

# Principles of Prevention: What Might They Be and Are They Useful?

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## Conflict of Interest Disclosure

- I am selling a book—The Nurture Effect
- I am providing consultation on the development of prevention systems to any reputable organizations that will hire me.



# The Questions

- What standards or criteria should be used to determine that a principle, kernel or practice is effective and ready for dissemination? What are examples of principles, kernels or practices that are ready and should be disseminated?
- How can we measure implementation fidelity or quality in implementing a principle, kernel or practice? How does that get done in dissemination?



# Some Background

- A principle is useful to the extent that it enables us to predict and influence behavior.
- Behavior is always in and with its context. If you want to influence behavior you have to change its context.
- Most of the components of our evidence-based family and school interventions were initially developed through single case experimental designs—ABA designs, multiple baseline designs, and multi-element designs.
- This fact is obscured by the fact that in recent years we have focused on randomized trials.
- Randomized trials allow us to test whether an intervention is sufficiently replicable across cases that it produces results superior to comparison conditions.



# Evidence-Based Kernels

- Simple behavior influence techniques that have been extensively validated mostly through single case experimental designs (repeatedly replicated).
- Indivisible—removing any part makes it inactive
- Produces quick, easily measured change
- Active ingredients of evidence based programs



Embry, D.D. & Biglan, A. (2008). Evidence-based kernels: Fundamental units of behavioral influence. *Clinical Child and Family Psychology*. 11(3), 77-113.

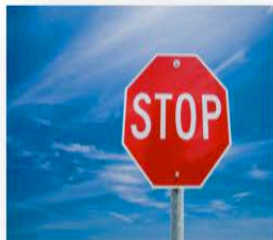


# Evidence-Based Kernels



**Antecedent  
Kernel**

Happens  
BEFORE the  
behavior



**Reinforcement  
Kernel**

Happens  
AFTER the  
behavior



**Physiological  
Kernel**

Changes  
biochemistry  
of behavior



**Relational  
Frame  
Kernel**

Creates verbal  
relations for  
the behavior



# Examples of Kernels

- Antecedent: Happy Feet, Pax Quiet, Beat the Timer
- Reinforcement: Granny's Whacky Prizes, tootle Notes, the prize bowl,
- Physiological: Omega 3 supplements
- Relational Framing: See, Hear, Feel, and Do; Pax, Spleem



# Kernels

- Are, by definition, validated.
- And their impact (or lack of impact) on behavior is in most cases immediately observable.
- Consider the Response to Intervention Movement in Education.
- Or for that matter, the treatment of hypertension.
- The implementation of *any* practice or program needs to be accompanied by monitoring of its impact.



# Two Overarching or Higher Level Principles

- Minimize toxic social conditions.
- Replace aversive means of control with more positively reinforcing practices.
- These are the basic ingredients of most of our family and school interventions.



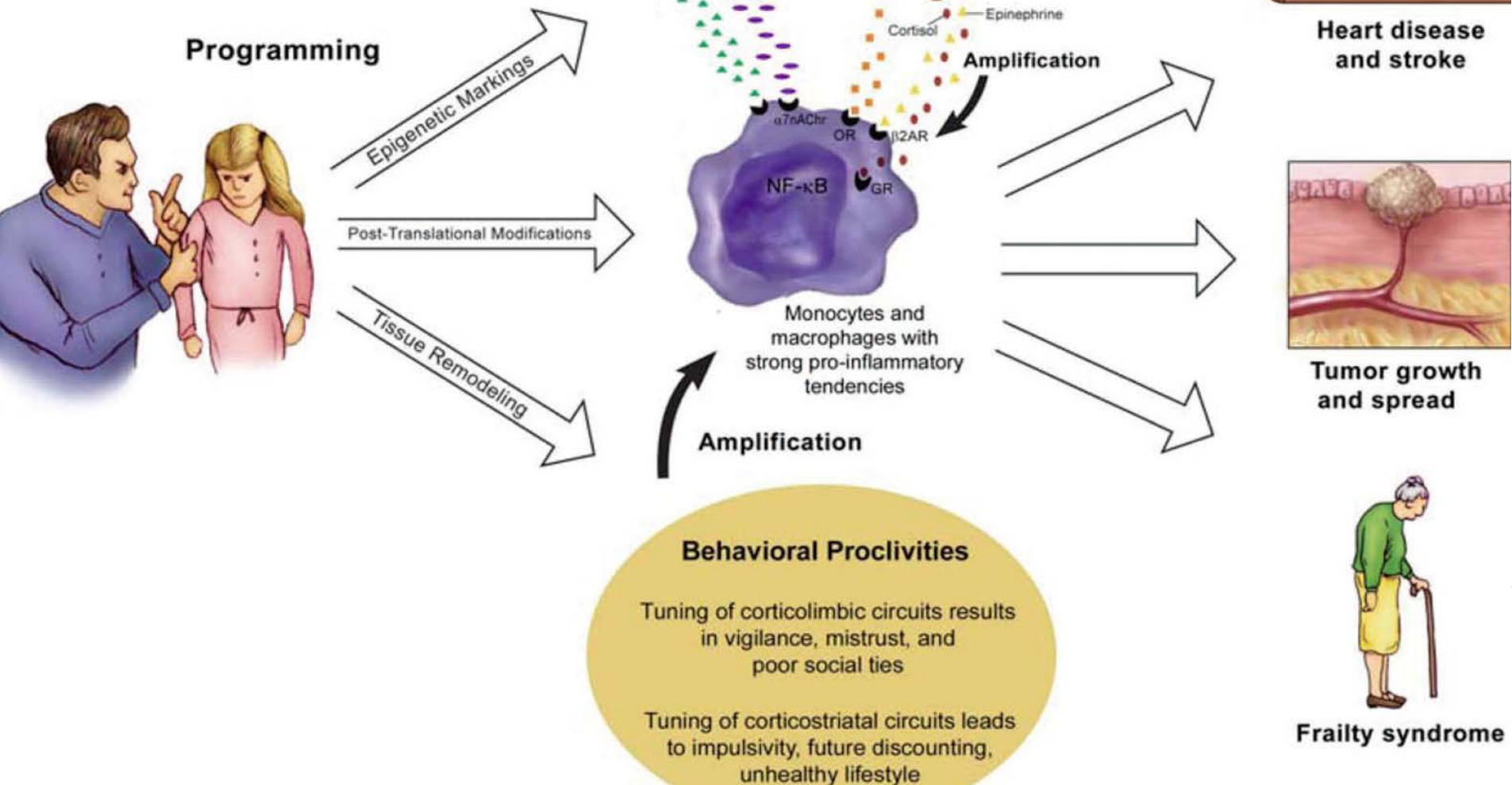


# The Most Important Public Health Challenge

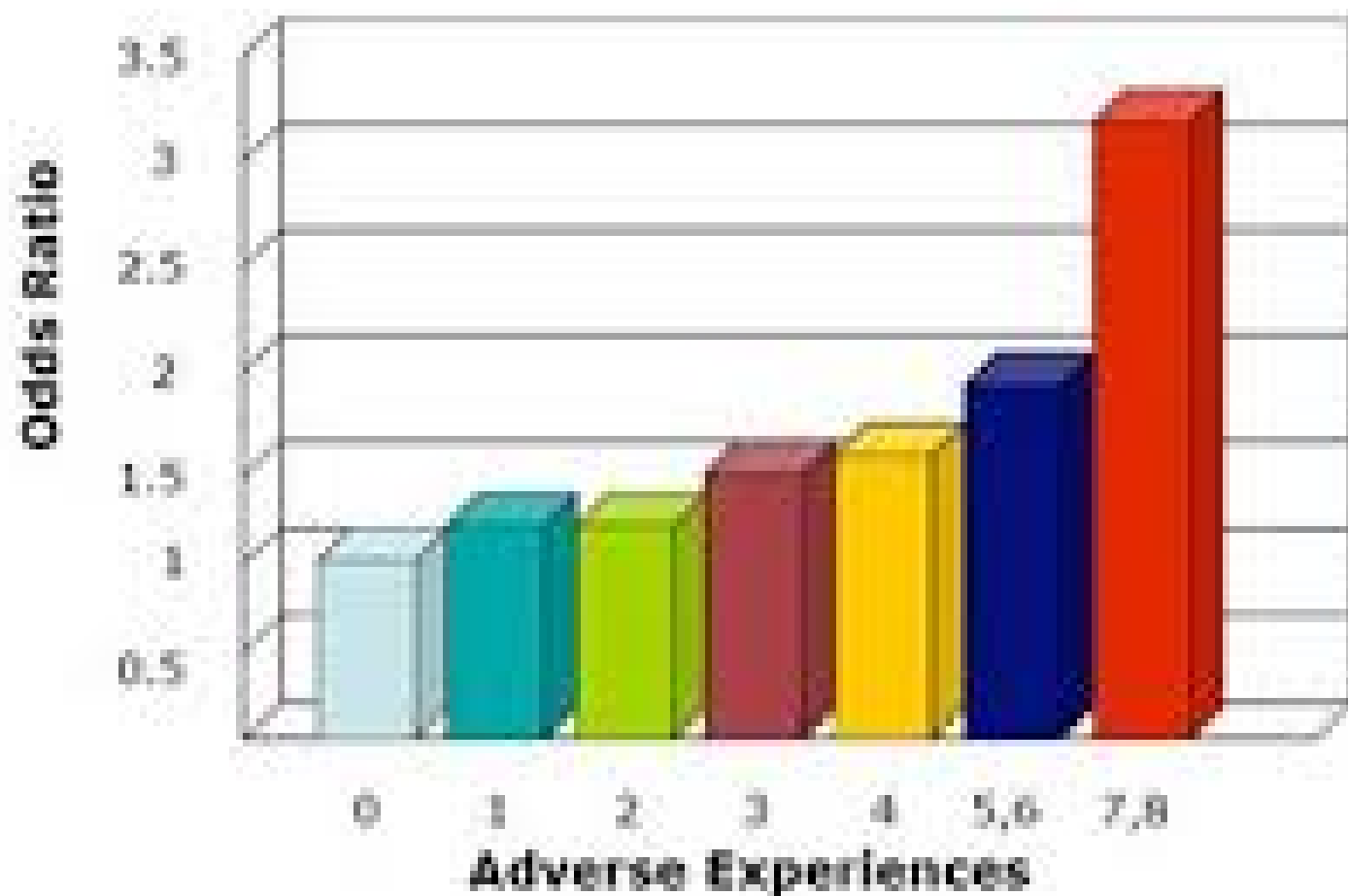
- Reducing the prevalence of toxic social environments
- If the only public health principle we chose to pursue was an increase in the longevity of every member of society, we would quickly conclude that reducing the prevalence of toxic social environments was the most important means to achieving that goal.
- Toxic Social Environments in Childhood
- Contribute directly to chronic disease in adulthood.
- Contribute to the development of the entire range of the most common and costly psychological and behavioral problems
  - Which in addition to being problems in their own right,
  - Contribute to chronic illness in adulthood.
- Poverty is a risk factor for these stressful social conditions.



# Altered hormonal milieu



## Risk of Adult Heart Disease Increases with more Adverse Childhood Experiences



Sources: Dong et al., 2004 11

# Prevalence of Key Risk Factors

- Rate of child poverty: 20% to 40%
- Rate of abuse and neglect
- Proportion of children being raised in poor single parent families (Putnam's *Our Kids*)



# Wider understanding of these principles could influence policymaking.

- Increased attention to poverty reducing policies because of the impact of poverty stressful/aversive interactions and reduced positive reinforcement.
- Increased support for implementation of EBP family, school, and community programs all of which reduce toxic social conditions and increase reinforcement of prosocial behavior.
  - Advocacy for these programs might be advanced if these principles were widely promoted. But I have no evidence for that.

# Conclusions

- Two of the most well-established principles regarding human development
  - Toxic social conditions harm development in myriad ways and
  - Highly reinforcing family and school environments are vital to the development of diverse prosocial behaviors and values.
- Like the impact of publicity about the harm of smoking, more widespread understanding of these principles could:
  - Influence policy making
  - Affect the behavior of individual parents and teachers
- However, evidence for these propositions is currently lacking

