



UNIVERSITY OF OTTAWA  
HEART INSTITUTE  
INSTITUT DE CARDIOLOGIE  
DE L'UNIVERSITÉ D'OTTAWA



*Smoking Cessation Interventions in  
Clinical Practice 2016*

*Managing Smoking  
Cessation*

*Robert Reid, PhD, MBA*

*Division of Prevention & Rehabilitation*

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# Declaration

Robert Reid, PhD, MBA

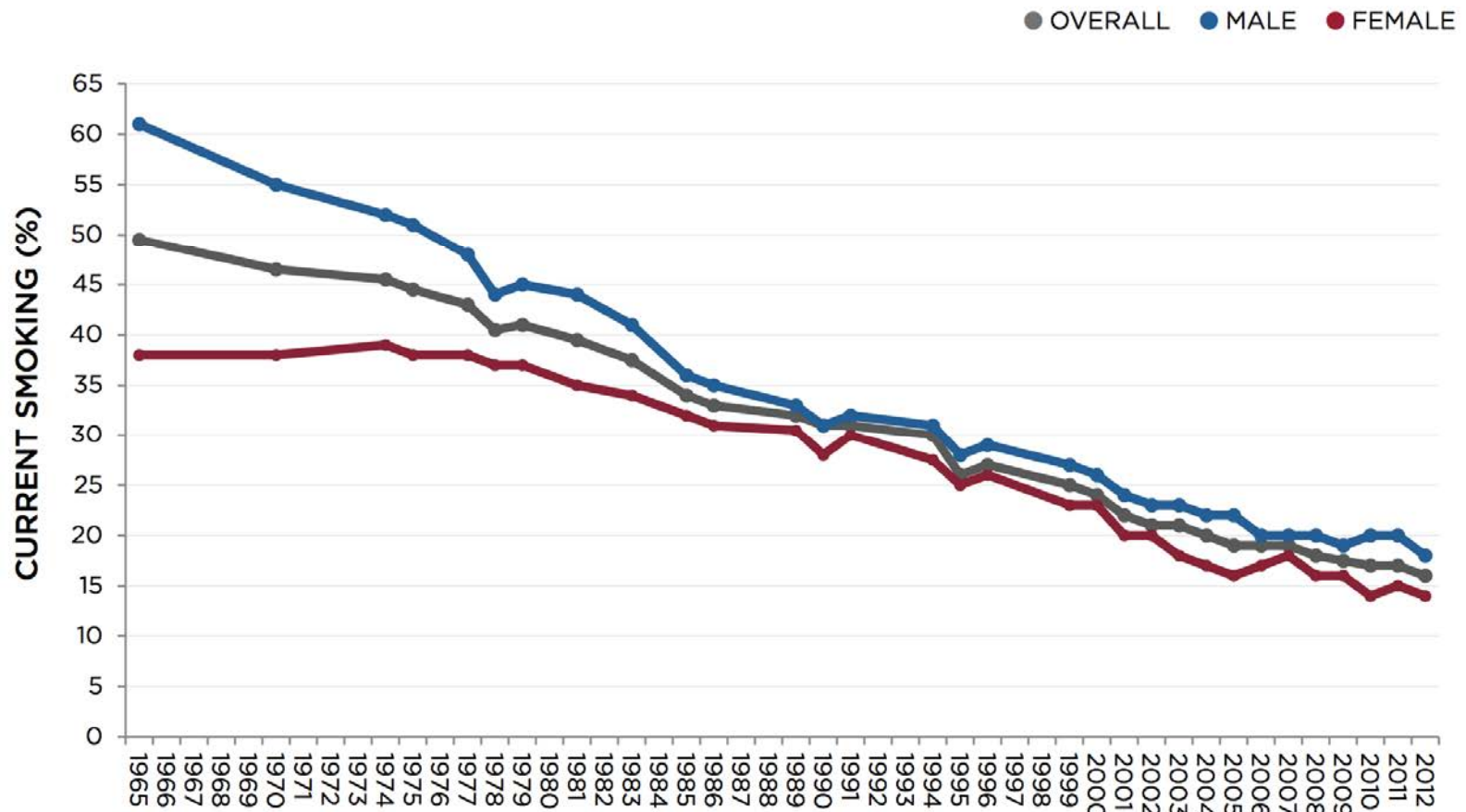
*In the past I have received research and educational support from, and/or served as a consultant to:*

**PFIZER**

**JOHNSON & JOHNSON**



# Smoking Prevalence

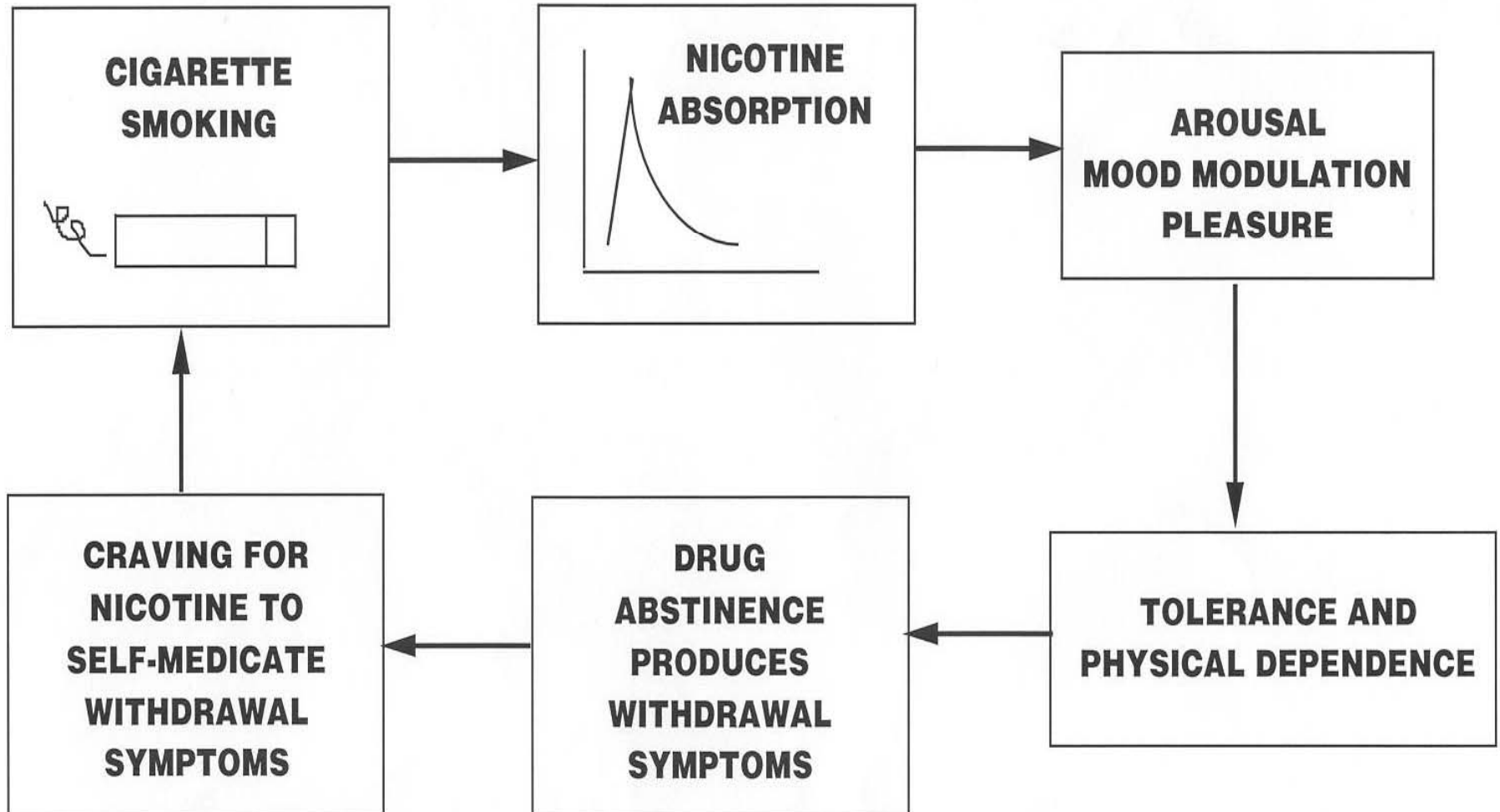




**FOREBRAIN**  
*Dopamine*

**BRAIN STEM**  
 *$\alpha_4\beta_2$  receptors*

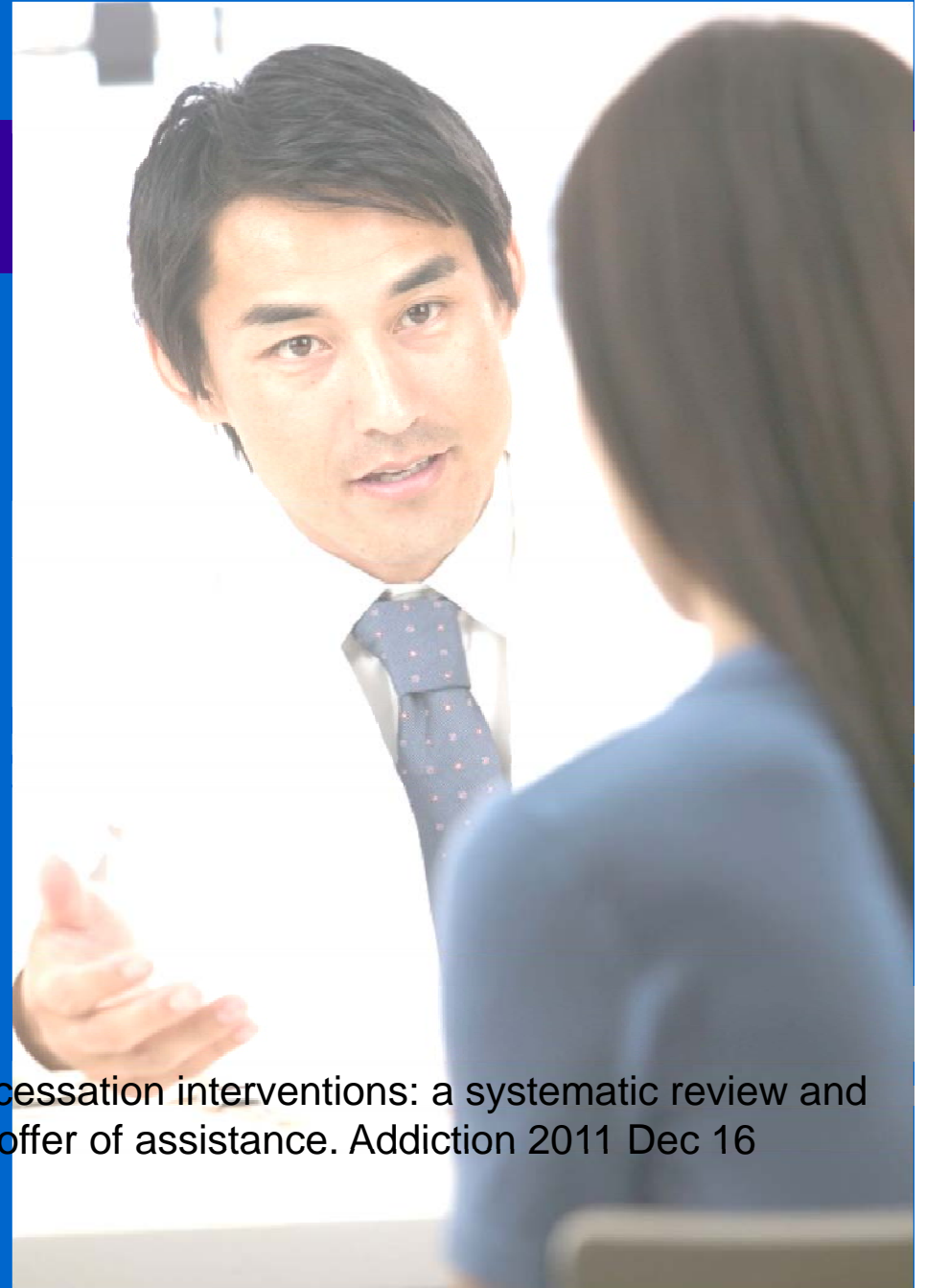
# NICOTINE ADDICTION CYCLE



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- 
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***“Health care professionals may be more effective in offering assistance to all smokers than by advising smokers to quit and offering assistance only to those who express an interest in doing so.”***

Aveyard P, et al. Brief opportunistic smoking cessation interventions: a systematic review and meta-analysis to compare advice to quit and offer of assistance. *Addiction* 2011 Dec 16



# THE 3As: ASK, ADVISE, ACT



## ASK AND DOCUMENT

Include tobacco use question as one of the patient's vital signs

*Have you used any form of tobacco in the last 7 days?*

*Have you used any form of tobacco in the past?*



## ADVISE AND REFER

Provide strong, personalized, non-judgmental advice to quit with offer of support



## ACT

For Patient who is **READY TO QUIT**:  
QUIT PLAN VISIT

- Strategic counselling
- Pharmacotherapy
- Follow-up/OMSC Smoker's Follow-up Program

For Patient who is **NOT READY TO QUIT**:

- Follow-up/OMSC Smoker's
- Follow-up Program



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OTTAWA MODEL  
FOR SMOKING CESSATION  
MODÈLE D'OTTAWA  
POUR L'ABANDON DU TABAC

5<sup>TH</sup> ANNUAL OTTAWA CONFERENCE  
STATE OF THE ART CLINICAL APPROACHES TO  
**SMOKING CESSATION**





# *Treatment Goals*

Quit abruptly on  
Target Quit Date

Reduce to quit  
on  
Target Quit Date

Reduce smoking

Not interested in  
quitting or  
reducing

- 
- 
- 

## ***Cessation Pharmacotherapy***

*“Pharmacotherapy provides a withdrawal-free doorway to an opportunity during which a smoker can develop a whole new repertoire of non-smoking behaviours”*

# *Nicotine Replacement Therapy*

- *Rationale*
- *Products*
  - *The 'Patch'*
  - *Chewing Pieces*
  - *Lozenges*
  - *Nicotine Inhaler*
- *Combo NRT better*

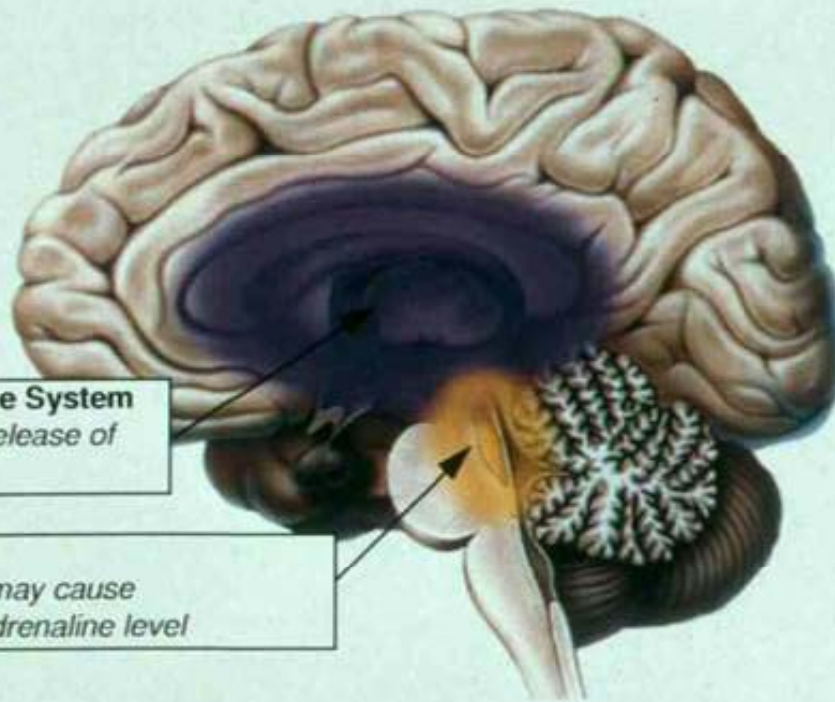
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# ***Bupropion***

***Rationale:  
Smoking and depression***

# Bupropion

## The Biology of Nicotine Addiction



**Mesolimbic Dopamine System**  
*nicotine stimulates release of dopamine*

**Locus Ceruleus**  
*nicotine withdrawal may cause changes in the noradrenaline level*

**Nicotine deprivation causes two reactions:**

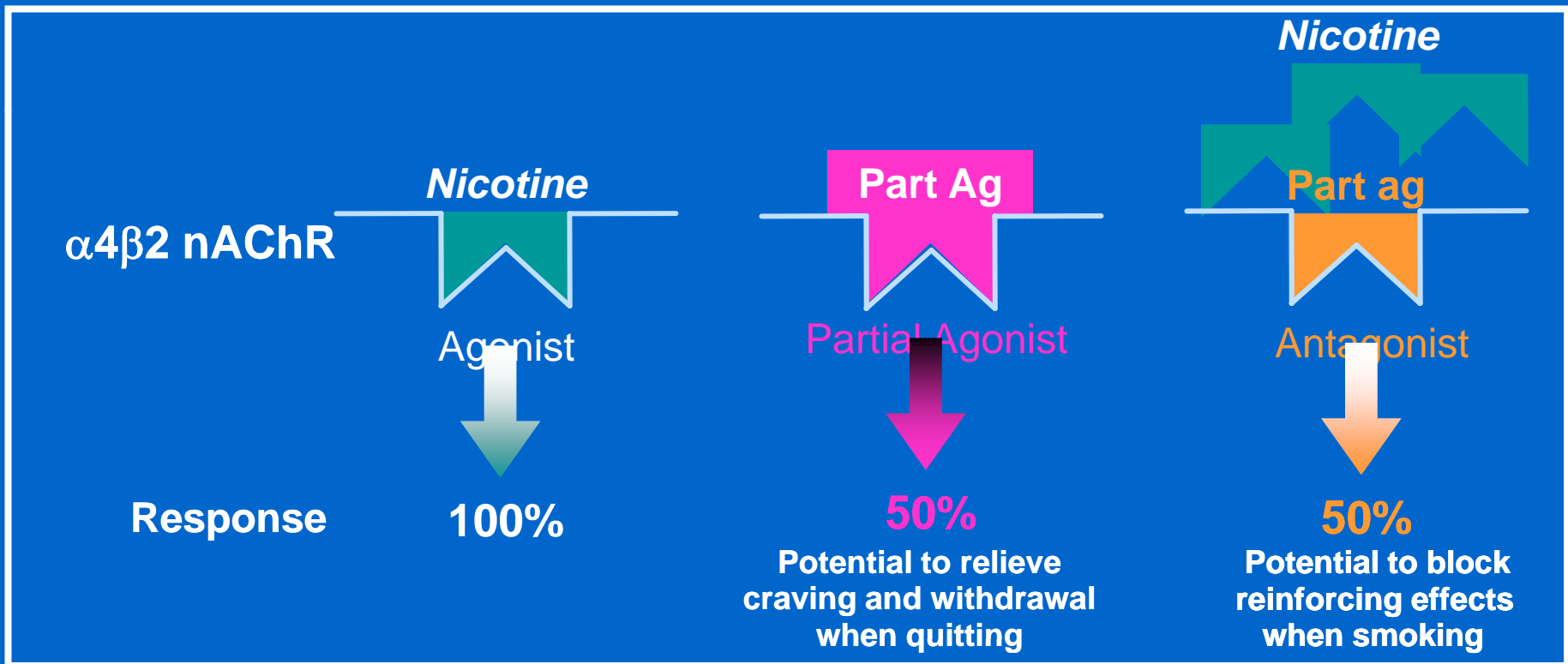
1. Psychological Craving
2. Physiological Withdrawal Symptoms

# $\alpha 4\beta 2$ nAChR Partial Agonists

Smoking  
No Partial Ag

No Smoking  
Partial Ag

Smoking  
+ Partial Ag



Dual action of a partial agonist

Medication	Number of arms	Estimated odds ratio	Estimated abstinence rate
Placebo	80	1.0	13.8
<b>Monotherapies</b>			
Varenicline (2 mg/d)	5	3.1 (2.5-3.8)	33.2 (28.9-37.8)
Nicotine patch	32	1.9 (1.7-2.3)	23.4 (21.3-25.8)
Nicotine gum	15	1.5 (1.2-1.7)	19.0 (16.5-21.9)
Bupropion SR	26	2.0 (1.8-2.2)	24.2 (22.2-26.4)
<b>Combination Therapies</b>			
Patch + Gum or Spray <i>(ad lib)</i>	3	3.6 (2.5-5.2)	36.5 (28.6-45.3)
Patch + Bupropion	3	2.5 (1.9-3.4)	28.9 (23.5-35.1)
Patch + Inhaler	2	2.2 (1.2-3.4)	25.8 (17.4-36.5)



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## ***Behavioural support***

- Provider-delivered advice and counseling
- Individual or group counseling
- Telephone quit lines
- Web-based interventions

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## ***Behavioural support***

- First two weeks are critical
- At least 4 contacts of 10 minutes each
- End of treatment ( $\approx$  12 weeks) is often problematic
- Extend treatment as long as necessary

***e-cigarettes***



# THE LANCET Respiratory Medicine

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## E-cigarettes and smoking cessation in real-world and clinical settings: a systematic review and meta-analysis

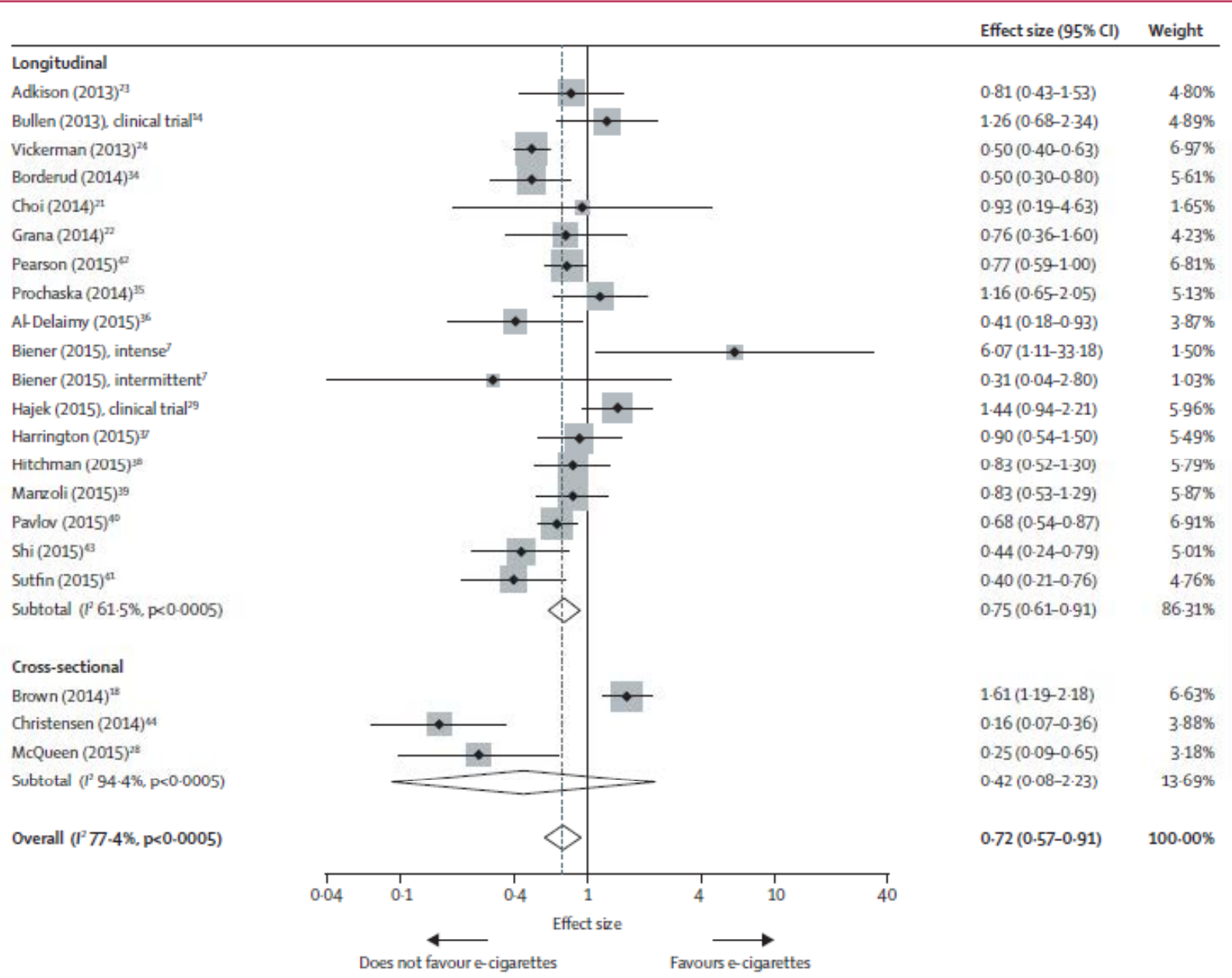


*Sara Kalkhoran, Stanton A Glantz*

**Background** Smokers increasingly use e-cigarettes for many reasons, including attempts to quit combustible cigarettes and to use nicotine where smoking is prohibited. We aimed to assess the association between e-cigarette use and cigarette smoking cessation among adult cigarette smokers, irrespective of their motivation for using e-cigarettes.

In the current regulatory environment, e-cigarette use is increasing and, although quitting smoking is a common marketing claim and is often cited as a reason for use among cigarette smokers, the overall conclusion from the available studies is that e-cigarette use is associated with reduced smoking cessation in the real world.

Published online January 14, 2016 [http://dx.doi.org/10.1016/S2213-2600\(15\)00521-4](http://dx.doi.org/10.1016/S2213-2600(15)00521-4)



**Figure 2: Odds of quitting smoking, stratified by longitudinal versus cross-sectional studies**

Figure shows odds of quitting among e-cigarette users compared with non-e-cigarette users. The overall odds of quitting cigarettes is 0.72 (95% CI 0.57-0.91) irrespective of how studies are stratified.

***Knowledge  
Translation into  
Clinical Practice***



Compassionate People. World-Class Care. Des gens de compassion. Des soins de calibre mondial. 23



# ***“The Ottawa Model”***

**Identification**

**Documentation**

**Strategic Advice**

**Pharmacotherapy**

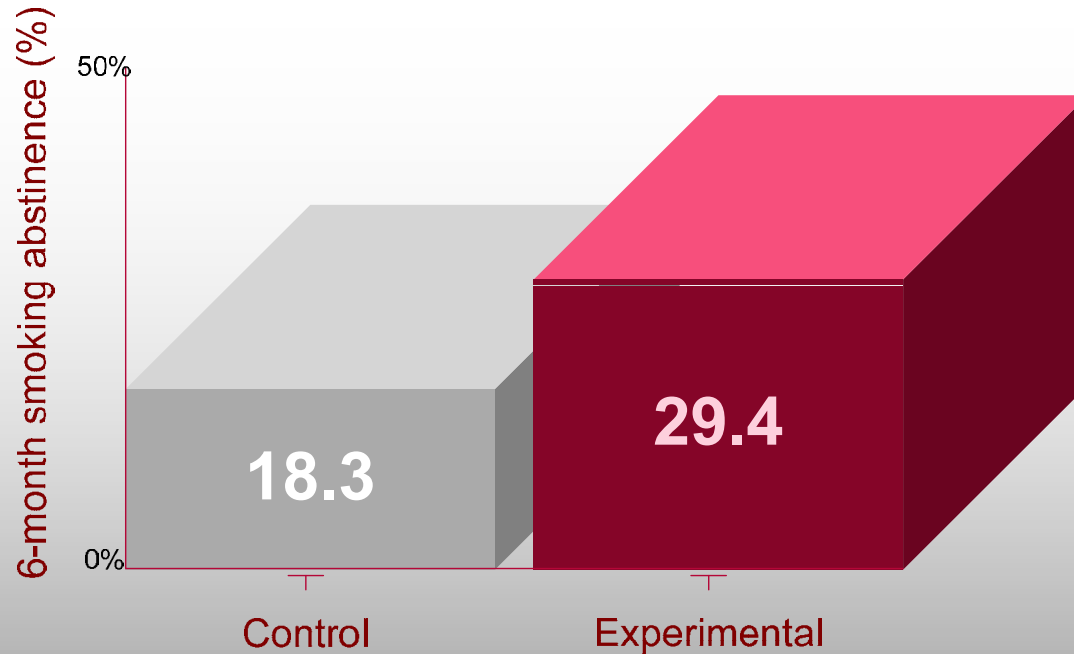
**Long-term follow-up**

Reid RD, Pipe AL, Quinlan B. *Can J Cardiol* 2006;22:775-780





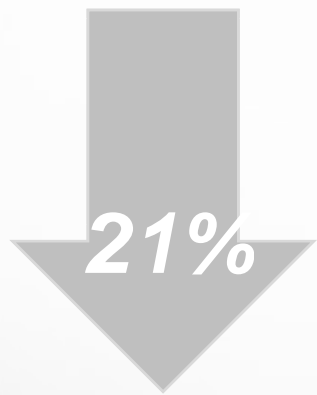
# Keeping Score



**(OR = 1.71; 95% CI = 1.11, 2.64; Z = 2.43; I<sup>2</sup> = 0%; P = 0.02).**

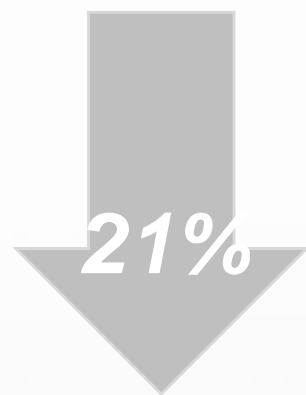
Reid RD, Mullen KA, Slovinec D'Angelo ME, Aitken DA, Papadakis S, Haley PM, McLaughlin CA, Pipe AL. *Nicotine Tob Res.* 2010 Jan;12(1):11-8

*The Ottawa Model results in significant reductions in 2-year healthcare utilization and risk of death*



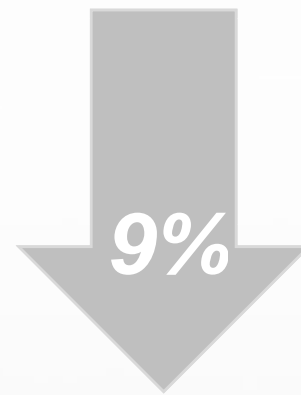
All-cause readmissions  
( $p < .0001$ )

NNT: 7



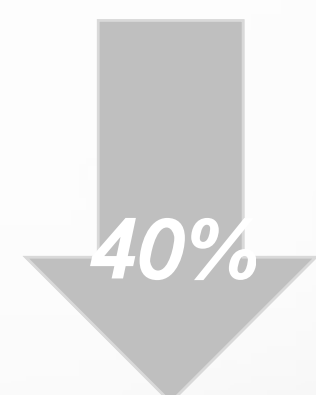
Smoking-related readmissions  
( $p < .0001$ )

NNT: 10



ER visits  
( $p = .04$ )

NNT: 25

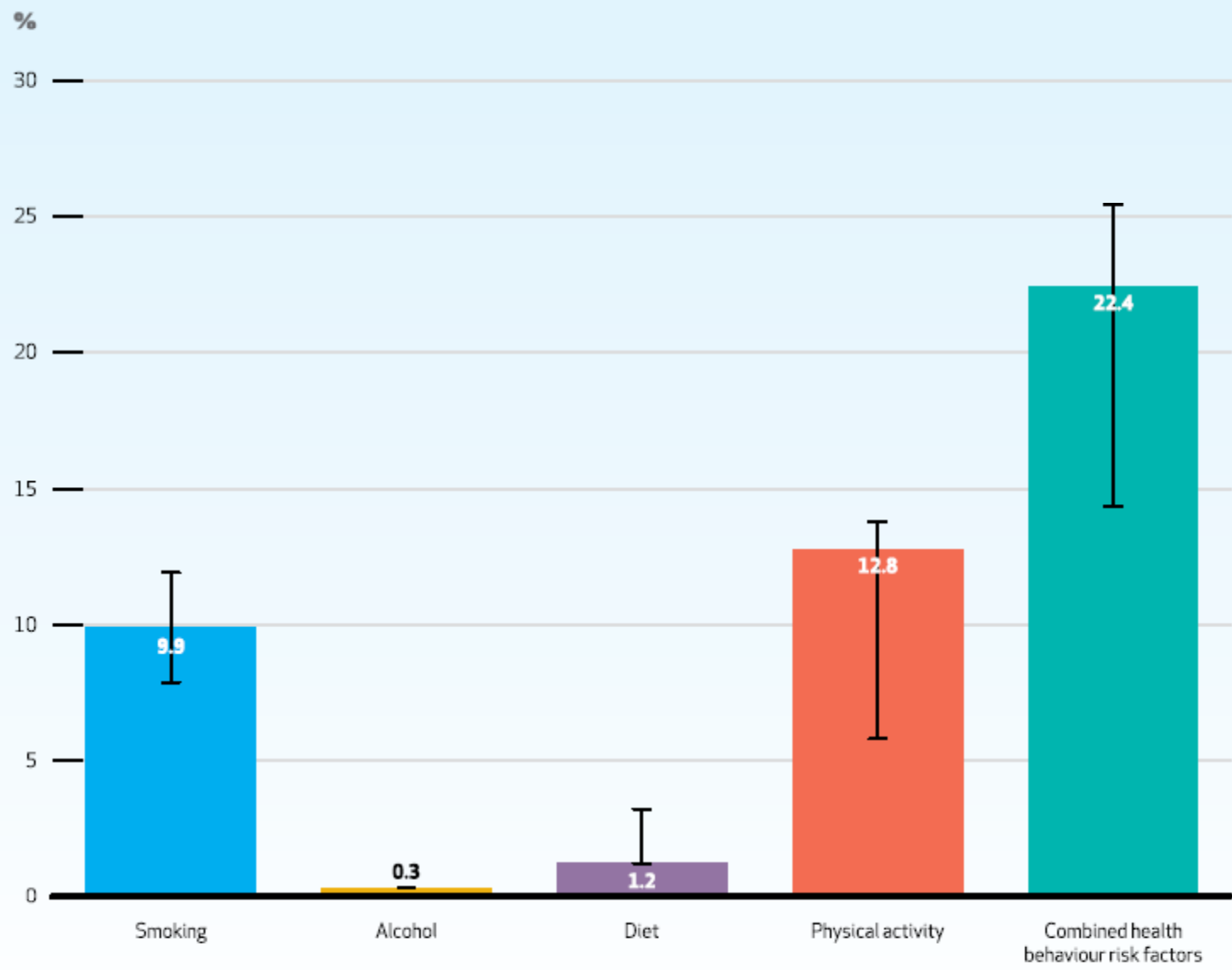


Death  
( $p = .0002$ )

NNT: 14



**KEEP  
CALM  
AND  
BE  
SYSTEMATIC**



\*Error bars represent high and low boundaries on burden estimates.

# *Online Life Expectancy Calculator*

**WWW.PROJECTBIGLIFE.CA**

Manuel DG, Perez R, Bennett C, Laporte A, Wilton AS, Gandhi S, Yates EA, Henry DA. *A \$4.9 Billion Decrease in Health Care Expenditure: The Ten-Year Impact of Changing Smoking, Alcohol, Diet and Physical Activity on Health Care Use in Ontario*. Toronto, ON: Institute for Clinical Evaluative Sciences; 2016.