

# Transcript

Let's talk e-cigarettes

Podcast 34, July 2024, Professor Jamie Brown, University College London

Speaker 1: Musical intro & outro

Speaker 2: Nicola Lindson, NL

Speaker 3: Jamie Hartmann-Boyce, JHB

Speaker 4: Jamie Brown

Musical intro

If asking your mate down the pub about vaping is what they probably say, no one agrees if it's safer or not, so you might as well smoke anyway. Now what your mate needs is a Cochrane review. All the facts have been checked at least twice. They find there's a lot that the experts agree on and might give you different advice.

Speaker 2

Hi, my name is Nicola and I'm a researcher based at the University of Oxford in the UK.

Speaker 3

And I'm Jamie and I'm a researcher based at the University of Massachusetts Amherst in the United States.

Speaker 2

We are both members of the Cochrane Tobacco Addiction Group. Welcome to this edition of Let's talk E cigarettes. This podcast is a companion to a research project being carried out at the University of Oxford, where every month we research the e-cigarette research literature to find new studies. We then use these studies to update our Cochrane Systematic review of E cigarettes for smoking cessation. This is called a living systematic review. In each episode, we start by going through the studies we've found that month and then go into more detail about a particular study or topic related to E cigarettes.

Speaker 3

This month we ran our searches on the 1st of July 2024, we found seven new references. Five of them were linked to previously included studies, and we found one new ongoing study and one new included study. In a nutshell. The one who included study was published in JAMA Internal Medicine and led by Anna Tuisku at the Lapland Center Hospital in Finland. They report funding from Grand with financial support from Pfizer. This was a randomized placebo-controlled trial conducted in Northern Finland in which 561 people who smoked daily were randomized to three different study arms. The first arm received nicotine e-cigarettes and placebo tablets. The second arm received varenicline with nicotine-free e-cigarettes and the third arm received nicotine-free e-cigarettes and placebo tablets. There was no clear evidence of a difference in six-month quit rates between varenicline and nicotine e-cigarettes. Both of them approximately doubled quit rates compared to the placebo non-nicotine e-cigarette arm. We're planning to update our review to incorporate this trial in due course. So over to you Nicola to tell us about the new ongoing study.

Speaker 2

We found our new ongoing study in their trials registry where it is titled Health effects of the standardised research e-cigarette in smokers with HIV. It's been led by Professor Patricia Cioe from Brown University. It's a randomised controlled trial that recruited people diagnosed with and engaged in care for HIV and they aim to recruit 72 people. The participants were randomised to either be provided with an electronic cigarette and encouraged to use the e-cigarette whenever they would normally smoke a cigarette or they were randomised to receive no intervention. Of relevance to our review, they plan to measure tobacco toxicant levels and lung function at six weeks follow up. The study was completed April 2024 and is funded by the NIH Research Fund there in the US.

Speaker 3

Thanks, Nicola. So in this month's deep-dive, I had the pleasure of speaking to Professor Jamie Brown from University College London about the long running Smoking Toolkit study, I'll hand over to Jamie to introduce himself and tell you all about it. So, can you start by telling us a bit about yourself and how you got into tobacco and e-cigarette research?

Speaker 4

Yeah, absolutely. Well, first of all, thanks very much for having me on this podcast. Obviously we've worked together over the years, but don't usually get the opportunity to publicly acknowledge what wonderful and vital work you've done as the Cochrane Tag team over the years.

Speaker 3

Ohh thank you.

Speaker 4

Your reviews are just critical for research progress informing influencing policy here in the UK and globally.

Speaker 3

Thanks so much.

Speaker 4

So a real pleasure to be on.

Speaker 3

Ohh lovely to hear that.

Speaker 4

But yeah, so how I got into things, this is a slightly long version of story. I'm a psychologist by training, actually, rather than an epidemiologist or health psychologist. I did my undergrad and PhD in a department of experimental psychology back in 2007. I was deep into quite an abstract, maybe little esoteric PhD titled an Analysis of Functional Differences in implicit learning, but from there I became interested in how these sorts of learning mechanisms, so kind of associative learning and so on might relate to addiction and started attending some seminars within the department organised by Barry Everett and Trevor Robbins kind of addiction groups and a key idea there was that drug addiction was fundamentally a transition from voluntary recreational drug use to kind of compulsive drug seeking habits underpinned by neurological changes, together with another student in the department my good friend Christian Marnay, we found that explanation maybe a little narrow, little unsatisfying for us anyway.

Speaker

Hmm.

Speaker 4

It obviously captured 1 aspect of addiction point of habits and compulsion. But kind of focusing at this level of explanation, it seemed to miss some other important parts, and so Christian recommended to me Robert West's theory of addiction book. Those ideas and that kind of broader, more integrative approach took really resonated with me. And so I kind of kept my eyes open for postdoc jobs available in Robert's group. One came up in 2010 and I applied it was to help develop and evaluate an internet based smoking cessation intervention. But from that particular project as is Robert style, you end up working on loads of different stuff relating to smoking cessation and I just loved it from there, really working on a much more applied area of psychology felt like this sort of work was making a difference, often related or informed clinical decisions or policy choices. So yeah, it just felt a really interesting research area to be involved in, with, and obviously enormously indebted to Robert for for getting me into the area and then being such a great mentor and colleague over the last 14 years.

Speaker 3

Awesome. So, one thing that your group is definitely. Known for among many things, is the Smoking Toolkit Study. Can you tell our listeners a little bit about it.

Speaker 4

Yeah, of course. Well, it's a national surveillance programme, really involving a series of monthly cross-sectional surveys of representative samples adults in Great Britain that aims to monitor trends and provide insights into population wide influences on smoking and smoking cessation. So, each month a new sample of about 2400 adults complete detailed survey with a trained Ipsos Mori interviewer that includes a range of detailed questions about the smoking attempts to quit vaping as well, which is contextualized by kind of detailed information about their motivations and nature of those attempts to quit and to cut down their use and exposure to healthcare and various sociodemographic characteristics. The study was started almost 20 years ago back in 2006, now by Robert, and that means we've accumulated data from almost 400,000 different adults now.

Speaker 3

It's incredible.

Speaker 4

Across about 210 monthly waves, we've always tried to work closely, you know, not just with other academic colleagues, partners in civil service, public health agencies across England also Great Britain to try to refine and update the survey to kind of changing needs and also you know I think a key feature of the survey is we report monthly trends on kind of key performance indicators relating to smoking and quitting. So inform policy and we try to get those out there, you know within about 6 to 8 weeks of each month's data collection. And yeah, you can keep up to date with all our kind of latest trends on our website, [smokingengland.info](http://smokingengland.info).

Speaker 3

Awesome. I remember my I think my first introduction to it was around the Stop Tober campaign and just how amazing it was to be able to see it almost real time. The impact of that. So that was super cool. So, as you know in our Cochrane review we mainly focus on randomized controlled trials. That's Cochrane's way of looking at the effects of interventions. But we've seen a lot over the years of I suppose people using the randomized controlled trial data and the toolkit data to make sense of complicated questions and I wondered what kind of information can we get from the toolkit study that we can't get from randomized controlled trials?

Speaker 4

Yeah, that's a great question. I think there are quite a few different answers. I think one, one version is you know it it's basically triangulation, I mean.

Speaker 2

Obscure science term definition triangulation in research means using multiple data sets, methods, theories and or investigators to address a research question. It's a research strategy that can help you enhance the validity and credibility of your findings.

Speaker 4

But Marcus Munafo and George David Smith wrote a nature comment about triangulation and you know making the point that robust research, whatever the area really requires triangulation from different sources, you know, any given approach has its own related, unrelated assumptions, strengths, weaknesses. Yeah. But if you get results that are agreeing across quite different mythologies, then you know you get a lot more confidence and more likely to be robust and generalizable. So, I suppose in this specific context, RCT's of e-cigarettes and reviews of them are obviously invaluable, but you know, arguably somewhat limited by generalisability outside the clinical trial context, for example, and most e-cigarrete use in the real world doesn't involve any engagement with health professionals, which obviously we see in a lot of the RCT's. And how do people actually use them in the real world when they haven't had that kind of contact and the marketplace is evolving rapidly how do we account or monitor the variety of different model types and so on? You know, there are at least two different parts. You know, the toolkit can be of use there. I suppose one approach would be, you know, classic comparative individual level epidemiology, real-world use. And by that I just mean, you know, on average what success rates do people who report using e-cigarettes in the real world get compared with those who don't, and obviously we've lost the randomization there. But you know, we can try to adjust for different confounders. Obviously there's quite a long history to that approach we reported one of the earlier ones, I think in about 2014 and Sarah updated it again in 2019 and we found after that trying to do that adjustment for important confounders. So characteristics are affecting both someone's chance of quitting successfully and also their likelihood of opting to use an e-cigarette given it's not random. That the real-world effect actually appeared quite similar to that that you've observed, you know, averaging across trials with people using an e-cigarette and a quit attempt in our study being about twice as likely to be successful than those not using an e-cigarette.

Speaker 3

Yeah.

Speaker 4

However, as you'll know from your reviews, you know lots of other studies have looked at this too, and I think it's fair to say it's a mixed picture with others failing to find an effect or some even a reduced likelihood of future quitting. Don't think you know, we need to go into the details of exactly why or why not different studies get those results, although I think some that include more important confounders and treat selection bias quite carefully so you know not looking at use of the cigarettes in the past and things like that, you know, tend to be a bit more consistent. But even with those best types of studies there remains the possibility that those people are using e-cigarettes may still be more likely to succeed in liquid sense because of unmeasured confounding. You know, the things we're not picking up in those surveys, whereas if we look aggregated level at the population level rates so, you know, time series types approach,

Dog bark

Speaker 2

Time series analysis is a specific way of analysing data collected over a number of time points.

Speaker 4

By definition, those estimates are of the whole population. So, we're getting rid of that possibility of individual level confounding.

Speaker

Absolutely.

Speaker 4

So you know, that's to ask the sort of question what was happening to overall success rates, quit attempts in England, while e-cigarettes were becoming popular? And broadly speaking, we know from annual data based from toolkit and some others that on average the overall quit success rate was probably quite flat between about 2007 and 2011 before e-cigarettes were popular, maybe about 13 to 14%. And then after they became popular, those rates appeared to go up to about kind of 17%. And so that uptick I think is suggestive of a positive impact of e-cigarettes quitting at a population level, but it's quite hard to get much confidence in those sorts of results at that level of annual detail. You just don't really have enough numbers or information. They're quite a lot of other things that might have been going on at the same time that could affect those success rates. So, here where I think the real value of the toolkit comes in is because we collect data monthly, still at the population level, but monthly and have done now for you know, going all the way back to 2006. We've got this really long series of quite fine grained data on which we can do some quite powerful time series analysis to formally assess the association between monthly or quarterly changes in the use of e-cigarettes with different outcome measures of quitting, and so all that extra kind of monthly or quarterly level information lets you to try.

Speaker

Umm.

Speaker 4

And assess whether, on average, when more people in the population seem to be using e-cigarettes each month. Do the success rates tend to go up and when we've done that versus led by Emma Beard and then Sarah Jackson more recently, it's something called an armax modelling approach, which allows you to put in adjustments for other factors that you think might be important like tobacco control policies expenditure and also for seasonal and long-term secular trends try to model the underlying structure of the data and if after accounting for all those you still get an association then it's a much more persuasive causal inference. I think so when we most recently modelled the data using that approach, we found that overall success rates increased by about .4% for every 1% increase in the prevalence of e-cigarette use during a recent quit attempt. So significant, but probably a bit more modest result that remains after accounting for all those other factors than you might assume when you're just kind of eyeballing the unadjusted annual trends. So these time-series come back to the kind of triangulation. They also have limitations. You know, they are limited by the possibility of population level confounding, such as introduction of policies that might affect quitting rates that we didn't model, or maybe in theory changes in the overall sociodemographic or smoking profiles of the populations, however, those sorts of limitations don't affect the trials or the comparative epidemiology studies. So taken together, we've got three sources of

information, clinical trials, comparative observation and population trend data, each with their own limitations and strengths. But together, I think they provide quite powerful triangulation on the sort of true effect size of e-cigarettes on cessation. So that's my.

Speaker 3

Yeah.

Speaker 4

A very long answer with a worked example, I think yeah.

Speaker 3

I love it. No, it's a wonderful answer. It's a great worked example and it's so useful to us and reassuring to us when we are looking at our RCT data, which is as you know, really difficult sometimes to generalize depending on the studies to see that reflected in your data as well just I think is very reassuring and helps us in talking about that data to policymakers. So you have this kind of amazing resource right back in 2006 when this was set up, you weren't thinking ohh we want to set this up because one day we're gonna need to study e-cigarettes. I'm sure that probably wasn't on the radar are and so it's just so amazing to have this opportunity of having this data that you can look back on and that you can ask more questions moving forward. I wonder what you think our future research priorities in terms of e-cigarettes, particularly when it comes to the toolkit study.

Speaker 4

Yeah, that's a good question. Often we don't look too far into the future cause exactly as you say, you know, stuff comes up on the radar that that we weren't thinking about and that's one of the beauties of the studies. But I think probably the priority in the near future. Is going to be to try to evaluate the impact of likely upcoming vaping policy changes in England. I don't know if you've talked about them before on the podcast, but you know there are some proposed policy changes such as new taxes on e-cigarettes. I think there's likely to be a ban of disposable e cigarettes, although obviously I think the market will pivot to still find some way of offering similar devices.

Speaker 3

Get around that.

Speaker 4

Yeah, but other things like changes to marketing and displays or product designs. And when you read the proposed bill that's, you know now being now being paused or you know, listen to the CMO.

Speaker 1

Yeah.

Speaker 4

all are intended to reduce youth vaping, but hoping to minimise the unintended effect of reducing the use of e-cigarettes for cessation. Now, as I've just said, it's all a little bit up in the air because we've had a snap election in England recently. But the plan beforehand was to regulate by effectively giving a Secretary of State the power to flex vaping regulations without necessarily reverting to primary legislation. So that would allow certain policy levers to be flexed relatively quickly, at least in theory.

Speaker 3

Yeah.

Speaker 4

Depending on what the data are showing, I suppose somewhat reflecting experiences with COVID. So I hope a priority we'll be using ours and other rapid

surveillance and evaluation to really help calibrate policy quite quickly if we see that, you know, it's having substantial unintended effects, for example.

Speaker

Ohh.

Speaker 3

Yeah.

Speaker 4

And then, yeah, another quite interesting area I think is. Which STS will be quite well placed to contribute and evaluate is the impact of the new Swap to Stop scheme in England again case it hasn't been discussed before. The idea is that.

Speaker 3

How exciting.

Speaker 4

I think about one in five of all smokers in England will be provided with a free vape starter kit alongside behavioural support to try to help them quit smoking and being quite targeted as far as it can be to, you know, less advantage groups. But now we know the scheme is being rolled out in England, but it's not going ahead in Scotland and Wales. But we collect data on all three nations, so hopefully we can use data from Scotland and Wales as a bit of natural experiment to try and control and estimate what might have been happening in the absence of this new scheme. So yeah, I think that's quite an exciting new area as well.

Speaker

Ah.

Speaker 3

Awesome. Oh, I look forward to seeing that. Well, I think that is it for me other than one final question for any researchers listening, which is could other researchers use this smoking toolkit data if they wanted to?

Speaker 4

Yeah, absolutely. I mean, people often ask, you know, why toolkit and that that is the reason it's called Smoking Toolkit Study because, you know, it's intended to be an open toolkit or resource for academic colleagues, but also, you know, policy makers, practitioners to freely use the data we do collect on our website. There are a couple of forms we ask people to fill in. I think we've refused about one request in the last 20 years. And as well as using those data collected already, we quite a few instances of encouraging people to apply and use funding for additional questions that are beyond the specific issues that we're focusing already in the study. So you know, when we did some work with you on adding some questions in relating to weight management. Those new questions then benefit from the context of all the other ongoing assessment that you know, Cancer Research UK have already funded

Speaker 3

absolutely.

Speaker 4 So yeah, if anyone is interested in working with us, then yeah, absolutely. Please do get in touch.

Speaker 3

Awesome. Thank you so much, Jamie. We really appreciate it.

Speaker 4

Great. Thank you very much.

Speaker 2

What really struck me about that interview, Jamie, is this similarities between the Smoking Toolkit study and our project in terms of like the monthly monitoring. That they're doing. As we do our monthly searches and then the timely dissemination of what they're they're finding and obviously the implication of that is they're able to influence policy quite quickly, which is what we are aiming to do with our review and think we are somewhat successful in doing and obviously with their study they've got the ability to look at the effects of actual policy changes, which is not something that we do in our review. So being able to kind of run these projects side by side doing that monthly monitoring in these kind of slightly different. Basis is really important I think.

Speaker 3

That's right, Nicola and I, I love what he was saying about data triangulation. You know, one of the limitations that we acknowledge about our review is that we focus on randomized controlled trials. They're the best way to look at the effects of an intervention. But they're also really limited sometimes in terms of generalizability. They can be high resource trials in specific populations. And so it's really nice to see those same trends mirrored in other study designs.

Speaker 2

Incredibly encouraging that they're kind of finding the same effect of e-cigarettes that we are finding. That's great.

Speaker 3

Exactly. Right. Well, thanks so much for listening everyone. That's it from us this month. We're taking a break in August and we hope all of you get some downtime this summer as well. Tune in in September for another episode of Let's Talk E Cigarettes.

Please subscribe on iTunes or Spotify and stay tuned for. Our next episode.

Musical outro

Vaping is safer than smoking may help you quit in the end. But remember to mention the findings we have can't tell us what will happen long term, even though we know vaping is safer than smoking, we may still find cause for concern, if you're thinking about switching to vaping do it. That's what the experts agree. Smoking so bad for you they all concur that vaping beats burning there's much to learn of effect long term yet to be seen.

Speaker 3

Thank you to Jonathan Livingstone-Banks for running searches to Ailsa Butler for producing this podcast and to all of you for tuning. In music is written with Jonny Berliner and I and performed by Johnny. Our living systematic review is supported by funding from Cancer Research UK. The views expressed in this podcast are those of Nicola and I and do not represent those of the funders.