

Health Effects of Vaping

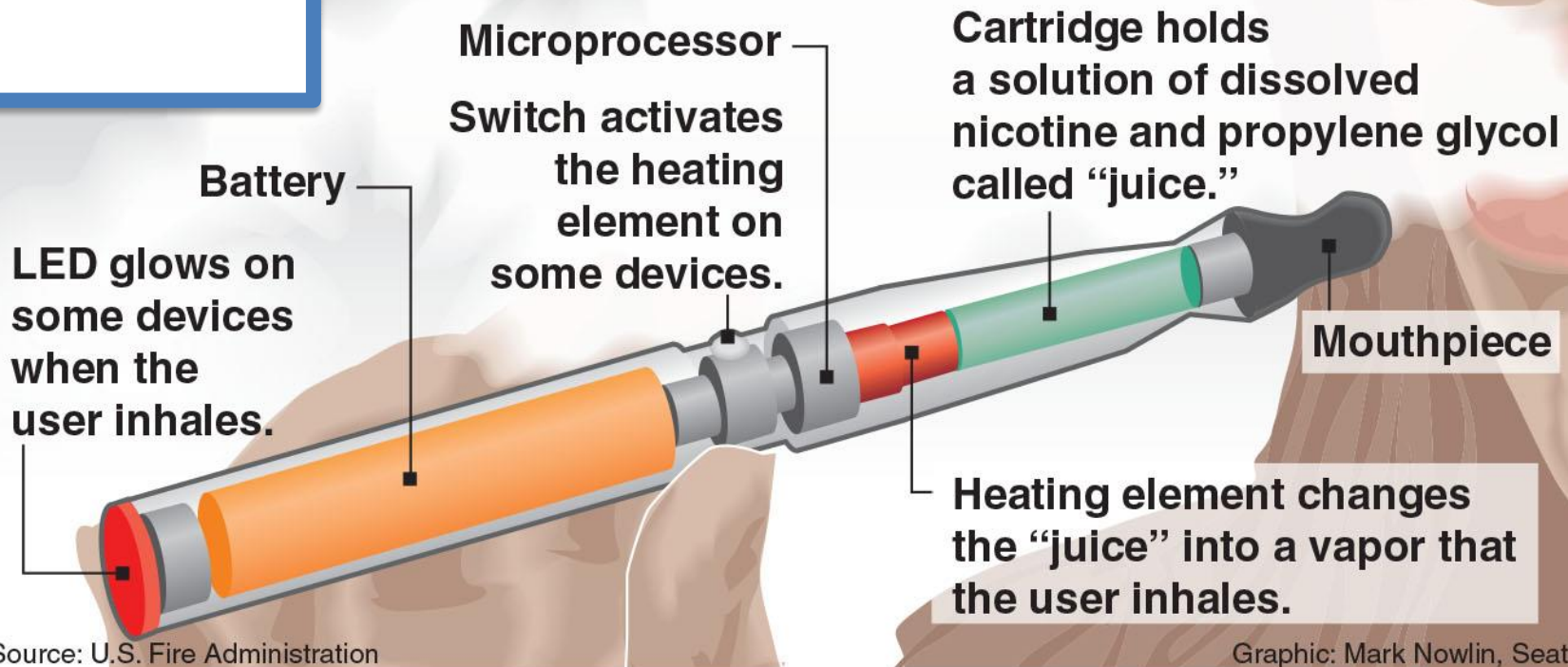


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FACTS

- Large majority of smokers unable or unwilling to quit;
- E-cig use is displacing tobacco smoking; >6 million EU smokers reported having quit using an e-cig (*Eurobarometer 2014*);
- E-cig use is much less risky than smoking; at least 95% less harmful (*Public Health England 2015*).

HOW E-CIGARETTE WORKS?



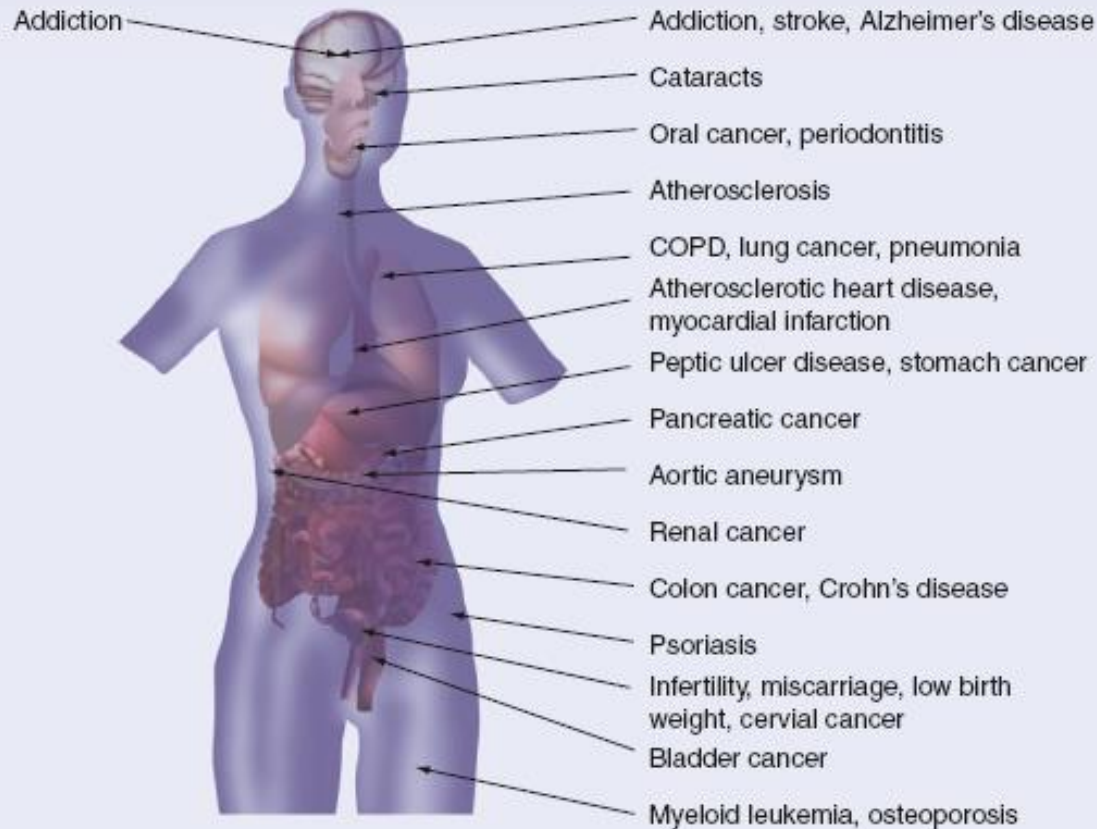
Source: U.S. Fire Administration

Graphic: Mark Nowlin, Seattle Times/TNS

Vaporization vs. Combustion

No tobacco,
no combustion

Tobacco,
and combustion



Electronic cigarette contains:

Propylene glycol, glycerin, nicotine and food flavoring

Traditional cigarette contains:

Nicotine, benzene, formaldehyde, lead, tar, methanol, hydrogen cyanide, butane, ammonia, chloroform, carbon monoxide, acetone, nitrosamines, aluminum, carbon dioxide, cadmium, arsenic, ethanol, vinyl chloride, radon, +3500 more chemicals and +50 known carcinogens

**Vaporisation of
nicotine-containing solvents**

GIVE A DOG A PHONE
Technology for our furry friends

NewScientist

WEEKLY 29 November 2014

We've made
150,000 new chemicals



We touch them,
we wear them, we eat them

**But which ones should
we worry about?**

SPECIAL REPORT, page 34

THE GOOD FIGHT
Most violence
is also virtuous

CHAMBER OF SECRETS
The greatest ever find
of early human bones

IS IT ALIVE?
Artificial worm could
be first digital animal

No2997 £3.90 US/CAN\$5.95



CONCERN

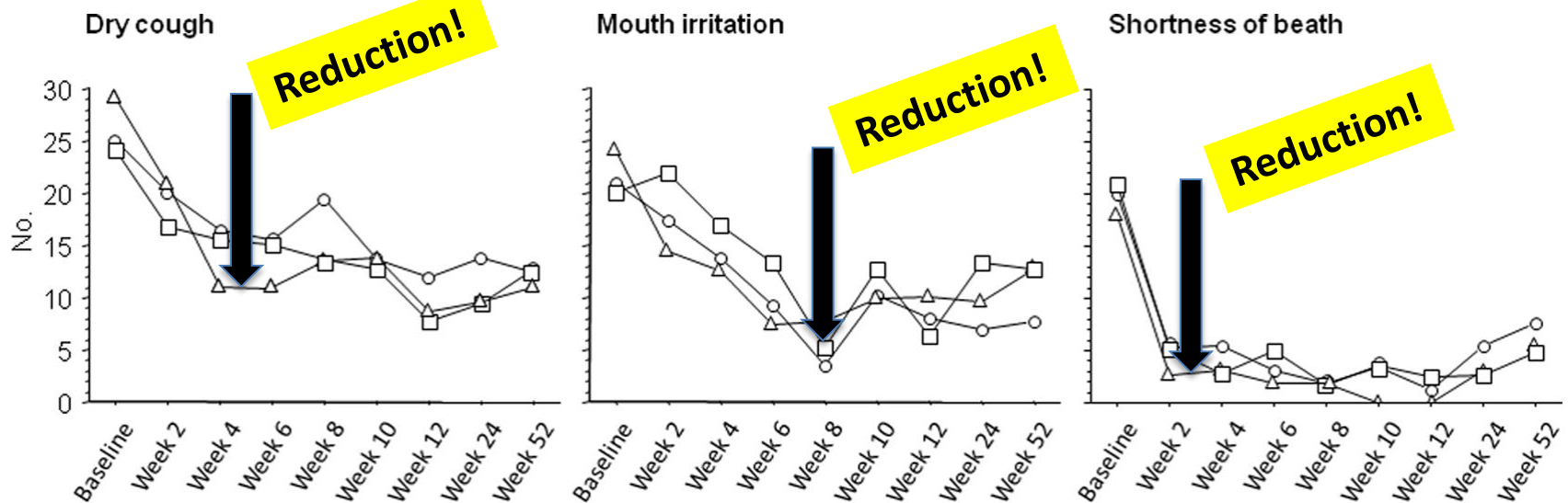
Long-term exposure to e-cig aerosol emissions might carry significant health risk.

Respiratory Effects - Acute

- throat irritation
- dry cough
- other symptoms of respiratory irritation

ECLAT Study:

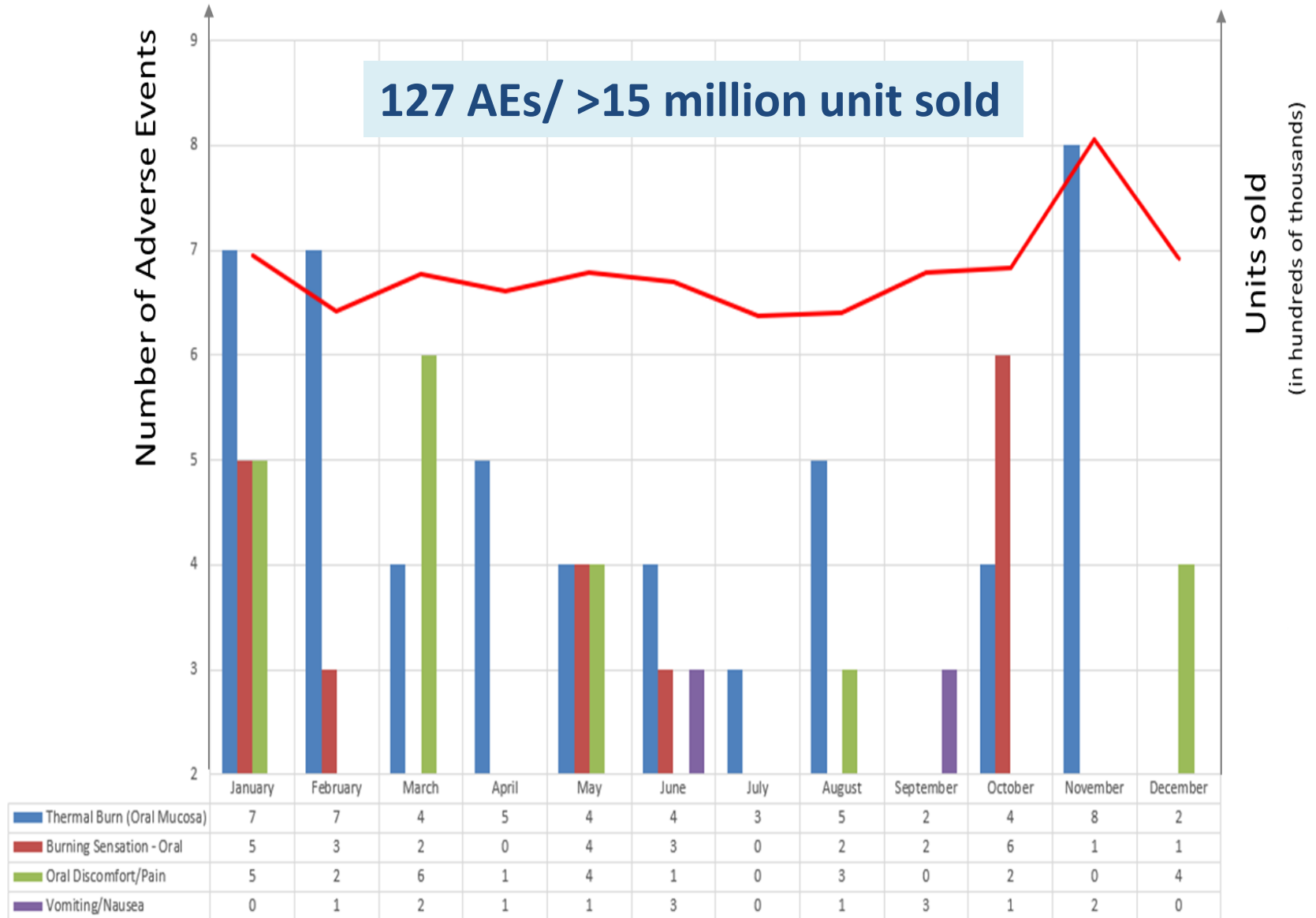
Changes in the frequency of the 3 most commonly reported symptoms



- AEs reported in some e-cig users
- Usually mild and transient
- No prognostic significance!

Adverse Effects

Vapour devices and Consumables 2017



Respiratory Effects – Long-term

A prospective 4-year study of daily e-cig users who have never smoked shows no long-term health concerns.

Respiratory Effects – Long-term

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high resolution CT of the lung

Of note, no early pathological signs were observed in subjects with the highest e-liquid consumption (i.e. 5 mls/day) and longest overall vaping hx (i.e. 57 months)



Respiratory Effects - Respiratory Patients

Reducing cigarette consumption by switching to e-cig may yield clinically relevant benefits:

☐ **Asthma** *(Polosa R, et al. Int J Environ Res Public Health 2014; Polosa R, et al. Discov Med 2016)*

- Improved lung function, BHR, respiratory symptoms, QoL
- Improvements also in dual users

☐ **COPD** *(Polosa R, et al. Respir Res 2016)*

- Improved respiratory exacerbations, QoL, 6MWD, and reduced disease severity
- Improvements also in dual users

☐ **Hypertension** *(Polosa R, et al. Int J Environ Res Public Health 2016)*

- Lowered BP and improved BP control
- Improvements also in dual users

RESPIRATORY SYMPTOMS IN E-CIG USERS

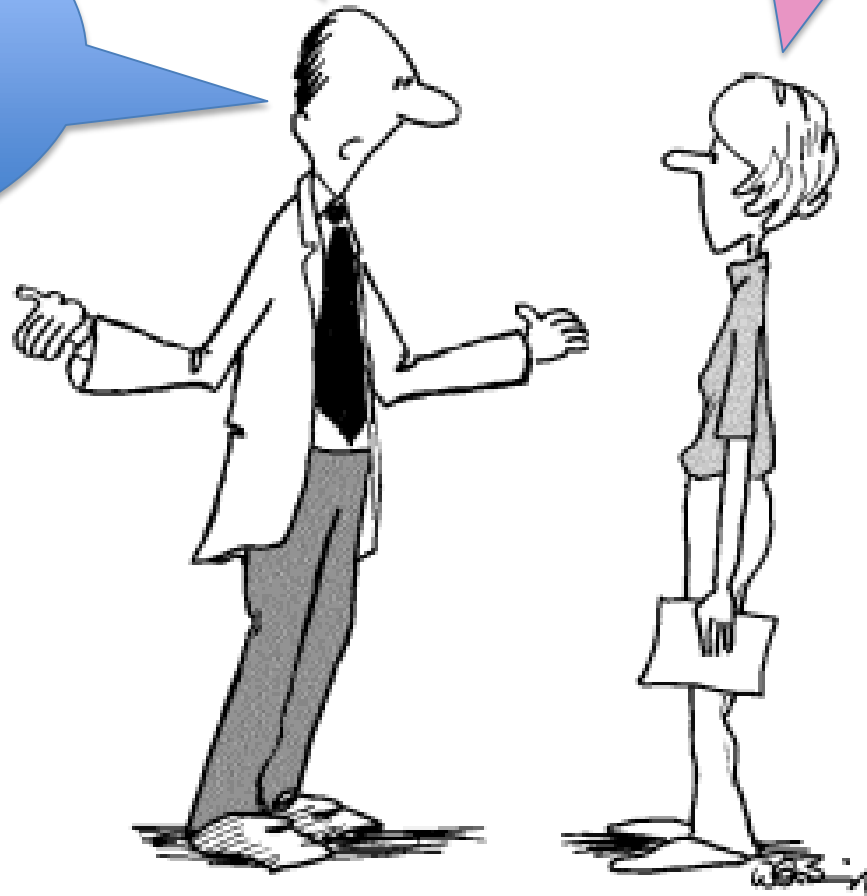
K. Farsalinos et al. *Int. J. Environ. Res. Public Health* 2014

Side effects/accidents	Total (n = 19,353)	Current smokers (n = 3682)	Former smokers (n = 15,671)	Statistic	p value
		Dual users	Single users		
Asthma (N = 1173)					
Worse	14 (1.1)	5 (2.2)	9 (0.8)	$\chi^2 = 27.3$	<0.001
Stable	303 (23.2)	78 (34.4)	225 (20.8)		
Improved	856 (65.4)	116 (51.1)	742 (68.6)		
COPD (N = 1062)					
Worse	10 (0.8)	4 (1.7)	6 (0.6)	$\chi^2 = 9.5$	0.009
Stable	151 (12.7)	39 (17.0)	112 (11.7)		
Improved	901 (75.7)	158 (68.7)	743 (77.4)		

Are e-cigs safe?

Yes

... e-cigs are much less harmful than tobacco cigarettes!



*"How could I be wrong?
I'm a doctor."*

The Demise of the Traditional Cigarette is Long Past Due.

Traditional Cigarettes have been essentially the same since 1881 when James Bonsack invented the cigarette-making machine. Cigarettes may have changed over the years, but they have not progressed much.

NOT ADAPTABLE



Source: An 1892 Duke of Durham box of machine-rolled cigarettes, healthliteracy.worlded.org

*"Change Is Inevitable,
but Progress Is Not"*

Vaping is an Idea Whose Time Has Come.

Vaping is an idea whose time has come. I'm not surprised that the vaping phenomenon is here, but I am surprised that it took so long to get here. The adaptability of vaping technology will allow it not only to survive, but to thrive.

EXTREMELY ADAPTABLE



3D Printed Mod

Source: [facebook.com/vapedroid](https://www.facebook.com/vapedroid)



Source: supersmokerbluetooth.com

Gamucci Launches New Scientific Products Division to Lead e-Cig Industry in Innovation and Quality

Gamucci Electronic Cigarettes are sold in 55 countries worldwide.

TAKE HOME MESSAGE

- ☐ E-cigs are unlikely to raise significant health concerns for the respiratory tract under normal condition of use
- ☐ Former smokers using and smokers intending to use E-cigs should receive correct information about residual risks and potential benefits
- ☐ Promoting further access to E-cigs may reduce risk and reverse harm

ACTION POINTS

- E-cigs must comply with safety and quality standards; EU CEN/TC 437 and ISO/TC 126 are developing standards for these products;
- Promoting legal access to safety and quality approved vaping products is an opportunity to reduce or prevent smoking-related morbidity and mortality.



CoEHAR

Center of Excellence
for the acceleration of **H**Arm Reduction

(Biologic Tower, Catania)

