Electronic Cigarettes and Conventional Cigarette Use Among US Adolescents
A Cross-sectional Study
Lauren M. Dutra, ScD; Stanton A. Glantz, PhD

**IMPORTANCE** Electronic cigarette (e-cigarette) use is increasing rapidly among adolescents, and e-cigarettes are currently unregulated.

**OBJECTIVE** To examine e-cigarette use and conventional cigarette smoking.

**DESIGN, SETTING, AND PARTICIPANTS** Cross-sectional analyses of survey data from a representative sample of US middle and high school students in 2011 (n = 17,353) and 2012 (n = 22,529) who completed the 2011 and 2012 National Youth Tobacco Survey.

**EXPOSURES** Ever and current e-cigarette use.

**MAIN OUTCOMES AND MEASURES** Experimentation with, ever, and current smoking, and smoking abstinence.

**RESULTS** Among cigarette experimenters (≥1 puff), ever e-cigarette use was associated with higher odds of ever smoking cigarettes (≥100 cigarettes; odds ratio [OR] = 6.31; 95% CI, 5.39-7.39) and current cigarette smoking (OR = 5.96; 95% CI, 5.67-6.27). Current e-cigarette use was positively associated with ever smoking cigarettes (OR = 7.42; 95% CI, 5.63-9.79) and current cigarette smoking (OR = 7.88; 95% CI, 6.01-10.32). In 2011, current cigarette smokers who had ever used e-cigarettes were more likely to intend to quit smoking within the next year (OR = 1.53; 95% CI, 1.03-2.28). Among experimenters with conventional cigarettes, ever use of e-cigarettes was associated with lower 30-day (OR = 0.24; 95% CI, 0.21-0.28), 6-month (OR = 0.24; 95% CI, 0.21-0.28), and 1-year (OR = 0.25; 95% CI, 0.21-0.30) abstinence from cigarettes. Current e-cigarette use was also associated with lower 30-day (OR = 0.11; 95% CI, 0.08-0.15), 6-month (OR = 0.11; 95% CI, 0.08-0.15), and 1-year (OR = 0.12; 95% CI, 0.07-0.18) abstinence. Among ever smokers of cigarettes (≥100 cigarettes), ever e-cigarette use was negatively associated with 30-day (OR = 0.61; 95% CI, 0.42-0.89), 6-month (OR = 0.53; 95% CI, 0.33-0.83), and 1-year (OR = 0.32; 95% CI, 0.18-0.56) abstinence from conventional cigarettes. Current e-cigarette use was also negatively associated with 30-day (OR = 0.35; 95% CI, 0.18-0.69), 6-month (OR = 0.30; 95% CI, 0.13-0.68), and 1-year (OR = 0.34; 95% CI, 0.13-0.87) abstinence.

**CONCLUSIONS AND RELEVANCE** Use of e-cigarettes was associated with higher odds of ever or current cigarette smoking, higher odds of established smoking, higher odds of planning to quit smoking among current smokers, and, among experimenters, lower odds of abstinence from conventional cigarettes. Use of e-cigarettes does not discourage, and may encourage, conventional cigarette use among US adolescents.

Published online March 6, 2014.

Copyright 2014 American Medical Association. All rights reserved.
Electronic cigarettes (e-cigarettes) are devices that deliver a heated aerosol of nicotine in a fashion that mimics conventional cigarettes while delivering lower levels of toxins than a conventional combusted cigarette. They are being aggressively marketed using the same messages and media channels (plus the Internet) that cigarette companies used to market conventional cigarettes in the 1950s and 1960s, including on television and radio where cigarette advertising has been prohibited for more than 40 years.

In addition to these traditional media, e-cigarettes have established a strong advertising presence on the Internet, and e-cigarette companies heavily advertise their products through electronic communication. Studies have demonstrated for decades that youth exposure to cigarette advertising causes youth smoking. Electronic cigarettes are also sold using characterizing flavors (eg, strawberry, licorice, chocolate) that are banned in cigarettes in the United States because they appeal to youths. The 2011 and 2012 National Youth Tobacco Survey (NYTS) revealed that e-cigarette use among youths in grades 6 through 12 doubled between 2011 and 2012, from 3.3% to 6.8%. As with adults, concurrent dual use of e-cigarettes and conventional cigarettes was also high, with 76.3% of current e-cigarette users reporting concurrent use of conventional cigarettes in 2012. Likewise, e-cigarettes were introduced to Korea in 2007 using marketing techniques similar to those used in the United States, and use among adolescents rapidly increased: in 2011, 4.7% of Korean adolescents were using e-cigarettes, 76.7% of whom were dual users. A cross-sectional US study also found that unsuccessful cigarette quitters were significantly more likely to have ever tried e-cigarettes in comparison with individuals who had never tried to quit. Likewise, a cross-sectional study of Korean adolescents found that they were using e-cigarettes as smoking cessation aids (odds ratio [OR] = 1.58; 95% CI, 1.39-1.79 for e-cigarette use among students who had made a quit attempt compared with those who had not) but were less likely to have quit smoking (OR = 0.10; 95% CI, 0.09-0.12).

To further understand the relationship between e-cigarette use with conventional cigarette use and quitting, this study used data from the 2011 and 2012 NYTS to examine the relationship between e-cigarette use and both conventional cigarette smoking and smoking cessation among US adolescents.

Methods

Data Source

The NYTS is a nationally representative cross-sectional sample of students from US middle and high schools (grades 6-12) located in all 50 states and the District of Columbia that was developed to inform national and state tobacco prevention and control programs. The 2011 sample included 18,866 students (88.0% response rate) from 178 schools (83.2% response rate), and the 2012 sample included 24,658 students (91.7% response rate) from 228 schools (80.3% response rate). The NYTS is an anonymous, self-administered, 81-item, pencil-and-paper questionnaire that includes indicators of tobacco use (including cigarettes, cigars, smokeless tobacco, kretekts, pipes, and emerging tobacco products), tobacco-related beliefs, attitudes about tobacco products, smoking cessation, exposure to secondhand smoke, ability to purchase tobacco products, and exposure to protobacco and antitobacco influences. It uses a 3-stage clustered probability sampling design without replacement to select primary sampling units (county, several small counties, portion of large county), schools within each primary sampling unit, and students within each school. Non-Hispanic black and Hispanic students are oversampled. Written permission to participate is obtained from parents or legal guardians. Institutional review board approval was waived because we used data from a deidentified public-use data set.

Variables

Conventional cigarette experimenters were defined as adolescents who responded yes to the question “Have you ever tried cigarette smoking, even 1 or 2 puffs?” Ever smokers of conventional cigarettes were defined as those who replied “100 or more cigarettes (5 or more packs)” to the question “About how many cigarettes have you smoked in your entire life?” Current smokers of conventional cigarettes were those who had smoked at least 100 cigarettes and smoked in the past 30 days.

In 2011, intention to quit smoking within the next year was measured among current cigarette smokers using the question “I plan to stop smoking cigarettes for good within the next….” Respondents who chose any time within the next year (7 days, 30 days, 6 months, or 1 year) were classified as intending to quit; those who responded “I do not plan to stop smoking cigarettes within the next year” were classified as not intending to quit. This question was not asked in 2012. We measured quit attempts with the question “During the past 12 months, how many times did you stop smoking for 1 day or longer because you were trying to quit smoking cigarettes for good?” Those who responded 1 or more times were consid-
Table 1. Sociodemographic Characteristics of Respondents in the 2011 and 2012 National Youth Tobacco Survey by Ever and Current Use of Electronic Cigarettes in 2011 and 2012*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 17 353)</td>
<td>(n = 22 529)</td>
</tr>
<tr>
<td></td>
<td>Alla</td>
<td>E-cigarette Useb</td>
</tr>
<tr>
<td></td>
<td>Ever</td>
<td>Current</td>
</tr>
<tr>
<td>Respondents, No. (%)</td>
<td>511 (3.1)</td>
<td>174 (1.1)</td>
</tr>
<tr>
<td>Age, mean (SD), y</td>
<td>14.7 (0.1)</td>
<td>15.8 (0.1)c</td>
</tr>
<tr>
<td>Gender, No. (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8544 (50.6)</td>
<td>296 (3.9)d</td>
</tr>
<tr>
<td>Female</td>
<td>8809 (49.4)</td>
<td>215 (2.4)</td>
</tr>
<tr>
<td>Race, No. (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>6731 (56.6)</td>
<td>274 (3.8)d</td>
</tr>
<tr>
<td>Non-Hispanic black</td>
<td>3102 (13.9)</td>
<td>28 (1.2)</td>
</tr>
<tr>
<td>Other</td>
<td>7520 (29.5)</td>
<td>209 (2.8)</td>
</tr>
<tr>
<td>Ever cigarette smoking, No. (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever</td>
<td>860 (5.6)</td>
<td>234 (30.8)d</td>
</tr>
<tr>
<td>Never</td>
<td>16 493 (94.4)</td>
<td>277 (1.5)</td>
</tr>
<tr>
<td>Dual ever use</td>
<td>232 (1.7)</td>
<td>80 (10.3)d</td>
</tr>
<tr>
<td>Current cigarette smoking, No. (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoker</td>
<td>778 (5.0)</td>
<td>219 (31.9)d</td>
</tr>
<tr>
<td>Nonsmoker</td>
<td>16 575 (95.0)</td>
<td>292 (1.6)</td>
</tr>
<tr>
<td>Dual current use</td>
<td>75 (0.5)</td>
<td>98 (0.6)</td>
</tr>
</tbody>
</table>

Abbreviation: e-cigarette, electronic cigarette.

* Respondents with missing values for e-cigarette use, cigarette smoking, and covariates are excluded.

a Percentages are by row.
b Percentages are by column.
c Percentages are by row. Ever e-cigarette use indicates having ever tried an e-cigarette, and current e-cigarette use indicates having used an e-cigarette in the past 30 days.
d Percentages are of the entire sample who have ever used e-cigarettes and ever smoked conventional cigarettes.

e Smoked at least 100 cigarettes in lifetime.

Statistical Analysis

The 92.0% of respondents (17 353 of 18 866) in 2011 and 91.4% of respondents (22 529 of 24 658) in 2012 with complete data on conventional cigarette use, e-cigarette use, and covariates were included in this analysis using SAS-callable SUDAAN (SAS version 9.3, SAS Institute, Inc; SUDAAN version 11.0.0, RTI International), which accounted for the stratified clustered sampling design of the NYTS, and Stata version 12.1 (StataCorp LP), which was used to pool the data from both years. Sampling weights were used in all analyses to adjust for nonresponse and the probability of selection and to match the sample’s sociodemographic characteristics with those of US middle and high school students in 2011.24,25

The PROC CROSSTAB procedure was used for χ2 analyses of categorical demographic variables by e-cigarette use. The PROC DESCRIPT and PROC REGRESS (generalized linear model) procedures provided means and P values for bivariate analyses of continuous and ordinal variables. All descriptive statistics and ORs were adjusted for stratification variables and weights. The PROC RLOGIST procedure was used to obtain ORs and 95% confidence intervals from multivariable logistic regression models of e-cigarette use and cigarette smoking, intention to quit, quit attempts, and abstinence from cigarettes, adjusting for demographic covari-
ates. Because the NYTS study designs in 2011 and 2012 were essentially identical, we pooled adjusted ORs for e-cigarette use in 2011 and 2012 using a fixed-effects meta-analysis with the Stata metan command. As expected, there was no evidence of heterogeneity between the 2 years (median P value for heterogeneity = .32; range, .09-.98).

Results

In 2011, 3.1% of the study sample had ever tried e-cigarettes (1.7% dual ever use, 1.5% only e-cigarettes) and 1.1% were current e-cigarette users (0.5% dual use, 0.6% only e-cigarettes). In 2012, 6.5% of the sample had tried e-cigarettes (2.6% dual use, 4.1% only e-cigarettes) and 2.0% were current e-cigarette users (1.0% dual use, 1.1% only e-cigarettes). Ever and current e-cigarette use varied significantly by sociodemographic characteristics (Table 1).

Ever e-cigarette users were significantly more likely to be male (P < .01), white (P < .01), and older (P < .01). Ever conventional cigarette smokers (≥100 cigarettes in lifetime) were significantly more likely than never smokers to have tried e-cigarettes (P < .01) and to be current e-cigarette users (P < .01).

In 2011, 45.4% of ever e-cigarette users had never been established smokers of conventional cigarettes and 49.7% of current e-cigarette users were current smokers of conventional cigarettes. In 2012, 61.2% of ever e-cigarette users had never been established smokers and 49.8% of current e-cigarette users were current cigarette smokers.

Reflecting high levels of dual use, ever and current e-cigarette use was associated with very high odds of experimentation with cigarettes, ever cigarette smoking, and current cigarette smoking (eTable 1 and eTable 2 in Supplement).

Among current smokers, current e-cigarette use was associated with higher levels of cigarette smoking (P = .003 for 2011; P = .001 for 2012) (Figure).

In pooled analyses, among experimenters (ever smoked a puff), ever e-cigarette use was positively associated with being an established smoker (≥100 cigarettes; OR = 6.31; 95% CI, 5.39-7.39) and current cigarette smoking (≥100 cigarettes and smoked in past 30 days; OR = 5.96; 95% CI, 5.67-6.27). Current e-cigarette use was also associated with ever cigarette smoking (OR = 7.42; 95% CI, 5.63-9.79) and current cigarette smoking (OR = 7.88; 95% CI, 6.01-10.32) (Table 2). Table 3 shows separate analyses by year.
Use of e-cigarettes was also associated with lower odds of abstinence. Among experimenters, ever e-cigarette use associated with lower odds of 30-day (OR = 0.24; 95% CI, 0.21-0.28), 6-month (OR = 0.24; 95% CI, 0.21-0.28), and 1-year (OR = 0.25; 95% CI, 0.21-0.30) abstinence from conventional cigarettes. Current e-cigarette use was also associated with lower odds of 30-day (OR = 0.12; 95% CI, 0.07-0.18), 6-month (OR = 0.11; 95% CI, 0.08-0.15), and 1-year (OR = 0.13; 95% CI, 0.07-0.18) abstinence from conventional cigarettes. Table 4 shows analyses by year.

Among ever cigarette smokers (≥100 cigarettes), ever e-cigarette use was negatively associated with 30-day (OR = 0.35; 95% CI, 0.18-0.69), 6-month (OR = 0.30; 95% CI, 0.13-0.68), and 1-year (OR = 0.34; 95% CI, 0.13-0.87) abstinence from conventional cigarettes. Table 5 shows analyses by year.

Table 2. Pooled Analysis of Ever and Current Electronic Cigarette Use and Cigarette Smoking in the 2011 and 2012 National Youth Tobacco Surveya

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Cigarette Smoking Statusb</th>
<th>OR (95% CI)</th>
<th>Abstinence From Cigarettesc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Everd</td>
<td>Current</td>
<td>30 dm</td>
</tr>
<tr>
<td>Cigarette experimenters (n = 10 850)b</td>
<td>6.84 (4.01-11.67)</td>
<td>6.49 (3.92-10.76)</td>
<td>7.52 (5.69-9.93)</td>
</tr>
<tr>
<td>Ever cigarette smokers (n = 1832)b</td>
<td>6.31 (5.39-7.39)</td>
<td>5.96 (5.67-6.27)</td>
<td>0.24 (0.21-0.28)</td>
</tr>
<tr>
<td>Current e-cigarette usef</td>
<td>7.42 (5.63-9.79)</td>
<td>7.88 (6.01-10.32)</td>
<td>0.11 (0.08-0.15)</td>
</tr>
</tbody>
</table>

Abbreviations: e-cigarette, electronic cigarette; OR, odds ratio; ellipses, not applicable.

* Excludes respondents with missing values for e-cigarette use, cigarette smoking, and covariates.

* Ever cigarette smoking indicates having smoked at least 100 cigarettes in lifetime, and current cigarette smoking indicates having smoked at least 100 cigarettes in lifetime and at least a puff of a cigarette in the past 30 days.

* Based on answers to “When was the last time you smoked a cigarette, even 1 or 2 puffs?”

* Responded “not in the past 6 months but in the past year” to the abstinence question.

* Responded “1 to 4 years ago” or “5 or more years ago” to the abstinence question.

* Smoked at least 1 puff of a cigarette.

* Ever tried an e-cigarette.

* Used an e-cigarette in the past 30 days.

Table 3. Association of Electronic Cigarette Use With Ever and Current Smoking Among Adolescents Reporting Experimentation With Conventional Cigarettes in the 2011 and 2012 National Youth Tobacco Surveya

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>2011 (n = 5169)</th>
<th>2012 (n = 5681)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Everb</td>
<td>Currentc</td>
</tr>
<tr>
<td>Adjusted</td>
<td>7.66</td>
<td>7.43 (5.39-10.22)</td>
</tr>
<tr>
<td>Age, y</td>
<td>1.33</td>
<td>(1.23-1.44)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic black</td>
<td>0.37</td>
<td>(0.23-0.57)</td>
</tr>
<tr>
<td>Non-Hispanic other</td>
<td>0.72</td>
<td>(0.54-0.97)</td>
</tr>
<tr>
<td>Male</td>
<td>1.39</td>
<td>(1.13-1.70)</td>
</tr>
<tr>
<td>Unadjusted</td>
<td>8.52</td>
<td>(6.06-11.98)</td>
</tr>
<tr>
<td>Current e-cigarette usef</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted</td>
<td>7.46</td>
<td>(4.12-13.49)</td>
</tr>
<tr>
<td>Age, y</td>
<td>1.35</td>
<td>(1.25-1.46)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic black</td>
<td>0.31</td>
<td>(0.20-0.47)</td>
</tr>
<tr>
<td>Non-Hispanic other</td>
<td>0.67</td>
<td>(0.50-0.89)</td>
</tr>
<tr>
<td>Male</td>
<td>1.38</td>
<td>(1.13-1.70)</td>
</tr>
<tr>
<td>Unadjusted</td>
<td>6.84</td>
<td>(4.01-11.67)</td>
</tr>
</tbody>
</table>

Abbreviations: e-cigarette, electronic cigarette; OR, odds ratio.

* Excludes respondents with missing values for e-cigarette use, cigarette smoking, and covariates.

* Ever tried an e-cigarette (in 2011, n = 468 [9.1% of experimenters]; in 2012, n = 1313 [23.3% of experimenters]).

* Used an e-cigarette in the past 30 days (in 2011, n = 154 [3.0% of experimenters]; in 2012, n = 423 [7.4% of experimenters]).
In adjusted analyses for 2011, among current smokers, e-cigarette use was associated with planning to stop smoking within the next year (OR = 1.53; 95% CI, 1.03-2.28), but current e-cigarette use was not (OR = 1.34; 95% CI, 0.62-2.90). In contrast, in pooled analyses, neither ever e-cigarette use (OR = 1.01; 95% CI, 0.77-1.34) nor current e-cigarette use (OR = 0.89; 95% CI, 0.61-1.30) was significantly associated with having made a quit attempt in the past 12 months after adjusting for covariates.

We also ran all analyses unadjusted by demographic variables, with little impact on the effects of e-cigarette use, indicating that the results were not due to confounding by demographic variables (Tables 3, 4, and 5).

### Discussion

As with adults,8-10 dual use of e-cigarettes and conventional cigarettes is high among adolescents and increasing rapidly. Adolescents who had ever experimented with cigarettes (smoked at least a puff) and used e-cigarettes were more likely to report having smoked at least 100 cigarettes and to be current smokers than adolescents who never used e-cigarettes. Thus, in combination with the observations that e-cigarette users are heavier smokers and less likely to have stopped smoking cigarettes, these results suggest that e-cigarette use is aggravating rather than ameliorating the tobacco epidemic among youths. These results call into question claims15,26,27 that e-cigarettes are effective as smoking cessation aids.

Our US results are consistent with those for Korean youths,3 with high levels of dual use in both populations. Current e-cigarette users (past 30 days) were much less likely to have abstained from smoking cigarettes in the past 30 days in both populations (≤1 puff but not in past 30 days: OR = 0.10; 95% CI, 0.09-0.12 in Korean youths vs OR = 0.15; 95% CI, 0.08-0.28 for experimenters with cigarettes in US youths). Among current cigarette-smoking youths in Korea, there was a significant association between current e-cigarette use and attempting to quit smoking in the past 12 months (OR = 1.67; 95% CI, 1.48-1.90), but there was not a significant association for US youths (OR = 1.20; 95% CI, 0.65-2.23). This difference may reflect behavioral differences between the 2 countries but may also reflect the lower power in our study. The Korean sample was much larger than ours (75 643 vs 17 320 individuals, respectively) with higher prevalence of current (12.1% vs 5.0%) and ever (26.3% vs 5.6%) cigarette smoking.
and current (4.7% vs 1.1%) and ever (9.4% vs 3.1%) e-cigarette use.

Although e-cigarettes deliver many fewer toxins and at much lower levels than conventional cigarettes,28–30 they contain nicotine, a highly addictive substance,31 in doses designed to mimic cigarettes. Animal models suggest that, through its effect on cholinergic pathways, nicotine may have permanent effects on the brain and behavior32,33 such as dysregulation of the limbic system, which can lead to long-term difficulties with behavioral regulation, attention, memory, and motivation, among other functions.33,34 The adolescent human brain may be particularly vulnerable to the effects of nicotine because it is still developing.35–37

This is a cross-sectional study, which only allows us to identify associations, not causal relationships. Our results are also limited by the lack of information about motivation for using e-cigarettes (eg, popularity, trendy, smoking cessation) and the fact that they only apply to middle and high school students, not all US youths.

In comparison with the 8.0% and 8.6% of respondents who had missing data in 2011 and 2012, respectively, and were dropped, our analytical sample had slightly more girls (2011: 42.9% vs 49.4%, P = .007; 2012: 38.3% vs 49.9%, P < .001) and more white respondents (2011: 39.5% vs 56.6%, P < .001; 2012: 39.8% vs 54.7%, P < .001) (eTable 3 in Supplement). In 2012 only, our sample compared with students with missing data also had a lower prevalence of e-cigarette use (6.5% vs 10.2%; P = .002) and was slightly younger (mean age, 14.6 vs 14.2 years; P < .001). There were no significant differences by any of the other demographic, e-cigarette use, or cigarette smoking variables.

Conclusions

While the cross-sectional nature of our study does not allow us to identify whether most youths are initiating smoking with conventional cigarettes and then moving on to (usually dual use of) e-cigarettes or vice versa, our results suggest that e-cigarettes are not discouraging use of conventional cigarettes. Among experimenters with conventional cigarettes, e-cigarette use is associated with established cigarette smoking and lower rates of abstinence from conventional cigarettes. The debate over e-cigarettes28,33,35–37 has centered on whether e-cigarettes could be useful as a harm-reduction strategy in established adult cigarette smokers. The results of our study together with those from the study in Korea3 suggest that e-cigarettes may contribute to nicotine addiction and are unlikely to discourage conventional cigarette smoking among youths.
Electronic and Conventional Cigarette Use

Electronic and Conventional Cigarette Use

ARTICLE INFORMATION
Accepted for Publication: December 16, 2013.
Published Online: March 6, 2014.

Author Contributions: Drs Dutra and Glantz had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Dutra, Glantz.
Analysis and interpretation of data: Dutra, Glantz.
Drafting of the manuscript: Dutra, Glantz.
Critical revision of the manuscript for important intellectual content: Dutra, Glantz.

Statistical analysis: Dutra, Glantz.
Obtained funding: Glantz.
Administrative, technical, or material support: Glantz.
Study supervision: Glantz.

Conflict of Interest Disclosures: None reported.

Funding/Support: This work was supported by grants CA-113710 and CA-060121 from the National Cancer Institute.

Role of the Sponsor: The funder had no role in the design and conduct of the study, collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Correction: This article was corrected online for typographical errors on March 10, 2014, and March 12, 2014.

REFERENCES