7 myths about tobacco use disorder in people with mental health conditions

And how you can help these smokers quit

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MINNESOTTA WEBINAR 3.2015

Geisel School of Medicine at Dartmouth

- **CURRENT FUNDING**
  - National Cancer Institute
  - Alkermes
- **COLLABORATORS**
  - Sarah Akerman
  - Kelly Aschbrenner
  - Steve Bartels
  - Alan Budney
  - Judith Cook
  - Tim Devitt
  - Robert Drake
  - Joelle Ferron
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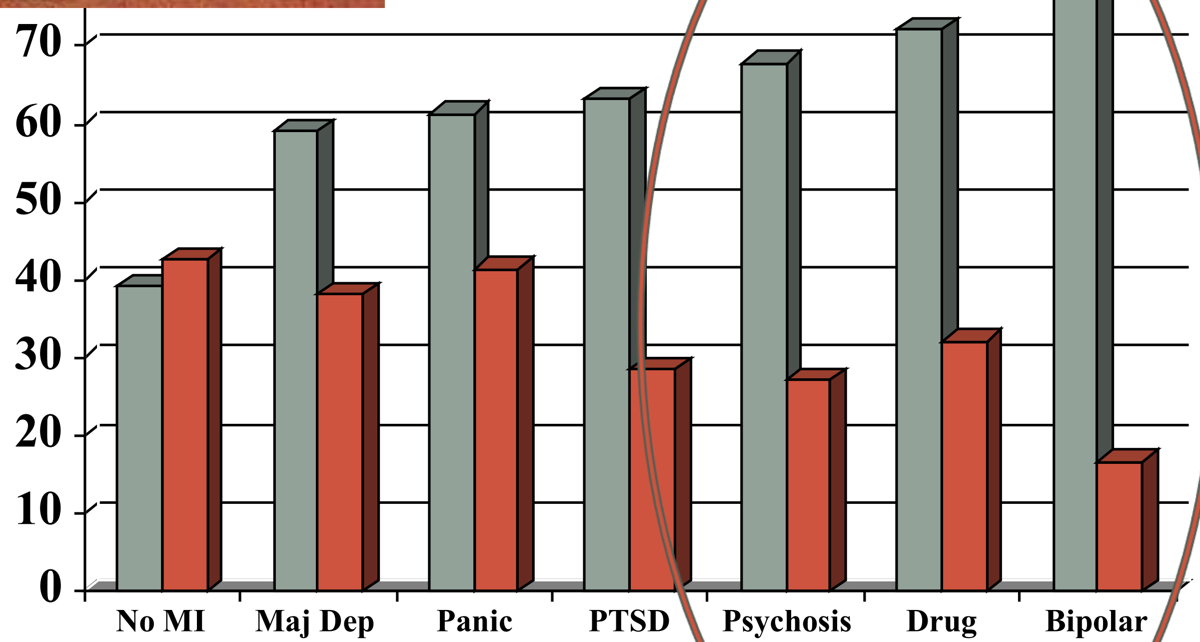
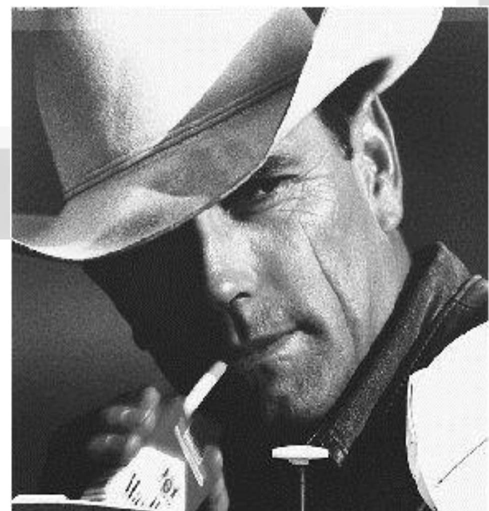
  - Sarah Pratt
  - Delbert Robinson
  - Robert Roth
  - Armando Rotondi
  - Lisa Rozzano
  - James Sargent
  - Cathy Stanger
  - Jill Williams
  - Haiyi Xie
  - And many others

SMOKING AND MENTAL ILLNESS

(LASSER ET AL, 2000)





Lifetime smoker
Quit rate

2007 Prevalence:

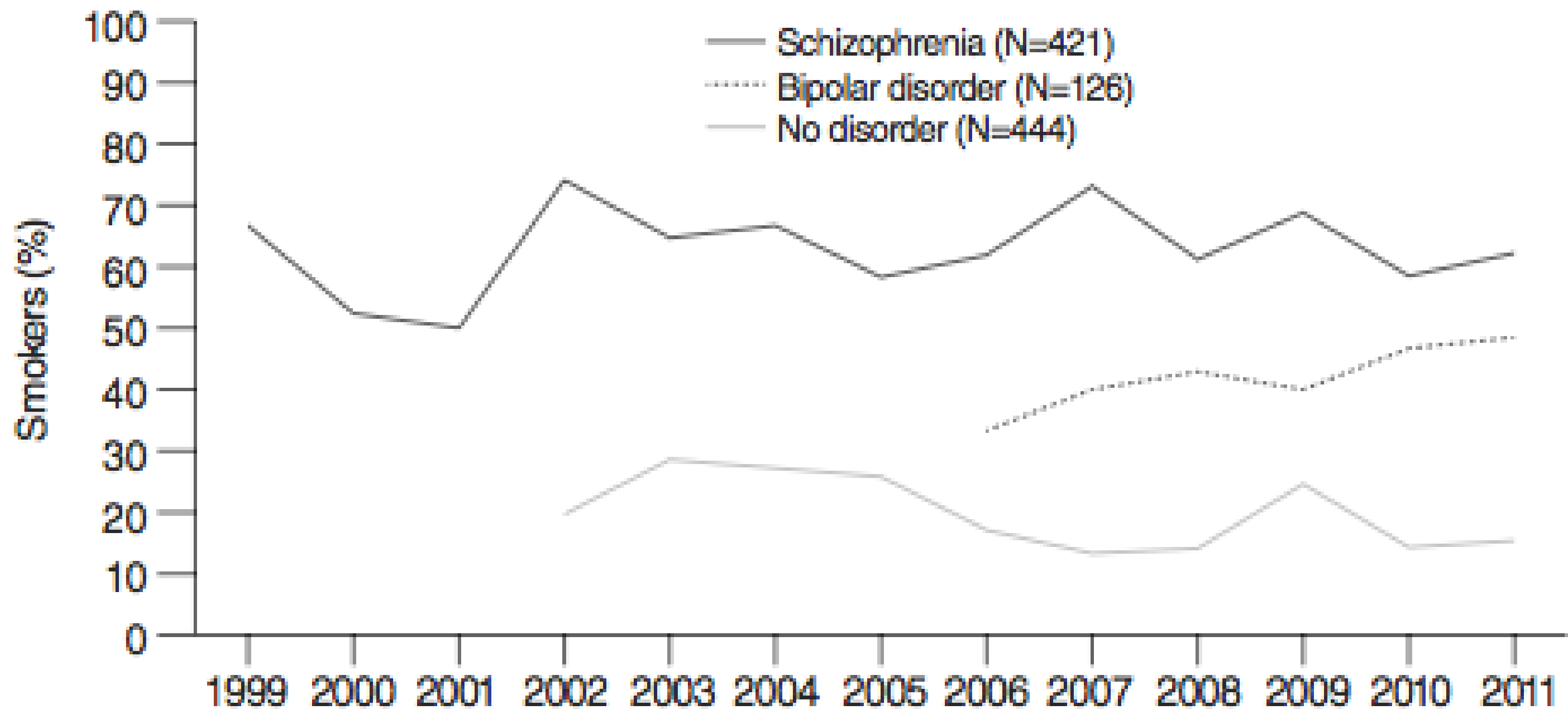
18% without MI

30-60% with MI

(McClave, 2009)

% OF PEOPLE SMOKING IN COMMUNITY MENTAL HEALTH

(DICKERSON 2013)

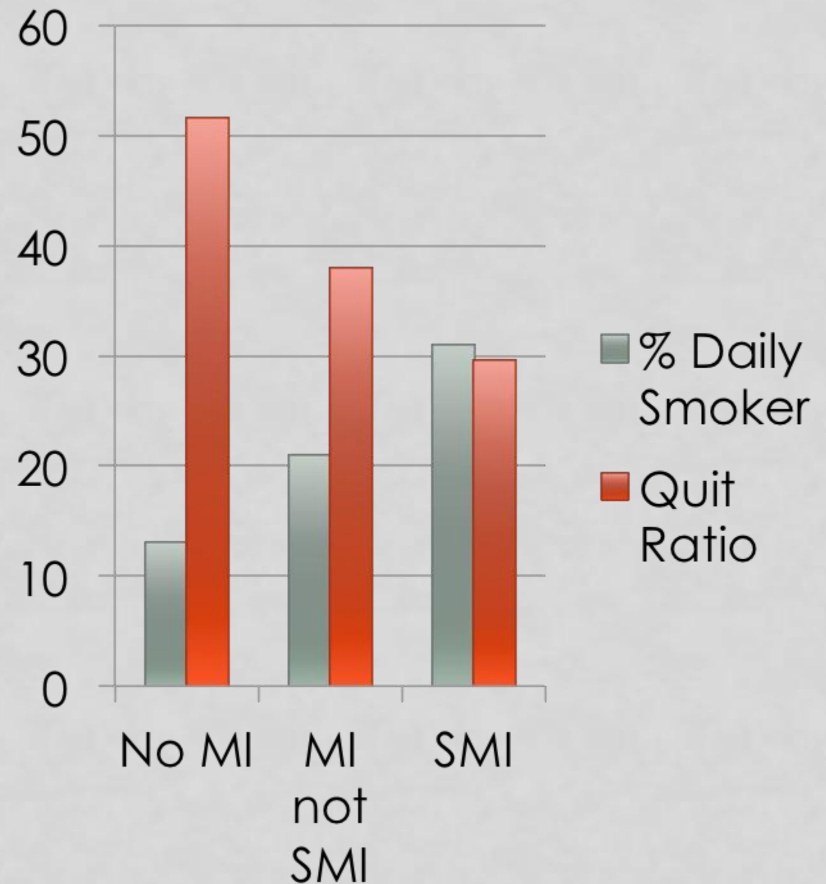


[a] Data are not shown for the bipolar disorder sample prior to 2007 or for the control group (no psychiatric illness) for 2004 because N<10 for each of these years for these groups. Number of persons in each of the other groups, by year, follows. For schizophrenia: 1999, 15; 2000, 21; 2001,

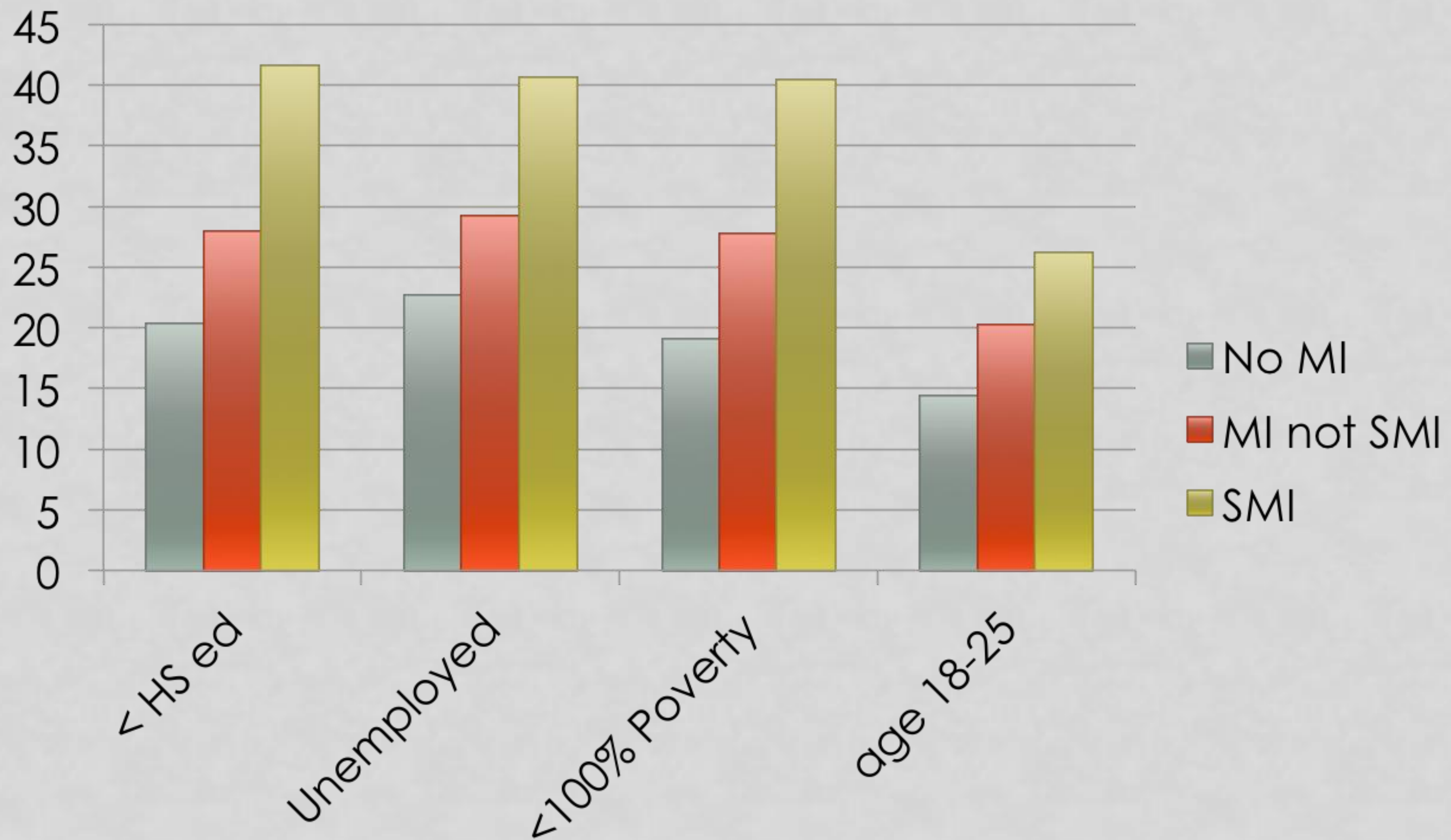
RECENT U.S. DAILY SMOKING

(GLASHEEN 2014)

- 2008-12 National Surveys on Drug Use and Health
- 229,000 adults ≥ 18
- Established mental illness with SCID telephone interview in subsample
- 14.2% had any MI (AMI)
- 3.9% had severe mental illness (SMI)



MENTAL ILLNESS IN RELATION TO RISK FACTORS FOR SMOKING



A VULNERABLE POPULATION: TOBACCO IN RECENT ONSET SCHIZOPHRENIA 2012-13 VS. OTHER YOUNG ADULTS

45
40
35
30
25
20
15
10
5
0

Cigarettes E-cigarettes Hookah Multiple

NY ROSchiz
MH condition
YA Gen Pop

Robinson, Brunette In prep;
Glasheen 2014;
Agaku 2014

RO Schiz Group: Mean age 23 years, 79% male

Original Investigation | December 2014

Cardiometabolic Risk in Patients With First-Episode Schizophrenia Spectrum Disorders

Baseline Results From the RAISE-ETP Study

Christoph U. Correll, MD[1,2,3,4]; Delbert G. Robinson, MD[1,2,3,4]; Nina R. Schooler, PhD[1,5]; Mary F. Brunette, MD[6,7]; Kim T. Mueser, PhD[8,9,10]; Robert A. Rosenheck, MD[11,12]; Patricia Marcy, BSN[1,2]; Jean Addington, PhD[13]; Sue E. Estroff, PhD[14]; James Robinson, MEd[15]; David L. Penn, PhD[16]; Susan Azrin, PhD[17]; Amy Goldstein, PhD[17]; Joanne Severe, MS[17]; Robert Heinssen, PhD[17]; John M. Kane, MD[1,2,3,4]

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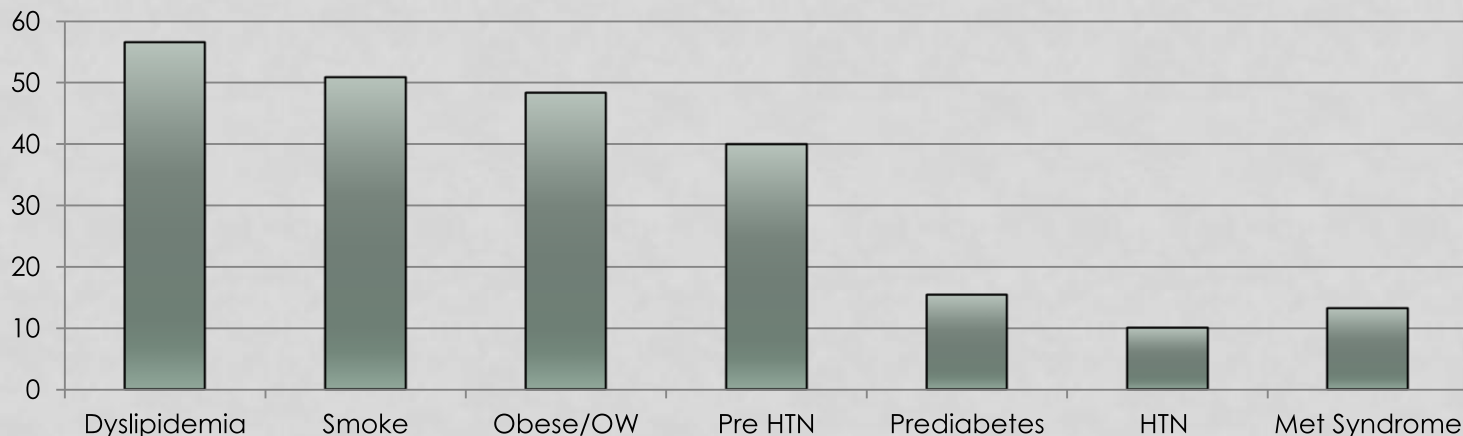
JAMA Psychiatry. 2014;71(12):1350-1363. doi:10.1001/jamapsychiatry.2014.1314. Text Size: A A A



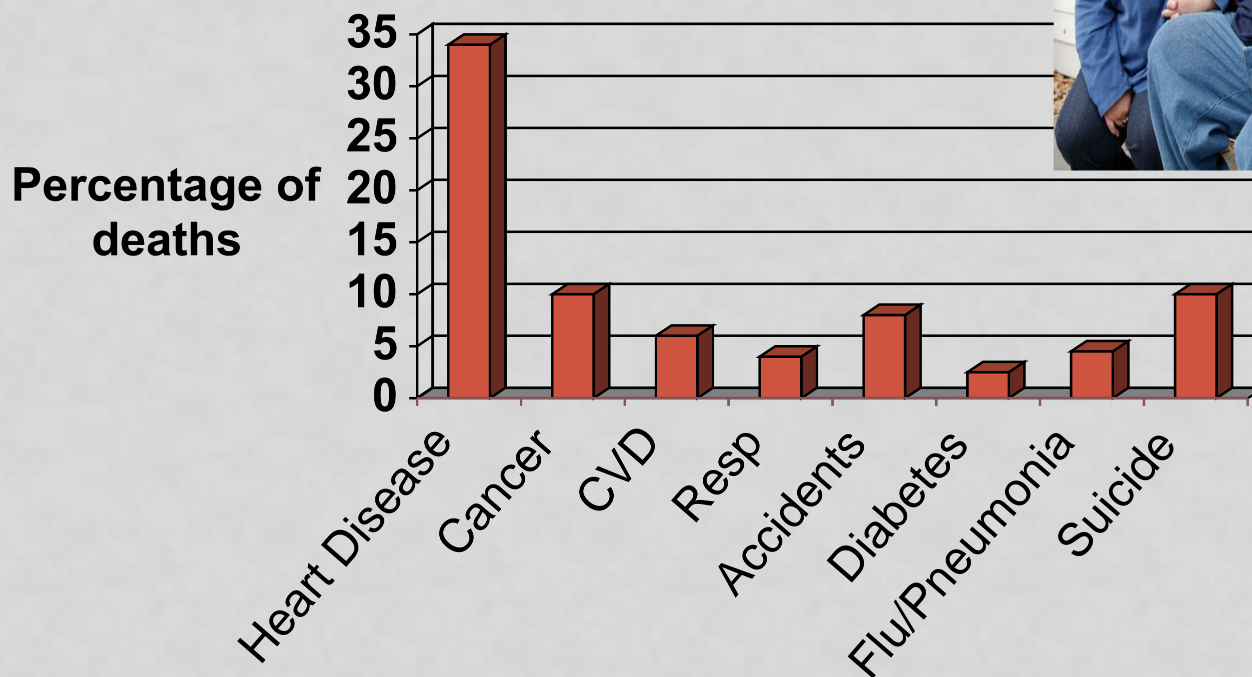
N=404

TED

- Community Mental Health New Hampshire 1998
  - Uses medications with high weight gain propensity
  - Smokes 2 ppd

HEART DISEASE AND CANCERS ARE PRIMARY CAUSES OF DEATH IN PERSONS WITH MI

30 year early mortality in SMI



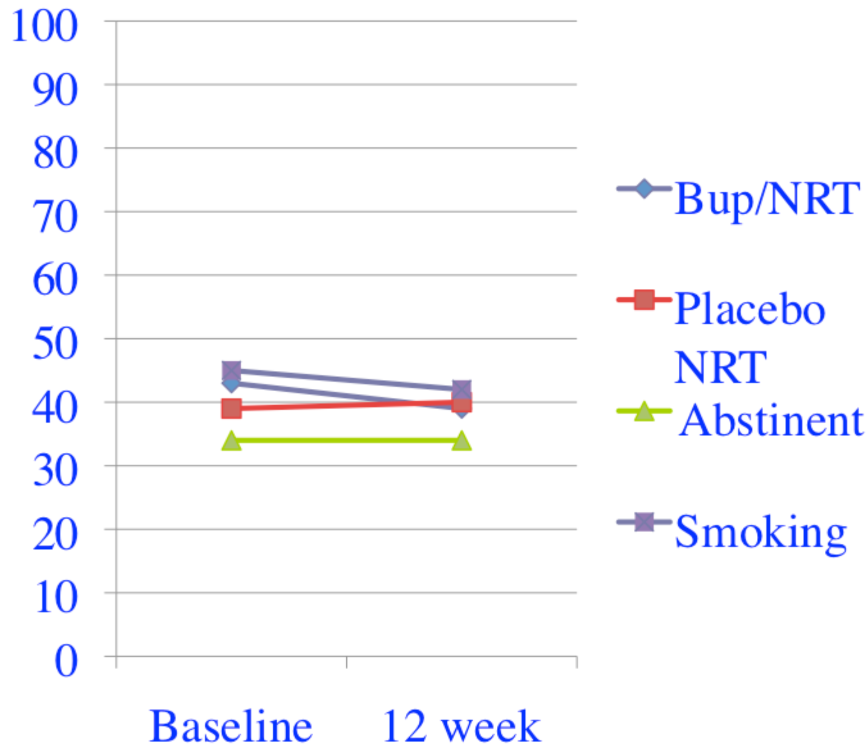
Data from Oklahoma 1996-2000; Colton et al, 2006

MYTH # 1: PEOPLE MUST SMOKE TO MANAGE SYMPTOMS OF MI OR SUD

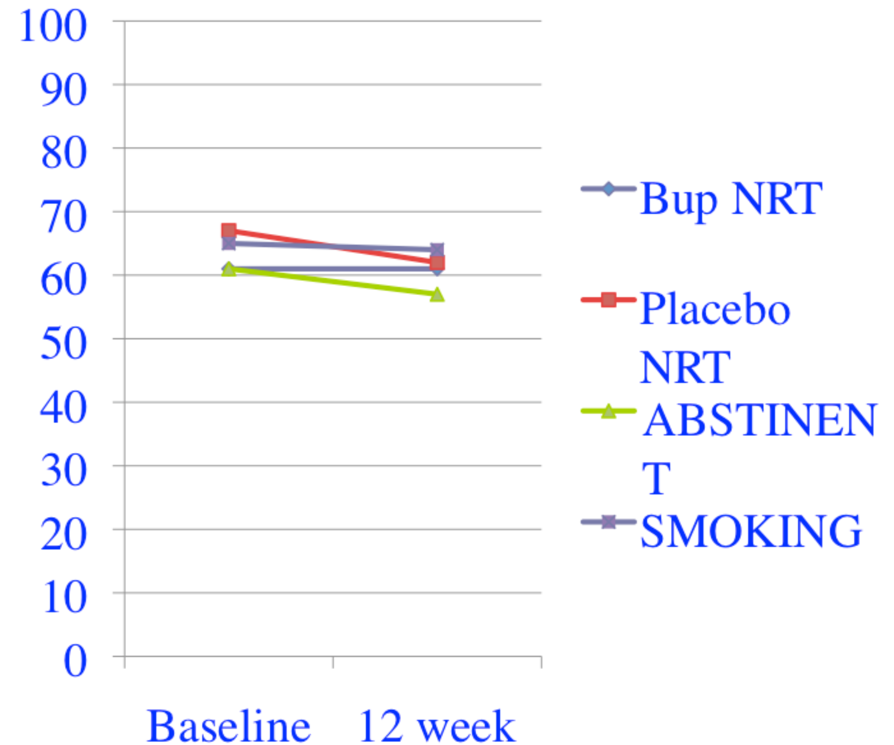
- Symptoms are confused with **withdrawal,** which occurs with
  - Daily use at least a few weeks
  - Abrupt cessation or reduction leads to 4 or more peaking at 1-4 days:
    - **Dysphoric or depressed mood**
    - **Irritability, frustration, anger**
    - **Anxiety**
    - **Insomnia**
    - **Difficulty concentrating**
    - **Restlessness**
    - Decreased heart rate
    - Increased appetite or wt gain

SYMPTOMS ARE STABLE DURING CESSATION TX BUT MUST BE MONITORED

SANS



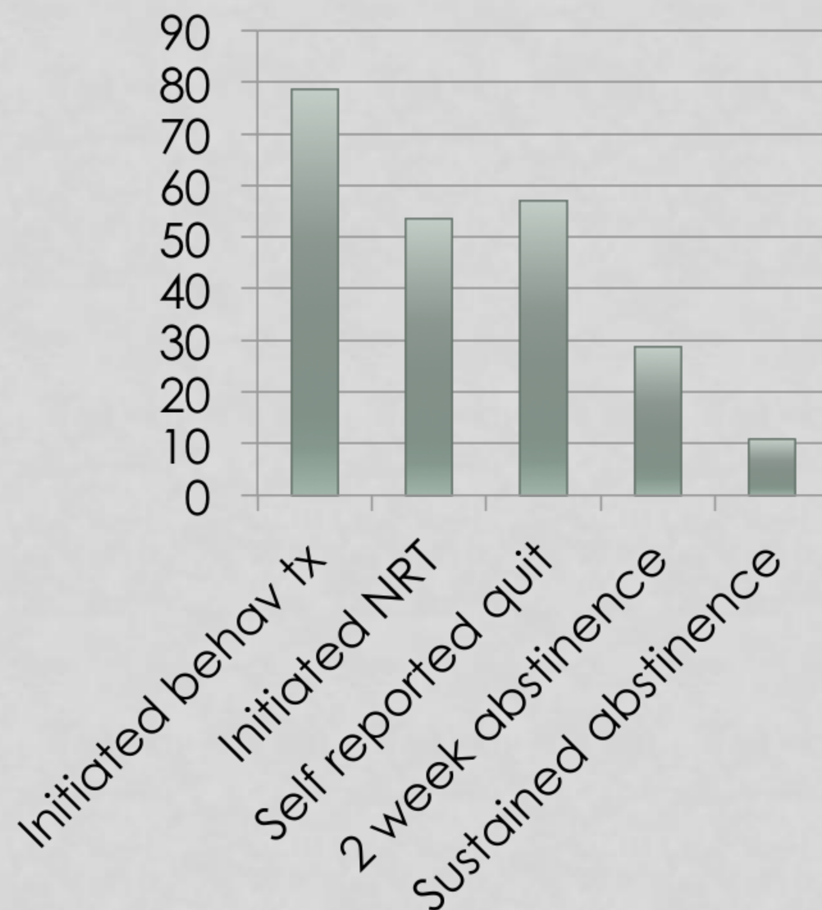
PANSS



(Evins 2007)

ADDICTION OUTCOMES ARE NOT HINDERED BY TOBACCO TREATMENT

- PILOT: 28 pts with cannabis use disorder and TUD
- Received contingency management, computer assisted CBT & MET with usual outcomes
- AND offered computer assisted tobacco tx & NRT
- Lee et al 2014;



Myth # 2
People with mental health conditions don't want to quit

- We followed 250 people with SMI & SUD over 11 years – 90% tried to quit! (Ferron et al, 2011)
- But they are afraid
  - That they won't succeed
  - That they can't cope without smoking
- Ambivalence is the norm

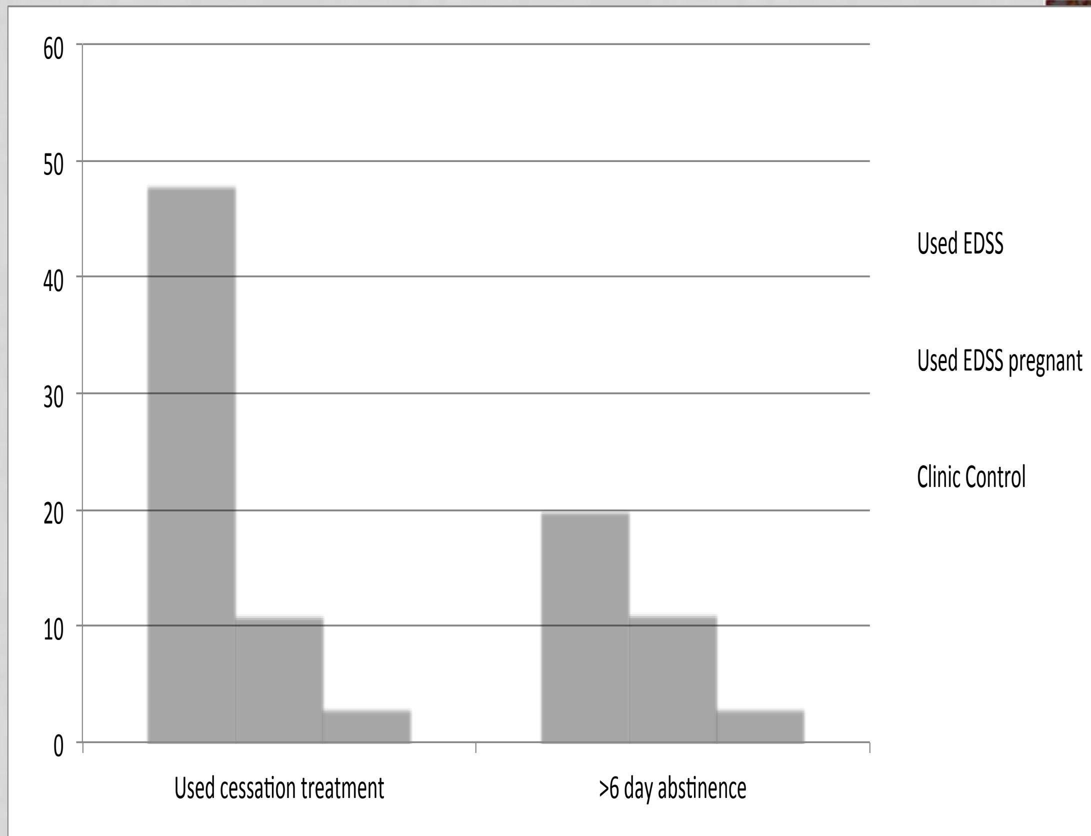
Tidey et al., 2002; George et al., 2000, 2002; Evins et al., 2002, 2005, 2007; Haung et al., 2005; Tonstad 2002

MYTH #3 MOTIVATIONAL INTERVIEWING DOESN'T WORK

- Multiple studies show efficacy of brief motivational interventions in people with schizophrenia and other SMI compared to education or no intervention
  - (Steinberg 2004; Cather 2010; Williams 2010; Steinberg 2012; Brunette 2011; Brunette 2013; Prochaska 2014)

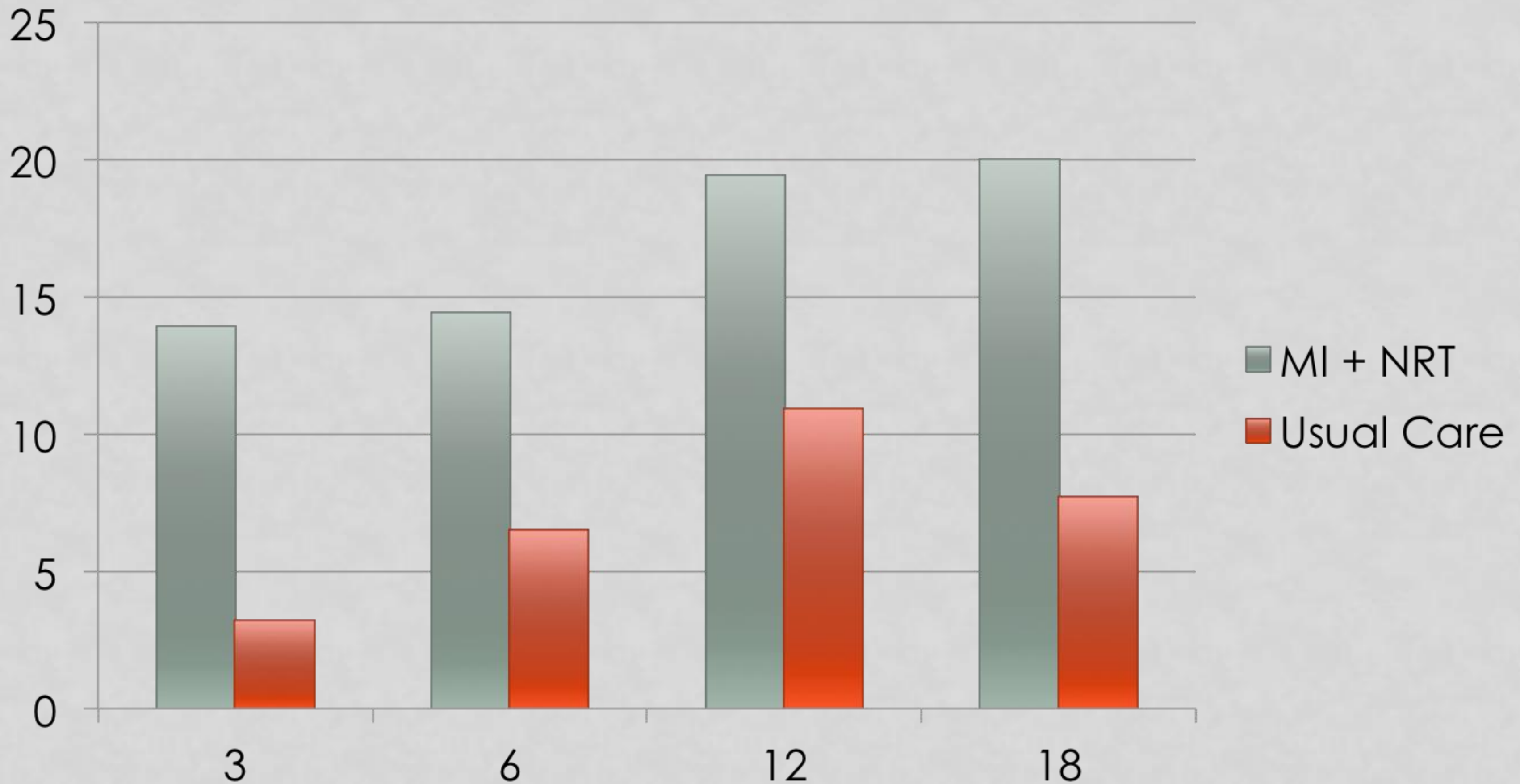
IMPACT OF MOTIVATIONAL DECISION SUPPORT IN DISADVANTAGED PRIMARY CARE PATIENTS

Concord Hospital Family Health Center



Brunette et al ASCP 2015; JSAT 2013

MOTIVATIONAL INTERVENTION AND FOLLOW-UP WITH MENTAL HEALTH INPATIENTS (N=224)



Prochaska 2014

Myth #4
People with MENTAL ILLNESS AND ADDICtiON can't quit

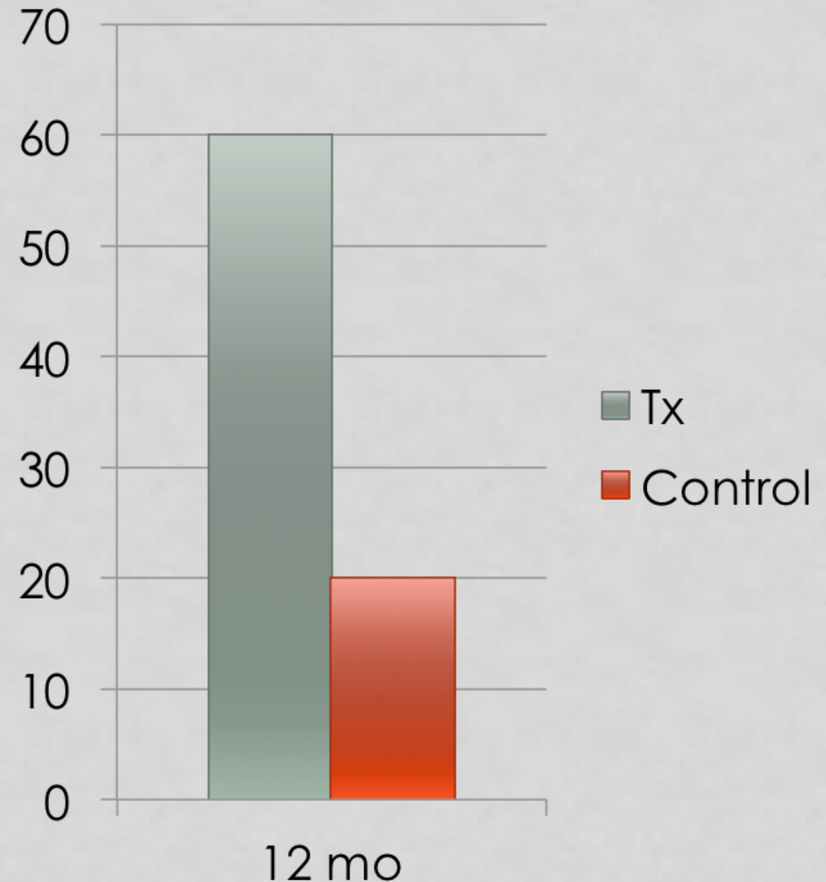
- Cold turkey efforts fail
- Research shows they can quit
  - 14 studies in schizophrenia
  - 6 studies in bipolar disorder
  - Dozens studies in depression and anxiety disorders
  - Dozens in substance use disorders

BUT CESSATION TREATMENT SHOULD BE DIFFERENT

- They benefit from
  - More behavioral treatment
  - Longer treatment
  - Medication combinations
- Multiple quit attempts may be required
- Quit attempts can build skills and confidence

1 YEAR CESSATION TREATMENT IN SMOKERS WITH SCHIZOPHRENIA AND BIPOLAR DISORDERS

- 203 received 12 weeks varenicline and weekly CBT
- 42% (87) were abstinent at 3 months
- Randomly assigned to cont. behav tx and take varenicline or placebo

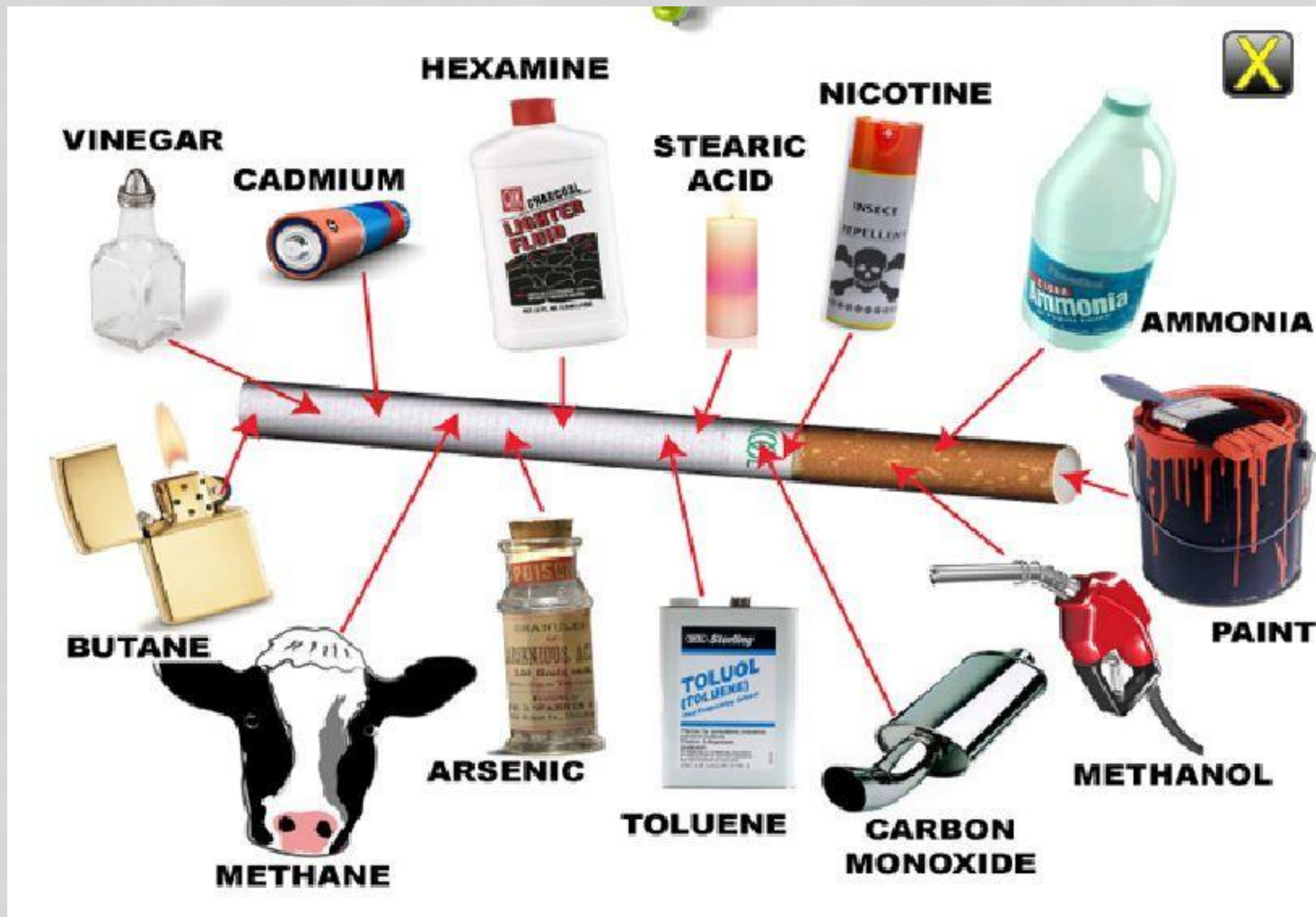


Evins et al 2014

MYTH #5: NICOTINE REPLACEMENT THERAPY IS HARMFUL

- Tobacco plant
  - Nicotine is the only addictive component
  - Other components – some harmful
- 599 approved additives in products
- Tobacco smoke: over 4000 components

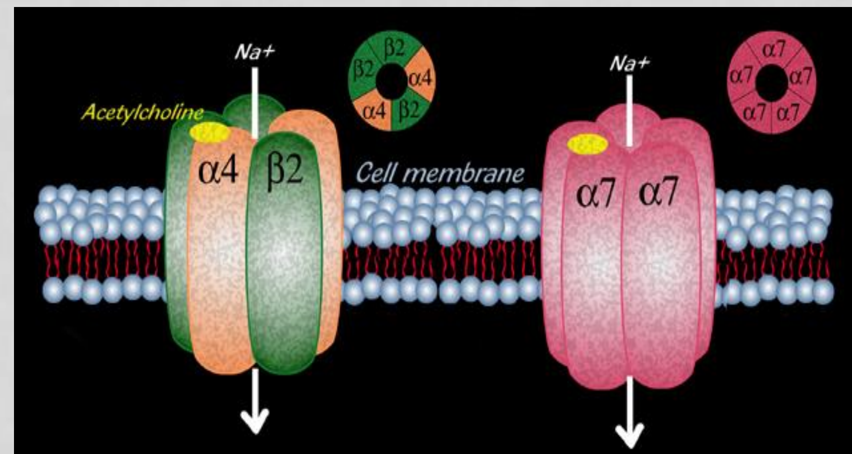
IT'S THE Toxins in smoke THAT cause CVD, cancer, lung disease, diabetes



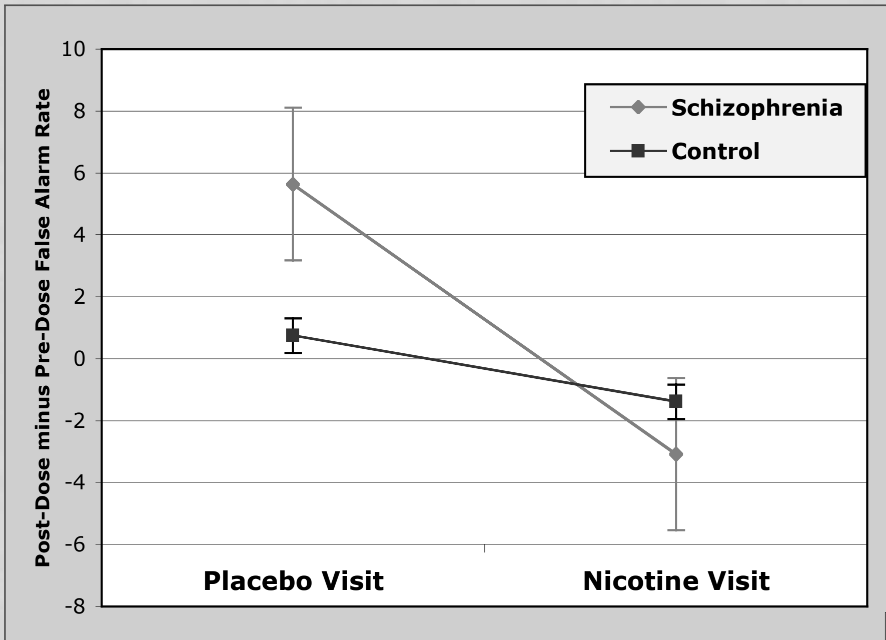
NEUROBIOLOGY OF NICOTINE

- Nicotine effects are mediated by nicotinic acetylcholine receptors
  - 17 receptor subtypes
  - alpha-4, beta-2 and alpha-7 likely related to nicotine addiction
  - New research focusing on other receptor subtypes
    - E.g. Alpha4beta2alpha5
      - Allosteric modulator
  - Active in networks for

Cognition and reward



Nicotine Improves Memory in Non-smokers



Nicotine Reduced False Alarms in an Episodic Memory Task:

Main Effect for Nicotine

$F_{(1:17)}=8.47$, $p<0.01$

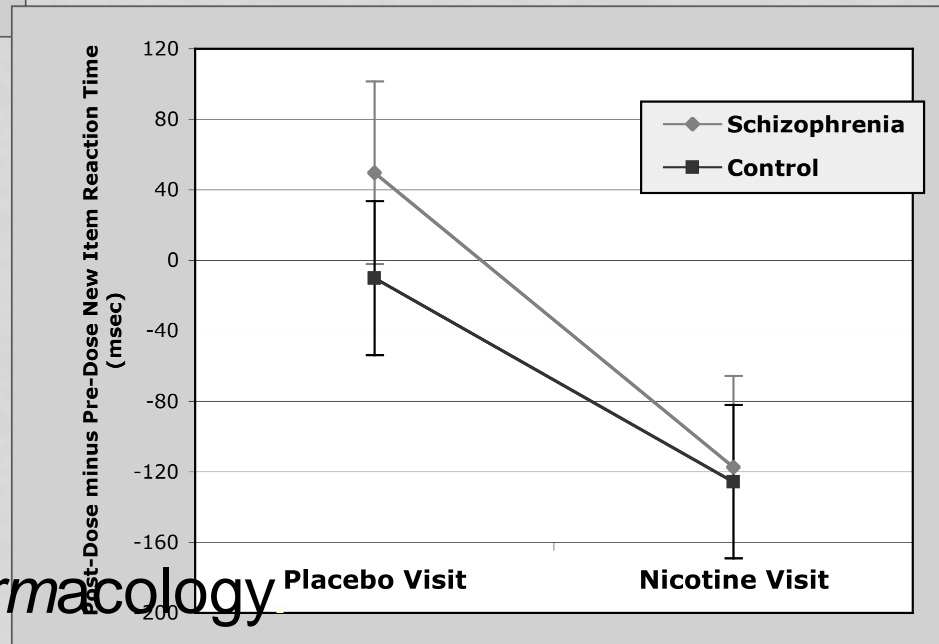
Nicotine x Diagnosis Interaction

$F_{(1:18)}=3.3$, $p=0.086$

Nicotine Reduced Hit Reaction Time in Non-Smokers

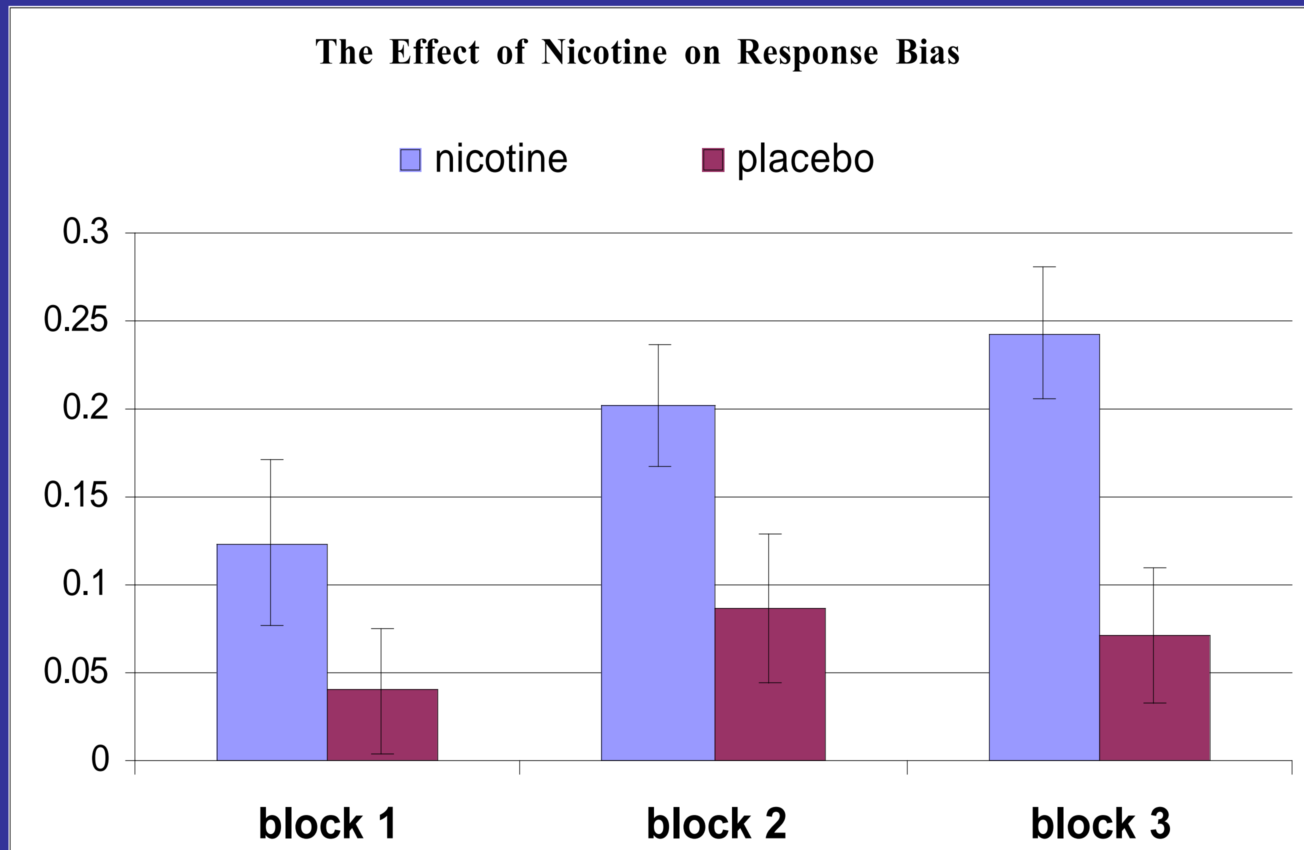
Main Effect of Nicotine:

$F_{(1,18)}=9.11$, $p=0.007$



Jubelt et al., 2008, *Psychopharmacology*

NICOTINE ENHANCES REWARD RESPONSIVITY IN HEALTHY NON-SMOKERS



Main Effect of Treatment: $F_{1, 28}=8.18$, $p=0.008$

Barr et al., 2008, *Biol Psych.*

MYTH #6: ONLY PRIMARY CARE PROVIDERS ARE EQUIPPED TO TREAT TOBACCO USE

- Behavioral health providers have more access to and time with smokers with mental illness than primary care providers
- Behavioral health providers have more training in motivational and behavior change strategies
- Tobacco Use Disorder is a DSM-5 diagnosis

Williams et al, 2006; 2014

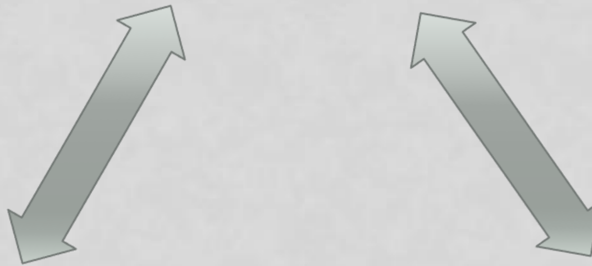
CAN PEOPLE WITH MI QUIT? YES!

- People with mental illness need combined treatment to quit
- MONITOR during cessation treatment
  - Schizophrenia symptoms stable & improving
  - Depression symptoms can worsen mildly
  - No published data in bipolar disorder
  - Little data in anxiety disorders

INGREDIENTS FOR CESSATION

Patient

Environment/P
olicy



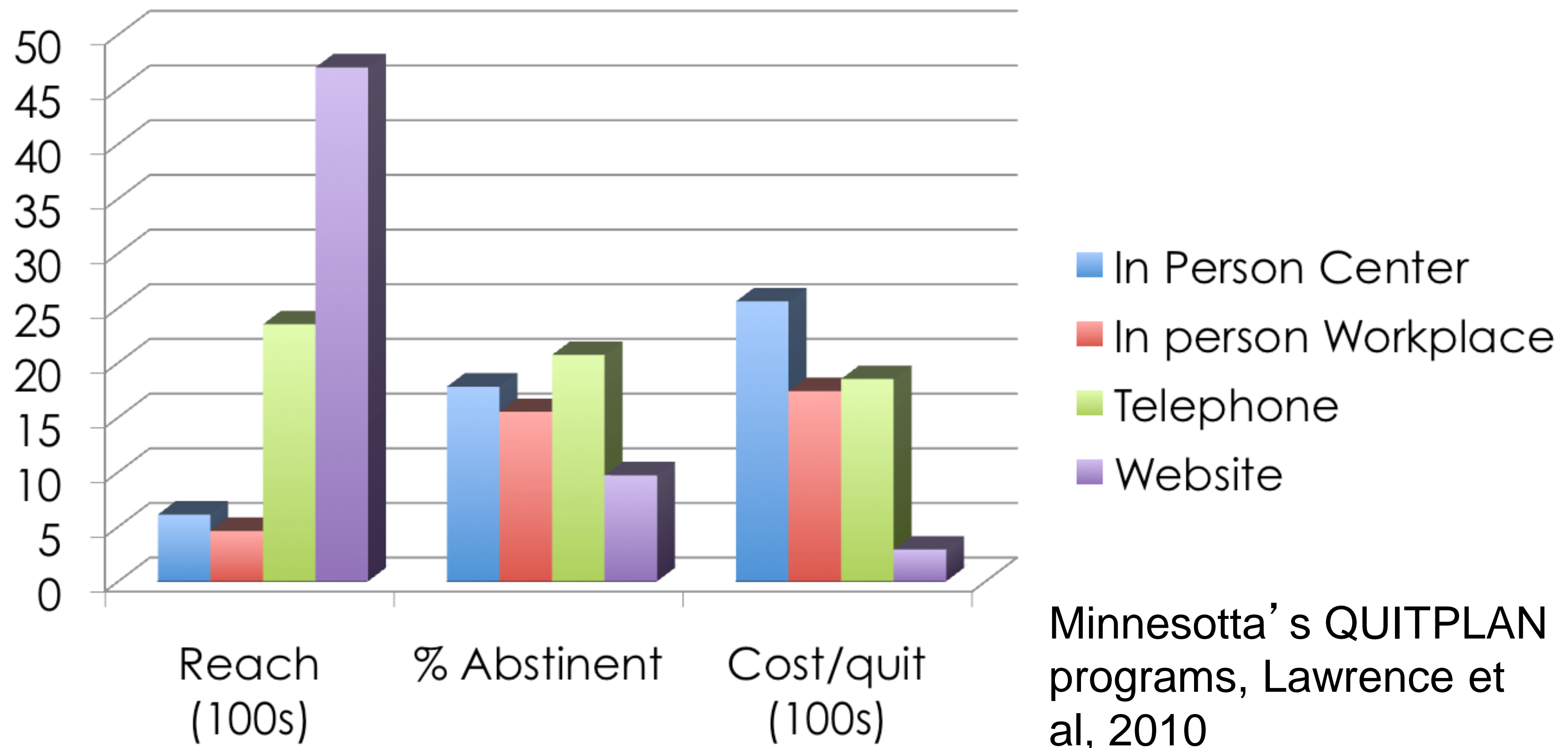
Clinician

Treatment

EVIDENCE-BASED STRATEGIES IN CESSATION TREATMENT FOR PEOPLE WITH MENTAL ILLNESS

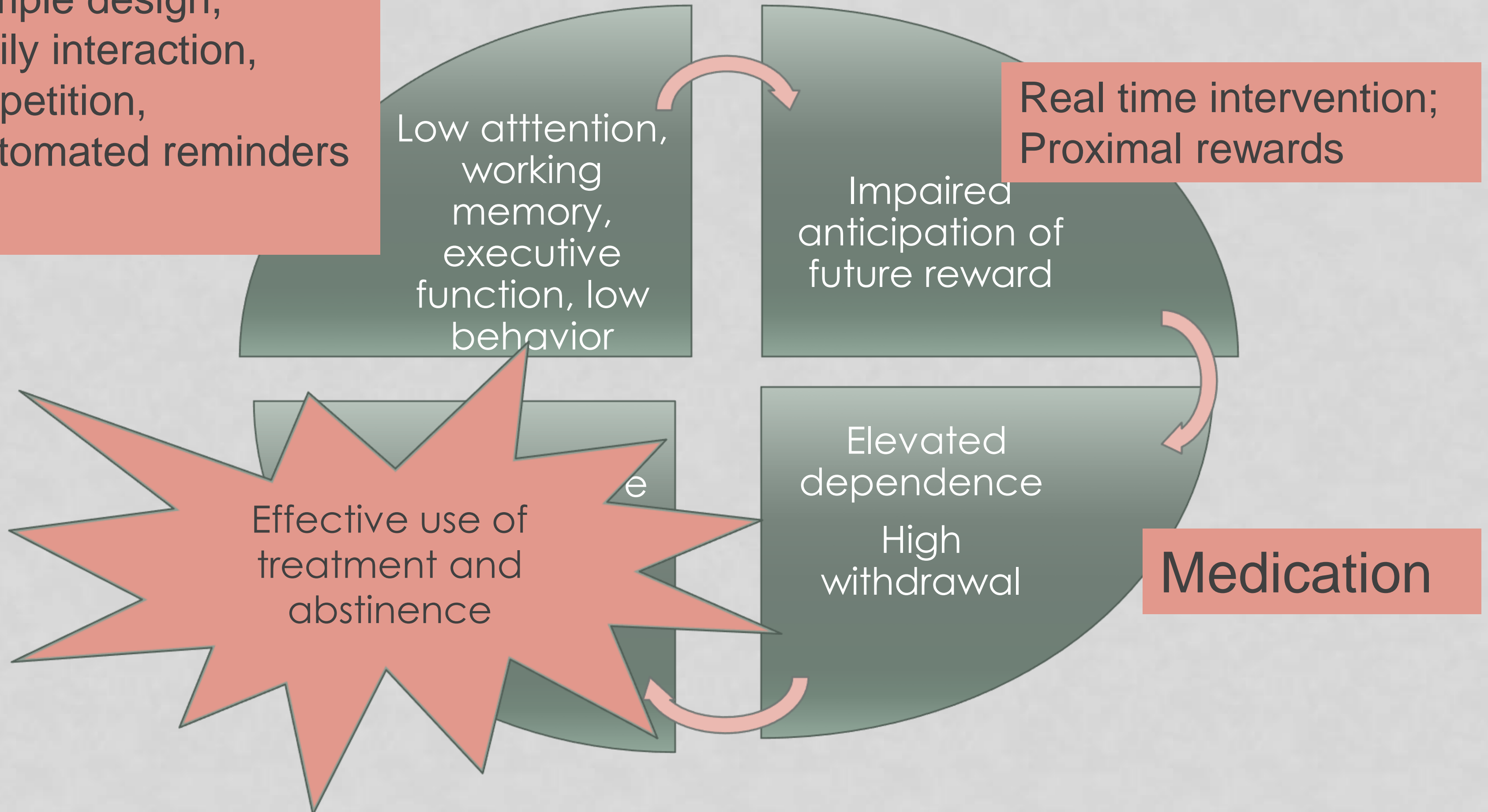
- Stagewise interventions
  - Precontemplation
  - Contemplation
  - Action
  - Relapse prevention
- Behavioral Strategies
  - Counseling
  - Incentive programs
- Biological Strategies
  - Medications
  - NRT

DIFFERENT STRATEGIES TO DELIVER EVIDENCE-BASED TOBACCO TREATMENT



Minnesotta's QUITPLAN programs, Lawrence et al, 2010

TECHNOLOGY-FACILITATED TOBACCO TREATMENT FOR SMOKERS WITH PSYCHOSIS



BEHAVIORAL TREATMENTS

FOR PEOPLE WITH MENTAL HEALTH CONDITIONS

WHAT IS MOTIVATIONAL INTERVIEWING?

- Goal:
  - To create a salient dissonance or discrepancy between the person's current substance abuse behavior and important personal goals – attained by getting more information and awareness of addiction behavior and how it interferes with person's life

- Core Principles
  - Express empathy – hard to quit
  - Establish personal goals – health, finance, social
  - Develop discrepancy- smoking interferes
  - Roll with resistance -
  - Support self efficacy – cutting down,

WHAT IS DECISION SUPPORT?

- Information in plain language about treatment options
- Used in cases where treatment options have similar efficacy - "equipoise" – preference-based care
- Improves use of treatment and satisfaction with treatment – many studies in medicine

MOTIVATIONAL DECISION SUPPORT

Let's Talk About Smoking

Bupropion

- Bupropion is a medicine that helps you quit smoking.
- It is a pill you take once or twice a day for at least two months and up to a year.
- Bupropion also treats depression.

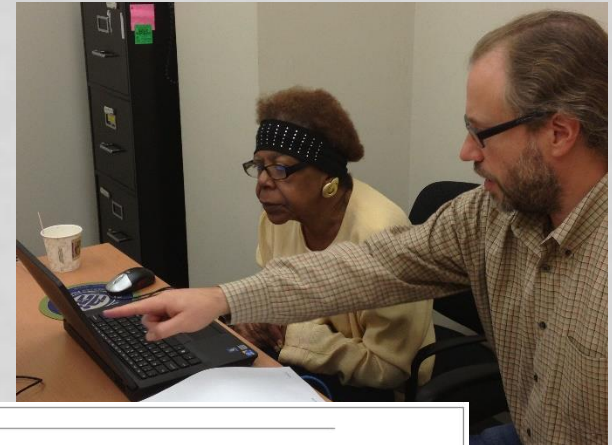
Want to know more

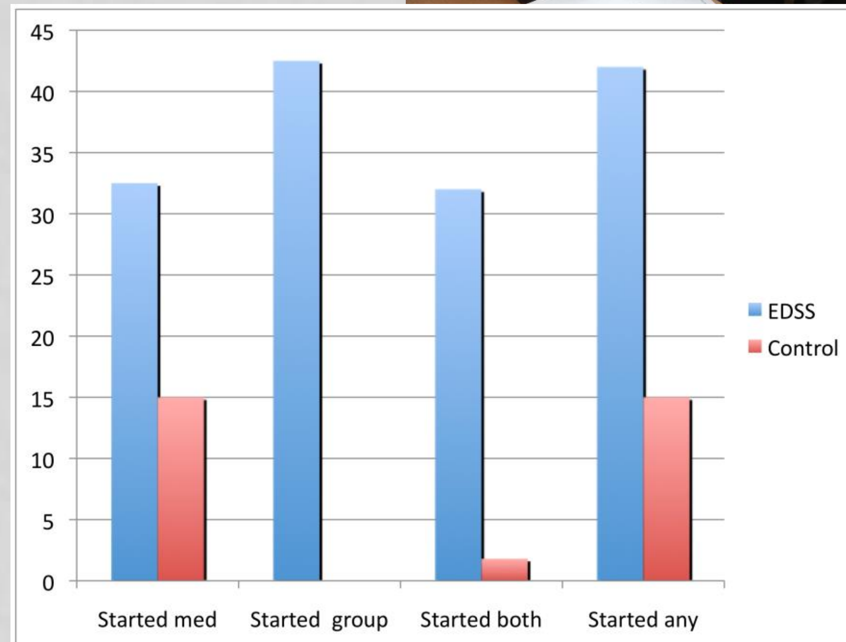
Do not want to know more

Click if you are interested in learning more.

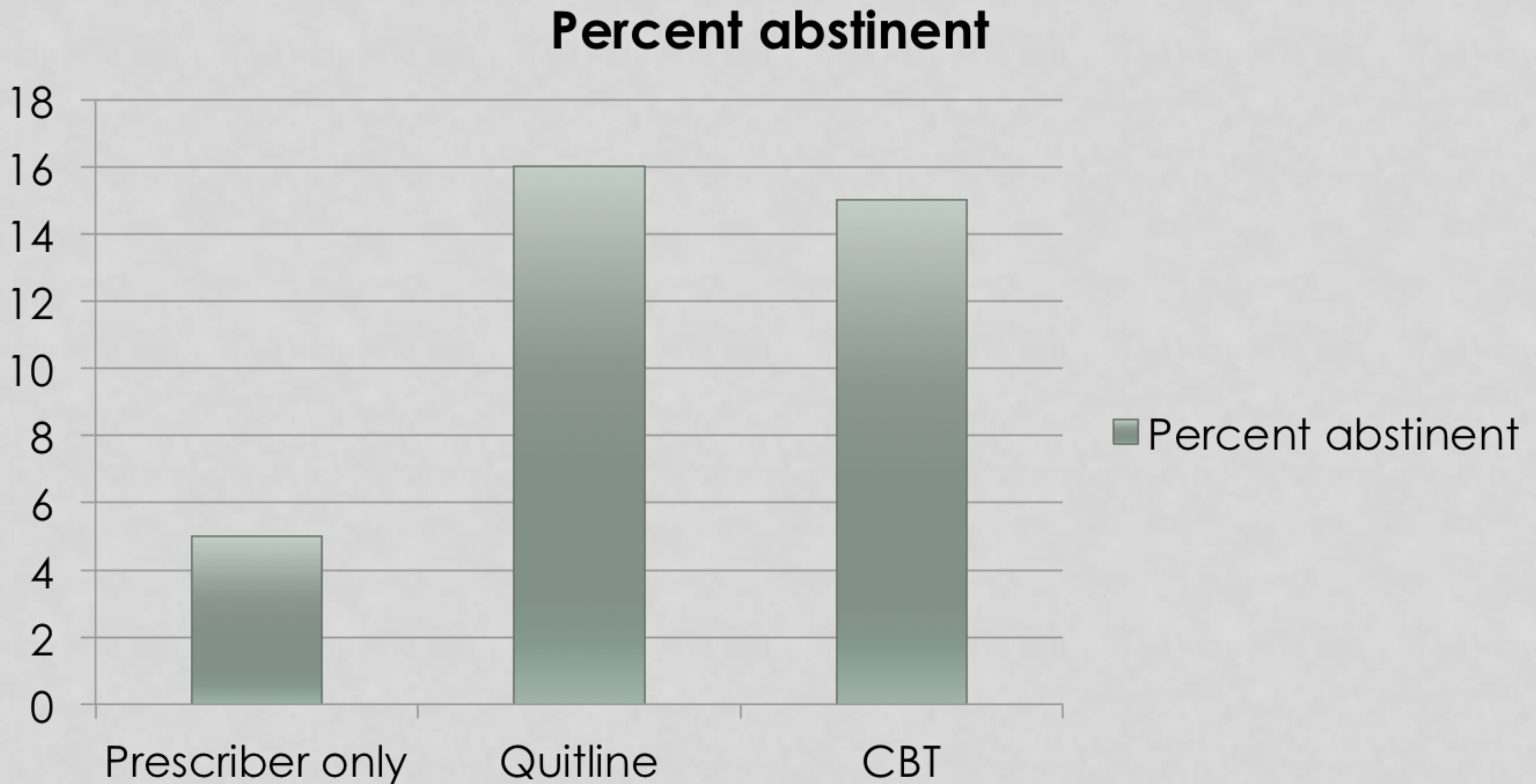
DESIGN OF DARTMOUTH WEB-BASED SMOKING CESSATION DECISION SUPPORT SYSTEM

- Based on usability testing with 85 SMI smokers (Ferron et al., 2011) and research of others (Rotondi, 2007)
  - Computer mouse tutorial
  - Simple, linear design – only 2 layers deep
  - Large buttons, font
  - Simplified language - 5th grade level
  - Text to Audio (for slow or poor readers)
  - Video hosts with SMI
  - Quit using treatment testimonials





BEHAVIORAL TREATMENT IS NEEDED TO INCREASE QUIT SKILLS



NH Wellness Incentive Program. Brunette, Pratt, Bartels Unpub

KEEP THE INFORMATION SIMPLE

What are things that make you want to smoke?

Things that make you want to smoke are called **triggers.**

A trigger is when a certain time, place, person or activity makes you want to smoke.

- A trigger can be a certain **time** of day you are used to lighting up a cigarette or cigar, like when you wake up.
- A trigger can be a **place** where you usually smoke, like your kitchen table.
- A trigger might be another **person**, such as a friend you always smoke with.
- A trigger can also be an **activity** during which you usually smoke, like waiting for the bus.

Back

Next

TYPICAL WEBSITE

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Freedom FROM SMOKING® ONLINE

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SEARCH

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Module 2: Triggers
Module 2: Nicotine Addiction
Module 2: Stress Management
Module 2: Ways to Make Lifestyle Changes

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- My Reasons to Stop Smoking.

Give the gift of *Freedom From Smoking®* Online

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A A A

Module 2: Triggers

Welcome back! :-) This lesson is about identifying your smoking triggers. After you started smoking you began to perfect your smoking behavior by bringing your cigarettes into other situations. Then you began to experience other positive results. You probably found it gave you something to do with your hands when you were on the phone or at a party. Or you found it helped you slow down and take a break when you needed to relax.

Each time you smoked in these situations you reinforced your pattern of behavior. You began to connect the act of smoking with these different activities and emotions. You no longer think about needing something to do with your hands. Instead, you just smoke when you're on the telephone, or when driving. The situations became triggers, or cues to light up. What are some of your triggers?

Triggers can be many things. They can be associated with good or bad situations. Different people have different triggers. For some smokers, waking is a trigger, or turning on the computer. For others it isn't. Some triggers are more important than others. Some activities are so strongly connected to smoking that you cannot imagine doing them without a cigarette. Am I striking a chord?

Studying your smoking triggers helps you determine your smoking pattern. You will learn how often the triggers happen. You will learn which triggers are the strongest, or which cigarettes are the "gotta haves". With this information, you can begin to break

Your Account

Welcome Mary
Your Premium Membership will expire on Nov 2, 2013

Quit Date: Sep 1, 2013 (update)

Manage your membership

Click here to log out.

Local American Lung Association Chapters

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Sign Up For eNewsletters

Receive Mary Ella's weekly message via email.

Contact Us

Contact the American Lung Association HelpLine by phone, email or instant chat.

Email the American

MORE AND LONGER BEHAVIORAL TREATMENT

- More and longer treatment
- Incorporating motivational interventions
- Flexible approach
- Combine with biological treatments

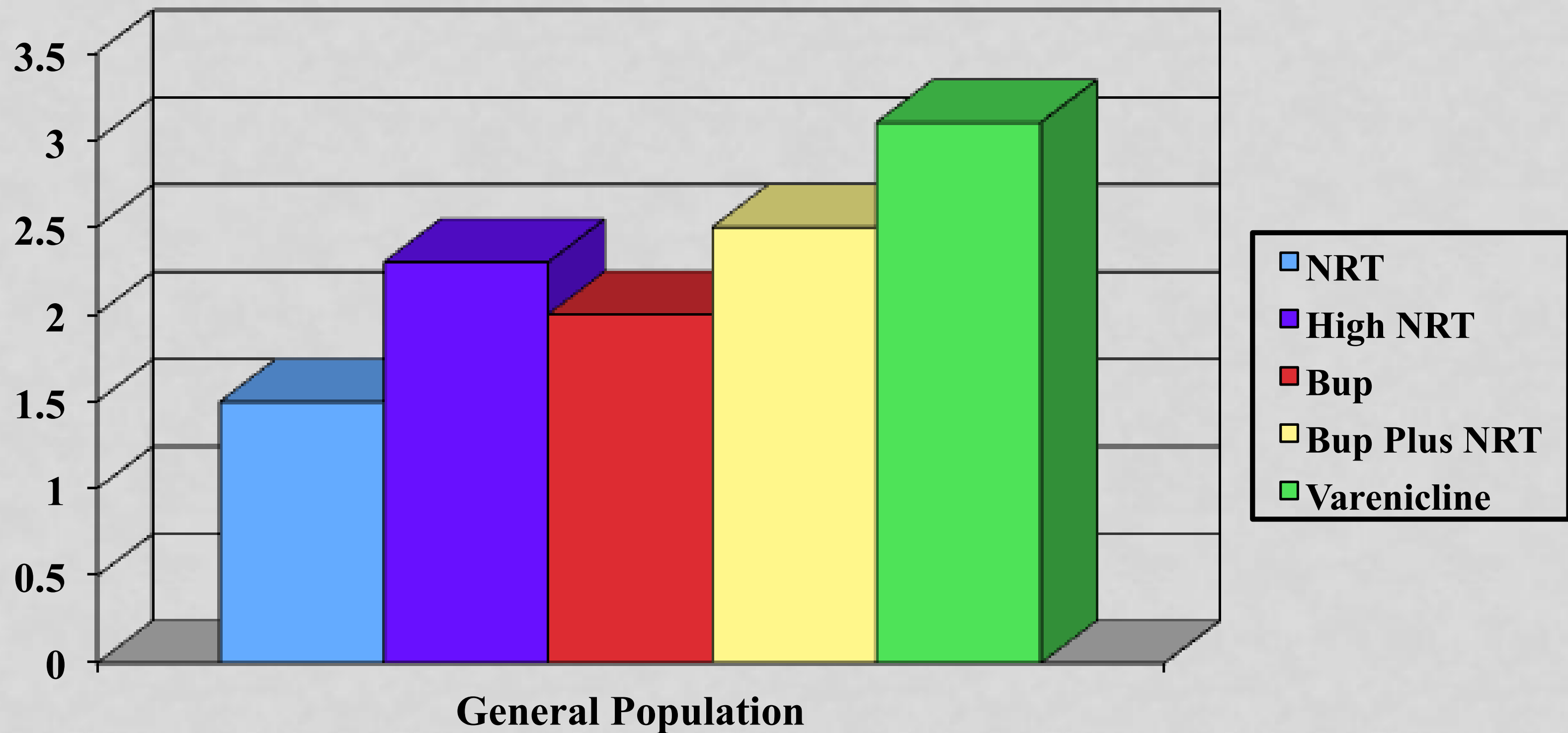
BIOLOGIC TREATMENTS

FOR PEOPLE WITH MENTAL HEALTH CONDITIONS

FIRST LINE CESSATION MEDS

- Bupropion, nicotine replacement, varenicline all are effective – best if used in combination
- Individual counseling or group/class that teaches quit skills
- **Counseling + combination pharmacotherapy = quit success**

HOW MUCH DO MEDS HELP PEOPLE QUIT?



Odds ratios for treatment effect over placebo in general population (Fiore 2008 for DHHS; Smith et al, Arch Gen Psych 2009)

THE PRESCRIBER ROLE:THE 5 AS

Ask about tobacco use. Identify and document tobacco use status for every patient at every visit.

Advise to quit. In a clear, strong and personalized manner urge every tobacco user to quit.

Assess willingness to make a quit attempt. Is the tobacco user willing to make a quit attempt at this time?

Assist in quit attempt. For the patient willing to make a quit attempt, offer medication and provide or refer for counseling or additional treatment to help the patient quit. For patients unwilling to quit at the time, provide interventions designed to increase future quit attempts.

Arrange follow-up. For the patient willing to make a quit attempt, arrange for follow-up contacts, beginning within the first week after the quit date. For patients unwilling to make a quit attempt at the time, address tobacco dependence and willingness to quit at next clinic visit.

Dixon et al 2009

BUPROPION (ZYBAN)

- NE and DA reuptake inhibitor
- Dose: 300 mg/day (150 BID) – up to a year
- Interactions: Inhibits 2D6 , metab by 2B6, reduce seizure thresh
  - Consider reduce dose aripiprazole,risperidone, iloperidone
  - Caution with all meds that may reduce seizure threshold
  - Potential interactions with many antidepressants
- Safety/side effects
  - Insomnia, stomach upset, constipation, diarrhea, HTN
- Most effective when used with Nicotine Replacement Patch plus lozenge or gum
- Start 2 weeks before quit date
- Not approved for kids (under 18)

NICOTINE REPLACEMENT THERAPY

- Available in: patch, gum, lozenge, spray
- Patch Dosing: 21 mg/D X 6 wks, 14 mg/D X 2 wks, 7 mg/d X 2 wks (total 10 wks – up to 1 year)
- Lozenge/gum dosing: 2 mg or 4 mg prn craving hourly 8Xday if used with patch, up to 24Xday without patch

NICOTINE REPLACEMENT THERAPY

- Use patch plus gum or lozenge prn craving – more effective in schizophrenia
  - Research on higher doses and smoking on patch is safe (Benowitz 1998; Zevin 1998)
  - If smokes ≤1/2 pack/day then start with 14 mg/d patch plus prn gum or lozenge
- Safety/side effects
  - Headache, stomach upset
- Start on quit date – OK to start a month earlier

COMBINATION BUPROPION/NRT WORKS BETTER THAN EITHER ALONE

- Start bupropion 2 weeks before quit date
- Start NRT on quit date or up to a month earlier

Evins, et al., 2007 *J Clin Psychopharmacology*

VARENICLINE (CHANTIX)

- Alpha4beta2 nicotine acetylcholine agonist
- Titrate up from 0.5 mg/day to 1.0 BID over 1 week. 0.5-1.0 mg BID 3-6 months
- Excreted unchanged in urine
- Interactions - no significant
- Safety/side effects: Nausea, diarrhea, headache, neuropsych
- Lower dose to address side effects
- Not studied or approved for kids (under 18)

CESSATION TX SIDE EFFECTS
(REMEMBER WITHDRAWAL ALSO HAS EFFECTS)

	Patch	Patch + lozenge	Buprop	Bup + lozenge	Varen*	Placebo*
Nausea	4.3	7.9	3.8-16*	5.0	52*	16-19*
Sleep dist /Abnl dreams	11.3	9.0	12*-16.8	10.6	15*	20-22*
Local irritation	Skin 15%	Throat 2-7%	Throat 2%	Throat 2-7%		
Irritability			11*		12*	10*

Smith, 2009; *Nides et al 2006

FLOW SHEET FOR USE OF CESSATION MEDICATION/NRT

- Developed based on
  - Evidence of efficacy and safety in general population
  - Evidence of efficacy and safety in schizophrenia
  - Consider most effective options first: varenicline and combinations
  - Safety and patient choice also guide med selection

A GUIDE FOR CHOOSING SMOKING CESSATION MEDICATION FOR PATIENTS WITH MENTAL ILLNESS

TAILORING BASED ON RESEARCH EVIDENCE
(BADER 2009; FIORE 2008; PIPER 2009; EVINS 2010; HITSMAN 2009)

1. In the past *year*, was this patient:
- Suicidal or homicidal
- Significantly depressed
- Violent
- Unwilling to attend regular doctor's appointments to monitor medications
- Under 18 years old

No to all → VARENICLINE

Yes to any ↓

2. Does patient have a history of:
- Mania
- Anxiety disorder
- Seizure
- Eating disorder
- Under 18 years old

No to all →

3. Does patient:
- Smoke 20 or more cigarettes a day
- Have a history of failure at serious quit attempts
- Have nicotine withdrawal when patient stops smoking, or
- Failure on single daily low dose of NRT

Yes to any → BUPROPION + High dose combination NRT

No to all → BUPROPION +Low dose combination NRT

Yes to any ↓

4. Does patient:
- Smoke 20 or more cigarettes a day
- Have a history of failure at serious quit attempt
- Have nicotine withdrawal when patient stops smoking, or
- Failure on single daily low dose of NRT

Yes to any → High dose combination NRT

No to all → Low dose combination NRT

Combination Nicotine Replacement Therapy (NRT):

High dose NRT: 21mg patch plus immediate release

Low dose NRT: 14mg patch plus immediate release

Immediate release: gum, lozenge, spray or inhaler up to 8 X day at appropriate strength. (Gum and lozenge come in either 2mg or 4 mg strength.)

MED ADJUSTMENTS NEEDED WITH SMOKING ABSTINENCE

- Smoking (polynuclear aromatic hydrocarbons) speeds hepatic metabolism of many medications
- Serum concentrations of medications stable in smokers may rise following abstinence
- CYP 1A1, 1A2, and 2E1
  - Abstinence assoc with 30-42% reduction in 1A2 activity over the first 1-3 days of abstinence
  - Haldol, Prolixin, Olanzapine, Clozapine, Mellaril, Thorazine, Asenapine
  - Caffeine is also metabolized through 1A2
- Therapeutic drug monitoring and 10% dose reduction has been recommended
- Nicotine in NRT does not change metabolism
- Monitor.. for adverse effects, relapse to smoking

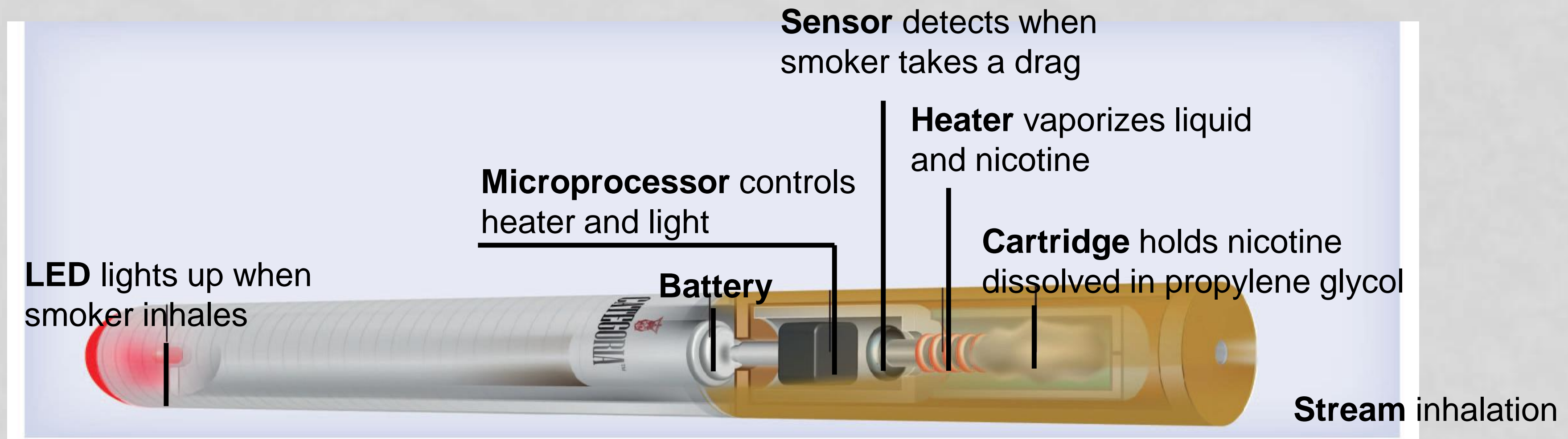
KEEP TRYING

- Adjust dose or switch med to address side effects
- Encourage behavioral intervention if not attending class/group
- Use combinations if hasn't been tried:
  - NRT combination
  - Buprop + NRT combination
- Most people quit after several tries

ELECTRONIC CIGARETTES

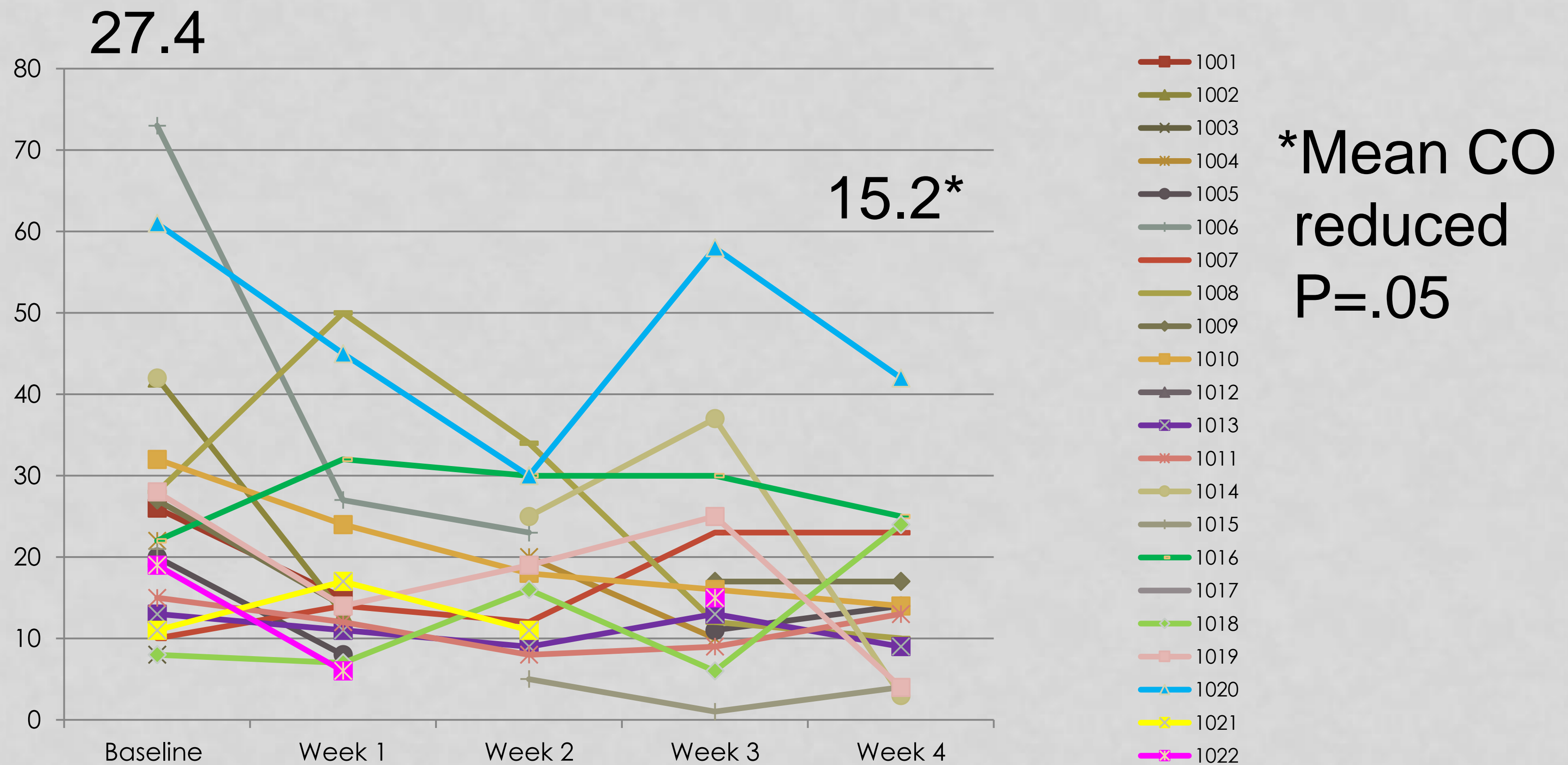
AND PEOPLE WITH MENTAL HEALTH CONDITIONS

What about E-Cigarettes?



- Many types and brands
- Typical cartridge = 2 packs of cigarettes
- Toxins 8-600X lower but most products not tested (Goniewitz, 2014; Rabinowitz 2014)
- Most common among smokers wishing to cut down/quit (Cummins 2014)
- Naturalistic use not associated with different cessation outcomes in SMI cessation studies (Prochaska 2014; Brunette 2014)

CO Levels after providing e-cigarettes to smokers with schizophrenia or bipolar disorder who had failed quit attempts



*Mean CO reduced P=.05

Pratt, Brunette et al

OTHER RESOURCES

http://smokingcessationleadership.ucsf.edu/MH_Resources.htm This site has a wide array of resources and links related to smoking cessation for people with mental illness. Included are lectures from various leaders in the field.

http://tdi.dartmouth.edu/prcd/cessation/ This site has excellent lectures by Nancy Rigotti, Professor of Medicine at Harvard. Topics include motivational interviewing, pharmacotherapy, biology of nicotine. There are live patients with which you can interact to practice counseling strategies.

https://www.smokingcessationandpregnancy.org/ This site has excellent lectures and simulated patients with a focus on smoking cessation in women and around pregancy. You can earn 4 CME credits for $25.

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THANKS