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Author's response

To the Editor

We would like to thank Drs Plurphanswat and Rodu for their letter. They are correct that our study included subjects that should have been excluded; we regret the error. After removing the subjects with osteoporosis and subjects with missing data on E-cigarette use, the number of eligible participants was reduced to 3068. We reran all of our statistical analyses on the updated cohort, and the overall findings and major conclusions reported in our study remain unchanged.

Analysis showed that, out of 3068 participants, 2777 were never E-cigarette users and 291were E-cigarette users. 444 participants had self-reported fragility fractures. In adjusted models, E-cigarette users had a 46% higher prevalence of self-reported fractures compared to never users. Results showed a higher prevalence of fragility fractures among former and current users compared to never users. Compared to the original article, the magnitude/significance of results remains unchanged. These new results are in harmony with the results of the original manuscript and show that E-Cigarette use is associated with a higher prevalence of self-reported fragility fractures. This highlights its possible detrimental effects on bone health, and raise the need for longitudinal studies exploring the potential effects of E-cigarette use on bone health.

We have submitted three updated tables and an updated Figure with the correct number of subjects to be published as a corrigendum for our study.

Sincerely,

Dayawa Agoons, MD, MPH

Updated Table 1

Table 1
Baseline characteristics of study participants by electronic cigarette (e-cig) use status.

Characteristics	Entire sample (n=3068)	Never e-cig users (n=2777)	Ever e-cig users (n=291)	p value
Age, years	65.4 (9.3)	65.9 (9.3)	60.5 (7.3)	<0.001
Female, %	50.5	51.1	44.7	0.037
Race, %				<0.001
Non-Hispanic white	38.4	36.9	52.6	
Non-Hispanic black	23.7	23.3	26.8	
Other	37.9	39.8	20.6	
Education, %				0.024
Less than high school	22.9	23.3	19.6	
High school graduate	24.7	23.9	31.6	
Attended college or higher	52.1	52.4	48.8	
Body mass index, kg/m^2	29.8 (6.9)	29.8 (6.8)	29.7 (7.7)	0.994
Current smoker, %	15.4	10.1	66.3	<0.001
Physical activity*, %	35.5	35.9	31.3	0.111
Hypertension, %	55.1	55.2	54.6	<0.001
Diabetes, %	24.6	24.8	23.4	0.533
Steroid use, %	7.8	7.2	13.1	0.002
Family history of osteoporosis, %	12.4	11.6	19.9	<0.001
Bone mineral density, g/cm^2)				
Femur neck	0.76 (0.14)	0.75 (0.14)	0.76 (0.15)	0.353
Total spine	0.99 (0.01)	0.99 (0.17)	1.01 (0.18)	0.023
Fragility fracture, %	14.5	13.5	23.7	<0.001

Data are mean (SD) or proportion (%) as appropriate. SD indicates standard deviation.
P value compares characteristics between Never, and ever e cigarette users
* Physical activity was defined as moderate-intensity sports, fitness, or recreational activity capable of increasing breathing or heart rate for 10 minutes continuously in a typical week.

Table 2
Association between electronic cigarette (e-cig) use and fragility fracture.

E-cigarette category	PR(95% CI)*	p value	PR(95% CI)†	p value
Never users	1 (Reference)	…	1 (Reference)	…
Ever users	1.73 (1.36, 2.19)	<0.001	1.46 (1.12, 1.89)	0.005
Former users	1.74 (1.35, 2.25)	<0.001	1.46 (1.10, 1.94)	0.008
Current users	1.66 (1.01, 2.74)	0.047	1.43 (0.84, 2.45)	0.191

PR: prevalence ratio; CI: confidence interval
* Adjusted for age, gender, race, level of education (Model 1)
† Adjusted for age, gender, race, level of education, BMI, smoking, physical activity, steroid use, and family history of osteoporosis (Model 2)

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Table 3
Association between electronic cigarette (e-cig) use and conventional smoking with fragility fracture.

Smoking status	PR (95% CI)*	p value	PR (95% CI)†	p value
Never smoker, never e-cig user (n=1623)	1 (Reference)	…	1 (Reference)	…
Never e-cig user & current smoker (n=280)	1.66 (1.22, 2.25)	<0.01	1.63 (1.18, 2.25)	0.003
Dual smoker & e-cig user (n=37)	2.39 (1.34, 4.26)	0.003	2.41 (1.28, 4.55)	0.006
P for trend		<0.001		<0.001

PR: prevalence ratio; CI: confidence interval
* Adjusted for age, gender, race, level of education (Model 1)
† Adjusted for age, gender, race, level of education, BMI, smoking, physical activity, steroid use, and family history of osteoporosis (Model 2)

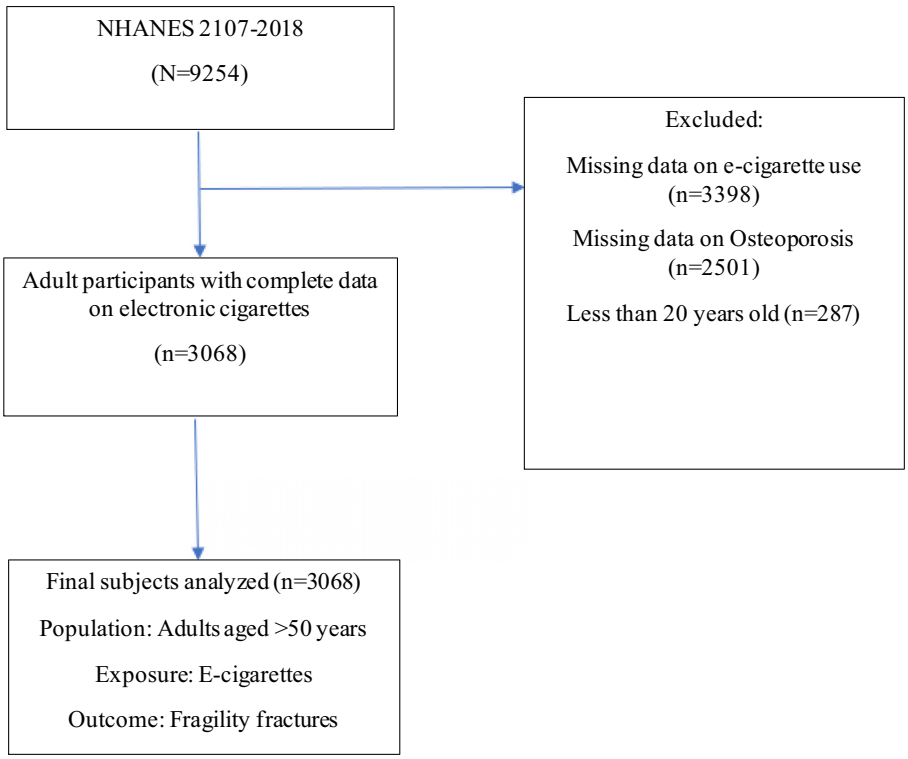

Fig. 1. Flow chart of study participant selection.

Updated Table 2
Updated Table 3
Updated Fig. 1

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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