

## INTRODUCTION

- Many e-cigarette products are available to consumers, of which PG and VG ratios as well as nicotine concentrations are variable.
- Currently unknown is how a user's preference for these product characteristics change over a length of time
- This study evaluates the change in both nicotine concentration and PG:VG ratio among established e-cigarette users, over the course of 1 year.
- These measures are then compared to determine the relative change among all users.

## METHODS

- This study included 15 exclusive e-cigarette users who completed 12 monthly study sessions in an ongoing cohort study.
- Aliquots of users' e-cigarettes were taken during each monthly session.
- Analysis for nicotine concentration and PGVG ratio was performed by GCMS

- Dynamic changes in nicotine concentration were calculated as the relative differences from the values determined in a product used during the initial visit versus each subsequent visit.
- Trends in nicotine concentration and PG:VG ratio among each participant were analyzed, as well as the average change across all participants.



Figure 1: Agilent 7890B/5977A GCMS

Table 1 – Participant Characteristics

Participant Characteristics	
Number	15
Average Age (years)	27
Sex (male)	53%

## RESULTS

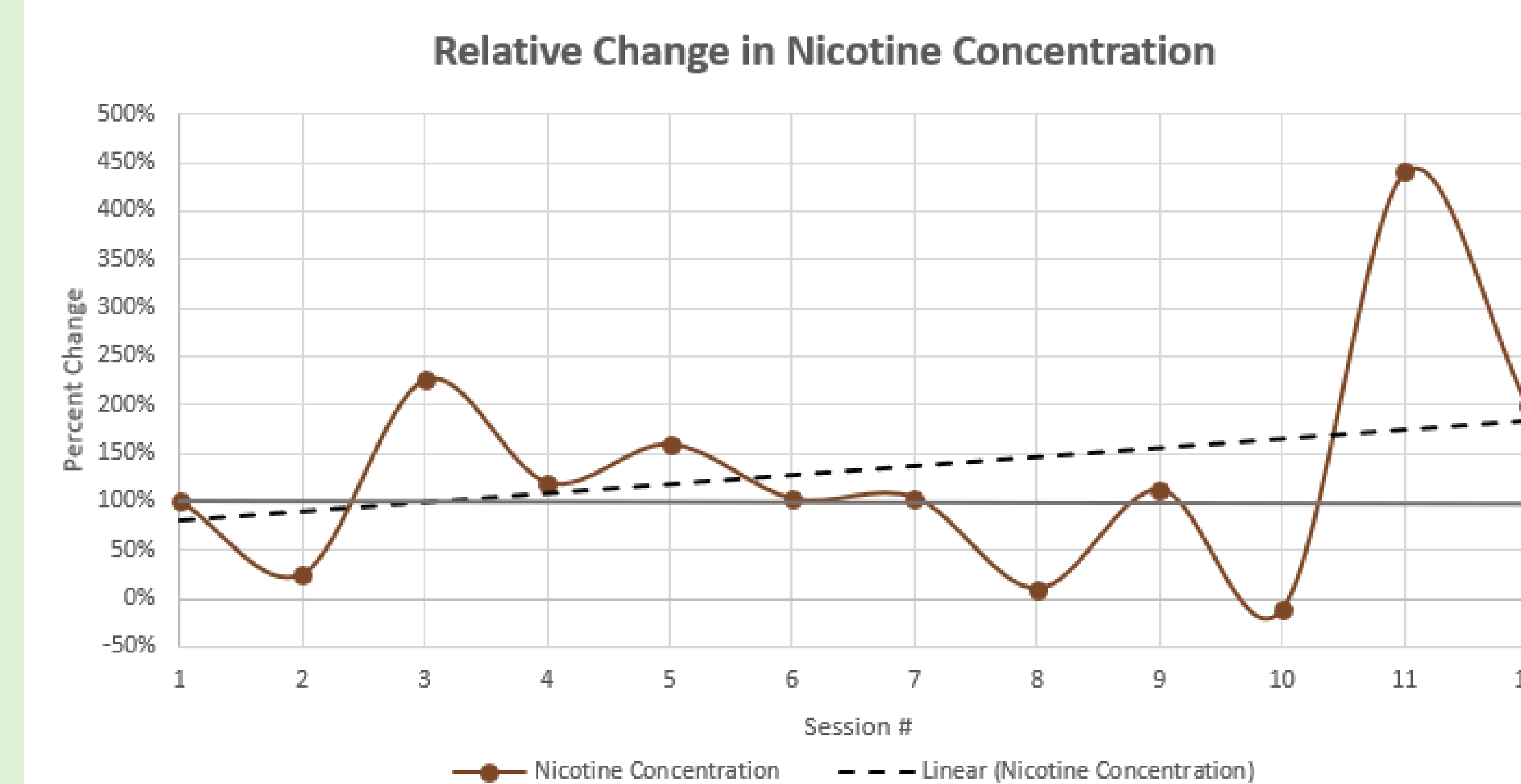


Figure 2: Average of relative change in nicotine concentration among participants over 12 months. Percent change calculated from initial visit.

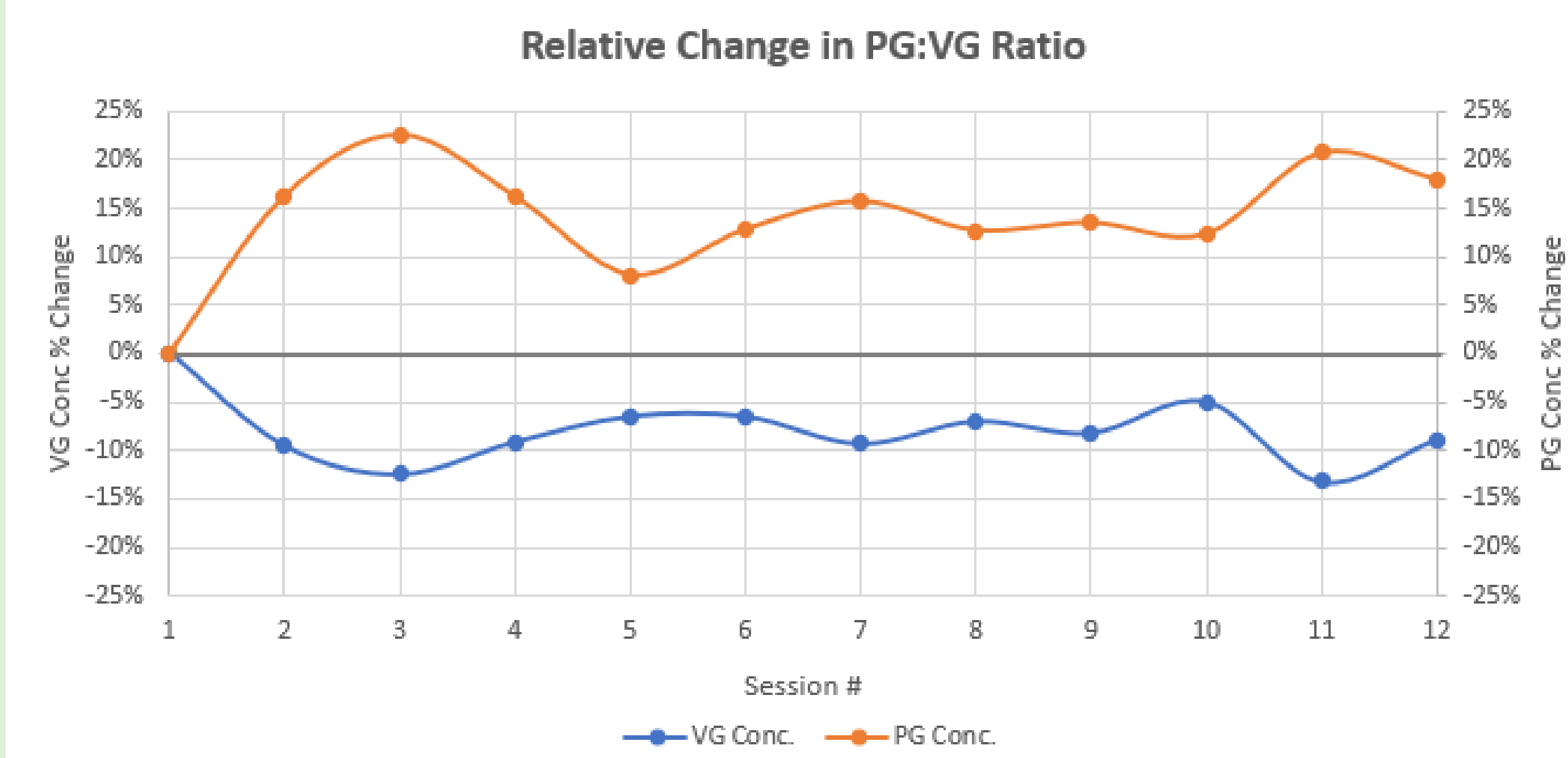


Figure 3: Average of relative change in the PG:VG ratio among participants over 12 months. Percent change calculated from initial visit.

## RESULTS SUMMARY

Table 2 – Analysis of Results	Nicotine	PG:VG
Average values of all collected e-cigarette liquids	<b>31.65 mg/mL</b>	<b>45:55 (PG:VG)</b>
Number of participants that showed an <b>increase</b> in nicotine or VG concentration	↑ <b>40%</b> (6/15)	↑ <b>20% (3/15)</b> increased VG
Number of participants that showed a <b>decrease</b> in nicotine or VG concentration	↓ <b>27%</b> (4/15)	↓ <b>67% (10/15)</b> decreased VG
Participants that did not show a final increase or decrease over 1 year	— <b>33%</b> (5/15)	— <b>13%</b> (2/15)
The biggest observed change per participant	4 → 47 mg/mL <b>1,050% increase</b>	<b>28% increase (PG)</b>
Average of relative change over 1 year across all participants	<b>35% increase</b>	<b>6% average increase (PG)</b>

## CONCLUSION

- Over the course of the study, the average **nicotine concentration increased** in the participants' products.
- The PG:VG ratio of participants changed noticeably over the year. The desired concentration of **PG increased**, while VG decreased.
- This preliminary data reflects approximately 10% of our final expected sample size.
- Future studies should explore whether increasing nicotine concentration in e-cigarettes could result in increased nicotine intake among daily vapers.

## DISCLOSURES

Dr. Goniewicz reports grants from Pfizer Inc. and served as an advisory board member to Johnson & Johnson, manufacturers of smoking cessation drugs, outside the submitted work.

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