

Common and Specific Factors in Behavioral Treatment

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Common and Specific Factors

- Clear separation in pharmacotherapy research
 - Specific factors are what's inside the pill
 - Common factors are everything else
 - FDA: Requires controlling for the placebo effect
- Much more difficult in behavioral therapies
 - Specific factors are theoretical/hypothetical mediators
 - Common factors are everything else that promotes change
 - True placebo control is impossible

Specific Treatments Have:

- Implicit or explicit assumptions about etiology and/or mechanism of change
- Prescribed procedures that are presumed to be specific, essential, active components
- Proscribed procedures

and may also have

- specific training, certification, licensing

No Shortage of Specific Treatments for Addictions

Acceptance and Commitment Therapy, Acupuncture, Affective Contra-Attribution Therapy, Assertive Community Treatment, Aversive Counterconditioning, BAC Discrimination Training, Behavior Contracting, Behavioral Marital Therapy, Behavioral Self-Control Training, Bibliotherapy, Brief Intervention, Brief Strategic Family Therapy, Biofeedback, CENAPS, Client-Centered Therapy, Cognitive Therapy, Community Reinforcement Approach, Constructive Confrontation, Contingency Management, Covert Sensitization, Cue Exposure, Developmental Counseling, Dialectical Behavior Therapy, Existential Therapy, Electrical Stimulation of the Head, Eye Movement Desensitization and Reprocessing, Functional Analysis, Functional Family Therapy, Group Process Psychotherapy, Guided Self-Change, Hypnosis, Matrix Model, Medical Management, Mindfulness, Minnesota Model, Moderation Management, Moral Reconciliation Therapy, Motivational Enhancement Therapy, Motivational Interviewing, Multidimensional Family Therapy, Multisystemic Therapy, Occupational Therapy, Problem Solving, Psychodynamic Psychotherapy, Psychoeducation, Rational Emotive Therapy, Rational Recovery, Recreational Therapy, Relapse Prevention, Relaxation Training, Reminiscence Therapy, Scared Straight, Secular Organization for Sobriety, Self-Monitoring, Sensory Deprivation, Social Skills Training, Stress Management, Solution-Focused Therapy, Supportive-Expressive Psychotherapy, Synanon, Systematic Desensitization, Teen Challenge, Therapeutic Community, Transcendental Meditation, Twelve-Step Facilitation Therapy, Unilateral Family Therapy, Videotape Self-Confrontation, Women for Sobriety

Reasons for Doubt About Specific Therapeutic Action

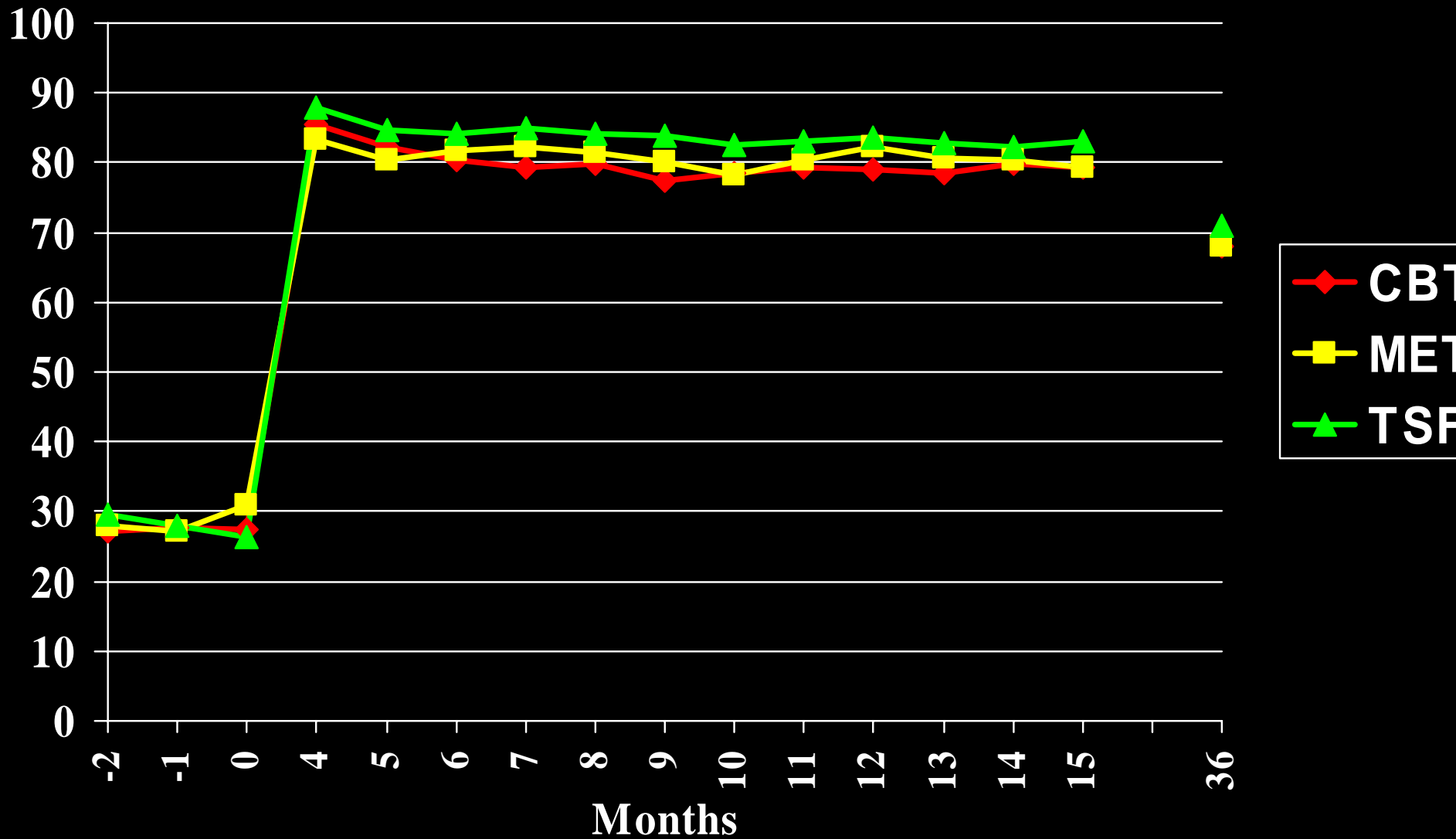
- 1. Different “specific” therapies often (but not always) yield similar outcomes**

Project MATCH

1726 clients randomized to three distinct, manual-driven, theoretically-based treatments

- Cognitive-Behavioral Treatment (CBT)
- 12 Step Facilitation (TSF)
- Motivational Enhancement Therapy (MET)

Mean Percent Days Abstinent (Outpatients)



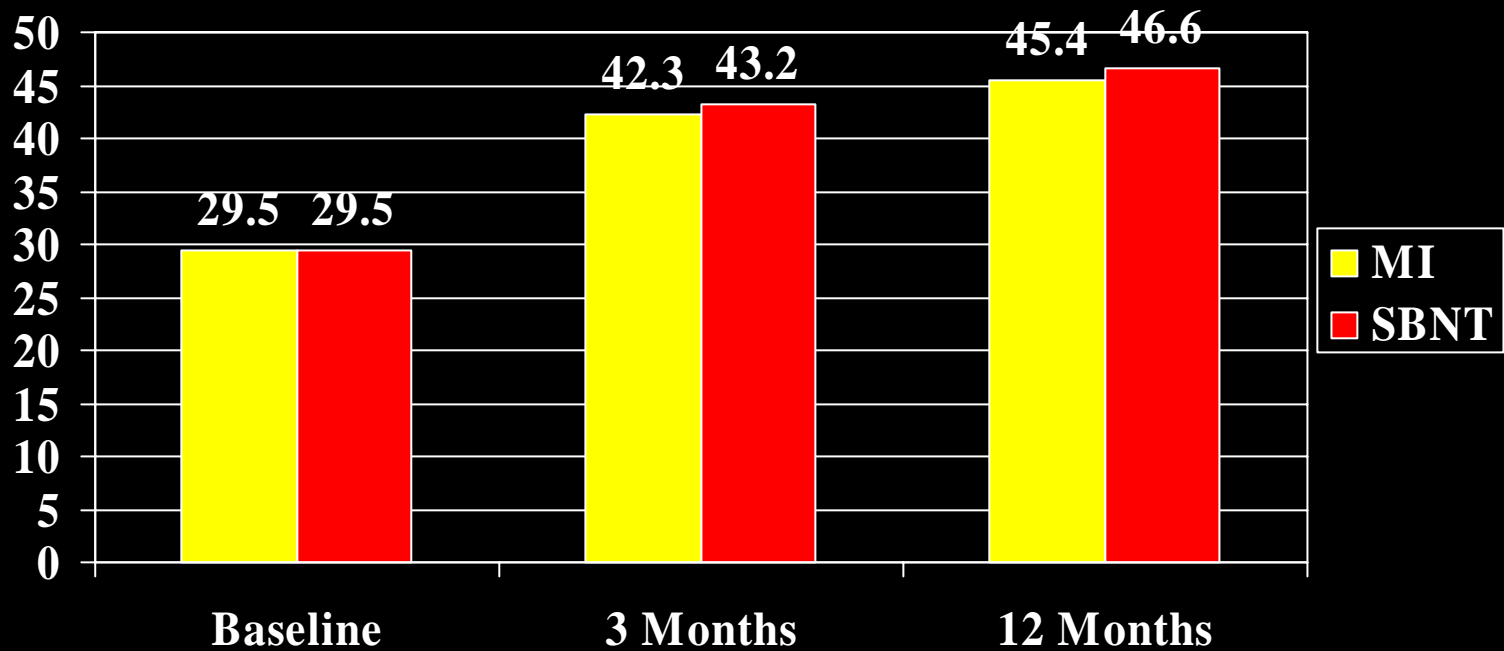
UK Alcohol Treatment Trial

British Medical Journal, 2005, 331:541-545

- 742 clients with alcohol problems, randomly assigned to 3 sessions of MET or 8 sessions of social behavior and network therapy

UKATT Outcome

Percent Days Abstinent

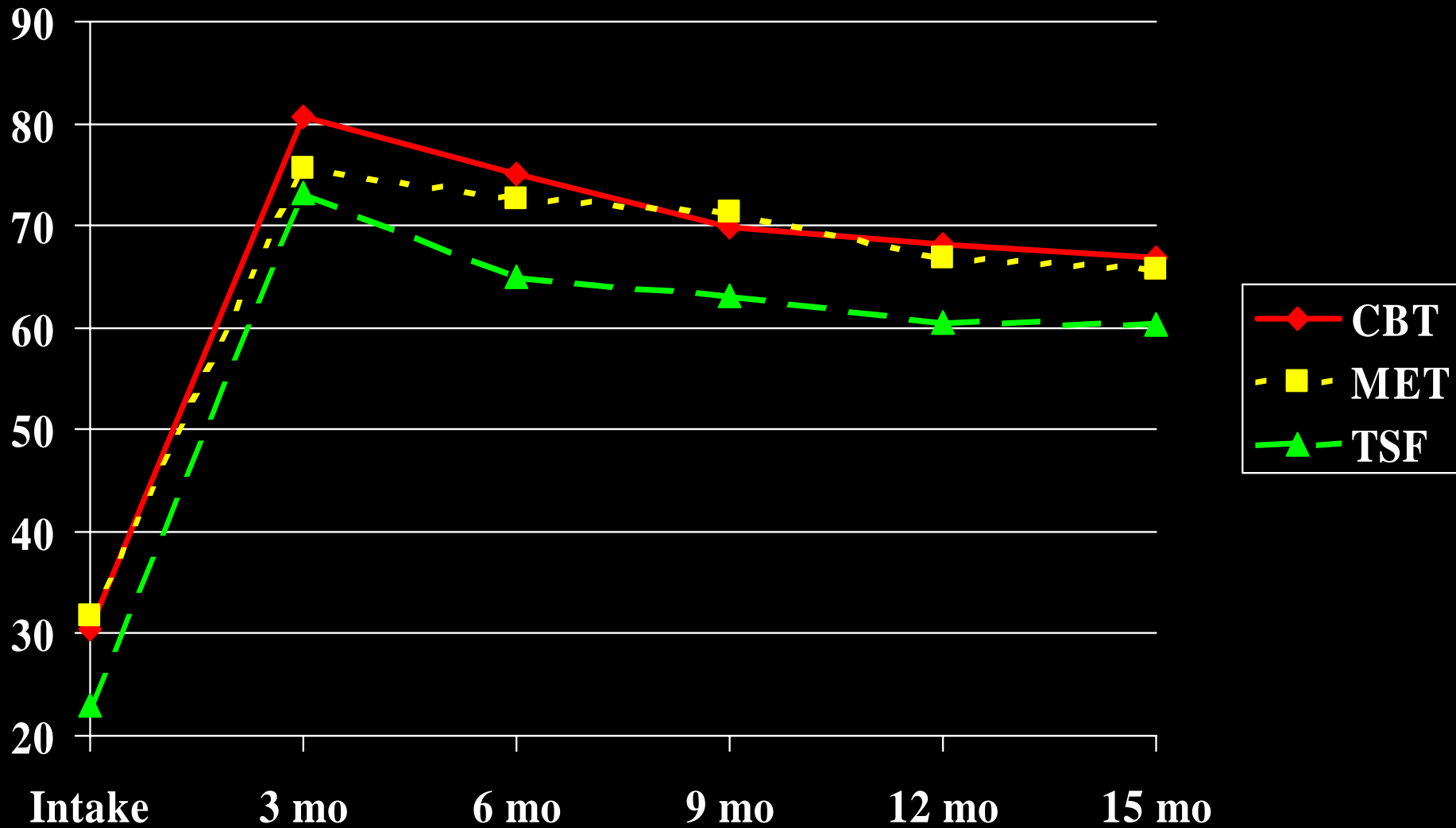


Reasons for Doubt About Specific Therapeutic Action

1. Different “specific” therapies yield similar outcomes
2. **Wide variation in efficacy across sites or therapists**

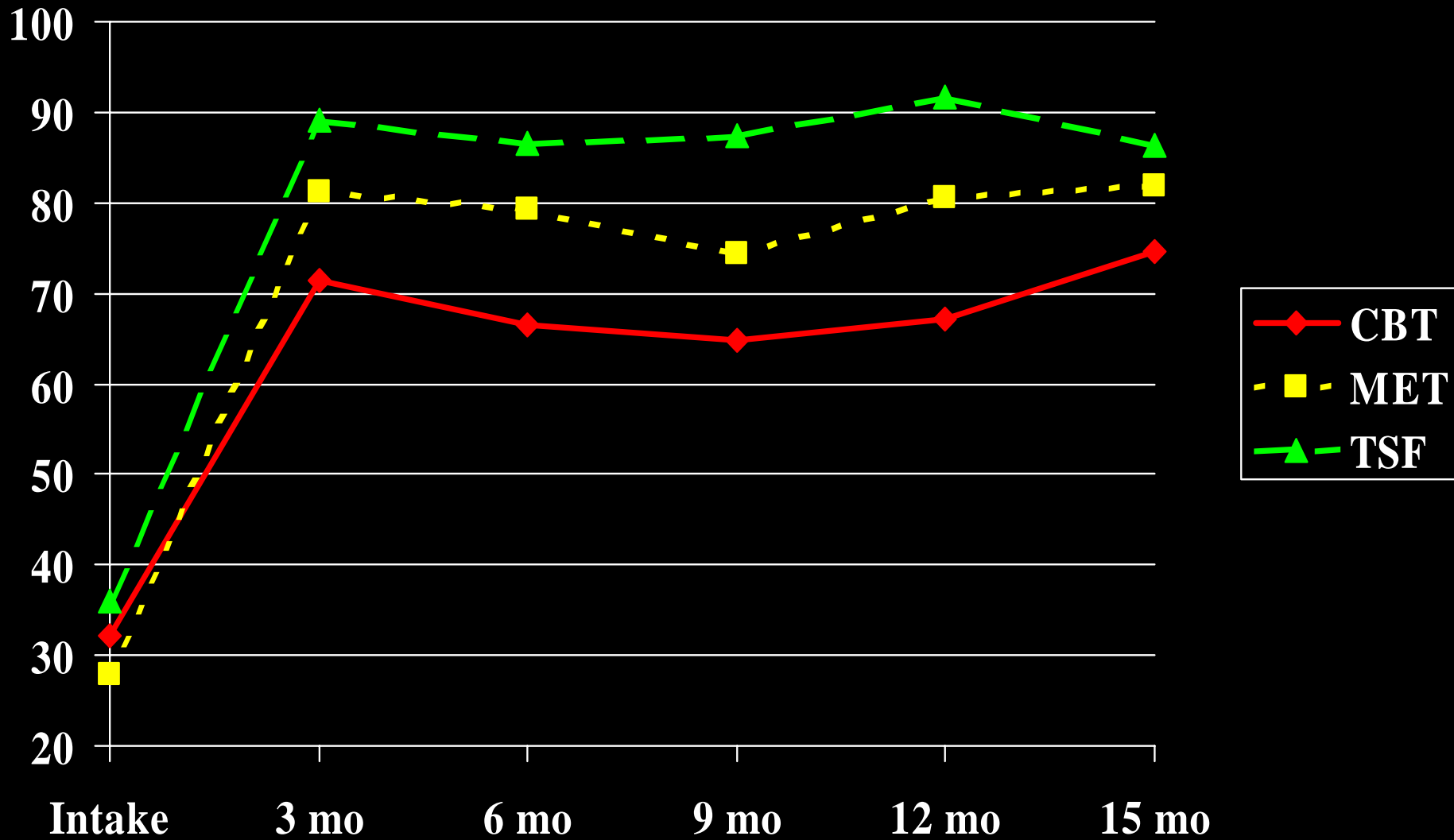


Farmington (OPT)



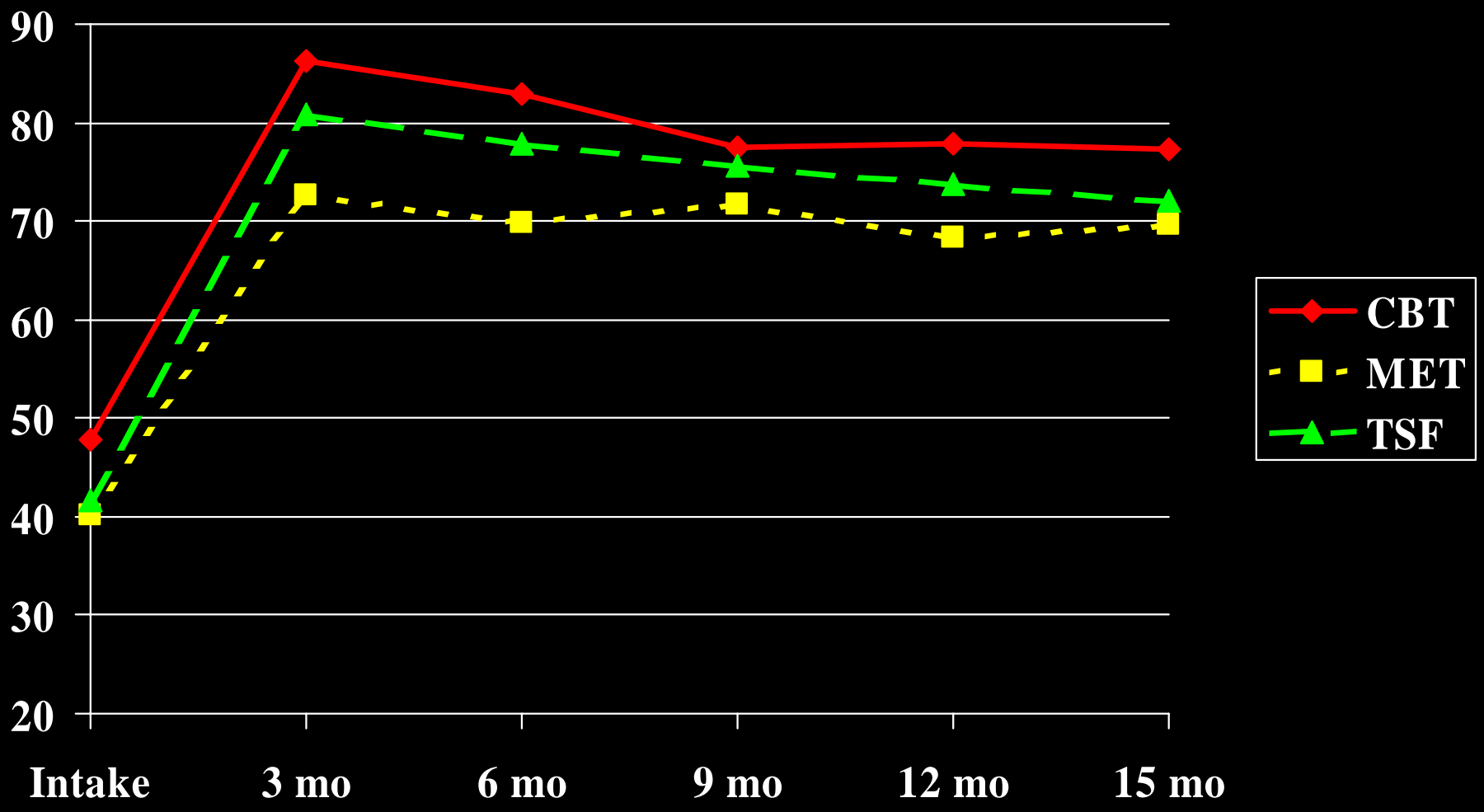


West Haven (OPT)



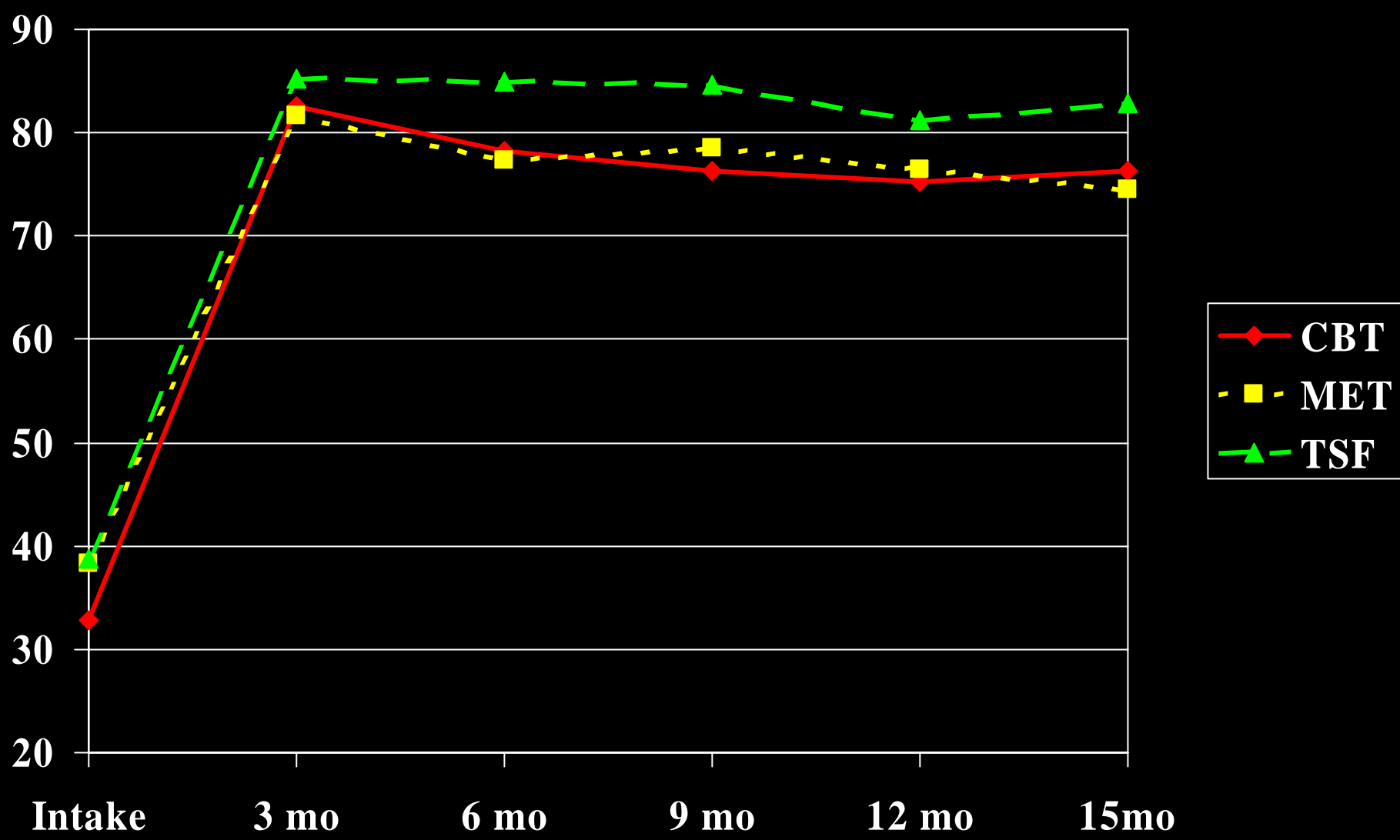


Milwaukee (OPT)





Albuquerque (OPT)



Therapist Effects in Project MATCH



- After extensive training and ongoing quality control to reduce therapist variance . .
- And after controlling for client characteristics and for site effects (which are confounded with therapists) . .
- Therapist effects still accounted for significant variance in client outcomes in CBT, MET, and TSF

Implication for CTN:

- Analyze for site-by-treatment interactions and therapist effects
- and be interested in understanding them as contributions to when and why treatments work (or don't)

Reasons for Doubt About Specific Therapeutic Action

1. Different “specific” therapies yield similar outcomes
2. Wide fluctuation in efficacy across sites or therapists
- 3. More education/experience does not improve therapists’ efficacy**

Reasons for Doubt About Specific Therapeutic Action

1. Different “specific” therapies yield similar outcomes
2. Wide fluctuation in efficacy across sites or therapists
3. More education/experience does not improve efficacy
4. **Mediational analyses, if done at all, often do not support the hypothesized mechanism**

Implication for CTN

- Don't just test packaged treatments
- Test the underlying theory of mediators (causal chains) to advance knowledge of *principles* of change

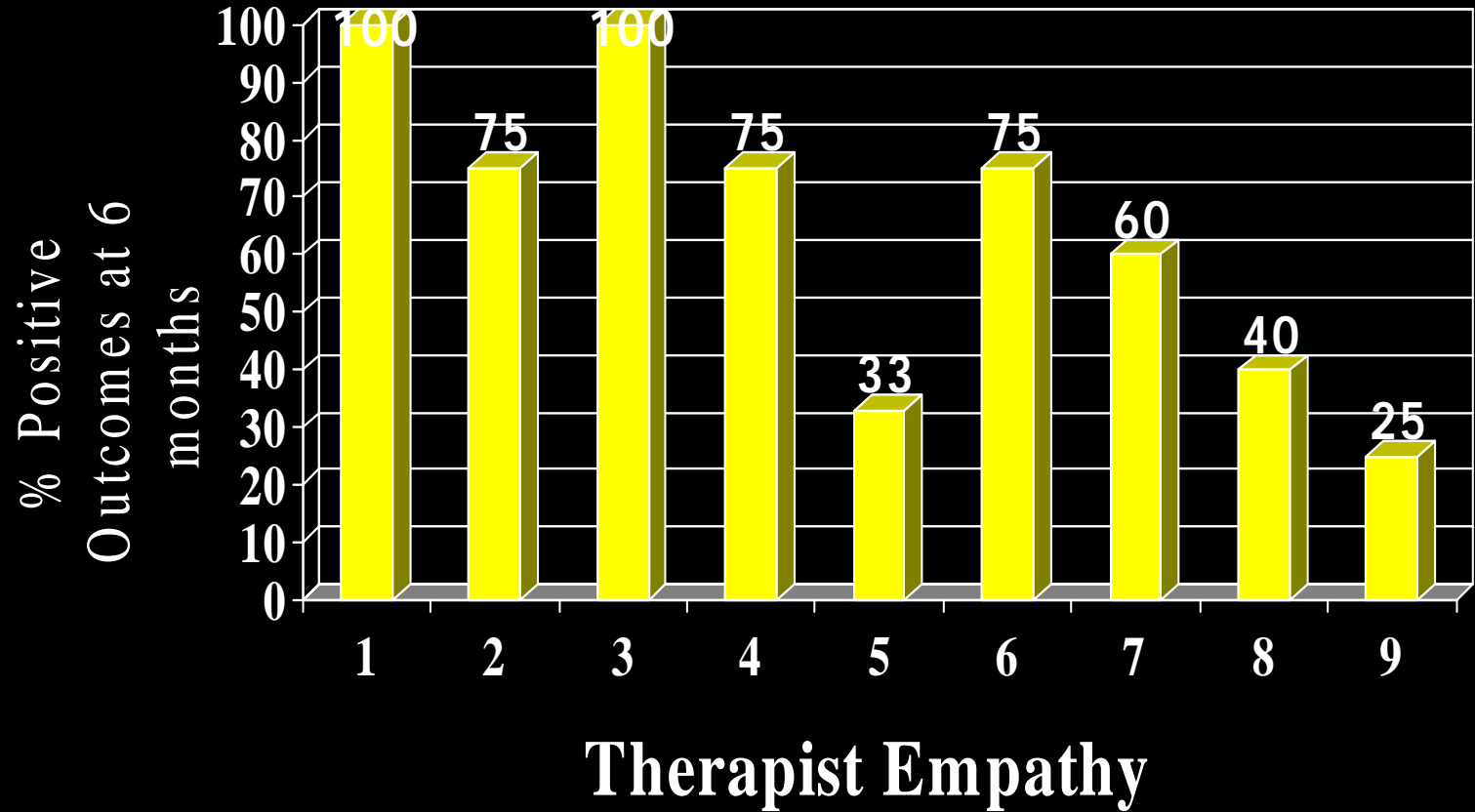
What About Common Factors?

Miller, Taylor & West, 1980

Journal of Consulting and Clinical Psychology 48:590-601

- Problem drinkers were randomly assigned to one of nine counselors delivering manual-guided behavior therapy
- 3 supervisors rated counselors' levels of accurate empathy (Truax & Carkhuff scale) with high inter-rater reliability

Counselor Empathy and Client Outcomes



Correlation Between Counselor Empathy and Client Drinking at Follow-up

(standard drinks per week)

Miller & Baca (1983) *Behavior Therapy* 14: 441-448

6 months	$r = .82$	$r^2 = .67$
12 months	$r = .71$	$r^2 = .50$
24 months	$r = .51$	$r^2 = .26$

Is empathy a common factor?

Are “Common” Factors:

- Everything except hypothesized specifics?
- As-yet-unspecified therapeutic factors?

And if so, once they are specified are they no longer common factors?

- Equally present in all therapies?
- And just how “common” are they anyhow?

Empathy is a *common* (not hypothesized specific) factor in behavior therapy,

but in motivational interviewing, empathy is hypothesized to be a *specific* and necessary factor

Engine of Change?

Specific Factors

Common Factors

What are “Evidence-Based” Treatments?

Efficacious or Not?

Good Evidence of Efficacy	Lacking Good Evidence of Efficacy

Two Dimensions of Evidence

	Good Evidence of Efficacy	Lacking Good Evidence of Efficacy
Good Evidence for Causal Mechanism		
Mechanism Unknown or Unsupported		

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Mechanism Unknown or Unsupported		4. Ineffective or Unknown Efficacy

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Two Dimensions of Evidence

	Good Evidence of Efficacy	Lacking Good Evidence of Efficacy
Good Evidence for Causal Mechanism		3. Ineffective or Unknown Efficacy
Mechanism Unknown or Unsupported	2. Efficacious Treatment – but why?	4. Ineffective or Unknown Efficacy

Two Dimensions of Evidence

	Good Evidence of Efficacy	Lacking Good Evidence of Efficacy
Good Evidence for Causal Mechanism	1. Evidence-Based Treatment	3. Ineffective or Unknown Efficacy
Mechanism Unknown or Unsupported	2. Efficacious Treatment	4. Ineffective or Unknown Efficacy

Implication for CTN

- Design trials to assess the impact of both specific and “common” factors

Evidence for Specific Efficacy of Treatment X

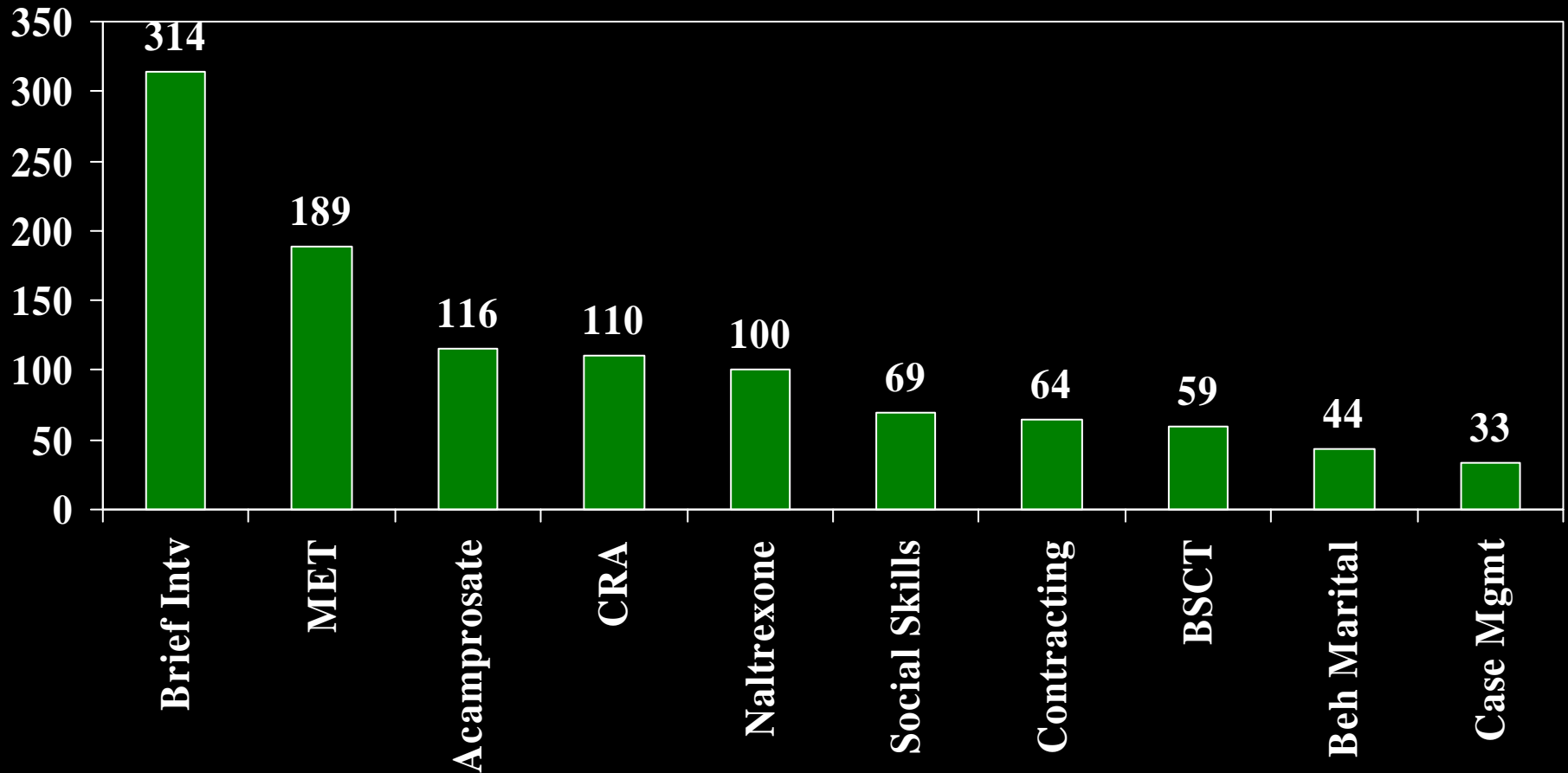
- A. $X >$ No treatment, placebo, waiting list
- B. $X >$ alternative treatment Y that does not contain the hypothesized mechanism
- C. Removal of hypothesized specific element from X diminishes its efficacy
- D. Efficacy of X is mediated by hypothesized mechanism (causal chain)

What Treatments meet Criterion A and/or B? (Efficacy)

- Randomized clinical trials show outcomes significantly better with specific Treatment X than with no treatment, placebo, waiting list, or alternative treatment
- Replication across trials
- *Mesa Grande Project*
 - Miller, Wilbourne & Hettema (2003)

Efficacy of Specific Treatment for Alcohol Problems: Top Ten Cumulative Evidence Scores

(Mesa Grande; Miller, Wilbourne & Hettema, 2003)



Some Treatments that meet Criterion C or D (Mechanism)

- Contingency Management
 - Non-contingent reward doesn't work
 - Consequating A doesn't change B
- Covert Sensitization
 - Those who show conditioned aversive response to alcohol have better outcomes
- Motivational Interviewing
 - Process ratings of therapist "MI spirit" and of client "change talk" predict outcome

A Psycholinguistic Path Model of MI

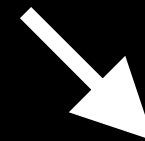
MI



Desire
Ability
Reasons
Need



Commitment



Change

Some Efficacious (A or B) Treatments With Unstudied Mechanisms

- Brief Intervention
 - What actually happens that triggers change?
- Community Reinforcement Approach
 - Do clients really become more engaged in the community?
- Behavioral Self-Control Training
 - Do clients really learn self-control skills?

Efficacious Treatments with Unsupported Mechanism

- Cognitive-Behavioral Skill Training
 - Process studies show either that clients do not learn the target skills, or that the extent of skill learning is unrelated to outcomes
- Twelve-Step Facilitation Therapy
 - No apparent enhancement of spirituality, or spiritual measures do not mediate outcomes
 - AA meeting attendance dwindles by 12 months

And yet they work in RCTs. Why?

A Different Problem

Two Studies of Covert Sensitization
(Imaginal Conditioning) for Alcoholism

Stages of Conditioning

- Imaginal pairing of CS-UCS

Then once a CR appears

- Escape scenes
- Avoidance scenes

Conditioning Responsiveness (Ralph Elkins)

- Demand responding – UCR occurs during but not before UCS presentation
- Conditioned responding – CR occurs during CS, prior to UCS presentation
- The establishment of conditioned responding predicts abstinence at follow-up

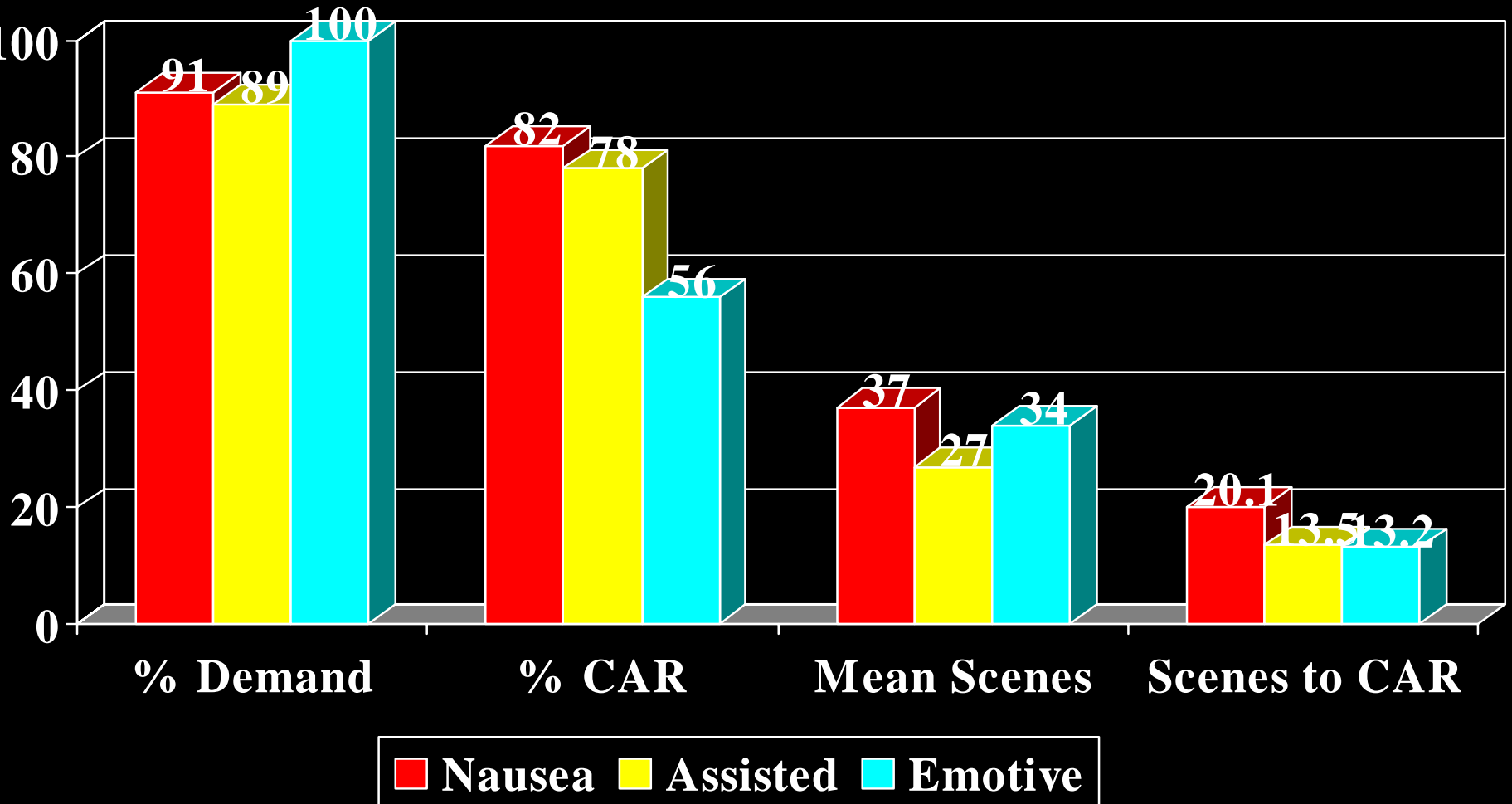
What is the UCS?

- Nausea and vomiting
- Assisted nausea (noxious odor)
 - (butyric acid + powdered bile)
- Emotive (feared consequences)
- Do all three actually produce a CR?

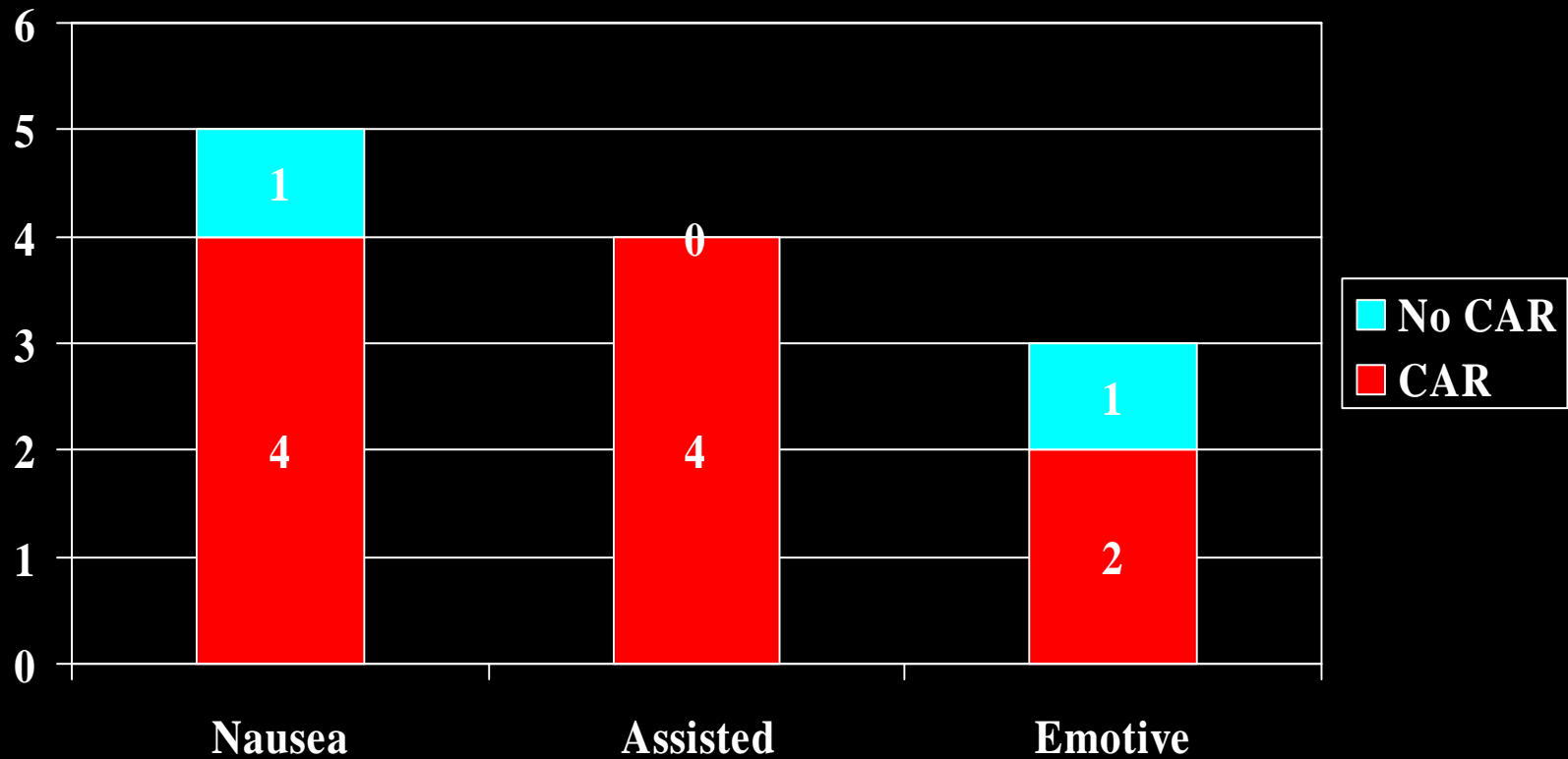
Testing Alternative Unconditional Stimuli in Covert Sensitization

- Miller & Dougher (1989)
- *Behavioural Psychotherapy* 17:203-220

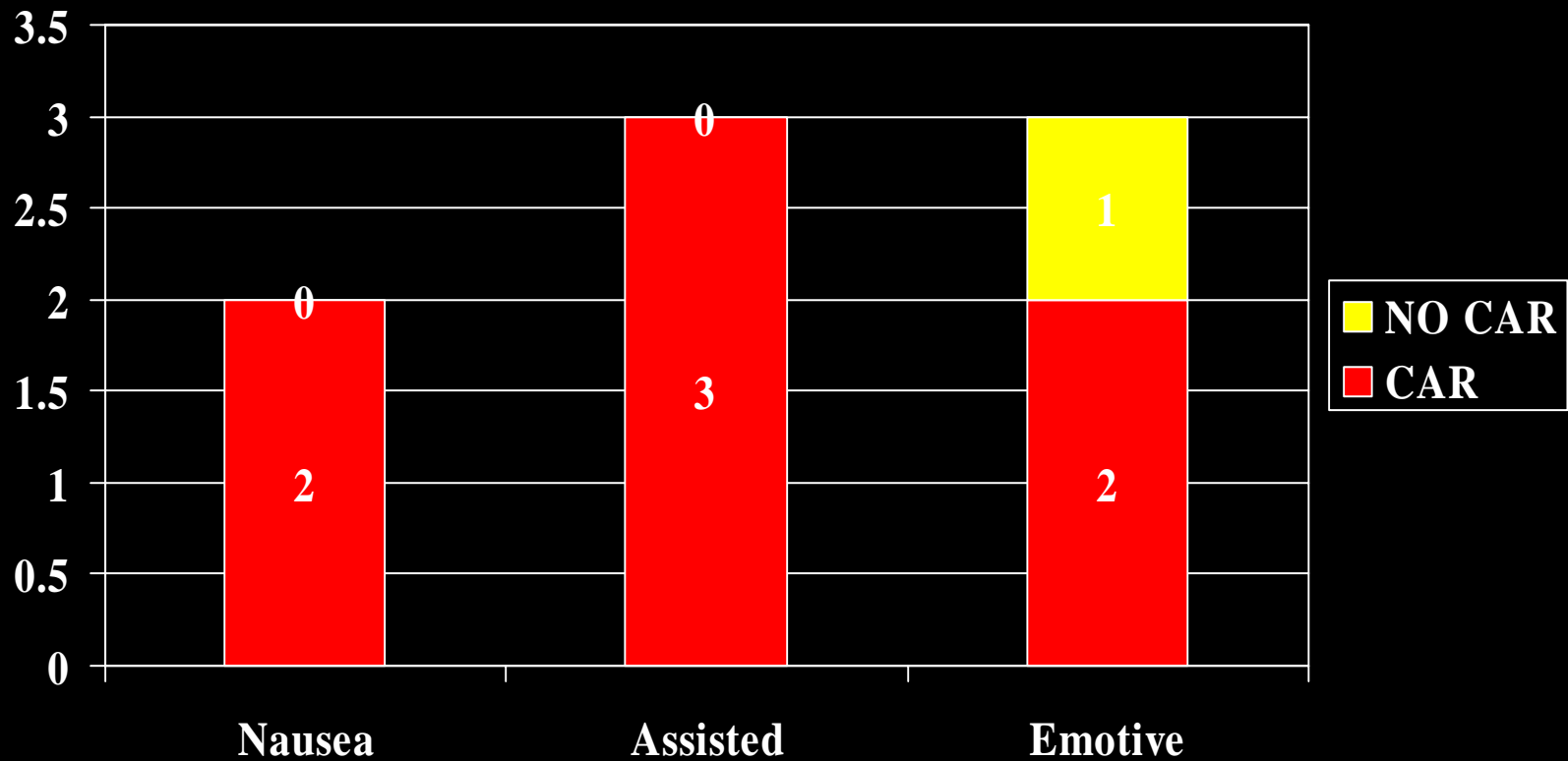
Success in Conditioning (CAR)



Cases Abstinent at 6 months



Abstinent Cases at 18 months



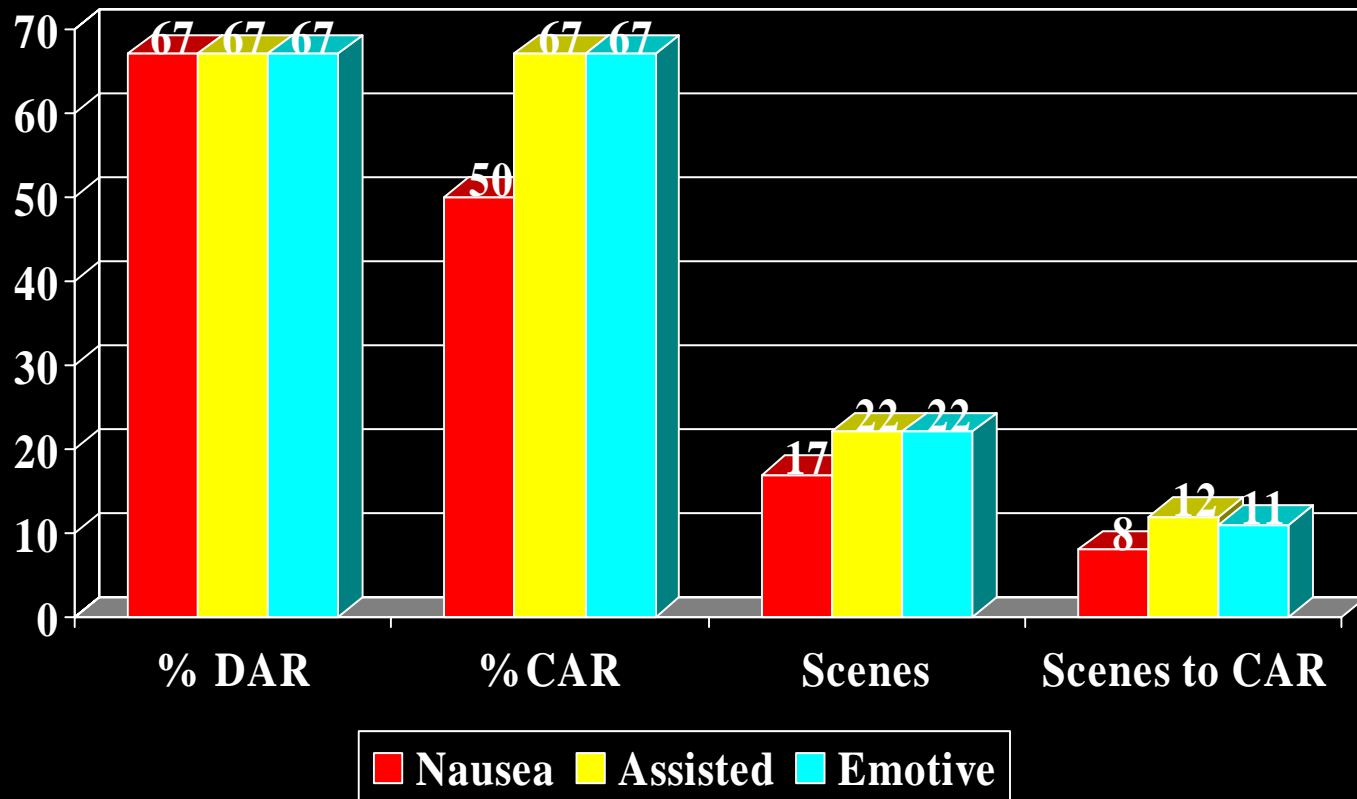
Study 2: Randomized Trial

Rimmele & Miller (1988)

Four Treatment Groups

- Covert Sensitization – Nausea
- Covert Sensitization – Assisted Nausea
- Covert Sensitization – Emotive
- Control – Self-Monitoring

Success in Conditioning

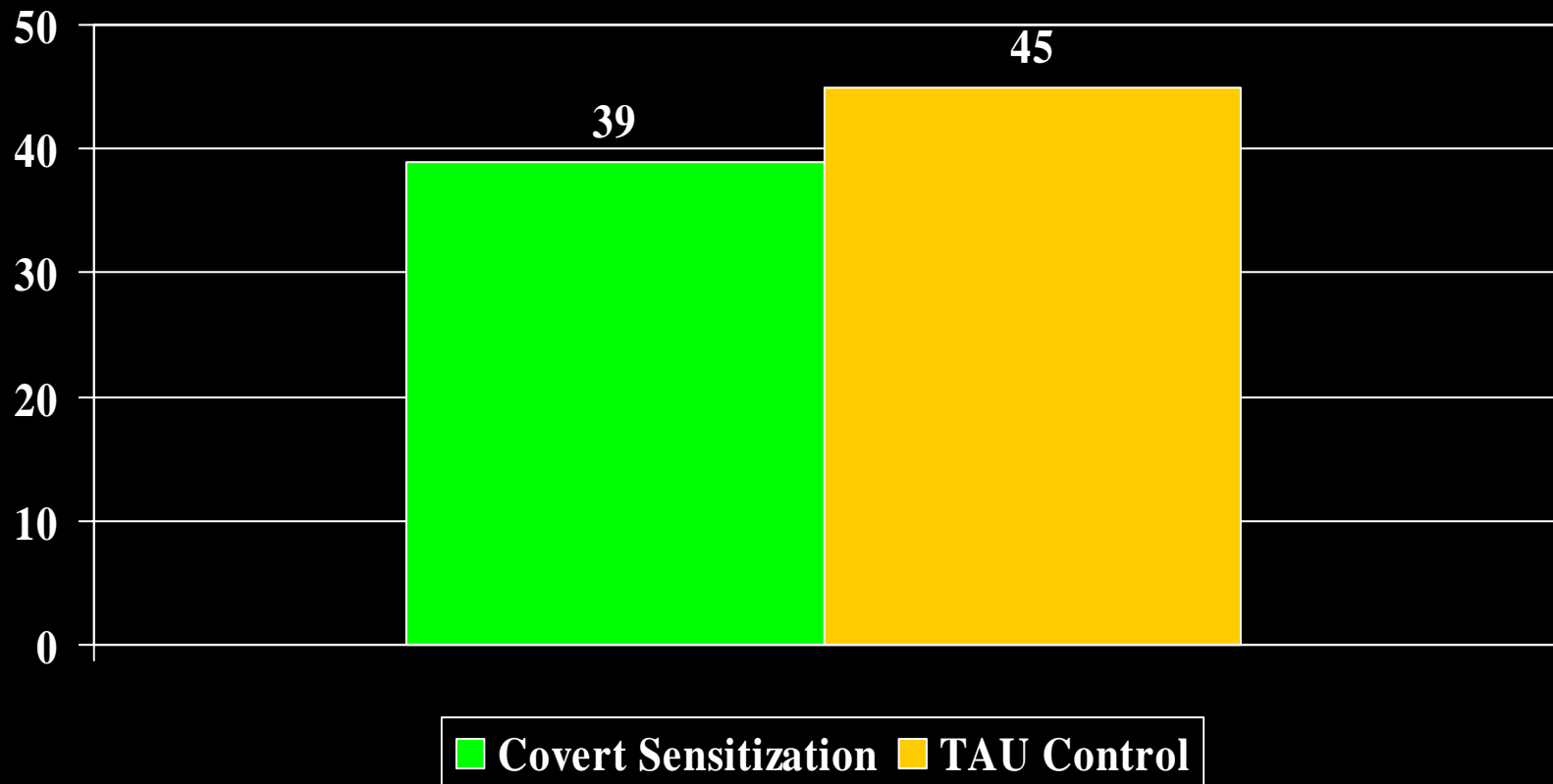


A treatment that works for the predicted reason!

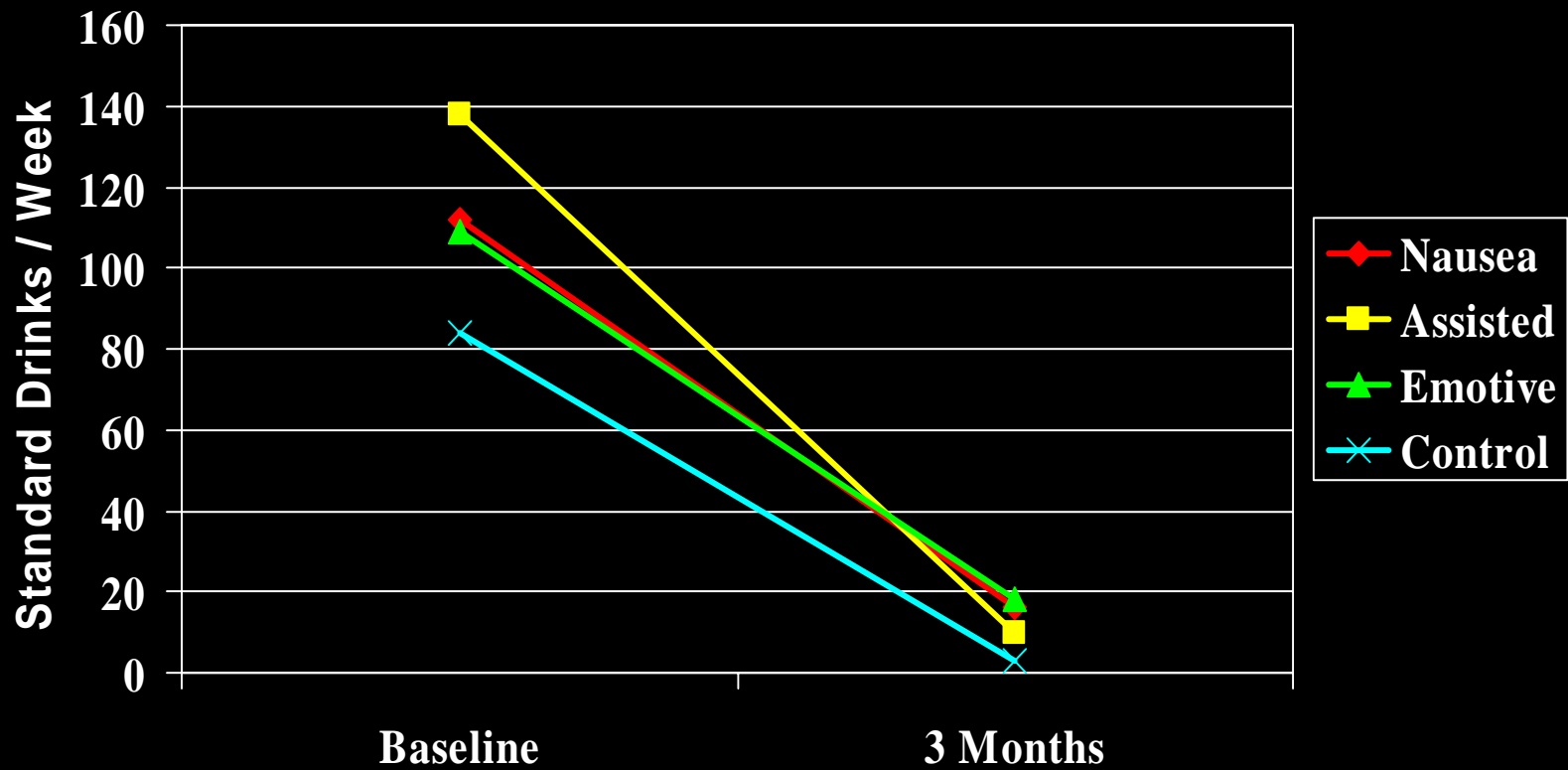
- The establishment of a conditioned aversive response strongly predicted abstinence at follow-up

However . . .

Abstinence Rates at Follow-up



Self-Reported Drinking



In other words: the mechanism worked
and the treatment didn't

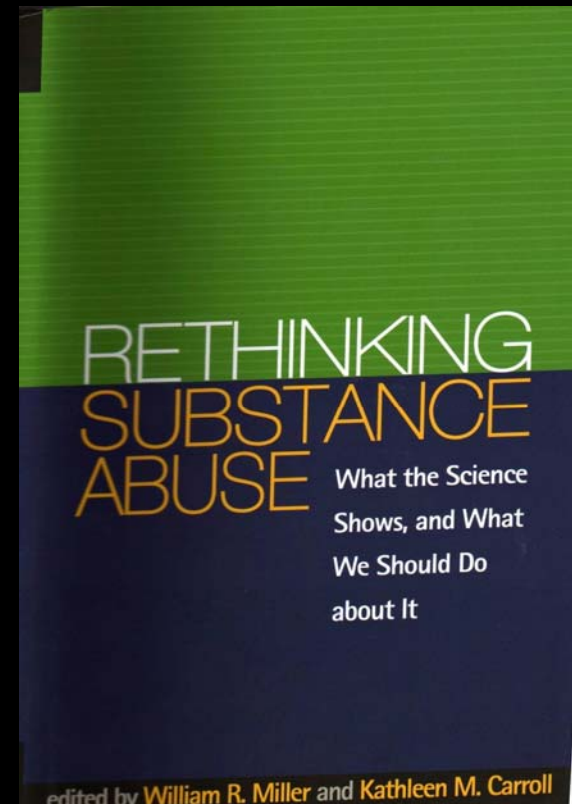
Conditioned aversion predicts abstinence,
but inducing conditioning may not

Evidence-Based Principles

- It is important to separate brand name treatments and therapeutic procedures from the change principles by which they exert effects

CACTUS Conference

- Think Tank: Bickel Carlson Carroll Childress DiClemente Hasin Hesselbrock Holder Humphreys Koob McCrady McLellan Moos Mueser O'Malley
- What if we had all the science, but no organized system for addressing addictions?



What do we *know* about addictive behavior? (CACTUS)

1. Addictive behavior is reinforcing, chosen behavior
2. Addictive behaviors emerge gradually and occur along a continuum
3. Once well-established, addictive behaviors tend to become self-perpetuating
4. Motivation is central to intervention
5. Addictive behavior responds to social reinforcement

What do we *know* about addictive behavior? (CACTUS)

6. Addictive behavior does not occur in isolation, but as part of behavior clusters
7. There are identifiable risk and protective factors for addictive behaviors
8. Addictive behavior occurs within a family context
9. Addictive behaviors are affected by a larger social context
10. Therapeutic relationship matters: It matters *who* is delivering the treatment, and how

Evidence-Based Principles of Change

(for further refinement)

1. Identify addictive behaviors and intervene early, even if briefly (e.g., in health care and social services).
2. Enhance personal motivation and commitment to change.
3. Make sobriety worthwhile; improve access to non-drug positive reinforcement.
4. Enhance social support for sobriety.
5. For well-established addiction, a period of ensured abstinence helps.

Evidence-Based Principles

6. Use an empathic, listening style of counseling (and hire empathic therapists).
7. Involve the family or social system to reinforce sobriety.
8. Address other social and behavioral health problems. (Implications for providers)
9. Encourage sampling of 12-step groups, and of other sources of drug-free reinforcement.
10. Promote meaningful employment or role

Evidence-Based Principles

11. Remove/reduce reinforcement for using
12. Expect gradual progress and reversals, and reinforce all steps and approximations
13. Think outside the skin: Social risk and protective factors (functional analysis)
14. Make services easily accessible, affordable, attractive, helpful, potent, rapid, and welcoming
15. Use evidence-based interventions