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Transcript

00:00:06 Speaker 2

If asking your mate down the pub about vaping here's what they'd 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.

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They find there's a lot that the experts agree on and might give you different advice.

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Hi, I'm Nicola Lindson.

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And I'm Jamie Hartmann-Boyce.

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We're both researchers based at the University of Oxford, where we work with the Cochrane Tobacco Addiction Group. Welcome to this edition of 'Let's talk e-cigarettes'.

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This podcast is a companion to a research project being carried out at the University of Oxford, where every month we search the e-cigarette research literature to find new studies. We then use these studies to update.

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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 have found that month and then go into more detail about a particular study or topic related to e-cigarettes.

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This month we searched for new evidence on the 1st of November and in a nutshell we found one new study led by Professor Okuyemi and published in Nicotine and Tobacco Research.

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It's a randomised controlled trial in 234 participants funded by a Clearway Research grant award, and we're going to be hearing more about it from its senior author professor

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Anne Joseph from the University of Minnesota, in this month's Deep Dive.

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So to start off with, could you tell us a little bit about yourself and what brought you to studying e-cigarettes?

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Sure, I'm a

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Professor of General Internal Medicine, so I've done over my career a lot of primary care, a lot of work in prevention, and specifically clinical trials and smoking cessation. I've been interested in different populations. Sometimes populations who are hard to reach, so the harm reduction questions

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for people who have difficulty quitting are of great interest to me, including e-cigarettes.

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Great thank you and the reason why you're on this month is because of the really exciting new study that you have and I'm wondering.

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If you could just

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tell us a little bit about this new study, and particularly I think what's a bit different about it compared to a lot of the other studies that we've seen in this area, is that you've really tried to kind of emulate a real world environment, so if you could just talk through that in a little bit

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of detail, what your study did and why you did it the way you did it.

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Sure, so this was a clinical trial of e-cigarettes containing nicotine or not containing

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nicotine and it was conducted in African American smokers in the Twin Cities in Minnesota, so the Midwest and we were very interested in what happened with use of e-cigarettes without a lot of specific instructions to study participants. And that's the real world aspect of this.

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The reason for that is that as I'm sure you know, many people quit smoking or change their smoking behaviours independent of researchers or clinicians.

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They're actually out there doing it on their own, and so we felt that it was very important to

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try at least to replicate some of those conditions and see what happened more spontaneously, given the option to use e-cigarettes.

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Great, thank you. I think it's really relevant to conversations too and we think about how they're provided and regulated as well as

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What support is provided alongside them? So that's wonderful. We're excited to see your study.

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One of the things I noted about it.

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Is that the participants were given the option to use e-cigarettes with or without menthol?

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I know that e-cigarette flavours are a slightly controversial topic at the moment, so I was wondering if you could just tell us a bit about.

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your choice of flavours for the study.

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Yes, so the vast majority of African American smokers use menthol combusted cigarettes and prior work that **Kola** Okuyemi, one of the investigators on the trial had done demonstrated that African American smokers, given the choice, would use menthol, or a

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mint flavoured e-cigarette over a non-menthol e-cigarette. We were not specifically studying flavours or menthol, but we did want to make sure that.

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I guess that the e-cigarettes were given a chance and if we didn't have a menthol flavour, we were concerned that that would be what was determining the behaviour more than the e-cigarette itself. We realised there's a lot of controversy or even around flavours, but even around menthol, but in this.

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Particular study we really wanted to look into the use of e-cigarettes more than menthol, and in fact the the vast majority of participants selected the menthol e-cigarettes.

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Great, thank you.

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So it's really that they were given the choice and then that helped.

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You would help facilitate their use.

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So you could imagine if I can interrupt. I mean there are a lot of interesting questions around menthol in this particular setting, particularly among African Americans.

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What would happen if we didn't offer menthol, for example, but we would have had to design this study in a different way to look at those questions.

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Yeah, that would be a different sort of study and there are very few actually that that are kind of assigning people to different flavours. But we kind of hope to see some.

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So that brings become nicely into the next question, which is about the fact that you conducted your trial in.

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African American participants.

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Can you tell

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us a little bit more about why your

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study focused on this group?

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Sure, so you know, African Americans, of course, have a heterogeneous pattern of smoking and probably of e-cigarette use.

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But what we know about combusted cigarette use is that African Americans have different patterns than whites. For example, in the US they have a lower average cigarette per day.

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They have different exposures to tobacco constituents. In spite of that, lower cigarettes per day.

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Use and they have a higher risk of lung

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Cancer. So the assumption that what we see in whites, for example, would apply to an African American population is probably not a fair one. It it poses a difficult question. Do we have to study every question in men and women?

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And African Americans and whites. But the differences are so significant in the disease

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burden of tobacco use in African Americans is so significant that we felt it was important to do a study in in that group.

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Great and I'm I'm aware of the study from Pulvers and colleagues which is in African Americans and people of Latin X heritage, and I'm aware of this one.

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But to the best of

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my knowledge, a lot of the studies in this area

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haven't selected on

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ethnicity and have as a result included mainly white people. Is that correct? That's that's my sense of it, and so that's also reason why it's really important to do this in these groups.

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I think that is that is largely correct. Sometimes the populations are more or less diverse and so you can do sub analyses in different racial groups, but then often the sample size isn't adequate to to look at the question.

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Yeah so.

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Great OK.

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And Next up, can you tell us a bit about what your study found?

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Yes, so we had two intervention groups one e-cigarettes with nicotine one e-cigarettes without nicotine and we followed the participants for 12 weeks. Our main outcome was at six weeks and that's when we measured biomarkers.

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Obscure science term definition. A biomarker is a substance that can be measured in a biological system, and in this case can be used to tell us whether someone has been exposed to a substance such as nicotine or tobacco, and how much they have been exposed to.

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So we measured biomarkers at baseline and at six weeks.

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And then we measured reported combusted tobacco use and e-cigarette use at baseline six weeks and 12 weeks and so at six weeks

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what we found was that in both groups, participants had modestly reduced their combusted cigarette use, but it was not different between the two groups.

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So it was approximately 3 cigarettes lower in both groups.

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Their exposure to tobacco specific carcinogens, so those are nitrosamines to cotinine and to carbon monoxide.

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Researchers use cotinine and carbon monoxide as biomarkers of cigarette smoking. Cotinine is a by-product of nicotine metabolism and so tells us how much nicotine a person has in their system, whereas carbon monoxide is a by-product of the burning of tobacco and so can give us an indication of how much a person has smoked.

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Was not

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different between the two groups.

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Now, I will say this is not what we expected to find. Our main hypothesis was that participants would use more of the nicotine containing e-cigarettes than the non-nicotine containing e-cigarettes and in fact would substitute more for their combusted cigarettes with nicotine containing e-cigarettes. But that's not what we observed.

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So that was interesting for us.

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Really interesting.

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Yeah, and in terms of those biomarkers

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had those, even though there wasn't a difference between groups had those reduced from baseline in both groups in line with the slight reduction in cigarette consumption or no real change there?

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No, no real change.

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OK, really interesting, thank you.

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Yeah, yeah, and the biomarkers of course are you know there are surrogate outcome for biological impacts of tobacco and potentially e-cigarette use, but to some extent a disappointment there.

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Yeah yeah, but I think it's really good that we talk about those studies too, right? Instead of just highlighting the ones where we find what we expected

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to find and one of the things I enjoyed about your paper was reading through the discussion. The different possibilities raised for maybe why this study didn't find what you'd expected to find, and one of the things that you propose

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is that the lack of the difference suggests that the behavioural aspects of e-cigarette use rather than the pharmacological effects are what contribute to smoking reduction.

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I was wondering if

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you could explain that in a little bit more detail.

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Well, that is a speculation. That's what happens in the discussion section you try to explore the potential reasons why something happened.

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Of course.

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And we as as I said, we did not give very specific directions other than how to use the e-cigarettes.

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Use them as much or as little as you want, including if you wanted to stop smoking. That was fine. If you didn't want to use them, that was fine, so it was a very open-ended kind of a stage for the participants.

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We know that behavioural interventions for smoking cessation are an important part of making changes and that, in general, pharmacologic interventions are not as effective without behavioural interventions so.

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I think that our working hypothesis is that this might look different had there been a instruction, or at least a if participants have been given an example of behaviour changes that they could make to cut

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down on smoking.

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Yeah, but it's really interesting 'cause it's also I think when we think about how they're regulated and provided.

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How representative that is in our studies. So a lot of the studies we have, they're being provided with support.

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That's not only behavioural support to help them quit smoking, but also on how to use the device, which can be a challenge in how to use it most effectively to support smoking cessation. So I think that's that's a really interesting speculation, and one where I hope there's some more research done.

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And I just

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wanted to explore one other thing that you speculate as a potential explanation, which is that your sample was in light smokers.

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So I wondered if you could tell us a bit more about them, particularly I was interested in

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something you described called the floor effect.

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Well, they actually were not light smokers as far as average combusted cigarette use among African American smokers in the US.

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But they are lighter smokers than for example, some of the other studies in the literature. And so we've done, you know, harm reduction before e-cigarettes was sometimes about trying to reduce combusted cigarette use and maintain that which historically was a difficult thing to do, although many smokers.

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As they get older do reduce the amount of cigarettes they use every day. But what we've seen in a number of other trials, and we've done a lot of trials in older smokers and smokers with medical conditions who've had reasons to reduce and have tried hard

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to cut down on smoking.

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Is that getting for example from 25 or 20 cigarettes a day to 10 is an easier change to make than from 5 to 0, so it's not a straight line of difficulty. It may be because of compensatory smoking, so.

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it's possible to get to 10, get just as many nitrosamines just as much nicotine by smoking harder. Smoking all the way down a cigarette.

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as as possible, but that biomarkers of exposure don't change that much when people make that change, and we've we've done some studies in the past on on that very question.

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Again, a disappointment because some people don't want to quit. So maybe it seems like it would be better to smoke 10 cigarettes than 20 cigarettes.

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a day and it might, it might be for some individuals

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but it's also hard to maintain that reduction over an extended period of time, so we speculated that this participant cohort was already at a relatively low number of cigarettes per day, and that reducing that farther would might be more challenging.

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than if they had started at a higher number. When we've done harm reduction studies on combusted cigarettes in the past, you know we'll sometimes get down to

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having people pick their favourite cigarettes so it might be

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first one in

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the morning, after lunch, after dinner, and those are very difficult to stop, so they're left.

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with these three

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cigarettes a day.

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But you know, are there forevermore.

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But yeah, OK, that's really interesting. Thank you, I'm kind

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of following on

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your study and your somewhat unexpected findings, I suppose, but also more broadly.

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what research do you think should be done next? You know if there is unlimited funding and unlimited resources, what what's your kind of dream study that you'd like to see following up on this?

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Well, I will say I would like to see more data from randomised controlled trials of e-cigarettes in for smoking cessation.

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I really think we need more data and different sorts of interventions. Different durations for the intervention, different concentrations of nicotine, different flavours.

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All those very basic questions.

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I think about e-cigarettes for smoking cessation are probably the in my mind. The most the most important thing to we obviously have some, but as you know that it's not a definitive set of studies. I also think that it's very important to study more naturalistic settings for use.

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Of e-cigarettes and that could be it could be observational, but details to see what dual users do, what exclusive e-cigarette users do and what happens to their combusted cigarette use and biomarkers over an extended period of time.

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To be honest, most of our work for sort of logistical and funding reasons is confined to an unnatural period of time, which is of course relevant but not completely relevant to what happens in the real world.

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Of course, one of the challenges of doing research definitely, so that's it from me. Thank you so much. That was all super interesting and I'm sure will be of interest to the listeners as well. Is there anything else that you wanted to cover that?

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We didn't cover or any message you'd like to leave our listeners with?

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You know, the only thing that I didn't mention, which is of interest, is that

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there was a reduction in both groups, so it and this probably should have been appended, a big part of another answer, but that suggests that some of e-cigarette use is just not completely nicotine driven, and that's a very you know, that's kind of an interesting idea.

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In, you know on the whole I'm not that nervous about nicotine, but it it does make the availability of non-nicotine e-cigarettes relevant, particularly when we think about other populations

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And youth for example.

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Absolutely, and there is. I think there has been kind of some research interests in those behavioural psychological,

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you know social cues for smoking and how those feed into addiction. How e-cigarettes if without nicotine, might be addressing some of those. So I'd love to see more on that as well. It's really interesting well.

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Thank you so much.

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OK.

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I feel like I always say this, but I found that really interesting and particularly that point about then trying to emulate the intervention trying to emulate what's happening in the real world in the States right now, where people aren't getting much support to quit smoking using an e-cigarette, and they're probably just going out and buying the e-cigarette from a local store or online.

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And what's interesting is obviously that they didn't see much of an effect on cessation under those.

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conditions, and I think I'm right in saying that that differs to the other studies that we've currently got in the review, where people received quite a lot of behavioural support and that's where we're seeing the positive effects on quitting.

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So, I think that's definitely something to look out for more in the future, and could maybe be explaining some of those differences we're seeing in the effects of quitting

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in the observational real life studies and what we're seeing in the randomised trials where there is more behavioural support being offered.

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Absolutely, that's something we definitely want to look at more in our review and over time, as I suppose evidence builds for the use of different medications, including stop smoking medications.

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Sometimes the questions move from OK in ideal circumstances. Does this work? to OK How do we make it work in real life? What kind of support needs to be provided? And I really hope we start seeing more studies.

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Like that that we can include moving forward. So that's it from us this month. Thank you so much for listening.

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And to Professor Joseph for

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the interview, we won't be around next month because we're taking a break for the holidays, but we look forward to checking in with all of you in 2022.

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

00:19:00 Speaker 2

Switching to vaping is safer than smoking and may help you quit in the end yeah, 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.

00:19:18 Speaker 2

If you're thinking of switching to vaping, do it!

00:19:22 Speaker 2

That's what the experts agree, smoking so bad for you.

00:19:27 Speaker 2

They all concur

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That vaping beats burning there's much to learn of effects long term yet to be seen

00:19:34 Speaker 4

Thank you to Jonathan Livingston Banks for running searches to Ailsa Butler for producing this podcast, and to all of you for tuning in.

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