

**Update: Tobacco Dependence Treatment  
in Clinical Settings and the Community**

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**Disclosures**

- Funding from the National Institutes of Health
  - National Cancer Institute
    - P50CA180908
    - R21CA205589
    - P003398602



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**Objectives:**

- To describe factors related to a smoking behavior among patients diagnosed with lung cancer.
- To identify persistent smoking and cessation estimates after a diagnosis of lung cancer.
- To describe evidence-based clinical interventions for tobacco dependence treatment for patients with lung cancer.
- To discuss policy level tobacco control interventions for implementation in health care settings and communities.



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**Cessation estimates among patients diagnosed with lung cancer**

**Factors related to smoking behaviors among patients diagnosed with lung cancer**

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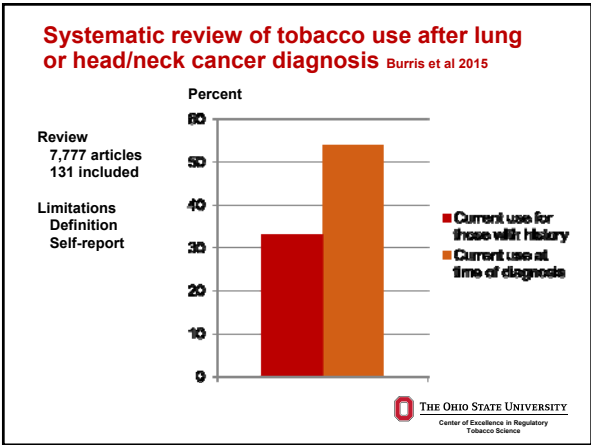
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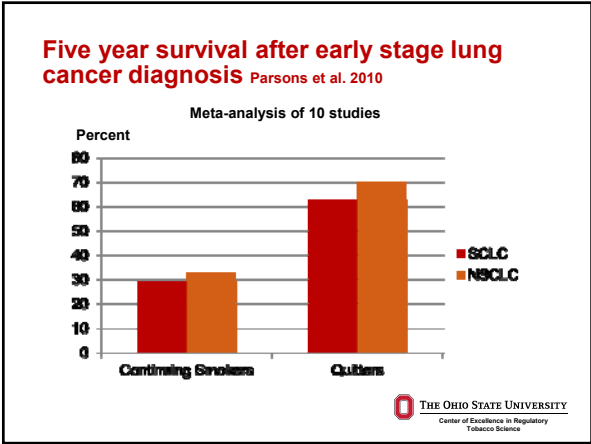
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**Who Quits?** Cooley et al. 2012; Schnoll et al. 2011

- Older patients
- Less craving
- Non-depressed
- Better symptom control
- Non tobacco-attributable cancer diagnosis
- Males > females\*



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**Tobacco Dependence Treatment among Lung Cancer Patients**

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**Methodological Issues**

*de Moor, Elder & Emmons 2008*

- **Sample-related**
  - Sample size
  - Target population
  - Selection bias
- **Treatment-related**
  - High intensity vs. usual care
- **Outcome-related**
  - Verification of smoking status
    - "Demand" characteristics
    - Expense



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### Intervention Studies

- Twelve published clinical trials
  - English language journal
  - Delivered to adult cancer survivors
  - Quasi-experimental or experimental design
  - Included an evaluation of an intervention
- First trial was conducted in 1993
  - Gritz et al. *Cancer Epidemiol Biomarkers Prev*
- Most recent trial published in 2014
  - Ostroff et al. *Health Psychology*



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### Cancer Patient Participants

- Inpatient/outpatients
  - Majority are convenience samples
- Sample characteristics
  - Newly diagnosed: 4 trials
  - Admitted for surgery: 2 trials
  - Homogeneous
  - Smoking history
    - Smoked in last 30 days → smoked daily for at least past year



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### Cancer Patient Participants

- Head/Neck: 3 trials
  - Gritz et al 1993 (n=186)
  - Garces et al 2004 (n=202)
  - Duffy et al 2006 (n=184)
- Lung: 3 trials
  - Wewers et al 1997 (n=15)
  - Browning et al 2000 (n=26)
  - Cox et al 2002 (n= 402)
- All sites: 6 trials
  - Wewers et al 1993 (n=30)
  - Stanislaw et al 1994 (n=26)
  - Griebel et al 1998 (n=28)
  - Schnoll et al 2003 (n=432)
  - Wakefield et al 2004 (n=137)
  - Ostroff et al 2014 (n= 185)



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### Treatment

- Cognitive behavioral therapy: 4 trials
- Follow-up counseling: 7 trials
  - Face-to-face and/or phone
- Group counseling: 2 trials
- Pharmacotherapy: 6 trials
- Print materials: 7 trials
- Interventionist
  - Nurse (7); MD (3); Trained Counselor (2)
- Set quit date: 2 trials



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### Results

- Evaluation endpoints
  - Five weeks → 12 months
- Abstinence rates (point prevalence)
  - Intervention group 12% → 75%
  - Usual care group 8% → 77%
- No effect → 'marginal' effect
- Biochemical validation: 7 trials
- Response rate
  - 41% → 100%



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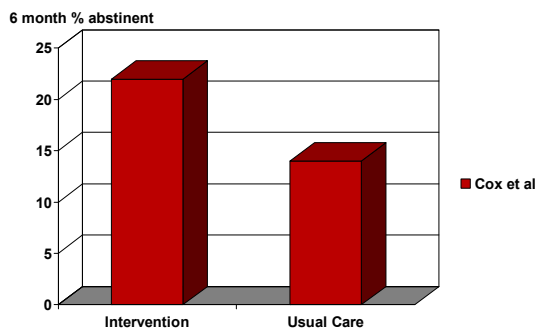
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### Lung Cancer Survivor Trial



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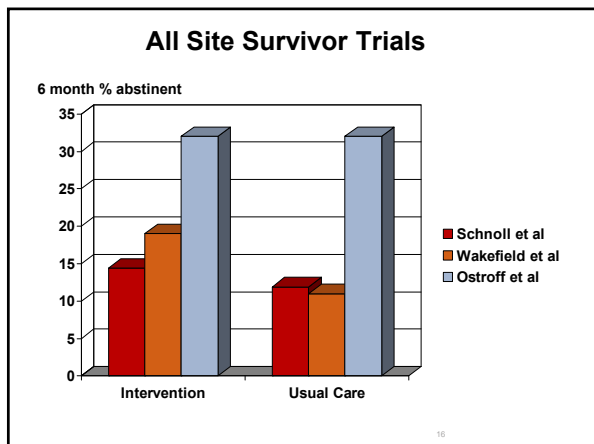
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### Policy Approaches in Clinical Settings and the Community

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- ### Tobacco Control Best Practices
- Comprehensive smoke-free laws ←
  - High tobacco taxes/prices ←
  - Funding for tobacco control programming
    - Counter-marketing
    - Treatment for nicotine addiction
    - Surveillance
    - Support for local coalitions
- 
- Center of Excellence in Regulatory Tobacco Science

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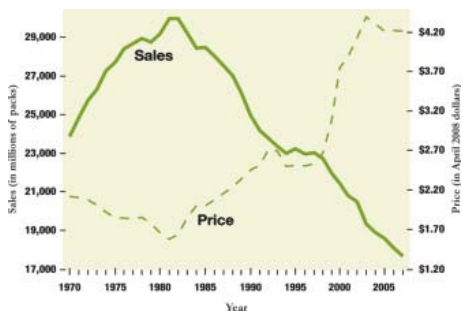
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**Impact of Cigarette Price Increases on U.S. Cigarette Sales 1969-2009**



TCLC/CPHSS 2014

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**Price sensitivity WHO 2012**

- In general
  - 10% increase in cigarette pack price = 4% reduction in smoking prevalence
- Who is price sensitive?
  - Youth
  - Young adults
  - Low socioeconomic status




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**Tobacco Product Excise Taxes**



**Cigarettes**

\$1.60/pack (OH)  
\$ 0.60/pack (KY)

U.S. Average \$1.65  
Ohio ranks 29<sup>th</sup>  
Kentucky ranks 43<sup>rd</sup>



**Smokeless tobacco**

17% wholesale price (OH)  
15% wholesale price (KY)



**E-cigarettes**

No excise tax in OH or KY




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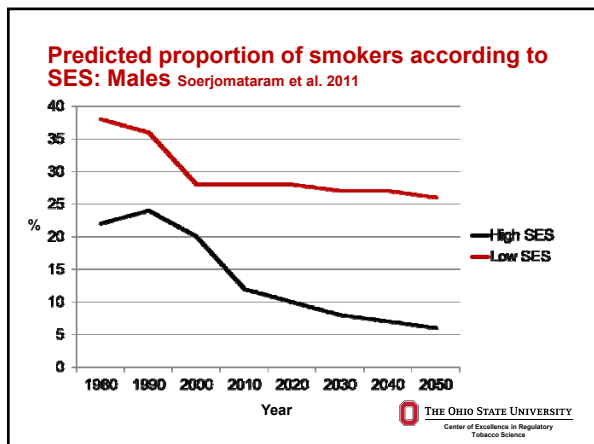
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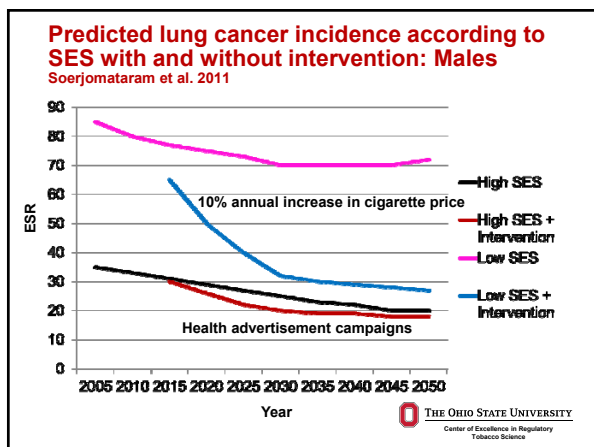
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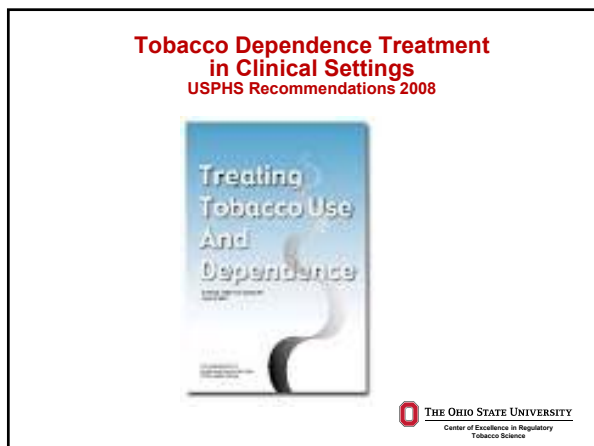
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**Treating Tobacco Use and Dependence: 2008 Update**  
 U.S. Public Health Service

- All patients should be
  - Screened for tobacco use
  - Advised to quit
  - Offered treatment
- All patients should be offered pharmacological treatment, unless contraindicated
  - Varenicline
  - Bupropion
  - Nicotine replacement therapy
- There is a dose-response relationship between intensity of treatment and abstinence




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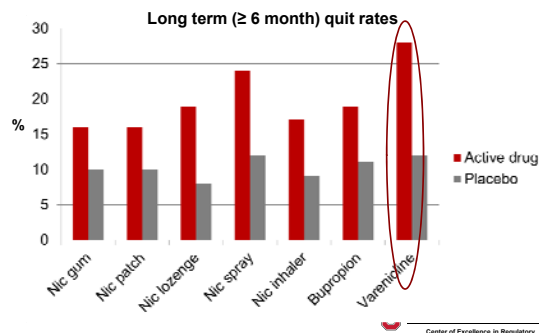
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**Available First-line Pharmacotherapies**  
 US PHS 2008




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**Behavioral Counseling**

- Cognitive behavioral therapy (CBT) in combination with pharmacotherapy significantly improves treatment outcomes
  - Individual counseling = group counseling
  - Proactive telephone counseling is efficacious

USPHS Clinical Practice Guideline 2008




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**Treatment options for cancer patients who continue to smoke**

- National Comprehensive Cancer Network®
  - [www.nccn.org](http://www.nccn.org)
  - Smoking Cessation Clinical Practice Guidelines
- American Cancer Society
  - [www.cancer.org](http://www.cancer.org)
  - Telephone and web-based cessation options



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**Community-based treatment in Ohio**

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**Effectiveness of a Community Health Worker (CHW) Cessation Trial Among Adult Ohio Appalachian Smokers**

- Funded by the National Cancer Institute
- Five year tobacco dependence treatment trial
- Evaluated two evidence-based CHW models of tobacco dependence treatment
  - Based on USPHS *Treating Tobacco Use and Dependence* Clinical Practice Guideline 2008
    - Cognitive-behavioral counseling
    - Pharmacotherapy
- Group randomized trial design



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### Effectiveness of a Community Health Worker (CHW) Cessation Trial

- Trial tested a two-arm intervention
  - Six counties enrolled participants to receive
    - Seven face-to-face (F2F) counseling visits from a CHW supervised by a public health department nurse
  - Six counties enrolled participants to receive
    - One visit from a CHW who referred to the Ohio Quit Line (OL)
      - Five proactive calls and unlimited reactive calls
  - Participants in both arms received up to 8 weeks of free NRT (21 mg patch)



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### Eligibility Criteria for Enrollment

- Resident of participating Ohio Appalachian county
- 18 years and older
- Self-reported daily cigarette or small cigar user
- Willing to quit in the next 30 days
- No contraindication to nicotine replacement therapy
- If female, not pregnant as confirmed by urine HCG
- Provided informed consent



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### Procedure

- Participants recruited through community sites
  - Public health clinics
  - Worksites, sporting events, shopping centers
  - Newspaper and radio advertisements
- Baseline interview conducted by field staff not involved in intervention
- Intervention delivered by CHW
  - F2F or QL
- Follow-up data collected at 3, 6, and 12 months
- Primary outcome measure
  - Self-reported abstinence from tobacco in last seven days as confirmed by saliva cotinine concentration of < 15 ng/mL



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Characteristic	CHW: F2F n=353		CHW QL n=354	
	N	%	N	%
<b>Age</b>				
18-24	16	4.5	19	5.4
25-54	222	62.9	233	65.8
55+	115	32.6	102	28.8
% Male	121	34.3	107	30.2
% White	340	96.3	332	93.8
<b>Highest Education</b>				
<HS	47	13.3	37	10.5
HS/GED	126	35.6	122	34.5
>HS/GED	177	50.1	192	54.2
<b>Marital Status</b>				
Single	62	17.6	72	20.3
Married/partnered	187	53.0	157	44.4
Separated/divorced	84	23.8	107	30.4
Widowed/other	20	5.7	18	5.1

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Characteristic	CHW: F2F n=353		CHW QL n=354	
	N	%	N	%
% Employed Full/Part-time	165	46.7	177	50.0
% with Health Insurance	250	70.8	254	71.8
% CES-D ≥ 10 (short form)	244	69.1	236	66.7
	Mean	SD	Mean	SD
Cigarettes smoked/day (#)	22.3	11.7	20.9	9.2
Fagerström score of nicotine dependence	5.2	2.2	5.2	2.2
Past year serious quit attempts (#)	1.7	3.4	1.2	2.0

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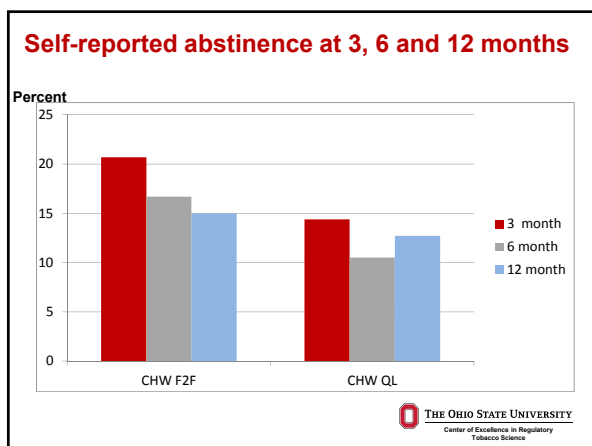
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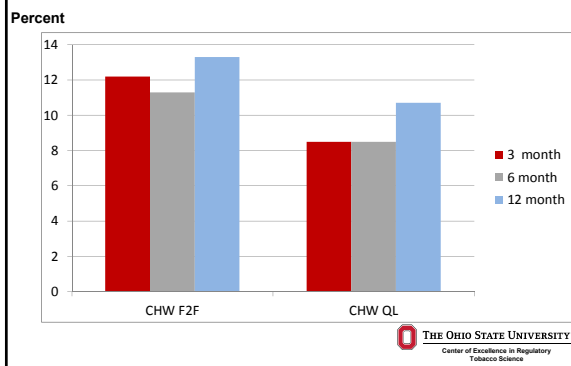
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**Cotinine-validated abstinence at 3, 6 and 12 months**




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**Dose of Counseling and NRT: F2F CHW Approach**

In-person visits (N)	N (% of total)	% Abstinent
0-4	54 (16)	6
5	30 (9)	10
6	64 (18)	13
7	205 (58)	17
NRT Duration		
< 2 weeks	51 (14)	4
2-4 weeks	38 (11)	13
4-6 weeks	54 (15)	19
6-8 weeks	210 (59)	14




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**Dose of Counseling and NRT: QL CHW Approach**

Quit line calls (N)	N (% of total)	% Abstinent
No calls	68 (22)	5
1-2	124 (35)	8
3-4	74 (21)	7
5+	88 (25)	23
Weeks of NRT dispensed		
0	114 (32)	11
2-4	119 (34)	9
> 4	121 (34)	12




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**Other factors associated with abstinence**

- **Face-to-face (F2F) condition**
  - Older smokers were more likely to quit
  - Higher cigarette consumption reduced the likelihood of quitting
- **Quit Line (QL) condition**
  - Those with higher depressive symptoms were less likely to quit
  - Married participants were more likely to quit




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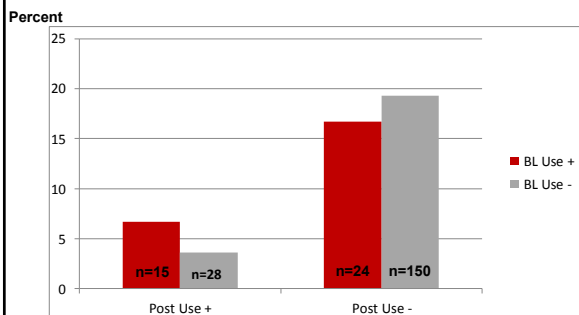
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**E-cigarette use and biochemically-verified abstinence at 12 months (n=217)**




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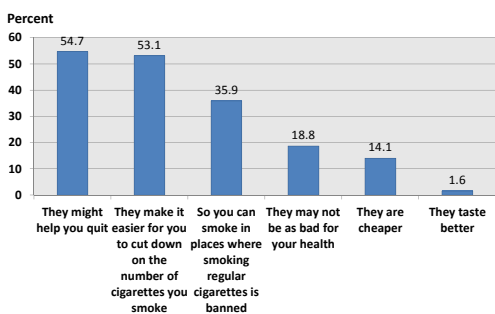
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**Reasons Cited for E-cigarette Use**




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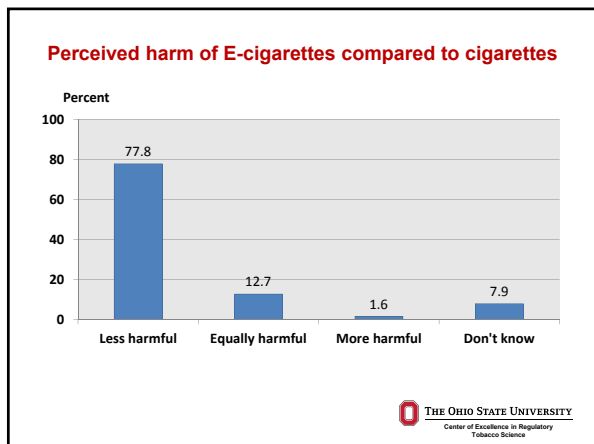
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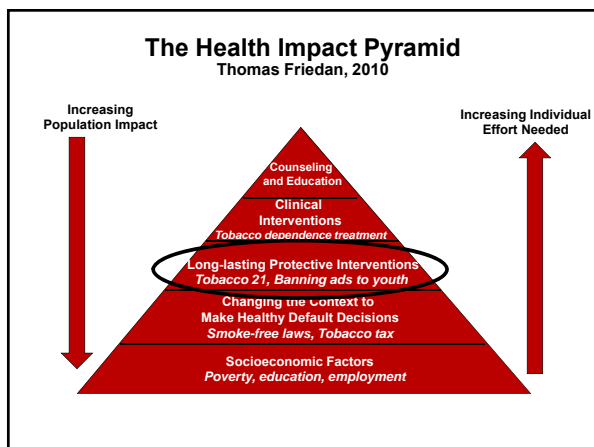
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### Adolescents and Prevention

This is tobacco marketing.

It's a fact:  
Kids who see it are  
64% more likely  
to start smoking.

Our kids have seen enough.  
Take action to protect them at  
[TobaccoFreeNYS.org](http://TobaccoFreeNYS.org)

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**What's next**

- **Regulating tobacco product ingredients**
  - Reduced nicotine content
- **Minimum pack price**
  - New York City = \$10.50
- **Tobacco 21**
  - Institute of Medicine Recommendations
  - ~ 200 municipalities – NYC, Boston, Chicago, Cleveland, San Francisco, Kansas City
  - Two states: Hawaii and California



TOBACCO  
eighteen twenty-one  
www.tobacco21.org



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**Conclusions**

- Tobacco dependence remains a significant clinical condition after a diagnosis of lung cancer
- Clinical interventions are effective in the general population and should be tested in cancer patients
- Community-based approaches have modest effect and deserve further investigation
- Tobacco control involves a comprehensive, multi-level approach
- Policy level approaches enhance individual level treatment



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