

**Appendix**  
**Impact of *The Real Cost* Media Campaign on Youth Smoking Initiation**  
**Duke et al.**

**Appendix Table 1.** Description of *The Real Cost* Advertisements

Ad	Description	Text	Screenshot
Alison	A teenage girl sitting at a table in her school cafeteria complains about a relationship we imagine is with a classmate. At the end of the ad, we see a shot of her standing outside smoking, and we realize she is talking about nicotine dependence.	<p>Alison: First I didn't take him seriously. I had heard the stories but I thought they were way overblown, but over time he became like, really annoying.</p> <p>Everywhere I went he had to follow. And bossy, so bossy!</p> <p><i>"Let's go outside now!"</i></p> <p>No, I'm talking to Jack.</p> <p><i>"Outside now!"</i></p> <p>It's pouring!</p> <p><i>"Outside now!"</i></p> <p>Well, fine.</p> <p>He was so needy.</p> <p><i>"I haven't seen you in so long!"</i></p> <p>Uh, yeah you did, like a little while ago.</p> <p><i>"But I miss you so much!"</i></p> <p>He started taking my money...</p> <p>Voiceover: none</p> <p>Tag Line: Don't let tobacco control you.</p> <p>Text in closing shot:  The Real Cost. <a href="http://TheRealCost.gov">TheRealCost.gov</a>  FDA Brought to you by the U.S. Food and Drug Administration</p>	

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<p><b>Bully</b></p>	<p>A tiny, repellent man bullies and controls teens a hundred times his size. At the end of the ad, we realize he represents cigarettes and nicotine dependence.</p>	<p>Bully: Heeey, Buddy! Let's take a little walk!          When I say go outside, we go outside.          When I say fork it over, you fork it over.          Hey. When I say, "Pause the movie," we pause the movie.          C'mon big boy. Pucker up.</p> <p>Voiceover: Cigarettes are bullies. Don't let tobacco control you.</p> <p>Tag line: Cigarettes are bullies. Don't let tobacco control you.</p> <p>Text in closing shot:          The Real Cost. <a href="http://TheRealCost.gov">TheRealCost.gov</a>          FDA Brought to you by the U.S. Food and Drug Administration</p>	
<p><b>Skin</b></p>	<p>It is night. A teenage girl enters the Circus Jiffy, a creepy convenience store. Finding she doesn't have enough money for a pack of cigarettes, she peels the skin off her cheek. The shopkeeper looks slightly uncomfortable, but accepts this as payment.</p>	<p>Teen: Pack of cigarettes.          Shopkeeper: You need a little more honey.          Voiceover: What's a pack of smokes cost?          Your smooth skin.          Shopkeeper: See you again.</p> <p>Voiceover: Smoking causes wrinkles which age you prematurely. What are cigarettes costing you?</p> <p>Text in closing shot:          The Real Cost. <a href="http://TheRealCost.gov">TheRealCost.gov</a>          FDA Brought to you by the U.S. Food and Drug Administration</p>	

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Tooth	<p>It is night. A teenage boy enters the Circus Jiffy, a creepy convenience store. Finding he doesn't have enough money for a pack of cigarettes, he takes out a pair of pliers and uses them to pull out one of his own teeth. The shopkeeper appears a bit disgusted, but accepts this as payment.</p>	<p>Teen: Pack of cigarettes, please.          Shopkeeper: It's not enough.          Voiceover: What's a pack of smokes cost?          Your teeth. Smoking causes serious gum disease which makes you more likely to lose 'em.          Shopkeeper: See you again.</p> <p>Voiceover: What are cigarettes costing you?</p> <p>Text in closing shot:          The Real Cost. <a href="http://TheRealCost.gov">TheRealCost.gov</a>          FDA Brought to you by the U.S. Food and Drug Administration</p>	
7000	<p>It is night. A teenage boy steps out of the house to smoke. As he lights up, an army of demon-like creatures rises up out of a swampy, wooded area which is engulfed in flames and races toward him. When the creatures reach him, they turn into smoke, which the teen inhales. We recognize that the creatures represent the toxic chemicals in cigarette smoke. The teen coughs.</p>	<p>Voiceover: Every time you smoke, there's a toxic mix of over 7,000 chemicals coming for you. That's the Real Cost.</p> <p>Tag Line: #7000chemicals.</p> <p>Text in closing shot:          The Real Cost. <a href="http://TheRealCost.gov">TheRealCost.gov</a>          FDA Brought to you by the U.S. Food and Drug Administration</p>	

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<p>Contract</p>	<p>Vignettes from teen Amanda Green's life at school, home and out with friends, closing with a shot of her sitting at a table outside of school, with a paper in her hand. The paper rolls up into a cigarette, and we understand it to be a contract.</p>	<p>Teen: I, Amanda Green, am at a point in my life when I'm not a kid anymore. Now that I finally have freedom to define who I am, I hereby agree to be bound to you, to let you decide how I spend my money, to let you set my boundaries, and to come running the instant you snap your fingers. With this contract, I relinquish part of my freedom to you.</p> <p>Voiceover: There's a contract in every cigarette. When you light up, you sign up. Don't let tobacco control you.</p> <p>Tag line: Don't let tobacco control you. Know the Real Cost.</p> <p>Text in closing shot:          The Real Cost. <a href="http://TheRealCost.gov">TheRealCost.gov</a>          FDA Brought to you by the U.S. Food and Drug Administration</p>	
<p>Science Class</p>	<p>In a high school science lab, the teacher takes a sample from a terrifying live creature, which is pinned to the desk. When he turns his back, the creature escapes and chaos ensues. The students scream and run.</p>	<p>Science Teacher (Mr. Estler): What are we looking at? Formaldehyde, acrolin, nitrobenzene, this actually has over 7000 chemicals. And don't get me started on what they do to you; prematurely wrinkled skin, stunted lung growth...</p> <p>Student: Mr Estler...</p> <p>Mr Estler: tooth loss, cancer...</p> <p>Student: Mr Estler...</p>	

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		<p>Mr Estler: Hang on...</p> <p>Voiceover: If cigarettes looked as dangerous as they are, you'd run like hell. Find out the real cost of tobacco.</p> <p>Text in closing shot:  The Real Cost.  <a href="https://www.instagram.com/TheRealCost">Instagram.com/TheRealCost</a>  FDA Brought to you by the U.S. Food and Drug Administration</p>	
<p>Found It</p>	<p>Students hanging out under the bleachers at night find a disgusting creature. At first it is novel and a bit thrilling, but when the creature crawls up the arm of a student and tries to enter his mouth, the scene turns truly terrifying.</p>	<p>Students: Check that out.  Agh!  Oh!  What is it?  Oh.  Get it off!  Guys?  You alright?</p> <p>Voiceover: If cigarettes looked as dangerous as they are, you'd run like hell.</p> <p>Text in closing shot:  The Real Cost.  <a href="https://www.instagram.com/TheRealCost">Instagram.com/TheRealCost</a>  FDA Brought to you by the U.S. Food and Drug Administration</p>	

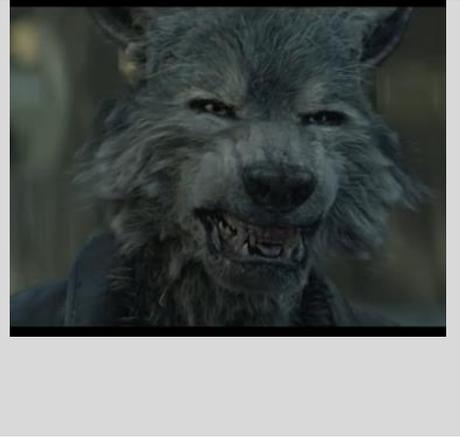
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<p>Fingers</p>	<p>Two female teens are sitting in the bleachers. One offers the other a cigarette. She declines offering silly reasons for doing so. The ad ends with both teens rocking out to heavy metal music.</p>	<p>Teen1: Hey, do you want a smoke?</p> <p>Teen2: No, I don't think so.</p> <p>Teen1: Oh, because cigarette smoke contains benzene, vinyl chloride and cadmium?</p> <p>Teen2: No, it's not that. It's just...I can't separate my index finger from my middle finger. They're in love.</p> <p>Teen1: So use your other hand.</p> <p>Teen2: Are you crazy? I'm not bringing up DeathMaggot!</p> <p>Voiceover: Any reason is a brilliant reason not to smoke. Share yours.</p> <p>Text in closing shot:  The Real Cost  #ReasonsNotToSmoke  FDA Brought to you by the U.S. Food and Drug Administration</p>	
<p>Skinny Jeans</p>	<p>Two male teens meet at the skatepark. One asks the other for a cigarette, only to find out that the teen he asked doesn't smoke anymore. The teen who doesn't smoke anymore says it's because he doesn't have room for cigarettes in his skinny jeans.</p>	<p>Teen1: Hey man.</p> <p>Teen2: Hey</p> <p>Teen1: Got any smokes.</p> <p>Teen2: Nah, I don't do that anymore.</p>	

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		<p>Teen 1: Is it because cigarette smoke is a toxic mix of over 7000 chemicals?</p> <p>Teen2: No it's because I can only fit one thing in the pocket of my skinny jeans. (Takes call from girlfriend. Hi Babe. No, I'm at the skate park)</p> <p>Voiceover: Any reason is a brilliant reason not to smoke. Share yours.</p> <p>Text in closing shot:  The Real Cost  #ReasonsNotToSmoke  FDA Brought to you by the U.S. Food and Drug Administration</p>	
<p>Bully Dance</p>	<p>A teen at the prom is harassed by a bully representing nicotine addiction. The teen leaves his date alone at the prom to go outside for a smoke.</p>	<p>Bully: Hey handsome. Remember me? Cheese!  You and me, outside, right now! Let's hit it!</p> <p>Hey Romeo. Time to cha-cha-cha outside, champ. Let's go. Move it! C'mon Twinkletoes. Don't forget who your real date is.</p> <p>Voiceover: Cigarettes are bullies. Don't let tobacco control you.</p> <p>Text in closing shot:  The Real Cost. <a href="http://TheRealCost.gov">TheRealCost.gov</a>  FDA Brought to you by the U.S. Food and Drug Administration</p>	

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Hacked	Montage of teens skateboarding, bowling, in a coffee shop. They have USB receptors instead of mouths. In the last scene a teen places a USB-type device into the receptor. Camera shot of her eyes reminiscent of a computer screen.	<p>Voiceover: Nicotine can reprogram you brain until all you think about is your next cigarette. Don't get hacked.</p> <p>Text in closing shot:  The Real Cost. TheRealCost.gov  Paid for by the U.S. Food and Drug Administration</p>	
Straw City	A wolf wakes up hungry and decides to go to "Straw City," for a meal. He roams the streets, but he can't catch his breath enough to "blow the house down."	<p>Sound of a radio giving the morning weather report, sound of a GPS guiding the wolf to Straw City.</p> <p>Voiceover: Smoking as a teen can permanently stunt your lungs, taking the air out of the even the biggest and baddest.</p> <p>Text in closing shot:  The Real Cost. TheRealCost.gov  Paid for by the U.S. Food and Drug Administration</p>	
Gift	A teen receives a disturbing delivery: a box with a mouth damaged from smoking. To his horror, the moth suddenly becomes his own.	<p>Delivery man: Package for James Miser.</p> <p>Voiceover: Once you start smoking the consequences will find you. Cigarettes may leave you with stained teeth, gum disease and more.</p> <p>Text in closing shot:  The Real Cost. TheRealCost.gov  Paid for by the U.S. Food and Drug Administration</p>	

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**Appendix Table 2.** Demographic Characteristics of the ExPECTT Full Sample, Attrition Between Baseline and Fourth Follow-Up

<b>Characteristic</b>	<b>Completed all waves <i>n</i> (%)</b>	<b>Did not complete all waves <i>n</i> (%)</b>
<b>Age, years</b>		
11 to 12	1,384 (32.9)	701 (27.7)
13 to 14	1,533 (36.4)	755 (29.8)
15 to 16	1,295 (30.8)	1,075 (42.5)
<b>Sex</b>		
Female	2,199 (52.2)	1,337 (52.8)
Male	2,013 (47.8)	1,194 (47.2)
<b>Race/Ethnicity</b>		
White, non-Hispanic	2,196 (52.1)	1,242 (49.1)
Black, non-Hispanic	342 (8.1)	340 (13.4)
Hispanic	1,234 (29.3)	692 (27.3)
Other or multi-racial	440 (10.5)	257 (10.2)
<b>Household tobacco use</b>		
Yes	1,123 (25.9)	835 (36.0)
No	2,793 (74.1)	1,485 (64.0)
<b>Smoking status</b>		
Non-susceptible nonsmoker	2,812 (68.1)	1,517 (61.3)
Susceptible nonsmoker	1,040 (25.2)	613 (24.8)
Experimenter	262 (6.3)	308 (12.4)
Former smoker	3 (0.1)	12 (0.5)
Smoker	15 (0.4)	25 (1.0)

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**Appendix Table 3.** Sensitivity Analysis for the Cumulative TRP Exposure Model – Including E-cigarette Use and Other Tobacco Product Use

Explanatory variable <sup>a</sup>	E-cigarette use OR (95% CI)	OTP use OR (95% CI)
Exposure variable	<b>0.69**</b> (0.52, 0.91)	<b>0.67**</b> (0.50, 0.88)
E-cigarette ever use	<b>8.74***</b> (7.33, 10.41)	N/A
OTP ever use	N/A	<b>10.79***</b> (8.92, 13.06)
Age, years		
11	ref	ref
12	0.90 (0.25, 3.30)	0.87 (0.24, 3.24)
13	2.13 (0.64, 7.06)	1.95 (0.58, 6.56)
14	2.79 (0.85, 9.14)	2.48 (0.75, 8.23)
15	2.84 (0.87, 9.29)	2.40 (0.73, 7.94)
16	2.91 (0.89, 9.51)	2.39 (0.72, 7.92)
17	2.56 (0.78, 8.42)	2.15 (0.64, 7.16)
18	<b>3.86*</b> (1.15, 12.92)	2.90 (0.85, 9.85)
19	<b>5.99**</b> (1.66, 21.55)	<b>4.54*</b> (1.25, 16.53)
Sex		
Female	ref	ref
Male	1.01 (0.85, 1.20)	1.00 (0.85, 1.19)
Race		
White, non-Hispanic	ref	ref
Black, non-Hispanic	1.28 (0.94, 1.73)	1.15 (0.85, 1.56)
Hispanic	1.18 (0.96, 1.46)	1.13 (0.91, 1.39)
Other, non-Hispanic	0.83 (0.61, 1.13)	0.81 (0.59, 1.10)
Other covariates		
Youth allowance	1.01 (0.97, 1.05)	1.01 (0.97, 1.05)
Lives with a tobacco user	<b>1.49***</b> (1.25, 1.76)	<b>1.48***</b> (1.24, 1.76)
Sensation seeking scale	<b>1.25***</b> (1.12, 1.39)	<b>1.22***</b> (1.10, 1.36)
School environment	<b>0.85***</b> (0.77, 0.93)	<b>0.86**</b> (0.78, 0.94)
School performance	<b>0.85**</b> (0.77, 0.94)	<b>0.86**</b> (0.78, 0.96)
School plans	0.92 (0.85, 1.00)	<b>0.92*</b> (0.85, 1.00)
Parental communication	0.92 (0.83, 1.02)	<b>0.91*</b> (0.82, 1.00)
TV use	<b>1.02*</b> (1.00, 1.05)	<b>1.02*</b> (1.00, 1.05)
Wave		
1	ref	ref
2	<b>0.60***</b> (0.47, 0.78)	<b>0.63***</b> (0.49, 0.81)
3	<b>0.43***</b> (0.32, 0.58)	<b>0.46***</b> (0.34, 0.61)
4	<b>0.52***</b> (0.39, 0.69)	<b>0.55***</b> (0.41, 0.74)
Time between waves	<b>1.14**</b> (1.05, 1.24)	<b>1.13**</b> (1.03, 1.23)

Note: Boldface indicates statistical significance (\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ ).

<sup>a</sup>Additional control variables include average market-level family income, average market-level high school completion rates, market population, 2013 Behavioral Risk Factor Surveillance System state smoking prevalence, measures of self-reported exposure to the *Tips From Former Smokers* and the Truth Initiative's truth<sup>®</sup> campaigns, an indicator for whether the youth's baseline interview was conducted after the launch of *The Real Cost*.

TRP, target rating points; OTP, other tobacco product; N/A, not applicable.

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**Appendix Table 4.** Sensitivity Analysis for the Cumulative TRP Exposure Model – Modeling Marijuana Initiation as the Outcome

Explanatory variable <sup>a</sup>	E-cigarette use OR (95% CI)
Exposure variable	0.96 (0.77, 1.20)
Age, years	
11	ref
12	0.94 (0.21, 4.30)
13	2.49 (0.60, 10.39)
14	<b>4.36*</b> (1.06, 17.95)
15	<b>5.90*</b> (1.44, 24.20)
16	<b>7.19**</b> (1.75, 29.47)
17	<b>8.45**</b> (2.06, 34.73)
18	<b>11.85***</b> (2.86, 49.09)
19	<b>8.89**</b> (2.02, 39.02)
Sex	
Female	ref
Male	1.01 (0.88, 1.15)
Race	
White, non-Hispanic	ref
Black, non-Hispanic	<b>1.72***</b> (1.37, 2.15)
Hispanic	<b>1.53***</b> (1.30, 1.80)
Other, non-Hispanic	1.08 (0.85, 1.36)
Other covariates	
Youth allowance	<b>1.04*</b> (1.01, 1.07)
Lives with a tobacco user	<b>1.66***</b> (1.44, 1.91)
Sensation seeking scale	<b>1.55***</b> (1.43, 1.68)
School environment	<b>0.83***</b> (0.77, 0.90)
School performance	<b>0.84***</b> (0.77, 0.91)
School plans	0.98 (0.92, 1.05)
Parental communication	<b>0.86***</b> (0.79, 0.93)
TV use	<b>1.03**</b> (1.01, 1.04)
Wave	
1	ref
2	1.01 (0.82, 1.24)
3	<b>0.77*</b> (0.61, 0.98)
4	1.04 (0.82, 1.31)
Time between waves	<b>1.08*</b> (1.01, 1.17)

*Note:* Boldface indicates statistical significance (\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ ).

<sup>a</sup>Additional control variables include average market-level family income, average market-level high school completion rates, market population, 2013 Behavioral Risk Factor Surveillance System state smoking prevalence, measures of self-reported exposure to the *Tips From Former Smokers* and the Truth Initiative's truth<sup>®</sup> campaigns, an indicator for whether the youth's baseline interview was conducted after the launch of *The Real Cost*.

TRP, target rating points.