms & Diagnosis (1 month or more)

- Intrusion (need 1) Criterion B
- **Avoidance (need 1) Criterion C**
- Negative Mood and Cognitions (need 2) Criterion D
  - World is dangerous and I cannot cope
- Hyperarousal (need 2) Criterion E

- *Acute Stress Disorder: Symptoms 3 days to 1 mo

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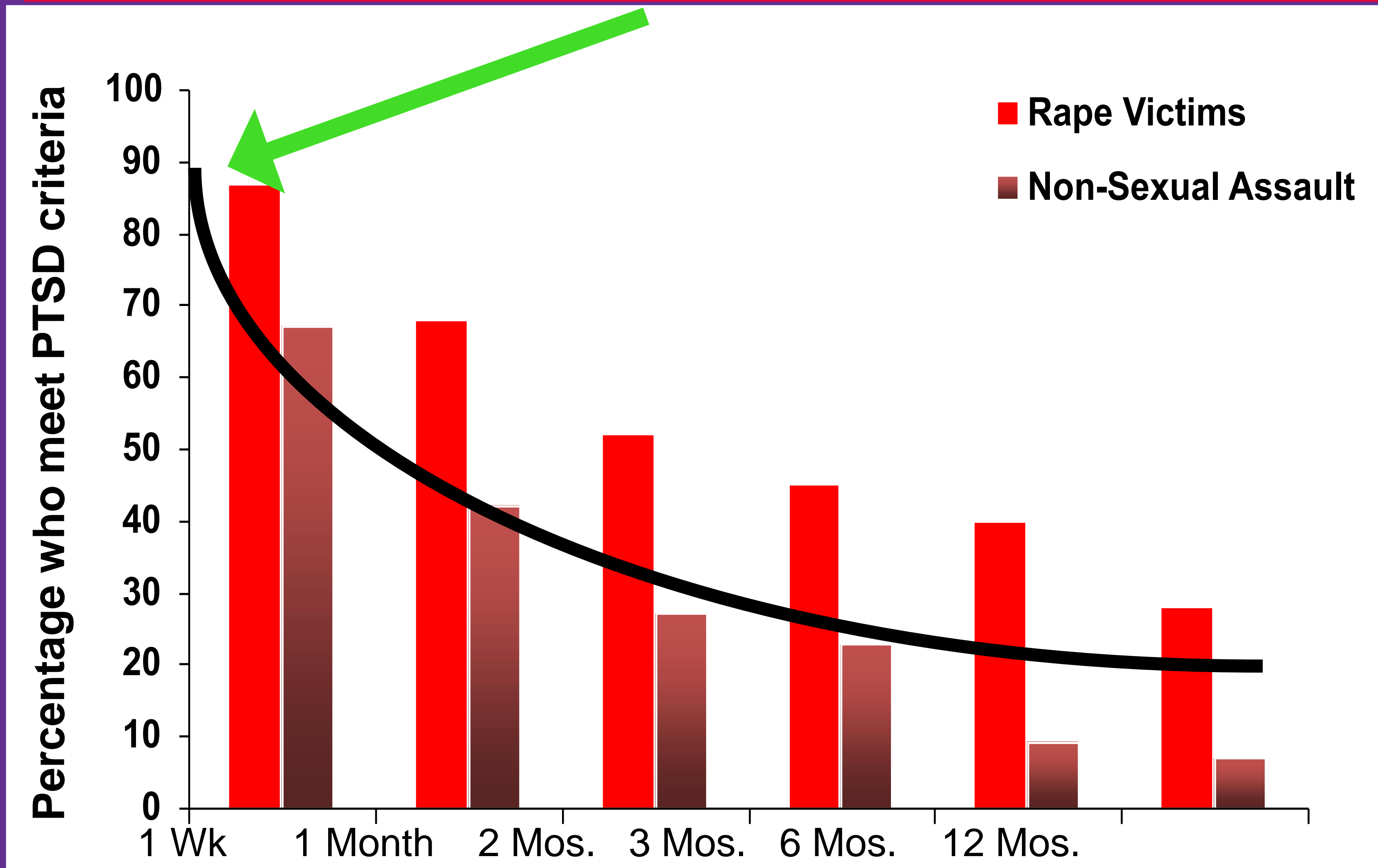
Prevalence

- Lifetime: 8.7%
- 12-Month: 3.5%

- *30-50% among rape, combat, and captivity survivors
- *Better with age? Rates are lower among older adults

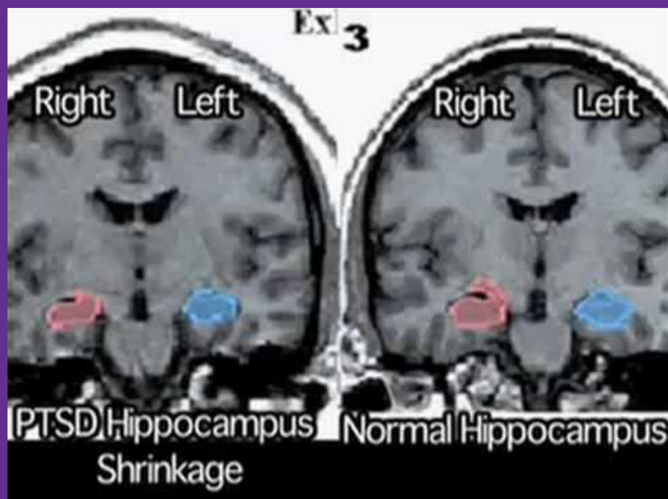
After Trauma

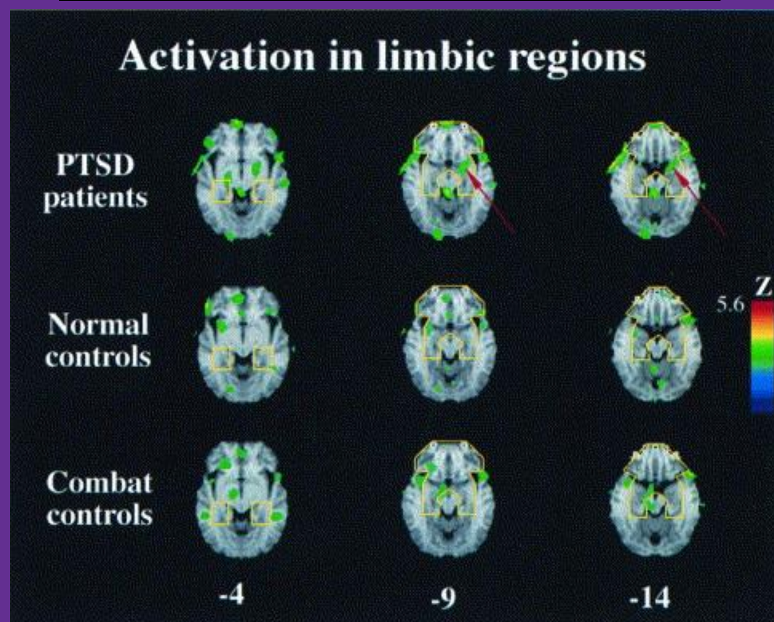
Most people have PTSD symptoms (Re-experiencing, Avoidance, Changes in Cognition and Mood, & Hyperarousal) but get better



(Breslau, Kessler, et al. 1998; Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992; Riggs Rothbaum, & Foa, 1995; Kessler et al. 1995; Gilboa-Schechtman & Foa, 2001; Kilpatrick & Resnick, 1993)

Predictors of PTSD





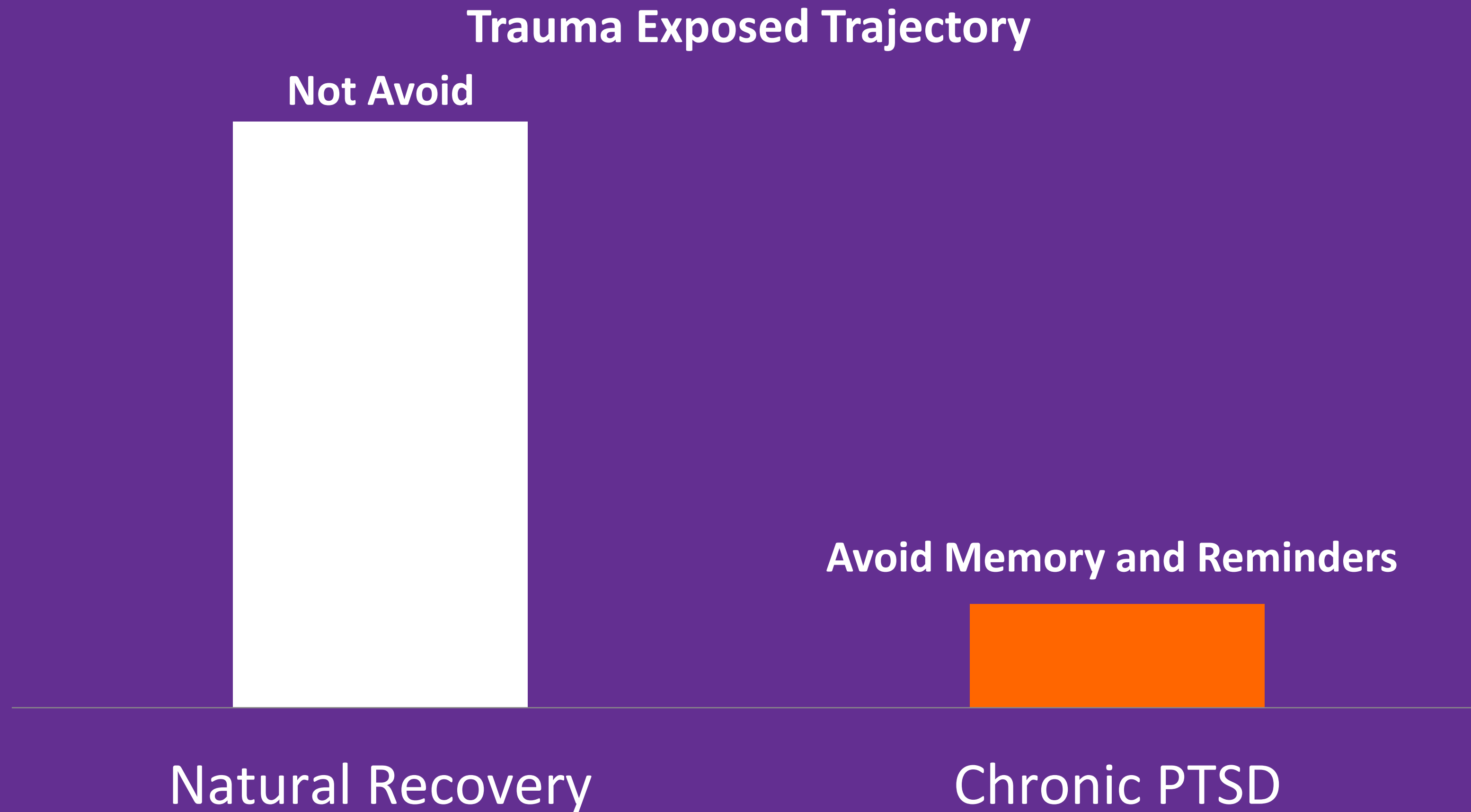
- Lower SES
- Female
- Younger
- Lack Hlth Ins
- Smokers
- Hx of MDD, other Anx Dis, and SUDs
- # of traumas/prior trauma Hx
- Trauma experienced directly
- Penetrating wounds
- Hippocampus Atrophy
- Norepinephrine & Cortisol
- Genes (BDNF SNP Val66Met)
- HPA Axis
- Low SES Social & Family Psych Hx
- Gunshot, younger age, psych Hx = 78% acuracy
- **Peritraumatic Dissociation** – largest in one meta-analysis but still only explained 9% of the variance VIDEO

Powers et al. 2014; Brewin et al. 2000; Ozer et al. 2003

Summary of Predictors

- **Younger** victims with pre-existing **psychiatric histories**
- **Higher injury severity**
- **Females**
    - Males experience more traumas - externalizing
    - Females are most likely to maintain symptoms following trauma - internalizing
- Victims of **Interpersonal & Intentional Traumas** (Rape, assault, combat)
- Comorbid **Substance Use Disorders**
- **Lack of social support**

What is the most reliable predictor?



Breslau et al. 1999; Foa, Stein, & McFarlane, 2006; Gil & Caspi, 2006; Karamustafalioglu et al. 2006; Maes et al. 1998; Myers, VanMeenen et al. 1012; Myers, VanMeenen, McAuley et al. 2012; North et al. 2004; North et al. 1999; O'Donnell et al. 2007; Solomon et al. 2009; Yoon et al. 2009

How do we measure/diagnose PTSD?

- **Foa Measures**
  - PSSI-5: Posttraumatic Stress Disorder Symptom Scale Interview for DSM-5 (Interview)
  - PDS-5: Posttraumatic Diagnostic Scale for DSM-5 (Self-report)
- **Other Example Measures**
  - CAPS-5: Clinician-Administered PTSD Scale for DSM-5 (Interview)
  - PCL-5: PTSD Checklist for DSM-5 (Self-report)

How do we Treat PTSD?

Treatments for PTSD

Learn To:

- Live/cope **with** PTSD
  - Medications
  - Talk Therapy/Counseling
  - Support Groups
  - Service Dogs
  - Relaxation
  - Yoga
  - Meditation
  - Coping Strategies
  - Exercise
- Live **without** PTSD
  - Trauma focused Exposure Therapies
    - PE, CPT, EMDR

Prolonged Exposure Therapy (PE) for PTSD

9-12 weekly or twice weekly 90-minute sessions

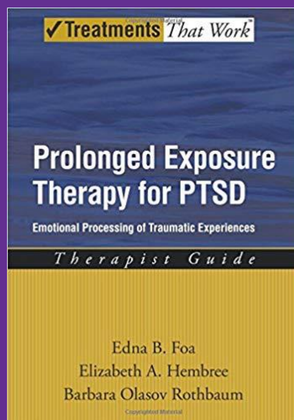
- **Psychoeducation** (sessions 1-2)
- ***In vivo* exposure** (sessions 2-12)
  - to trauma reminders in life as homework
- **Imaginal exposure** (sessions 3-12)
  - revisiting the trauma memory (30-45 minutes during sessions)
- **Processing** (sessions 3-12)
  - Following each imaginal exposure session (15 minutes)

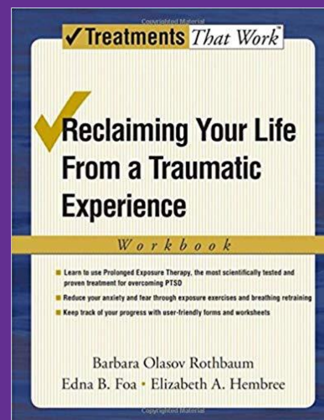
- *Exposure needs to be:
  - Systematic, Deliberate, Repeated, Prolonged
- *While fading safety behaviors/avoidance

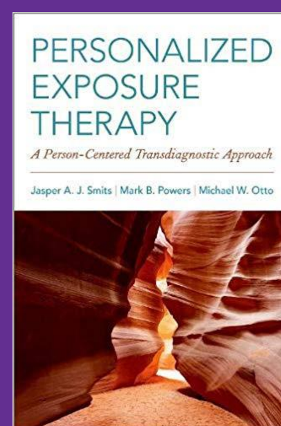
Session	Components	Homework
Phone Contact	• Identify Patient's Core Threats	• Fill out Intake Packet Including Initial Measures
Intake	• Set agenda • Presenting Problem • Confirm Patient's Core Threats • Working Diagnoses • Initial Treatment Plan	• Fill out Domain Specific Measures
1	• Set agenda • Overall Treatment Rationale • Gather information about symptoms • Assign Homework	• Listen to the session recording once • Fill out the PDS-5, PTCI, and PHQ-9
2	• Set agenda • Homework review • Common reactions to trauma • Rationale for in vivo exposure • Introduce SUDs scale • Create in vivo hierarchy • Assign homework	• Listen to the session recording once • In vivo exposure (60mins/day) • Fill out the PDS-5, PTCI, and PHQ-9
3	• Set agenda • Homework review • Rationale for imaginal exposure • Imaginal exposure • Processing • Assign homework	• Listen to the session recording once • In vivo exposure (60mins/day) • Imaginal exposure (60mins/day) • Fill out the PDS-5, PTCI, and PHQ-9
4-11	• Same as session 3 • Session 6 or 7 imaginal exposure Hot Spots	• Same as session 3
12	• Termination • Homework review • Imaginal exposure (entire memory) • Review of the hierarchy • Processing • Relapse prevention	

PE Training Opportunities & Resources

- PE Training by Dr. Edna Foa
  - https://www.med.upenn.edu/ctsa/workshops_ptsd.html
- PE for Veterans: STRONG STAR Training Initiative
  - https://www.strongstartraining.org/what-we-do
- Manuals by Dr. Foa
- Chapter on PE by Dr. Powers







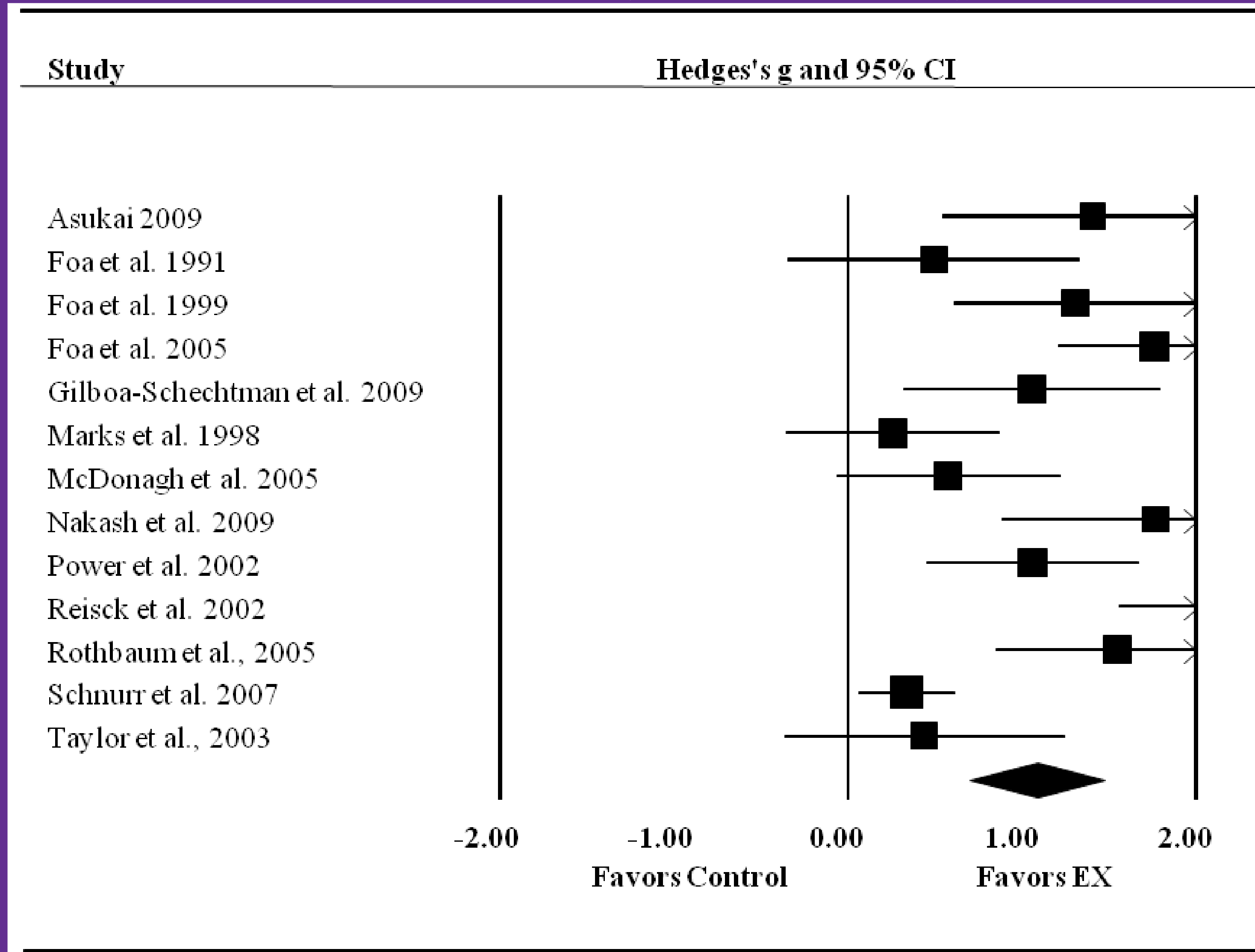
How Effective is PE?

Meta Analysis of 13 PE RCTs

Large effect size (*g* = 1.08) relative to control conditions

Average PE-treated patient fared better than 86% of those in the control conditions

NNT = 2.49 (SSRI NNT for MDD = 9)



Powers, Halpern, Ferenschak, Gillihan, & Foa, 2010 *Clinical Psychology Review*

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Overall

- Posttreatment:
  - 85% response rate (significantly better)
  - Loss of diagnosis (no longer meet criteria for PTSD)
    - 50% (Intent to treat)
    - 70% (Completers)
  - 20% dropout rate
- Long-term follow-up
  - Loss of diagnosis 80%
- *Recent data may suggest more modest outcomes with military personnel
- Relative Efficacy/Effectiveness & Dropout
  - Similar to other trauma focused therapies (e.g. CPT, EMDR)

(Bisson et al. 2013; Bradley et al. 2005; Cusa ck et al. 2016; *Foa et al. 2018; Powers et al. 2010; Resick et al. 2012; Watts et al. 2013)

Medications

- FDA Approved
  - Zoloft
  - Paxil

Room for Improvement?

- 20% of patients dropout
- 15% of completers do not respond
- More modest outcome in military personnel

Augmentation

Improve:
Tolerability, Efficacy, Speed, Generalizability

Choose between Efficacy OR Tolerability

Increase Tolerability = Decrease Efficacy

- Benzodiazepines, Alcohol, Safety Behaviors, Avoidance
  - Interfere with consolidation of extinction learning
  - Misattribution of treatment gains (I'm ok as long as I have my benzo) – patient learns conditional safety

Hart, Panayi, Harris, & Westbrook, 2014; Powers, Smits, & Telch, 2004; Powers, Smits, Whitley, Bystritsky, & Telch, 2008

Choose between Efficacy OR Tolerability

Increase Efficacy = Decrease Tolerability

- Cognitive Enhancers: Yohimbine hcl, DCS, Methyline blue, Exercise
- Increase efficacy and durability of gains
- But can decrease tolerability (Yohimbine/Exercise) and enhance whatever is learned:
  - Good sessions (e.g. low end fear)
  - Bad sessions (e.g. high end fear)

(Tuerk, Wangelin, Powers, Smits, Acierno, Myers, Orr, Foa, & Hamner, 2018; Powers, Smits, Otto, Sanders, & Emmelkamp, 2009; Powers, Medina, Burns, Kauffman, Monfils, Asmundson, Diamond, McIntyre, & Smits, 2015; Smits, Rosenfield, Otto, Powers, Hofmann, telch, Pollack, & Tart, 2013; Zoellner, Telch, Foa et al. 2017)

Vagus Nerve Stimulation may accomplish both

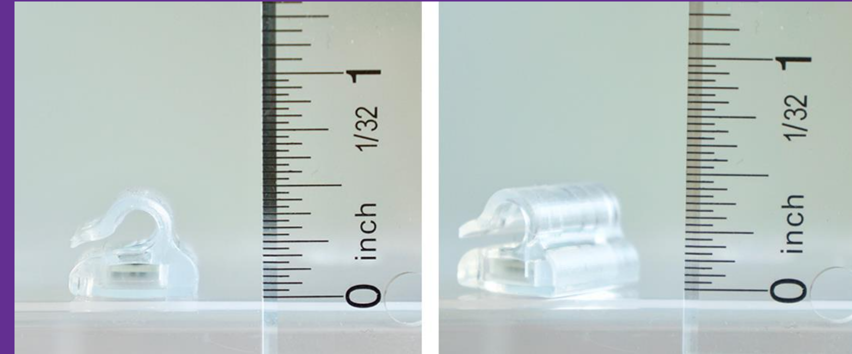
Vagus Nerve Stimulation

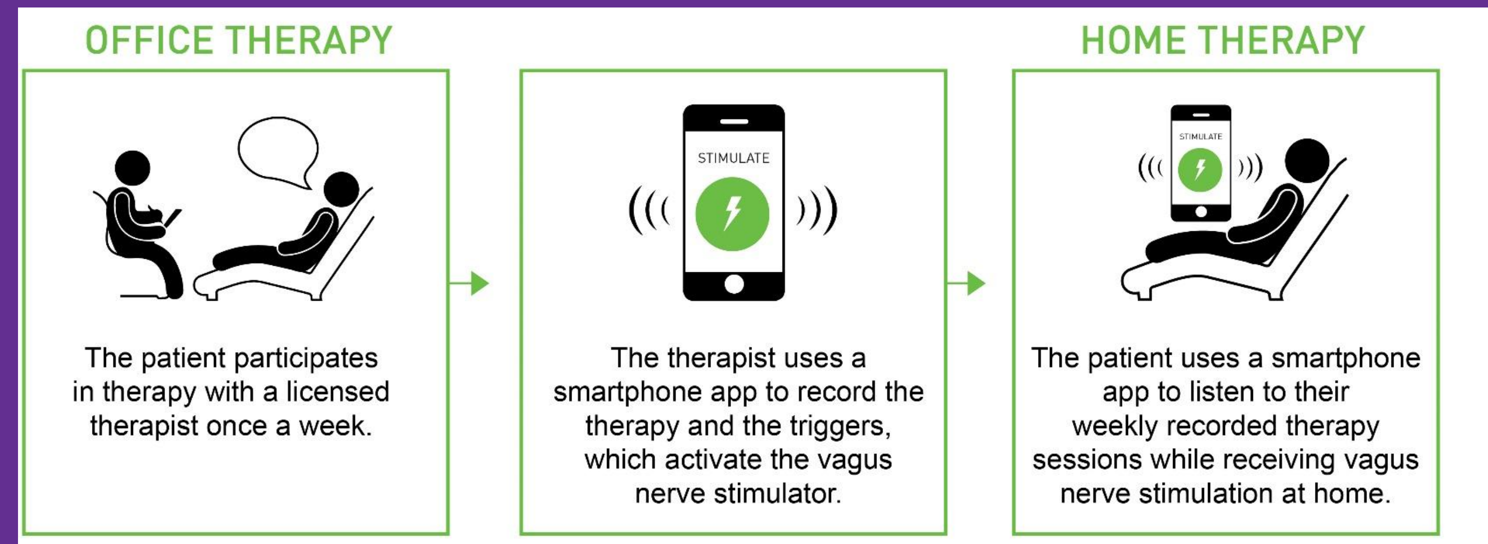
- **Anxiolytic:** 20% efferent stimulation of parasympathetic NS
- **Cognitive enhancer:** 80% afferent stimulation of brain plasticity
- Preclinical studies show 10-30 times faster/more effective extinction in animal model of PTSD
- **VNS in 80,000** patients for other indications (epilepsy, depression, tinnitus, stroke rehab)
- **But:** Existing Device is permanent, wires get damaged, clavicle stimulator large

Engineer et al. 2011, *Nature;* Noble et al. 2017, *Translational Psychiatry*

DARPA, BUMC, UTSW, UTD Trial

- **New device**
  - Smaller (1-inch incision left side)
  - Single incision (30 minutes or less)
  - Removable
  - No wires
  - No clavicle implant
- **New Stimulation Parameters**
  - .5 second .8mA every 7 seconds during exposure
    - Most effective
    - Prevents tolerance
- First in human trial for device
- First in human trial of VNS for PTSD





Final Research Target: Prevention

- Multisite RCT of secondary prevention of PTSD in Level 1 Trauma Centers
- Intervention delivered via tablet:
  - Trauma/PTSD Psychoeducation

  +

  - Visuo-spatial task to interrupt consolidation/reconsolidation of trauma memory

Kessler, Holmes, Blackwell, et al. 2018

Summary

- Who is at risk for PTSD?
  - People who push away trauma reminders
- What causes PTSD?
  - Primarily Avoidance (among a host of other predictors)
- Effective treatments for PTSD?
  - Variants of trauma focused therapy (e.g. variants of CBT: PE, CPT, EMDR)
- Recent Advances
  - VNS augmentation may increase tolerability and efficacy of trauma focused therapy for PTSD
  - Visuo-Spatial tasks and psychoeducation may lead to secondary prevention of PTSD

References/Citations

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Q&A

- Dr. Sammons will read select questions that were submitted via the Q&A feature throughout the presentation.
- Due to time constraints, we will not be able to address every question asked.

Thank You for Joining Us!

- Attendees eligible for CE credit may refer to the chat box for a direct link to the CE evaluation—or you may type this URL into a new browser window: bit.ly/ptsdeval
- If you have comments or feedback regarding this webinar, please email **CESupport@nationalregister.org**
- We hope you can attend our next webinar on June 12: Clinical Exemplars for Primary Care and Brief Treatment Settings with Bridget Beachy, PsyD.

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