



Society of Actuaries in Ireland

Might Smoking Rates go up in Flames?

Dr John Schoonbee, Chief Medical Officer, Swiss Re



**ONE PERSON
DIES**

**EVERY 6 SECONDS
FROM A TOBACCO-
RELATED DISEASE.**



That's 10 people per minute.

Tobacco smoke
contains

over **4,000
chemicals**



including 250 known to harm humans.

Over 20%

of all deaths in the US
are from

TOBACCO.



That's more than murders, car
accidents, & HIV/AIDs...combined.

Tobacco industry
revenue was

**\$744
Billion**

in 2014.



That's more than the GDP
of all but 18 nations.

EuroMonitor International [database on the Internet]. Cigarettes: Global. EuroMonitor International. © 2015.

More than 600,000
NON-SMOKERS DIE
each year from
secondhand smoke
worldwide.



1/3 of which are children.

Between 1990 & 2009,
cigarette consumption
DECREASED by 26%
in Western Europe

but

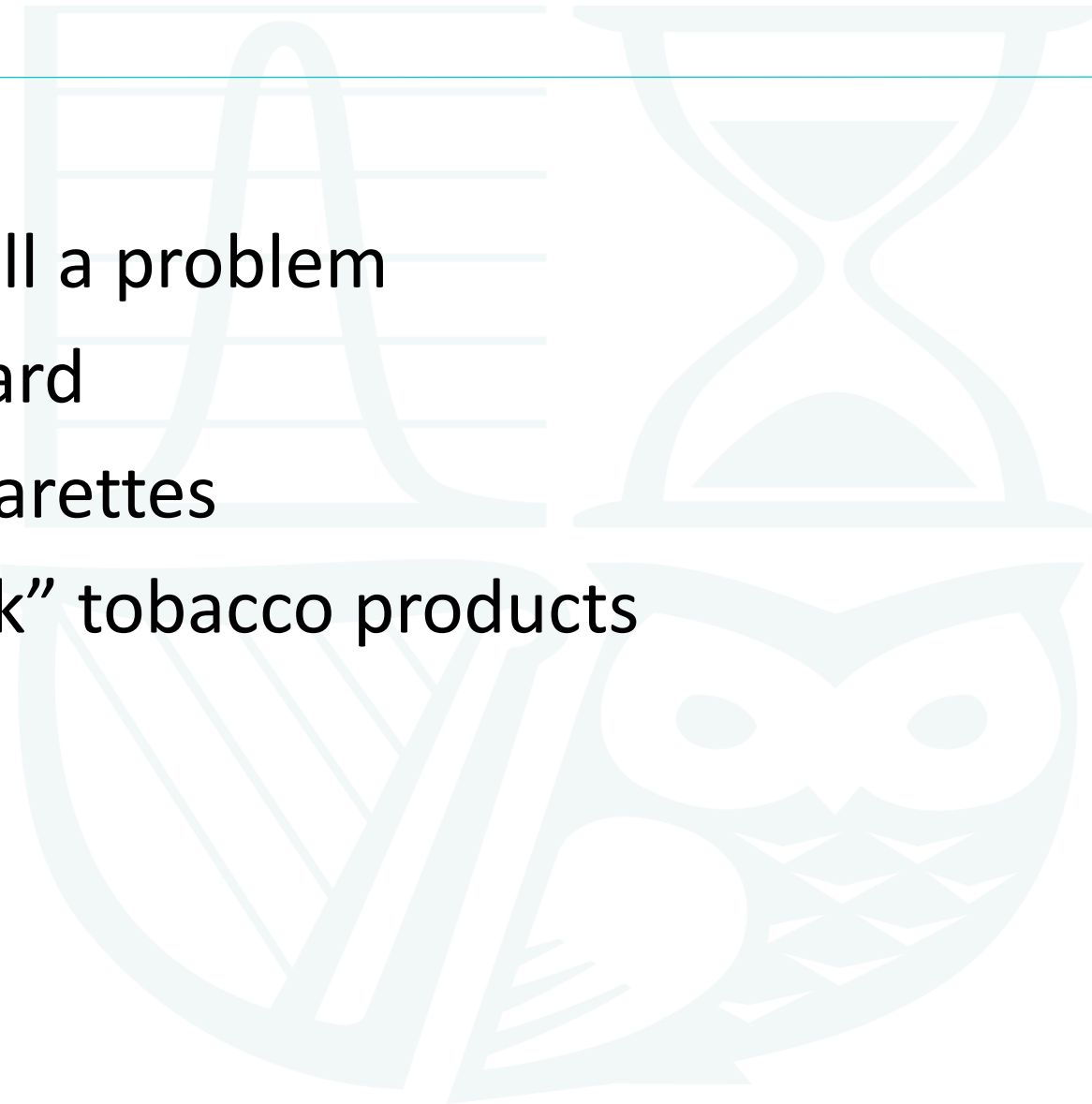
INCREASED by 57%
in Africa and
the Middle East.



http://aarcancerfreesociety.org/tobacco/tobacco7_ga=1.196952060.1945430145.1176984228

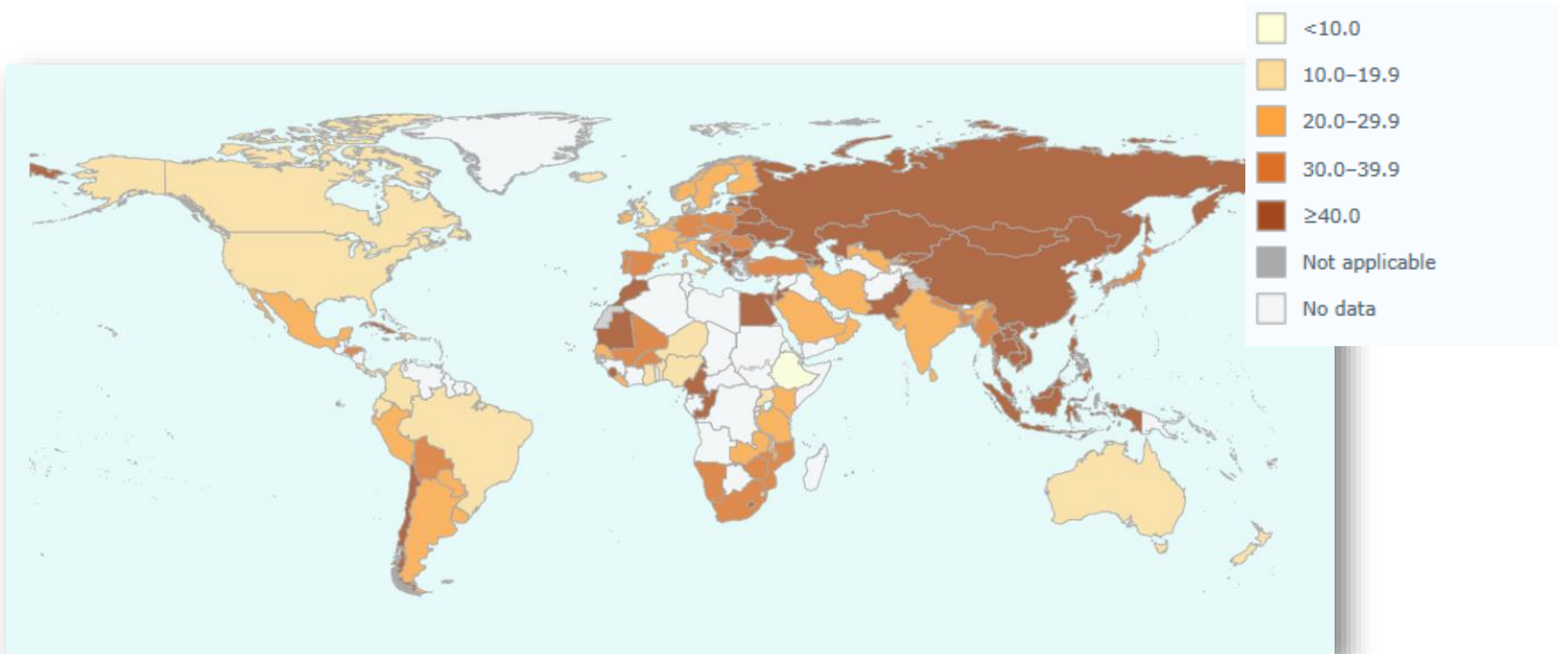
Agenda

- Smoking is still a problem
- Stopping is hard
- Electronic cigarettes
- “Reduced Risk” tobacco products





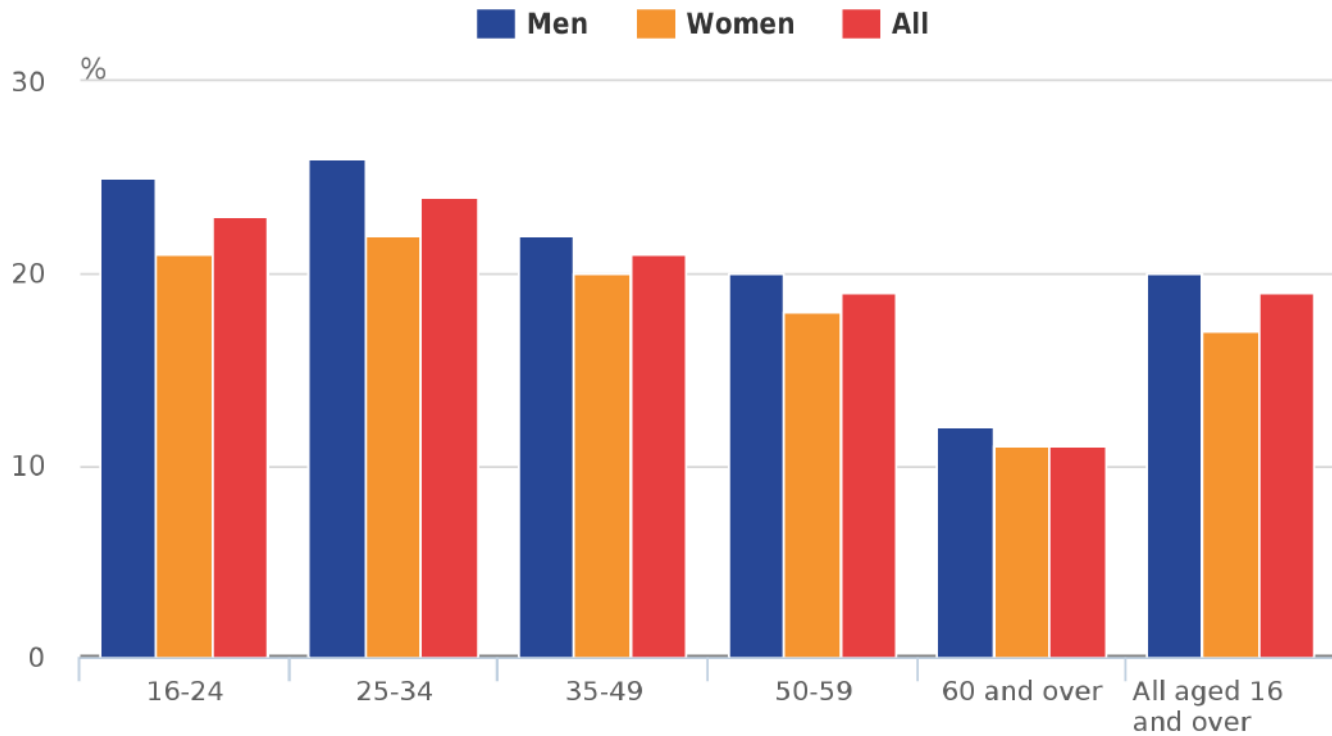
Males >15yr smoking prevalence (WHO)





Percentage of smokers by age and sex, 2014

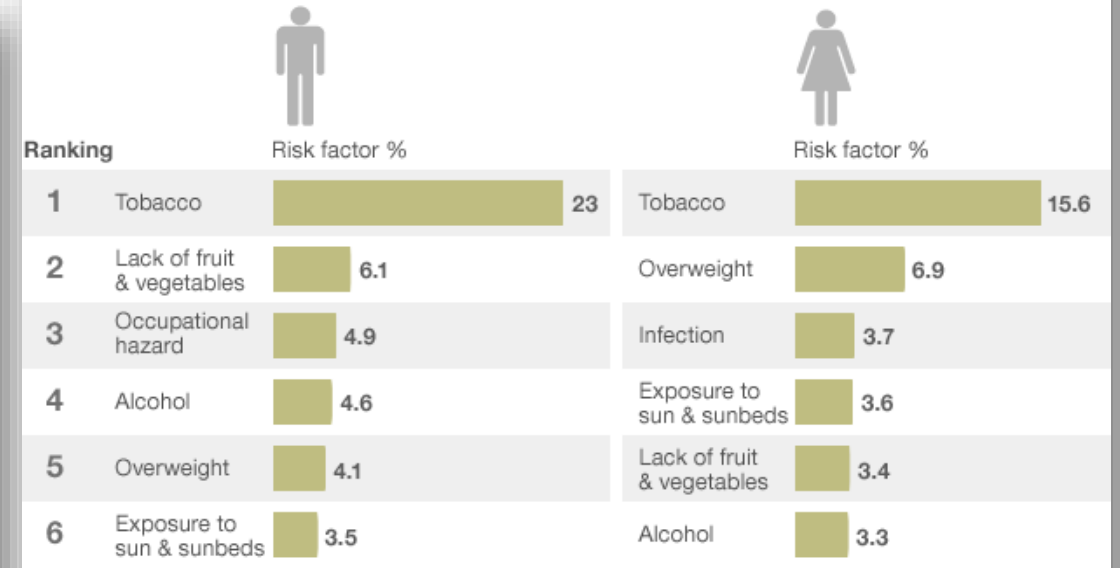
Great Britain



Source: Opinions and Lifestyle Survey - Office for National Statistics

Top six causes of all cancers in men and women

Risk factors of the 158,700 cancers diagnosed in men and 155,600 cancers diagnosed in women each year



Source: Cancer Research UK



Smoking prevalence in Ireland



Smoking Prevalence Tracker 2017 Infographic

(This information relates to data collected in the months of :
March, June, September & December)

Survey carried out by Ipsos MRBI on behalf of the HSE

Headline Data

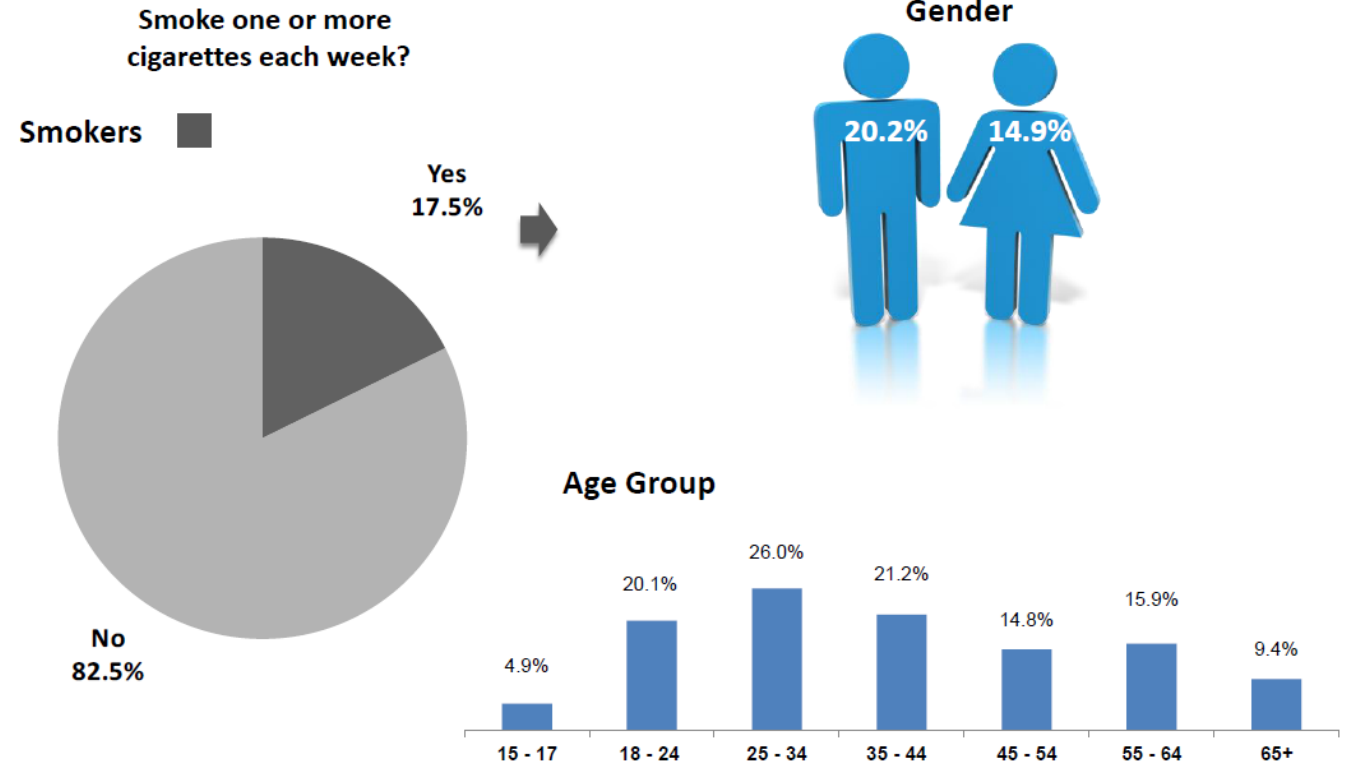
Smoking Prevalence: 17.5%

E Cigarette Use: 5.7%

Roll Your Own (RYO): 29.2%
(% of Smokers using RYO)

Cigarette Smoking Prevalence

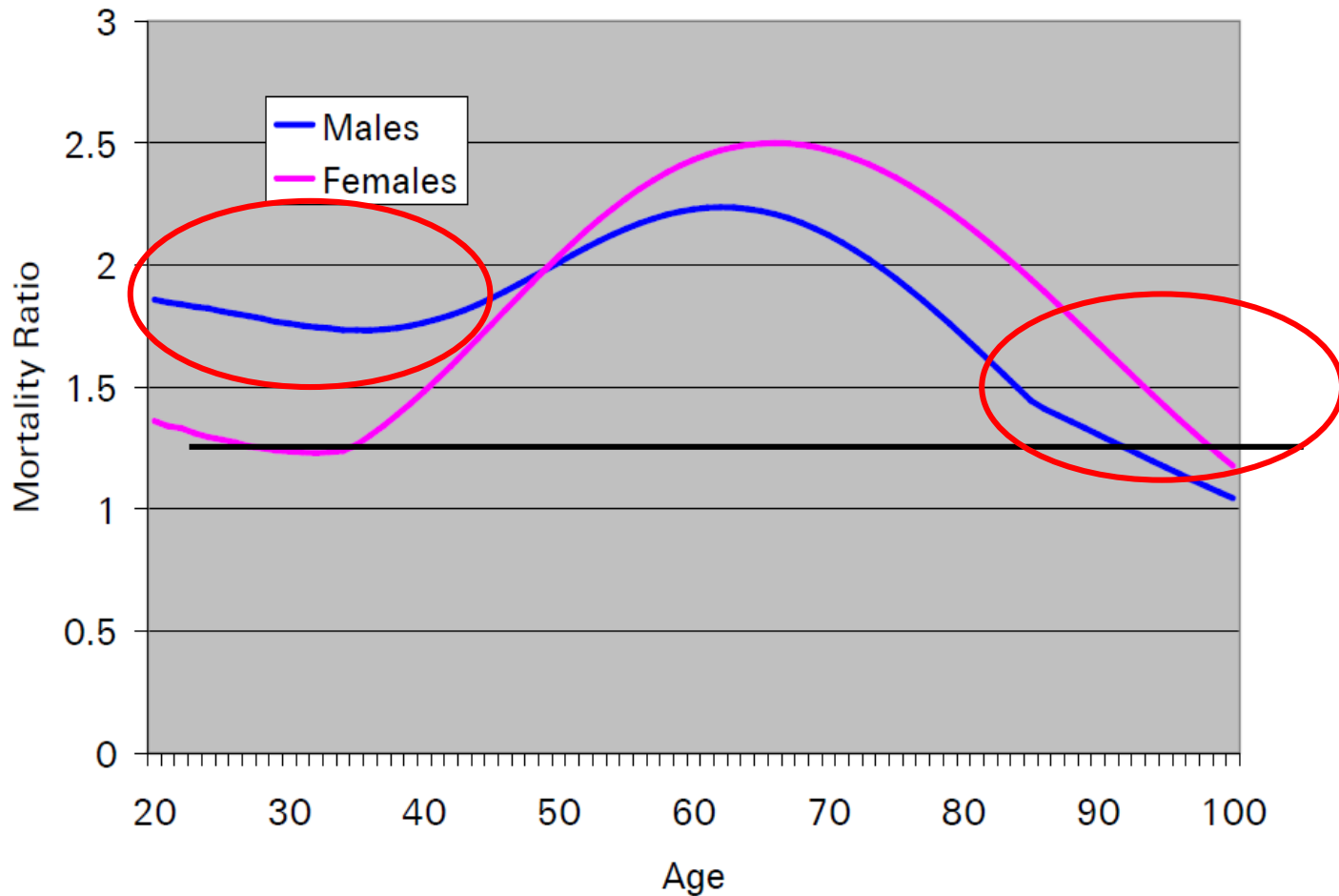
Q.1 Do you smoke one or more cigarettes each week, whether packaged or roll your own?



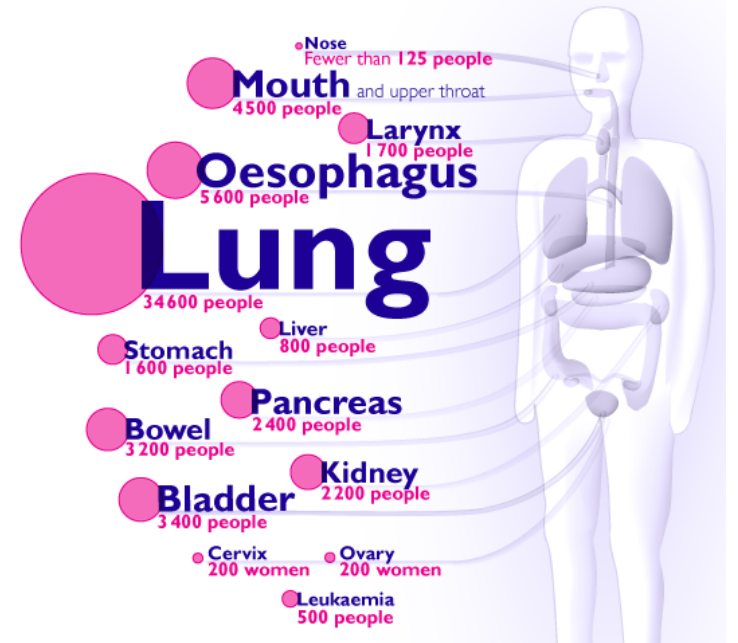


Smoker/non smoker mortality ratios

- On average about 170% mortality compared to non smokers



Tobacco causes 14 types of cancer



Annual UK tobacco toll: 60,800 cancer cases, 43,000 cancer deaths

Together we will beat cancer



BMJ, doi:10.1136

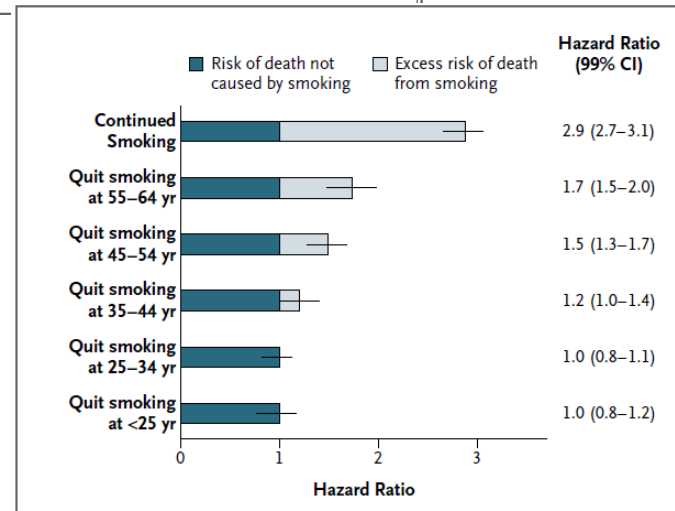
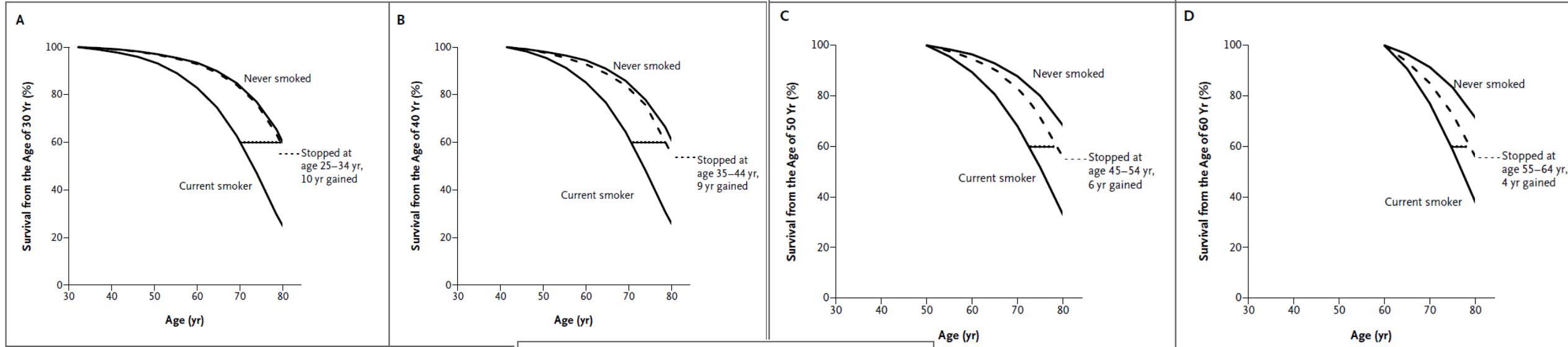


STOP



How does quitting (/switching) improve health?

- Stopping gains 4 -10 yrs of life (age dependent)



N Engl J Med 2013;368:341-50



How easy is it to quit? 2/3 want to, ~5% manage

- Options include
 - cold turkey
 - gum, patches
 - medication
 - (switching)

Monday, Dec 19

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Want to quit smoking? Study finds only 6% who try will succeed ... and graduates are more likely to kick the habit

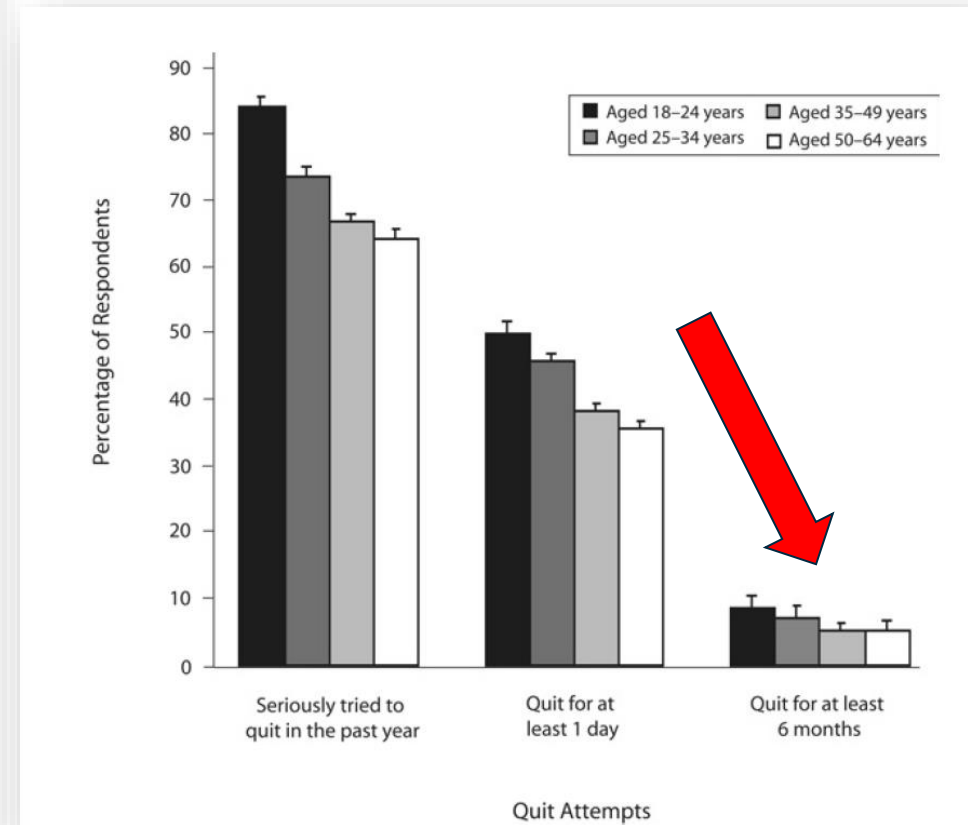
By DANIEL BATES
UPDATED: 17:23 GMT, 11 November 2011

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They say that quitting smoking is the hardest thing to do, now new research underlines just how difficult it can be.

Just six per cent of people who try to stub out their nicotine habit actually succeed in doing so, the study found.

This is despite more than two thirds of people who smoke wanting to quit because they know it is bad for them.



<http://www.dailymail.co.uk/news/article-2060414/Want-quit-smoking-Study-finds-6-cent-try-succeed---graduates-likely-kick-habit.html>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2376894/pdf/0980317.pdf>



Electronic Cigarettes - Introduction

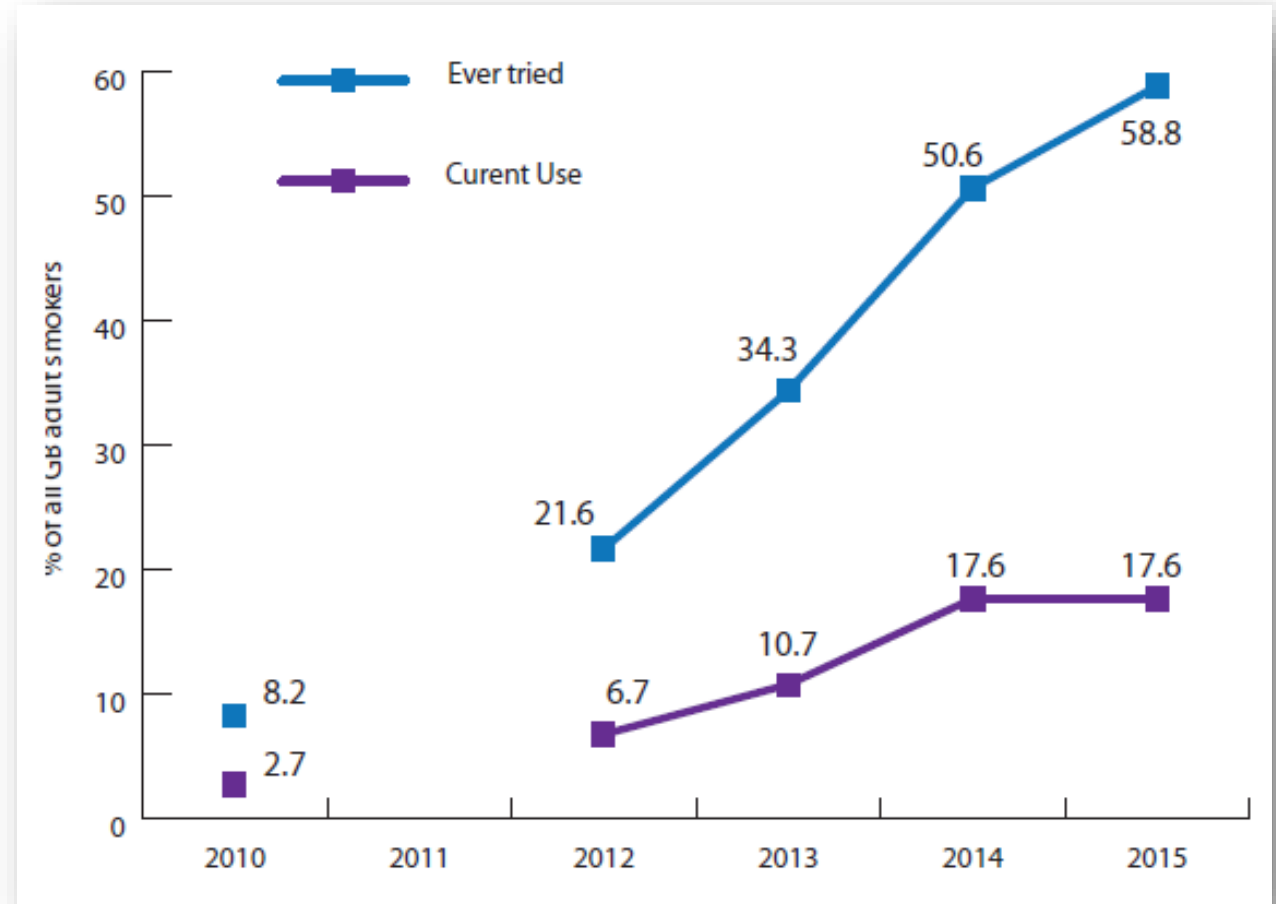
- electronic nicotine-delivery system (ENDS)
- Electronic cigarettes (e-cigarettes) : nicotine, flavour and other chemicals. They turn chemicals, including nicotine, into an aerosol (using an atomizer) that is inhaled by the user
- no smoke, no tobacco - creates a vapour...hence the term vaping





Current adult e-cigarette smokers (2010-2015)

- % of all adult GB smokers



ASH Fact Sheet on the use of electronic cigarettes among adults in Great Britain
May 2015



E-cigarettes - are they harmful?



*“the constituents of cigarette smoke that harm health – including carcinogens – are **either absent** in e-cigarette vapour or, if present, they are mostly at levels much below 5% of smoking doses (mostly below 1% and far below safety limits for occupational exposure)”*

Annals of Internal Medicine®

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◀ PREV ARTICLE | THIS ISSUE | NEXT ARTICLE ▶

ORIGINAL RESEARCH | 21 MARCH 2017

Nicotine, Carcinogen, and Toxin Exposure in Long-Term E-Cigarette and Nicotine Replacement Therapy Users: A Cross-sectional Study

Lion Shahab, PhD; Maciej L. Goniewicz, PhD; Benjamin C. Blount, PhD; Jamie Brown, PhD; Ann McNeill, PhD; K. Udeni Alwis, PhD; June Fena, PhD; Lanaina Wana, PhD; Robert West, PhD

Conclusion: Former smokers with long-term e-cigarette-only or NRT-only use may obtain roughly similar levels of nicotine compared with smokers of combustible cigarettes only, but results varied. Long-term NRT-only and e-cigarette-only use, but not dual use of NRTs or e-cigarettes with combustible cigarettes, is associated with substantially reduced levels of measured carcinogens and toxins relative to smoking only combustible cigarettes.



E-cigarettes - what about the aldehydes?

- Recent reports raised a possibility that under certain conditions, EC may release high levels of aldehydes (released in tobacco smoke and contribute to its toxicity)
- Aldehydes are also released with thermal degradation of propylene glycol and glycerol in e-liquids.
- Previous studies detected the presence of aldehydes, especially formaldehyde, in the vapour from some EC, but at levels much lower than in cigarette smoke.
- Across brands, ***EC released 1/50th of the level of formaldehyde released by cigarettes. The highest level detected was six times lower than the level in cigarette smoke.***
- Normal vaping generated negligible aldehyde levels. (McRobbie, H., et al., *Effects of the use of electronic cigarettes with and without concurrent smoking on acrolein delivery*. 2014)

Farsalinos, K. *E Cig aerosol contains 6 x LESS formaldehyde than tobacco cigarette smoke*. 2014 , Farsalinos, C., E-cigarette aerosols generates high levels of formaldehyde only in 'dry puff' conditions. *Addiction*

E-cigs haven't been shown to be effective

There haven't been any scientific studies that prove e-cigs actually help people to quit smoking. There is also concern that using e-cigs may lead kids to start smoking regular cigarettes.

The bottom line is that we just don't know enough about e-cigs, ***so we don't recommend that you use them.***

smokefree.gov



Youth effect

- **CONCLUSIONS:** Most US youth view e-cigarettes as less harmful and addictive than cigarettes. Far fewer think similarly about cigars and smokeless tobacco. Increases in e-cigarettes' perceived safety mirrors rapid increases observed in their use. Perceived safety correlates with use of each tobacco product.

Pediatrics
November 2016, VOLUME 138 / ISSUE 5
From the American Academy of Pediatrics
Article

Perceptions of e-Cigarettes and Noncigarette Tobacco Products Among US Youth

Stephen M Amrock, Lily Lee, Michael Weitzman

[Article](#) [Figures & Data](#) [Supplemental](#) [Info & Metrics](#) [Comments](#)

Pediatrics Nov 2016, 138 (5) e20154306



Youth effect

Pediatrics
July 2016
From the American Academy of Pediatrics
Article

E-cigarettes, Cigarettes, and the Prevalence of Adolescent Tobacco Use

Jessica E. Barrington-Trimis, Robert Urman, Adam M. Leventhal, W. James Gauderman, Tess Boley Cruz, Tamika D. Gilreath, Steve Howland, Jennifer B. Unger, Kiros Berhane, Jonathan M. Samet, Rob McConnell

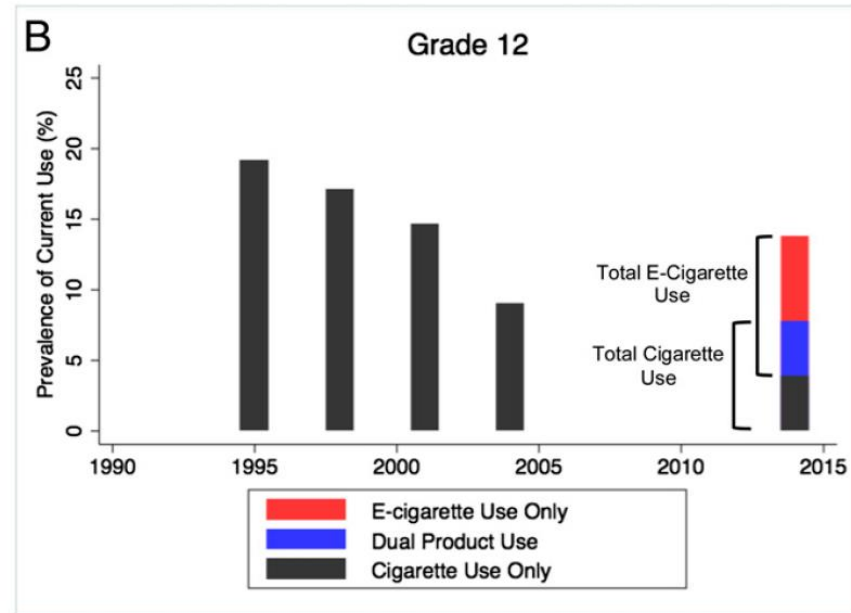
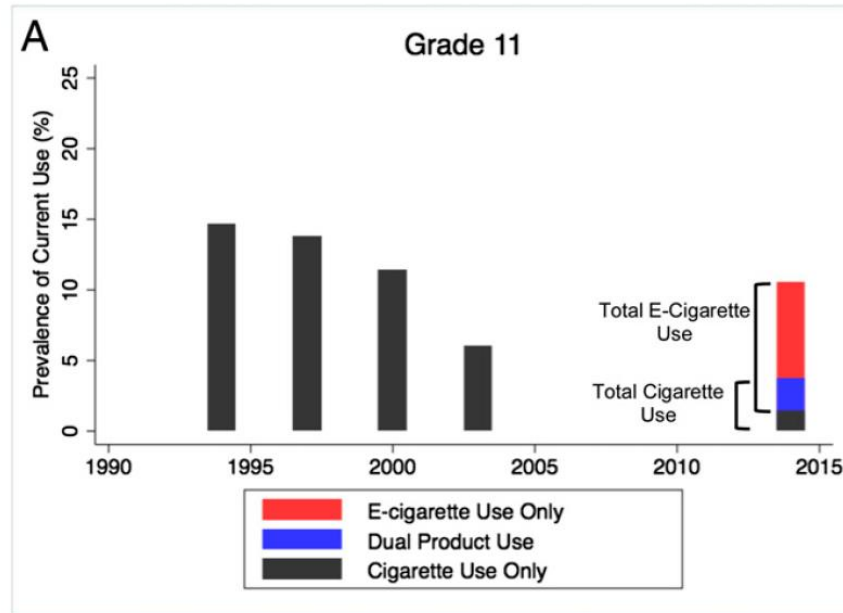
Article

Figures & Data


Info & Metrics

Comments

Current Use



CONCLUSIONS: Smoking prevalence among Southern California adolescents has declined over 2 decades, but the high prevalence of combined e-cigarette or cigarette use in 2014, compared with historical Southern California smoking prevalence, suggests that e-cigarettes are not merely substituting for cigarettes and indicates that e-cigarette use is occurring in adolescents who would not otherwise have used tobacco products.



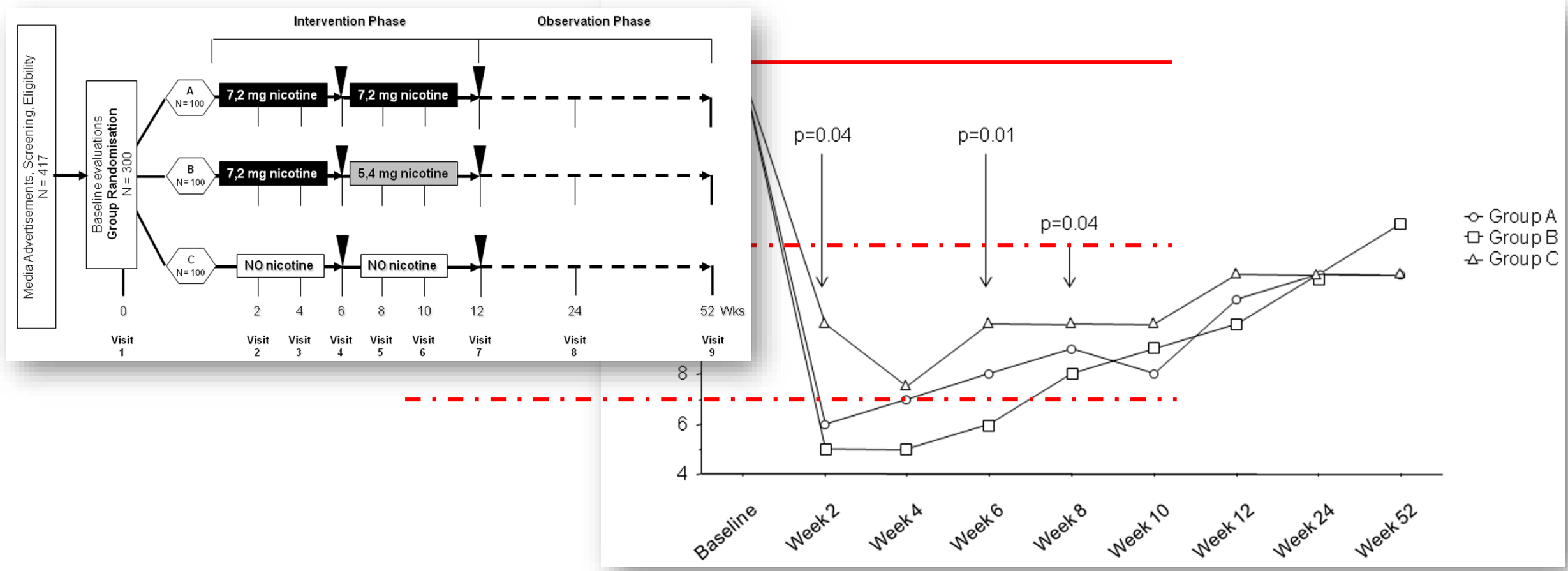
“Switching from smoking to vaping avoids most of the risks of smoking and smokers should be encouraged to do so.

E-cigarettes currently are much more popular than other treatments and hence have much wider reach and potential for a major public health impact.”

Public Health England’s position on e-cigarettes
BMJ 2015;351:h4863



E-cigarette users and quitting smoking



Caponnetto P, et al. (2013) Efficiency and Safety of an eElectronic cigAreTte (ECLAT) as Tobacco Cigarettes Substitute: A Prospective 12-Month Randomized Control Design Study. PLoS ONE 8(6): e66317. doi:10.1371



E-cigarette users and quitting smoking

- Respondents were categorized as **intensive users** (used e-cigarettes daily for at least 1 month), **intermittent users** (used regularly, but not daily for more than 1 month), and **non-users/tryers** (used e-cigarettes at most once or twice).
- Logistic regression controlling for demographics and tobacco dependence indicated **that intensive users of e-cigarettes were 6 times more likely than non-users/tryers to report that they quit smoking** (OR: 6.07, 95% CI = 1.11, 33.2).



Reduced Risk Tobacco Products



Philip Morris looks beyond cigarettes with alternative products





Background

- Philip Morris International CEO has stated : “no more combustible cigarettes by 2050”
- PMI has **invested 3bn USD** in developing a new reduced risk product (RRP) – no combustion, only heating of tobacco to 300°C – “**heat not burn**”
- The data shows **risk reduction of >90%** (compared to traditional cigarettes)
- They have launched in multiple markets – Japan, Europe and UK - in Japan alone they have ~15% of the smokers on RRP
- Single digit % of smokers manage to give up, PMI have managed *over 70% conversion in Japan (first market)*
- This is the first of 4 different platforms they are developing, all reduced risk products. The second is in live city testing.



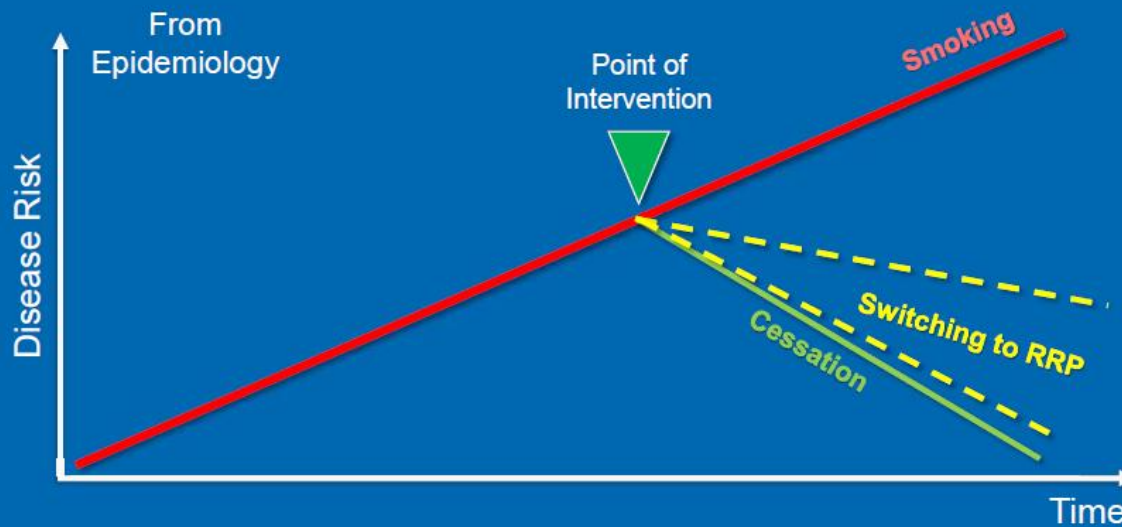
Switching vs. Cessation



Cessation: The "Gold Standard"



- We apply the U.S. Institute of Medicine's "gold standard" for assessing risk reduction: benchmark against cessation

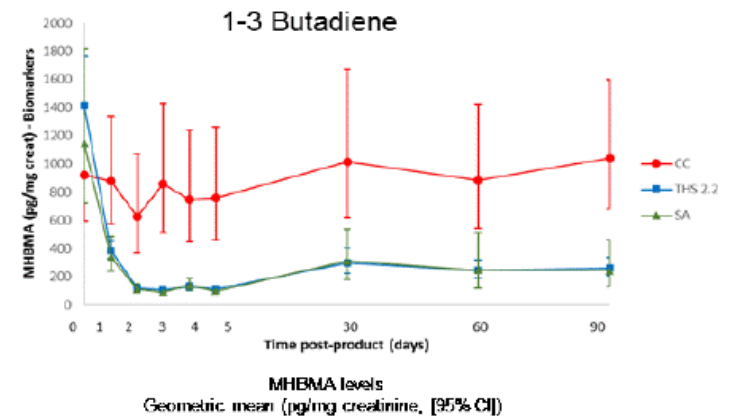
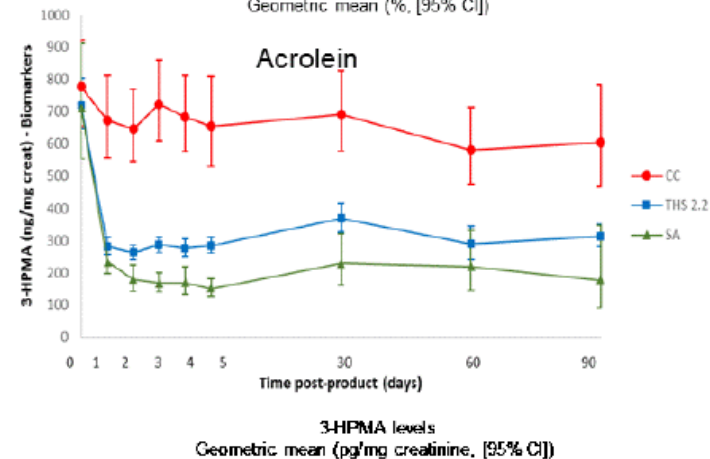
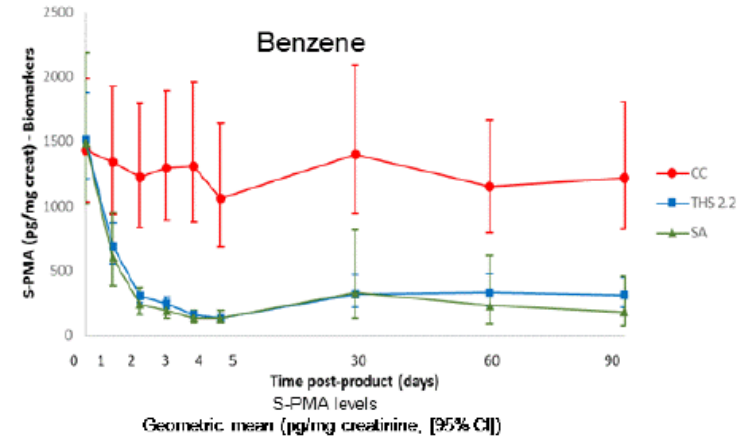
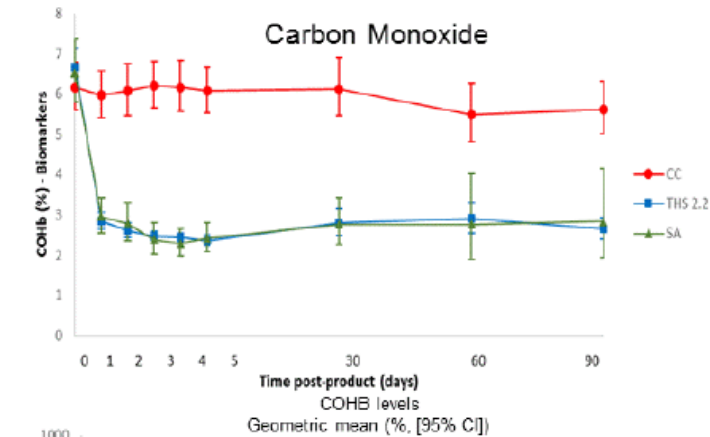




Reduction in exposure

- Reduction in metabolites, carcinogens equivalent to abstinence when smokers switch to RRP

CC – combustible cig
THS – RRP
SA - abstinence





FDA approval

- How successful will they be?

Bloomberg the Company & Its Products | Bloomberg Anywhere Remote Login | Bloomberg Terminal Demo Request

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Technology

Are High-Tech Tobacco Products Healthier? FDA Wants More Data

By [Anna Edney](#)
22. Januar 2018 17:40 Updated on 22. Januar 2018 19:18

- ▶ U.S. Regulators post report on Philip Morris's iQos device
- ▶ Agency staff wants cancer study results coming later in 2018

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In high-stakes votes, FDA advisors say evidence doesn't back Philip Morris' claims

- Philip Morris International wants to make a claim that using its heat-not-burn tobacco product, iQOS, is safer than smoking cigarettes.
- FDA approval would be required for such a claim.
- PMI presented its case to an independent advisory committee this week.

Angelica LaVito | @angelicalavito
Published 12:20 PM ET Thu, 25 Jan 2018 | Updated 8:04 PM ET Thu, 25 Jan 2018

CNBC





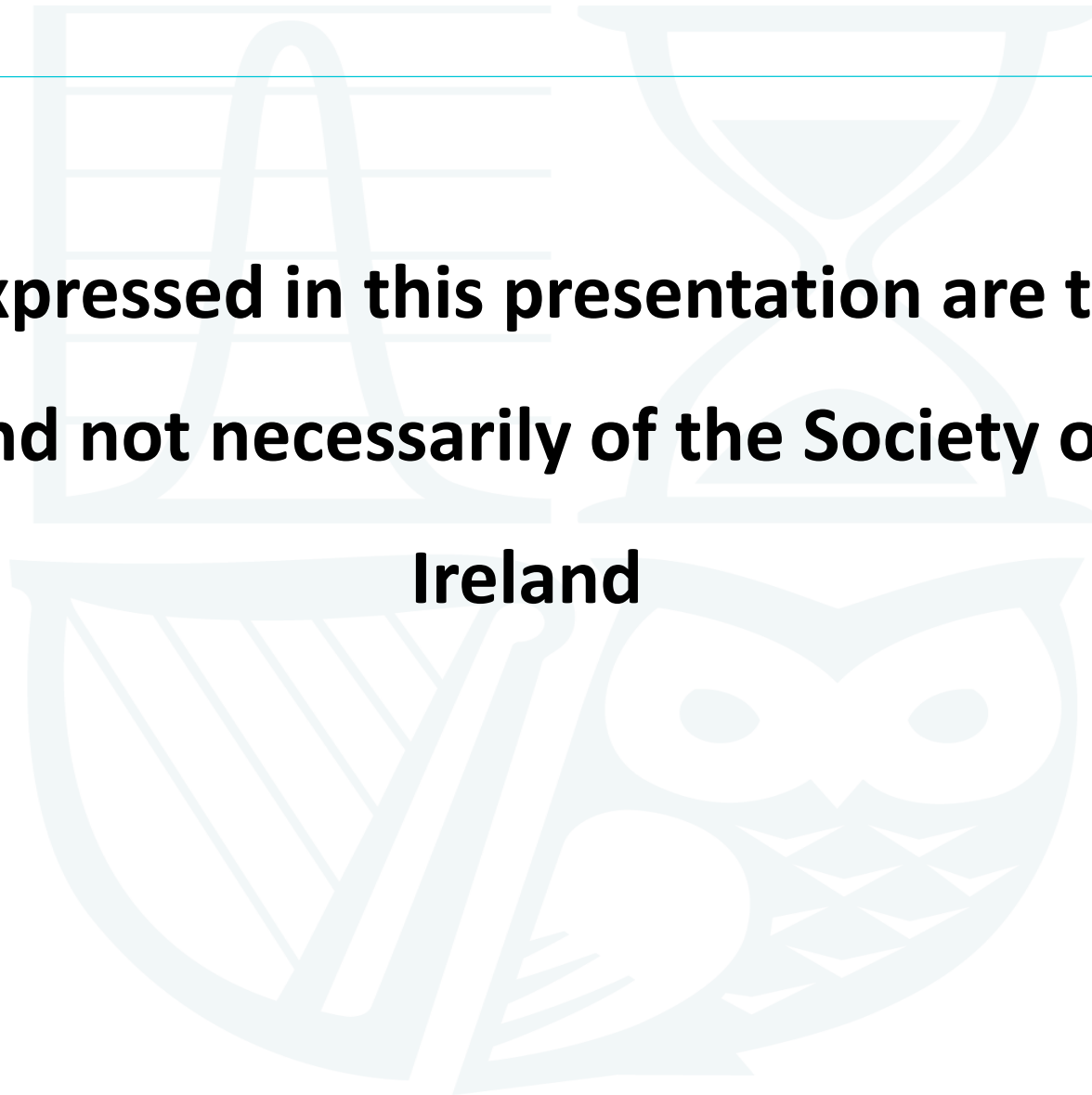
What we have think about

- How to test if someone still inhales nicotine?
- How sustainable is the switch?
- How absolute is the switch?
- Do we really know long term outcomes?
- Nicotine = ?lifelong addiction
- How much lower is the risk?



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