

KU LEUVEN STUDY

Article

Effectiveness of the Electronic Cigarette: An Eight-Week Flemish Study with Six-Month Follow-up on Smoking Reduction, Craving and Experienced Benefits and Complaints

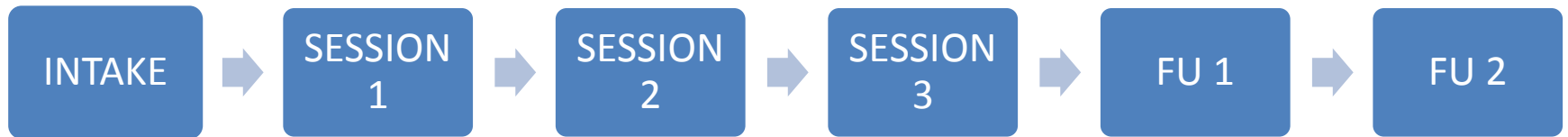
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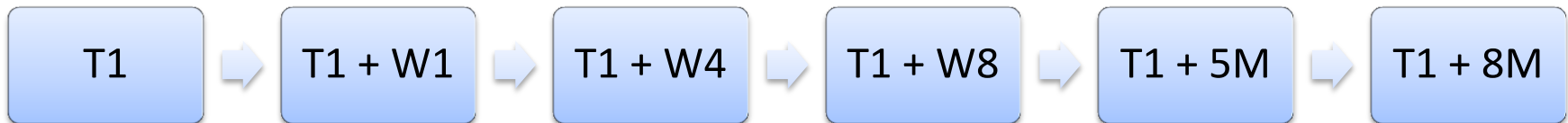
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DESIGN KULEUVEN STUDY



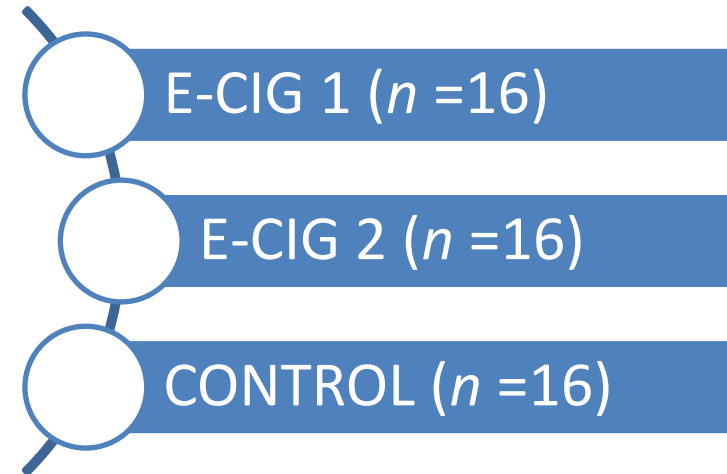
online diaries



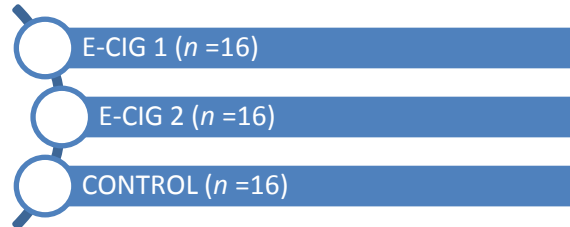
DESIGN + MEASURES

INTAKE

- info
- I.C.
- CO
- smoke history
- FTND
- BDI



DESIGN + MEASURES



4h abstinence

SESSION 1

saliva
CO + Q
5m vaping/smoking
CO + Q
CO + Q
CO + Q
CO + Q
CO + Q

4h abstinence

SESSION 2

saliva
CO + Q
5m vaping/smoking
CO + Q
CO + Q
CO + Q
CO + Q
CO + Q

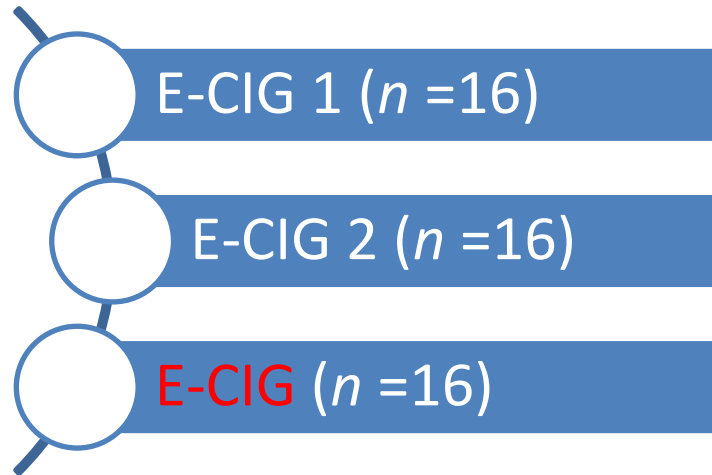
4h abstinence

SESSION 3

saliva
CO + Q
5m vaping/smoking
CO + Q
CO + Q
CO + Q
CO + Q
CO + Q

DESIGN + MEASURES

SESSION 3



DESIGN + MEASURES

FU 1

online Q

DESIGN + MEASURES

FU 2

saliva

CO

Q

GROUPS

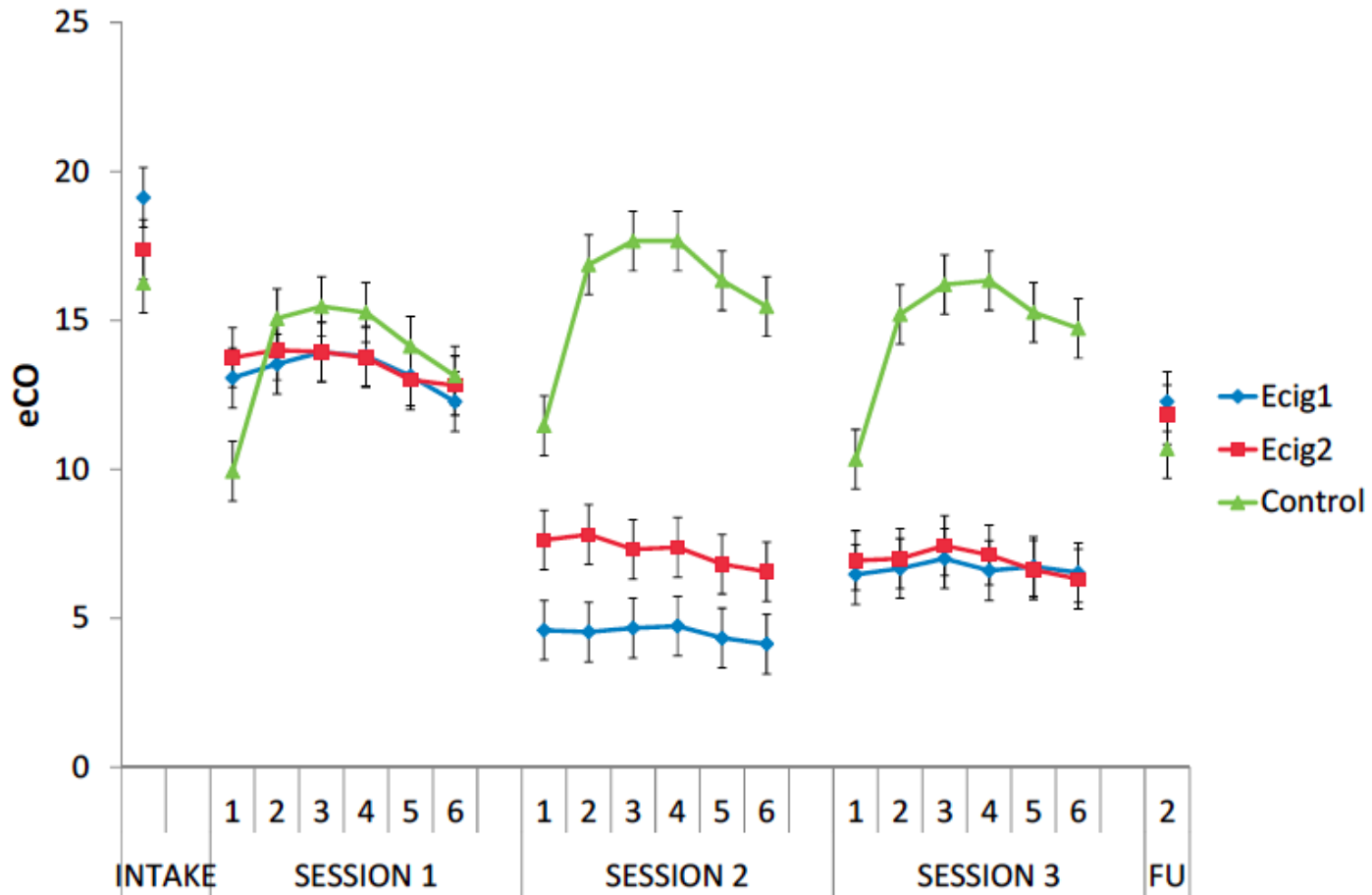
Table 1. Participants' characteristics.

Group	Gender	Age	% Employed	# Cigarettes	FTCD	BDI	eCO
Ecig1	7/9	44.75 (13.54)	78.75	20.13 (9.41)	5.81 (1.94)	6.81 (7.06)	19.13 (6.11)
Ecig2	10/6	46.06 (12.76)	71.25	20.63 (6.62)	6.31 (1.45)	6.14 (11.99)	17.38 (6.29)
Control	10/6	40.31 (13.21)	74.69	16.69 (5.49)	5.24 (1.62)	3.56 (4.34)	16.25 (8.92)
All groups	27/21	43.71 (13.13)	74.90	19.15 (7.41)	5.79 (1.70)	5.51 (8.35)	17.58 (7.17)

Note: all values means, except gender is a ratio female/male, *SD* between (); $n_{\text{Ecig1}} = 16$, $n_{\text{Ecig2}} = 16$, $n_{\text{Control}} = 16$,

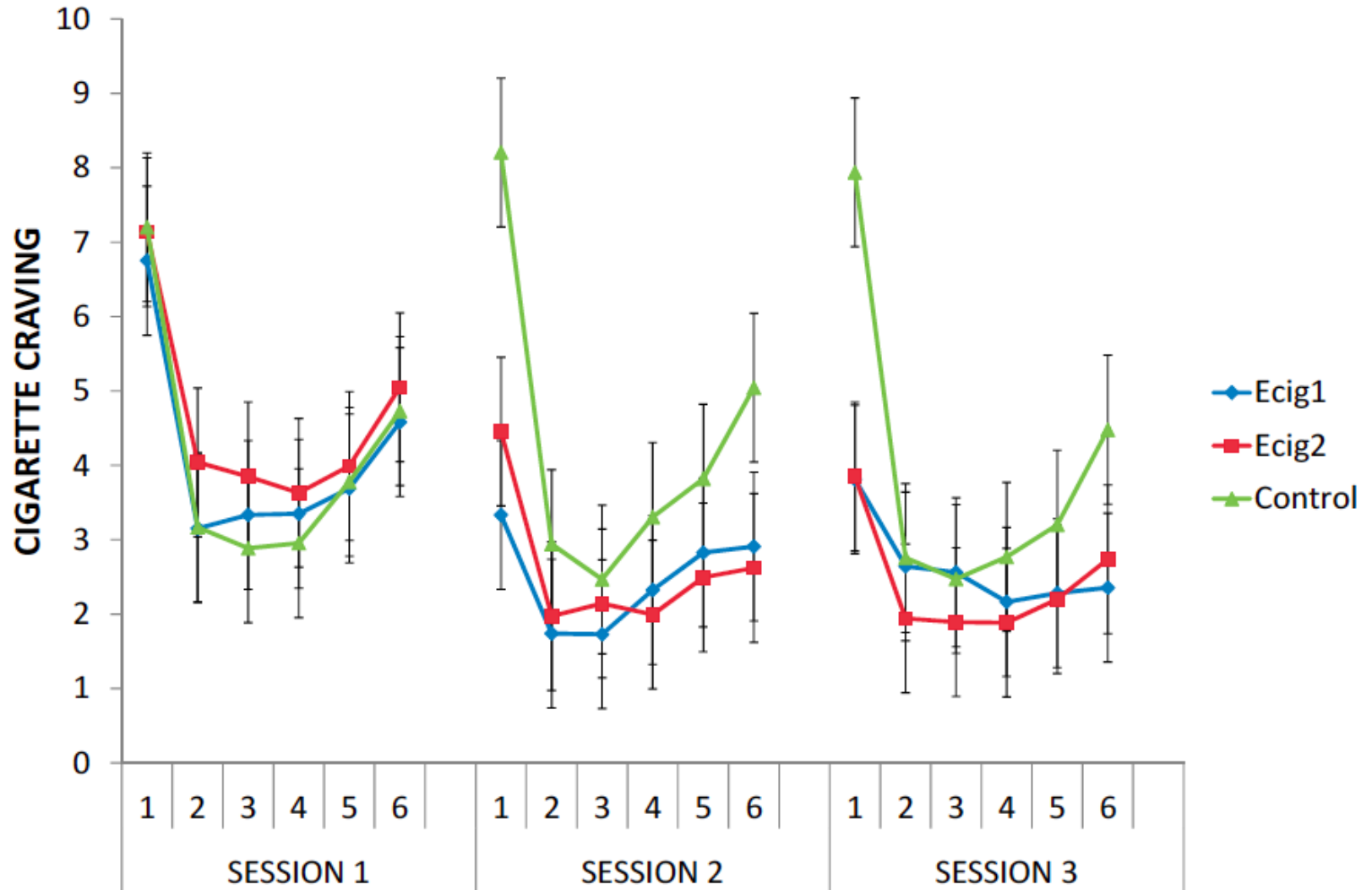
$n_{\text{All groups}} = 48$.

RESULTS: eCO

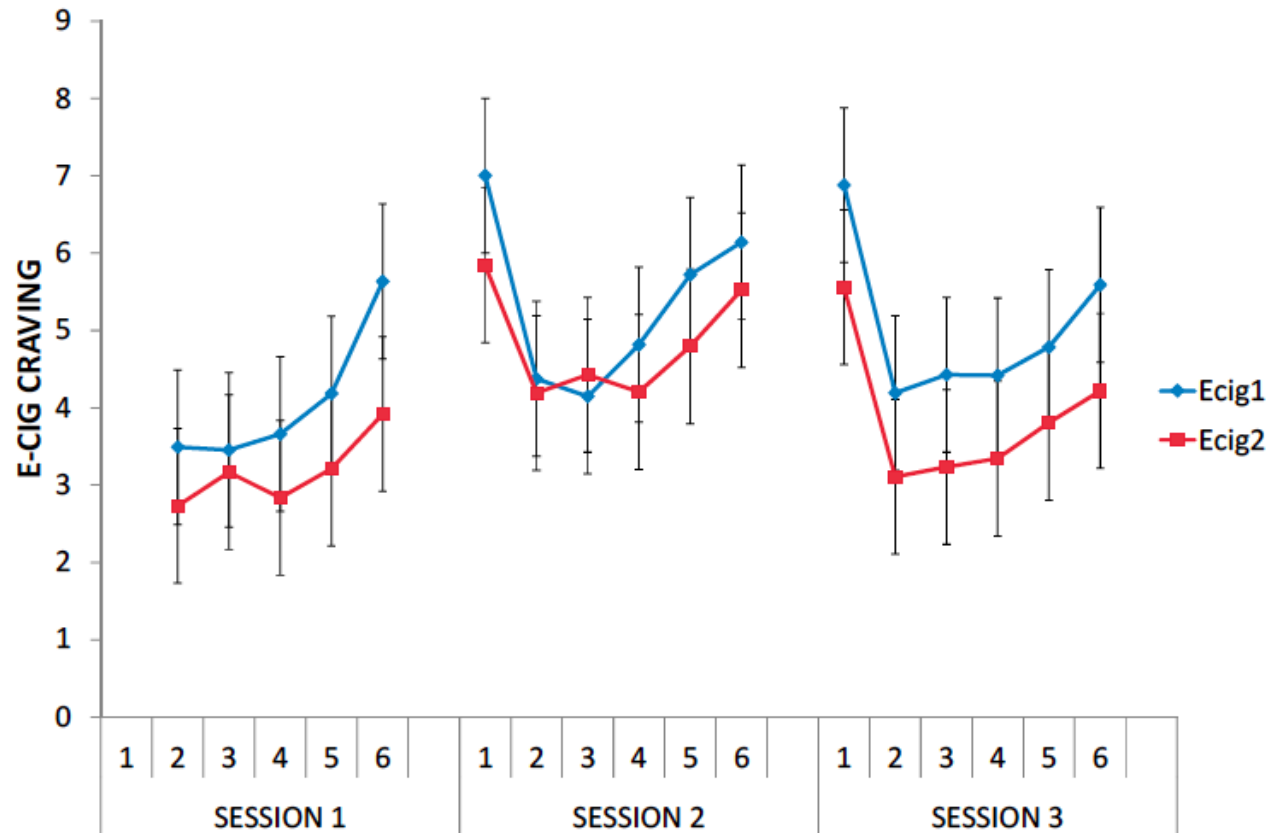


Note: all values mean (± 1 SEM) eCO levels; $n_{\text{E cig1-Intake}} = 16$, $n_{\text{E cig1-Session 1/2/3}} = 15$, $n_{\text{E cig1-FU2}} = 11$; $n_{\text{E cig2-Intake}} = 16$, $n_{\text{E cig2-Session 1/2/3}} = 16$, $n_{\text{E cig2-FU2}} = 12$; $n_{\text{Control-Intake}} = 16$, $n_{\text{Control-Session 1/2/3}} = 15$, $n_{\text{Control-FU2}} = 13$.

RESULTS: CIGARETTE CRAVING

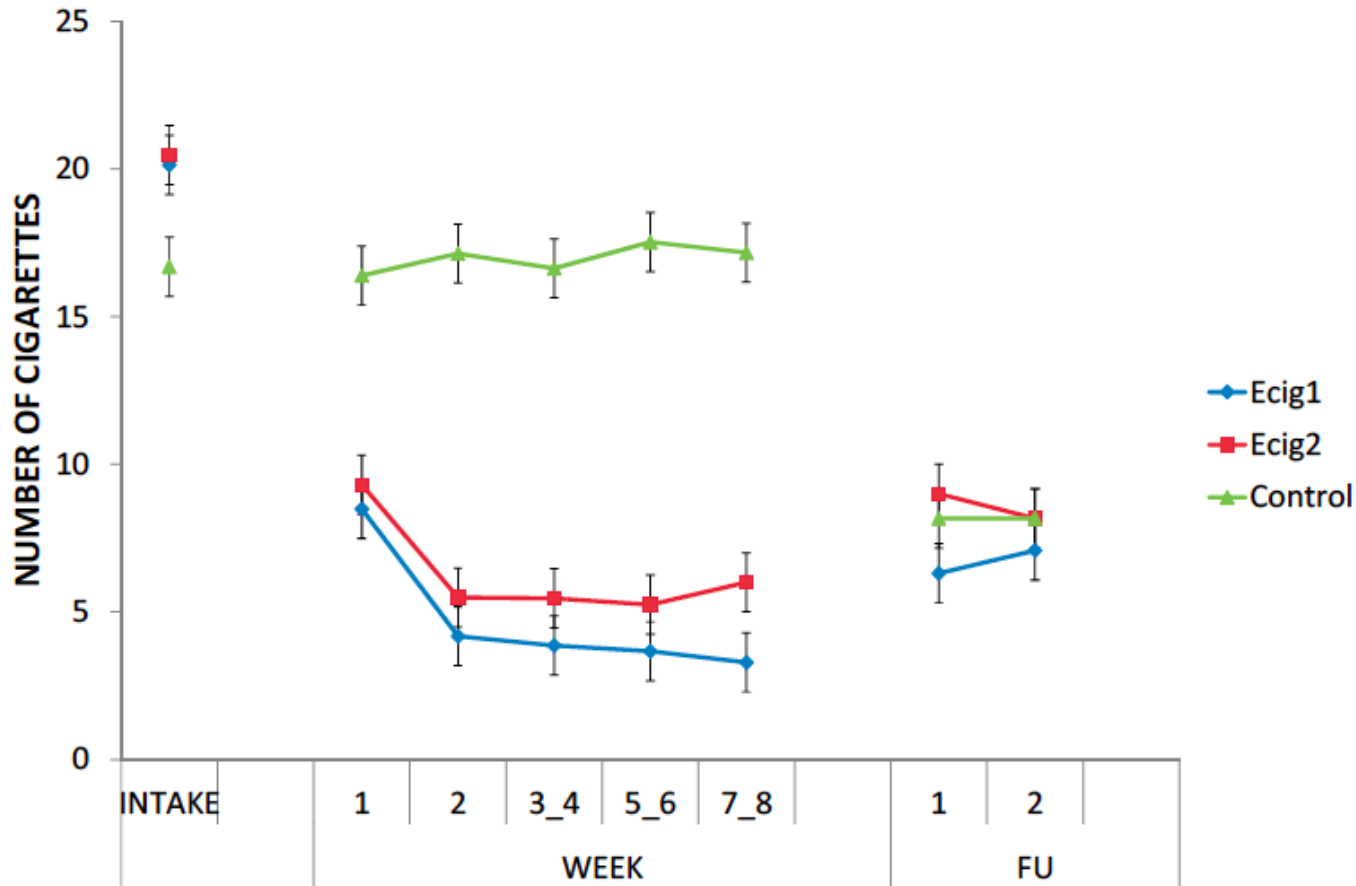


RESULTS: E-CIG CRAVING



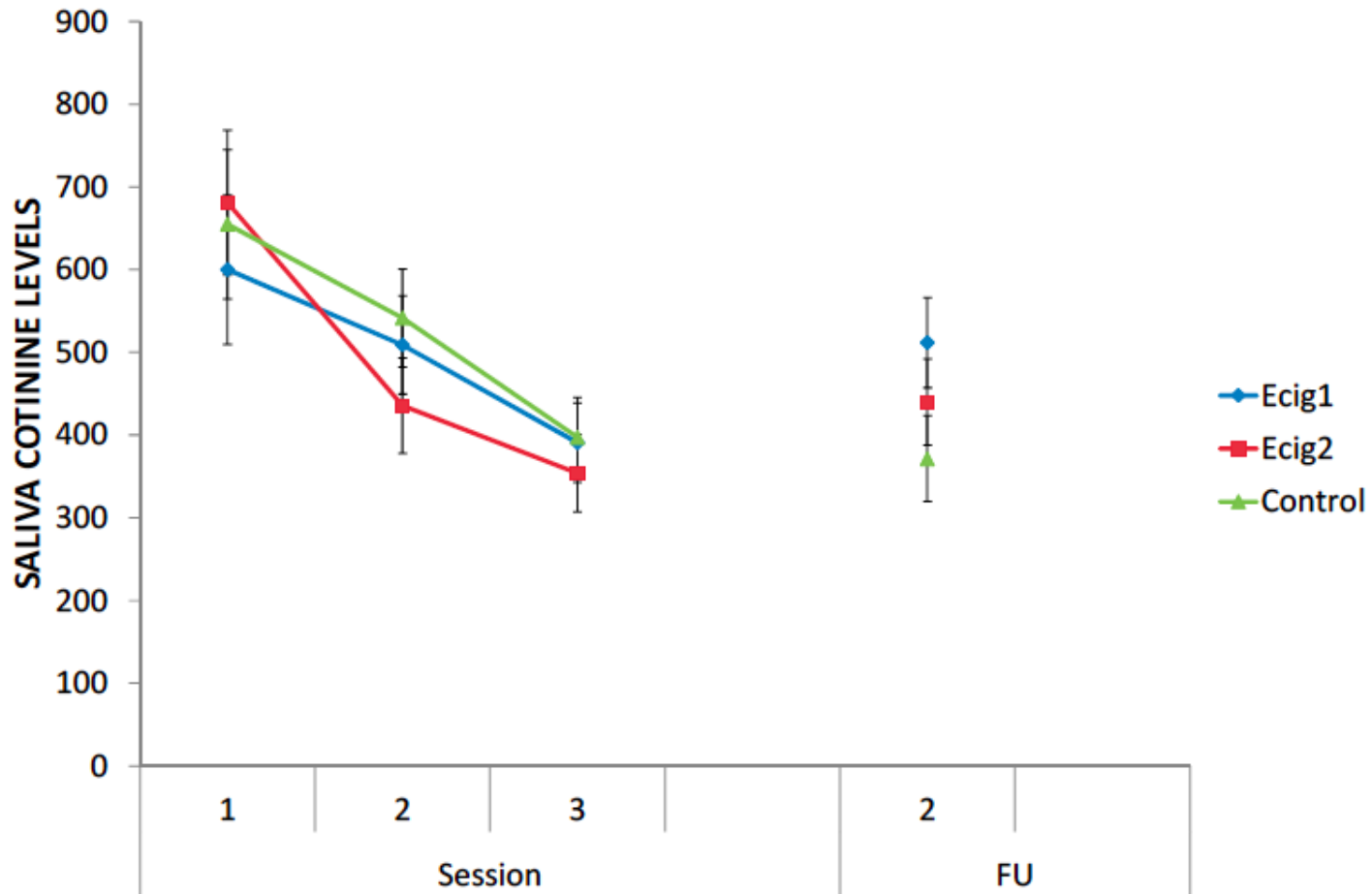
Note: top figure: all values mean (\pm 1 SEM) craving levels with minimum 0 and maximum 10; $n_{\text{E cig1—Session 1/2/3}} = 14$, $n_{\text{E cig2—Session 1/2/3}} = 14$, $n_{\text{Control—Session 1/2/3}} = 15$; bottom figure: all values mean (\pm 1 SEM) e-cig craving levels with minimum 0 and maximum 10; $n_{\text{E cig1—Session 1/2/3}} = 14$, $n_{\text{E cig2—Session 1/2/3}} = 14$. No measurement of e-cig craving at the start (T1) of Session 1, because participants had not yet used the e-cig.

RESULTS: #cigarettes



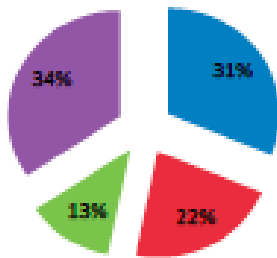
Note: all values mean (\pm 1 SEM) number of cigarettes; $n_{\text{Ecig1-Intake}} = 15$, $n_{\text{Ecig1-W1-W7}_8} = 12$, $n_{\text{Ecig1-FU1}} = 13$, $n_{\text{Ecig1-FU2}} = 13$; $n_{\text{Ecig2-Intake}} = 15$, $n_{\text{Ecig2-W1-W7}_8} = 13$, $n_{\text{Ecig2-FU1}} = 12$, $n_{\text{Ecig2-FU2}} = 12$; $n_{\text{Control-Intake}} = 16$, $n_{\text{Control-W1-W7}_8} = 15$, $n_{\text{Control-FU1}} = 12$, $n_{\text{Control-FU2}} = 12$.

RESULTS: COTININE

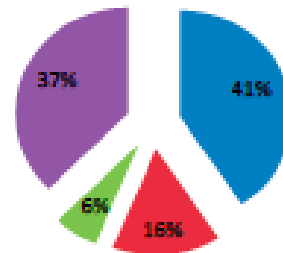


Note: all values mean (± 1 SEM) saliva cotinine levels; $n_{\text{Ecig1—Session 1/2/3}} = 15$, $n_{\text{Ecig1—FU2}} = 11$, $n_{\text{Ecig2—Session 1/2/3}} = 16$, $n_{\text{Ecig2—FU2}} = 12$, $n_{\text{Control—Session 1/2/3}} = 15$, $n_{\text{Control—FU2}} = 12$.

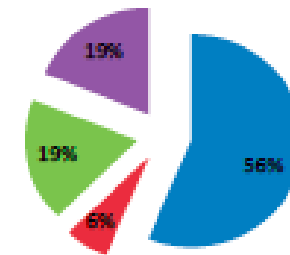
**End of lab study (W7_8)
E-cig groups**



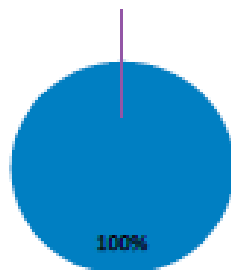
**Follow-up 1
E-cig groups**



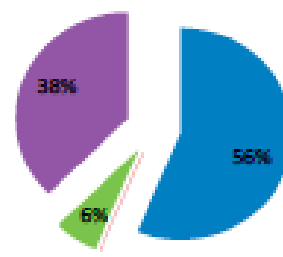
**Follow-up 2
E-cig groups**



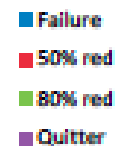
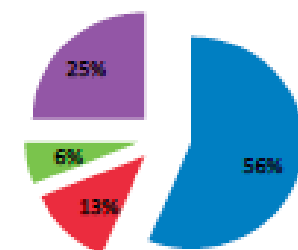
**End of lab study (W7_8)
Control group**



**Follow-up 1
Control group**

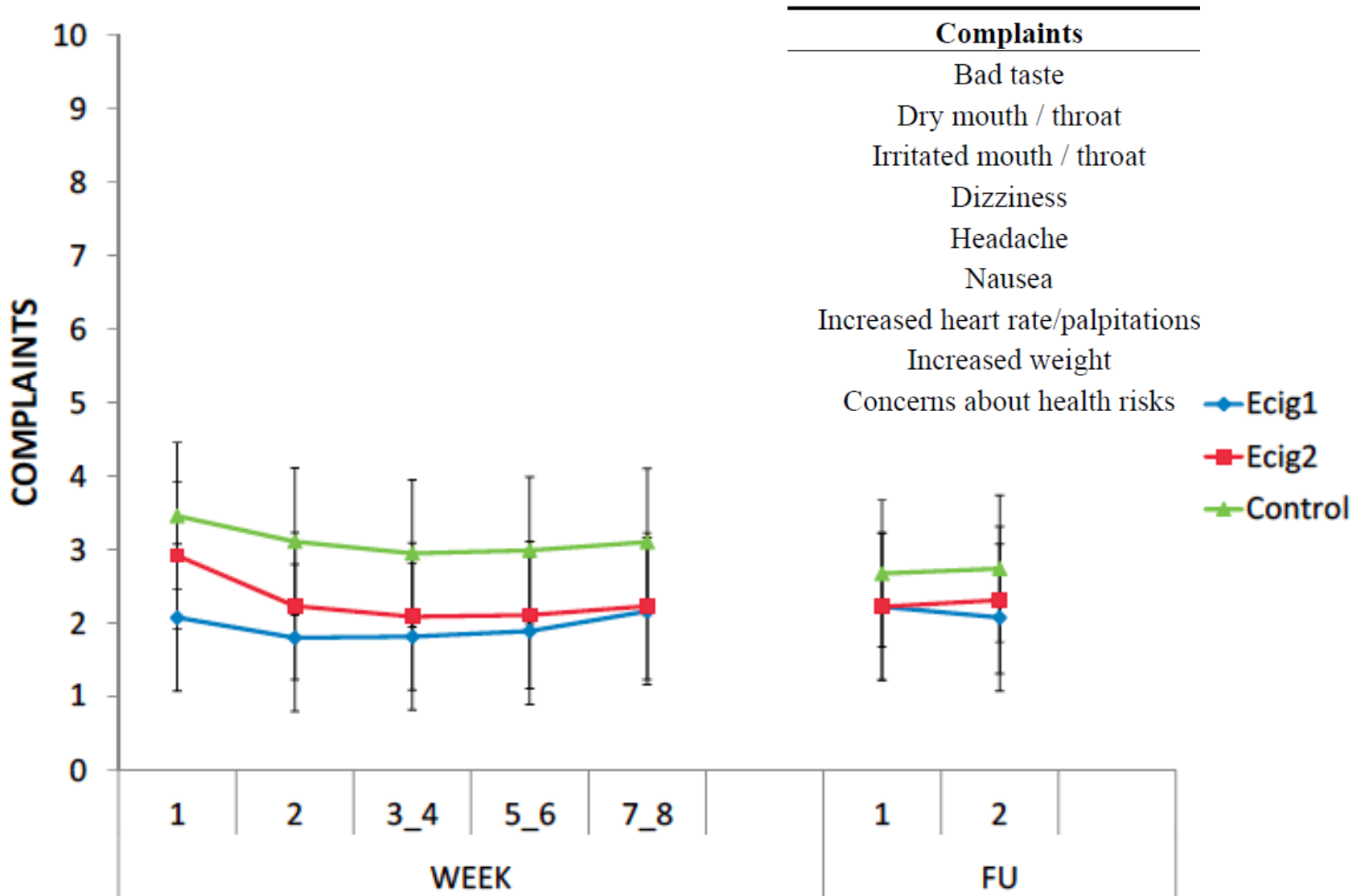


**Follow-up 2
Control group**

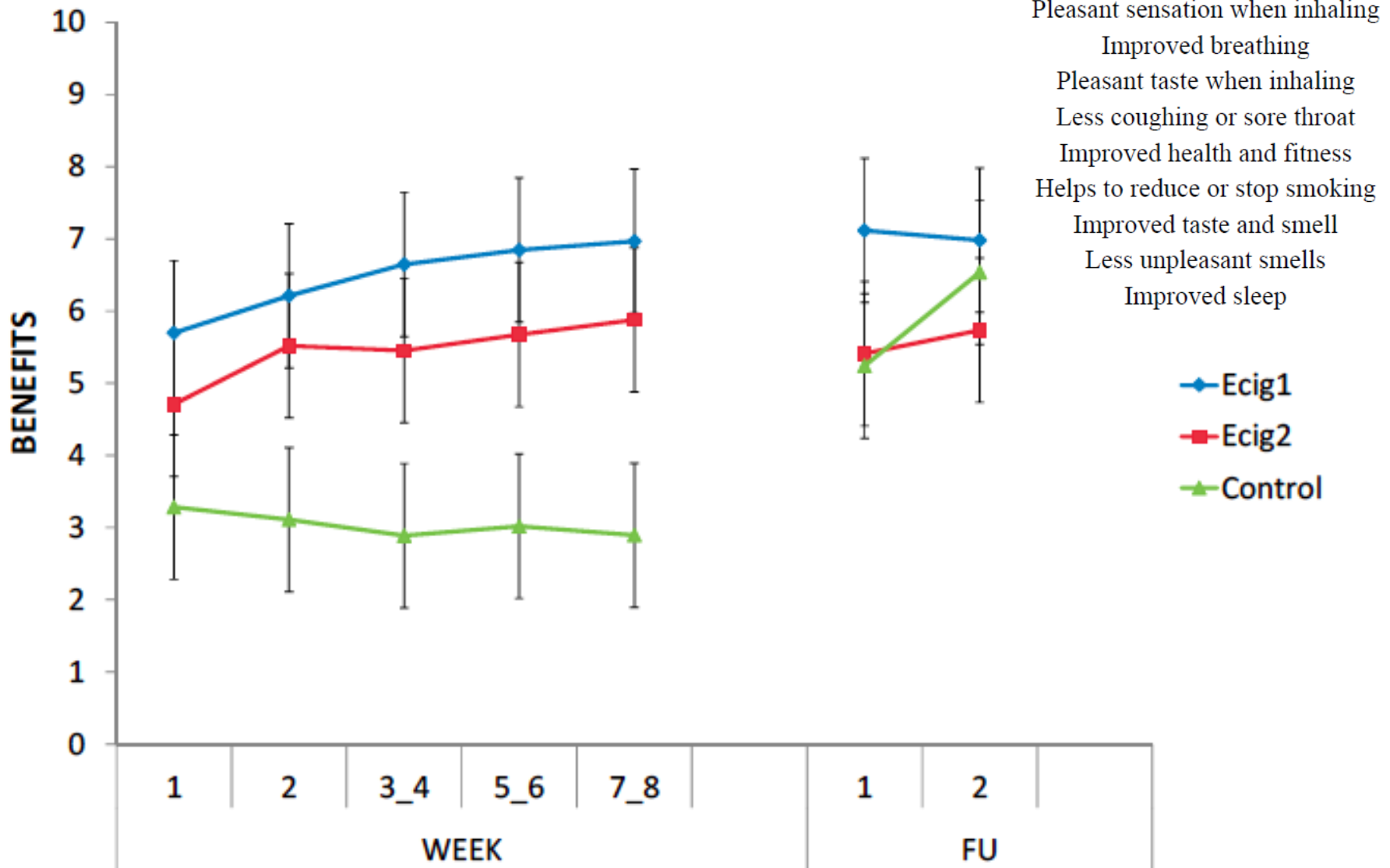


Note: all values reduction rates (%); $n_{\text{E-cig groups—W7_8/FU1/FU2}} = 32$, $n_{\text{Control—W7_8/FU1/FU2}} = 16$. The category “Failures” included 3%, 6%, and 28% of participants with missing data at W7_8, Follow-up 1, and Follow-up 2 in the E-cig groups, *versus* 0%, 6%, and 19% in the Control group. For quitters, the difference between e-cig groups and control group was statistically significant at W7_8 ($p < 0.01$).

RESULTS: COMPLAINTS



RESULTS: BENEFITS



SUMMARY

- Also confirmed in Italian study:

Results

Sustained 50% and 80% reduction in cigs/day at week-24 was reported in 15/50 (30%) and 7/50 (14%) participants with a reduction from 25cigs/day to 6cigs/day ($p < 0.001$) and 3cigs/day ($p < 0.001$), respectively. Smoking abstinence (self-reported abstinence from cigarette smoking verified by an $eCO \leq 10$ ppm) at week-24 was observed in 18/50 (36%) participants, with 15/18 (83.3%) still using their PVs at the end of the study. Combined 50% reduction and smoking abstinence was shown in 33/50 (66%) participants. Throat/mouth irritation (35.6%), dry throat/mouth (28.9%), headache (26.7%) and dry cough (22.2%) were frequently reported early in the study, but waned substantially by week-24. Participants' perception and acceptance of the products was very good.