

**Appendix**  
**Changes in E-cigarette Use Behaviors and Dependence in Long-Term E-cigarette Users**  
**Du et al.**

**Appendix Table 1.** Characteristics of All Study Subjects

Characteristics	All study subjects (N=494)		
	Baseline	Follow-up	<i>p</i> -value <sup>a</sup>
Age, years, mean (SD)	40.7 (12.0)	44.4 (12.1)	–
Male, n (%)	327 (66.2)		–
White, n (%)	443 (90.4)		–
College or higher, n (%)	229 (46.4)	238 (48.2)	0.23
Full-time employed, n (%)	331 (67.0)	327 (66.2)	0.69
Income >\$2,500/month, n (%)	NA	304 (62.7)	–
E-cigarette use behaviors			
The most important reason to use an e-cigarette, n (%)			
Less harmful to my health	178 (36.1)	180 (36.4)	0.94
To quit smoking or avoid relapsing	153 (31.0)	155 (31.4)	0.88
Mean number of devices used prior to the current device (SD)	4.5 (5.5)	10.2 (12.8)	<b>&lt;0.0001</b>
Mean nicotine concentration of preferred liquid (in mg/ml) (SD)	NA	8.0 (8.1)	–
Non-nicotine-containing preferred liquid, n (%)	NA	26 (5.3)	–
Use more than one nicotine level, n (%)	NA	74 (15.0)	–
Mean number of different nicotine levels used on a regular basis (SD)	NA	2.3 (0.6)	–
Mean amount of e-liquid used per day (in ml) (SD)	NA	7.6 (6.9)	–
Daily e-cigarette use in the past 28 days or 30 days, <sup>b</sup> n (%)	424 (85.8)	441 (89.3)	–
E-cigarette-related dependence			
Mean PSECDI (SD)	8.4 (3.5)	8.3 (3.9)	0.50
Mean e-cigarette use times per day (SD)	23.2 (24.8)	21.0 (23.8)	0.09
Mean time to first e-cigarette use after waking (in minutes) (SD)	49.6 (90.1)	46.1 (82.6)	0.45
Awaken at night to use e-cigarette, n (%)	36 (7.3)	50 (10.2)	<b>0.048</b>
Mean number of nights per week awakened to use e-cigarette (SD)	0.3 (1.2)	0.4 (1.3)	0.17
Hard to quit e-cigarette, n (%)	161 (32.7)	101 (20.5)	<b>&lt;0.0001</b>
Have had strong cravings to use e-cigarette, n (%)	209 (42.5)	224 (45.5)	0.23
Strong urges to use e-cigarette, n (%)	74 (15.0)	74 (15.0)	1.00
Hard to keep from using e-cigarette, n (%)	62 (12.6)	78 (15.8)	0.11
Felt irritable if couldn't use e-cigarette, n (%)	160 (32.4)	150 (30.4)	0.43
Felt nervous/restless/anxious if couldn't use e-cigarette, n (%)	166 (33.6)	164 (33.2)	0.87

*Note:* Subjects with complete data on e-cigarette use and e-cigarette-related dependence were included. Boldface indicates statistical significance ( $p < 0.05$ ).

<sup>a</sup>Paired *t*-test or McNemar's test *p*-values were used to examine changes in characteristics between baseline and follow-up.

<sup>b</sup>In the baseline survey subjects were asked to report the number of e-cigarette-use days in the past 28 days; in the follow-up survey subjects were asked to report the number of e-cigarette-use days in the past 30 days.

NA, the questions were not comparable in the baseline survey; PSECDI, Penn State Electronic Cigarette Dependence Index.