

Bad Science: Common Claims About Vaping That Are Wrong

Brad Rodu

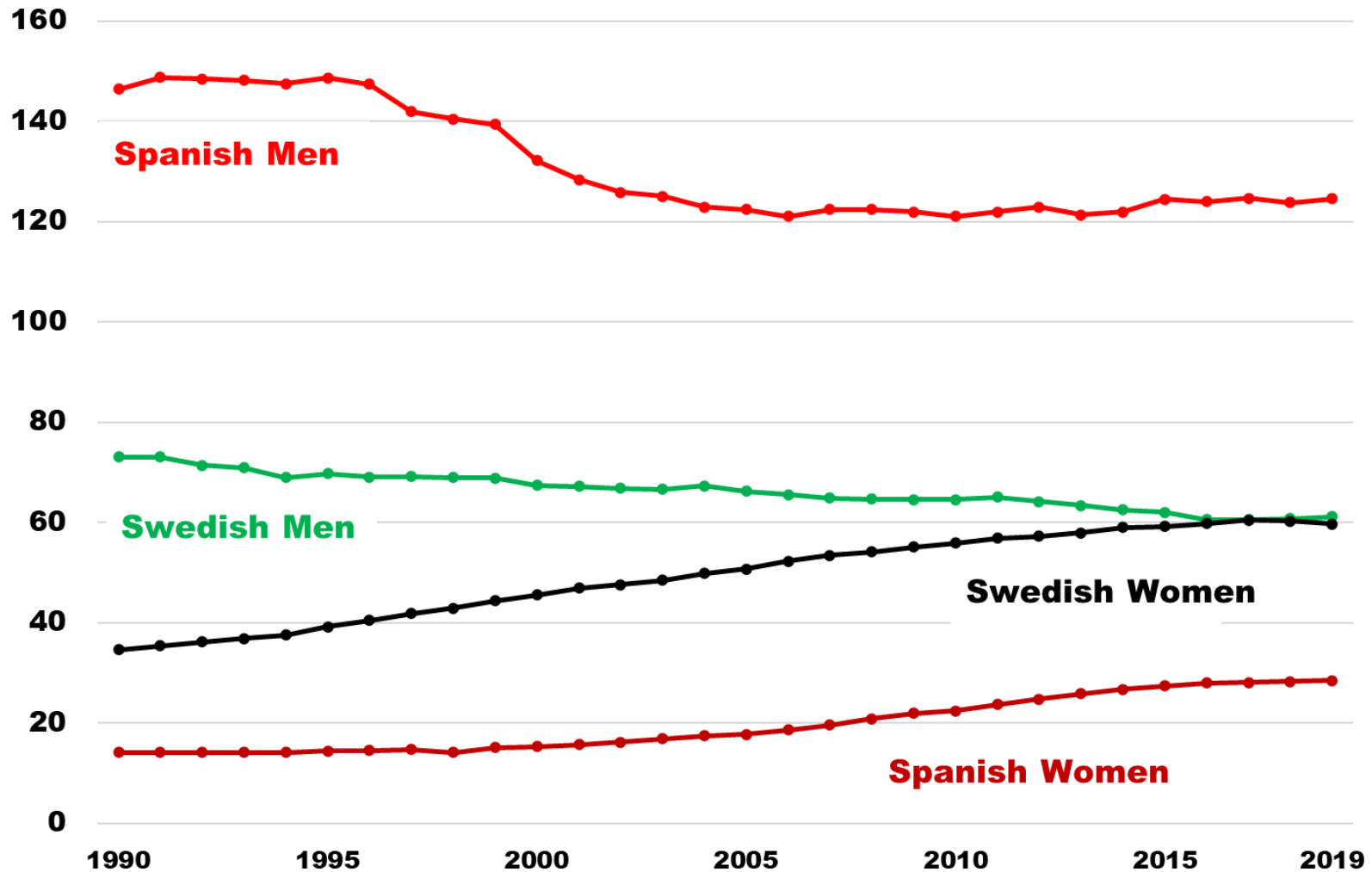
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Conflict of Interest: <https://rodutobaccotruth.blogspot.com/>

Why This Summit Is Important

The Impact of Tobacco Harm Reduction

Larynx+Lung Cancer Mortality (per 100,000 py) Among Men and Women 25+ years in Spain and Sweden, 1990 to 2019



The U.S. Federal Government Mission Tobacco-Free World



NIH NATIONAL CANCER INSTITUTE
Division of Cancer Control & Population Sciences

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Behavioral Research Program

Tobacco Control Research Branch (TCRB)

[Behavioral Research Program](#) / [Tobacco Control Research Branch \(TCRB\)](#)

Mission

The Tobacco Control Research Branch (TCRB) leads and collaborates on research and disseminates evidence-based findings to prevent, treat, and control tobacco use in order to create a world free of tobacco use and related cancer and suffering. TCRB is within the National Cancer Institute's (NCI) Behavioral Research Program (BRP), in the Division of Cancer Control and Population Sciences (DCCPS).

Bad Research, Mainly from the US, Results in Big Misperceptions About Vaping

- 1) Use of nicotine is harmful. **FALSE**
- 2) There is an epidemic of teen vaping in America. **EXAGGERATED**
- 3) Vaping caused fatal lung injuries in teens/young adults...EVALI. **FALSE**
- 4) Vaping causes heart attacks and other illnesses. **FALSE**
- 5) Vaping is as harmful as smoking. **FALSE**

Outbreak of Lung Injuries in the U.S. Prior to Covid in 2019

- 2,807 cases of **E**-cigarette/**V**aping **A**ssociated **L**ung **I**njury (EVALI) reported by CDC
- Almost all had history of illegal cannabis use
Vitamin E acetate (used to dilute THC liquids)
- Nicotine-based e-cigarettes and vape products, used by millions for over 10 years, **were not involved**
- No cases outside U.S. (except Canada)

Bates C. The outbreak of lung injuries often known as "EVALI" was nothing to do with nicotine vaping.

<https://www.qeios.com/read/ZGVHM7.2>

False Claim: E-Cigs Cause Heart Attacks

ORIGINAL RESEARCH

Journal of the American Heart Association
June 2019



Electronic Cigarette Use and Myocardial Infarction Among Adults in the US Population Assessment of Tobacco and Health

Dharma N. Bhatta, PhD, MPH; Stanton A. Glantz, PhD

Background—E-cigarettes are popular for smoking cessation and as an alternative to combustible cigarettes. We assess the association between e-cigarette use and having had a myocardial infarction (MI) and whether reverse causality can explain the observed cross-sectional association between e-cigarette use and MI.

Methods and Results—Cross-sectional analysis of the Population Assessment of Tobacco and Health Wave 1 for association between e-cigarette use and having had and MI. Longitudinal analysis of Population Assessment of Tobacco and Health Waves 1 and 2 for reverse causality analysis. Logistic regression was performed to determine the associations between e-cigarette initiation and MI, adjusting for cigarette smoking, demographic and clinical variables. Every-day (adjusted odds ratio, **2.25**, 95% CI: 1.23–4.11) and some-day (**1.99**, 95% CI: 1.11–3.58) e-cigarette use were independently associated with increased odds of having had an MI with a significant dose-response ($P < 0.0005$). Odds ratio for daily dual use of both products was 6.64 compared with a never cigarette smoker who never used e-cigarettes. Having had a myocardial infarction at Wave 1 did not predict e-cigarette use at Wave 2 ($P > 0.62$), suggesting that reverse causality cannot explain the cross-sectional association between e-cigarette use and MI observed at Wave 1.

June 6, 2019

Stanton A. Glantz, PhD

More evidence that e-cigs **cause** heart attacks, this time from PATH

False Claim: E-Cigs Cause Heart Attacks

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Journal of the American Heart Association

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Dear Drs. London, Eitzman, Weinberg and Harrington:

We write in reference to a recent article in the *Journal of the American Heart Association* entitled "Electronic cigarette use and myocardial infarction among adults in the US Population Assessment of Tobacco and Health" by Dharma N. Bhatta and Stanton A. Glantz (Reference 1).

Bhatta and Glantz reported that current e-cigarette users were twice as likely as never users to have had a heart attack, based on 38 cases. They reported odds ratios (ORs) of 2.25 (95% confidence interval, CI = 1.23 – 4.11) for 19 daily vapers, and 1.99 (CI = 1.11 – 3.58) for 19 some-day users (Abstract, Table 3 and Table S6).

"In fact, the majority of the 38 current e-cigarette users...had a heart attack many years before they first started using e-cigarettes...by almost a decade on average."

Addiction, 2020

<https://pubmed.ncbi.nlm.nih.gov/32794213/>

<https://rodutobaccotruth.blogspot.com/2020/08/re-analysis-of-retracted-research-on.html>

False Claim: Retracted

This Article was Retracted in February 2020

ORIGINAL RESEARCH



Electronic Cigarette Use and Myocardial Infarction Among Adults in the US Population Assessment of Tobacco and Health

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Background—E-cigarettes are popular for smoking cessation and as an alternative to combustible cigarettes. We assess the association between e-cigarette use and having had a myocardial infarction (MI) and whether reverse causality can explain the observed cross-sectional association between e-cigarette use and MI.

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Conclusions—Some-day and every-day e-cigarette use are associated with increased risk of having had a myocardial infarction, adjusted for combustible cigarette smoking. Effect of e-cigarettes are similar as conventional cigarette and dual use of e-cigarettes and conventional cigarettes at the same time is riskier than using either product alone. (*J Am Heart Assoc.* 2019;8:e012317. DOI: 10.1161/JAHA.119.012317.)

Key Words: e-cigarettes • epidemiology • myocardial infarction • smoking

Cardiovascular disease is the leading cause of death in the United States¹ and tobacco smoking is a major modifiable risk factor for cardiovascular disease, including myocardial infarction.² The risk of myocardial infarction is 2- to 5-fold higher among young smokers compared with never smokers,^{2,3} with a non-linear dose-response curve with even the low levels of exposure associated with smoking a single

cigarette a day⁴ or breathing secondhand smoke conferring substantial risk.⁵

E-cigarettes are promoted as a smoking cessation device and less dangerous way to self-administer nicotine than conventional cigarettes^{6,7} and people with cardiovascular disease are using e-cigarettes as a smoking cessation aid.⁸ Like conventional cigarettes, e-cigarettes deliver nicotine as an inhaled aerosol of nicotine and ultrafine particles.⁹ Fine particles increase cardiovascular risk.¹⁰ E-cigarettes and combustible cigarettes have similar effects on endothelial function which increases the risk of cardiovascular disease.^{11–15} E-cigarettes increase oxidative stress and the release of inflammatory mediators,^{11,16} induce platelet activation, aggregation, and adhesion¹⁷ and alters cardiovascular function in mice.^{18–20} Acute exposure to electronic cigarettes with nicotine increases aortic stiffness²¹ and cardiac sympathetic tone (reflected in heart rate variability) in a way associated with increased cardiac risk.¹³ Nevertheless, the

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Accompanying Tables S1 through S6 and Figure S1 are available at <https://www.ahajournals.org/doi/suppl/10.1161/JAHA.119.012317>

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Our Previous Efforts Regarding False Claims

1. Smoking Population “Softening” → Harm reduction unnecessary (*Tob Contr* 2016). *Addiction*, 2016 <http://www.ncbi.nlm.nih.gov/pubmed/27177450>

2. Teen Vaping → Smoking (*Pediatrics* 2018). **LTE**

3. Adult Vaping → Heart Attacks (*J Am Heart Assoc* 2019) **RETRACTED**

4. Tobacco Product Use → Increased Mortality (*JNCI Cancer Spectrum* 2019)

Completely revised

5. Teen Vaping → Covid (*J Adolescent Health* 2020). **LTE**

6. Young Adult Vaping → Emphysema COPD (*Tob Ind Diseases* 2021).

Completely revised

7. Snus Use → Increased Mortality (*Int J Epi* 2021). **Heterogeneity and other problems.** *F1000Research* 2021, 10:38 (<https://doi.org/10.12688/f1000research.52127.1>)

Disease Claims from Cross-Sectional Studies

Published Study

Disease(s)

Am J Prev Medicine (2018)

Myocardial infarction (MI)

Am J Respir Crit Care Med (2018)

COPD, emphysema, chronic bronchitis

Drug Alcohol Depend (2019)

Asthma, COPD

Drug Alcohol Depend (2019)

Pre-diabetes

Am J Medicine (2019)

Stroke, MI, Congestive heart failure

Cureus (2020)

MI

Am J Prevent Medicine (2020)

Stroke

Tob Induced Diseases (2021)

Asthma, COPD

Toxics (2021)

Hypertension

Prev Medicine (2022)

Asthma, COPD, chronic bronchitis

Am J Prev Medicine (2022)

Pre-diabetes

Rodu B, Plurphanswat N. **Cross-sectional e-cigarette studies are unreliable** without timing of exposure and disease diagnosis

Previous studies contained no information about:

- **Age at disease diagnosis**
- **Age at first smoking**
- **Age at first vaping**

Internal and Emergency Medicine 18(1):319-323, 2023.

Epub 2022 Nov 25.

[https://link.springer.com/article/10.1007/s11739-022-03141-](https://link.springer.com/article/10.1007/s11739-022-03141-3)

Disease Claims from Cross-Sectional Data ARE UNRELIABLE

We used PATH* data to explore the relationship between smoking, vaping and diseases.

PATH contains information on the age when participants:

- Started smoking regularly**
- First used e-cigarettes**
- First diagnosed with disease(s)**

***Population Assessment of Tobacco and Health. FDA/NIDA**

Age of Disease Diagnosis and First Regular Smoking

Panel B

Age when first started <u>smoking</u> cigarettes fairly regularly	Age first told COPD								Age first told emphysema								Age first told MI							
	< 18	18-24	25-34	35-44	45-54	55+	Total	< 18	18-24	25-34	35-44	45-54	55+	Total	< 18	18-24	25-34	35-44	45-54	55+	Total			
	< 18	7	10	44	118	205	188	572	8	11	25	67	77	113	301	2	8	27	51	87	98	273		
18-24	3	3	12	34	69	148	269	2	2	8	18	40	57	127	3	1	5	25	46	61	141			
25-34	1		6	5	12	26	50			2	2	4	11	19				5	7	10	22			
35-44	1				3	6	10					1	1	2	1				1		2			
45-54				1	1	1	3													1	1			
55+			1		1	2	4			1	1	1		3										
All	12	13	63	158	291	371	908	10	13	36	88	123	182	452	6	9	32	81	141	170	439			

97% of COPD, 96% of emphysema and 98% of MI occurred after first started regular smoking

Age of Disease Diagnosis and First E-Cigarette Use

Panel A		Age first told COPD							Age first told emphysema							Age first told MI						
		< 18	18-24	25-34	35-44	45-54	55+	All	< 18	18-24	25-34	35-44	45-54	55+	All	< 18	18-24	25-34	35-44	45-54	55+	All
Age when first used an e-cigarette , even one or two times	< 18	2		1	1			4	3						3	2			1			3
	18-24	6	3	1	2			12	6	2	1	1			10	2	2		1			5
	25-34		2	15	4			21		4	5	1			10			4	2			6
	35-44			12	51	6	2	71		2	7	29	2	2	42		2	5	11	3	1	22
	45-54	1	2	8	50	114	4	179			9	27	47	4	87			5	18	31	4	58
	55+	4	2	5	12	57	181	261	3	1	2	12	30	85	133	1		2	12	29	62	106
	All	13	9	42	120	177	187	548	12	9	24	70	79	91	285	5	4	16	43	65	67	200

Only 3.8% of COPD, 3.9% of emphysema, and 6% of MI after first e-cigarette use.

First Regular Smoking for Diagonals (Same Age First E-Cigarette and Diagnosis)

	COPD ^a								Emphysema ^b								MI ^c							
	Age first started smoking cigarettes regularly								Age first started smoking cigarettes regularly								Age first started smoking cigarettes regularly							
	<18	18-24	25-34	35-44	45-54	55+	NS	All	<18	18-24	25-34	35-44	45-54	55+	NS	All	<18	18-24	25-34	35-44	45-54	55+	NS	All
Age first used an e-cigarette, even one or two times	< 18	1						1	1						1									
	18-24	3						3	2						2	2								2
	25-34	7	5					12	3	1					4	4								4
	35-44	32	12	2				46	18	8	0				26	7	2	2						11
	45-54	79	19	5	1		2	106	29	13	1	1		1	45	20	7	2						29
	55+	84	59	10	5	1	2	165	50	20	5	1		4	80	35	17	2		1		1		56
	All	206	95	17	6	1	6	333	103	42	6	2		5	158	68	26	6		1		1		102

The vast majority were smoking cigarettes regularly prior to using e-cigarettes.

Take-Home Messages

- **US federal mission for a tobacco-free society continues to lavishly fund the tobacco control industry and bad tobacco science**
- **Pre- or post-publication peer review of bad tobacco science is almost nonexistent**
- **Absent critical appraisal, cross-sectional studies provide "scientific evidence" that e-cigarettes are associated with serious diseases, which will:**
 - **Deter smokers from switching**
 - **Support harsh and unfair regulation**